

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-79444-1

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

For:

AECOM  
1111 Third Ave  
Suite 1600  
Seattle, Washington 98101

Attn: Amy Dahl

*M. Elaine Walker*

Authorized for release by:  
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Elaine Walker, Project Manager II  
(253)248-4972  
[elaine.walker@testamericainc.com](mailto:elaine.walker@testamericainc.com)

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Case Narrative

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

TestAmerica Job ID: 580-79444-1

**Job ID: 580-79444-1**

**Laboratory: TestAmerica Seattle**

**Narrative**

## CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-79444-1

### **REVISION 2: NOVEMBER 20, 2018**

The client noticed, after revision 1, that there were still 4 samples that were reporting both PCB-1254 and PCB-1260 in the diluted runs. The following samples were re-evaluated and have been reported as the predominant Aroclor only: PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S192-0to1.5 (580-79444-39), and PDI-SC-S192-3to4.2 (580-79444-41). Any additional narrative comments are indicated in bold type in the PCB section of the narrative.

### **REVISION 1: NOVEMBER 9, 2018**

This revision was required for the following: The PCB data was re-evaluated for the following samples for proper Aroclor identification: PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S117-0to2 (580-79444-25) and PDI-SC-S192-1.5to3 (580-79444-40). In addition the narrative was reviewed and any narrative additions are indicated in bold type below.

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**

Forty-four samples were received on 8/8/2018 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 0.4° C, 1.5° C, 1.6° C, 1.7° C, 3.9° C and 4.2° C.

The following sample was received at the laboratory without a sample collection time documented on the chain of custody: PDI-RB-SS-180806 (580-79444-44). Logged in per container labels.

A sample container was provided to be archived frozen at the TestAmerica Sacramento laboratory pending potential additional analyses.

This report contains results of all analyses performed by TestAmerica Seattle.

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

### **SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)**

Samples PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), PDI-SC-S222-13.2to15.2 (580-79444-17), PDI-SC-S248-0to2 (580-79444-18), PDI-SC-S248-2to4 (580-79444-19), PDI-SC-S248-4to6.2 (580-79444-20), PDI-SC-S139-0to2

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### Laboratory: TestAmerica Seattle (Continued)

(580-79444-21), PDI-SC-S139-2to4.1 (580-79444-22), PDI-SC-S139-4.1to5.9 (580-79444-23), PDI-SC-S139-4.1to5.9D (580-79444-24), PDI-SC-S117-0to2 (580-79444-25), PDI-SC-S117-2to4 (580-79444-26), PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), PDI-SC-S105-0to2 (580-79444-31), PDI-SC-S105-2to4 (580-79444-32), PDI-SC-S105-4to5.6 (580-79444-33), PDI-SC-S105-5.6to6.6 (580-79444-34), PDI-SC-S191-0to2 (580-79444-35), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D\_SIM. The samples were prepared on 08/14/2018, 08/17/2018 and 08/20/2018 and analyzed on 08/17/2018, 08/18/2018, 08/21/2018, 08/22/2018, 08/24/2018 and 08/27/2018.

The 8270D SIM reference spectra for Fluoranthene is incorrect in the raw data for samples PDI-SC-S117-2to4 (580-79444-26) and PDI-SC-S117-4to6 (580-79444-27), however, this reference spectra is correct for all other samples in this job and this reference spectra can be utilized for review of data for the sample that does not have the correct spectra.

Several analytes were detected in method blank MB 580-281503/1-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. The method blank contained Indeno[1,2,3-cd]pyrene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Naphthalene and Phenanthrene were detected in method blank MB 580-281889/1-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.

2-Methylnaphthalene and Naphthalene were detected in method blank MB 580-281984/1-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.

Benzo[b]fluoranthene failed the recovery criteria high for LCS 580-281889/2-A. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Naphthalene failed the recovery criteria low for the MS of sample PDI-SC-S222-7.2to9.2MS (580-79444-14) in batch 580-281877. Naphthalene failed the recovery criteria low for the MSD of sample PDI-SC-S222-7.2to9.2MSD (580-79444-14) in batch 580-281877. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

2-Methylnaphthalene, Benzo[a]pyrene, Naphthalene and Phenanthrene failed the recovery criteria low for the MS of sample PDI-SC-S248-2to4MS (580-79444-19) in batch 580-281877. 2-Methylnaphthalene, Naphthalene and Phenanthrene failed the recovery criteria low for the MSD of sample PDI-SC-S248-2to4MSD (580-79444-19) in batch 580-281877. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Several analytes failed the recovery criteria low for the MS of sample PDI-SC-S105-2to4MS (580-79444-32) in batch 580-281877. Several analytes failed the recovery criteria low for the MSD of sample PDI-SC-S105-2to4MSD (580-79444-32) in batch 580-281877. Several analytes exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

The following samples were diluted due to the nature of the sample matrix: PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-7.2to9.2 (580-79444-14[MSJ]), PDI-SC-S222-7.2to9.2 (580-79444-14[MSD]), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), PDI-SC-S222-13.2to15.2 (580-79444-17), PDI-SC-S248-0to2 (580-79444-18), PDI-SC-S248-2to4 (580-79444-19),

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### Laboratory: TestAmerica Seattle (Continued)

PDI-SC-S248-2to4 (580-79444-19[MS]), PDI-SC-S248-2to4 (580-79444-19[MSD]), PDI-SC-S248-4to6.2 (580-79444-20), PDI-SC-S139-0to2 (580-79444-21), PDI-SC-S139-2to4.1 (580-79444-22), PDI-SC-S139-4.1to5.9 (580-79444-23), PDI-SC-S219-4to5.2 (580-79444-30), PDI-SC-S105-4to5.6 (580-79444-33), PDI-SC-S105-5.6to6.6 (580-79444-34), PDI-SC-S191-0to2 (580-79444-35), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40), PDI-SC-S192-3to4.2 (580-79444-41). Elevated reporting limits (RLs) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S139-4.1to5.9D (580-79444-24), PDI-SC-S117-0to2 (580-79444-25), PDI-SC-S117-2to4 (580-79444-26), PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S105-0to2 (580-79444-31), PDI-SC-S105-2to4 (580-79444-32), PDI-SC-S105-2to4 (580-79444-32[MS]), PDI-SC-S105-2to4 (580-79444-32[MSD]), PDI-SC-S105-4to5.6 (580-79444-33) and PDI-SC-S105-5.6to6.6 (580-79444-34). 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) - RINSR BLANK

Samples PDI-RB-SS-180807 (580-79444-42), PDI-RB-SS-180808 (580-79444-43) and PDI-RB-SS-180806 (580-79444-44) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with 8270D SIM. The samples were prepared on 08/12/2018 and analyzed on 08/14/2018.

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

### POLYCHLORINATED BIPHENYLS (PCBS)

Samples PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), PDI-SC-S222-13.2to15.2 (580-79444-17), PDI-SC-S248-0to2 (580-79444-18), PDI-SC-S248-2to4 (580-79444-19), PDI-SC-S248-4to6.2 (580-79444-20), PDI-SC-S139-0to2 (580-79444-21), PDI-SC-S139-2to4.1 (580-79444-22), PDI-SC-S139-4.1to5.9 (580-79444-23), PDI-SC-S139-4.1to5.9D (580-79444-24), PDI-SC-S117-0to2 (580-79444-25), PDI-SC-S117-2to4 (580-79444-26), PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), PDI-SC-S105-0to2 (580-79444-31), PDI-SC-S105-2to4 (580-79444-32), PDI-SC-S105-4to5.6 (580-79444-33), PDI-SC-S105-5.6to6.6 (580-79444-34), PDI-SC-S191-0to2 (580-79444-35), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA sw-846 method 8082A. The samples were prepared on 08/12/2018 and 08/15/2018 and analyzed on 08/17/2018, 08/29/2018, 08/30/2018 and 08/31/2018.

Surrogate recovery for the following samples were outside control limits: **PDI-SC-S226-6to8 (580-79444-1)**, PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), **PDI-SC-S222-0to2 (580-79444-9)**, **PDI-SC-S222-2to4 (580-79444-10)**, **PDI-SC-S222-4to5 (580-79444-11)**, **PDI-SC-S222-5to7.2 (580-79444-12)**, PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-7.2to9.2 (580-79444-14[MS]), PDI-SC-S222-7.2to9.2 (580-79444-14[MSD]), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), **PDI-SC-S248-2to4 (580-79444-19)**, **PDI-SC-S248-2to4 (580-79444-19[MS])**, **PDI-SC-S139-0to2 (580-79444-21)**, PDI-SC-S139-4.1to5.9 (580-79444-23), PDI-SC-S139-4.1to5.9D (580-79444-24), PDI-SC-S117-0to2 (580-79444-25), PDI-SC-S117-2to4 (580-79444-26), **PDI-SC-S117-4to6 (580-79444-27)**, PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), PDI-SC-S105-0to2 (580-79444-31), PDI-SC-S191-0to2 (580-79444-35), **PDI-SC-S191-2to4 (580-79444-36)**, PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not performed.

PCB-1260 failed the recovery criteria low for the MS of sample PDI-SC-S222-7.2to9.2MS (580-79444-14) in batch 580-281783. PCB-1016 and PCB-1260 failed the recovery criteria low for the MSD of sample PDI-SC-S222-7.2to9.2MSD (580-79444-14) in batch 580-281783. PCB-1016 exceeded the RPD limit. Sample matrix interference is suspected.



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PCB-1260 failed the recovery criteria low for the MS of sample PDI-SC-S248-2to4MS (580-79444-19) in batch 580-282698. PCB-1016 and PCB-1260 failed the recovery criteria high for the MSD of sample PDI-SC-S248-2to4MSD (580-79444-19) in batch 580-282698. PCB-1016 and PCB-1260 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.

PCB-1016 and PCB-1260 failed the recovery criteria low for the MS of sample PDI-SC-S105-2to4MS (580-79444-32) in batch 580-282796. Sample matrix interference and/or non-homogeneity are suspected because the MS and associated laboratory control sample (LCS) recovery was within acceptance limits.

The surrogate Tetrachloro-m-xylene falls outside acceptance criteria for the laboratory control sample (LCS) and the method blank (MB). Since surrogate DCB Decachlorobiphenyl and all targets pass in the LCS, and surrogate DCB Decachlorobiphenyl recovery falls within limits the MB, the data has been reported. The following samples are affected: **PDI-SC-S222-5to7.2 (580-79444-12)**, **PDI-SC-S222-5to7.2D (580-79444-13)**, **PDI-SC-S222-9.2to11.2 (580-79444-15)**, **PDI-SC-S222-11.2to13.2 (580-79444-16)**, **PDI-SC-S222-13.2to15.2 (580-79444-17)**, **PDI-SC-S248-0to2 (580-79444-18)**, **PDI-SC-S248-2to4 (580-79444-19)**, **PDI-SC-S248-4to6.2 (580-79444-20)**, **PDI-SC-S139-0to2 (580-79444-21)**, **PDI-SC-S139-2to4.1 (580-79444-22)**, **PDI-SC-S139-4.1to5.9D (580-79444-24)**, **PDI-SC-S117-0to2 (580-79444-25)**, **PDI-SC-S117-2to4 (580-79444-26)**, **PDI-SC-S248-2to4 (580-79444-19[MS])**, **PDI-SC-S248-2to4 (580-79444-19[MSD])**, **(MB 580-281621/21A)** and (LCS 580-281621/2-A).

Internal standard responses were outside of acceptance limits for the following sample: PDI-SC-S226-14to15.8 (580-79444-8). The sample(s) shows evidence of matrix interference. Rx results are similar and Rx has been reported.

The continuing calibration verification (CCV) associated with batch 580-281783 recovered outside acceptance criteria, low biased, for PCB-1254. Since the CCV level is below the RL for this Aroclor and the associated samples were non-detect for this analyte, the data have been qualified and reported.

The continuing calibration verification (CCV) associated with batch 580-282709 recovered above the upper control limit for PCB-1232, **PCB-1242**, PCB-1248 and PCB-1221. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), (CCV 580-282709/1), (CCV 580-282709/2), **(CCV 580-282709/3)** and (CCV 580-282709/4).

The continuing calibration verification (CCV) associated with 580-282709 recovered low and outside the control limits for PCB-1254 and PCB-1260 on the confirmation column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), (CCV 580-282709/3), (CCV 580-282709/4) and (CCVIS 580-282709/5).

The continuing calibration verification (CCV) associated with 580-282796 recovered high and outside the control limits for PCB-1232, PCB-1248, PCB-1254, and PCB-1260 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: (CCV 580-282796/6), (CCV 580-282796/7), (CCV 580-282796/9) and (CCVIS 580-282796/10).

The continuing calibration verification (CCV) associated with batch 580-282698 recovered above the upper control limit for PCB-1232, **PCB-1221** and PCB-1248. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: **PDI-SC-S191-6to8.1 (580-79444-38)**, **PDI-SC-S192-0to1.5 (580-79444-39)**, **PDI-SC-S192-1.5to3 (580-79444-40)** and **PDI-SC-S192-3to4.2 (580-79444-41)**, (CCV 580-282698/1), (CCV 580-282698/2) and **(CCV 580-282698/4)**.

The continuing calibration verification (CCV) associated with 580-282698 recovered high and outside the control limits for PCB-1254 on one column. Results are confirmed on both columns and **detections** were reported from the passing column. The following sample is impacted: **PDI-SC-S191-6to8.1 (580-79444-38)**, **PDI-SC-S192-0to1.5 (580-79444-39)**, **PDI-SC-S192-1.5to3 (580-79444-40)** and **PDI-SC-S192-3to4.2 (580-79444-41)** and (CCV 580-282698/4).

The continuing calibration verification (CCV) associated with 580-282920 recovered high and outside the control limits for PCB-1232, PCB-1242, and PCB-1254 on the confirmation column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4

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(580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S139-4.1to5.9 (580-79444-23), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40), PDI-SC-S192-3to4.2 (580-79444-41), (CCV 580-282920/6), (CCV 580-282920/8), (CCV 580-282920/9) and (MB 580-281623/1-A).

The surrogate Tetrachloro-m-xylene recovered in the LCS associated with preparation batch 580-281382 and analytical batch 580-281783 outside the lower control limits. Since the other surrogate, DCB Decachlorobiphenyl, and the spiked Aroclors all met acceptance criteria, the data is qualified and reported. The following samples are affected: PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-7.2to9.2 (580-79444-14[MSJ]), PDI-SC-S222-7.2to9.2 (580-79444-14[MSD]) and (LCS 580-281382/2-A).

The affected samples, PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-2to4 (580-79444-5) and PDI-SC-S226-12to14 (580-79444-6), had PCB-1248 Peak 4, PCB-1242 Peak 1, PCB-1248, PCB-1260 Peak 2 and PCB-1242 Peak 4 respectively removed from their reported column due to a high bias. Per method SOP, only three peaks are needed to positively identify a PCB aroclor; therefore, this analysis falls within compliance.

The %RPD between the primary and confirmation column exceeded 40% for PCB-1260 and/ or PCB-1242 for the following samples: PDI-SC-S226-12to14 (580-79444-6) and PDI-SC-S226-4to6 (580-79444-7). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

Internal standard (ISTD) response for the following sample exceeded the control limit on the primary column: PDI-SC-S226-14to15.8 (580-79444-8). As such, the sample results associated with this ISTD were reported from the other column, which met ISTD acceptance criteria. The RPD for this sample is above the 40% limit; however, since the internal standard is high on the column with the lower concentration, the higher concentration has been reported.

The %RPD between the primary and confirmation column / detector exceeded 40% for PCB-1242 and PCB-1254 for the following sample: PDI-SC-S248-0to2 (580-79444-18). The lower values have been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column / detector exceeded 40% for PCB-1254 for the following sample: PDI-SC-S219-4to5.2 (580-79444-30) and PDI-SC-S191-2to4 (580-79444-36). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column exceeded 40% for PCB-1260 for the following sample: PDI-SC-S105-0to2 (580-79444-31). The lower value has been reported and qualified in accordance with the laboratory's SOP.

The %RPD between the primary and confirmation column exceeded 40% for PCB-1254 for the following sample: PDI-SC-S191-2to4 (580-79444-36). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

The following samples contained more than one Aroclor with insufficient separation to quantify individually. The PCBs present are quantified as the predominant Aroclor: PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S192-0to1.5 (580-79444-39) and PDI-SC-S192-3to4.2 (580-79444-41).

The following samples contained more than one Aroclor with insufficient separation to quantify individually. The PCBs present are quantified as the predominant Aroclor: PDI-SC-S191-0to2 (580-79444-35), PDI-SC-S191-6to8.1 (580-79444-38) and PDI-SC-S192-1.5to3 (580-79444-40).

The following samples appear to contain polychlorinated biphenyls (PCBs); however, due to weathering, other environmental processes and/or contributions from the presence of multiple Aroclors, resulting in overlapping PCB patterns, the PCBs in the samples do not directly match any of the laboratory's Aroclor standards used for instrument calibration: PDI-SC-S226-6to8 (580-79444-1) and PDI-SC-S226-8to10 (580-79444-3). The samples have been quantified and reported using the best overall Aroclor/standard pattern match.

The following samples were diluted to bring the concentration of target analytes within the calibration range: PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S191-2to4 (580-79444-36),

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PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41). Elevated reporting limits (RLs) are provided.

The following samples required a dilution due to the nature of the sample matrix: PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

### POLYCHLORINATED BIPHENYLS (PCBS) - RINSE BLANK

**Samples PDI-RB-SS-180807 (580-79444-42), PDI-RB-SS-180808 (580-79444-43) and PDI-RB-SS-180806 (580-79444-44) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A.** The samples were prepared on 08/13/2018 and analyzed on 08/29/2018.

Surrogate DCB Decachlorobiphenyl recovery for the following samples were outside control limits: PDI-RB-SS-180807 (580-79444-42) and PDI-RB-SS-180808 (580-79444-43). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The continuing calibration verification (CCV) associated with 580-282692 recovered high and outside the control limits for PCB-1232, PCB-1242, PCB-1254, and PCB-1248 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: **PDI-RB-SS-180807 (580-79444-42), PDI-RB-SS-180808 (580-79444-43) and PDI-RB-SS-180806 (580-79444-44), MB 580-281399/1-A, LCS 580-281399/2-A, LCSD 580-281399/3-A, (CCV 580-282692/6), (CCV 580-282692/7), (CCV 580-282692/8) and (CCV 580-282692/9).**

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

### TOTAL ORGANIC CARBON

**Samples PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), PDI-SC-S222-13.2to15.2 (580-79444-17), PDI-SC-S248-0to2 (580-79444-18), PDI-SC-S248-2to4 (580-79444-19), PDI-SC-S248-4to6.2 (580-79444-20), PDI-SC-S139-0to2 (580-79444-21), PDI-SC-S139-2to4.1 (580-79444-22), PDI-SC-S139-4.1to5.9 (580-79444-23), PDI-SC-S139-4.1to5.9D (580-79444-24), PDI-SC-S117-0to2 (580-79444-25), PDI-SC-S117-2to4 (580-79444-26), PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), PDI-SC-S105-0to2 (580-79444-31), PDI-SC-S105-2to4 (580-79444-32), PDI-SC-S105-4to5.6 (580-79444-33), PDI-SC-S105-5.6to6.6 (580-79444-34), PDI-SC-S191-0to2 (580-79444-35), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060.** The samples were analyzed on 08/17/2018 and 08/20/2018.

Total Organic Carbon - Duplicates was detected in method blank MB 580-281951/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Total Organic Carbon - Duplicates failed the recovery criteria low for the MS of sample PDI-SC-S248-2to4MS (580-79444-19) in batch 580-281951. Total Organic Carbon - Duplicates failed the recovery criteria low for the MSD of sample PDI-SC-S248-2to4MSD (580-79444-19) in batch 580-281951. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Total Organic Carbon - Duplicates failed the recovery criteria low for the MSD of sample PDI-SC-S105-2to4MSD (580-79444-32) in batch 580-282035. Total Organic Carbon - Duplicates exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are



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### Laboratory: TestAmerica Seattle (Continued)

suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

### TOTAL ORGANIC CARBON - RINSE BLANK

Samples PDI-RB-SS-180807 (580-79444-42), PDI-RB-SS-180808 (580-79444-43) and PDI-RB-SS-180806 (580-79444-44) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 08/13/2018.

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

### GRAIN SIZE

Samples PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), PDI-SC-S222-13.2to15.2 (580-79444-17), PDI-SC-S248-0to2 (580-79444-18), PDI-SC-S248-2to4 (580-79444-19), PDI-SC-S248-4to6.2 (580-79444-20), PDI-SC-S139-0to2 (580-79444-21), PDI-SC-S139-2to4.1 (580-79444-22), PDI-SC-S139-4.1to5.9D (580-79444-24), PDI-SC-S117-0to2 (580-79444-25), PDI-SC-S117-2to4 (580-79444-26), PDI-SC-S117-4to6 (580-79444-27), PDI-SC-S219-0to2 (580-79444-28), PDI-SC-S219-2to4 (580-79444-29), PDI-SC-S219-4to5.2 (580-79444-30), PDI-SC-S105-0to2 (580-79444-31), PDI-SC-S105-2to4 (580-79444-32), PDI-SC-S105-4to5.6 (580-79444-33), PDI-SC-S105-5.6to6.6 (580-79444-34), PDI-SC-S191-0to2 (580-79444-35), PDI-SC-S191-2to4 (580-79444-36), PDI-SC-S191-4to6 (580-79444-37), PDI-SC-S191-6to8.1 (580-79444-38), PDI-SC-S192-0to1.5 (580-79444-39), PDI-SC-S192-1.5to3 (580-79444-40) and PDI-SC-S192-3to4.2 (580-79444-41) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 08/14/2018, 08/15/2018 and 08/16/2018.

Coarse Sand, Gravel and Medium Sand exceeded the RPD limit for the duplicate of sample PDI-SC-S222-13.2to15.2DU (580-79444-17).

Coarse Sand and Medium Sand exceeded the RPD limit for the duplicate of sample PDI-SC-S226-10to12DU (580-79444-2). Coarse Sand exceeded the RPD limit for the duplicate of sample 580-79504-1.

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

### PERCENT SOLIDS

Samples PDI-SC-S226-6to8 (580-79444-1), PDI-SC-S226-10to12 (580-79444-2), PDI-SC-S226-8to10 (580-79444-3), PDI-SC-S226-0to2 (580-79444-4), PDI-SC-S226-2to4 (580-79444-5), PDI-SC-S226-12to14 (580-79444-6), PDI-SC-S226-4to6 (580-79444-7), PDI-SC-S226-14to15.8 (580-79444-8), PDI-SC-S222-0to2 (580-79444-9), PDI-SC-S222-2to4 (580-79444-10), PDI-SC-S222-4to5 (580-79444-11), PDI-SC-S222-5to7.2 (580-79444-12), PDI-SC-S222-5to7.2D (580-79444-13), PDI-SC-S222-7.2to9.2 (580-79444-14), PDI-SC-S222-9.2to11.2 (580-79444-15), PDI-SC-S222-11.2to13.2 (580-79444-16), PDI-SC-S222-13.2to15.2 (580-79444-17), PDI-SC-S248-0to2 (580-79444-18), PDI-SC-S248-2to4 (580-79444-19), PDI-SC-S248-4to6.2 (580-79444-20), PDI-SC-S139-0to2 (580-79444-21), PDI-SC

# Definitions/Glossary

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## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
*	LCS or LCSD is outside acceptance limits.

### GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
*	ISTD response or retention time outside acceptable limits

### General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

### Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

## Glossary

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

TestAmerica Seattle

# Definitions/Glossary

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## Glossary (Continued)

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Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-6to8**

**Lab Sample ID: 580-79444-1**

Date Collected: 08/06/18 15:05

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 52.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	36	J B	91	8.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Acenaphthene	30	J	91	11	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Acenaphthylene	49	J	91	9.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Anthracene	44	J	91	11	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Benzo[a]anthracene	83	J	91	14	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Benzo[a]pyrene	61	J	91	7.2	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Benzo[b]fluoranthene	92		91	11	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Benzo[g,h,i]perylene	54	J	91	9.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Benzo[k]fluoranthene	44	J	91	11	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Chrysene	100		91	27	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Dibenz(a,h)anthracene	ND		91	13	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Fluoranthene	250		91	25	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Fluorene	53	J	91	9.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Indeno[1,2,3-cd]pyrene	49	J	91	11	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Naphthalene	68	J B	91	14	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Phenanthrene	170		91	12	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
Pyrene	250		91	18	ug/Kg	☼	08/20/18 12:34	08/21/18 21:25	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	90		57 - 120				08/20/18 12:34	08/21/18 21:25	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.8	0.64	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
PCB-1221	ND		3.8	1.8	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
PCB-1232	ND		3.8	0.89	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
PCB-1242	ND		3.8	0.92	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
<b>PCB-1248</b>	<b>35</b>		3.8	0.30	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
PCB-1254	ND		3.8	1.5	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
<b>PCB-1260</b>	<b>6.7</b>		3.8	0.64	ug/Kg	☼	08/12/18 10:39	08/17/18 05:14	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	51	X	54 - 142				08/12/18 10:39	08/17/18 05:14	1
Tetrachloro-m-xylene	60		58 - 122				08/12/18 10:39	08/17/18 05:14	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	46000		2000	44	mg/Kg			08/17/18 11:46	1
Total Solids	52.2		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	53	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.1				%			08/14/18 08:19	1
Medium Sand	0.2				%			08/14/18 08:19	1
Fine Sand	11.9				%			08/14/18 08:19	1
Silt	72.4				%			08/14/18 08:19	1
Clay	15.4				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-10to12**

**Lab Sample ID: 580-79444-2**

Date Collected: 08/06/18 15:15

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 57.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	26	J B	81	7.3	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Acenaphthene	22	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Acenaphthylene	43	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Anthracene	38	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Benzo[a]anthracene	77	J	81	12	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Benzo[a]pyrene	60	J	81	6.5	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Benzo[b]fluoranthene	90		81	9.6	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Benzo[g,h,i]perylene	49	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Benzo[k]fluoranthene	43	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Chrysene	110		81	24	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Dibenz(a,h)anthracene	12	J	81	12	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Fluoranthene	190		81	23	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Fluorene	33	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Indeno[1,2,3-cd]pyrene	45	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Naphthalene	91	B	81	13	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Phenanthrene	160		81	11	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50
Pyrene	220		81	16	ug/Kg	☼	08/20/18 12:34	08/21/18 21:51	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		57 - 120	08/20/18 12:34	08/21/18 21:51	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.5	0.59	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1
PCB-1221	ND		3.5	1.6	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1
PCB-1232	ND		3.5	0.82	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1
PCB-1242	ND		3.5	0.85	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1
PCB-1254	ND		3.5	1.4	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1
PCB-1260	3.8		3.5	0.59	ug/Kg	☼	08/12/18 10:39	08/17/18 05:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	48	X	54 - 142	08/12/18 10:39	08/17/18 05:32	1
Tetrachloro-m-xylene	57	X	58 - 122	08/12/18 10:39	08/17/18 05:32	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	40000		2000	44	mg/Kg			08/17/18 11:52	1
Total Solids	57.2		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	58	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.5				%			08/14/18 08:19	1
Medium Sand	0.2				%			08/14/18 08:19	1
Fine Sand	7.3				%			08/14/18 08:19	1
Silt	78.5				%			08/14/18 08:19	1
Clay	13.6				%			08/14/18 08:19	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-8to10**

**Lab Sample ID: 580-79444-3**

Date Collected: 08/06/18 15:10

Matrix: Solid

Date Received: 08/08/18 15:30

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	49	J B	89	8.0	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Acenaphthene	28	J	89	11	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Acenaphthylene	77	J	89	8.9	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Anthracene	38	J	89	11	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Benzo[a]anthracene	60	J	89	14	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Benzo[a]pyrene	51	J	89	7.1	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Benzo[b]fluoranthene	75	J	89	11	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Benzo[g,h,i]perylene	41	J	89	8.9	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Benzo[k]fluoranthene	36	J	89	11	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Chrysene	110		89	27	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Dibenz(a,h)anthracene	ND		89	13	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Fluoranthene	220		89	25	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Fluorene	40	J	89	8.9	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Indeno[1,2,3-cd]pyrene	42	J	89	11	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Naphthalene	170	B	89	14	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Phenanthrene	200		89	12	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50
Pyrene	270		89	17	ug/Kg	☼	08/20/18 12:34	08/21/18 22:18	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120	08/20/18 12:34	08/21/18 22:18	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.7	0.62	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1
PCB-1221	ND		3.7	1.7	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1
PCB-1232	ND		3.7	0.86	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1
PCB-1242	ND		3.7	0.89	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1
PCB-1248	6.9		3.7	0.29	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1
PCB-1254	ND		3.7	1.4	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1
PCB-1260	3.9		3.7	0.62	ug/Kg	☼	08/12/18 10:39	08/17/18 05:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	32	X	54 - 142	08/12/18 10:39	08/17/18 05:49	1
Tetrachloro-m-xylene	39	X	58 - 122	08/12/18 10:39	08/17/18 05:49	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	49000		2000	44	mg/Kg			08/17/18 11:58	1
Total Solids	52.7		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	54	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	2.7				%			08/14/18 08:19	1
Medium Sand	0.1				%			08/14/18 08:19	1
Fine Sand	9.3				%			08/14/18 08:19	1
Silt	71.8				%			08/14/18 08:19	1
Clay	16.0				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-0to2**

**Lab Sample ID: 580-79444-4**

Date Collected: 08/06/18 14:50

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 44.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		100	9.4	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
Acenaphthene	ND		100	12	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Acenaphthylene</b>	<b>39</b>	<b>J</b>	100	10	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Anthracene</b>	<b>14</b>	<b>J</b>	100	12	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Benzo[a]anthracene</b>	<b>40</b>	<b>J</b>	100	16	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Benzo[a]pyrene</b>	<b>34</b>	<b>J</b>	100	8.3	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Benzo[b]fluoranthene</b>	<b>63</b>	<b>J</b>	100	12	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Benzo[g,h,i]perylene</b>	<b>26</b>	<b>J</b>	100	10	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Benzo[k]fluoranthene</b>	<b>19</b>	<b>J</b>	100	12	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Chrysene</b>	<b>59</b>	<b>J</b>	100	31	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
Dibenz(a,h)anthracene	ND		100	15	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Fluoranthene</b>	<b>140</b>		100	29	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Fluorene</b>	<b>13</b>	<b>J</b>	100	10	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Indeno[1,2,3-cd]pyrene</b>	<b>33</b>	<b>J</b>	100	12	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Naphthalene</b>	<b>35</b>	<b>J B</b>	100	17	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Phenanthrene</b>	<b>80</b>	<b>J</b>	100	14	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Pyrene</b>	<b>130</b>		100	20	ug/Kg	☼	08/20/18 12:34	08/21/18 22:44	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	84		57 - 120				08/20/18 12:34	08/21/18 22:44	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.4	0.75	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
PCB-1221	ND		4.4	2.1	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
PCB-1232	ND		4.4	1.0	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
PCB-1242	ND		4.4	1.1	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
PCB-1248	ND		4.4	0.35	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
PCB-1254	ND		4.4	1.8	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
PCB-1260	ND		4.4	0.75	ug/Kg	☼	08/12/18 10:39	08/17/18 06:07	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	33	X	54 - 142				08/12/18 10:39	08/17/18 06:07	1
Tetrachloro-m-xylene	37	X	58 - 122				08/12/18 10:39	08/17/18 06:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>45000</b>		2000	44	mg/Kg			08/17/18 12:05	1
<b>Total Solids</b>	<b>44.3</b>		0.1	0.1	%			08/11/18 15:51	1
<b>Total Solids @ 70°C</b>	<b>45</b>	<b>H</b>	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gravel</b>	<b>0.0</b>				%			08/14/18 08:19	1
<b>Coarse Sand</b>	<b>0.0</b>				%			08/14/18 08:19	1
<b>Medium Sand</b>	<b>0.2</b>				%			08/14/18 08:19	1
<b>Fine Sand</b>	<b>10.2</b>				%			08/14/18 08:19	1
<b>Silt</b>	<b>74.0</b>				%			08/14/18 08:19	1
<b>Clay</b>	<b>15.6</b>				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-2to4**

**Lab Sample ID: 580-79444-5**

Date Collected: 08/06/18 14:55

Matrix: Solid

Date Received: 08/08/18 15:30

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	12	J B	96	8.7	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Acenaphthene	15	J	96	12	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Acenaphthylene	ND		96	9.6	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Anthracene	18	J	96	12	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Benzo[a]anthracene	39	J	96	15	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Benzo[a]pyrene	35	J	96	7.7	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Benzo[b]fluoranthene	50	J	96	11	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Benzo[g,h,i]perylene	29	J	96	9.6	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Benzo[k]fluoranthene	17	J	96	12	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Chrysene	62	J	96	29	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Dibenz(a,h)anthracene	ND		96	14	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Fluoranthene	110		96	27	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Fluorene	18	J	96	9.6	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Indeno[1,2,3-cd]pyrene	34	J	96	12	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Naphthalene	42	J B	96	15	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Phenanthrene	81	J	96	13	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
Pyrene	120		96	19	ug/Kg	☼	08/20/18 12:34	08/21/18 23:10	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	85		57 - 120				08/20/18 12:34	08/21/18 23:10	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.9	0.66	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
PCB-1221	ND		3.9	1.9	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
PCB-1232	ND		3.9	0.92	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
PCB-1242	10		3.9	0.95	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
PCB-1248	ND		3.9	0.31	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
PCB-1254	ND		3.9	1.5	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
PCB-1260	3.9		3.9	0.66	ug/Kg	☼	08/12/18 10:39	08/17/18 06:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	29	X	54 - 142				08/12/18 10:39	08/17/18 06:25	1
Tetrachloro-m-xylene	33	X	58 - 122				08/12/18 10:39	08/17/18 06:25	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	41000		2000	44	mg/Kg			08/17/18 12:12	1
Total Solids	51.1		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	53	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.0				%			08/14/18 08:19	1
Medium Sand	0.2				%			08/14/18 08:19	1
Fine Sand	12.0				%			08/14/18 08:19	1
Silt	70.2				%			08/14/18 08:19	1
Clay	17.6				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-12to14**

**Lab Sample ID: 580-79444-6**

Date Collected: 08/06/18 15:20

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 56.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	26	J B	86	7.8	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Acenaphthene	28	J	86	10	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Acenaphthylene	49	J	86	8.6	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Anthracene	53	J	86	10	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Benzo[a]anthracene	85	J	86	13	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Benzo[a]pyrene	63	J	86	6.9	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Benzo[b]fluoranthene	100		86	10	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Benzo[g,h,i]perylene	51	J	86	8.6	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Benzo[k]fluoranthene	51	J	86	10	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Chrysene	120		86	26	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Dibenz(a,h)anthracene	14	J	86	12	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Fluoranthene	240		86	24	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Fluorene	37	J	86	8.6	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Indeno[1,2,3-cd]pyrene	56	J	86	10	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Naphthalene	79	J B	86	14	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Phenanthrene	200		86	12	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
Pyrene	250		86	17	ug/Kg	☼	08/20/18 12:34	08/21/18 23:36	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	89		57 - 120				08/20/18 12:34	08/21/18 23:36	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.5	0.59	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
PCB-1221	ND		3.5	1.7	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
PCB-1232	ND		3.5	0.82	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
<b>PCB-1242</b>	<b>5.6</b>		3.5	0.85	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
PCB-1254	ND		3.5	1.4	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
<b>PCB-1260</b>	<b>6.3</b>		3.5	0.59	ug/Kg	☼	08/12/18 10:39	08/17/18 06:42	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	34	X	54 - 142				08/12/18 10:39	08/17/18 06:42	1
Tetrachloro-m-xylene	38	X	58 - 122				08/12/18 10:39	08/17/18 06:42	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	41000		2000	44	mg/Kg			08/17/18 12:18	1
Total Solids	56.6		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	57	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.4				%			08/14/18 08:19	1
Medium Sand	0.1				%			08/14/18 08:19	1
Fine Sand	8.9				%			08/14/18 08:19	1
Silt	75.2				%			08/14/18 08:19	1
Clay	15.5				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-4to6**

**Lab Sample ID: 580-79444-7**

Date Collected: 08/06/18 15:00

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 57.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	8.5	J B	81	7.3	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Acenaphthene	17	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Acenaphthylene	28	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Anthracene	16	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Benzo[a]anthracene	27	J	81	12	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Benzo[a]pyrene	35	J	81	6.5	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Benzo[b]fluoranthene	37	J	81	9.5	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Benzo[g,h,i]perylene	24	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Benzo[k]fluoranthene	15	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Chrysene	38	J	81	24	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Dibenz(a,h)anthracene	ND		81	12	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Fluoranthene	79	J	81	23	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Fluorene	12	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Indeno[1,2,3-cd]pyrene	25	J	81	9.7	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Naphthalene	32	J B	81	13	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Phenanthrene	67	J	81	11	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
Pyrene	83		81	16	ug/Kg	☼	08/20/18 12:34	08/22/18 00:02	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	85		57 - 120				08/20/18 12:34	08/22/18 00:02	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.3	0.57	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
PCB-1232	ND		3.3	0.79	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
PCB-1242	2.3	J	3.3	0.82	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
PCB-1248	ND		3.3	0.27	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
PCB-1260	2.3	J	3.3	0.57	ug/Kg	☼	08/12/18 10:39	08/17/18 07:00	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	40	X	54 - 142				08/12/18 10:39	08/17/18 07:00	1
Tetrachloro-m-xylene	48	X	58 - 122				08/12/18 10:39	08/17/18 07:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	33000		2000	44	mg/Kg			08/17/18 12:24	1
Total Solids	57.4		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	57	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.0				%			08/14/18 08:19	1
Medium Sand	0.1				%			08/14/18 08:19	1
Fine Sand	17.9				%			08/14/18 08:19	1
Silt	67.8				%			08/14/18 08:19	1
Clay	14.3				%			08/14/18 08:19	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-14to15.8**

**Lab Sample ID: 580-79444-8**

Date Collected: 08/06/18 15:25

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 55.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	47	J B	81	7.3	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Acenaphthene	61	J	81	9.8	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Acenaphthylene	77	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Anthracene	120		81	9.8	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Benzo[a]anthracene	150		81	12	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Benzo[a]pyrene	110		81	6.5	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Benzo[b]fluoranthene	170		81	9.6	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Benzo[g,h,i]perylene	72	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Benzo[k]fluoranthene	56	J	81	9.8	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Chrysene	180		81	24	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Dibenz(a,h)anthracene	17	J	81	12	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Fluoranthene	500		81	23	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Fluorene	70	J	81	8.1	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Indeno[1,2,3-cd]pyrene	65	J	81	9.8	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Naphthalene	130	B	81	13	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Phenanthrene	400		81	11	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50
Pyrene	480		81	16	ug/Kg	☼	08/20/18 12:34	08/22/18 00:28	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		57 - 120	08/20/18 12:34	08/22/18 00:28	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND	*	3.4	0.58	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1
PCB-1221	ND	*	3.4	1.6	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1
PCB-1232	ND	*	3.4	0.80	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1
PCB-1242	ND	*	3.4	0.83	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1
PCB-1248	ND	*	3.4	0.27	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1
PCB-1254	ND	*	3.4	1.3	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1
PCB-1260	13		3.4	0.58	ug/Kg	☼	08/12/18 10:39	08/30/18 22:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	79		54 - 142	08/12/18 10:39	08/30/18 22:32	1
Tetrachloro-m-xylene	67		58 - 122	08/12/18 10:39	08/30/18 22:32	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	42000		2000	44	mg/Kg			08/17/18 12:29	1
Total Solids	55.9		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	57	H	0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	1.1				%			08/14/18 08:19	1
Medium Sand	0.5				%			08/14/18 08:19	1
Fine Sand	9.7				%			08/14/18 08:19	1
Silt	74.4				%			08/14/18 08:19	1
Clay	14.4				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-0to2**

**Lab Sample ID: 580-79444-9**

Date Collected: 08/07/18 09:45

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 39.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1100	B	230	21	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Acenaphthene	990		230	28	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Acenaphthylene	760		230	23	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Anthracene	1700		230	28	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Benzo[a]anthracene	520		230	35	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Benzo[a]pyrene	540		230	19	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Benzo[b]fluoranthene	550		230	28	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Benzo[g,h,i]perylene	420		230	23	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Benzo[k]fluoranthene	250		230	28	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Chrysene	900		230	70	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Dibenz(a,h)anthracene	ND		230	34	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Fluoranthene	1700		230	65	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Fluorene	3200		230	23	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Indeno[1,2,3-cd]pyrene	350		230	28	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Naphthalene	600	B	230	37	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Phenanthrene	7400		230	32	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
Pyrene	2400		230	45	ug/Kg	☼	08/20/18 12:34	08/22/18 00:55	100
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	88		57 - 120				08/20/18 12:34	08/22/18 00:55	100

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	4700		250	43	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
PCB-1221	ND		250	120	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
PCB-1232	ND		250	59	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
PCB-1242	ND		250	61	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
PCB-1248	ND		250	20	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
PCB-1254	ND		250	99	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
PCB-1260	430		250	43	ug/Kg	☼	08/12/18 10:39	08/30/18 22:49	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	2643	X	54 - 142				08/12/18 10:39	08/30/18 22:49	50
Tetrachloro-m-xylene	0	X	58 - 122				08/12/18 10:39	08/30/18 22:49	50

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	300000		2000	44	mg/Kg			08/17/18 12:35	1
Total Solids	39.8		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	41		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.4				%			08/14/18 08:19	1
Medium Sand	1.0				%			08/14/18 08:19	1
Fine Sand	30.7				%			08/14/18 08:19	1
Silt	60.2				%			08/14/18 08:19	1
Clay	7.7				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-2to4**

**Lab Sample ID: 580-79444-10**

Date Collected: 08/07/18 09:50

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 56.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	400	B	170	15	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Acenaphthene	380		170	20	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Acenaphthylene	150	J	170	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Anthracene	430		170	20	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Benzo[a]anthracene	430		170	26	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Benzo[a]pyrene	390		170	13	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Benzo[b]fluoranthene	540		170	20	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Benzo[g,h,i]perylene	350		170	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Benzo[k]fluoranthene	160	J	170	20	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Chrysene	950		170	50	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Dibenz(a,h)anthracene	52	J	170	24	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Fluoranthene	1400		170	47	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Fluorene	330		170	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Indeno[1,2,3-cd]pyrene	300		170	20	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Naphthalene	310	B	170	27	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Phenanthrene	2100		170	23	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
Pyrene	1900		170	33	ug/Kg	☼	08/20/18 12:34	08/22/18 01:21	100
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	101		57 - 120				08/20/18 12:34	08/22/18 01:21	100

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	1200		350	59	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
PCB-1221	ND		350	170	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
PCB-1232	ND		350	82	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
PCB-1242	ND		350	85	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
PCB-1248	ND		350	28	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
PCB-1254	ND		350	140	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
PCB-1260	300	J	350	59	ug/Kg	☼	08/15/18 09:34	08/30/18 23:06	100
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	1270	X	54 - 142				08/15/18 09:34	08/30/18 23:06	100
Tetrachloro-m-xylene	0	X	58 - 122				08/15/18 09:34	08/30/18 23:06	100

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	60000		2000	44	mg/Kg			08/17/18 12:43	1
Total Solids	56.4		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	57		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.1				%			08/14/18 08:19	1
Medium Sand	1.0				%			08/14/18 08:19	1
Fine Sand	26.9				%			08/14/18 08:19	1
Silt	62.9				%			08/14/18 08:19	1
Clay	9.1				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-4to5**

**Lab Sample ID: 580-79444-11**

Date Collected: 08/07/18 09:55

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 64.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	300	B	140	13	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Acenaphthene	530		140	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Acenaphthylene	270		140	14	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Anthracene	610		140	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Benzo[a]anthracene	550		140	22	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Benzo[a]pyrene	500		140	11	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Benzo[b]fluoranthene	650		140	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Benzo[g,h,i]perylene	620		140	14	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Benzo[k]fluoranthene	180		140	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Chrysene	1100		140	43	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Dibenz(a,h)anthracene	89	J	140	21	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Fluoranthene	1700		140	40	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Fluorene	140		140	14	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Indeno[1,2,3-cd]pyrene	360		140	17	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Naphthalene	390	B	140	23	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Phenanthrene	3000		140	20	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100
Pyrene	2500		140	28	ug/Kg	☼	08/20/18 12:34	08/22/18 01:47	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	102		57 - 120	08/20/18 12:34	08/22/18 01:47	100

### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		280	48	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100
PCB-1221	ND		280	130	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100
PCB-1232	ND		280	67	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100
PCB-1242	ND		280	69	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100
PCB-1248	ND		280	23	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100
PCB-1254	ND		280	110	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100
PCB-1260	180	J	280	48	ug/Kg	☼	08/15/18 09:34	08/30/18 23:22	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	3705	X	54 - 142	08/15/18 09:34	08/30/18 23:22	100
Tetrachloro-m-xylene	0	X	58 - 122	08/15/18 09:34	08/30/18 23:22	100

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	74000		2000	44	mg/Kg			08/17/18 12:57	1
Total Solids	64.5		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	61		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.6				%			08/14/18 08:19	1
Coarse Sand	0.3				%			08/14/18 08:19	1
Medium Sand	6.3				%			08/14/18 08:19	1
Fine Sand	37.6				%			08/14/18 08:19	1
Silt	48.9				%			08/14/18 08:19	1
Clay	6.2				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-5to7.2**

**Lab Sample ID: 580-79444-12**

Date Collected: 08/07/18 10:00

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 79.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	5.6	B	3.5	0.31	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Acenaphthene	11		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Acenaphthylene	4.6		3.5	0.35	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Anthracene	7.3		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Benzo[a]anthracene	9.4		3.5	0.53	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Benzo[a]pyrene	10		3.5	0.28	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Benzo[b]fluoranthene	12		3.5	0.41	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Benzo[g,h,i]perylene	13		3.5	0.35	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Benzo[k]fluoranthene	4.4		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Chrysene	18		3.5	1.0	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Dibenz(a,h)anthracene	1.4	J	3.5	0.50	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Fluoranthene	26		3.5	0.98	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Fluorene	4.3		3.5	0.35	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Indeno[1,2,3-cd]pyrene	8.3		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Naphthalene	7.0	B	3.5	0.56	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Phenanthrene	41		3.5	0.48	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
Pyrene	44		3.5	0.68	ug/Kg	☼	08/20/18 12:34	08/22/18 02:13	3
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	99		57 - 120				08/20/18 12:34	08/22/18 02:13	3

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.5	0.42	ug/Kg	☼	08/15/18 09:34	08/29/18 04:10	1
PCB-1221	ND		2.5	1.2	ug/Kg	☼	08/15/18 09:34	08/29/18 04:10	1
PCB-1232	37		2.5	0.58	ug/Kg	☼	08/15/18 09:34	08/30/18 23:39	1
PCB-1242	ND		2.5	0.61	ug/Kg	☼	08/15/18 09:34	08/29/18 04:10	1
PCB-1248	27		2.5	0.20	ug/Kg	☼	08/15/18 09:34	08/30/18 23:39	1
PCB-1254	ND		2.5	0.98	ug/Kg	☼	08/15/18 09:34	08/29/18 04:10	1
PCB-1260	ND		2.5	0.42	ug/Kg	☼	08/15/18 09:34	08/29/18 04:10	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	141		54 - 142				08/15/18 09:34	08/30/18 23:39	1
Tetrachloro-m-xylene	30	X	58 - 122				08/15/18 09:34	08/30/18 23:39	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1100	J	2000	44	mg/Kg			08/17/18 13:04	1
Total Solids	79.8		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	79		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.0				%			08/14/18 08:19	1
Medium Sand	27.5				%			08/14/18 08:19	1
Fine Sand	68.5				%			08/14/18 08:19	1
Silt	4.0				%			08/14/18 08:19	1
Clay	0.0				%			08/14/18 08:19	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-5to7.2D**

**Lab Sample ID: 580-79444-13**

Date Collected: 08/07/18 10:00

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 79.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	4.9	B	3.5	0.32	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Acenaphthene	11		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Acenaphthylene	3.2	J	3.5	0.35	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Anthracene	4.2		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Benzo[a]anthracene	4.6		3.5	0.53	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Benzo[a]pyrene	4.9		3.5	0.28	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Benzo[b]fluoranthene	5.6		3.5	0.41	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Benzo[g,h,i]perylene	6.8		3.5	0.35	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Benzo[k]fluoranthene	2.5	J	3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Chrysene	7.9		3.5	1.1	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Dibenz(a,h)anthracene	ND		3.5	0.51	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Fluoranthene	14		3.5	0.98	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Fluorene	3.2	J	3.5	0.35	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Indeno[1,2,3-cd]pyrene	4.2		3.5	0.42	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Naphthalene	6.4	B	3.5	0.56	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Phenanthrene	36		3.5	0.48	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
Pyrene	22		3.5	0.68	ug/Kg	☼	08/20/18 12:34	08/22/18 02:39	3
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	96		57 - 120				08/20/18 12:34	08/22/18 02:39	3

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.4	0.41	ug/Kg	☼	08/15/18 09:34	08/29/18 04:28	1
PCB-1221	ND		2.4	1.1	ug/Kg	☼	08/15/18 09:34	08/29/18 04:28	1
PCB-1242	ND		2.4	0.59	ug/Kg	☼	08/15/18 09:34	08/29/18 04:28	1
PCB-1254	ND		2.4	0.95	ug/Kg	☼	08/15/18 09:34	08/29/18 04:28	1
PCB-1260	ND		2.4	0.41	ug/Kg	☼	08/15/18 09:34	08/29/18 04:28	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	117		54 - 142				08/15/18 09:34	08/29/18 04:28	1
Tetrachloro-m-xylene	58		58 - 122				08/15/18 09:34	08/29/18 04:28	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	26		2.4	0.56	ug/Kg	☼	08/15/18 09:34	08/30/18 23:56	1
PCB-1248	19		2.4	0.19	ug/Kg	☼	08/15/18 09:34	08/30/18 23:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	107		54 - 142				08/15/18 09:34	08/30/18 23:56	1
Tetrachloro-m-xylene	43	X	58 - 122				08/15/18 09:34	08/30/18 23:56	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1200	J	2000	44	mg/Kg			08/17/18 13:09	1
Total Solids	79.9		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	79	H	0.10	0.10	%			08/30/18 16:04	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Lab Sample ID: 580-79444-14**

Date Collected: 08/07/18 10:05

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 58.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.0	J	8.2	0.74	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Acenaphthene	20		8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Acenaphthylene	ND		8.2	0.82	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Anthracene	1.2	J	8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Benzo[a]anthracene	2.7	J B	8.2	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Benzo[a]pyrene	ND		8.2	0.66	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Benzo[b]fluoranthene	3.7	J B	8.2	0.97	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Benzo[g,h,i]perylene	1.6	J B	8.2	0.82	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Benzo[k]fluoranthene	1.3	J B	8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Chrysene	2.9	J B	8.2	2.5	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Dibenz(a,h)anthracene	ND		8.2	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Fluoranthene	3.8	J	8.2	2.3	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Fluorene	1.3	J	8.2	0.82	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Indeno[1,2,3-cd]pyrene	2.1	J B	8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Naphthalene	3.0	J F1 B	8.2	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Phenanthrene	6.3	J B	8.2	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
Pyrene	7.2	J B	8.2	1.6	ug/Kg	☼	08/14/18 10:08	08/17/18 16:39	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	67		57 - 120				08/14/18 10:08	08/17/18 16:39	5

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND	F2 F1	3.4	0.58	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
PCB-1221	ND		3.4	1.6	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
PCB-1232	ND		3.4	0.80	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
PCB-1242	ND		3.4	0.83	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
PCB-1248	ND		3.4	0.27	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
PCB-1254	ND		3.4	1.3	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
PCB-1260	ND	F1	3.4	0.58	ug/Kg	☼	08/12/18 10:39	08/17/18 07:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	38	X	54 - 142				08/12/18 10:39	08/17/18 07:53	1
Tetrachloro-m-xylene	44	X	58 - 122				08/12/18 10:39	08/17/18 07:53	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000		2000	44	mg/Kg			08/17/18 11:13	1
Total Solids	58.3		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	58		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/14/18 08:19	1
Coarse Sand	0.2				%			08/14/18 08:19	1
Medium Sand	0.8				%			08/14/18 08:19	1
Fine Sand	13.5				%			08/14/18 08:19	1
Silt	75.1				%			08/14/18 08:19	1
Clay	10.4				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-9.2to11.2**

**Lab Sample ID: 580-79444-15**

Date Collected: 08/07/18 10:10

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 64.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>2-Methylnaphthalene</b>	<b>1.5</b>	<b>J B</b>	15	1.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Acenaphthene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Acenaphthylene	ND		15	1.5	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Anthracene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
<b>Benzo[a]anthracene</b>	<b>3.3</b>	<b>J</b>	15	2.2	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Benzo[a]pyrene	ND		15	1.2	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
<b>Benzo[b]fluoranthene</b>	<b>4.0</b>	<b>J</b>	15	1.7	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Benzo[g,h,i]perylene	ND		15	1.5	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Benzo[k]fluoranthene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Chrysene	ND		15	4.4	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Dibenz(a,h)anthracene	ND		15	2.1	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Fluoranthene	ND		15	4.1	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Fluorene	ND		15	1.5	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
Indeno[1,2,3-cd]pyrene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
<b>Naphthalene</b>	<b>4.2</b>	<b>J B</b>	15	2.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
<b>Phenanthrene</b>	<b>5.8</b>	<b>J</b>	15	2.0	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10
<b>Pyrene</b>	<b>4.9</b>	<b>J</b>	15	2.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:05	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	109		57 - 120	08/20/18 12:34	08/22/18 03:05	10

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	65		54 - 142	08/15/18 09:34	08/29/18 04:46	1
Tetrachloro-m-xylene	58		58 - 122	08/15/18 09:34	08/29/18 04:46	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>PCB-1016</b>	<b>1.4</b>	<b>J</b>	3.0	0.51	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1
PCB-1221	ND		3.0	1.4	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1
PCB-1232	ND		3.0	0.71	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1
PCB-1242	ND		3.0	0.74	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1
PCB-1248	ND		3.0	0.24	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1
PCB-1254	ND		3.0	1.2	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1
PCB-1260	ND		3.0	0.51	ug/Kg	☼	08/15/18 09:34	08/31/18 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	55		54 - 142	08/15/18 09:34	08/31/18 00:13	1
Tetrachloro-m-xylene	54	X	58 - 122	08/15/18 09:34	08/31/18 00:13	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>22000</b>		2000	44	mg/Kg			08/17/18 13:14	1
<b>Total Solids</b>	<b>64.3</b>		0.1	0.1	%			08/11/18 15:51	1
<b>Total Solids @ 70°C</b>	<b>67</b>		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gravel</b>	<b>0.0</b>				%			08/14/18 08:19	1
<b>Coarse Sand</b>	<b>0.3</b>				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-9.2to11.2**

**Lab Sample ID: 580-79444-15**

**Date Collected: 08/07/18 10:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 64.3**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Medium Sand	0.2				%			08/14/18 08:19	1
Fine Sand	13.5				%			08/14/18 08:19	1
Silt	78.1				%			08/14/18 08:19	1
Clay	7.9				%			08/14/18 08:19	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-11.2to13.2**

**Lab Sample ID: 580-79444-16**

Date Collected: 08/07/18 10:15

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 66.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>2-Methylnaphthalene</b>	<b>1.7</b>	<b>J B</b>	14	1.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Acenaphthene	ND		14	1.7	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Acenaphthylene	ND		14	1.4	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Anthracene	ND		14	1.7	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Benzo[a]anthracene	ND		14	2.2	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Benzo[a]pyrene	ND		14	1.2	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
<b>Benzo[b]fluoranthene</b>	<b>3.1</b>	<b>J</b>	14	1.7	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Benzo[g,h,i]perylene	ND		14	1.4	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Benzo[k]fluoranthene	ND		14	1.7	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Chrysene	ND		14	4.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Dibenz(a,h)anthracene	ND		14	2.1	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Fluoranthene	ND		14	4.0	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Fluorene	ND		14	1.4	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
Indeno[1,2,3-cd]pyrene	ND		14	1.7	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
<b>Naphthalene</b>	<b>3.6</b>	<b>J B</b>	14	2.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
<b>Phenanthrene</b>	<b>4.1</b>	<b>J</b>	14	2.0	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
<b>Pyrene</b>	<b>3.4</b>	<b>J</b>	14	2.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:31	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	113		57 - 120				08/20/18 12:34	08/22/18 03:31	10

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.0	0.51	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
PCB-1221	ND		3.0	1.4	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
PCB-1232	ND		3.0	0.70	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
PCB-1242	ND		3.0	0.73	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
PCB-1248	ND		3.0	0.24	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
PCB-1254	ND		3.0	1.2	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
PCB-1260	ND		3.0	0.51	ug/Kg	☼	08/15/18 09:34	08/29/18 05:03	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	75		54 - 142				08/15/18 09:34	08/29/18 05:03	1
Tetrachloro-m-xylene	21	X	58 - 122				08/15/18 09:34	08/29/18 05:03	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>20000</b>		2000	44	mg/Kg			08/17/18 13:20	1
<b>Total Solids</b>	<b>66.0</b>		0.1	0.1	%			08/11/18 15:51	1
<b>Total Solids @ 70°C</b>	<b>67</b>		0.10	0.10	%			08/14/18 08:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gravel</b>	<b>0.0</b>				%			08/14/18 08:19	1
<b>Coarse Sand</b>	<b>0.0</b>				%			08/14/18 08:19	1
<b>Medium Sand</b>	<b>0.1</b>				%			08/14/18 08:19	1
<b>Fine Sand</b>	<b>5.0</b>				%			08/14/18 08:19	1
<b>Silt</b>	<b>87.5</b>				%			08/14/18 08:19	1
<b>Clay</b>	<b>7.4</b>				%			08/14/18 08:19	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-13.2to15.2**

**Lab Sample ID: 580-79444-17**

Date Collected: 08/07/18 10:20

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 63.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		15	1.4	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Acenaphthene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Acenaphthylene	ND		15	1.5	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Anthracene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Benzo[a]anthracene</b>	<b>2.8</b>	<b>J</b>	15	2.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Benzo[a]pyrene	ND		15	1.2	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Benzo[b]fluoranthene</b>	<b>3.0</b>	<b>J</b>	15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Benzo[g,h,i]perylene	ND		15	1.5	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Benzo[k]fluoranthene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Chrysene	ND		15	4.6	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Dibenz(a,h)anthracene	ND		15	2.2	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Fluoranthene	ND		15	4.3	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Fluorene</b>	<b>1.8</b>	<b>J</b>	15	1.5	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
Indeno[1,2,3-cd]pyrene	ND		15	1.8	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Naphthalene</b>	<b>3.2</b>	<b>J B</b>	15	2.4	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Phenanthrene</b>	<b>5.9</b>	<b>J</b>	15	2.1	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Pyrene</b>	<b>5.1</b>	<b>J</b>	15	2.9	ug/Kg	☼	08/20/18 12:34	08/22/18 03:57	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	99		57 - 120				08/20/18 12:34	08/22/18 03:57	10

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.2	0.54	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
PCB-1232	ND		3.2	0.74	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
<b>PCB-1242</b>	<b>1.5</b>	<b>J</b>	3.2	0.77	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
PCB-1248	ND		3.2	0.25	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
PCB-1254	ND		3.2	1.2	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
PCB-1260	ND		3.2	0.54	ug/Kg	☼	08/15/18 09:34	08/29/18 05:21	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	77		54 - 142				08/15/18 09:34	08/29/18 05:21	1
Tetrachloro-m-xylene	71		58 - 122				08/15/18 09:34	08/29/18 05:21	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>22000</b>		2000	44	mg/Kg			08/17/18 13:26	1
<b>Total Solids</b>	<b>63.0</b>		0.1	0.1	%			08/11/18 15:51	1
<b>Total Solids @ 70°C</b>	<b>65</b>	<b>H</b>	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gravel</b>	<b>0.0</b>				%			08/15/18 08:31	1
<b>Coarse Sand</b>	<b>0.1</b>				%			08/15/18 08:31	1
<b>Medium Sand</b>	<b>0.2</b>				%			08/15/18 08:31	1
<b>Fine Sand</b>	<b>9.7</b>				%			08/15/18 08:31	1
<b>Silt</b>	<b>78.2</b>				%			08/15/18 08:31	1
<b>Clay</b>	<b>11.8</b>				%			08/15/18 08:31	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S248-0to2**

**Lab Sample ID: 580-79444-18**

Date Collected: 08/07/18 16:45

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 39.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	16	J	22	1.9	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Acenaphthene	30		22	2.6	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Acenaphthylene	24		22	2.2	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Anthracene	36		22	2.6	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Benzo[a]anthracene	55	B	22	3.3	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Benzo[a]pyrene	25	B	22	1.7	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Benzo[b]fluoranthene	42	B	22	2.5	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Benzo[g,h,i]perylene	21	J B	22	2.2	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Benzo[k]fluoranthene	17	J B	22	2.6	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Chrysene	61	B	22	6.5	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Dibenz(a,h)anthracene	4.7	J B	22	3.1	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Fluoranthene	200		22	6.0	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Fluorene	38		22	2.2	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Indeno[1,2,3-cd]pyrene	24	B	22	2.6	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Naphthalene	25	B	22	3.4	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Phenanthrene	150	B	22	3.0	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10
Pyrene	160	B	22	4.2	ug/Kg	☼	08/14/18 10:08	08/17/18 17:56	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	08/14/18 10:08	08/17/18 17:56	10

### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.8	0.81	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1
PCB-1221	ND		4.8	2.3	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1
PCB-1232	ND		4.8	1.1	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1
PCB-1242	2.2	J	4.8	1.2	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1
PCB-1248	ND		4.8	0.38	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1
PCB-1254	3.3	J	4.8	1.9	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1
PCB-1260	ND		4.8	0.81	ug/Kg	☼	08/15/18 09:34	08/29/18 05:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	55		54 - 142	08/15/18 09:34	08/29/18 05:39	1
Tetrachloro-m-xylene	73		58 - 122	08/15/18 09:34	08/29/18 05:39	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	53000		2000	44	mg/Kg			08/17/18 13:32	1
Total Solids	39.7		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	41	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.0				%			08/15/18 08:31	1
Medium Sand	0.4				%			08/15/18 08:31	1
Fine Sand	15.6				%			08/15/18 08:31	1
Silt	80.9				%			08/15/18 08:31	1
Clay	3.1				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S248-2to4**

**Lab Sample ID: 580-79444-19**

Date Collected: 08/07/18 16:50

Matrix: Solid

Date Received: 08/08/18 15:30

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	70	F1	8.2	0.73	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Acenaphthene	99		8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Acenaphthylene	21		8.2	0.82	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Anthracene	82		8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Benzo[a]anthracene	88	B	8.2	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Benzo[a]pyrene	49	F1 B	8.2	0.65	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Benzo[b]fluoranthene	74	B	8.2	0.96	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Benzo[g,h,i]perylene	38	B	8.2	0.82	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Benzo[k]fluoranthene	30	B	8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Chrysene	86	B	8.2	2.4	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Dibenz(a,h)anthracene	6.6	J B	8.2	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Fluoranthene	440		8.2	2.3	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Fluorene	140		8.2	0.82	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Indeno[1,2,3-cd]pyrene	40	B	8.2	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Naphthalene	180	F1 B	8.2	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Phenanthrene	450	F1 B	8.2	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
Pyrene	330	B	8.2	1.6	ug/Kg	☼	08/14/18 10:08	08/17/18 18:22	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	81		57 - 120				08/14/18 10:08	08/17/18 18:22	5

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND	F2 F1	3.5	0.59	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
PCB-1221	ND		3.5	1.6	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
PCB-1232	ND		3.5	0.81	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
PCB-1242	ND		3.5	0.85	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
PCB-1254	ND		3.5	1.4	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
<b>PCB-1260</b>	<b>13</b>	<b>F2 F1</b>	3.5	0.59	ug/Kg	☼	08/15/18 09:34	08/29/18 05:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	36	X	54 - 142				08/15/18 09:34	08/29/18 05:56	1
Tetrachloro-m-xylene	60		58 - 122				08/15/18 09:34	08/29/18 05:56	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	31000	B F1	2000	44	mg/Kg			08/17/18 14:00	1
Total Solids	55.1		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	58	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.7				%			08/15/18 08:31	1
Medium Sand	2.4				%			08/15/18 08:31	1
Fine Sand	35.1				%			08/15/18 08:31	1
Silt	51.9				%			08/15/18 08:31	1
Clay	10.0				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S248-4to6.2**

**Lab Sample ID: 580-79444-20**

Date Collected: 08/07/18 16:55

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 56.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	98		8.3	0.74	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Acenaphthene	160		8.3	0.99	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Acenaphthylene	84		8.3	0.83	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Anthracene	200		8.3	0.99	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Benzo[a]anthracene	280	B	8.3	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Benzo[a]pyrene	240	B	8.3	0.66	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Benzo[b]fluoranthene	250	B	8.3	0.98	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Benzo[g,h,i]perylene	250	B	8.3	0.83	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Benzo[k]fluoranthene	90	B	8.3	0.99	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Chrysene	270	B	8.3	2.5	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Dibenz(a,h)anthracene	37	B	8.3	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Fluoranthene	770		8.3	2.3	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Fluorene	160		8.3	0.83	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Indeno[1,2,3-cd]pyrene	210	B	8.3	0.99	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Naphthalene	220	B	8.3	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Phenanthrene	710	B	8.3	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
Pyrene	900	B	8.3	1.6	ug/Kg	☼	08/14/18 10:08	08/17/18 19:40	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	82		57 - 120				08/14/18 10:08	08/17/18 19:40	5

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.5	0.59	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
PCB-1221	ND		3.5	1.6	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
PCB-1232	ND		3.5	0.81	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
PCB-1242	ND		3.5	0.85	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
PCB-1254	ND		3.5	1.4	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
PCB-1260	1.9	J	3.5	0.59	ug/Kg	☼	08/15/18 09:34	08/29/18 06:49	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	64		54 - 142				08/15/18 09:34	08/29/18 06:49	1
Tetrachloro-m-xylene	69		58 - 122				08/15/18 09:34	08/29/18 06:49	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	41000	B	2000	44	mg/Kg			08/17/18 14:32	1
Total Solids	56.6		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	58	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.0				%			08/15/18 08:31	1
Medium Sand	0.8				%			08/15/18 08:31	1
Fine Sand	15.9				%			08/15/18 08:31	1
Silt	69.6				%			08/15/18 08:31	1
Clay	13.7				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S139-0to2**

**Lab Sample ID: 580-79444-21**

Date Collected: 08/07/18 14:20

Matrix: Solid

Date Received: 08/08/18 15:30

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	220		11	0.95	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Acenaphthene	440		11	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Acenaphthylene	180		11	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Anthracene	340		11	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Benzo[a]anthracene	440	B	11	1.6	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Benzo[a]pyrene	380	B	11	0.85	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Benzo[b]fluoranthene	460	B	11	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Benzo[g,h,i]perylene	420	B	11	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Benzo[k]fluoranthene	110	B	11	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Chrysene	420	B	11	3.2	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Dibenz(a,h)anthracene	55	B	11	1.5	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Fluoranthene	1500		11	3.0	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Fluorene	220		11	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Indeno[1,2,3-cd]pyrene	340	B	11	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Naphthalene	1100	B	11	1.7	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Phenanthrene	1300	B	11	1.5	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
Pyrene	1900	B	11	2.0	ug/Kg	☼	08/14/18 10:08	08/17/18 20:06	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	74		57 - 120				08/14/18 10:08	08/17/18 20:06	5

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.5	0.76	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
PCB-1221	ND		4.5	2.1	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
PCB-1232	ND		4.5	1.0	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
PCB-1242	ND		4.5	1.1	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
PCB-1248	ND		4.5	0.36	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
PCB-1254	ND		4.5	1.8	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
PCB-1260	ND		4.5	0.76	ug/Kg	☼	08/15/18 09:34	08/29/18 07:07	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	125		54 - 142				08/15/18 09:34	08/29/18 07:07	1
Tetrachloro-m-xylene	54	X	58 - 122				08/15/18 09:34	08/29/18 07:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	71000	B	2000	44	mg/Kg			08/17/18 14:39	1
Total Solids	43.1		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	44	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.9				%			08/15/18 08:31	1
Coarse Sand	0.7				%			08/15/18 08:31	1
Medium Sand	1.4				%			08/15/18 08:31	1
Fine Sand	26.9				%			08/15/18 08:31	1
Silt	58.4				%			08/15/18 08:31	1
Clay	11.7				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S139-2to4.1**

**Lab Sample ID: 580-79444-22**

Date Collected: 08/07/18 14:25

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 70.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	51		6.6	0.60	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Acenaphthene	88		6.6	0.80	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Acenaphthylene	58		6.6	0.66	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Anthracene	90		6.6	0.80	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Benzo[a]anthracene	150	B	6.6	1.0	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Benzo[a]pyrene	160	B	6.6	0.53	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Benzo[b]fluoranthene	160	B	6.6	0.78	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Benzo[g,h,i]perylene	170	B	6.6	0.66	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Benzo[k]fluoranthene	39	B	6.6	0.80	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Chrysene	160	B	6.6	2.0	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Dibenz(a,h)anthracene	19	B	6.6	0.96	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Fluoranthene	400		6.6	1.9	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Fluorene	47		6.6	0.66	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Indeno[1,2,3-cd]pyrene	130	B	6.6	0.80	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Naphthalene	210	B	6.6	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Phenanthrene	310	B	6.6	0.92	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
Pyrene	530	B	6.6	1.3	ug/Kg	☼	08/14/18 10:08	08/17/18 20:31	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	82		57 - 120				08/14/18 10:08	08/17/18 20:31	5

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.8	0.48	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
PCB-1232	ND		2.8	0.66	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
PCB-1242	ND		2.8	0.69	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
PCB-1248	ND		2.8	0.23	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
PCB-1254	ND		2.8	1.1	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
PCB-1260	ND		2.8	0.48	ug/Kg	☼	08/15/18 09:34	08/29/18 07:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	91		54 - 142				08/15/18 09:34	08/29/18 07:25	1
Tetrachloro-m-xylene	75		58 - 122				08/15/18 09:34	08/29/18 07:25	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	11000	B	2000	44	mg/Kg			08/17/18 14:46	1
Total Solids	70.1		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	72	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.0				%			08/15/18 08:31	1
Medium Sand	2.5				%			08/15/18 08:31	1
Fine Sand	72.9				%			08/15/18 08:31	1
Silt	20.2				%			08/15/18 08:31	1
Clay	4.3				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S139-4.1to5.9**

**Lab Sample ID: 580-79444-23**

Date Collected: 08/07/18 14:30

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 72.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	30		3.9	0.35	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Acenaphthene	54		3.9	0.46	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Acenaphthylene	60		3.9	0.39	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Anthracene	77		3.9	0.46	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Benzo[a]anthracene	140	B	3.9	0.59	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Benzo[a]pyrene	110	B	3.9	0.31	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Benzo[b]fluoranthene	130	B	3.9	0.45	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Benzo[g,h,i]perylene	95	B	3.9	0.39	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Benzo[k]fluoranthene	33	B	3.9	0.46	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Chrysene	120	B	3.9	1.2	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Dibenz(a,h)anthracene	13	B	3.9	0.55	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Fluoranthene	290		3.9	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Fluorene	39		3.9	0.39	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Indeno[1,2,3-cd]pyrene	83	B	3.9	0.46	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Naphthalene	170	B	3.9	0.62	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Phenanthrene	240	B	3.9	0.53	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
Pyrene	420	B	3.9	0.75	ug/Kg	☼	08/14/18 10:08	08/17/18 20:57	3
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	76		57 - 120				08/14/18 10:08	08/17/18 20:57	3

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.6	0.44	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
PCB-1221	ND		2.6	1.2	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
PCB-1232	ND		2.6	0.60	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
PCB-1242	ND		2.6	0.63	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
PCB-1248	ND		2.6	0.21	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
PCB-1254	ND		2.6	1.0	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
PCB-1260	ND		2.6	0.44	ug/Kg	☼	08/15/18 09:34	08/31/18 00:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	63		54 - 142				08/15/18 09:34	08/31/18 00:30	1
Tetrachloro-m-xylene	21	X	58 - 122				08/15/18 09:34	08/31/18 00:30	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	3700	B	2000	44	mg/Kg			08/17/18 14:51	1
Total Solids	72.1		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	60		0.10	0.10	%			08/23/18 08:17	1



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S139-4.1to5.9D**

**Lab Sample ID: 580-79444-24**

Date Collected: 08/07/18 14:30

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 77.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	23		3.7	0.33	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Acenaphthene	91		3.7	0.44	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Acenaphthylene	72		3.7	0.37	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Anthracene	230		3.7	0.44	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Benzo[a]anthracene	410	B	3.7	0.56	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Benzo[a]pyrene	390	B	3.7	0.30	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Benzo[b]fluoranthene	360	B	3.7	0.44	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Benzo[g,h,i]perylene	280	B	3.7	0.37	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Benzo[k]fluoranthene	120	B	3.7	0.44	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Chrysene	350	B	3.7	1.1	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Dibenz(a,h)anthracene	49	B	3.7	0.53	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Fluoranthene	900		3.7	1.0	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Fluorene	57		3.7	0.37	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Indeno[1,2,3-cd]pyrene	290	B	3.7	0.44	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Naphthalene	83	B	3.7	0.59	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Phenanthrene	680	B	3.7	0.51	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
Pyrene	1200	B	3.7	0.72	ug/Kg	☼	08/14/18 10:08	08/17/18 21:23	3
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	79		57 - 120				08/14/18 10:08	08/17/18 21:23	3

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.4	0.41	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
PCB-1221	ND		2.4	1.2	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
PCB-1232	ND		2.4	0.57	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
PCB-1242	ND		2.4	0.59	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
PCB-1248	ND		2.4	0.19	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
PCB-1254	ND		2.4	0.96	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
PCB-1260	ND		2.4	0.41	ug/Kg	☼	08/15/18 09:34	08/29/18 08:00	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	62		54 - 142				08/15/18 09:34	08/29/18 08:00	1
Tetrachloro-m-xylene	57	X	58 - 122				08/15/18 09:34	08/29/18 08:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	3200	B	2000	44	mg/Kg			08/17/18 14:57	1
Total Solids	77.0		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	77	H	0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/16/18 08:22	1
Coarse Sand	0.0				%			08/16/18 08:22	1
Medium Sand	6.6				%			08/16/18 08:22	1
Fine Sand	83.1				%			08/16/18 08:22	1
Silt	6.3				%			08/16/18 08:22	1
Clay	4.0				%			08/16/18 08:22	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-0to2**

**Lab Sample ID: 580-79444-25**

Date Collected: 08/07/18 16:00

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 61.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	910		72	6.5	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Acenaphthene	19000		72	8.6	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Acenaphthylene	1800		72	7.2	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Anthracene	13000		72	8.6	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Benzo[a]anthracene	15000	B	72	11	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Benzo[a]pyrene	15000	B	72	5.8	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Benzo[b]fluoranthene	15000	B	72	8.5	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Benzo[g,h,i]perylene	13000	B	72	7.2	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Benzo[k]fluoranthene	4500	B	72	8.6	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Chrysene	15000	B	72	22	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Dibenz(a,h)anthracene	1900	B	72	10	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Fluoranthene	45000		72	20	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Fluorene	9900		72	7.2	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Indeno[1,2,3-cd]pyrene	13000	B	72	8.6	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Naphthalene	2700	B	72	12	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Phenanthrene	57000	B	72	9.9	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
Pyrene	56000	B	72	14	ug/Kg	☼	08/14/18 10:08	08/17/18 21:50	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	82		57 - 120				08/14/18 10:08	08/17/18 21:50	50

### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	44		3.2	0.55	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
PCB-1232	ND		3.2	0.76	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
PCB-1242	ND		3.2	0.79	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
PCB-1248	ND		3.2	0.26	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
PCB-1254	59		3.2	1.3	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
PCB-1260	ND		3.2	0.55	ug/Kg	☼	08/15/18 09:34	08/29/18 08:18	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	98		54 - 142				08/15/18 09:34	08/29/18 08:18	1
Tetrachloro-m-xylene	523	X	58 - 122				08/15/18 09:34	08/29/18 08:18	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	31000	B	2000	44	mg/Kg			08/17/18 15:02	1
Total Solids	61.0		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	63	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.6				%			08/15/18 08:31	1
Medium Sand	2.6				%			08/15/18 08:31	1
Fine Sand	26.5				%			08/15/18 08:31	1
Silt	61.0				%			08/15/18 08:31	1
Clay	9.3				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-2to4**

**Lab Sample ID: 580-79444-26**

Date Collected: 08/07/18 16:05

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 58.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	78000		79	9.4	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Acenaphthylene	6600		79	7.9	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Benzo[a]anthracene	72000	B	79	12	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Benzo[a]pyrene	43000	B	79	6.3	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Benzo[b]fluoranthene	44000	B	79	9.3	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Benzo[g,h,i]perylene	31000	B	79	7.9	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Benzo[k]fluoranthene	12000	B	79	9.4	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Chrysene	72000	B	79	24	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Dibenz(a,h)anthracene	6500	B	79	11	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Fluorene	54000		79	7.9	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Indeno[1,2,3-cd]pyrene	30000	B	79	9.4	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50
Naphthalene	11000	B	79	13	ug/Kg	☼	08/14/18 10:08	08/17/18 22:16	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	97		57 - 120	08/14/18 10:08	08/17/18 22:16	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	95000		1600	140	ug/Kg	☼	08/14/18 10:08	08/27/18 01:43	1000
Anthracene	89000		1600	190	ug/Kg	☼	08/14/18 10:08	08/27/18 01:43	1000
Fluoranthene	160000		1600	440	ug/Kg	☼	08/14/18 10:08	08/27/18 01:43	1000
Phenanthrene	400000	B	1600	220	ug/Kg	☼	08/14/18 10:08	08/27/18 01:43	1000
Pyrene	220000	B	1600	310	ug/Kg	☼	08/14/18 10:08	08/27/18 01:43	1000

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.3	0.56	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1
PCB-1232	ND		3.3	0.78	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1
PCB-1242	ND		3.3	0.81	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1
PCB-1248	ND		3.3	0.27	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1
PCB-1260	35		3.3	0.56	ug/Kg	☼	08/15/18 09:34	08/29/18 08:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	35	X	54 - 142	08/15/18 09:34	08/29/18 08:36	1
Tetrachloro-m-xylene	576	X	58 - 122	08/15/18 09:34	08/29/18 08:36	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	68000	B	2000	44	mg/Kg			08/17/18 15:45	1
Total Solids	58.7		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	59	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.3				%			08/15/18 08:31	1
Medium Sand	3.8				%			08/15/18 08:31	1
Fine Sand	19.7				%			08/15/18 08:31	1
Silt	64.1				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-2to4**

**Lab Sample ID: 580-79444-26**

**Date Collected: 08/07/18 16:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 58.7**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	12.1				%			08/15/18 08:31	1

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

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-4to6**

**Lab Sample ID: 580-79444-27**

Date Collected: 08/07/18 16:10

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 58.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	7300		83	8.3	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Benzo[a]anthracene	70000	B	83	13	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Benzo[a]pyrene	57000	B	83	6.6	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Benzo[b]fluoranthene	59000	B	83	9.7	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Benzo[g,h,i]perylene	44000	B	83	8.3	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Benzo[k]fluoranthene	15000	B	83	9.9	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Chrysene	69000	B	83	25	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Dibenz(a,h)anthracene	9000	B	83	12	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Fluorene	76000		83	8.3	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50
Indeno[1,2,3-cd]pyrene	42000	B	83	9.9	ug/Kg	☼	08/14/18 10:08	08/17/18 22:42	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	116		57 - 120	08/14/18 10:08	08/17/18 22:42	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	170000		1700	150	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000
Acenaphthene	170000		1700	200	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000
Anthracene	110000		1700	200	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000
Fluoranthene	200000		1700	460	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000
Naphthalene	630000	B	1700	260	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000
Phenanthrene	440000	B	1700	230	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000
Pyrene	260000	B	1700	320	ug/Kg	☼	08/14/18 10:08	08/27/18 02:09	1000

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.3	0.55	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1
PCB-1221	ND		3.3	1.5	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1
PCB-1232	ND		3.3	0.76	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1
PCB-1242	ND		3.3	0.80	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1
PCB-1248	ND		3.3	0.26	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1
PCB-1260	38		3.3	0.55	ug/Kg	☼	08/15/18 09:34	08/29/18 12:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	244	X	54 - 142	08/15/18 09:34	08/29/18 12:08	1
Tetrachloro-m-xylene	82		58 - 122	08/15/18 09:34	08/29/18 12:08	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	100000	B	2000	44	mg/Kg			08/17/18 15:52	1
Total Solids	58.7		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	59	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.5				%			08/15/18 08:31	1
Coarse Sand	0.2				%			08/15/18 08:31	1
Medium Sand	0.7				%			08/15/18 08:31	1
Fine Sand	18.9				%			08/15/18 08:31	1
Silt	66.7				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-4to6**

**Lab Sample ID: 580-79444-27**

**Date Collected: 08/07/18 16:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 58.7**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	13.1				%			08/15/18 08:31	1

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



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S219-0to2**

**Lab Sample ID: 580-79444-28**

Date Collected: 08/07/18 11:40

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 60.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	190		80	7.2	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Acenaphthene	350		80	9.6	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Acenaphthylene	90		80	8.0	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Anthracene	410		80	9.6	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Benzo[a]anthracene	360	B	80	12	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Benzo[a]pyrene	260	B	80	6.4	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Benzo[b]fluoranthene	380	B	80	9.5	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Benzo[g,h,i]perylene	230	B	80	8.0	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Benzo[k]fluoranthene	110	B	80	9.6	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Chrysene	430	B	80	24	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Dibenz(a,h)anthracene	41	J B	80	12	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Fluoranthene	910		80	23	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Fluorene	150		80	8.0	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Indeno[1,2,3-cd]pyrene	230	B	80	9.6	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Naphthalene	610	B	80	13	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Phenanthrene	1700	B	80	11	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
Pyrene	1300	B	80	16	ug/Kg	☼	08/14/18 10:08	08/17/18 23:08	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	84		57 - 120				08/14/18 10:08	08/17/18 23:08	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.2	0.54	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
PCB-1232	ND		3.2	0.74	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
PCB-1242	ND		3.2	0.77	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
PCB-1248	ND		3.2	0.25	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
PCB-1254	ND		3.2	1.2	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
<b>PCB-1260</b>	<b>35</b>		3.2	0.54	ug/Kg	☼	08/15/18 09:34	08/29/18 12:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	61		54 - 142				08/15/18 09:34	08/29/18 12:25	1
Tetrachloro-m-xylene	52	X	58 - 122				08/15/18 09:34	08/29/18 12:25	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	20000	B	2000	44	mg/Kg			08/17/18 15:59	1
Total Solids	60.9		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	68	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	8.9				%			08/15/18 08:31	1
Coarse Sand	2.7				%			08/15/18 08:31	1
Medium Sand	21.7				%			08/15/18 08:31	1
Fine Sand	31.2				%			08/15/18 08:31	1
Silt	28.3				%			08/15/18 08:31	1
Clay	7.2				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S219-2to4**

**Lab Sample ID: 580-79444-29**

Date Collected: 08/07/18 11:45

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 74.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3.1		1.2	0.10	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Acenaphthene	1.0	J	1.2	0.14	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Acenaphthylene	1.0	J	1.2	0.12	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Anthracene	0.26	J	1.2	0.14	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Benzo[a]anthracene	0.55	J B	1.2	0.18	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Benzo[a]pyrene	ND		1.2	0.092	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Benzo[b]fluoranthene	0.44	J B	1.2	0.14	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Benzo[g,h,i]perylene	0.37	J B	1.2	0.12	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Benzo[k]fluoranthene	0.22	J B	1.2	0.14	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Chrysene	0.47	J B	1.2	0.35	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Dibenz(a,h)anthracene	ND		1.2	0.17	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Fluoranthene	0.83	J	1.2	0.32	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Fluorene	0.36	J	1.2	0.12	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Indeno[1,2,3-cd]pyrene	0.44	J B	1.2	0.14	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Naphthalene	2.2	B	1.2	0.18	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Phenanthrene	1.3	B	1.2	0.16	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
Pyrene	1.9	B	1.2	0.22	ug/Kg	☼	08/14/18 10:08	08/17/18 23:34	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	91		57 - 120				08/14/18 10:08	08/17/18 23:34	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.7	0.45	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
PCB-1232	ND		2.7	0.63	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
PCB-1242	ND		2.7	0.65	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
PCB-1248	ND		2.7	0.21	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
PCB-1260	ND		2.7	0.45	ug/Kg	☼	08/15/18 09:34	08/29/18 12:43	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	43	X	54 - 142				08/15/18 09:34	08/29/18 12:43	1
Tetrachloro-m-xylene	39	X	58 - 122				08/15/18 09:34	08/29/18 12:43	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1700	J B	2000	44	mg/Kg			08/17/18 16:05	1
Total Solids	74.3		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	75	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.3				%			08/15/18 08:31	1
Coarse Sand	0.1				%			08/15/18 08:31	1
Medium Sand	1.0				%			08/15/18 08:31	1
Fine Sand	93.6				%			08/15/18 08:31	1
Silt	5.0				%			08/15/18 08:31	1
Clay	0.0				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S219-4to5.2**

**Lab Sample ID: 580-79444-30**

Date Collected: 08/07/18 11:50

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 71.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.7	J	3.8	0.34	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Acenaphthene	7.6		3.8	0.45	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Acenaphthylene	2.7	J	3.8	0.38	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Anthracene	0.64	J	3.8	0.45	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Benzo[a]anthracene	2.1	J B	3.8	0.57	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Benzo[a]pyrene	ND		3.8	0.30	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Benzo[b]fluoranthene	2.8	J B	3.8	0.44	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Benzo[g,h,i]perylene	1.3	J B	3.8	0.38	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Benzo[k]fluoranthene	0.77	J B	3.8	0.45	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Chrysene	2.0	J B	3.8	1.1	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Dibenz(a,h)anthracene	ND		3.8	0.54	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Fluoranthene	2.4	J	3.8	1.1	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Fluorene	0.93	J	3.8	0.38	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Indeno[1,2,3-cd]pyrene	1.6	J B	3.8	0.45	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Naphthalene	3.1	J B	3.8	0.60	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Phenanthrene	3.8	B	3.8	0.52	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
Pyrene	3.2	J B	3.8	0.73	ug/Kg	☼	08/14/18 10:08	08/18/18 00:00	3
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	84		57 - 120				08/14/18 10:08	08/18/18 00:00	3

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.7	0.46	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
PCB-1242	ND		2.7	0.67	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
<b>PCB-1254</b>	<b>1.6</b>	<b>J</b>	2.7	1.1	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
PCB-1260	ND		2.7	0.46	ug/Kg	☼	08/15/18 09:34	08/29/18 13:01	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	44	X	54 - 142				08/15/18 09:34	08/29/18 13:01	1
Tetrachloro-m-xylene	48	X	58 - 122				08/15/18 09:34	08/29/18 13:01	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	7300	B	2000	44	mg/Kg			08/17/18 16:10	1
Total Solids	71.9		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	73	H	0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.0				%			08/15/18 08:31	1
Medium Sand	2.0				%			08/15/18 08:31	1
Fine Sand	43.9				%			08/15/18 08:31	1
Silt	47.0				%			08/15/18 08:31	1
Clay	7.1				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-0to2**

**Lab Sample ID: 580-79444-31**

Date Collected: 08/08/18 08:55

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 63.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	550		72	6.5	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Acenaphthene	5000		72	8.6	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Acenaphthylene	1100		72	7.2	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Anthracene	7400		72	8.6	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Benzo[a]anthracene	8500	B	72	11	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Benzo[a]pyrene	11000	B	72	5.7	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Benzo[b]fluoranthene	11000	B	72	8.5	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Benzo[g,h,i]perylene	11000	B	72	7.2	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Benzo[k]fluoranthene	2800	B	72	8.6	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Chrysene	9100	B	72	22	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Dibenz(a,h)anthracene	1200	B	72	10	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Fluoranthene	32000		72	20	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Fluorene	4500		72	7.2	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Indeno[1,2,3-cd]pyrene	10000	B	72	8.6	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Naphthalene	3100	B	72	11	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Phenanthrene	2900	B	72	9.9	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
Pyrene	41000	B	72	14	ug/Kg	☼	08/14/18 10:08	08/18/18 00:26	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	85		57 - 120				08/14/18 10:08	08/18/18 00:26	50

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.1	0.53	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
PCB-1221	ND		3.1	1.5	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
PCB-1232	ND		3.1	0.74	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
PCB-1242	ND		3.1	0.77	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
PCB-1248	ND		3.1	0.25	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
PCB-1254	ND		3.1	1.2	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
PCB-1260	2.8	J	3.1	0.53	ug/Kg	☼	08/15/18 09:46	08/29/18 17:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	62		54 - 142				08/15/18 09:46	08/29/18 17:05	1
Tetrachloro-m-xylene	174	X	58 - 122				08/15/18 09:46	08/29/18 17:05	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	27000	B	2000	44	mg/Kg			08/17/18 16:15	1
Total Solids	63.6		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	64		0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.1				%			08/15/18 08:31	1
Medium Sand	0.3				%			08/15/18 08:31	1
Fine Sand	42.6				%			08/15/18 08:31	1
Silt	49.1				%			08/15/18 08:31	1
Clay	7.8				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-2to4**

**Lab Sample ID: 580-79444-32**

Date Collected: 08/08/18 09:00

Matrix: Solid

Date Received: 08/08/18 15:30

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	36	F2	6.3	0.56	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Acenaphthene	220		6.3	0.75	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Acenaphthylene	150	F1	6.3	0.63	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Anthracene	320	F1	6.3	0.75	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Benzo[a]anthracene	780	F1 F2 B	6.3	0.95	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Benzo[a]pyrene	720	F1 F2 B	6.3	0.50	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Benzo[b]fluoranthene	890	F1 F2 B	6.3	0.74	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Benzo[g,h,i]perylene	770	F1 F2 B	6.3	0.63	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Benzo[k]fluoranthene	240	F1 F2 B	6.3	0.75	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Chrysene	970	F1 F2 B	6.3	1.9	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Dibenz(a,h)anthracene	120	F1 F2 B	6.3	0.90	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Fluoranthene	2000		6.3	1.8	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Fluorene	310		6.3	0.63	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Indeno[1,2,3-cd]pyrene	770	F1 F2 B	6.3	0.75	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Naphthalene	170	F1 F2 B	6.3	1.0	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Phenanthrene	260	F1 B	6.3	0.86	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
Pyrene	2800	B	6.3	1.2	ug/Kg	☼	08/14/18 10:08	08/18/18 00:52	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	82		57 - 120				08/14/18 10:08	08/18/18 00:52	5

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND	F1	2.7	0.46	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
PCB-1242	ND		2.7	0.67	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
PCB-1260	ND	F1	2.7	0.46	ug/Kg	☼	08/15/18 09:46	08/29/18 17:22	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	54		54 - 142				08/15/18 09:46	08/29/18 17:22	1
Tetrachloro-m-xylene	60		58 - 122				08/15/18 09:46	08/29/18 17:22	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	15000	F1 F2	2000	44	mg/Kg			08/20/18 15:50	1
Total Solids	69.4		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	70		0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.1				%			08/15/18 08:31	1
Medium Sand	0.2				%			08/15/18 08:31	1
Fine Sand	46.4				%			08/15/18 08:31	1
Silt	47.0				%			08/15/18 08:31	1
Clay	6.4				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-4to5.6**

**Lab Sample ID: 580-79444-33**

Date Collected: 08/08/18 09:05

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 70.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	4300		13	1.2	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Acenaphthene	4300		13	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Acenaphthylene	200		13	1.3	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Anthracene	4600		13	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Benzo[a]anthracene	3900		13	2.0	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Benzo[a]pyrene	6700		13	1.1	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Benzo[b]fluoranthene	6400 *		13	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Benzo[k]fluoranthene	2100		13	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Chrysene	4400		13	4.0	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Dibenz(a,h)anthracene	850		13	1.9	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Fluorene	3000		13	1.3	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10
Indeno[1,2,3-cd]pyrene	5300		13	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 15:31	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		57 - 120	08/17/18 16:04	08/24/18 15:31	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	6100		130	13	ug/Kg	☼	08/17/18 16:04	08/27/18 20:40	100
Fluoranthene	18000		130	37	ug/Kg	☼	08/17/18 16:04	08/27/18 20:40	100
Naphthalene	24000 B		130	21	ug/Kg	☼	08/17/18 16:04	08/27/18 20:40	100
Phenanthrene	22000 B		130	18	ug/Kg	☼	08/17/18 16:04	08/27/18 20:40	100
Pyrene	23000		130	26	ug/Kg	☼	08/17/18 16:04	08/27/18 20:40	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		57 - 120	08/17/18 16:04	08/27/18 20:40	100

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.8	0.47	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1
PCB-1232	ND		2.8	0.66	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1
PCB-1242	ND		2.8	0.68	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1
PCB-1248	ND		2.8	0.22	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1
PCB-1254	ND		2.8	1.1	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1
PCB-1260	ND		2.8	0.47	ug/Kg	☼	08/15/18 09:46	08/29/18 18:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	64		54 - 142	08/15/18 09:46	08/29/18 18:12	1
Tetrachloro-m-xylene	61		58 - 122	08/15/18 09:46	08/29/18 18:12	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	15000		2000	44	mg/Kg			08/20/18 16:22	1
Total Solids	70.7		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	71		0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.1				%			08/15/18 08:31	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-4to5.6**

**Lab Sample ID: 580-79444-33**

**Date Collected: 08/08/18 09:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 70.7**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Medium Sand	0.1				%			08/15/18 08:31	1
Fine Sand	49.4				%			08/15/18 08:31	1
Silt	45.1				%			08/15/18 08:31	1
Clay	5.3				%			08/15/18 08:31	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-5.6to6.6**

**Lab Sample ID: 580-79444-34**

Date Collected: 08/08/18 09:10

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 61.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	3600		32	3.2	ug/Kg	☼	08/17/18 16:04	08/24/18 15:56	20
Benzo[k]fluoranthene	16000		32	3.8	ug/Kg	☼	08/17/18 16:04	08/24/18 15:56	20
Dibenz(a,h)anthracene	7600		32	4.6	ug/Kg	☼	08/17/18 16:04	08/24/18 15:56	20
Fluorene	31000		32	3.2	ug/Kg	☼	08/17/18 16:04	08/24/18 15:56	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	91		57 - 120				08/17/18 16:04	08/24/18 15:56	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	47000		800	72	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Acenaphthene	57000		800	95	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Anthracene	60000		800	95	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Benzo[a]anthracene	50000		800	120	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Benzo[a]pyrene	62000		800	64	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Benzo[b]fluoranthene	61000 *		800	94	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Benzo[g,h,i]perylene	58000		800	80	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Chrysene	56000		800	240	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Fluoranthene	210000		800	220	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Indeno[1,2,3-cd]pyrene	55000		800	95	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Naphthalene	540000 B		800	130	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Phenanthrene	290000 B		800	110	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
Pyrene	260000		800	150	ug/Kg	☼	08/17/18 16:04	08/27/18 21:05	500
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	98		57 - 120				08/17/18 16:04	08/27/18 21:05	500

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.2	0.55	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
PCB-1232	ND		3.2	0.76	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
PCB-1242	ND		3.2	0.79	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
PCB-1248	ND		3.2	0.26	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
PCB-1254	ND		3.2	1.3	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
PCB-1260	ND		3.2	0.55	ug/Kg	☼	08/15/18 09:46	08/29/18 18:29	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	70		54 - 142				08/15/18 09:46	08/29/18 18:29	1
Tetrachloro-m-xylene	78		58 - 122				08/15/18 09:46	08/29/18 18:29	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	120000		2000	44	mg/Kg			08/20/18 16:28	1
Total Solids	61.0		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	62		0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	1.4				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-5.6to6.6**

**Lab Sample ID: 580-79444-34**

**Date Collected: 08/08/18 09:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 61.0**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Medium Sand	2.0				%			08/15/18 08:31	1
Fine Sand	43.1				%			08/15/18 08:31	1
Silt	44.9				%			08/15/18 08:31	1
Clay	8.5				%			08/15/18 08:31	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-0to2**

**Lab Sample ID: 580-79444-35**

Date Collected: 08/08/18 10:15

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 40.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	64		23	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Acenaphthene	420		23	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Acenaphthylene	73		23	2.3	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Anthracene	430		23	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Benzo[a]anthracene	1000		23	3.5	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Benzo[a]pyrene	970		23	1.8	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Benzo[b]fluoranthene	1500 *		23	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Benzo[g,h,i]perylene	750		23	2.3	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Benzo[k]fluoranthene	480		23	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Chrysene	1100		23	6.9	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Dibenz(a,h)anthracene	240		23	3.3	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Fluoranthene	3000		23	6.4	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Fluorene	380		23	2.3	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Indeno[1,2,3-cd]pyrene	960		23	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Naphthalene	200 B		23	3.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Phenanthrene	2400 B		23	3.2	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10
Pyrene	2700		23	4.4	ug/Kg	☼	08/17/18 16:04	08/24/18 16:20	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	94		57 - 120	08/17/18 16:04	08/24/18 16:20	10

### Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.8	0.82	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1
PCB-1221	ND		4.8	2.3	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1
PCB-1232	ND		4.8	1.1	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1
PCB-1242	ND		4.8	1.2	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1
PCB-1248	ND		4.8	0.39	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1
PCB-1254	290		4.8	1.9	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1
PCB-1260	ND		4.8	0.82	ug/Kg	☼	08/15/18 09:46	08/29/18 18:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	37	X	54 - 142	08/15/18 09:46	08/29/18 18:46	1
Tetrachloro-m-xylene	31	X	58 - 122	08/15/18 09:46	08/29/18 18:46	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	41000		2000	44	mg/Kg			08/20/18 16:36	1
Total Solids	40.7		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	42		0.10	0.10	%			08/15/18 08:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/15/18 08:31	1
Coarse Sand	0.1				%			08/15/18 08:31	1
Medium Sand	3.2				%			08/15/18 08:31	1
Fine Sand	12.3				%			08/15/18 08:31	1
Silt	62.6				%			08/15/18 08:31	1
Clay	21.8				%			08/15/18 08:31	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-2to4**

**Lab Sample ID: 580-79444-36**

Date Collected: 08/08/18 10:20

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 55.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	47		18	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Acenaphthene	310		18	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Acenaphthylene	81		18	1.8	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Anthracene	240		18	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Benzo[a]anthracene	1300		18	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Benzo[a]pyrene	1100		18	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Benzo[b]fluoranthene	1800 *		18	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Benzo[g,h,i]perylene	880		18	1.8	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Benzo[k]fluoranthene	640		18	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Chrysene	1400		18	5.4	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Dibenz(a,h)anthracene	280		18	2.6	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Fluoranthene	3200		18	5.0	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Fluorene	270		18	1.8	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Indeno[1,2,3-cd]pyrene	1100		18	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Naphthalene	75 B		18	2.9	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Phenanthrene	2200 B		18	2.5	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
Pyrene	2900		18	3.5	ug/Kg	☼	08/17/18 16:04	08/24/18 16:45	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	108		57 - 120				08/17/18 16:04	08/24/18 16:45	10

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		170	30	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
PCB-1221	ND		170	83	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
PCB-1232	ND		170	41	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
PCB-1242	ND		170	43	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
PCB-1248	ND		170	14	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
<b>PCB-1254</b>	<b>1300</b>		170	69	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
PCB-1260	ND		170	30	ug/Kg	☼	08/15/18 09:46	08/30/18 20:51	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	51	X	54 - 142				08/15/18 09:46	08/30/18 20:51	50
Tetrachloro-m-xylene	39	X	58 - 122				08/15/18 09:46	08/30/18 20:51	50

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	27000		2000	44	mg/Kg			08/20/18 16:43	1
Total Solids	55.4		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	56 H		0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.2				%			08/16/18 08:22	1
Coarse Sand	0.1				%			08/16/18 08:22	1
Medium Sand	5.3				%			08/16/18 08:22	1
Fine Sand	28.0				%			08/16/18 08:22	1
Silt	47.4				%			08/16/18 08:22	1
Clay	18.9				%			08/16/18 08:22	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-4to6**

**Lab Sample ID: 580-79444-37**

Date Collected: 08/08/18 10:25

Matrix: Solid

Date Received: 08/08/18 15:30

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	60		33	3.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Acenaphthene	240		33	4.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Acenaphthylene	69		33	3.3	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Anthracene	200		33	4.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Benzo[a]anthracene	1200		33	5.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Benzo[a]pyrene	1200		33	2.6	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Benzo[b]fluoranthene	1800 *		33	3.9	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Benzo[g,h,i]perylene	1000		33	3.3	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Benzo[k]fluoranthene	720		33	4.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Chrysene	1400		33	9.9	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Dibenz(a,h)anthracene	320		33	4.8	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Fluoranthene	3100		33	9.3	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Fluorene	280		33	3.3	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Indeno[1,2,3-cd]pyrene	1300		33	4.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Naphthalene	180 B		33	5.3	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Phenanthrene	1900 B		33	4.6	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
Pyrene	3000		33	6.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:09	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	94		57 - 120				08/17/18 16:04	08/24/18 17:09	20

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.6	0.61	ug/Kg	☼	08/15/18 09:46	08/29/18 19:19	1
PCB-1221	ND		3.6	1.7	ug/Kg	☼	08/15/18 09:46	08/29/18 19:19	1
PCB-1232	ND		3.6	0.84	ug/Kg	☼	08/15/18 09:46	08/29/18 19:19	1
PCB-1242	ND		3.6	0.88	ug/Kg	☼	08/15/18 09:46	08/29/18 19:19	1
PCB-1248	ND		3.6	0.29	ug/Kg	☼	08/15/18 09:46	08/29/18 19:19	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	79		54 - 142				08/15/18 09:46	08/29/18 19:19	1
Tetrachloro-m-xylene	50 X		58 - 122				08/15/18 09:46	08/29/18 19:19	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	720		180	71	ug/Kg	☼	08/15/18 09:46	08/30/18 21:08	50
PCB-1260	ND		180	31	ug/Kg	☼	08/15/18 09:46	08/30/18 21:08	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	50 X		54 - 142				08/15/18 09:46	08/30/18 21:08	50
Tetrachloro-m-xylene	42 X		58 - 122				08/15/18 09:46	08/30/18 21:08	50

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	35000		2000	44	mg/Kg			08/20/18 16:48	1
Total Solids	55.6		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	56 H		0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			08/16/18 08:22	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-4to6**

**Lab Sample ID: 580-79444-37**

**Date Collected: 08/08/18 10:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 55.6**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Coarse Sand	0.2				%			08/16/18 08:22	1
Medium Sand	1.3				%			08/16/18 08:22	1
Fine Sand	10.6				%			08/16/18 08:22	1
Silt	60.8				%			08/16/18 08:22	1
Clay	27.2				%			08/16/18 08:22	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-6to8.1**

**Lab Sample ID: 580-79444-38**

Date Collected: 08/08/18 10:30

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 67.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	26		14	1.2	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Acenaphthene	52		14	1.7	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Acenaphthylene	46		14	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Anthracene	72		14	1.7	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Benzo[a]anthracene	340		14	2.1	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Benzo[a]pyrene	310		14	1.1	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Benzo[b]fluoranthene	470 *		14	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Benzo[g,h,i]perylene	290		14	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Benzo[k]fluoranthene	160		14	1.7	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Chrysene	390		14	4.2	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Dibenz(a,h)anthracene	76		14	2.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Fluoranthene	500		14	3.9	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Fluorene	33		14	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Indeno[1,2,3-cd]pyrene	340		14	1.7	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Naphthalene	100 B		14	2.2	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Phenanthrene	430 B		14	1.9	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10
Pyrene	890		14	2.7	ug/Kg	☼	08/17/18 16:04	08/24/18 17:34	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	105		57 - 120	08/17/18 16:04	08/24/18 17:34	10

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.8	0.47	ug/Kg	☼	08/15/18 09:46	08/29/18 21:34	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	08/15/18 09:46	08/29/18 21:34	1
PCB-1232	ND		2.8	0.65	ug/Kg	☼	08/15/18 09:46	08/29/18 21:34	1
PCB-1242	ND		2.8	0.68	ug/Kg	☼	08/15/18 09:46	08/29/18 21:34	1
PCB-1248	ND		2.8	0.22	ug/Kg	☼	08/15/18 09:46	08/29/18 21:34	1
PCB-1260	ND		2.8	0.47	ug/Kg	☼	08/15/18 09:46	08/29/18 21:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	78		54 - 142	08/15/18 09:46	08/29/18 21:34	1
Tetrachloro-m-xylene	50	X	58 - 122	08/15/18 09:46	08/29/18 21:34	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	280		28	11	ug/Kg	☼	08/15/18 09:46	08/30/18 21:25	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	84		54 - 142	08/15/18 09:46	08/30/18 21:25	10
Tetrachloro-m-xylene	51	X	58 - 122	08/15/18 09:46	08/30/18 21:25	10

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	12000		2000	44	mg/Kg			08/20/18 16:55	1
Total Solids	67.4		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	71	H	0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.1				%			08/16/18 08:22	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-6to8.1**

**Lab Sample ID: 580-79444-38**

**Date Collected: 08/08/18 10:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 67.4**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Coarse Sand	0.2				%			08/16/18 08:22	1
Medium Sand	1.9				%			08/16/18 08:22	1
Fine Sand	73.4				%			08/16/18 08:22	1
Silt	20.0				%			08/16/18 08:22	1
Clay	4.5				%			08/16/18 08:22	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-0to1.5**

**Lab Sample ID: 580-79444-39**

Date Collected: 08/08/18 11:20

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 27.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	580		70	6.3	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Acenaphthene	2200		70	8.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Acenaphthylene	470		70	7.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Anthracene	3200		70	8.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Benzo[a]anthracene	7400		70	11	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Benzo[a]pyrene	8400		70	5.6	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Benzo[b]fluoranthene	12000 *		70	8.2	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Benzo[g,h,i]perylene	6000		70	7.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Benzo[k]fluoranthene	4700		70	8.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Chrysene	8600		70	21	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Dibenz(a,h)anthracene	1800		70	10	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Fluoranthene	22000		70	20	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Fluorene	2400		70	7.0	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Indeno[1,2,3-cd]pyrene	7800		70	8.4	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Naphthalene	540 B		70	11	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Phenanthrene	16000 B		70	9.6	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
Pyrene	20000		70	14	ug/Kg	☼	08/17/18 16:04	08/24/18 17:58	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	109		57 - 120				08/17/18 16:04	08/24/18 17:58	20

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		7.2	1.2	ug/Kg	☼	08/15/18 09:46	08/29/18 21:51	1
PCB-1221	ND		7.2	3.4	ug/Kg	☼	08/15/18 09:46	08/29/18 21:51	1
PCB-1232	ND		7.2	1.7	ug/Kg	☼	08/15/18 09:46	08/29/18 21:51	1
PCB-1242	ND		7.2	1.8	ug/Kg	☼	08/15/18 09:46	08/29/18 21:51	1
PCB-1248	ND		7.2	0.57	ug/Kg	☼	08/15/18 09:46	08/29/18 21:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	53	X	54 - 142				08/15/18 09:46	08/29/18 21:51	1
Tetrachloro-m-xylene	122		58 - 122				08/15/18 09:46	08/29/18 21:51	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	1800		360	140	ug/Kg	☼	08/15/18 09:46	08/30/18 21:41	50
PCB-1260	ND		360	61	ug/Kg	☼	08/15/18 09:46	08/30/18 21:41	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	0	X	54 - 142				08/15/18 09:46	08/30/18 21:41	50
Tetrachloro-m-xylene	0	X	58 - 122				08/15/18 09:46	08/30/18 21:41	50

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	100000		2000	44	mg/Kg			08/20/18 17:01	1
Total Solids	27.6		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	26	H	0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.1				%			08/16/18 08:22	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-0to1.5**

**Lab Sample ID: 580-79444-39**

**Date Collected: 08/08/18 11:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 27.6**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Coarse Sand	0.4				%			08/16/18 08:22	1
Medium Sand	0.7				%			08/16/18 08:22	1
Fine Sand	19.7				%			08/16/18 08:22	1
Silt	70.9				%			08/16/18 08:22	1
Clay	8.2				%			08/16/18 08:22	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-1.5to3**

**Lab Sample ID: 580-79444-40**

Date Collected: 08/08/18 11:25

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 37.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	580		50	4.5	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Acenaphthene	1500		50	6.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Acenaphthylene	330		50	5.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Anthracene	2400		50	6.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Benzo[a]anthracene	6300		50	7.5	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Benzo[a]pyrene	5900		50	4.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Benzo[b]fluoranthene	8500 *		50	5.9	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Benzo[g,h,i]perylene	4200		50	5.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Benzo[k]fluoranthene	3200		50	6.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Chrysene	7200		50	15	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Dibenz(a,h)anthracene	1300		50	7.1	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Fluoranthene	16000		50	14	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Fluorene	1800		50	5.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Indeno[1,2,3-cd]pyrene	5500		50	6.0	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Naphthalene	450 B		50	7.9	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Phenanthrene	12000 B		50	6.8	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
Pyrene	14000		50	9.6	ug/Kg	☼	08/17/18 16:04	08/24/18 18:23	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	103		57 - 120				08/17/18 16:04	08/24/18 18:23	20

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		5.2	0.88	ug/Kg	☼	08/15/18 09:46	08/29/18 22:08	1
PCB-1221	ND		5.2	2.5	ug/Kg	☼	08/15/18 09:46	08/29/18 22:08	1
PCB-1232	ND		5.2	1.2	ug/Kg	☼	08/15/18 09:46	08/29/18 22:08	1
PCB-1242	ND		5.2	1.3	ug/Kg	☼	08/15/18 09:46	08/29/18 22:08	1
PCB-1248	ND		5.2	0.41	ug/Kg	☼	08/15/18 09:46	08/29/18 22:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	47	X	54 - 142				08/15/18 09:46	08/29/18 22:08	1
Tetrachloro-m-xylene	31	X	58 - 122				08/15/18 09:46	08/29/18 22:08	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	1500		260	100	ug/Kg	☼	08/15/18 09:46	08/30/18 21:58	50
PCB-1260	ND		260	44	ug/Kg	☼	08/15/18 09:46	08/30/18 21:58	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	860	X	54 - 142				08/15/18 09:46	08/30/18 21:58	50
Tetrachloro-m-xylene	13	X	58 - 122				08/15/18 09:46	08/30/18 21:58	50

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	84000		2000	44	mg/Kg			08/20/18 17:08	1
Total Solids	37.8		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	37	H	0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.1				%			08/16/18 08:22	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-1.5to3**

**Lab Sample ID: 580-79444-40**

**Date Collected: 08/08/18 11:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 37.8**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Coarse Sand	0.5				%			08/16/18 08:22	1
Medium Sand	2.8				%			08/16/18 08:22	1
Fine Sand	33.6				%			08/16/18 08:22	1
Silt	56.9				%			08/16/18 08:22	1
Clay	6.1				%			08/16/18 08:22	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-3to4.2**

**Lab Sample ID: 580-79444-41**

Date Collected: 08/08/18 11:30

Matrix: Solid

Date Received: 08/08/18 15:30

Percent Solids: 80.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	48		12	1.1	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Acenaphthene	160		12	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Acenaphthylene	33		12	1.2	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Anthracene	230		12	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Benzo[a]anthracene	670		12	1.8	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Benzo[a]pyrene	620		12	0.94	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Benzo[b]fluoranthene	900 *		12	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Benzo[g,h,i]perylene	460		12	1.2	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Benzo[k]fluoranthene	320		12	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Chrysene	730		12	3.5	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Dibenz(a,h)anthracene	130		12	1.7	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Fluoranthene	1600		12	3.3	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Fluorene	200		12	1.2	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Indeno[1,2,3-cd]pyrene	610		12	1.4	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Naphthalene	ND		12	1.9	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Phenanthrene	1200 B		12	1.6	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
Pyrene	1500		12	2.3	ug/Kg	☼	08/17/18 16:04	08/24/18 18:47	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	102		57 - 120				08/17/18 16:04	08/24/18 18:47	10

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.4	0.42	ug/Kg	☼	08/15/18 09:46	08/29/18 22:25	1
PCB-1221	ND		2.4	1.2	ug/Kg	☼	08/15/18 09:46	08/29/18 22:25	1
PCB-1232	ND		2.4	0.57	ug/Kg	☼	08/15/18 09:46	08/29/18 22:25	1
PCB-1242	ND		2.4	0.60	ug/Kg	☼	08/15/18 09:46	08/29/18 22:25	1
PCB-1248	ND		2.4	0.20	ug/Kg	☼	08/15/18 09:46	08/29/18 22:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	61		54 - 142				08/15/18 09:46	08/29/18 22:25	1
Tetrachloro-m-xylene	51 X		58 - 122				08/15/18 09:46	08/29/18 22:25	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1254	180		24	9.6	ug/Kg	☼	08/15/18 09:46	08/30/18 22:15	10
PCB-1260	ND		24	4.2	ug/Kg	☼	08/15/18 09:46	08/30/18 22:15	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	88		54 - 142				08/15/18 09:46	08/30/18 22:15	10
Tetrachloro-m-xylene	49 X		58 - 122				08/15/18 09:46	08/30/18 22:15	10

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	5800		2000	44	mg/Kg			08/20/18 17:16	1
Total Solids	80.1		0.1	0.1	%			08/11/18 15:51	1
Total Solids @ 70°C	80 H		0.10	0.10	%			08/16/18 08:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	39.1				%			08/16/18 08:22	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-3to4.2**

**Lab Sample ID: 580-79444-41**

**Date Collected: 08/08/18 11:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 80.1**

**Method: D7928/D6913 - ASTM D7928/D6913 (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Coarse Sand	2.1				%			08/16/18 08:22	1
Medium Sand	17.4				%			08/16/18 08:22	1
Fine Sand	37.0				%			08/16/18 08:22	1
Silt	2.7				%			08/16/18 08:22	1
Clay	1.5				%			08/16/18 08:22	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-RB-SS-180807**

**Lab Sample ID: 580-79444-42**

**Date Collected: 08/07/18 13:00**

**Matrix: Water**

**Date Received: 08/08/18 15:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.10	0.018	ug/L		08/12/18 11:26	08/14/18 12:41	1
2-Methylnaphthalene	ND		0.10	0.020	ug/L		08/12/18 11:26	08/14/18 12:41	1
Acenaphthylene	ND		0.20	0.044	ug/L		08/12/18 11:26	08/14/18 12:41	1
Acenaphthene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 12:41	1
Fluorene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 12:41	1
Phenanthrene	ND		0.10	0.019	ug/L		08/12/18 11:26	08/14/18 12:41	1
Anthracene	ND		0.10	0.0070	ug/L		08/12/18 11:26	08/14/18 12:41	1
Fluoranthene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 12:41	1
Pyrene	ND		0.10	0.0090	ug/L		08/12/18 11:26	08/14/18 12:41	1
Benzo[a]anthracene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 12:41	1
Chrysene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 12:41	1
Benzo[b]fluoranthene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 12:41	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 12:41	1
Benzo[a]pyrene	ND		0.10	0.035	ug/L		08/12/18 11:26	08/14/18 12:41	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 12:41	1
Dibenz(a,h)anthracene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 12:41	1
Benzo[g,h,i]perylene	ND		0.20	0.076	ug/L		08/12/18 11:26	08/14/18 12:41	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	89		54 - 120				08/12/18 11:26	08/14/18 12:41	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 04:34	1
PCB-1221	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 04:34	1
PCB-1232	ND		0.45	0.063	ug/L		08/13/18 09:26	08/29/18 04:34	1
PCB-1242	ND		0.45	0.059	ug/L		08/13/18 09:26	08/29/18 04:34	1
PCB-1248	ND		0.45	0.052	ug/L		08/13/18 09:26	08/29/18 04:34	1
PCB-1254	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 04:34	1
PCB-1260	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 04:34	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	31	X	38 - 140				08/13/18 09:26	08/29/18 04:34	1
Tetrachloro-m-xylene	67		40 - 120				08/13/18 09:26	08/29/18 04:34	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.28	J	1.0	0.19	mg/L			08/13/18 12:21	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-RB-SS-180808**

**Lab Sample ID: 580-79444-43**

**Date Collected: 08/08/18 10:55**

**Matrix: Water**

**Date Received: 08/08/18 15:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.095	0.017	ug/L		08/12/18 11:26	08/14/18 13:07	1
2-Methylnaphthalene	ND		0.095	0.019	ug/L		08/12/18 11:26	08/14/18 13:07	1
Acenaphthylene	ND		0.19	0.042	ug/L		08/12/18 11:26	08/14/18 13:07	1
Acenaphthene	ND		0.095	0.0057	ug/L		08/12/18 11:26	08/14/18 13:07	1
Fluorene	ND		0.095	0.012	ug/L		08/12/18 11:26	08/14/18 13:07	1
Phenanthrene	ND		0.095	0.018	ug/L		08/12/18 11:26	08/14/18 13:07	1
Anthracene	ND		0.095	0.0067	ug/L		08/12/18 11:26	08/14/18 13:07	1
Fluoranthene	ND		0.095	0.012	ug/L		08/12/18 11:26	08/14/18 13:07	1
Pyrene	ND		0.095	0.0086	ug/L		08/12/18 11:26	08/14/18 13:07	1
Benzo[a]anthracene	ND		0.095	0.0057	ug/L		08/12/18 11:26	08/14/18 13:07	1
Chrysene	ND		0.095	0.0057	ug/L		08/12/18 11:26	08/14/18 13:07	1
Benzo[b]fluoranthene	ND		0.095	0.0057	ug/L		08/12/18 11:26	08/14/18 13:07	1
Benzo[k]fluoranthene	ND		0.095	0.012	ug/L		08/12/18 11:26	08/14/18 13:07	1
Benzo[a]pyrene	ND		0.095	0.033	ug/L		08/12/18 11:26	08/14/18 13:07	1
Indeno[1,2,3-cd]pyrene	ND		0.095	0.0057	ug/L		08/12/18 11:26	08/14/18 13:07	1
Dibenz(a,h)anthracene	ND		0.095	0.0057	ug/L		08/12/18 11:26	08/14/18 13:07	1
Benzo[g,h,i]perylene	ND		0.19	0.072	ug/L		08/12/18 11:26	08/14/18 13:07	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	95		54 - 120				08/12/18 11:26	08/14/18 13:07	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 04:51	1
PCB-1221	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 04:51	1
PCB-1232	ND		0.45	0.063	ug/L		08/13/18 09:26	08/29/18 04:51	1
PCB-1242	ND		0.45	0.059	ug/L		08/13/18 09:26	08/29/18 04:51	1
PCB-1248	ND		0.45	0.052	ug/L		08/13/18 09:26	08/29/18 04:51	1
PCB-1254	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 04:51	1
PCB-1260	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 04:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	35	X	38 - 140				08/13/18 09:26	08/29/18 04:51	1
Tetrachloro-m-xylene	74		40 - 120				08/13/18 09:26	08/29/18 04:51	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.27	J	1.0	0.19	mg/L			08/13/18 12:21	1

# Client Sample Results

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-RB-SS-180806**

**Lab Sample ID: 580-79444-44**

**Date Collected: 08/06/18 16:00**

**Matrix: Water**

**Date Received: 08/08/18 15:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.10	0.019	ug/L		08/12/18 11:26	08/14/18 13:33	1
2-Methylnaphthalene	ND		0.10	0.021	ug/L		08/12/18 11:26	08/14/18 13:33	1
Acenaphthylene	ND		0.21	0.046	ug/L		08/12/18 11:26	08/14/18 13:33	1
Acenaphthene	ND		0.10	0.0062	ug/L		08/12/18 11:26	08/14/18 13:33	1
Fluorene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 13:33	1
Phenanthrene	ND		0.10	0.020	ug/L		08/12/18 11:26	08/14/18 13:33	1
Anthracene	ND		0.10	0.0073	ug/L		08/12/18 11:26	08/14/18 13:33	1
Fluoranthene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 13:33	1
Pyrene	ND		0.10	0.0093	ug/L		08/12/18 11:26	08/14/18 13:33	1
Benzo[a]anthracene	ND		0.10	0.0062	ug/L		08/12/18 11:26	08/14/18 13:33	1
Chrysene	ND		0.10	0.0062	ug/L		08/12/18 11:26	08/14/18 13:33	1
Benzo[b]fluoranthene	ND		0.10	0.0062	ug/L		08/12/18 11:26	08/14/18 13:33	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 13:33	1
Benzo[a]pyrene	ND		0.10	0.036	ug/L		08/12/18 11:26	08/14/18 13:33	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0062	ug/L		08/12/18 11:26	08/14/18 13:33	1
Dibenz(a,h)anthracene	ND		0.10	0.0062	ug/L		08/12/18 11:26	08/14/18 13:33	1
Benzo[g,h,i]perylene	ND		0.21	0.079	ug/L		08/12/18 11:26	08/14/18 13:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	94		54 - 120				08/12/18 11:26	08/14/18 13:33	1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.47	0.063	ug/L		08/13/18 09:26	08/29/18 05:08	1
PCB-1221	ND		0.47	0.078	ug/L		08/13/18 09:26	08/29/18 05:08	1
PCB-1232	ND		0.47	0.065	ug/L		08/13/18 09:26	08/29/18 05:08	1
PCB-1242	ND		0.47	0.061	ug/L		08/13/18 09:26	08/29/18 05:08	1
PCB-1248	ND		0.47	0.054	ug/L		08/13/18 09:26	08/29/18 05:08	1
PCB-1254	ND		0.47	0.078	ug/L		08/13/18 09:26	08/29/18 05:08	1
PCB-1260	ND		0.47	0.063	ug/L		08/13/18 09:26	08/29/18 05:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	43		38 - 140				08/13/18 09:26	08/29/18 05:08	1
Tetrachloro-m-xylene	73		40 - 120				08/13/18 09:26	08/29/18 05:08	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.25	J	1.0	0.19	mg/L			08/13/18 12:21	1



# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: MB 580-281384/1-A**  
**Matrix: Water**  
**Analysis Batch: 281512**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 281384**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.10	0.020	ug/L		08/12/18 11:26	08/14/18 11:24	1
Acenaphthylene	ND		0.20	0.044	ug/L		08/12/18 11:26	08/14/18 11:24	1
Acenaphthene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 11:24	1
Anthracene	ND		0.10	0.0070	ug/L		08/12/18 11:26	08/14/18 11:24	1
Benzo[a]anthracene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 11:24	1
Chrysene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 11:24	1
Fluoranthene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 11:24	1
Benzo[b]fluoranthene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 11:24	1
Fluorene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 11:24	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/12/18 11:26	08/14/18 11:24	1
Benzo[a]pyrene	ND		0.10	0.035	ug/L		08/12/18 11:26	08/14/18 11:24	1
Naphthalene	ND		0.10	0.018	ug/L		08/12/18 11:26	08/14/18 11:24	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 11:24	1
Phenanthrene	ND		0.10	0.019	ug/L		08/12/18 11:26	08/14/18 11:24	1
Dibenz(a,h)anthracene	ND		0.10	0.0060	ug/L		08/12/18 11:26	08/14/18 11:24	1
Pyrene	ND		0.10	0.0090	ug/L		08/12/18 11:26	08/14/18 11:24	1
Benzo[g,h,i]perylene	ND		0.20	0.076	ug/L		08/12/18 11:26	08/14/18 11:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		54 - 120	08/12/18 11:26	08/14/18 11:24	1

**Lab Sample ID: LCS 580-281384/2-A**  
**Matrix: Water**  
**Analysis Batch: 281512**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281384**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	2.00	1.81		ug/L		90	53 - 120
Acenaphthylene	2.00	1.71		ug/L		86	33 - 130
Acenaphthene	2.00	1.78		ug/L		89	64 - 120
Anthracene	2.00	1.63		ug/L		81	46 - 127
Benzo[a]anthracene	2.00	2.04		ug/L		102	70 - 120
Chrysene	2.00	1.89		ug/L		95	65 - 120
Fluoranthene	2.00	2.05		ug/L		103	72 - 120
Benzo[b]fluoranthene	2.00	2.07		ug/L		104	57 - 132
Fluorene	2.00	1.99		ug/L		100	67 - 120
Benzo[k]fluoranthene	2.00	1.95		ug/L		97	61 - 132
Benzo[a]pyrene	2.00	1.69		ug/L		85	23 - 141
Naphthalene	2.00	1.65		ug/L		83	58 - 120
Indeno[1,2,3-cd]pyrene	2.00	2.08		ug/L		104	53 - 133
Phenanthrene	2.00	1.92		ug/L		96	69 - 120
Dibenz(a,h)anthracene	2.00	2.10		ug/L		105	57 - 132
Pyrene	2.00	1.99		ug/L		100	57 - 133
Benzo[g,h,i]perylene	2.00	2.07		ug/L		103	52 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	88		54 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: LCSD 580-281384/3-A**

**Matrix: Water**

**Analysis Batch: 281512**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 281384**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
2-Methylnaphthalene	2.00	1.80		ug/L		90	53 - 120	0	23
Acenaphthylene	2.00	1.79		ug/L		89	33 - 130	4	34
Acenaphthene	2.00	1.90		ug/L		95	64 - 120	7	20
Anthracene	2.00	1.81		ug/L		91	46 - 127	11	19
Benzo[a]anthracene	2.00	2.02		ug/L		101	70 - 120	1	17
Chrysene	2.00	1.90		ug/L		95	65 - 120	0	19
Fluoranthene	2.00	2.04		ug/L		102	72 - 120	1	21
Benzo[b]fluoranthene	2.00	2.02		ug/L		101	57 - 132	2	25
Fluorene	2.00	2.01		ug/L		100	67 - 120	1	20
Benzo[k]fluoranthene	2.00	1.98		ug/L		99	61 - 132	2	22
Benzo[a]pyrene	2.00	1.63		ug/L		81	23 - 141	4	35
Naphthalene	2.00	1.64		ug/L		82	58 - 120	0	23
Indeno[1,2,3-cd]pyrene	2.00	2.07		ug/L		103	53 - 133	0	25
Phenanthrene	2.00	1.93		ug/L		96	69 - 120	0	21
Dibenz(a,h)anthracene	2.00	2.10		ug/L		105	57 - 132	0	24
Pyrene	2.00	2.01		ug/L		101	57 - 133	1	21
Benzo[g,h,i]perylene	2.00	2.07		ug/L		104	52 - 129	0	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	83		54 - 120

**Lab Sample ID: MB 580-281503/1-A**

**Matrix: Solid**

**Analysis Batch: 281877**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 281503**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Acenaphthene	ND		1.0	0.12	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Anthracene	ND		1.0	0.12	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Benzo[a]anthracene	0.231	J	1.0	0.15	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Chrysene	0.406	J	1.0	0.30	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Fluoranthene	ND		1.0	0.28	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Benzo[b]fluoranthene	0.352	J	1.0	0.12	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Fluorene	ND		1.0	0.10	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Benzo[k]fluoranthene	0.313	J	1.0	0.12	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Benzo[a]pyrene	0.329	J	1.0	0.080	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Naphthalene	0.205	J	1.0	0.16	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Indeno[1,2,3-cd]pyrene	0.512	J	1.0	0.12	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Phenanthrene	0.194	J	1.0	0.14	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Dibenz(a,h)anthracene	0.303	J	1.0	0.14	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Pyrene	0.337	J	1.0	0.19	ug/Kg		08/14/18 10:08	08/17/18 15:47	1
Benzo[g,h,i]perylene	0.326	J	1.0	0.10	ug/Kg		08/14/18 10:08	08/17/18 15:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	100		57 - 120	08/14/18 10:08	08/17/18 15:47	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: LCS 580-281503/2-A**  
**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	179		ug/Kg		90	68 - 120
Acenaphthylene	200	165		ug/Kg		82	68 - 120
Acenaphthene	200	176		ug/Kg		88	68 - 120
Anthracene	200	190		ug/Kg		95	73 - 125
Benzo[a]anthracene	200	191		ug/Kg		95	66 - 120
Chrysene	200	186		ug/Kg		93	69 - 120
Fluoranthene	200	194		ug/Kg		97	74 - 125
Benzo[b]fluoranthene	200	206		ug/Kg		103	63 - 121
Fluorene	200	188		ug/Kg		94	73 - 120
Benzo[k]fluoranthene	200	201		ug/Kg		100	63 - 123
Benzo[a]pyrene	200	189		ug/Kg		95	72 - 124
Naphthalene	200	159		ug/Kg		79	70 - 120
Indeno[1,2,3-cd]pyrene	200	206		ug/Kg		103	65 - 121
Phenanthrene	200	178		ug/Kg		89	73 - 120
Dibenz(a,h)anthracene	200	216		ug/Kg		108	70 - 125
Pyrene	200	190		ug/Kg		95	70 - 120
Benzo[g,h,i]perylene	200	218		ug/Kg		109	63 - 120

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

**Lab Sample ID: 580-79444-14 MS**  
**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: PDI-SC-S222-7.2to9.2**  
**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	1.0	J	292	215		ug/Kg	☼	73	68 - 120
Acenaphthene	20		292	241		ug/Kg	☼	76	68 - 120
Acenaphthylene	ND		292	206		ug/Kg	☼	71	68 - 120
Anthracene	1.2	J	292	242		ug/Kg	☼	82	73 - 125
Benzo[a]anthracene	2.7	J B	292	263		ug/Kg	☼	89	66 - 120
Benzo[a]pyrene	ND		292	219		ug/Kg	☼	75	72 - 124
Benzo[b]fluoranthene	3.7	J B	292	230		ug/Kg	☼	77	63 - 121
Benzo[g,h,i]perylene	1.6	J B	292	250		ug/Kg	☼	85	63 - 120
Benzo[k]fluoranthene	1.3	J B	292	221		ug/Kg	☼	75	63 - 123
Chrysene	2.9	J B	292	244		ug/Kg	☼	83	69 - 120
Dibenz(a,h)anthracene	ND		292	266		ug/Kg	☼	91	70 - 125
Fluoranthene	3.8	J	292	245		ug/Kg	☼	83	74 - 125
Fluorene	1.3	J	292	241		ug/Kg	☼	82	73 - 120
Indeno[1,2,3-cd]pyrene	2.1	J B	292	248		ug/Kg	☼	84	65 - 121
Naphthalene	3.0	J F1 B	292	184	F1	ug/Kg	☼	62	70 - 120
Phenanthrene	6.3	J B	292	233		ug/Kg	☼	78	73 - 120
Pyrene	7.2	J B	292	249		ug/Kg	☼	83	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	73		57 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-14 MSD**

**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
2-Methylnaphthalene	1.0	J	287	215		ug/Kg	☼	74	68 - 120	0	12
Acenaphthene	20		287	265		ug/Kg	☼	85	68 - 120	9	12
Acenaphthylene	ND		287	212		ug/Kg	☼	74	68 - 120	3	12
Anthracene	1.2	J	287	252		ug/Kg	☼	87	73 - 125	4	12
Benzo[a]anthracene	2.7	J B	287	261		ug/Kg	☼	90	66 - 120	1	14
Benzo[a]pyrene	ND		287	225		ug/Kg	☼	78	72 - 124	3	12
Benzo[b]fluoranthene	3.7	J B	287	233		ug/Kg	☼	80	63 - 121	1	10
Benzo[g,h,i]perylene	1.6	J B	287	256		ug/Kg	☼	88	63 - 120	2	14
Benzo[k]fluoranthene	1.3	J B	287	226		ug/Kg	☼	78	63 - 123	2	15
Chrysene	2.9	J B	287	238		ug/Kg	☼	82	69 - 120	3	10
Dibenz(a,h)anthracene	ND		287	267		ug/Kg	☼	93	70 - 125	0	13
Fluoranthene	3.8	J	287	258		ug/Kg	☼	89	74 - 125	5	13
Fluorene	1.3	J	287	249		ug/Kg	☼	86	73 - 120	3	13
Indeno[1,2,3-cd]pyrene	2.1	J B	287	255		ug/Kg	☼	88	65 - 121	3	15
Naphthalene	3.0	J F1 B	287	180	F1	ug/Kg	☼	61	70 - 120	2	12
Phenanthrene	6.3	J B	287	245		ug/Kg	☼	83	73 - 120	5	11
Pyrene	7.2	J B	287	261		ug/Kg	☼	88	70 - 120	5	12

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

**Lab Sample ID: 580-79444-19 MS**

**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: PDI-SC-S248-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
2-Methylnaphthalene	70	F1	348	271	F1	ug/Kg	☼	58	68 - 120
Acenaphthene	99		348	336		ug/Kg	☼	68	68 - 120
Acenaphthylene	21		348	263		ug/Kg	☼	69	68 - 120
Anthracene	82		348	367		ug/Kg	☼	82	73 - 125
Benzo[a]anthracene	88	B	348	421		ug/Kg	☼	96	66 - 120
Benzo[a]pyrene	49	F1 B	348	292	F1	ug/Kg	☼	70	72 - 124
Benzo[b]fluoranthene	74	B	348	324		ug/Kg	☼	72	63 - 121
Benzo[g,h,i]perylene	38	B	348	326		ug/Kg	☼	83	63 - 120
Benzo[k]fluoranthene	30	B	348	282		ug/Kg	☼	73	63 - 123
Chrysene	86	B	348	356		ug/Kg	☼	77	69 - 120
Dibenz(a,h)anthracene	6.6	J B	348	322		ug/Kg	☼	91	70 - 125
Fluoranthene	440		348	739		ug/Kg	☼	87	74 - 125
Fluorene	140		348	396		ug/Kg	☼	73	73 - 120
Indeno[1,2,3-cd]pyrene	40	B	348	320		ug/Kg	☼	81	65 - 121
Naphthalene	180	F1 B	348	268	F1	ug/Kg	☼	24	70 - 120
Phenanthrene	450	F1 B	348	618	F1	ug/Kg	☼	47	73 - 120
Pyrene	330	B	348	645		ug/Kg	☼	89	70 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
Terphenyl-d14	77		57 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-19 MSD**

**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: PDI-SC-S248-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
2-Methylnaphthalene	70	F1	303	261	F1	ug/Kg	☼	63	68 - 120	4	12
Acenaphthene	99		303	357		ug/Kg	☼	85	68 - 120	6	12
Acenaphthylene	21		303	260		ug/Kg	☼	79	68 - 120	1	12
Anthracene	82		303	359		ug/Kg	☼	92	73 - 125	2	12
Benzo[a]anthracene	88	B	303	374		ug/Kg	☼	95	66 - 120	12	14
Benzo[a]pyrene	49	F1 B	303	268		ug/Kg	☼	72	72 - 124	9	12
Benzo[b]fluoranthene	74	B	303	296		ug/Kg	☼	73	63 - 121	9	10
Benzo[g,h,i]perylene	38	B	303	298		ug/Kg	☼	86	63 - 120	9	14
Benzo[k]fluoranthene	30	B	303	260		ug/Kg	☼	76	63 - 123	8	15
Chrysene	86	B	303	332		ug/Kg	☼	81	69 - 120	7	10
Dibenz(a,h)anthracene	6.6	J B	303	291		ug/Kg	☼	94	70 - 125	10	13
Fluoranthene	440		303	727		ug/Kg	☼	96	74 - 125	2	13
Fluorene	140		303	425		ug/Kg	☼	94	73 - 120	7	13
Indeno[1,2,3-cd]pyrene	40	B	303	296		ug/Kg	☼	85	65 - 121	8	15
Naphthalene	180	F1 B	303	268	F1	ug/Kg	☼	27	70 - 120	0	12
Phenanthrene	450	F1 B	303	673	F1	ug/Kg	☼	72	73 - 120	9	11
Pyrene	330	B	303	630		ug/Kg	☼	98	70 - 120	2	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	83		57 - 120

**Lab Sample ID: 580-79444-32 MS**

**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: PDI-SC-S105-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
2-Methylnaphthalene	36	F2	267	238		ug/Kg	☼	76	68 - 120
Acenaphthene	220		267	455		ug/Kg	☼	86	68 - 120
Acenaphthylene	150	F1	267	249	F1	ug/Kg	☼	35	68 - 120
Anthracene	320	F1	267	462	F1	ug/Kg	☼	54	73 - 125
Benzo[a]anthracene	780	F1 F2 B	267	590	F1	ug/Kg	☼	-73	66 - 120
Benzo[a]pyrene	720	F1 F2 B	267	474	F1	ug/Kg	☼	-92	72 - 124
Benzo[b]fluoranthene	890	F1 F2 B	267	522	F1	ug/Kg	☼	-139	63 - 121
Benzo[g,h,i]perylene	770	F1 F2 B	267	516	F1	ug/Kg	☼	-95	63 - 120
Benzo[k]fluoranthene	240	F1 F2 B	267	324	F1	ug/Kg	☼	30	63 - 123
Chrysene	970	F1 F2 B	267	553	F1	ug/Kg	☼	-154	69 - 120
Dibenz(a,h)anthracene	120	F1 F2 B	267	287	F1	ug/Kg	☼	64	70 - 125
Fluoranthene	2000		267	1490	4	ug/Kg	☼	-173	74 - 125
Fluorene	310		267	548		ug/Kg	☼	88	73 - 120
Indeno[1,2,3-cd]pyrene	770	F1 F2 B	267	499	F1	ug/Kg	☼	-101	65 - 121
Naphthalene	170	F1 F2 B	267	289	F1	ug/Kg	☼	43	70 - 120
Phenanthrene	260	F1 B	267	363	F1	ug/Kg	☼	39	73 - 120
Pyrene	2800	B	267	1770	4	ug/Kg	☼	-369	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	79		57 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-32 MSD**

**Matrix: Solid**  
**Analysis Batch: 281877**

**Client Sample ID: PDI-SC-S105-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 281503**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
2-Methylnaphthalene	36	F2	280	278	F2	ug/Kg	☼	87	68 - 120	15	12
Acenaphthene	220		280	449		ug/Kg	☼	80	68 - 120	1	12
Acenaphthylene	150	F1	280	273	F1	ug/Kg	☼	42	68 - 120	9	12
Anthracene	320	F1	280	488	F1	ug/Kg	☼	61	73 - 125	6	12
Benzo[a]anthracene	780	F1 F2 B	280	795	F1 F2	ug/Kg	☼	4	66 - 120	30	14
Benzo[a]pyrene	720	F1 F2 B	280	571	F1 F2	ug/Kg	☼	-53	72 - 124	19	12
Benzo[b]fluoranthene	890	F1 F2 B	280	763	F1 F2	ug/Kg	☼	-47	63 - 121	38	10
Benzo[g,h,i]perylene	770	F1 F2 B	280	677	F1 F2	ug/Kg	☼	-34	63 - 120	27	14
Benzo[k]fluoranthene	240	F1 F2 B	280	440	F2	ug/Kg	☼	71	63 - 123	30	15
Chrysene	970	F1 F2 B	280	813	F1 F2	ug/Kg	☼	-54	69 - 120	38	10
Dibenz(a,h)anthracene	120	F1 F2 B	280	350	F2	ug/Kg	☼	84	70 - 125	19	13
Fluoranthene	2000		280	1470	4	ug/Kg	☼	-173	74 - 125	1	13
Fluorene	310		280	539		ug/Kg	☼	81	73 - 120	2	13
Indeno[1,2,3-cd]pyrene	770	F1 F2 B	280	669	F1 F2	ug/Kg	☼	-36	65 - 121	29	15
Naphthalene	170	F1 F2 B	280	343	F1 F2	ug/Kg	☼	61	70 - 120	17	12
Phenanthrene	260	F1 B	280	403	F1	ug/Kg	☼	51	73 - 120	10	11
Pyrene	2800	B	280	1790	4	ug/Kg	☼	-346	70 - 120	1	12

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Terphenyl-d14	87		57 - 120

**Lab Sample ID: MB 580-281889/1-A**

**Matrix: Solid**  
**Analysis Batch: 282430**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 281889**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Acenaphthene	ND		1.0	0.12	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Anthracene	ND		1.0	0.12	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Chrysene	ND		1.0	0.30	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Fluoranthene	ND		1.0	0.28	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Fluorene	ND		1.0	0.10	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Naphthalene	0.285	J	1.0	0.16	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Phenanthrene	0.145	J	1.0	0.14	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Pyrene	ND		1.0	0.19	ug/Kg		08/17/18 16:04	08/24/18 14:42	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		08/17/18 16:04	08/24/18 14:42	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14	100		57 - 120	08/17/18 16:04	08/24/18 14:42	1

TestAmerica Seattle



# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: LCS 580-281889/2-A**  
**Matrix: Solid**  
**Analysis Batch: 282430**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281889**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	193		ug/Kg		96	68 - 120
Acenaphthylene	200	192		ug/Kg		96	68 - 120
Acenaphthene	200	202		ug/Kg		101	68 - 120
Anthracene	200	226		ug/Kg		113	73 - 125
Benzo[a]anthracene	200	227		ug/Kg		113	66 - 120
Chrysene	200	201		ug/Kg		101	69 - 120
Fluoranthene	200	246		ug/Kg		123	74 - 125
Benzo[b]fluoranthene	200	264 *		ug/Kg		132	63 - 121
Fluorene	200	207		ug/Kg		103	73 - 120
Benzo[k]fluoranthene	200	236		ug/Kg		118	63 - 123
Benzo[a]pyrene	200	237		ug/Kg		119	72 - 124
Naphthalene	200	187		ug/Kg		93	70 - 120
Indeno[1,2,3-cd]pyrene	200	236		ug/Kg		118	65 - 121
Phenanthrene	200	210		ug/Kg		105	73 - 120
Dibenz(a,h)anthracene	200	224		ug/Kg		112	70 - 125
Pyrene	200	236		ug/Kg		118	70 - 120
Benzo[g,h,i]perylene	200	231		ug/Kg		116	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	108		57 - 120

**Lab Sample ID: MB 580-281984/1-A**  
**Matrix: Solid**  
**Analysis Batch: 282110**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 281984**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.174	J	1.0	0.090	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Acenaphthene	ND		1.0	0.12	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Anthracene	ND		1.0	0.12	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Chrysene	ND		1.0	0.30	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Fluoranthene	ND		1.0	0.28	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Fluorene	ND		1.0	0.10	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Naphthalene	0.358	J	1.0	0.16	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Phenanthrene	ND		1.0	0.14	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Pyrene	ND		1.0	0.19	ug/Kg		08/20/18 12:34	08/21/18 17:58	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		08/20/18 12:34	08/21/18 17:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	112		57 - 120	08/20/18 12:34	08/21/18 17:58	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: LCS 580-281984/2-A**  
**Matrix: Solid**  
**Analysis Batch: 282110**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281984**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	211		ug/Kg		105	68 - 120
Acenaphthylene	200	189		ug/Kg		94	68 - 120
Acenaphthene	200	199		ug/Kg		100	68 - 120
Anthracene	200	210		ug/Kg		105	73 - 125
Benzo[a]anthracene	200	213		ug/Kg		107	66 - 120
Chrysene	200	190		ug/Kg		95	69 - 120
Fluoranthene	200	218		ug/Kg		109	74 - 125
Benzo[b]fluoranthene	200	208		ug/Kg		104	63 - 121
Fluorene	200	207		ug/Kg		103	73 - 120
Benzo[k]fluoranthene	200	212		ug/Kg		106	63 - 123
Benzo[a]pyrene	200	201		ug/Kg		100	72 - 124
Naphthalene	200	190		ug/Kg		95	70 - 120
Indeno[1,2,3-cd]pyrene	200	201		ug/Kg		101	65 - 121
Phenanthrene	200	192		ug/Kg		96	73 - 120
Dibenz(a,h)anthracene	200	207		ug/Kg		104	70 - 125
Pyrene	200	212		ug/Kg		106	70 - 120
Benzo[g,h,i]perylene	200	208		ug/Kg		104	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	101		57 - 120

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Lab Sample ID: MB 580-281382/1-A**  
**Matrix: Solid**  
**Analysis Batch: 281783**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 281382**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/12/18 10:39	08/17/18 03:28	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/12/18 10:39	08/17/18 03:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	82		54 - 142	08/12/18 10:39	08/17/18 03:28	1
Tetrachloro-m-xylene	71		58 - 122	08/12/18 10:39	08/17/18 03:28	1

**Lab Sample ID: LCS 580-281382/2-A**  
**Matrix: Solid**  
**Analysis Batch: 281783**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281382**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	7.99		ug/Kg		80	64 - 120
PCB-1260	10.0	7.57		ug/Kg		76	63 - 130

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 580-281382/2-A**  
**Matrix: Solid**  
**Analysis Batch: 281783**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281382**

Surrogate	LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	79		54 - 142
Tetrachloro-m-xylene	56	X	58 - 122

**Lab Sample ID: 580-79444-14 MS**  
**Matrix: Solid**  
**Analysis Batch: 281783**

**Client Sample ID: PDI-SC-S222-7.2to9.2**  
**Prep Type: Total/NA**  
**Prep Batch: 281382**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
PCB-1016	ND	F2 F1	17.0	11.7		ug/Kg	☼	69	64 - 120
PCB-1260	ND	F1	17.0	7.45	F1	ug/Kg	☼	44	63 - 130

Surrogate	MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	43	X	54 - 142
Tetrachloro-m-xylene	48	X	58 - 122

**Lab Sample ID: 580-79444-14 MSD**  
**Matrix: Solid**  
**Analysis Batch: 281783**

**Client Sample ID: PDI-SC-S222-7.2to9.2**  
**Prep Type: Total/NA**  
**Prep Batch: 281382**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
PCB-1016	ND	F2 F1	16.7	9.04	F2 F1	ug/Kg	☼	54	64 - 120	25	21
PCB-1260	ND	F1	16.7	7.22	F1	ug/Kg	☼	43	63 - 130	3	25

Surrogate	MSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	42	X	54 - 142
Tetrachloro-m-xylene	44	X	58 - 122

**Lab Sample ID: MB 580-281399/1-A**  
**Matrix: Water**  
**Analysis Batch: 282692**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 281399**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
PCB-1016	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 03:27		1
PCB-1221	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 03:27		1
PCB-1232	ND		0.45	0.063	ug/L		08/13/18 09:26	08/29/18 03:27		1
PCB-1242	ND		0.45	0.059	ug/L		08/13/18 09:26	08/29/18 03:27		1
PCB-1248	ND		0.45	0.052	ug/L		08/13/18 09:26	08/29/18 03:27		1
PCB-1254	ND		0.45	0.075	ug/L		08/13/18 09:26	08/29/18 03:27		1
PCB-1260	ND		0.45	0.061	ug/L		08/13/18 09:26	08/29/18 03:27		1

Surrogate	MB		Limits	Prepared	Analyzed	Dil	Fac
	%Recovery	Qualifier					
DCB Decachlorobiphenyl	68		38 - 140	08/13/18 09:26	08/29/18 03:27		1
Tetrachloro-m-xylene	79		40 - 120	08/13/18 09:26	08/29/18 03:27		1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 580-281399/2-A**  
**Matrix: Water**  
**Analysis Batch: 282692**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281399**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	1.00	0.884		ug/L		88	50 - 121
PCB-1260	1.00	0.853		ug/L		85	55 - 132

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	77		38 - 140
Tetrachloro-m-xylene	75		40 - 120

**Lab Sample ID: LCSD 580-281399/3-A**  
**Matrix: Water**  
**Analysis Batch: 282692**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 281399**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
PCB-1016	1.00	0.870		ug/L		87	50 - 121	2	25
PCB-1260	1.00	0.849		ug/L		85	55 - 132	0	22

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	70		38 - 140
Tetrachloro-m-xylene	81		40 - 120

**Lab Sample ID: MB 580-281621/1-A**  
**Matrix: Solid**  
**Analysis Batch: 282698**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 281621**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/15/18 09:34	08/29/18 03:00	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/15/18 09:34	08/29/18 03:00	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/15/18 09:34	08/29/18 03:00	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/15/18 09:34	08/29/18 03:00	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/15/18 09:34	08/29/18 03:00	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/15/18 09:34	08/29/18 03:00	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/15/18 09:34	08/29/18 03:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	102		54 - 142	08/15/18 09:34	08/29/18 03:00	1
Tetrachloro-m-xylene	51	X	58 - 122	08/15/18 09:34	08/29/18 03:00	1

**Lab Sample ID: LCS 580-281621/2-A**  
**Matrix: Solid**  
**Analysis Batch: 282698**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281621**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	6.48		ug/Kg		65	64 - 120
PCB-1260	10.0	9.84		ug/Kg		98	63 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	98		54 - 142
Tetrachloro-m-xylene	54	X	58 - 122

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

**Lab Sample ID: 580-79444-19 MS**  
**Matrix: Solid**  
**Analysis Batch: 282698**

**Client Sample ID: PDI-SC-S248-2to4**  
**Prep Type: Total/NA**  
**Prep Batch: 281621**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
PCB-1016	ND	F2 F1	16.9	14.1		ug/Kg	☼	83	64 - 120
PCB-1260	13	F2 F1	16.9	18.8	F1	ug/Kg	☼	35	63 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS MS Qualifier</b>	<b>Limits</b>						
DCB Decachlorobiphenyl	53	X	54 - 142						
Tetrachloro-m-xylene	58		58 - 122						

**Lab Sample ID: 580-79444-19 MSD**  
**Matrix: Solid**  
**Analysis Batch: 282698**

**Client Sample ID: PDI-SC-S248-2to4**  
**Prep Type: Total/NA**  
**Prep Batch: 281621**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	ND	F2 F1	16.5	21.0	F1 F2	ug/Kg	☼	128	64 - 120	39	21
PCB-1260	13	F2 F1	16.5	55.7	F1 F2	ug/Kg	☼	260	63 - 130	99	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD MSD Qualifier</b>	<b>Limits</b>								
DCB Decachlorobiphenyl	60		54 - 142								
Tetrachloro-m-xylene	68		58 - 122								

**Lab Sample ID: MB 580-281623/1-A**  
**Matrix: Solid**  
**Analysis Batch: 282920**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 281623**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
PCB-1221	ND		2.0	0.95	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
PCB-1232	ND		2.0	0.47	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
PCB-1242	ND		2.0	0.49	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
PCB-1248	ND		2.0	0.16	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
PCB-1254	ND		2.0	0.79	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
PCB-1260	ND		2.0	0.34	ug/Kg		08/15/18 09:46	08/30/18 20:34	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB MB Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
DCB Decachlorobiphenyl	92		54 - 142	08/15/18 09:46	08/30/18 20:34	1			
Tetrachloro-m-xylene	62		58 - 122	08/15/18 09:46	08/30/18 20:34	1			

**Lab Sample ID: LCS 580-281623/2-A**  
**Matrix: Solid**  
**Analysis Batch: 282796**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 281623**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	7.57		ug/Kg		76	64 - 120
PCB-1260	10.0	8.23		ug/Kg		82	63 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS LCS Qualifier</b>	<b>Limits</b>				
DCB Decachlorobiphenyl	88		54 - 142				
Tetrachloro-m-xylene	63		58 - 122				

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: 580-79444-32 MS**

**Matrix: Solid**  
**Analysis Batch: 282796**

**Client Sample ID: PDI-SC-S105-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 281623**

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
PCB-1016	ND	F1	14.2	8.98	F1	ug/Kg	☼	63	64 - 120
PCB-1260	ND	F1	14.2	8.49	F1	ug/Kg	☼	60	63 - 130
<b>MS MS</b>									
Surrogate	%Recovery		Qualifier	Limits					
DCB Decachlorobiphenyl	68			54 - 142					
Tetrachloro-m-xylene	64			58 - 122					

**Lab Sample ID: 580-79444-32 MSD**

**Matrix: Solid**  
**Analysis Batch: 282796**

**Client Sample ID: PDI-SC-S105-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 281623**

Analyte	Sample		Spike Added	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
PCB-1016	ND	F1	13.8	9.81		ug/Kg	☼	71	64 - 120	9	21
PCB-1260	ND	F1	13.8	9.57		ug/Kg	☼	69	63 - 130	12	25
<b>MSD MSD</b>											
Surrogate	%Recovery		Qualifier	Limits							
DCB Decachlorobiphenyl	80			54 - 142							
Tetrachloro-m-xylene	70			58 - 122							

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

**Lab Sample ID: MB 580-281896/3**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon - Duplicates	ND		2000	44	mg/Kg			08/17/18 11:03	1

**Lab Sample ID: LCS 580-281896/4**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Organic Carbon - Duplicates	4270	5010		mg/Kg		117	68 - 149

**Lab Sample ID: LCSD 580-281896/5**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Total Organic Carbon - Duplicates	4270	5060		mg/Kg		119	68 - 149	1	32

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-14 MS**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	35000		120000	146000		mg/Kg		92	68 - 149

**Lab Sample ID: 580-79444-14 MSD**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	35000		120000	177000		mg/Kg		118	68 - 149	19	32

**Lab Sample ID: 580-79444-14 DU**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	35000		34900		mg/Kg		0.7	50

**Lab Sample ID: 580-79444-14 TRL**

**Matrix: Solid**  
**Analysis Batch: 281896**

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	35000		35200		mg/Kg		0.4	20

**Lab Sample ID: MB 580-281951/5**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	59.3	J	2000	44	mg/Kg			08/17/18 13:45	1

**Lab Sample ID: LCS 580-281951/6**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	4270	5870		mg/Kg		137	68 - 149

**Lab Sample ID: LCSD 580-281951/7**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	5330		mg/Kg		125	68 - 149	10	32

TestAmerica Seattle



# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-19 MS**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: PDI-SC-S248-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	31000	B F1	120000	102000	F1	mg/Kg		59	68 - 149

**Lab Sample ID: 580-79444-19 MSD**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: PDI-SC-S248-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	31000	B F1	120000	109000	F1	mg/Kg		65	68 - 149	6	32

**Lab Sample ID: 580-79444-19 DU**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: PDI-SC-S248-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	31000	B F1	30400		mg/Kg		0.8	50

**Lab Sample ID: 580-79444-19 TRL**

**Matrix: Solid**  
**Analysis Batch: 281951**

**Client Sample ID: PDI-SC-S248-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	31000	B F1	31400		mg/Kg		2	20

**Lab Sample ID: MB 580-282035/3**

**Matrix: Solid**  
**Analysis Batch: 282035**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		2000	44	mg/Kg			08/20/18 15:13	1

**Lab Sample ID: LCS 580-282035/4**

**Matrix: Solid**  
**Analysis Batch: 282035**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	4270	5230		mg/Kg		122	68 - 149

**Lab Sample ID: LCSD 580-282035/5**

**Matrix: Solid**  
**Analysis Batch: 282035**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	5270		mg/Kg		123	68 - 149	1	32

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-32 MS**

**Matrix: Solid**  
**Analysis Batch: 282035**

**Client Sample ID: PDI-SC-S105-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	15000	F1 F2	120000	139000		mg/Kg		103	68 - 149

**Lab Sample ID: 580-79444-32 MSD**

**Matrix: Solid**  
**Analysis Batch: 282035**

**Client Sample ID: PDI-SC-S105-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	15000	F1 F2	120000	82600	F1 F2	mg/Kg		56	68 - 149	51	32

**Lab Sample ID: 580-79444-32 DU**

**Matrix: Solid**  
**Analysis Batch: 282035**

**Client Sample ID: PDI-SC-S105-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	15000	F1 F2	15200		mg/Kg		2	50

**Lab Sample ID: 580-79444-32 TRL**

**Matrix: Solid**  
**Analysis Batch: 282035**

**Client Sample ID: PDI-SC-S105-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	15000	F1 F2	14400		mg/Kg		3	20

## Method: D 2216 - Percent Moisture

**Lab Sample ID: 580-79444-1 DU**

**Matrix: Solid**  
**Analysis Batch: 281377**

**Client Sample ID: PDI-SC-S226-6to8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	52.2		54.4		%		4	20

**Lab Sample ID: 580-79444-20 DU**

**Matrix: Solid**  
**Analysis Batch: 281377**

**Client Sample ID: PDI-SC-S248-4to6.2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	56.6		56.6		%		0	20

**Lab Sample ID: 580-79444-41 DU**

**Matrix: Solid**  
**Analysis Batch: 281377**

**Client Sample ID: PDI-SC-S192-3to4.2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	80.1		80.7		%		0.7	20

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

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

**Lab Sample ID: 580-79444-2 DU**  
**Matrix: Solid**  
**Analysis Batch: 282689**

**Client Sample ID: PDI-SC-S226-10to12**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Solids @ 70°C	58	H	56		%		2	20

**Lab Sample ID: 580-79444-17 DU**  
**Matrix: Solid**  
**Analysis Batch: 282711**

**Client Sample ID: PDI-SC-S222-13.2to15.2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Total Solids @ 70°C	65	H	65		%		0	20

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

**Lab Sample ID: MB 580-281640/3**  
**Matrix: Water**  
**Analysis Batch: 281640**

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	ND		1.0	0.19	mg/L			08/13/18 12:21	1

**Lab Sample ID: LCS 580-281640/4**  
**Matrix: Water**  
**Analysis Batch: 281640**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

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

**Lab Sample ID: 580-79444-2 DU**  
**Matrix: Solid**  
**Analysis Batch: 281490**

**Client Sample ID: PDI-SC-S226-10to12**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Gravel	0.0		0.0		%		NC	20
Coarse Sand	0.5		0.3	F3	%		50	20
Medium Sand	0.2		0.1	F3	%		67	20
Fine Sand	7.3		6.5		%		12	20
Silt	78.5		76.9		%		2	20
Clay	13.6		16.2		%		17	20

**Lab Sample ID: 580-79444-17 DU**  
**Matrix: Solid**  
**Analysis Batch: 281595**

**Client Sample ID: PDI-SC-S222-13.2to15.2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Gravel	0.0		1.1	F3	%		200	20
Coarse Sand	0.1		0.3	F3	%		100	20
Medium Sand	0.2		0.3	F3	%		40	20
Fine Sand	9.7		9.8		%		1	20
Silt	78.2		78.6		%		0.5	20

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79444-1

## Method: D7928/D6913 - ASTM D7928/D6913 (Continued)

Lab Sample ID: 580-79444-17 DU

Matrix: Solid

Analysis Batch: 281595

Client Sample ID: PDI-SC-S222-13.2to15.2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay	11.8		9.8		%		19	20

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

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-6to8**  
**Date Collected: 08/06/18 15:05**  
**Date Received: 08/08/18 15:30**

**Lab Sample ID: 580-79444-1**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 11:46	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-6to8**  
**Date Collected: 08/06/18 15:05**  
**Date Received: 08/08/18 15:30**

**Lab Sample ID: 580-79444-1**  
**Matrix: Solid**  
**Percent Solids: 52.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/21/18 21:25	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 05:14	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-10to12**  
**Date Collected: 08/06/18 15:15**  
**Date Received: 08/08/18 15:30**

**Lab Sample ID: 580-79444-2**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 11:52	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-10to12**  
**Date Collected: 08/06/18 15:15**  
**Date Received: 08/08/18 15:30**

**Lab Sample ID: 580-79444-2**  
**Matrix: Solid**  
**Percent Solids: 57.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/21/18 21:51	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 05:32	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-8to10**  
**Date Collected: 08/06/18 15:10**  
**Date Received: 08/08/18 15:30**

**Lab Sample ID: 580-79444-3**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 11:58	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: AECOM

TestAmerica Job ID: 580-79444-1

Project/Site: Portland Harbor Pre-Remedial Design

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-8to10**

**Lab Sample ID: 580-79444-3**

**Date Collected: 08/06/18 15:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 52.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/21/18 22:18	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 05:49	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-0to2**

**Lab Sample ID: 580-79444-4**

**Date Collected: 08/06/18 14:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:05	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-0to2**

**Lab Sample ID: 580-79444-4**

**Date Collected: 08/06/18 14:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 44.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/21/18 22:44	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 06:07	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-2to4**

**Lab Sample ID: 580-79444-5**

**Date Collected: 08/06/18 14:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:12	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-2to4**

**Lab Sample ID: 580-79444-5**

**Date Collected: 08/06/18 14:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 51.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/21/18 23:10	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 06:25	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-12to14**

**Lab Sample ID: 580-79444-6**

**Date Collected: 08/06/18 15:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:18	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-12to14**

**Lab Sample ID: 580-79444-6**

**Date Collected: 08/06/18 15:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 56.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/21/18 23:36	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 06:42	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-4to6**

**Lab Sample ID: 580-79444-7**

**Date Collected: 08/06/18 15:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:24	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-4to6**

**Lab Sample ID: 580-79444-7**

**Date Collected: 08/06/18 15:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 57.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/22/18 00:02	T1W	TAL SEA

TestAmerica Seattle



# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S226-4to6**

**Lab Sample ID: 580-79444-7**

**Date Collected: 08/06/18 15:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 57.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 07:00	CSC	TAL SEA

**Client Sample ID: PDI-SC-S226-14to15.8**

**Lab Sample ID: 580-79444-8**

**Date Collected: 08/06/18 15:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:29	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S226-14to15.8**

**Lab Sample ID: 580-79444-8**

**Date Collected: 08/06/18 15:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 55.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		50	282110	08/22/18 00:28	T1W	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	282920	08/30/18 22:32	TL1	TAL SEA

**Client Sample ID: PDI-SC-S222-0to2**

**Lab Sample ID: 580-79444-9**

**Date Collected: 08/07/18 09:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:35	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-0to2**

**Lab Sample ID: 580-79444-9**

**Date Collected: 08/07/18 09:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 39.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		100	282110	08/22/18 00:55	T1W	TAL SEA
Total/NA	Prep	3550B	DL		281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A	DL	50	282920	08/30/18 22:49	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-2to4**

**Lab Sample ID: 580-79444-10**

**Date Collected: 08/07/18 09:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:43	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-2to4**

**Lab Sample ID: 580-79444-10**

**Date Collected: 08/07/18 09:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 56.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		100	282110	08/22/18 01:21	T1W	TAL SEA
Total/NA	Prep	3550B	DL		281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	100	282920	08/30/18 23:06	TL1	TAL SEA

**Client Sample ID: PDI-SC-S222-4to5**

**Lab Sample ID: 580-79444-11**

**Date Collected: 08/07/18 09:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 12:57	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-4to5**

**Lab Sample ID: 580-79444-11**

**Date Collected: 08/07/18 09:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 64.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		100	282110	08/22/18 01:47	T1W	TAL SEA
Total/NA	Prep	3550B	DL		281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	100	282920	08/30/18 23:22	TL1	TAL SEA

**Client Sample ID: PDI-SC-S222-5to7.2**

**Lab Sample ID: 580-79444-12**

**Date Collected: 08/07/18 10:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 13:04	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-5to7.2**

**Lab Sample ID: 580-79444-12**

**Date Collected: 08/07/18 10:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-5to7.2**

**Lab Sample ID: 580-79444-12**

**Date Collected: 08/07/18 10:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 79.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		3	282110	08/22/18 02:13	T1W	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282920	08/30/18 23:39	TL1	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 04:10	APR	TAL SEA

**Client Sample ID: PDI-SC-S222-5to7.2D**

**Lab Sample ID: 580-79444-13**

**Date Collected: 08/07/18 10:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 13:09	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282895	08/30/18 16:04	A1K	TAL SEA

**Client Sample ID: PDI-SC-S222-5to7.2D**

**Lab Sample ID: 580-79444-13**

**Date Collected: 08/07/18 10:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 79.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		3	282110	08/22/18 02:39	T1W	TAL SEA
Total/NA	Prep	3550B	RA		281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A	RA	1	282920	08/30/18 23:56	TL1	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 04:28	APR	TAL SEA

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Lab Sample ID: 580-79444-14**

**Date Collected: 08/07/18 10:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 11:13	SPP	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Lab Sample ID: 580-79444-14**

**Date Collected: 08/07/18 10:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-7.2to9.2**

**Lab Sample ID: 580-79444-14**

**Date Collected: 08/07/18 10:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 58.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281877	08/17/18 16:39	W1T	TAL SEA
Total/NA	Prep	3550B			281382	08/12/18 10:39	KMS	TAL SEA
Total/NA	Analysis	8082A		1	281783	08/17/18 07:53	CSC	TAL SEA

**Client Sample ID: PDI-SC-S222-9.2to11.2**

**Lab Sample ID: 580-79444-15**

**Date Collected: 08/07/18 10:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 13:14	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-9.2to11.2**

**Lab Sample ID: 580-79444-15**

**Date Collected: 08/07/18 10:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 64.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282110	08/22/18 03:05	T1W	TAL SEA
Total/NA	Prep	3550B	RA		281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A	RA	1	282920	08/31/18 00:13	TL1	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 04:46	APR	TAL SEA

**Client Sample ID: PDI-SC-S222-11.2to13.2**

**Lab Sample ID: 580-79444-16**

**Date Collected: 08/07/18 10:15**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 13:20	SPP	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S222-11.2to13.2**

**Lab Sample ID: 580-79444-16**

**Date Collected: 08/07/18 10:15**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282689	08/14/18 08:19	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281490	08/14/18 08:19	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-11.2to13.2**

**Lab Sample ID: 580-79444-16**

**Date Collected: 08/07/18 10:15**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 66.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282110	08/22/18 03:31	T1W	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 05:03	APR	TAL SEA

**Client Sample ID: PDI-SC-S222-13.2to15.2**

**Lab Sample ID: 580-79444-17**

**Date Collected: 08/07/18 10:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 13:26	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S222-13.2to15.2**

**Lab Sample ID: 580-79444-17**

**Date Collected: 08/07/18 10:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 63.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281984	08/20/18 12:34	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282110	08/22/18 03:57	T1W	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 05:21	APR	TAL SEA

**Client Sample ID: PDI-SC-S248-0to2**

**Lab Sample ID: 580-79444-18**

**Date Collected: 08/07/18 16:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281896	08/17/18 13:32	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S248-0to2**

**Lab Sample ID: 580-79444-18**

**Date Collected: 08/07/18 16:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S248-0to2**

**Lab Sample ID: 580-79444-18**

**Date Collected: 08/07/18 16:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 39.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		10	281877	08/17/18 17:56	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 05:39	APR	TAL SEA

**Client Sample ID: PDI-SC-S248-2to4**

**Lab Sample ID: 580-79444-19**

**Date Collected: 08/07/18 16:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 14:00	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S248-2to4**

**Lab Sample ID: 580-79444-19**

**Date Collected: 08/07/18 16:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 55.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281877	08/17/18 18:22	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 05:56	APR	TAL SEA

**Client Sample ID: PDI-SC-S248-4to6.2**

**Lab Sample ID: 580-79444-20**

**Date Collected: 08/07/18 16:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 14:32	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S248-4to6.2**

**Lab Sample ID: 580-79444-20**

**Date Collected: 08/07/18 16:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 56.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281877	08/17/18 19:40	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 06:49	APR	TAL SEA

**Client Sample ID: PDI-SC-S139-0to2**

**Lab Sample ID: 580-79444-21**

**Date Collected: 08/07/18 14:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 14:39	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S139-0to2**

**Lab Sample ID: 580-79444-21**

**Date Collected: 08/07/18 14:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 43.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281877	08/17/18 20:06	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 07:07	APR	TAL SEA

**Client Sample ID: PDI-SC-S139-2to4.1**

**Lab Sample ID: 580-79444-22**

**Date Collected: 08/07/18 14:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 14:46	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S139-2to4.1**

**Lab Sample ID: 580-79444-22**

**Date Collected: 08/07/18 14:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 70.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281877	08/17/18 20:31	W1T	TAL SEA

TestAmerica Seattle



# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S139-2to4.1**

**Lab Sample ID: 580-79444-22**

**Date Collected: 08/07/18 14:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 70.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 07:25	APR	TAL SEA

**Client Sample ID: PDI-SC-S139-4.1to5.9**

**Lab Sample ID: 580-79444-23**

**Date Collected: 08/07/18 14:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 14:51	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282626	08/23/18 08:17	A1K	TAL SEA

**Client Sample ID: PDI-SC-S139-4.1to5.9**

**Lab Sample ID: 580-79444-23**

**Date Collected: 08/07/18 14:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 72.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		3	281877	08/17/18 20:57	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282920	08/31/18 00:30	TL1	TAL SEA

**Client Sample ID: PDI-SC-S139-4.1to5.9D**

**Lab Sample ID: 580-79444-24**

**Date Collected: 08/07/18 14:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 14:57	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

**Client Sample ID: PDI-SC-S139-4.1to5.9D**

**Lab Sample ID: 580-79444-24**

**Date Collected: 08/07/18 14:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 77.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		3	281877	08/17/18 21:23	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 08:00	APR	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-0to2**

**Lab Sample ID: 580-79444-25**

**Date Collected: 08/07/18 16:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 15:02	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S117-0to2**

**Lab Sample ID: 580-79444-25**

**Date Collected: 08/07/18 16:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 61.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		50	281877	08/17/18 21:50	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 08:18	APR	TAL SEA

**Client Sample ID: PDI-SC-S117-2to4**

**Lab Sample ID: 580-79444-26**

**Date Collected: 08/07/18 16:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 15:45	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S117-2to4**

**Lab Sample ID: 580-79444-26**

**Date Collected: 08/07/18 16:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 58.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		50	281877	08/17/18 22:16	W1T	TAL SEA
Total/NA	Prep	3546	DL		281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM	DL	1000	282505	08/27/18 01:43	T1W	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282698	08/29/18 08:36	APR	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S117-4to6**

**Lab Sample ID: 580-79444-27**

**Date Collected: 08/07/18 16:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 15:52	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S117-4to6**

**Lab Sample ID: 580-79444-27**

**Date Collected: 08/07/18 16:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 58.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		50	281877	08/17/18 22:42	W1T	TAL SEA
Total/NA	Prep	3546	DL		281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM	DL	1000	282505	08/27/18 02:09	T1W	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282709	08/29/18 12:08	TL1	TAL SEA

**Client Sample ID: PDI-SC-S219-0to2**

**Lab Sample ID: 580-79444-28**

**Date Collected: 08/07/18 11:40**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 15:59	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S219-0to2**

**Lab Sample ID: 580-79444-28**

**Date Collected: 08/07/18 11:40**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 60.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		50	281877	08/17/18 23:08	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282709	08/29/18 12:25	TL1	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S219-2to4**

**Lab Sample ID: 580-79444-29**

**Date Collected: 08/07/18 11:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 16:05	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S219-2to4**

**Lab Sample ID: 580-79444-29**

**Date Collected: 08/07/18 11:45**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 74.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281877	08/17/18 23:34	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282709	08/29/18 12:43	TL1	TAL SEA

**Client Sample ID: PDI-SC-S219-4to5.2**

**Lab Sample ID: 580-79444-30**

**Date Collected: 08/07/18 11:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 16:10	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S219-4to5.2**

**Lab Sample ID: 580-79444-30**

**Date Collected: 08/07/18 11:50**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 71.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		3	281877	08/18/18 00:00	W1T	TAL SEA
Total/NA	Prep	3550B			281621	08/15/18 09:34	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282709	08/29/18 13:01	TL1	TAL SEA

**Client Sample ID: PDI-SC-S105-0to2**

**Lab Sample ID: 580-79444-31**

**Date Collected: 08/08/18 08:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	281951	08/17/18 16:15	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-0to2**

**Lab Sample ID: 580-79444-31**

**Date Collected: 08/08/18 08:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S105-0to2**

**Lab Sample ID: 580-79444-31**

**Date Collected: 08/08/18 08:55**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 63.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		50	281877	08/18/18 00:26	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282796	08/29/18 17:05	ERZ	TAL SEA

**Client Sample ID: PDI-SC-S105-2to4**

**Lab Sample ID: 580-79444-32**

**Date Collected: 08/08/18 09:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 15:50	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S105-2to4**

**Lab Sample ID: 580-79444-32**

**Date Collected: 08/08/18 09:00**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 69.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281503	08/14/18 10:08	JCM	TAL SEA
Total/NA	Analysis	8270D SIM		5	281877	08/18/18 00:52	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282796	08/29/18 17:22	ERZ	TAL SEA

**Client Sample ID: PDI-SC-S105-4to5.6**

**Lab Sample ID: 580-79444-33**

**Date Collected: 08/08/18 09:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 16:22	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S105-4to5.6**

**Lab Sample ID: 580-79444-33**

**Date Collected: 08/08/18 09:05**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 70.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282430	08/24/18 15:31	W1T	TAL SEA
Total/NA	Prep	3546	DL		281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM	DL	100	282548	08/27/18 20:40	TL1	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282796	08/29/18 18:12	ERZ	TAL SEA

**Client Sample ID: PDI-SC-S105-5.6to6.6**

**Lab Sample ID: 580-79444-34**

**Date Collected: 08/08/18 09:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 16:28	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

**Client Sample ID: PDI-SC-S105-5.6to6.6**

**Lab Sample ID: 580-79444-34**

**Date Collected: 08/08/18 09:10**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 61.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		20	282430	08/24/18 15:56	W1T	TAL SEA
Total/NA	Prep	3546	DL		281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM	DL	500	282548	08/27/18 21:05	TL1	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282796	08/29/18 18:29	ERZ	TAL SEA

**Client Sample ID: PDI-SC-S191-0to2**

**Lab Sample ID: 580-79444-35**

**Date Collected: 08/08/18 10:15**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 16:36	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282711	08/15/18 08:31	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281595	08/15/18 08:31	JKM	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-0to2**

**Lab Sample ID: 580-79444-35**

**Date Collected: 08/08/18 10:15**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 40.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282430	08/24/18 16:20	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282796	08/29/18 18:46	ERZ	TAL SEA

**Client Sample ID: PDI-SC-S191-2to4**

**Lab Sample ID: 580-79444-36**

**Date Collected: 08/08/18 10:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 16:43	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

**Client Sample ID: PDI-SC-S191-2to4**

**Lab Sample ID: 580-79444-36**

**Date Collected: 08/08/18 10:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 55.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282430	08/24/18 16:45	W1T	TAL SEA
Total/NA	Prep	3550B	DL		281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	50	282920	08/30/18 20:51	TL1	TAL SEA

**Client Sample ID: PDI-SC-S191-4to6**

**Lab Sample ID: 580-79444-37**

**Date Collected: 08/08/18 10:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 16:48	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

**Client Sample ID: PDI-SC-S191-4to6**

**Lab Sample ID: 580-79444-37**

**Date Collected: 08/08/18 10:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 55.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		20	282430	08/24/18 17:09	W1T	TAL SEA

TestAmerica Seattle



# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S191-4to6**

**Lab Sample ID: 580-79444-37**

**Date Collected: 08/08/18 10:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 55.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282796	08/29/18 19:19	ERZ	TAL SEA
Total/NA	Prep	3550B	DL		281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	50	282920	08/30/18 21:08	TL1	TAL SEA

**Client Sample ID: PDI-SC-S191-6to8.1**

**Lab Sample ID: 580-79444-38**

**Date Collected: 08/08/18 10:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 16:55	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

**Client Sample ID: PDI-SC-S191-6to8.1**

**Lab Sample ID: 580-79444-38**

**Date Collected: 08/08/18 10:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 67.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282430	08/24/18 17:34	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282798	08/29/18 21:34	ERZ	TAL SEA
Total/NA	Prep	3550B	DL		281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	10	282920	08/30/18 21:25	TL1	TAL SEA

**Client Sample ID: PDI-SC-S192-0to1.5**

**Lab Sample ID: 580-79444-39**

**Date Collected: 08/08/18 11:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 17:01	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-0to1.5**

**Lab Sample ID: 580-79444-39**

**Date Collected: 08/08/18 11:20**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 27.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		20	282430	08/24/18 17:58	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282798	08/29/18 21:51	ERZ	TAL SEA
Total/NA	Prep	3550B	DL		281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	50	282920	08/30/18 21:41	TL1	TAL SEA

**Client Sample ID: PDI-SC-S192-1.5to3**

**Lab Sample ID: 580-79444-40**

**Date Collected: 08/08/18 11:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 17:08	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

**Client Sample ID: PDI-SC-S192-1.5to3**

**Lab Sample ID: 580-79444-40**

**Date Collected: 08/08/18 11:25**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 37.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		20	282430	08/24/18 18:23	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282798	08/29/18 22:08	ERZ	TAL SEA
Total/NA	Prep	3550B	DL		281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	50	282920	08/30/18 21:58	TL1	TAL SEA

**Client Sample ID: PDI-SC-S192-3to4.2**

**Lab Sample ID: 580-79444-41**

**Date Collected: 08/08/18 11:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282035	08/20/18 17:16	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	281377	08/11/18 15:51	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	282886	08/16/18 08:22	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	281703	08/16/18 08:22	JKM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79444-1

**Client Sample ID: PDI-SC-S192-3to4.2**

**Lab Sample ID: 580-79444-41**

**Date Collected: 08/08/18 11:30**

**Matrix: Solid**

**Date Received: 08/08/18 15:30**

**Percent Solids: 80.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			281889	08/17/18 16:04	SPS	TAL SEA
Total/NA	Analysis	8270D SIM		10	282430	08/24/18 18:47	W1T	TAL SEA
Total/NA	Prep	3550B			281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A		1	282798	08/29/18 22:25	ERZ	TAL SEA
Total/NA	Prep	3550B	DL		281623	08/15/18 09:46	SPS	TAL SEA
Total/NA	Analysis	8082A	DL	10	282920	08/30/18 22:15	TL1	TAL SEA

**Client Sample ID: PDI-RB-SS-180807**

**Lab Sample ID: 580-79444-42**

**Date Collected: 08/07/18 13:00**

**Matrix: Water**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			281384	08/12/18 11:26	JSM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281512	08/14/18 12:41	T1W	TAL SEA
Total/NA	Prep	3510C			281399	08/13/18 09:26	JCM	TAL SEA
Total/NA	Analysis	8082A		1	282692	08/29/18 04:34	JES	TAL SEA
Total/NA	Analysis	SM 5310B		1	281640	08/13/18 12:21	ASJ	TAL SEA

**Client Sample ID: PDI-RB-SS-180808**

**Lab Sample ID: 580-79444-43**

**Date Collected: 08/08/18 10:55**

**Matrix: Water**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			281384	08/12/18 11:26	JSM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281512	08/14/18 13:07	T1W	TAL SEA
Total/NA	Prep	3510C			281399	08/13/18 09:26	JCM	TAL SEA
Total/NA	Analysis	8082A		1	282692	08/29/18 04:51	JES	TAL SEA
Total/NA	Analysis	SM 5310B		1	281640	08/13/18 12:21	ASJ	TAL SEA

**Client Sample ID: PDI-RB-SS-180806**

**Lab Sample ID: 580-79444-44**

**Date Collected: 08/06/18 16:00**

**Matrix: Water**

**Date Received: 08/08/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			281384	08/12/18 11:26	JSM	TAL SEA
Total/NA	Analysis	8270D SIM		1	281512	08/14/18 13:33	T1W	TAL SEA
Total/NA	Prep	3510C			281399	08/13/18 09:26	JCM	TAL SEA
Total/NA	Analysis	8082A		1	282692	08/29/18 05:08	JES	TAL SEA
Total/NA	Analysis	SM 5310B		1	281640	08/13/18 12:21	ASJ	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: 580-79444-1

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
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
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: 580-79444-1

Project/Site: Portland Harbor Pre-Remedial Design


Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79444-1	PDI-SC-S226-6to8	Solid	08/06/18 15:05	08/08/18 15:30
580-79444-2	PDI-SC-S226-10to12	Solid	08/06/18 15:15	08/08/18 15:30
580-79444-3	PDI-SC-S226-8to10	Solid	08/06/18 15:10	08/08/18 15:30
580-79444-4	PDI-SC-S226-0to2	Solid	08/06/18 14:50	08/08/18 15:30
580-79444-5	PDI-SC-S226-2to4	Solid	08/06/18 14:55	08/08/18 15:30
580-79444-6	PDI-SC-S226-12to14	Solid	08/06/18 15:20	08/08/18 15:30
580-79444-7	PDI-SC-S226-4to6	Solid	08/06/18 15:00	08/08/18 15:30
580-79444-8	PDI-SC-S226-14to15.8	Solid	08/06/18 15:25	08/08/18 15:30
580-79444-9	PDI-SC-S222-0to2	Solid	08/07/18 09:45	08/08/18 15:30
580-79444-10	PDI-SC-S222-2to4	Solid	08/07/18 09:50	08/08/18 15:30
580-79444-11	PDI-SC-S222-4to5	Solid	08/07/18 09:55	08/08/18 15:30
580-79444-12	PDI-SC-S222-5to7.2	Solid	08/07/18 10:00	08/08/18 15:30
580-79444-13	PDI-SC-S222-5to7.2D	Solid	08/07/18 10:00	08/08/18 15:30
580-79444-14	PDI-SC-S222-7.2to9.2	Solid	08/07/18 10:05	08/08/18 15:30
580-79444-15	PDI-SC-S222-9.2to11.2	Solid	08/07/18 10:10	08/08/18 15:30
580-79444-16	PDI-SC-S222-11.2to13.2	Solid	08/07/18 10:15	08/08/18 15:30
580-79444-17	PDI-SC-S222-13.2to15.2	Solid	08/07/18 10:20	08/08/18 15:30
580-79444-18	PDI-SC-S248-0to2	Solid	08/07/18 16:45	08/08/18 15:30
580-79444-19	PDI-SC-S248-2to4	Solid	08/07/18 16:50	08/08/18 15:30
580-79444-20	PDI-SC-S248-4to6.2	Solid	08/07/18 16:55	08/08/18 15:30
580-79444-21	PDI-SC-S139-0to2	Solid	08/07/18 14:20	08/08/18 15:30
580-79444-22	PDI-SC-S139-2to4.1	Solid	08/07/18 14:25	08/08/18 15:30
580-79444-23	PDI-SC-S139-4.1to5.9	Solid	08/07/18 14:30	08/08/18 15:30
580-79444-24	PDI-SC-S139-4.1to5.9D	Solid	08/07/18 14:30	08/08/18 15:30
580-79444-25	PDI-SC-S117-0to2	Solid	08/07/18 16:00	08/08/18 15:30
580-79444-26	PDI-SC-S117-2to4	Solid	08/07/18 16:05	08/08/18 15:30
580-79444-27	PDI-SC-S117-4to6	Solid	08/07/18 16:10	08/08/18 15:30
580-79444-28	PDI-SC-S219-0to2	Solid	08/07/18 11:40	08/08/18 15:30
580-79444-29	PDI-SC-S219-2to4	Solid	08/07/18 11:45	08/08/18 15:30
580-79444-30	PDI-SC-S219-4to5.2	Solid	08/07/18 11:50	08/08/18 15:30
580-79444-31	PDI-SC-S105-0to2	Solid	08/08/18 08:55	08/08/18 15:30
580-79444-32	PDI-SC-S105-2to4	Solid	08/08/18 09:00	08/08/18 15:30
580-79444-33	PDI-SC-S105-4to5.6	Solid	08/08/18 09:05	08/08/18 15:30
580-79444-34	PDI-SC-S105-5.6to6.6	Solid	08/08/18 09:10	08/08/18 15:30
580-79444-35	PDI-SC-S191-0to2	Solid	08/08/18 10:15	08/08/18 15:30
580-79444-36	PDI-SC-S191-2to4	Solid	08/08/18 10:20	08/08/18 15:30
580-79444-37	PDI-SC-S191-4to6	Solid	08/08/18 10:25	08/08/18 15:30
580-79444-38	PDI-SC-S191-6to8.1	Solid	08/08/18 10:30	08/08/18 15:30
580-79444-39	PDI-SC-S192-0to1.5	Solid	08/08/18 11:20	08/08/18 15:30
580-79444-40	PDI-SC-S192-1.5to3	Solid	08/08/18 11:25	08/08/18 15:30
580-79444-41	PDI-SC-S192-3to4.2	Solid	08/08/18 11:30	08/08/18 15:30
580-79444-42	PDI-RB-SS-180807	Water	08/07/18 13:00	08/08/18 15:30
580-79444-43	PDI-RB-SS-180808	Water	08/08/18 10:55	08/08/18 15:30
580-79444-44	PDI-RB-SS-180806	Water	08/06/18 16:00	08/08/18 15:30

TestAmerica Seattle



# SUBSURFACE SEDIMENT CHAIN OF CUSTODY

<b>TestAmerica-Seattle</b> 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047	<b>Client Contact</b> AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: (206) 438-2700 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Subsurface Sediment Sample Type:	<b>Project Contact: Amy Dahl / Chelsey Cook</b> Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) <u>W</u> 21 days <input checked="" type="checkbox"/> Calendar (C) or Work Days (W) <u>W</u> <input type="checkbox"/> Other	Date: 8/8/18 Carrier: Courier COC No. 1 of 1 pages	Site Contact: Jennifer Ray Laboratory Contact: Elaine-Walker Aterberg Limits ASTM D4318 Total Solids 8082A, 8270D-SIM, 9060, 1603 PCB Aroclors, PAHs, Total Organic Carbon, Grain Size ASTM D7928/D6913 Archive PCD/Fs Fraction		
Sample Identification						
Sample ID	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.
PDI-SC-S226 - 6 to 8	8/6/2018	15:05	SC		ED	4
PDI-SC-S226 - 10 to 12	8/6/2018	15:15	SC		ED	
PDI-SC-S226 - 8 to 10	8/6/2018	15:10	SC		ED	
PDI-SC-S226 - 0 to 2	8/6/2018	14:50	SC		ED	
PDI-SC-S226 - 2 to 4	8/6/2018	14:55	SC		ED	
PDI-SC-S226 - 12 to 14	8/6/2018	15:20	SC		ED	
PDI-SC-S226 - 4 to 6	8/6/2018	15:00	SC		ED	
PDI-SC-S226 - 14 to 15.8	8/6/2018	15:25	SC		ED	
PDI-SC-S222 - 0 to 2	8/7/2018	09:45	SC		ED	
PDI-SC-S222 - 2 to 4	8/7/2018	9:50	SC		ED	
PDI-SC-S222 - 4 to 5	8/7/2018	9:55	SC		ED	
PDI-SC-S222 - 5 to 7.2	8/7/2018	10:00	SC		ED	



580-79444 Chain of Custody

Return To Client   
  Disposal By Lab   
  Archive For 12 Months

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

Relinquished by:	Company: <u>AECOM</u>	Date/Time: <u>8/8/18 1445</u>	Company: <u>M-E</u>	Date/Time: <u>8/8/18 1445</u>
Relinquished by:	Company: <u>M-E</u>	Date/Time: <u>8/8/18 1530</u>	Company: <u>AFOR</u>	Date/Time: <u>8/8/18 1530</u>
Relinquished by:	Company:	Date/Time:	Company:	Date/Time:



# SUBSURFACE SEDIMENT CHAIN OF CUSTODY

**TestAmerica-Seattle**  
5755-8th-Street-East  
Tacoma, WA 98424-1317  
Ph: 252-922-2310 Fax: 252-922-5047

**Client Contact**  
AECOM  
1111 3rd Ave Suite 1600  
Seattle, WA 98101  
Phone: (206) 438-2700 Fax: 1-(866) 495-5288  
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Portland, OR  
Project #: 60566335 Study: Subsurface Sediment

Sample Type:

**Project Contact:** Amy Dahl / Chelsey Cook  
Tel: (206) 438-2261 / (206) 438-2010  
Analysis Turnaround Time  
Calendar (C) or Work Days (W) W  
 21 days  
 Other \_\_\_\_\_

**Site Contact:** Jennifer Ray  
**Date:** 8/8/18  
**Carrier:** Courier

**Laboratory Contact:** Elaine Walker  
Aterberg Limits ASTM D4318  
Total Solids 8082A, 8270D-SIM, 9060, 1603  
PCB Aroclors, PAHs, Total Organic Carbon,  
Grain size ASTM D7928/D6913  
Archive  
PCDD/Fs 1613B

COC No: 1 of 9 pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction		Sample Specific Notes:
							AG	WMG	
PDI-SC-S222 - 5 to 7.2D	8/7/2018	10:00	SC		ED	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S222 - 7.2 to 9.2	8/7/2018	10:05	SC	MS/MSD	ED	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S222 - 9.2 to 11.2	8/7/2018	10:10	SC		ED	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S222 - 11 to 13.2	8/7/2018	10:15	SC		ED	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S222 - 13 to 15.2	8/7/2018	10:20	SC		ED	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S248 - 0 to 2	8/7/2018	16:45	SC		ED	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S248 - 2 to 4	8/7/2018	16:50	SC	MS/MSD	ED	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S248 - 4 to 6.2	8/7/2018	16:55	SC		ED		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S219 - 0 to 2	8/7/2018	11:40	SC		ED		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S219 - 2 to 4	8/7/2018	11:45	SC		ED		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S219 - 4 to 5.2	8/7/2018	11:50	SC		ED		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PDI-SC-S139 - 0 to 2	8/7/2018	14:20	SC		ED		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

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

Relinquished by:	Date/Time	Company:	Received by:	Date/Time	Company:
<i>[Signature]</i>	8/8/18 1445	M.E.	<i>[Signature]</i>	8/8/18 1445	M.E.
<i>[Signature]</i>	8/8/18 1530	M.E.	<i>[Signature]</i>	8/8/18 1530	M.E.
<i>[Signature]</i>			<i>[Signature]</i>		





# SUBSURFACE SEDIMENT CHAIN OF CUSTODY

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

**Client Contact**  
AECOM  
1111 3rd Ave Suite 1600  
Seattle, WA 98101  
Phone: (206)438-2700 Fax: 1+(866)495-5288  
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Portland, OR  
Project #: 60566335 Study: Subsurface Sediment  
Sample Type:

Project Contact: Amy Dahl / Chelsey Cook  
Tel: (206) 438-2261 / (206) 438-2010  
Analysis Turnaround Time  
Calendar (C) or Work Days (W) W  
 21 days  
 Other \_\_\_\_\_

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction		Sample Specific Notes
							PCDD's 1613B	Archive	
PDI-SC-S139 - 0 to 2	8/7/2018	14:20	SC		ED	4	X	X	
PDI-SC-S139 - 2 to 4.1	8/7/2018	14:25	SC	MS/MSD	ED	3	X	X	
PDI-SC-S139 - 4.1 to 5.9	8/7/2018	14:30	SC		ED	3	X	X	
PDI-SC-S139 - 4.1 to 5.9D	8/7/2018	14:30	SC		ED	4	X	X	
PDI-SC-S117 - 0 to 2	8/7/2018	16:00	SC		ED	1	X	X	
PDI-SC-S117 - 2 to 4	8/7/2018	16:05	SC		ED	1	X	X	
PDI-SC-S117 - 4 to 6	8/7/2018	16:10	SC		ED	1	X	X	
PDI-SC-S219 - 0 to 2	8/7/2018	11:40	SC		ED	1	X	X	
PDI-SC-S219 - 2 to 4	8/7/2018	11:45	SC		ED	1	X	X	
PDI-SC-S219 - 4 to 5.2	8/7/2018	11:50	SC		ED	1	X	X	
PDI-SC-S105 - 0 to 2	8/8/2018	8:55	SC		ED	1	X	X	
PDI-SC-S105 - 2 to 4	8/8/2018	9:00	SC	MS/MSD	ED	6	X	X	

Site Contact: Jennifer Ray Date: 8/8/18  
Laboratory Contact: Elaine Walker Carrier: Courier  
Atterberg Limits ASTM D4318  
Total Solids 8082A, 8270D-SIM, 9060, 1603  
PCB Aroclors, PAHs, Total Organic Carbon,  
Grain size ASTM D7928/D6913

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Coil  
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid  
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal		Special Instructions/OC Requirements & Comments: Separate reports for each lab	
Return To Client	Respal By Lab	Respal For 12 Months	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Received by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Company: M.E.	Date/Time: 8/8/18 1445
Received by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Company: TAPAR	Date/Time: 8/8/18 630
Received by: _____	Received by: _____	Company: _____	Date/Time: _____

**SUBSURFACE SEDIMENT  
CHAIN OF CUSTODY**

<b>TestAmerica-Seattle</b> 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		<b>Client Contact</b> AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Subsurface Sediment Sample Type:		<b>Project Contact: Amy Dahl / Chelsey Cook</b> Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar ( C ) or Work Days (W) _ W _ 21 days <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other		<b>Site Contact: Jennifer Ray</b> Laboratory Contact: Elaine-Walker Date: 8/8/18 Carrier: Courier COC No.: 1 of 5 pages													
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCDDs 1613B	Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 1603	Atterberg Limits ASTM D4318	WQ-PCBA	WQ-PAHs	WQ-D/F	WQ-TOC	Sample Specific Notes:		
PDI-SC-S105 - 4 to 5.6	8/8/2018	9:05	SC		ED	5		X	X	X	X	X							
PDI-SC-S105 - 5.6 to 6.6	8/8/2018	9:10	SC		ED	5		X	X	X	X								
PDI-SC-S191 - 0 to 2	8/8/2018	10:15	SC		ED	4		X	X	X	X								
PDI-SC-S191 - 2 to 4	8/8/2018	10:20	SC		ED	4		X	X	X	X								
PDI-SC-S191 - 4 to 6	8/8/2018	10:25	SC		ED	4		X	X	X	X								
PDI-SC-S191 - 6 to 8.1	8/8/2018	10:30	SC		ED	4		X	X	X	X								
PDI-SC-S192 - 0 to 1.5	8/8/2018	11:20	SC		ED	4		X	X	X	X								
PDI-SC-S192 - 1.5 to 3	8/8/2018	11:25	SC		ED	4		X	X	X	X								
PDI-SC-S192 - 3 to 4.2	8/8/2018	11:30	SC		ED	4		X	X	X	X								
PDI-RB-SS-180807	8/7/2018	13:00	W		ED	7							X	X	X				
PDI-RB-SS-180808	8/8/2018	10:55	W		ED	7							X	X	X				
PDI-105-SS-180806	8/6/18		W		ED	7							X	X	X				
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Col Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																			
Special Instructions/QC Requirements & Comments: <b>Separate reports for each lab</b> Sample Disposal <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Dispose By Lab <input checked="" type="checkbox"/> Archive For 12 Months																			
Relinquished by:		Company: M.E.	Date/Time: 8/8/18 1445	Received by:		Company: M.E.	Date/Time: 8/8/18 1445	Relinquished by:		Company: M.E.	Date/Time: 8/8/18 1530	Received by:		Company: M.E.	Date/Time: 8/8/18 1530	Relinquished by:		Company: M.E.	Date/Time: 8/8/18 1530







TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		SUBSURFACE SEDIMENT CHAIN OF CUSTODY																									
Client Contact		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010				Site Contact: Jennifer Ray Laboratory Contact: Elaine-Walker				Date: 8/8/18		COC No: 1 2 of 9 pages															
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: Subsurface Sediment Sample Type:		Analysis Turnaround Time Calendar ( C ) or Work Days (W) W <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other _____				<table border="1"> <tr> <th>Fraction</th> <th>PCDD/Fs 1613B</th> <th>Archive</th> <th>Grain size ASTM D7928/D6913</th> <th>PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIML, 9060, 160.3</th> <th>Atterberg Limits ASTM D4318</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										Fraction	PCDD/Fs 1613B	Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIML, 9060, 160.3	Atterberg Limits ASTM D4318						
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Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCDD/Fs 1613B	Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIML, 9060, 160.3	Atterberg Limits ASTM D4318	Sample Specific Notes:														
PDI-SC-S222 - 5 to 7.2D	8/7/2018	10:00	SC		ED	3		x	x	<del>NY</del>	x																
PDI-SC-S222 - 7.2 to 9.2	8/7/2018	10:05	SC	MS/MSD	ED	6		x	x	x	x																
PDI-SC-S222 - 9.2 to 11.2	8/7/2018	10:10	SC		ED	9		x	x	x	x																
PDI-SC-S222 - 11 to 13.2	8/7/2018	10:15	SC		ED	4		x	x	x	x																
PDI-SC-S222 - 13 to 15.2	8/7/2018	10:20	SC		ED	4		x	x	x	x																
PDI-SC-S248 - 0 to 2	8/7/2018	16:45	SC		ED	4		x	x	x	x																
PDI-SC-S248 - 2 to 4	8/7/2018	16:50	SC	MS/MSD	ED	6		x	x	x	x																
PDI-SC-S248 - 4 to 6.2	8/7/2018	16:55	SC		ED			x	x	x	x																
<del>PDI-SC-S219 - 0 to 2</del>	<del>8/7/2018</del>	<del>11:40</del>	<del>SC</del>		<del>ED</del>			<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>																
<del>PDI-SC-S219 - 2 to 4</del>	<del>8/7/2018</del>	<del>11:45</del>	<del>SC</del>		<del>ED</del>			<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>																
<del>PDI-SC-S219 - 4 to 5.2</del>	<del>8/7/2018</del>	<del>11:50</del>	<del>SC</del>		<del>ED</del>			<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>																
<del>PDI-SC-S139 - 0 to 2</del>	<del>8/7/2018</del>	<del>14:20</del>	<del>SC</del>		<del>ED</del>			<del>x</del>	<del>x</del>	<del>x</del>	<del>x</del>																
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Col							AG	AG	WMG	WMG	AG																
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid																											
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																											
Sample Disposal							<input type="checkbox"/> Return To Client	<input checked="" type="checkbox"/> Sposal By Lab	<input checked="" type="checkbox"/> Archive For 12 Months																		
Special Instructions/QC Requirements & Comments: Separate reports for each lab																											
Relinquished by:	Company: AECOM	Date/Time: 8/8/18 1445	Relinquished by:	Company: M.E.	Date/Time: 8/8/18 1530	Relinquished by:	Company: TAPOR	Date/Time: 8/8/18 1700	Relinquished by:	Company: TAPOR	Date/Time: 8/8/18 1530	Relinquished by:	Company: TAPOR	Date/Time: 8/9/18 0920													

TestAmerica-Seattle 5755 8th Street East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		SUBSURFACE SEDIMENT CHAIN OF CUSTODY													
Client Contact		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010			Site Contact: Jennifer Ray			Date: 8/8/18		COC No 1					
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: Subsurface Sediment Sample Type:		Analysis Turnaround Time Calendar (C) or Work Days (W) W <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other _____			Laboratory Contact: Elaine Walker			Carrier: Courier		3 of 4 pages					
Sample Identification		Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCDD/Fs 163B	Asbestos	Grain size ASTM D7528/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 140.3	Atterberg Limits ASTM D4318	Sample Specific Notes:	
PDI-SC-S139 - 0 to 2		8/7/2018	14:20	SC		ED	4		x	x	x	x		<p>PRE ACCO 8/7/18 FW</p>	
PDI-SC-S139 - 2 to 4.1		8/7/2018	14:25	SC	MS/MSD	ED	4		x	x	x	x			
PDI-SC-S139 - 4.1 to 5.9		8/7/2018	14:30	SC		ED	3		x	x	x	x			
PDI-SC-S139 - 4.1 to 5.9D		8/7/2018	14:30	SC		ED	4		x	x	x	x			
PDI-SC-S117 - 0 to 2		8/7/2018	16:00	SC		ED	4		x	x	x	x			
PDI-SC-S117 - 2 to 4		8/7/2018	16:05	SC		ED	4		x	x	x	x			
PDI-SC-S117 - 4 to 6		8/7/2018	16:10	SC		ED	4		x	x	x	x			
PDI-SC-S219 - 0 to 2		8/7/2018	11:40	SC		ED	4		x	x	x	x			
PDI-SC-S219 - 2 to 4		8/7/2018	11:45	SC		ED	4		x	x	x	x			
PDI-SC-S219 - 4 to 5.2		8/7/2018	11:50	SC		ED	4		x	x	x	x			
PDI-SC-S105 - 0 to 2		8/8/2018	8:55	SC		ED	4		x	x	x	x			
PDI-SC-S105 - 2 to 4		8/8/2018	9:00	SC	MS/MSD	ED	6		x	x	x	x			
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Coil								AG	AG	WMG	WMG	AG			
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid															
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)															
Sample Disposal								<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposed By Lab <input checked="" type="checkbox"/> Archive For 12 Months							
Special Instructions/QC Requirements & Comments: Separate reports for each lab															
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:				
	AECOM	8/8/18 1445		M.E.	8/8/18 1445		M.E.	8/8/18 1530		TAPOR	8/8/18 1530				
	M.E.	8/8/18 1530		TAPOR	8/8/18 1530		TAPOR	8/9/18 0920		TAPOR	8/9/18 0920				

**TestAmerica-Seattle**  
 5755-8th-Street-East  
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**SUBSURFACE SEDIMENT  
 CHAIN OF CUSTODY**

<b>Client Contact</b>	Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010	Site Contact: Jennifer Ray Laboratory Contact: Elaine-Walker	Date: 8/8/18	COC No: 1 4 of 4 pages
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: Subsurface Sediment Sample Type:	<b>Analysis Turnaround Time</b> Calendar ( C ) or Work Days (W) W			
<input checked="" type="checkbox"/> 21 days		<input type="checkbox"/> Other _____		

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCDD/Fs 1613B	Archie	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 160.3	Atterberg Limits ASTM D4318	WO-PCBA	WO-PAHs	WO-D/F	WO-TOC	Sample Specific Notes:	
PDI-SC-S105 - 4 to 5.6	8/8/2018	9:05	SC		ED	5		x	x	x	x	x						
PDI-SC-S105 - 5.6 to 6.6	8/8/2018	9:10	SC		ED	5		x	x	x	x							
PDI-SC-S191 - 0 to 2	8/8/2018	10:15	SC		ED	4		x	x	x	x							
PDI-SC-S191 - 2 to 4	8/8/2018	10:20	SC		ED	5		x	x	x	x							
PDI-SC-S191 - 4 to 6	8/8/2018	10:25	SC		ED	5		x	x	x	x							
PDI-SC-S191 - 6 to 8.1	8/8/2018	10:30	SC		ED	5		x	x	x	x							
PDI-SC-S192 - 0 to 1.5	8/8/2018	11:20	SC		ED	5		x	x	x	x							
PDI-SC-S192 - 1.5 to 3	8/8/2018	11:25	SC		ED	5		x	x	x	x							
PDI-SC-S192 - 3 to 4.2	8/8/2018	11:30	SC		ED	5		x	x	x	x							
PDI-RB-SS-180807	8/7/2018	13:00	W		ED	7							x	x	x	x		
PDI-RB-SS-180808	8/8/2018	10:55	W		ED	7							x	x	x	x		
PDI-RB-SS-180806	8/6/18		W		ED	7							x	x	x	x		

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Coil  
 Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid  
 Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal:  Return To Client  Sposal By Lab  Archive For 12 Months

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

Relinquished by:	Company: AECOM	Date/Time: 8/8/18 1445	Received by:	Company: M-E	Date/Time: 8/8/18 1445
Relinquished by:	Company: M-E	Date/Time: 8/8/18 1530	Received by:	Company: TAPOR	Date/Time: 8/8/18 1530
Relinquished by:	Company: TAPOR	Date/Time: 8/8/18 1700	Received by:	Company: TASC	Date/Time: 8-9-18 0920







# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79444-1

**Login Number: 79444**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Antonson, Angeline D**

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

