

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-78380-1

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

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Authorized for release by:
8/2/2018 4:38:09 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

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Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-78380-1

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

Twenty-six samples were received on 6/27/2018 1:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were -2.1° C and -1.7° C.

Per AECOM- sample PDI-SG-B194-BL1, which was originally included on the COCs for this job was split out into a separate job-now logged under 580-78433-1.

Limited volume was available for sample PDI-SG-B102-BL1 (580-78380-1) and the laboratory was unable to run moisture/solids analysis. The sample container was broken, spilling the mostly liquid sample upon opening; the sample had previously been frozen and thawed. This sample was submitted previously under job 580-78107. Moisture results are reported from job 580-78107 for sample PDI-SG-B102-BL1 per client request.

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-B102-BL1 (580-78380-1), PDI-SG-B304-BL1 (580-78380-2), PDI-SG-B289-BL1 (580-78380-3), PDI-SG-B117-BL1 (580-78380-4), PDI-SG-B301-BL1 (580-78380-5), PDI-SG-B297-BL1 (580-78380-6), PDI-SG-B293-BL1 (580-78380-7), PDI-SG-B310-BL1 (580-78380-8), PDI-SG-B309-BL1 (580-78380-9), PDI-SG-B314-BL1 (580-78380-10), PDI-SG-B031-BL1 (580-78380-12), PDI-SG-B042-BL1 (580-78380-13), PDI-SG-B191-BL1 (580-78380-14), PDI-SG-B114-BL1 (580-78380-15), PDI-SG-B425-BL1 (580-78380-16), PDI-SG-B096-BL1 (580-78380-17), PDI-SG-B096-BL1-D (580-78380-18), PDI-SG-B155-BL1 (580-78380-19), PDI-SG-B259-BL1 (580-78380-20), PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23), PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25) and PDI-SG-B264-BL1 (580-78380-26) were analyzed for semivolatile organic compounds (GC-MS) in accordance with 8270D. The samples were prepared on 06/29/2018 and 07/03/2018 and analyzed on 07/03/2018 and 07/14/2018.

Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-278105/1-A at a level exceeding the reporting limit. 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-analysis of samples was not warranted.

Terphenyl-d14 (Surr) failed the surrogate recovery criteria high for PDI-SG-B304-BL1 (580-78380-2). Terphenyl-d14 (Surr) failed the surrogate recovery criteria high for PDI-SG-B310-BL1 (580-78380-8). Evidence of matrix interference is present; therefore, re-extraction

Case Narrative

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Laboratory: TestAmerica Seattle (Continued)

and/or re-analysis were not performed.

Bis(2-ethylhexyl) phthalate failed the recovery criteria high for the MS of sample PDI-SG-B031-BL1MS (580-78380-12) in batch 580-278042. Bis(2-ethylhexyl) phthalate failed the recovery criteria high for the MSD of sample PDI-SG-B031-BL1MSD (580-78380-12) in batch 580-278042. Bis(2-ethylhexyl) phthalate exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples were diluted due to the nature of the sample matrix: PDI-SG-B102-BL1 (580-78380-1), PDI-SG-B304-BL1 (580-78380-2), PDI-SG-B289-BL1 (580-78380-3), PDI-SG-B117-BL1 (580-78380-4), PDI-SG-B301-BL1 (580-78380-5), PDI-SG-B297-BL1 (580-78380-6), PDI-SG-B293-BL1 (580-78380-7), PDI-SG-B310-BL1 (580-78380-8), PDI-SG-B309-BL1 (580-78380-9), PDI-SG-B314-BL1 (580-78380-10), PDI-SG-B031-BL1 (580-78380-12), PDI-SG-B031-BL1 (580-78380-12[MS]), PDI-SG-B031-BL1 (580-78380-12[MSD]), PDI-SG-B042-BL1 (580-78380-13), PDI-SG-B191-BL1 (580-78380-14), PDI-SG-B114-BL1 (580-78380-15), PDI-SG-B425-BL1 (580-78380-16), PDI-SG-B096-BL1 (580-78380-17), PDI-SG-B096-BL1-D (580-78380-18), PDI-SG-B155-BL1 (580-78380-19), PDI-SG-B259-BL1 (580-78380-20), PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23), PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25), and PDI-SG-B264-BL1 (580-78380-26). Elevated reporting limits (RLs) are provided.

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-B102-BL1 (580-78380-1), PDI-SG-B304-BL1 (580-78380-2), PDI-SG-B289-BL1 (580-78380-3), PDI-SG-B117-BL1 (580-78380-4), PDI-SG-B301-BL1 (580-78380-5), PDI-SG-B297-BL1 (580-78380-6), PDI-SG-B293-BL1 (580-78380-7), PDI-SG-B310-BL1 (580-78380-8), PDI-SG-B309-BL1 (580-78380-9), PDI-SG-B314-BL1 (580-78380-10), PDI-SG-B031-BL1 (580-78380-12), PDI-SG-B042-BL1 (580-78380-13), PDI-SG-B191-BL1 (580-78380-14), PDI-SG-B114-BL1 (580-78380-15), PDI-SG-B425-BL1 (580-78380-16), PDI-SG-B096-BL1 (580-78380-17), PDI-SG-B096-BL1-D (580-78380-18), PDI-SG-B155-BL1 (580-78380-19), PDI-SG-B259-BL1 (580-78380-20), PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23), PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25) and PDI-SG-B264-BL1 (580-78380-26) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 06/29/2018 and analyzed on 07/03/2018, 07/04/2018, 07/10/2018 and 07/11/2018.

2-Methylnaphthalene, Naphthalene and Phenanthrene were detected in method blank MB 580-277832/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have 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.

Terphenyl-d14 failed the surrogate recovery criteria low for PDI-SG-B042-BL1 (580-78380-13). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not performed.

Benzo[g,h,i]perylene and Naphthalene failed the recovery criteria low for the MS of sample PDI-SG-B031-BL1MS (580-78380-12) in batch 580-278071. Naphthalene failed the recovery criteria low for the MSD of sample PDI-SG-B031-BL1MSD (580-78380-12) in batch 580-278071. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples were diluted due to the nature of the sample matrix: PDI-SG-B102-BL1 (580-78380-1), PDI-SG-B304-BL1 (580-78380-2), PDI-SG-B289-BL1 (580-78380-3), PDI-SG-B117-BL1 (580-78380-4), PDI-SG-B301-BL1 (580-78380-5), PDI-SG-B297-BL1 (580-78380-6), PDI-SG-B293-BL1 (580-78380-7), PDI-SG-B310-BL1 (580-78380-8), PDI-SG-B309-BL1 (580-78380-9), PDI-SG-B314-BL1 (580-78380-10), PDI-SG-B031-BL1 (580-78380-12), PDI-SG-B031-BL1 (580-78380-12[MS]), PDI-SG-B031-BL1 (580-78380-12[MSD]), PDI-SG-B042-BL1 (580-78380-13), PDI-SG-B191-BL1 (580-78380-14), PDI-SG-B114-BL1 (580-78380-15), PDI-SG-B425-BL1 (580-78380-16), PDI-SG-B096-BL1 (580-78380-17), PDI-SG-B096-BL1-D (580-78380-18), PDI-SG-B155-BL1 (580-78380-19), PDI-SG-B259-BL1 (580-78380-20), PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23), PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25), and PDI-SG-B264-BL1 (580-78380-26). Elevated reporting limits (RLs) are provided.

The following samples were re-analyzed due to the initial analysis' CCV failing high for Benzo[a]anthracene and the samples having a detection for this analyte. PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23),

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PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25), and PDI-SG-B264-BL1 (580-78380-26).

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-B102-BL1 (580-78380-1), PDI-SG-B304-BL1 (580-78380-2), PDI-SG-B289-BL1 (580-78380-3), PDI-SG-B117-BL1 (580-78380-4), PDI-SG-B301-BL1 (580-78380-5), PDI-SG-B297-BL1 (580-78380-6), PDI-SG-B293-BL1 (580-78380-7), PDI-SG-B310-BL1 (580-78380-8), PDI-SG-B309-BL1 (580-78380-9), PDI-SG-B314-BL1 (580-78380-10), PDI-SG-B031-BL1 (580-78380-12), PDI-SG-B042-BL1 (580-78380-13), PDI-SG-B191-BL1 (580-78380-14), PDI-SG-B114-BL1 (580-78380-15), PDI-SG-B425-BL1 (580-78380-16), PDI-SG-B096-BL1 (580-78380-17), PDI-SG-B096-BL1-D (580-78380-18), PDI-SG-B155-BL1 (580-78380-19), PDI-SG-B259-BL1 (580-78380-20), PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23), PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25) and PDI-SG-B264-BL1 (580-78380-26) were analyzed for organotins by GC/MS in accordance with the Krone Method. The samples were prepared on 06/28/2018, 06/29/2018 and 07/03/2018 and analyzed on 07/07/2018, 07/08/2018, 07/09/2018 and 07/10/2018.

Triphenyltin failed the surrogate recovery criteria low for PDI-SG-B259-BL1 (580-78380-20). Because of the required dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Tributyltin failed the recovery criteria low for the MSD of sample PDI-SG-B031-BL1MSD (580-78380-12) in batch 580-278456. Non-homogeneity is suspected because the associated laboratory control sample (LCS) and matrix spike (MS) recovery were within acceptance limits.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Sample PDI-SG-B259-BL1 (580-78380-20)[50X] 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.

PERCENT SOLIDS

Samples PDI-SG-B102-BL1 (580-78380-1), PDI-SG-B304-BL1 (580-78380-2), PDI-SG-B289-BL1 (580-78380-3), PDI-SG-B117-BL1 (580-78380-4), PDI-SG-B301-BL1 (580-78380-5), PDI-SG-B297-BL1 (580-78380-6), PDI-SG-B293-BL1 (580-78380-7), PDI-SG-B310-BL1 (580-78380-8), PDI-SG-B309-BL1 (580-78380-9), PDI-SG-B314-BL1 (580-78380-10), PDI-SG-B031-BL1 (580-78380-12), PDI-SG-B042-BL1 (580-78380-13), PDI-SG-B191-BL1 (580-78380-14), PDI-SG-B114-BL1 (580-78380-15), PDI-SG-B425-BL1 (580-78380-16), PDI-SG-B096-BL1 (580-78380-17), PDI-SG-B096-BL1-D (580-78380-18), PDI-SG-B155-BL1 (580-78380-19), PDI-SG-B259-BL1 (580-78380-20), PDI-SG-B274-BL1 (580-78380-21), PDI-SG-B285-BL1 (580-78380-22), PDI-SG-B272-BL1 (580-78380-23), PDI-SG-B281-BL1 (580-78380-24), PDI-SG-B278-BL1 (580-78380-25) and PDI-SG-B264-BL1 (580-78380-26) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 06/21/2018 and 06/29/2018.

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: 580-78380-1

Qualifiers

GC/MS 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.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
X	Surrogate is outside control limits
B	Compound was found in the blank and sample.

Glossary

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

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B102-BL1

Date Collected: 06/13/18 14:27

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-1

Matrix: Solid

Percent Solids: 31.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	17		15	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Acenaphthene	22		15	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Acenaphthylene	17		15	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Anthracene	59		15	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Benzo[a]anthracene	240		15	2.3	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Benzo[a]pyrene	220		15	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Benzo[b]fluoranthene	370		15	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Benzo[g,h,i]perylene	190		15	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Benzo[k]fluoranthene	96		15	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Chrysene	280		15	4.5	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Dibenz(a,h)anthracene	52		15	2.2	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Fluoranthene	420		15	4.2	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Fluorene	21		15	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Indeno[1,2,3-cd]pyrene	280		15	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Naphthalene	34		15	2.4	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Phenanthrene	130		15	2.1	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5
Pyrene	390		15	2.9	ug/Kg	☼	06/29/18 14:52	07/03/18 17:49	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		57 - 120	06/29/18 14:52	07/03/18 17:49	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		470	110	ug/Kg	☼	06/29/18 09:59	07/03/18 14:38	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	79		58 - 120	06/29/18 09:59	07/03/18 14:38	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		230	60	ug/Kg	☼	06/28/18 14:32	07/09/18 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	24		10 - 113	06/28/18 14:32	07/09/18 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	31.9		0.1	0.1	%	-		06/21/18 12:31	1

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Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B304-BL1

Date Collected: 06/14/18 15:00

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-2

Matrix: Solid

Percent Solids: 62.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	2.6	J	7.6	0.68	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Acenaphthene	2.6	J	7.6	0.91	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Acenaphthylene	1.9	J	7.6	0.76	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Anthracene	18		7.6	0.91	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Benzo[a]anthracene	10		7.6	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Benzo[a]pyrene	9.8		7.6	0.61	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Benzo[b]fluoranthene	20		7.6	0.90	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Benzo[g,h,i]perylene	11		7.6	0.76	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Benzo[k]fluoranthene	5.9	J	7.6	0.91	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Chrysene	22		7.6	2.3	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Dibenz(a,h)anthracene	4.0	J	7.6	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Fluoranthene	26		7.6	2.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Fluorene	4.3	J	7.6	0.76	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Indeno[1,2,3-cd]pyrene	14		7.6	0.91	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Naphthalene	6.5	J	7.6	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Phenanthrene	17		7.6	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5
Pyrene	26		7.6	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 18:14	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	06/29/18 14:52	07/03/18 18:14	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		230	53	ug/Kg	☼	06/29/18 09:59	07/03/18 15:02	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	176	X	58 - 120	06/29/18 09:59	07/03/18 15:02	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		120	31	ug/Kg	☼	06/28/18 14:32	07/09/18 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	23		10 - 113	06/28/18 14:32	07/09/18 17:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	62.6		0.1	0.1	%			06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B289-BL1

Date Collected: 06/14/18 13:53

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-3

Matrix: Solid

Percent Solids: 50.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	5.1	J	9.4	0.85	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Acenaphthene	11		9.4	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Acenaphthylene	3.9	J	9.4	0.94	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Anthracene	10		9.4	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Benzo[a]anthracene	16		9.4	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Benzo[a]pyrene	15		9.4	0.75	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Benzo[b]fluoranthene	30		9.4	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Benzo[g,h,i]perylene	16		9.4	0.94	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Benzo[k]fluoranthene	9.4		9.4	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Chrysene	23		9.4	2.8	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Dibenz(a,h)anthracene	4.6	J	9.4	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Fluoranthene	48		9.4	2.6	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Fluorene	8.2	J	9.4	0.94	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Indeno[1,2,3-cd]pyrene	18		9.4	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Naphthalene	14		9.4	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Phenanthrene	39		9.4	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5
Pyrene	48		9.4	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 18:38	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		57 - 120	06/29/18 14:52	07/03/18 18:38	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		300	67	ug/Kg	☼	06/29/18 09:59	07/03/18 15:27	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		58 - 120	06/29/18 09:59	07/03/18 15:27	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		140	36	ug/Kg	☼	06/29/18 11:21	07/10/18 01:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	28		10 - 113	06/29/18 11:21	07/10/18 01:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	50.2		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B117-BL1

Date Collected: 06/14/18 12:00

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-4

Matrix: Solid

Percent Solids: 55.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	370		8.5	0.76	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Acenaphthene	240		8.5	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Acenaphthylene	750		8.5	0.85	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Anthracene	1600		8.5	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Benzo[a]anthracene	4800		8.5	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Benzo[a]pyrene	5900		8.5	0.68	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Benzo[b]fluoranthene	5700		8.5	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Benzo[g,h,i]perylene	5000		8.5	0.85	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Benzo[k]fluoranthene	2100		8.5	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Chrysene	4900		8.5	2.5	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Dibenz(a,h)anthracene	880		8.5	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Fluoranthene	12000		8.5	2.4	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Fluorene	610		8.5	0.85	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Naphthalene	1500		8.5	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Phenanthrene	4400		8.5	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5
Pyrene	15000		8.5	1.6	ug/Kg	☼	06/29/18 14:52	07/03/18 19:02	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		57 - 120	06/29/18 14:52	07/03/18 19:02	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	6500		85	10	ug/Kg	☼	06/29/18 14:52	07/11/18 02:45	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	77	J	270	62	ug/Kg	☼	06/29/18 09:59	07/03/18 15:51	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		58 - 120	06/29/18 09:59	07/03/18 15:51	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		130	34	ug/Kg	☼	06/28/18 14:32	07/09/18 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	44		10 - 113	06/28/18 14:32	07/09/18 18:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	55.1		0.1	0.1	%			06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B301-BL1

Date Collected: 06/15/18 16:20

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-5

Matrix: Solid

Percent Solids: 55.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	6.3	J	8.6	0.78	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Acenaphthene	6.6	J	8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Acenaphthylene	6.7	J	8.6	0.86	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Anthracene	13		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Benzo[a]anthracene	19		8.6	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Benzo[a]pyrene	19		8.6	0.69	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Benzo[b]fluoranthene	33		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Benzo[g,h,i]perylene	18		8.6	0.86	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Benzo[k]fluoranthene	9.7		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Chrysene	28		8.6	2.6	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Dibenz(a,h)anthracene	4.4	J	8.6	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Fluoranthene	55		8.6	2.4	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Fluorene	6.8	J	8.6	0.86	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Indeno[1,2,3-cd]pyrene	24		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Naphthalene	24		8.6	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Phenanthrene	36		8.6	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5
Pyrene	56		8.6	1.7	ug/Kg	☼	06/29/18 14:52	07/03/18 19:27	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		57 - 120	06/29/18 14:52	07/03/18 19:27	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		270	61	ug/Kg	☼	06/29/18 09:59	07/03/18 16:16	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	79		58 - 120	06/29/18 09:59	07/03/18 16:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		130	33	ug/Kg	☼	06/28/18 14:32	07/09/18 18:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	26		10 - 113	06/28/18 14:32	07/09/18 18:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	55.3		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B297-BL1

Date Collected: 06/15/18 15:33

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-6

Matrix: Solid

Percent Solids: 56.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	4.8	J	8.2	0.74	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Acenaphthene	3.5	J	8.2	0.98	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Acenaphthylene	4.0	J	8.2	0.82	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Anthracene	6.9	J	8.2	0.98	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Benzo[a]anthracene	14		8.2	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Benzo[a]pyrene	14		8.2	0.66	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Benzo[b]fluoranthene	22		8.2	0.97	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Benzo[g,h,i]perylene	15		8.2	0.82	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Benzo[k]fluoranthene	6.3	J	8.2	0.98	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Chrysene	22		8.2	2.5	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Dibenz(a,h)anthracene	3.6	J	8.2	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Fluoranthene	42		8.2	2.3	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Fluorene	4.7	J	8.2	0.82	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Indeno[1,2,3-cd]pyrene	18		8.2	0.98	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Naphthalene	14		8.2	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Phenanthrene	23		8.2	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5
Pyrene	38		8.2	1.6	ug/Kg	☼	06/29/18 14:52	07/03/18 19:51	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	93		57 - 120	06/29/18 14:52	07/03/18 19:51	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		260	60	ug/Kg	☼	06/29/18 09:59	07/03/18 16:40	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	84		58 - 120	06/29/18 09:59	07/03/18 16:40	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		130	33	ug/Kg	☼	06/28/18 14:32	07/09/18 19:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	28		10 - 113	06/28/18 14:32	07/09/18 19:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	56.8		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B293-BL1

Date Collected: 06/15/18 14:50

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-7

Matrix: Solid

Percent Solids: 52.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	4.0	J	9.2	0.83	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Acenaphthene	1.9	J	9.2	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Acenaphthylene	3.2	J	9.2	0.92	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Anthracene	9.3		9.2	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Benzo[a]anthracene	11		9.2	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Benzo[a]pyrene	9.3		9.2	0.74	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Benzo[b]fluoranthene	19		9.2	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Benzo[g,h,i]perylene	11		9.2	0.92	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Benzo[k]fluoranthene	4.6	J	9.2	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Chrysene	15		9.2	2.8	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Dibenz(a,h)anthracene	3.6	J	9.2	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Fluoranthene	32		9.2	2.6	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Fluorene	3.7	J	9.2	0.92	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Indeno[1,2,3-cd]pyrene	13		9.2	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Naphthalene	15		9.2	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Phenanthrene	18		9.2	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5
Pyrene	30		9.2	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 20:15	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	06/29/18 14:52	07/03/18 20:15	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		280	63	ug/Kg	☼	06/29/18 09:59	07/03/18 17:05	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	92		58 - 120	06/29/18 09:59	07/03/18 17:05	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		140	36	ug/Kg	☼	06/28/18 14:32	07/09/18 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	31		10 - 113	06/28/18 14:32	07/09/18 19:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	52.7		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B310-BL1

Date Collected: 06/15/18 13:26

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-8

Matrix: Solid

Percent Solids: 46.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	7.3	J	10	0.92	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Acenaphthene	12		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Acenaphthylene	6.6	J	10	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Anthracene	27		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Benzo[a]anthracene	43		10	1.6	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Benzo[a]pyrene	23		10	0.82	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Benzo[b]fluoranthene	59		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Benzo[g,h,i]perylene	21		10	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Benzo[k]fluoranthene	18		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Chrysene	64		10	3.1	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Dibenz(a,h)anthracene	4.9	J	10	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Fluoranthene	180		10	2.9	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Fluorene	16		10	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Indeno[1,2,3-cd]pyrene	29		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Naphthalene	13		10	1.6	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Phenanthrene	90		10	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5
Pyrene	130		10	2.0	ug/Kg	☼	06/29/18 14:52	07/03/18 20:40	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	83		57 - 120	06/29/18 14:52	07/03/18 20:40	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	78	J	320	72	ug/Kg	☼	06/29/18 09:59	07/03/18 17:29	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	171	X	58 - 120	06/29/18 09:59	07/03/18 17:29	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		150	40	ug/Kg	☼	06/28/18 14:32	07/09/18 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	34		10 - 113	06/28/18 14:32	07/09/18 19:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	46.6		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B309-BL1

Date Collected: 06/15/18 12:25

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-9

Matrix: Solid

Percent Solids: 47.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	6.6	J	10	0.93	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Acenaphthene	11		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Acenaphthylene	7.0	J	10	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Anthracene	26		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Benzo[a]anthracene	56		10	1.6	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Benzo[a]pyrene	28		10	0.82	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Benzo[b]fluoranthene	92		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Benzo[g,h,i]perylene	24		10	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Benzo[k]fluoranthene	21		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Chrysene	96		10	3.1	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Dibenz(a,h)anthracene	7.0	J	10	1.5	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Fluoranthene	200		10	2.9	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Fluorene	18		10	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Indeno[1,2,3-cd]pyrene	34		10	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Naphthalene	11		10	1.6	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Phenanthrene	84		10	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5
Pyrene	160		10	2.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:04	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	83		57 - 120	06/29/18 14:52	07/03/18 21:04	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	76	J	310	71	ug/Kg	☼	06/29/18 09:59	07/03/18 17:54	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	72		58 - 120	06/29/18 09:59	07/03/18 17:54	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		150	39	ug/Kg	☼	06/28/18 14:32	07/09/18 20:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	22		10 - 113	06/28/18 14:32	07/09/18 20:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	47.6		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B314-BL1

Lab Sample ID: 580-78380-10

Date Collected: 06/16/18 14:16

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 69.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.78	J	6.5	0.59	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Acenaphthene	ND		6.5	0.79	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Acenaphthylene	1.2	J	6.5	0.65	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Anthracene	2.2	J	6.5	0.79	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Benzo[a]anthracene	11		6.5	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Benzo[a]pyrene	9.7		6.5	0.52	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Benzo[b]fluoranthene	17		6.5	0.77	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Benzo[g,h,i]perylene	7.4		6.5	0.65	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Benzo[k]fluoranthene	5.2	J	6.5	0.79	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Chrysene	11		6.5	2.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Dibenz(a,h)anthracene	2.7	J	6.5	0.94	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Fluoranthene	18		6.5	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Fluorene	0.80	J	6.5	0.65	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Indeno[1,2,3-cd]pyrene	11		6.5	0.79	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Naphthalene	1.6	J	6.5	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Phenanthrene	5.3	J	6.5	0.90	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5
Pyrene	22		6.5	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 21:29	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	06/29/18 14:52	07/03/18 21:29	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		210	48	ug/Kg	☼	06/29/18 09:59	07/03/18 18:18	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	90		58 - 120	06/29/18 09:59	07/03/18 18:18	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		100	27	ug/Kg	☼	06/28/18 14:32	07/09/18 20:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	14		10 - 113	06/28/18 14:32	07/09/18 20:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	69.9		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B031-BL1

Date Collected: 06/17/18 11:20

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-12

Matrix: Solid

Percent Solids: 40.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	19		12	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Acenaphthene	39		12	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Acenaphthylene	13		12	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Anthracene	51		12	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Benzo[a]anthracene	69		12	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Benzo[a]pyrene	59		12	0.96	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Benzo[b]fluoranthene	100		12	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Benzo[g,h,i]perylene	51	F1	12	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Benzo[k]fluoranthene	33		12	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Chrysene	93		12	3.6	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Dibenz(a,h)anthracene	12		12	1.7	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Fluoranthene	250		12	3.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Fluorene	48		12	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Indeno[1,2,3-cd]pyrene	84		12	1.4	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Naphthalene	27	F1	12	1.9	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Phenanthrene	190		12	1.7	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5
Pyrene	220		12	2.3	ug/Kg	☼	06/29/18 14:52	07/03/18 21:53	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	06/29/18 14:52	07/03/18 21:53	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND	F2 F1	360	81	ug/Kg	☼	06/29/18 09:59	07/03/18 18:43	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	91		58 - 120	06/29/18 09:59	07/03/18 18:43	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND	F1	180	46	ug/Kg	☼	06/28/18 14:32	07/09/18 21:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	19		10 - 113	06/28/18 14:32	07/09/18 21:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	40.8		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B042-BL1

Lab Sample ID: 580-78380-13

Date Collected: 06/17/18 14:46

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 70.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	57		6.6	0.59	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Acenaphthene	470		6.6	0.79	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Acenaphthylene	250		6.6	0.66	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Anthracene	300		6.6	0.79	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Benzo[a]anthracene	2900		13	2.0	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Benzo[a]pyrene	4100		13	1.1	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Benzo[b]fluoranthene	3700		13	1.6	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Benzo[g,h,i]perylene	3200		13	1.3	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Benzo[k]fluoranthene	1100		13	1.6	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Chrysene	2900		13	3.9	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Dibenz(a,h)anthracene	550		13	1.9	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Fluoranthene	3300		6.6	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Fluorene	250		6.6	0.66	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Indeno[1,2,3-cd]pyrene	3100		13	1.6	ug/Kg	☼	06/29/18 14:52	07/11/18 03:09	10
Naphthalene	160		6.6	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Phenanthrene	2000		6.6	0.91	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5
Pyrene	4300		6.6	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 23:07	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	47	X	57 - 120	06/29/18 14:52	07/03/18 23:07	5
Terphenyl-d14	78		57 - 120	06/29/18 14:52	07/11/18 03:09	10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	109		57 - 120	06/29/18 14:52	07/11/18 03:33	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		210	47	ug/Kg	☼	06/29/18 09:59	07/03/18 19:56	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	89		58 - 120	06/29/18 09:59	07/03/18 19:56	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		100	26	ug/Kg	☼	06/28/18 14:32	07/09/18 22:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	31		10 - 113	06/28/18 14:32	07/09/18 22:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	70.2		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B191-BL1

Lab Sample ID: 580-78380-14

Date Collected: 06/18/18 16:31

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 75.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.6	J	6.1	0.55	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Acenaphthene	2.7	J	6.1	0.73	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Acenaphthylene	1.9	J	6.1	0.61	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Anthracene	5.3	J	6.1	0.73	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Benzo[a]anthracene	7.6		6.1	0.93	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Benzo[a]pyrene	6.1		6.1	0.49	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Benzo[b]fluoranthene	11		6.1	0.72	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Benzo[g,h,i]perylene	4.4	J	6.1	0.61	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Benzo[k]fluoranthene	3.1	J	6.1	0.73	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Chrysene	7.9		6.1	1.8	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Dibenz(a,h)anthracene	ND		6.1	0.88	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Fluoranthene	27		6.1	1.7	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Fluorene	2.6	J	6.1	0.61	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Indeno[1,2,3-cd]pyrene	6.1		6.1	0.73	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Naphthalene	3.0	J	6.1	0.98	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Phenanthrene	24		6.1	0.84	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5
Pyrene	28		6.1	1.2	ug/Kg	☼	06/29/18 14:52	07/03/18 23:31	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	90		57 - 120	06/29/18 14:52	07/03/18 23:31	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		200	45	ug/Kg	☼	06/29/18 09:59	07/03/18 20:21	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	93		58 - 120	06/29/18 09:59	07/03/18 20:21	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		92	24	ug/Kg	☼	06/28/18 14:32	07/09/18 22:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	17		10 - 113	06/28/18 14:32	07/09/18 22:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.0		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B114-BL1

Lab Sample ID: 580-78380-15

Date Collected: 06/18/18 10:22

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 69.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	20		6.9	0.62	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Acenaphthene	14		6.9	0.83	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Acenaphthylene	5.9	J	6.9	0.69	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Anthracene	18		6.9	0.83	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Benzo[a]anthracene	54		6.9	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Benzo[a]pyrene	52		6.9	0.55	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Benzo[b]fluoranthene	67		6.9	0.82	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Benzo[g,h,i]perylene	35		6.9	0.69	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Benzo[k]fluoranthene	18		6.9	0.83	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Chrysene	55		6.9	2.1	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Dibenz(a,h)anthracene	5.8	J	6.9	1.0	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Fluoranthene	120		6.9	1.9	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Fluorene	13		6.9	0.69	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Indeno[1,2,3-cd]pyrene	49		6.9	0.83	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Naphthalene	48		6.9	1.1	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Phenanthrene	79		6.9	0.96	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5
Pyrene	140		6.9	1.3	ug/Kg	☼	06/29/18 14:52	07/03/18 23:55	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		57 - 120	06/29/18 14:52	07/03/18 23:55	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		220	49	ug/Kg	☼	06/29/18 09:59	07/03/18 20:46	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	98		58 - 120	06/29/18 09:59	07/03/18 20:46	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		99	26	ug/Kg	☼	06/28/18 14:32	07/09/18 23:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	35		10 - 113	06/28/18 14:32	07/09/18 23:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	69.4		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B425-BL1

Lab Sample ID: 580-78380-16

Date Collected: 06/19/18 12:01

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 44.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	2.7	J	11	0.95	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Acenaphthene	1.8	J	11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Acenaphthylene	2.8	J	11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Anthracene	3.6	J	11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Benzo[a]anthracene	8.1	J	11	1.6	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Benzo[a]pyrene	7.6	J	11	0.85	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Benzo[b]fluoranthene	17		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Benzo[g,h,i]perylene	7.7	J	11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Benzo[k]fluoranthene	3.9	J	11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Chrysene	15		11	3.2	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Dibenz(a,h)anthracene	ND		11	1.5	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Fluoranthene	22		11	3.0	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Fluorene	2.7	J	11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Indeno[1,2,3-cd]pyrene	8.8	J	11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Naphthalene	5.3	J	11	1.7	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Phenanthrene	11		11	1.5	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5
Pyrene	21		11	2.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:19	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120	06/29/18 14:52	07/04/18 00:19	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		330	74	ug/Kg	☼	06/29/18 09:59	07/03/18 21:10	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	94		58 - 120	06/29/18 09:59	07/03/18 21:10	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		150	40	ug/Kg	☼	06/28/18 14:32	07/09/18 23:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	28		10 - 113	06/28/18 14:32	07/09/18 23:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	44.8		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B096-BL1

Date Collected: 06/20/18 14:22

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-17

Matrix: Solid

Percent Solids: 43.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	15		11	0.97	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Acenaphthene	30		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Acenaphthylene	22		11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Anthracene	51		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Benzo[a]anthracene	89		11	1.6	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Benzo[a]pyrene	110		11	0.86	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Benzo[b]fluoranthene	120		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Benzo[g,h,i]perylene	73		11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Benzo[k]fluoranthene	41		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Chrysene	110		11	3.2	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Dibenz(a,h)anthracene	12		11	1.6	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Fluoranthene	310		11	3.0	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Fluorene	23		11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Indeno[1,2,3-cd]pyrene	89		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Naphthalene	65		11	1.7	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Phenanthrene	200		11	1.5	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5
Pyrene	320		11	2.1	ug/Kg	☼	06/29/18 14:52	07/04/18 00:44	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		57 - 120	06/29/18 14:52	07/04/18 00:44	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		340	77	ug/Kg	☼	07/03/18 18:54	07/14/18 18:23	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	67		58 - 120	07/03/18 18:54	07/14/18 18:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		170	45	ug/Kg	☼	06/28/18 14:32	07/10/18 00:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	37		10 - 113	06/28/18 14:32	07/10/18 00:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	43.1		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B096-BL1-D

Lab Sample ID: 580-78380-18

Date Collected: 06/20/18 14:22

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 44.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	12		11	0.98	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Acenaphthene	19		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Acenaphthylene	10	J	11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Anthracene	33		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Benzo[a]anthracene	65		11	1.7	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Benzo[a]pyrene	64		11	0.87	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Benzo[b]fluoranthene	100		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Benzo[g,h,i]perylene	47		11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Benzo[k]fluoranthene	23		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Chrysene	85		11	3.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Dibenz(a,h)anthracene	8.6	J	11	1.6	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Fluoranthene	200		11	3.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Fluorene	20		11	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Indeno[1,2,3-cd]pyrene	60		11	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Naphthalene	32		11	1.7	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Phenanthrene	100		11	1.5	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5
Pyrene	200		11	2.1	ug/Kg	☼	06/29/18 14:52	07/04/18 01:08	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		57 - 120	06/29/18 14:52	07/04/18 01:08	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		330	74	ug/Kg	☼	07/03/18 18:54	07/14/18 18:49	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	72		58 - 120	07/03/18 18:54	07/14/18 18:49	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		170	44	ug/Kg	☼	06/28/18 14:32	07/10/18 00:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	29		10 - 113	06/28/18 14:32	07/10/18 00:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	44.0		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B155-BL1

Lab Sample ID: 580-78380-19

Date Collected: 06/20/18 11:56

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 55.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	410		8.3	0.75	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Acenaphthene	640		8.3	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Acenaphthylene	59		8.3	0.83	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Anthracene	350		8.3	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Benzo[a]anthracene	790		8.3	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Benzo[a]pyrene	810		8.3	0.67	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Benzo[b]fluoranthene	1100		8.3	0.98	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Benzo[g,h,i]perylene	380		8.3	0.83	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Benzo[k]fluoranthene	400		8.3	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Chrysene	880		8.3	2.5	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Dibenz(a,h)anthracene	93		8.3	1.2	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Fluoranthene	2500		8.3	2.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Fluorene	680		8.3	0.83	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Indeno[1,2,3-cd]pyrene	540		8.3	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Naphthalene	990		8.3	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Phenanthrene	2500		8.3	1.1	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5
Pyrene	2200		8.3	1.6	ug/Kg	☼	06/29/18 14:52	07/04/18 01:32	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		57 - 120	06/29/18 14:52	07/04/18 01:32	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	280	B	260	60	ug/Kg	☼	07/03/18 18:54	07/14/18 19:15	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	77		58 - 120	07/03/18 18:54	07/14/18 19:15	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	670		130	33	ug/Kg	☼	06/28/18 14:32	07/10/18 01:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	43		10 - 113	06/28/18 14:32	07/10/18 01:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	55.6		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B259-BL1

Date Collected: 06/22/18 16:17

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-20

Matrix: Solid

Percent Solids: 54.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	49		8.6	0.78	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Acenaphthene	140		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Acenaphthylene	36		8.6	0.86	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Anthracene	230		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Benzo[a]anthracene	510		8.6	1.3	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Benzo[a]pyrene	460		8.6	0.69	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Benzo[b]fluoranthene	650		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Benzo[g,h,i]perylene	220		8.6	0.86	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Benzo[k]fluoranthene	240		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Chrysene	540		8.6	2.6	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Dibenz(a,h)anthracene	58		8.6	1.2	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Fluoranthene	1300		8.6	2.4	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Fluorene	150		8.6	0.86	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Indeno[1,2,3-cd]pyrene	350		8.6	1.0	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Naphthalene	130		8.6	1.4	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Phenanthrene	1100		8.6	1.2	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5
Pyrene	1100		8.6	1.7	ug/Kg	☼	06/29/18 14:52	07/04/18 01:57	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	06/29/18 14:52	07/04/18 01:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	840	B	270	62	ug/Kg	☼	07/03/18 18:54	07/14/18 19:40	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	68		58 - 120	07/03/18 18:54	07/14/18 19:40	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	7500		6300	1700	ug/Kg	☼	06/28/18 14:32	07/10/18 17:31	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	0	X	10 - 113	06/28/18 14:32	07/10/18 17:31	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	54.4		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B274-BL1

Lab Sample ID: 580-78380-21

Date Collected: 06/24/18 13:30

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 54.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	7.9	J B	8.6	0.78	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Acenaphthene	3.9	J	8.6	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Acenaphthylene	4.4	J	8.6	0.86	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Anthracene	13		8.6	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Benzo[a]pyrene	42		8.6	0.69	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Benzo[b]fluoranthene	62		8.6	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Benzo[g,h,i]perylene	23		8.6	0.86	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Benzo[k]fluoranthene	21		8.6	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Chrysene	53		8.6	2.6	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Dibenz(a,h)anthracene	7.8	J	8.6	1.2	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Fluoranthene	69		8.6	2.4	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Fluorene	6.5	J	8.6	0.86	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Indeno[1,2,3-cd]pyrene	29		8.6	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Naphthalene	14	B	8.6	1.4	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Phenanthrene	36	B	8.6	1.2	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5
Pyrene	63		8.6	1.7	ug/Kg	☼	06/29/18 16:28	07/03/18 02:52	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	06/29/18 16:28	07/03/18 02:52	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	39		8.6	1.3	ug/Kg	☼	06/29/18 16:28	07/10/18 21:51	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		270	60	ug/Kg	☼	07/03/18 18:54	07/14/18 20:06	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	81		58 - 120	07/03/18 18:54	07/14/18 20:06	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		130	34	ug/Kg	☼	07/03/18 13:55	07/07/18 22:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	46		10 - 113	07/03/18 13:55	07/07/18 22:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	54.7		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B285-BL1

Date Collected: 06/24/18 09:59

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-22

Matrix: Solid

Percent Solids: 52.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	20	B	9.2	0.83	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Acenaphthene	3.0	J	9.2	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Acenaphthylene	6.3	J	9.2	0.92	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Anthracene	7.9	J	9.2	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Benzo[a]pyrene	18		9.2	0.74	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Benzo[b]fluoranthene	30		9.2	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Benzo[g,h,i]perylene	10		9.2	0.92	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Benzo[k]fluoranthene	13		9.2	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Chrysene	27		9.2	2.8	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Dibenz(a,h)anthracene	3.6	J	9.2	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Fluoranthene	46		9.2	2.6	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Fluorene	5.1	J	9.2	0.92	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Indeno[1,2,3-cd]pyrene	16		9.2	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Naphthalene	24	B	9.2	1.5	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Phenanthrene	29	B	9.2	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5
Pyrene	49		9.2	1.8	ug/Kg	☼	06/29/18 16:28	07/03/18 03:16	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	06/29/18 16:28	07/03/18 03:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	21		9.2	1.4	ug/Kg	☼	06/29/18 16:28	07/10/18 22:17	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		280	64	ug/Kg	☼	07/03/18 18:54	07/14/18 20:32	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	75		58 - 120	07/03/18 18:54	07/14/18 20:32	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		130	35	ug/Kg	☼	07/03/18 13:55	07/07/18 23:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	26		10 - 113	07/03/18 13:55	07/07/18 23:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	52.0		0.1	0.1	%	-		06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B272-BL1

Date Collected: 06/24/18 15:17

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-23

Matrix: Solid

Percent Solids: 57.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	6.5	J B	8.2	0.74	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Acenaphthene	4.6	J	8.2	0.98	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Acenaphthylene	4.0	J	8.2	0.82	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Anthracene	11		8.2	0.98	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Benzo[a]pyrene	15		8.2	0.65	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Benzo[b]fluoranthene	30		8.2	0.97	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Benzo[g,h,i]perylene	9.6		8.2	0.82	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Benzo[k]fluoranthene	8.5		8.2	0.98	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Chrysene	30		8.2	2.5	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Dibenz(a,h)anthracene	3.5	J	8.2	1.2	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Fluoranthene	48		8.2	2.3	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Fluorene	6.6	J	8.2	0.82	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Indeno[1,2,3-cd]pyrene	15		8.2	0.98	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Naphthalene	12	B	8.2	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Phenanthrene	32	B	8.2	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5
Pyrene	46		8.2	1.6	ug/Kg	☼	06/29/18 16:28	07/03/18 03:40	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	92		57 - 120	06/29/18 16:28	07/03/18 03:40	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	20		8.2	1.2	ug/Kg	☼	06/29/18 16:28	07/10/18 22:43	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	140	J B	250	57	ug/Kg	☼	07/03/18 18:54	07/14/18 20:58	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	80		58 - 120	07/03/18 18:54	07/14/18 20:58	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		120	31	ug/Kg	☼	07/03/18 13:55	07/07/18 23:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	31		10 - 113	07/03/18 13:55	07/07/18 23:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	57.9		0.1	0.1	%			06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B281-BL1

Lab Sample ID: 580-78380-24

Date Collected: 06/24/18 10:49

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 52.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	7.8	J B	8.7	0.79	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Acenaphthene	4.8	J	8.7	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Acenaphthylene	4.2	J	8.7	0.87	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Anthracene	7.9	J	8.7	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Benzo[a]pyrene	9.2		8.7	0.70	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Benzo[b]fluoranthene	24		8.7	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Benzo[g,h,i]perylene	7.9	J	8.7	0.87	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Benzo[k]fluoranthene	6.8	J	8.7	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Chrysene	18		8.7	2.6	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Dibenz(a,h)anthracene	3.3	J	8.7	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Fluoranthene	38		8.7	2.4	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Fluorene	4.5	J	8.7	0.87	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Indeno[1,2,3-cd]pyrene	11		8.7	1.0	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Naphthalene	14	B	8.7	1.4	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Phenanthrene	28	B	8.7	1.2	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5
Pyrene	36		8.7	1.7	ug/Kg	☼	06/29/18 16:28	07/03/18 04:04	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		57 - 120	06/29/18 16:28	07/03/18 04:04	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	13		8.7	1.3	ug/Kg	☼	06/29/18 16:28	07/10/18 23:08	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	180	J B	290	65	ug/Kg	☼	07/03/18 18:54	07/14/18 21:24	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	72		58 - 120	07/03/18 18:54	07/14/18 21:24	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		130	35	ug/Kg	☼	07/03/18 13:55	07/08/18 00:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	22		10 - 113	07/03/18 13:55	07/08/18 00:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	52.3		0.1	0.1	%			06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B278-BL1

Lab Sample ID: 580-78380-25

Date Collected: 06/24/18 12:36

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 51.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	15	B	8.9	0.80	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Acenaphthene	12		8.9	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Acenaphthylene	3.8	J	8.9	0.89	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Anthracene	16		8.9	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Benzo[a]pyrene	14		8.9	0.71	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Benzo[b]fluoranthene	27		8.9	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Benzo[g,h,i]perylene	11		8.9	0.89	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Benzo[k]fluoranthene	9.4		8.9	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Chrysene	21		8.9	2.7	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Dibenz(a,h)anthracene	3.5	J	8.9	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Fluoranthene	54		8.9	2.5	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Fluorene	11		8.9	0.89	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Indeno[1,2,3-cd]pyrene	12		8.9	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Naphthalene	26	B	8.9	1.4	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Phenanthrene	55	B	8.9	1.2	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5
Pyrene	49		8.9	1.7	ug/Kg	☼	06/29/18 16:28	07/03/18 04:28	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	81		57 - 120	06/29/18 16:28	07/03/18 04:28	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	16		8.9	1.4	ug/Kg	☼	06/29/18 16:28	07/10/18 23:34	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	1100	B	280	64	ug/Kg	☼	07/03/18 18:54	07/14/18 21:50	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	76		58 - 120	07/03/18 18:54	07/14/18 21:50	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		140	37	ug/Kg	☼	07/03/18 13:55	07/08/18 00:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	20		10 - 113	07/03/18 13:55	07/08/18 00:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	51.1		0.1	0.1	%			06/29/18 18:01	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B264-BL1

Lab Sample ID: 580-78380-26

Date Collected: 06/25/18 10:38

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 43.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	12	B	11	0.98	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Acenaphthene	16		11	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Acenaphthylene	5.5	J	11	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Anthracene	30		11	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Benzo[a]pyrene	57		11	0.87	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Benzo[b]fluoranthene	98		11	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Benzo[g,h,i]perylene	29		11	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Benzo[k]fluoranthene	30		11	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Chrysene	85		11	3.3	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Dibenz(a,h)anthracene	8.9	J	11	1.6	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Fluoranthene	160		11	3.0	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Fluorene	19		11	1.1	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Indeno[1,2,3-cd]pyrene	46		11	1.3	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Naphthalene	19	B	11	1.7	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Phenanthrene	110	B	11	1.5	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5
Pyrene	150		11	2.1	ug/Kg	☼	06/29/18 16:28	07/03/18 02:27	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120	06/29/18 16:28	07/03/18 02:27	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	77		11	1.7	ug/Kg	☼	06/29/18 16:28	07/10/18 21:25	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	230	J B	330	75	ug/Kg	☼	07/03/18 18:54	07/14/18 22:16	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	63		58 - 120	07/03/18 18:54	07/14/18 22:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	270		160	41	ug/Kg	☼	07/03/18 13:55	07/08/18 00:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	14		10 - 113	07/03/18 13:55	07/08/18 00:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	43.7		0.1	0.1	%			06/29/18 18:01	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: MB 580-277778/1-A

Matrix: Solid

Analysis Batch: 278042

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 277778

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		30	6.8	ug/Kg		06/29/18 09:59	07/03/18 13:49	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	96		58 - 120				06/29/18 09:59	07/03/18 13:49	1

Lab Sample ID: LCS 580-277778/2-A

Matrix: Solid

Analysis Batch: 278042

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277778

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Bis(2-ethylhexyl) phthalate	50.0	48.7		ug/Kg		97	59 - 123		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
Terphenyl-d14 (Surr)	77		58 - 120						

Lab Sample ID: 580-78380-12 MS

Matrix: Solid

Analysis Batch: 278042

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277778

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits		
Bis(2-ethylhexyl) phthalate	ND	F2 F1	115	198	J F1	ug/Kg	☼	171	59 - 123		
Surrogate	MS %Recovery	MS Qualifier	Limits								
Terphenyl-d14 (Surr)	96		58 - 120								

Lab Sample ID: 580-78380-12 MSD

Matrix: Solid

Analysis Batch: 278042

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277778

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Bis(2-ethylhexyl) phthalate	ND	F2 F1	116	155	J F1 F2	ug/Kg	☼	134	59 - 123	24	13
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Terphenyl-d14 (Surr)	63		58 - 120								

Lab Sample ID: MB 580-278105/1-A

Matrix: Solid

Analysis Batch: 279040

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 278105

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	6.92	J	30	6.8	ug/Kg		07/03/18 18:54	07/14/18 16:13	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	87		58 - 120				07/03/18 18:54	07/14/18 16:13	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: LCS 580-278105/2-A

Matrix: Solid

Analysis Batch: 279040

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 278105

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Bis(2-ethylhexyl) phthalate	50.0	43.3		ug/Kg		87	59 - 123
Surrogate	%Recovery	LCS Qualifier	Limits				
Terphenyl-d14 (Surr)	58		58 - 120				

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

Lab Sample ID: MB 580-277818/1-A

Matrix: Solid

Analysis Batch: 278071

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 277818

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Acenaphthene	ND		1.0	0.12	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Anthracene	ND		1.0	0.12	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Chrysene	ND		1.0	0.30	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Fluoranthene	ND		1.0	0.28	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Fluorene	ND		1.0	0.10	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Naphthalene	ND		1.0	0.16	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Phenanthrene	ND		1.0	0.14	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Pyrene	ND		1.0	0.19	ug/Kg		06/29/18 14:52	07/03/18 17:01	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	90		57 - 120				06/29/18 14:52	07/03/18 17:01	1

Lab Sample ID: LCS 580-277818/2-A

Matrix: Solid

Analysis Batch: 278071

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	165		ug/Kg		82	68 - 120
Acenaphthene	200	159		ug/Kg		79	68 - 120
Acenaphthylene	200	171		ug/Kg		86	68 - 120
Anthracene	200	189		ug/Kg		95	73 - 125
Benzo[a]anthracene	200	193		ug/Kg		97	66 - 120
Benzo[a]pyrene	200	188		ug/Kg		94	72 - 124
Benzo[b]fluoranthene	200	198		ug/Kg		99	63 - 121
Benzo[g,h,i]perylene	200	185		ug/Kg		92	63 - 120
Benzo[k]fluoranthene	200	168		ug/Kg		84	63 - 123

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: LCS 580-277818/2-A

Matrix: Solid

Analysis Batch: 278071

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	200	181		ug/Kg		91	69 - 120
Dibenz(a,h)anthracene	200	191		ug/Kg		96	70 - 125
Fluoranthene	200	186		ug/Kg		93	74 - 125
Fluorene	200	163		ug/Kg		81	73 - 120
Indeno[1,2,3-cd]pyrene	200	198		ug/Kg		99	65 - 121
Naphthalene	200	160		ug/Kg		80	70 - 120
Phenanthrene	200	165		ug/Kg		82	73 - 120
Pyrene	200	181		ug/Kg		90	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	94		57 - 120

Lab Sample ID: 580-78380-12 MS

Matrix: Solid

Analysis Batch: 278071

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277818

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	19		446	346		ug/Kg	☼	73	68 - 120
Acenaphthene	39		446	354		ug/Kg	☼	71	68 - 120
Acenaphthylene	13		446	363		ug/Kg	☼	78	68 - 120
Anthracene	51		446	453		ug/Kg	☼	90	73 - 125
Benzo[a]anthracene	69		446	489		ug/Kg	☼	94	66 - 120
Benzo[a]pyrene	59		446	433		ug/Kg	☼	84	72 - 124
Benzo[b]fluoranthene	100		446	484		ug/Kg	☼	86	63 - 121
Benzo[g,h,i]perylene	51	F1	446	329	F1	ug/Kg	☼	62	63 - 120
Benzo[k]fluoranthene	33		446	376		ug/Kg	☼	77	63 - 123
Chrysene	93		446	437		ug/Kg	☼	77	69 - 120
Dibenz(a,h)anthracene	12		446	371		ug/Kg	☼	80	70 - 125
Fluoranthene	250		446	655		ug/Kg	☼	90	74 - 125
Fluorene	48		446	377		ug/Kg	☼	74	73 - 120
Indeno[1,2,3-cd]pyrene	84		446	479		ug/Kg	☼	89	65 - 121
Naphthalene	27	F1	446	332	F1	ug/Kg	☼	68	70 - 120
Phenanthrene	190		446	517		ug/Kg	☼	73	73 - 120
Pyrene	220		446	606		ug/Kg	☼	85	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	86		57 - 120

Lab Sample ID: 580-78380-12 MSD

Matrix: Solid

Analysis Batch: 278071

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277818

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
2-Methylnaphthalene	19		463	351		ug/Kg	☼	72	68 - 120	1	12
Acenaphthene	39		463	372		ug/Kg	☼	72	68 - 120	5	12
Acenaphthylene	13		463	386		ug/Kg	☼	81	68 - 120	6	12
Anthracene	51		463	455		ug/Kg	☼	87	73 - 125	0	12
Benzo[a]anthracene	69		463	505		ug/Kg	☼	94	66 - 120	3	14

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: 580-78380-12 MSD

Matrix: Solid

Analysis Batch: 278071

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277818

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]pyrene	59		463	451		ug/Kg	☼	85	72 - 124	4	12
Benzo[b]fluoranthene	100		463	480		ug/Kg	☼	82	63 - 121	1	10
Benzo[g,h,i]perylene	51	F1	463	353		ug/Kg	☼	65	63 - 120	7	14
Benzo[k]fluoranthene	33		463	363		ug/Kg	☼	72	63 - 123	3	15
Chrysene	93		463	453		ug/Kg	☼	78	69 - 120	3	10
Dibenz(a,h)anthracene	12		463	397		ug/Kg	☼	83	70 - 125	7	13
Fluoranthene	250		463	687		ug/Kg	☼	94	74 - 125	5	13
Fluorene	48		463	397		ug/Kg	☼	76	73 - 120	5	13
Indeno[1,2,3-cd]pyrene	84		463	526		ug/Kg	☼	95	65 - 121	9	15
Naphthalene	27	F1	463	339	F1	ug/Kg	☼	67	70 - 120	2	12
Phenanthrene	190		463	539		ug/Kg	☼	76	73 - 120	4	11
Pyrene	220		463	652		ug/Kg	☼	92	70 - 120	7	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	86		57 - 120

Lab Sample ID: MB 580-277832/1-A

Matrix: Solid

Analysis Batch: 277979

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 277832

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.328	J	1.0	0.090	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Acenaphthene	ND		1.0	0.12	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Anthracene	ND		1.0	0.12	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Chrysene	ND		1.0	0.30	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Fluoranthene	ND		1.0	0.28	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Fluorene	ND		1.0	0.10	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Naphthalene	0.181	J	1.0	0.16	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Phenanthrene	0.292	J	1.0	0.14	ug/Kg		06/29/18 16:28	07/02/18 19:35	1
Pyrene	ND		1.0	0.19	ug/Kg		06/29/18 16:28	07/02/18 19:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	06/29/18 16:28	07/02/18 19:35	1

Lab Sample ID: LCS 580-277832/2-A

Matrix: Solid

Analysis Batch: 277979

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277832

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	200	173		ug/Kg		86	68 - 120

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: LCS 580-277832/2-A

Matrix: Solid

Analysis Batch: 277979

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277832

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	200	163		ug/Kg		81	68 - 120
Acenaphthylene	200	176		ug/Kg		88	68 - 120
Anthracene	200	193		ug/Kg		96	73 - 125
Benzo[a]anthracene	200	217		ug/Kg		108	66 - 120
Benzo[a]pyrene	200	200		ug/Kg		100	72 - 124
Benzo[b]fluoranthene	200	207		ug/Kg		104	63 - 121
Benzo[g,h,i]perylene	200	190		ug/Kg		95	63 - 120
Benzo[k]fluoranthene	200	193		ug/Kg		96	63 - 123
Chrysene	200	200		ug/Kg		100	69 - 120
Dibenz(a,h)anthracene	200	178		ug/Kg		89	70 - 125
Fluoranthene	200	195		ug/Kg		97	74 - 125
Fluorene	200	163		ug/Kg		82	73 - 120
Indeno[1,2,3-cd]pyrene	200	191		ug/Kg		96	65 - 121
Naphthalene	200	166		ug/Kg		83	70 - 120
Phenanthrene	200	168		ug/Kg		84	73 - 120
Pyrene	200	191		ug/Kg		95	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	91		57 - 120

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

Lab Sample ID: MB 580-277713/1-A

Matrix: Solid

Analysis Batch: 278456

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 277713

Analyte							Prepared		
	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared		
Tributyltin	ND		75	20	ug/Kg	-	06/28/18 14:32	07/09/18 16:05	
							Dil Fac		
							1		
Surrogate							Prepared		
	MB %Recovery	MB Qualifier	Limits				Prepared		
Triphenyltin	69		10 - 113				06/28/18 14:32	07/09/18 16:05	
							Dil Fac		
							1		

Lab Sample ID: LCS 580-277713/2-A

Matrix: Solid

Analysis Batch: 278456

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277713

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Tributyltin			71.8	49.4	J	ug/Kg	-	69	14 - 150		
Surrogate	LCS	LCS									
	%Recovery	Qualifier	Limits								
Triphenyltin	63		10 - 113								

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: LCSD 580-277713/3-A

Matrix: Solid

Analysis Batch: 278456

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 277713

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	71.8	45.6	J	ug/Kg		63	14 - 150	8	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Triphenyltin	58		10 - 113						

Lab Sample ID: 580-78380-12 MS

Matrix: Solid

Analysis Batch: 278456

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277713

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	ND	F1	153	42.2	J	ug/Kg	☼	28	14 - 150		
Surrogate	MS %Recovery	MS Qualifier	Limits								
Triphenyltin	20		10 - 113								

Lab Sample ID: 580-78380-12 MSD

Matrix: Solid

Analysis Batch: 278456

Client Sample ID: PDI-SG-B031-BL1

Prep Type: Total/NA

Prep Batch: 277713

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	ND	F1	153	ND	F1	ug/Kg	☼	0	14 - 150	NC	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Triphenyltin	18		10 - 113								

Lab Sample ID: MB 580-278064/1-A

Matrix: Solid

Analysis Batch: 278356

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 278064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		75	20	ug/Kg		07/03/18 13:55	07/07/18 15:23	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Triphenyltin	65		10 - 113	07/03/18 13:55	07/07/18 15:23	1			

Lab Sample ID: LCS 580-278064/2-A

Matrix: Solid

Analysis Batch: 278356

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 278064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	71.8	51.8	J	ug/Kg		72	14 - 150		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
Triphenyltin	76		10 - 113						

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78380-1

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

Lab Sample ID: LCSD 580-278064/3-A

Matrix: Solid

Analysis Batch: 278356

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 278064

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	71.8	55.9	J	ug/Kg	-	78	14 - 150	8	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Triphenyltin	77		10 - 113						

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-78380-10 DU

Matrix: Solid

Analysis Batch: 277844

Client Sample ID: PDI-SG-B314-BL1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	69.9		69.9		%	-	0.09	20

Lab Sample ID: 580-78380-19 DU

Matrix: Solid

Analysis Batch: 277844

Client Sample ID: PDI-SG-B155-BL1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	55.6		47.8		%	-	15	20

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B102-BL1

Date Collected: 06/13/18 14:27

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	276941	06/21/18 12:31	TTN	TAL SEA

Client Sample ID: PDI-SG-B102-BL1

Date Collected: 06/13/18 14:27

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-1

Matrix: Solid

Percent Solids: 31.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 14:38	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 17:49	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 17:22	ERZ	TAL SEA

Client Sample ID: PDI-SG-B304-BL1

Date Collected: 06/14/18 15:00

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B304-BL1

Date Collected: 06/14/18 15:00

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-2

Matrix: Solid

Percent Solids: 62.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 15:02	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 18:14	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 17:47	ERZ	TAL SEA

Client Sample ID: PDI-SG-B289-BL1

Date Collected: 06/14/18 13:53

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B289-BL1

Date Collected: 06/14/18 13:53

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-3

Matrix: Solid

Percent Solids: 50.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 15:27	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 18:38	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/29/18 11:21	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/10/18 01:55	ERZ	TAL SEA

Client Sample ID: PDI-SG-B117-BL1

Date Collected: 06/14/18 12:00

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B117-BL1

Date Collected: 06/14/18 12:00

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-4

Matrix: Solid

Percent Solids: 55.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 15:51	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 19:02	T1W	TAL SEA
Total/NA	Prep	3546	DL		277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	DL	50	278593	07/11/18 02:45	ERB	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 18:13	ERZ	TAL SEA

Client Sample ID: PDI-SG-B301-BL1

Date Collected: 06/15/18 16:20

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B301-BL1

Date Collected: 06/15/18 16:20

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-5

Matrix: Solid

Percent Solids: 55.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 16:16	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B301-BL1

Lab Sample ID: 580-78380-5

Date Collected: 06/15/18 16:20

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 55.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 19:27	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 18:39	ERZ	TAL SEA

Client Sample ID: PDI-SG-B297-BL1

Lab Sample ID: 580-78380-6

Date Collected: 06/15/18 15:33

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B297-BL1

Lab Sample ID: 580-78380-6

Date Collected: 06/15/18 15:33

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 56.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 16:40	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 19:51	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 19:04	ERZ	TAL SEA

Client Sample ID: PDI-SG-B293-BL1

Lab Sample ID: 580-78380-7

Date Collected: 06/15/18 14:50

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B293-BL1

Lab Sample ID: 580-78380-7

Date Collected: 06/15/18 14:50

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 52.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 17:05	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 20:15	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 19:29	ERZ	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B310-BL1

Date Collected: 06/15/18 13:26

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B310-BL1

Date Collected: 06/15/18 13:26

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-8

Matrix: Solid

Percent Solids: 46.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 17:29	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 20:40	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 19:55	ERZ	TAL SEA

Client Sample ID: PDI-SG-B309-BL1

Date Collected: 06/15/18 12:25

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B309-BL1

Date Collected: 06/15/18 12:25

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-9

Matrix: Solid

Percent Solids: 47.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 17:54	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 21:04	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 20:20	ERZ	TAL SEA

Client Sample ID: PDI-SG-B314-BL1

Date Collected: 06/16/18 14:16

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B314-BL1

Lab Sample ID: 580-78380-10

Date Collected: 06/16/18 14:16

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 69.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 18:18	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 21:29	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 20:46	ERZ	TAL SEA

Client Sample ID: PDI-SG-B031-BL1

Lab Sample ID: 580-78380-12

Date Collected: 06/17/18 11:20

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B031-BL1

Lab Sample ID: 580-78380-12

Date Collected: 06/17/18 11:20

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 40.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 18:43	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 21:53	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 21:11	ERZ	TAL SEA

Client Sample ID: PDI-SG-B042-BL1

Lab Sample ID: 580-78380-13

Date Collected: 06/17/18 14:46

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B042-BL1

Lab Sample ID: 580-78380-13

Date Collected: 06/17/18 14:46

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 70.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 19:56	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 23:07	T1W	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B042-BL1

Lab Sample ID: 580-78380-13

Date Collected: 06/17/18 14:46

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 70.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D SIM		10	278593	07/11/18 03:09	ERB	TAL SEA
Total/NA	Prep	3546	DL		277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	DL	100	278593	07/11/18 03:33	ERB	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 22:29	ERZ	TAL SEA

Client Sample ID: PDI-SG-B191-BL1

Lab Sample ID: 580-78380-14

Date Collected: 06/18/18 16:31

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B191-BL1

Lab Sample ID: 580-78380-14

Date Collected: 06/18/18 16:31

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 75.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 20:21	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 23:31	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 22:55	ERZ	TAL SEA

Client Sample ID: PDI-SG-B114-BL1

Lab Sample ID: 580-78380-15

Date Collected: 06/18/18 10:22

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B114-BL1

Lab Sample ID: 580-78380-15

Date Collected: 06/18/18 10:22

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 69.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 20:46	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/03/18 23:55	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 23:20	ERZ	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B425-BL1

Date Collected: 06/19/18 12:01

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-16

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B425-BL1

Date Collected: 06/19/18 12:01

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-16

Matrix: Solid

Percent Solids: 44.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			277778	06/29/18 09:59	KMS	TAL SEA
Total/NA	Analysis	8270D		5	278042	07/03/18 21:10	ERB	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/04/18 00:19	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/09/18 23:46	ERZ	TAL SEA

Client Sample ID: PDI-SG-B096-BL1

Date Collected: 06/20/18 14:22

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-17

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B096-BL1

Date Collected: 06/20/18 14:22

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-17

Matrix: Solid

Percent Solids: 43.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 18:23	W1T	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/04/18 00:44	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/10/18 00:11	ERZ	TAL SEA

Client Sample ID: PDI-SG-B096-BL1-D

Date Collected: 06/20/18 14:22

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-18

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B096-BL1-D

Lab Sample ID: 580-78380-18

Date Collected: 06/20/18 14:22

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 44.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 18:49	W1T	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/04/18 01:08	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/10/18 00:37	ERZ	TAL SEA

Client Sample ID: PDI-SG-B155-BL1

Lab Sample ID: 580-78380-19

Date Collected: 06/20/18 11:56

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B155-BL1

Lab Sample ID: 580-78380-19

Date Collected: 06/20/18 11:56

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 55.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 19:15	W1T	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/04/18 01:32	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			277713	06/28/18 14:32	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278456	07/10/18 01:03	ERZ	TAL SEA

Client Sample ID: PDI-SG-B259-BL1

Lab Sample ID: 580-78380-20

Date Collected: 06/22/18 16:17

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B259-BL1

Lab Sample ID: 580-78380-20

Date Collected: 06/22/18 16:17

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 54.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 19:40	W1T	TAL SEA
Total/NA	Prep	3546			277818	06/29/18 14:52	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	278071	07/04/18 01:57	T1W	TAL SEA
Total/NA	Prep	Organotin Prep	DL		277713	06/28/18 14:32	TTN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B259-BL1

Lab Sample ID: 580-78380-20

Date Collected: 06/22/18 16:17

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 54.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Organotins	DL	50	278610	07/10/18 17:31	ERB	TAL SEA

Client Sample ID: PDI-SG-B274-BL1

Lab Sample ID: 580-78380-21

Date Collected: 06/24/18 13:30

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B274-BL1

Lab Sample ID: 580-78380-21

Date Collected: 06/24/18 13:30

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 54.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 20:06	W1T	TAL SEA
Total/NA	Prep	3546			277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	277979	07/03/18 02:52	T1W	TAL SEA
Total/NA	Prep	3546	RA		277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	278594	07/10/18 21:51	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			278064	07/03/18 13:55	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278356	07/07/18 22:47	ERZ	TAL SEA

Client Sample ID: PDI-SG-B285-BL1

Lab Sample ID: 580-78380-22

Date Collected: 06/24/18 09:59

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B285-BL1

Lab Sample ID: 580-78380-22

Date Collected: 06/24/18 09:59

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 52.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 20:32	W1T	TAL SEA
Total/NA	Prep	3546			277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	277979	07/03/18 03:16	T1W	TAL SEA
Total/NA	Prep	3546	RA		277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	278594	07/10/18 22:17	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			278064	07/03/18 13:55	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278356	07/07/18 23:13	ERZ	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B272-BL1

Date Collected: 06/24/18 15:17

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-23

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B272-BL1

Date Collected: 06/24/18 15:17

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-23

Matrix: Solid

Percent Solids: 57.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 20:58	W1T	TAL SEA
Total/NA	Prep	3546			277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	277979	07/03/18 03:40	T1W	TAL SEA
Total/NA	Prep	3546	RA		277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	278594	07/10/18 22:43	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			278064	07/03/18 13:55	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278356	07/07/18 23:39	ERZ	TAL SEA

Client Sample ID: PDI-SG-B281-BL1

Date Collected: 06/24/18 10:49

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-24

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B281-BL1

Date Collected: 06/24/18 10:49

Date Received: 06/27/18 13:45

Lab Sample ID: 580-78380-24

Matrix: Solid

Percent Solids: 52.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 21:24	W1T	TAL SEA
Total/NA	Prep	3546			277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	277979	07/03/18 04:04	T1W	TAL SEA
Total/NA	Prep	3546	RA		277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	278594	07/10/18 23:08	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			278064	07/03/18 13:55	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278356	07/08/18 00:05	ERZ	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78380-1

Client Sample ID: PDI-SG-B278-BL1

Lab Sample ID: 580-78380-25

Date Collected: 06/24/18 12:36

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B278-BL1

Lab Sample ID: 580-78380-25

Date Collected: 06/24/18 12:36

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 51.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 21:50	W1T	TAL SEA
Total/NA	Prep	3546			277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	277979	07/03/18 04:28	T1W	TAL SEA
Total/NA	Prep	3546	RA		277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	278594	07/10/18 23:34	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			278064	07/03/18 13:55	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278356	07/08/18 00:31	ERZ	TAL SEA

Client Sample ID: PDI-SG-B264-BL1

Lab Sample ID: 580-78380-26

Date Collected: 06/25/18 10:38

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	277844	06/29/18 18:01	TTN	TAL SEA

Client Sample ID: PDI-SG-B264-BL1

Lab Sample ID: 580-78380-26

Date Collected: 06/25/18 10:38

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 43.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			278105	07/03/18 18:54	TTN	TAL SEA
Total/NA	Analysis	8270D		5	279040	07/14/18 22:16	W1T	TAL SEA
Total/NA	Prep	3546			277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM		5	277979	07/03/18 02:27	T1W	TAL SEA
Total/NA	Prep	3546	RA		277832	06/29/18 16:28	TTN	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	278594	07/10/18 21:25	T1W	TAL SEA
Total/NA	Prep	Organotin Prep			278064	07/03/18 13:55	TTN	TAL SEA
Total/NA	Analysis	Organotins		1	278356	07/08/18 00:57	ERZ	TAL SEA

Laboratory References:

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

TestAmerica Seattle

Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-78380-1

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	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

Client: AECOM

TestAmerica Job ID: 580-78380-1

Project/Site: Portland Harbor Pre-Remedial Design

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78380-1	PDI-SG-B102-BL1	Solid	06/13/18 14:27	06/27/18 13:45
580-78380-2	PDI-SG-B304-BL1	Solid	06/14/18 15:00	06/27/18 13:45
580-78380-3	PDI-SG-B289-BL1	Solid	06/14/18 13:53	06/27/18 13:45
580-78380-4	PDI-SG-B117-BL1	Solid	06/14/18 12:00	06/27/18 13:45
580-78380-5	PDI-SG-B301-BL1	Solid	06/15/18 16:20	06/27/18 13:45
580-78380-6	PDI-SG-B297-BL1	Solid	06/15/18 15:33	06/27/18 13:45
580-78380-7	PDI-SG-B293-BL1	Solid	06/15/18 14:50	06/27/18 13:45
580-78380-8	PDI-SG-B310-BL1	Solid	06/15/18 13:26	06/27/18 13:45
580-78380-9	PDI-SG-B309-BL1	Solid	06/15/18 12:25	06/27/18 13:45
580-78380-10	PDI-SG-B314-BL1	Solid	06/16/18 14:16	06/27/18 13:45
580-78380-12	PDI-SG-B031-BL1	Solid	06/17/18 11:20	06/27/18 13:45
580-78380-13	PDI-SG-B042-BL1	Solid	06/17/18 14:46	06/27/18 13:45
580-78380-14	PDI-SG-B191-BL1	Solid	06/18/18 16:31	06/27/18 13:45
580-78380-15	PDI-SG-B114-BL1	Solid	06/18/18 10:22	06/27/18 13:45
580-78380-16	PDI-SG-B425-BL1	Solid	06/19/18 12:01	06/27/18 13:45
580-78380-17	PDI-SG-B096-BL1	Solid	06/20/18 14:22	06/27/18 13:45
580-78380-18	PDI-SG-B096-BL1-D	Solid	06/20/18 14:22	06/27/18 13:45
580-78380-19	PDI-SG-B155-BL1	Solid	06/20/18 11:56	06/27/18 13:45
580-78380-20	PDI-SG-B259-BL1	Solid	06/22/18 16:17	06/27/18 13:45
580-78380-21	PDI-SG-B274-BL1	Solid	06/24/18 13:30	06/27/18 13:45
580-78380-22	PDI-SG-B285-BL1	Solid	06/24/18 09:59	06/27/18 13:45
580-78380-23	PDI-SG-B272-BL1	Solid	06/24/18 15:17	06/27/18 13:45
580-78380-24	PDI-SG-B281-BL1	Solid	06/24/18 10:49	06/27/18 13:45
580-78380-25	PDI-SG-B278-BL1	Solid	06/24/18 12:36	06/27/18 13:45
580-78380-26	PDI-SG-B264-BL1	Solid	06/25/18 10:38	06/27/18 13:45

TestAmerica Seattle



580-78380 Chain of Custody

SURFACE SEDIMENT CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1-(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR		Project 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 Roy Laboratory Contact: Elaine Walker Date: 6/27/18 Carrier: Courier COC No: 3 of 3 COCs	
Sample Identification Project #: 60566335 Study: Surface Sediment Sample Type: SRS		Fraction PAHs, BEHP, Tributyltin 8270-SIM, 8270-LI, Kronen/Inger		Sample Specific Notes: Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30 Sample frozen 6/20/18 @ 12:30			
Sample Date 6/13/2018 6/14/2018 6/14/2018 6/14/2018 6/15/2018 6/15/2018 6/15/2018 6/15/2018 6/16/2018 6/17/2018 6/17/2018		Sample Time 14:27 15:00 13:53 12:00 16:20 15:33 14:50 13:26 12:25 14:16 12:11 11:20		Matrix SS SS SS SS SS SS SS SS SS SS SS		QC Sample 	
Sampler's Initials MM MM MM MM MM MM MM MM MM MM MM MM		Total No. of Cont. 1 1 1 1 1 1 1 1 1 1 1 3		Sample Disposal ☐ Return To Client ☒ Archive For 12 Months			

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:
 Separate reports for each lab.

Keep samples frozen upon receipt

Relinquished by: <i>[Signature]</i>	Company: <i>AECON</i>	Date/Time: 6/27/18 12:52	Received by: <i>[Signature]</i>	Company: <i>M-E-</i>	Date/Time: 6/27/18 12:52
Relinquished by: <i>[Signature]</i>	Company: <i>M-E-</i>	Date/Time: 6/27/18 13:45	Received by: <i>[Signature]</i>	Company: <i>A-poe</i>	Date/Time: 6/27/18 13:45
Relinquished by: <i>[Signature]</i>	Company: <i>M-E-</i>	Date/Time: 6/27/18 13:45	Received by: <i>[Signature]</i>	Company: <i>A-poe</i>	Date/Time: 6/27/18 13:45

-1.7, -2.1

SURFACE SEDIMENT CHAIN OF CUSTODY											
Test America - Seattle			Client Contact			Project Contact: Amy Dahl / Cheley Cook			Site Contact: Jennifer Ray		
5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047			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			Tel: (206) 438-2261 / (206) 438-2010			Date: 6/27/18 Carrier: Courier		
Sample Type: SRS			Analysis: Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other			Laboratory Contact: Elaine Walker			COC No: 3 of 3 COCs		
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LT, Kronk/Unger	Sample Specific Notes:		
PDJ-SG-B042-BL1	6/17/2018	14:46	SS		MM	1		x	Sample frozen 6/20/18 @ 12:30		
PDJ-SG-B191-BL1	6/18/2018	16:31	SS		MM	1		x	Sample frozen 6/20/18 @ 12:30		
PDJ-SG-B114-BL1	6/18/2018	10:22	SS		MM	1		x	Sample frozen 6/20/18 @ 12:30		
PDJ-SG-B425-BL1	6/19/2018	12:01	SS		MM	1		x	Sample frozen 6/20/18 @ 12:30		
PDJ-SG-B096-BL1	6/20/2018	14:22	SS		MM	1		x	Sample frozen 6/20/18 @ 12:30		
PDJ-SG-B096-BL1-D	6/20/2018	14:22	SS		MM	1		x	Sample frozen 6/20/18 @ 12:30		
PDJ-SG-B155-BL1	6/20/2018	11:56	SS		MM	1		x	Sample frozen 6/21/18 @ 16:00		
PDJ-SG-B259-BL1	6/22/2018	16:17	SS		MM	1		x	Sample frozen 6/24/18 @ 17:30		
PDJ-SG-B274-BL1	6/24/2018	13:30	SS		MM	1		x	Sample frozen 6/24/18 @ 17:30		
PDJ-SG-B285-BL1	6/24/2018	9:59	SS		MM	1		x	Sample frozen 6/24/18 @ 17:30		
PDJ-SG-B272-BL1	6/24/2018	15:17	SS		MM	1		x	Sample frozen 6/24/18 @ 17:30		
PDJ-SG-B281-BL1	6/24/2018	10:49	SS		MM	1		x	Sample frozen 6/24/18 @ 17:30		
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 ☒ Isoposal By Lab ☒ Archive For 12 Months											

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Company: *Arcom*

Company: *M.E.*

Company:

Date/Time: 6/27/18 1252

Date/Time: 6/27/18 1345

Date/Time:

Received by: *[Signature]*

Received by: *[Signature]*

Received by:

Company: *M.E.*

Company: *TA-DR*

Company:

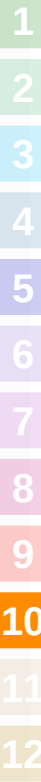
Date/Time: 6/27/18 1252

Date/Time: 6/27/18 1345

Date/Time:

Keep samples frozen upon receipt

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





580-78380 Chain of Custody

TestAmerica-Seattle		SURFACE SEDIMENT CHAIN OF CUSTODY										580-78380 Chain of Custody									
5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010					Site Contact: Jennifer Ray					Date: 6/27/18					COC No: 3				
Client Contact		Analysis Turnaround Time					Laboratory Contact: Elaine-Walker					Carrier: Courier					1 of 3 COCs				
AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1-(866) 495-5288		Calendar (C) or Work Days (W)																			
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling		☐ 21 days																			
Portland, OR		☐ Other																			
Project #: 60566335 Study: Surface Sediment																					
Sample Type: SRS																					
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction														Sample Specific Notes:
PDI-SG-B102-BL1	6/13/2018	14:27	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B304-BL1	6/14/2018	15:00	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B289-BL1	6/14/2018	13:53	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B117-BL1	6/14/2018	12:00	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B301-BL1	6/15/2018	16:20	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B297-BL1	6/15/2018	15:33	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B293-BL1	6/15/2018	14:50	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B310-BL1	6/15/2018	13:26	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B309-BL1	6/15/2018	12:25	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B314-BL1	6/16/2018	14:16	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B030-BL1	6/17/2018	12:11	SS		MM	1		x													Sample frozen 6/20/18 @ 12:30
PDI-SG-B031-BL1	6/17/2018	11:20	SS	MS/MSD	MM	3		x													Sample frozen 6/20/18 @ 12:30
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column																					
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid																					
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																					
Sample Disposal ☐ Return To Client ☒ Disposal By Lab ☒ Archive For 12 Months																					
Special Instructions/QC Requirements & Comments: Separate reports for each lab.																					
Keep samples frozen upon receipt																					
Relinquished by	Company	Date/Time	Received by	Company	Date/Time																
<i>[Signature]</i>	AECOM	6/27/18 1252	<i>[Signature]</i>	M-E-	6/27/18 1252																
<i>[Signature]</i>	M-E-	6/27/18 1345	<i>[Signature]</i>	A-POR	6/27/18 1345																
<i>[Signature]</i>	TARK	6/27/18 1750	<i>[Signature]</i>	TASEA	6/28/18 0930																

IRS=-19.0/19.0

10



580-78380 Chain of Custody

Revised

SURFACE SEDIMENT

CHAIN OF CUSTODY

TestAmerica-Seattle 5755 8th Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Client Contact 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 Date: 6/27/18 Carrier: Courier		COC No: 3 of 3 COCs	
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment Sample Type: SRS		21 days ☒ Calendar (C) or Work Days (W) ☐ Other					
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Retention
PDI-SG-B102-BL1	6/13/2018	14:27	SS		MM	1	
PDI-SG-B304-BL1	6/14/2018	15:00	SS		MM	1	
PDI-SG-B289-BL1	6/14/2018	13:53	SS		MM	1	
PDI-SG-B117-BL1	6/14/2018	12:00	SS		MM	1	
PDI-SG-B301-BL1	6/15/2018	16:20	SS		MM	1	
PDI-SG-B297-BL1	6/15/2018	15:33	SS		MM	1	
PDI-SG-B293-BL1	6/15/2018	14:50	SS		MM	1	
PDI-SG-B310-BL1	6/15/2018	13:26	SS		MM	1	
PDI-SG-B309-BL1	6/15/2018	12:25	SS		MM	1	
PDI-SG-B314-BL1	6/16/2018	14:16	SS		MM	1	
PDI-SG-B030-BL1	6/17/2018	12:11	SS		MM	1	
PDI-SG-B031-BL1	6/17/2018	11:20	SS	MS/MSD	MM	3	
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PE=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)							
Special Instructions/QC Requirements & Comments: Separate reports for each lab.							

Keep samples frozen upon receipt

-1.7, -2.1

IR5=-19.0/19.0

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

SURFACE SEDIMENT CHAIN OF CUSTODY									
Client Contact			Project Contact: Amy Dahl / Chelsea Cook			Site Contact: Jennifer Ray		Date: 6/27/18	
TestAmerica-Seattle 5755-8th Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047			Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W)			Laboratory Contact: Elaine-Walker Carrier: Courier		COC No. 3 2 of 3 COCs	
Sample Identification			Sample Matrix			Sample Specific Notes			
Sample ID	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Sample Specific Notes		
PDI-SG-B042-BL1	6/17/2018	14:46	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B191-BL1	6/18/2018	16:31	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B114-BL1	6/18/2018	10:22	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B425-BL1	6/19/2018	12:01	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B096-BL1	6/20/2018	14:22	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B096-BL1-D	6/20/2018	14:22	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B155-BL1	6/20/2018	11:56	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B259-BL1	6/22/2018	16:17	SS		MM	1	Sample frozen 6/20/18 @ 12:30		
PDI-SG-B274-BL1	6/24/2018	13:30	SS		MM	1	Sample frozen 6/24/18 @ 17:30		
PDI-SG-B285-BL1	6/24/2018	9:59	SS		MM	1	Sample frozen 6/24/18 @ 17:30		
PDI-SG-B272-BL1	6/24/2018	15:17	SS		MM	1	Sample frozen 6/24/18 @ 17:30		
PDI-SG-B281-BL1	6/24/2018	10:49	SS		MM	1	Sample frozen 6/24/18 @ 17:30		
Container Type: WHG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)									
Special Instructions/QC Requirements & Comments: Separate reports for each lab.									

Keep samples frozen upon receipt			
Relinquished by:	Company:	Date/Time:	Received by:
<i>[Signature]</i>	ATEC	6/27/18 12:52	<i>[Signature]</i>
<i>[Signature]</i>	M.E.	6/27/18 1345	<i>[Signature]</i>
<i>[Signature]</i>	N. DR	6/27/18 17:50	<i>[Signature]</i>

Sample Disposal			
Return To Client	Disposal By Lab	Archive For 12 Months	
☐	☒	☐	

Relinquished by:			
Company:	Date/Time:	Received by:	Date/Time:
AA-E-	6/27/18 1252	<i>[Signature]</i>	6/27/18 1252
TA-DR	6/27/18 1345	<i>[Signature]</i>	6/27/18 1345
TA-DR	6/27/18 1750	<i>[Signature]</i>	6/27/18 1750

SURFACE SEDIMENT CHAIN OF CUSTODY													
TestAmerica-Seattle		Client Contact		Project Contact: Amy Dahl / Chelsea Cook		Site Contact: Jennifer Ray		Date: 6/27/18					
5755-8th Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		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		Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other		Laboratory Contact: Elaine Walker		Carrier: Courier					
Project #: 60566335 Study: Surface Sediment		Sample Type: SRS		FRACTION		PCB Congener 165A		COC No: 3 of 3 COCs					
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	PAHs, BHRP, Tributyltin 8270-SIM, 8270-LL, Kron/Unger <th>PCDD/Fs 1613B <th>TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A <th>Grain size ASTM D7928/D6913 <th>Total organic carbon, Total solids 9060 <th>Archive Archive -20 C <th>Sample Specific Notes:</th> </th></th></th></th></th>	PCDD/Fs 1613B <th>TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A <th>Grain size ASTM D7928/D6913 <th>Total organic carbon, Total solids 9060 <th>Archive Archive -20 C <th>Sample Specific Notes:</th> </th></th></th></th>	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A <th>Grain size ASTM D7928/D6913 <th>Total organic carbon, Total solids 9060 <th>Archive Archive -20 C <th>Sample Specific Notes:</th> </th></th></th>	Grain size ASTM D7928/D6913 <th>Total organic carbon, Total solids 9060 <th>Archive Archive -20 C <th>Sample Specific Notes:</th> </th></th>	Total organic carbon, Total solids 9060 <th>Archive Archive -20 C <th>Sample Specific Notes:</th> </th>	Archive Archive -20 C <th>Sample Specific Notes:</th>	Sample Specific Notes:
PDI-SG-B278-BL1	6/24/2018	12:36	SS		MM	1	x						Sample frozen 6/20/18 @ 12:30
PDI-SG-B264-BL1	6/25/2018	10:38	SS		MM	1	x						Sample frozen 6/25/18 @ 17:30
PDI-SG-B264-BL1	6/25/2018	10:20	SS		MM	6							Sample frozen 6/1/18 @ 17:41
Per Account 10519 in separate box (R) 6/28/18													
Container Type: WMS-Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)													
Special Instructions/QC Requirements & Comments: Separate reports for each lab.													
Sample Disposal ☐ Return To Client ☒ Dispose By Lab ☒ Archive For 12 Months													
Keep samples frozen upon receipt													
Relinquished by: [Signature]		Company: AECOM		Date/Time: 6/27/18 1252		Received by: [Signature]		Company: M.E.		Date/Time: 6/27/18 1252		Company: M.E.	
Relinquished by: [Signature]		Company: M.E.		Date/Time: 6/27/18 1345		Received by: [Signature]		Company: M.E.		Date/Time: 6/27/18 1345		Company: M.E.	
Relinquished by: [Signature]		Company: M.E.		Date/Time: 6/27/18 1750		Received by: [Signature]		Company: M.E.		Date/Time: 6/28/18 0930		Company: M.E.	

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78380-1

Login Number: 78380

List Source: TestAmerica Seattle

List Number: 1

Creator: Gonzales, Steve

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.	N/A	
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: Dahl, Amy <amy.dahl@aecom.com>
Sent: Monday, July 02, 2018 2:34 PM
To: Presley, Kim; Cook, Chelsey; Walker, M Elaine
Cc: Mixon, Karen
Subject: RE: *****Broken and unsalvagable sample for 580-78380-1 Portland Harbor Pre-Remedial Design

-External Email-

Hi Kim, please proceed analysis of these analytes with what you have leftover as soon as possible. You should delete this sample from 580-78380 and add the analytes to 580-78153.

Please include a copy of this email in the lab report.

Thank you,

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

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

From: Presley, Kim [mailto:Kim.Presley@testamericainc.com]
Sent: Monday, July 02, 2018 10:17 AM
To: Dahl, Amy; Cook, Chelsey; Walker, M Elaine
Subject: RE: *****Broken and unsalvagable sample for 580-78380-1 Portland Harbor Pre-Remedial Design
Importance: High

Amy,

We do have additional non frozen volume here in Seattle for this sample. It would be out of hold for PAHs though. There is also frozen volume in Sacramento if you want me to request they send that to us.

Let me know

KIM A PRESLEY
Project Management Assistant

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

5755 8th Street East
Tacoma, WA 98424
Tel: 253.922.2310
www.testamericainc.com

SHIPPING ALERT: Independence Day, Wednesday July 4th 2018

For the upcoming Independence Day holiday (observed Wednesday, July 4th) FedEx and UPS will not have scheduled service on Wednesday July 4th.

If you have BOD samples or any short hold samples arriving over the weekend or being delivered Monday July 2nd or Tuesday July 3rd we ask that you contact your Project Manager in advance to ensure your samples meet all holding time criteria.

We are thankful for your business and hope that you have a wonderful and safe holiday!

From: Dahl, Amy [mailto:amy.dahl@aecom.com]

Sent: Friday, June 29, 2018 6:31 PM

To: Presley, Kim; Cook, Chelsey; Walker, M Elaine

Subject: RE: *****Broken and unsalvagable sample for 580-78380-1 Portland Harbor Pre-Remedial Design

-External Email-

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

Hi Kim and Elaine,

Do you have enough volume from the same sample submitted previously for the original analytes (580-78153-7) to add PAHs, BEHP, and TBT?

Thank you,

Amy Dahl, PhD

Chemist, Environment, Pacific Northwest

D +1-206-438-2261

amy.dahl@aecom.com

AECOM

1111 Third Avenue, Suite 1600

Seattle, WA 98101, United States

T +1-206-438-2700

aecom.com

From: Presley, Kim [mailto:kim.presley@testamericainc.com]

Sent: Friday, June 29, 2018 5:51 PM

To: Dahl, Amy; Cook, Chelsey; elaine.walker@testamericainc.com

Subject: *****Broken and unsalvagable sample for 580-78380-1 Portland Harbor Pre-Remedial Design

Importance: High

Amy and Chelsey,

We were just informed that the only container provided for PDI-SG-B030-BL1(580-78380-11) was broken and there was no salvagable sample volume for any analysis. This jar was one of the previously frozen samples and the bottom was broken out upon thawing and all sample volume was lost. We have cancelled all analysis on this sample.

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

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

KIM A PRESLEY

Project Manager Assistant

TestAmerica Seattle

THE LEADER IN ENVIRONMENTAL TESTING

Tel: 253.922.2310

www.testamericainc.com

Reference: [249019]

Attachments: 1