

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

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TestAmerica Job ID: 580-79672-1

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

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Authorized for release by:  
10/22/2018 12:11:59 PM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

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

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# Case Narrative

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

TestAmerica Job ID: 580-79672-1

**Job ID: 580-79672-1**

**Laboratory: TestAmerica Seattle**

**Narrative**

## CASE NARRATIVE Client: AECOM Project: Portland Harbor Pre-Remedial Design Report Number: 580-79672-1

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

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

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

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

### **RECEIPT**

Fifty-four samples were received on 8/17/2018 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 1.3° C, 1.7° C, 1.9° C, 2.5° C, 3.1° C, 3.6° C, 4.0° C and 4.7° C.

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

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

Samples were placed in freezers at -10 degrees Celsius to extend holding time. Samples were placed in the freezer on August 28, 2018.

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

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

Samples PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-4to6 (580-79672-10), PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S109-10to11.3 (580-79672-13), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29), PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-6.7to8.8D (580-79672-36), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-6to8 (580-79672-41), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-10to12.4 (580-79672-43), PDI-SC-S157-12.4to14 (580-79672-44), PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), PDI-SC-S053-8to10 (580-79672-52), PDI-SC-S053-10to12.4 (580-79672-53) and PDI-SC-S113(A)-2.2to4.6D (580-79672-54) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D\_SIM. The samples were prepared on 10/03/2018 and 10/12/2018 and analyzed on 10/06/2018, 10/07/2018, 10/08/2018 and 10/15/2018.

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### Laboratory: TestAmerica Seattle (Continued)

The following samples were frozen in hold: PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-4to6 (580-79672-10), PDI-SC-S109-4to6 (580-79672-10[MS]), PDI-SC-S109-4to6 (580-79672-10[MSD]), PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S109-10to11.3 (580-79672-13), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-2to4 (580-79672-26[MS]), PDI-SC-S232-2to4 (580-79672-26[MSD]), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29) and PDI-SC-S263-3.8to5.9 (580-79672-30). PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-6.7to8.8D (580-79672-36), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-6to8 (580-79672-41), PDI-SC-S157-6to8 (580-79672-41[MS]), PDI-SC-S157-6to8 (580-79672-41[MSD]), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-10to12.4 (580-79672-43), PDI-SC-S157-12.4to14 (580-79672-44), PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), PDI-SC-S053-8to10 (580-79672-52), PDI-SC-S053-10to12.4 (580-79672-53), and PDI-SC-S113(A)-2.2to4.6D (580-79672-54). Samples were removed from freezer on 10/02/18 at 20:15 and thawed.

The following samples were frozen in hold: PDI-SC-S109-4to6 (580-79672-10), PDI-SC-S109-4to6 (580-79672-10[MS]), PDI-SC-S109-4to6 (580-79672-10[MSD]), PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S109-10to11.3 (580-79672-13), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29) and PDI-SC-S263-3.8to5.9 (580-79672-30). Samples were removed from freezer for reanalysis on 10/11/18 at 19:00 and thawed.

Fluoranthene was detected in method blank MB 580-285540/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Several analytes were detected in method blank MB 580-285541/1-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 the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Terphenyl-d14 failed the surrogate recovery criteria high for PDI-SC-S109-8to10 (580-79672-12). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not performed.

Terphenyl-d14 failed the surrogate recovery criteria low for PDI-SC-S157-6to8MS (580-79672-41MS). Terphenyl-d14 was inadvertently omitted during the extraction process. Since all other samples met acceptance criteria (including the parent and matrix spike duplicate) for Terphenyl-d14, the data is qualified and reported.

Internal standard (ISTD) Perylene-d12 response for the following method blank was outside control limits: (MB 580-285541/1-A). The method blank was re-analyzed with concurring results, the affected samples and the LCS/LCSD pair all met acceptance criteria for this ISTD, and the MB was less than 1/2 the reporting limit for all the affected analytes except for Phenanthrene, which was above 1/2 the RL.

Several analytes failed the recovery criteria high for the MS of sample PDI-SC-S109-4to6MS (580-79672-10) in batch 580-286489. Several analytes failed the recovery criteria high for the MSD of sample PDI-SC-S109-4to6MSD (580-79672-10) in batch 580-286489. Several analytes exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recoveries and precision was within acceptance limits. The presence of the '4' qualifier indicates analytes where

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the concentration in the unspiked sample exceeded four times the spiking amount.

Several analytes failed the recovery criteria low for the MS of sample PDI-SC-S232-2to4MS (580-79672-26) in batch 580-285875. Several analytes failed the recovery criteria low for the MSD of sample PDI-SC-S232-2to4MSD (580-79672-26) in batch 580-285875. Several analytes exceeded the RPD limit. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCSD) recoveries and precision were within acceptance limits.

Fluorene and Naphthalene failed the recovery criteria low for the MS of sample PDI-SC-S157-6to8MS (580-79672-41) in batch 580-285850. 2-Methylnaphthalene, Acenaphthene and Naphthalene exceeded the RPD limit for the MSD of sample PDI-SC-S157-6to8MSD (580-79672-41) in batch 580-285850. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recoveries were within acceptance limits.

The following samples were diluted due to the nature of the sample matrix: PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-2to4 (580-79672-26[MS]), PDI-SC-S232-2to4 (580-79672-26[MSD]), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29), PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-6.7to8.8D (580-79672-36), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), and PDI-SC-S053-8to10 (580-79672-52), PDI-SC-S053-10to12.4 (580-79672-53), and PDI-SC-S113(A)-2.2to4.6D (580-79672-54). 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) - RINSE BLANK**

**Samples PDI-RB-SS-180816-1110 (580-79672-46) and PDI-RB-SS-180817 (580-79672-47) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with 8270D SIM.** The samples were prepared on 08/22/2018 and analyzed on 08/28/2018.

Acenaphthene failed the recovery criteria low for LCS 580-282236/2-A. Acenaphthene and Anthracene exceeded the RPD limit for LCSD 580-282236/3-A. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

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

### **POLYCHLORINATED BIPHENYLS (PCBS)**

**Samples PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-4to6 (580-79672-10), PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S109-10to11.3 (580-79672-13), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29), PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-6.7to8.8D (580-79672-36), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-6to8 (580-79672-41), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-10to12.4 (580-79672-43), PDI-SC-S157-12.4to14 (580-79672-44),**

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**PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), PDI-SC-S053-8to10 (580-79672-52), PDI-SC-S053-10to12.4 (580-79672-53) and PDI-SC-S113(A)-2.2to4.6D (580-79672-54) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA sw-846 method 8082A.** The samples were prepared on 09/28/2018, 10/03/2018 and 10/05/2018 and analyzed on 10/01/2018, 10/04/2018 and 10/08/2018.

Surrogate recovery for the following samples were outside control limits: PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S263-3.8to5.9 MS (580-79672-30 MS) and PDI-SC-S263-3.8to5.9 MSD (580-79672-30 MSD), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-12.4to14 (580-79672-44), PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), PDI-SC-S053-8to10 (580-79672-52) and PDI-SC-S053-10to12.4 (580-79672-53). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis were not performed.

The continuing calibration verification (CCV) associated with 580-285345 recovered high and outside the control limits for PCB-1232, PCB-1248, PCB-1254 and PCB-1260 on the confirmation column only. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-10to12.4 (580-79672-43), PDI-SC-S157-12.4to14 (580-79672-44), PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), (CCV 580-285345/4), (CCV 580-285345/5), (CCV 580-285345/7) and (CCVIS 580-285345/8).

The following continuing calibration verification (CCV) standard associated with batch 580-285345 recovered outside acceptance criteria for %D for surrogate DCB Decachlorobiphenyl. Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. The following samples are impacted: PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-10to12.4 (580-79672-43), PDI-SC-S157-12.4to14 (580-79672-44), PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49) and (CCVIS 580-285345/8).

The continuing calibration verification (CCV) associated with 580-285370 recovered high and outside the control limits for PCB-1254 and PCB-1260 on the confirmation column only. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), PDI-SC-S053-8to10 (580-79672-52), PDI-SC-S053-10to12.4 (580-79672-53), (CCV 580-285370/7) and (CCVIS 580-285370/8).

The continuing calibration verification (CCV) associated with 580-285642 recovered outside the control limits for PCB-1232, PCB-1248, PCB-1242, PCB-1254, PCB-1016 and PCB-1260 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-4to6 (580-79672-10), (CCV 580-285642/4), (CCV 580-285642/5), (CCV 580-285642/6), (CCV 580-285642/7) and (CCVIS 580-285642/8).

The continuing calibration verification (CCV) associated with 580-285683 recovered low and outside the control limits for PCB-1232 and PCB-1260 on one column. Results are confirmed on both columns and reported from the passing column. The following samples are impacted: PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29), PDI-SC-S108-6.7to8.8D (580-79672-36),

# Case Narrative

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

TestAmerica Job ID: 580-79672-1

## Job ID: 580-79672-1 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

PDI-SC-S157-6to8 (580-79672-41), PDI-SC-S113(A)-2.2to4.6D (580-79672-54), (CCV 580-285683/3) and (CCVIS 580-285683/7).

The following continuing calibration verification (CCV) standard associated with batch 580-285683 recovered outside acceptance criteria for %D for surrogate DCB Decachlorobiphenyl. Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. The following samples are impacted: PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-4to6.2 (580-79672-27), PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29), PDI-SC-S108-6.7to8.8D (580-79672-36), PDI-SC-S157-6to8 (580-79672-41), PDI-SC-S113(A)-2.2to4.6D (580-79672-54) and (CCVIS 580-285683/7).

The continuing calibration verification (CCV) associated with 580-285677 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: PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), (CCV 580-285677/4), (CCV 580-285677/5), (CCV 580-285677/7) and (CCVIS 580-285677/8).

The continuing calibration verification (CCV) associated with 580-285909 recovered high and outside the control limits for PCB-1016, PCB-1232, PCB-1248, PCB-1242, 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-S109-10to11.3 (580-79672-13), (CCV 580-285909/4), (CCV 580-285909/5), (CCV 580-285909/6), (CCV 580-285909/7) and (CCVIS 580-285909/8).

The following continuing calibration verification (CCV) standard associated with batch 580-285909 recovered outside acceptance criteria for %D for surrogate DCB Decachlorobiphenyl on the confirmation column only. Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. The following samples are impacted: PDI-SC-S109-10to11.3 (580-79672-13) and (CCVIS 580-285909/8)

The continuing calibration verification (CCV) associated with 580-285807 recovered high and outside the control limits for PCB-1016, PCB-1232, PCB-1242, 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 580-285807/4), (CCV 580-285807/5), (CCV 580-285807/6), (CCV 580-285807/7), (CCVIS 580-285807/8), (LCS 580-285787/2-A), (LCSD 580-285787/3-A) and (MB 580-285787/1-A).

The following continuing calibration verification (CCV) standard associated with batch 580-285807 recovered outside acceptance criteria for %D for surrogate DCB Decachlorobiphenyl on the confirmation column only. Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. The following samples are impacted: (CCVIS 580-285807/8), (LCS 580-285787/2-A), (LCSD 580-285787/3-A) and (MB 580-285787/1-A).

PCB-1260 failed the recovery criteria low for the MSD of sample PDI-SC-S109-4to6MSD (580-79672-10) in batch 580-285642. Sample matrix interference and/or non-homogeneity are suspected because the MS and associated laboratory control sample (LCS) recovery was within acceptance limits.

PCB-1260 failed the recovery criteria low for the MS of sample PDI-SC-S232-2to4MS (580-79672-26) in batch 580-285683. PCB-1260 failed the recovery criteria low for the MSD of sample PDI-SC-S232-2to4MSD (580-79672-26) in batch 580-285683. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

PCB-1260 failed the recovery criteria low for the MS of sample PDI-SC-S263-3.8to5.9MS (580-79672-30) in batch 580-285345. PCB-1260 failed the recovery criteria low for the MSD of sample PDI-SC-S263-3.8to5.9MSD (580-79672-30) in batch 580-285345. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Due to the matrix, the initial volume(s) and final volumes used for the following sample deviated from the standard procedure: PDI-SC-S109-10to11.3 (580-79672-13). The reporting limits (RLs) have been adjusted proportionately.

# Case Narrative

Client: AECOM  
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TestAmerica Job ID: 580-79672-1

## Job ID: 580-79672-1 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

The following samples appears to contain polychlorinated biphenyls (PCBs); however, due to weathering or other environmental processes, the PCBs in the sample do not closely match any of the laboratory's Aroclor standards used for instrument calibration: PDI-SC-S113(A)-2.2to4.6 (580-79672-2) and PDI-SC-S109-0to2 (580-79672-8). The sample(s) has been quantified and reported as PCB-1260. Due to the poor match with the Aroclor standard(s), there is increased qualitative and quantitative uncertainty associated with this result.

The following samples required a copper clean-up to reduce matrix interferences caused by sulfur: PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-4to6 (580-79672-10), PDI-SC-S109-4to6 (580-79672-10[MSJ]), PDI-SC-S109-4to6 (580-79672-10[MSD]), PDI-SC-S109-10to11.3 (580-79672-13), (LCS 580-285787/2-A), (LCSD 580-285787/3-A), (MB 580-285787/1-A), (LCS 580-285536/2-A) and (MB 580-285536/1-A).

The %RPD between the primary and confirmation column exceeds 40% for PCB-1254 and PCB-1260 for the following samples: PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S131-4to6 (580-79672-16) and PDI-SC-S131-6to8 (580-79672-17). 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 samples: PDI-SC-S113(A)-2.2to4.6 (580-79672-2) and PDI-SC-S113(B)-12to13.8 (580-79672-7). 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-1016 for the following sample: PDI-SC-S256-6to8.7 (580-79672-22). 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-S157-2to3.7 (580-79672-39). The lower has been reported and qualified in accordance with the laboratory's SOP. The lower value was reported from a column where the CCV (batch 580-285677) showed a high bias, however the result was still reported from this column as it was the lower of the two values.

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-180816-1110 (580-79672-46) and PDI-RB-SS-180817 (580-79672-47) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A.** The samples were prepared on 08/22/2018 and analyzed on 08/31/2018.

The continuing calibration verification (CCV) associated with batch 580-283038 recovered above the upper control limit for PCB-1232, PCB-1248, PCB-1242 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-RB-SS-180816-1110 (580-79672-46), PDI-RB-SS-180817 (580-79672-47), (CCV 580-283038/1), (CCV 580-283038/2), (CCV 580-283038/3) and (CCV 580-283038/4).

The following continuing calibration verification (CCV) standard associated with batch 580-283038 recovered outside acceptance criteria for %D for surrogate DCB Decachlorobiphenyl. Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. The following sample is impacted: (CCVIS 580-283038/5).

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-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-79672-2), PDI-SC-S113(B)-3.6to5.6 (580-79672-3), PDI-SC-S113(B)-5.6to7.4 (580-79672-4), PDI-SC-S113(B)-7.4to10 (580-79672-5), PDI-SC-S113(B)-10to12 (580-79672-6), PDI-SC-S113(B)-12to13.8 (580-79672-7), PDI-SC-S109-0to2 (580-79672-8), PDI-SC-S109-2to4 (580-79672-9), PDI-SC-S109-4to6 (580-79672-10), PDI-SC-S109-6to8 (580-79672-11), PDI-SC-S109-8to10 (580-79672-12), PDI-SC-S109-10to11.3 (580-79672-13), PDI-SC-S131-0to2 (580-79672-14), PDI-SC-S131-2to4 (580-79672-15), PDI-SC-S131-4to6 (580-79672-16), PDI-SC-S131-6to8 (580-79672-17), PDI-SC-S256-0to2 (580-79672-18), PDI-SC-S256-2to4 (580-79672-19), PDI-SC-S256-2to4D (580-79672-20), PDI-SC-S256-4to6 (580-79672-21), PDI-SC-S256-6to8.7 (580-79672-22), PDI-SC-S256-8.7to9.7 (580-79672-23), PDI-SC-S256-9.7to10.7 (580-79672-24), PDI-SC-S232-0to2 (580-79672-25), PDI-SC-S232-2to4 (580-79672-26), PDI-SC-S232-4to6.2 (580-79672-27),**



# Case Narrative

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

TestAmerica Job ID: 580-79672-1

## Job ID: 580-79672-1 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

PDI-SC-S263-0to2 (580-79672-28), PDI-SC-S263-2to3.8 (580-79672-29), PDI-SC-S263-3.8to5.9 (580-79672-30), PDI-SC-S108-0to1.9 (580-79672-31), PDI-SC-S108-1.9to3 (580-79672-32), PDI-SC-S108-3to4.7 (580-79672-33), PDI-SC-S108-4.7to6.7 (580-79672-34), PDI-SC-S108-6.7to8.8 (580-79672-35), PDI-SC-S108-6.7to8.8D (580-79672-36), PDI-SC-S108-8.8to9.8 (580-79672-37), PDI-SC-S157-0to2 (580-79672-38), PDI-SC-S157-2to3.7 (580-79672-39), PDI-SC-S157-3.7to6 (580-79672-40), PDI-SC-S157-6to8 (580-79672-41), PDI-SC-S157-8to10 (580-79672-42), PDI-SC-S157-10to12.4 (580-79672-43), PDI-SC-S157-12.4to14 (580-79672-44), PDI-SC-S157-14to15.9 (580-79672-45), PDI-SC-S053-0to2 (580-79672-48), PDI-SC-S053-2to4 (580-79672-49), PDI-SC-S053-4to6 (580-79672-50), PDI-SC-S053-6to8 (580-79672-51), PDI-SC-S053-8to10 (580-79672-52), PDI-SC-S053-10to12.4 (580-79672-53) and PDI-SC-S113(A)-2.2to4.6D (580-79672-54) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 08/28/2018 and 08/30/2018.

Total Organic Carbon - Duplicates was detected in method blank MB 580-282653/5 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/or re-analysis of samples were not performed.

Total Organic Carbon - Duplicates was detected in method blank MB 580-282946/5 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/or re-analysis of samples were not performed.

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-180816-1110 (580-79672-46) and PDI-RB-SS-180817 (580-79672-47) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 08/27/2018.

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

### GRAIN SIZE

Samples PDI-SC-S113(A)-0to2.2 (580-79672-1), PDI-SC-S113(A)-2.2to4.6 (580-7

# Definitions/Glossary

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

TestAmerica Job ID: 580-79672-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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.
X	Surrogate is outside control limits
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
*	ISTD response or retention time outside acceptable limits

### GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

### General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

## Glossary

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

# Definitions/Glossary

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

TestAmerica Job ID: 580-79672-1

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## Glossary (Continued)

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**Abbreviation**      **These commonly used abbreviations may or may not be present in this report.**

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: 580-79672-1

**Client Sample ID: PDI-SC-S113(A)-0to2.2**

**Lab Sample ID: 580-79672-1**

Date Collected: 08/15/18 15:25

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 72.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	37000		61	5.5	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Acenaphthene	38000		61	7.3	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Acenaphthylene	2200		61	6.1	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Anthracene	29000	B	61	7.3	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Benzo[a]anthracene	14000	B	61	9.2	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Benzo[a]pyrene	17000		61	4.8	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Benzo[b]fluoranthene	14000	B	61	7.1	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Benzo[g,h,i]perylene	11000		61	6.1	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Benzo[k]fluoranthene	5500	B	61	7.3	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Chrysene	19000		61	18	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Dibenz(a,h)anthracene	1900		61	8.7	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Fluoranthene	59000	B	61	17	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Fluorene	21000		61	6.1	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Indeno[1,2,3-cd]pyrene	12000		61	7.3	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Naphthalene	4300	B	61	9.7	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50
Pyrene	76000	B	61	12	ug/Kg	☼	10/03/18 09:32	10/06/18 17:00	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		57 - 120	10/03/18 09:32	10/06/18 17:00	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenanthrene	190000	B	1200	170	ug/Kg	☼	10/03/18 09:32	10/15/18 11:41	1000

## 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	☼	10/03/18 09:09	10/04/18 14:08	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	10/03/18 09:09	10/04/18 14:08	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	10/03/18 09:09	10/04/18 14:08	1
PCB-1242	ND		2.7	0.67	ug/Kg	☼	10/03/18 09:09	10/04/18 14:08	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	10/03/18 09:09	10/04/18 14:08	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 14:08	1
PCB-1260	6.0		2.7	0.46	ug/Kg	☼	10/03/18 09:09	10/04/18 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	62		54 - 142	10/03/18 09:09	10/04/18 14:08	1
Tetrachloro-m-xylene	86		58 - 122	10/03/18 09:09	10/04/18 14:08	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	19000	B	2000	44	mg/Kg			08/28/18 09:17	1
Total Solids	72.4	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	73	H	0.10	0.10	%			09/04/18 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/04/18 13:37	1
Coarse Sand	0.2				%			09/04/18 13:37	1
Medium Sand	19.9				%			09/04/18 13:37	1
Fine Sand	65.8				%			09/04/18 13:37	1
Silt	9.0				%			09/04/18 13:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(A)-0to2.2**

**Lab Sample ID: 580-79672-1**

**Date Collected: 08/15/18 15:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 72.4**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.0				%			09/04/18 13:37	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: 580-79672-1

**Client Sample ID: PDI-SC-S113(A)-2.2to4.6**

**Lab Sample ID: 580-79672-2**

Date Collected: 08/15/18 15:30

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 78.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	2600		12	1.1	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Acenaphthene	6800		12	1.5	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Acenaphthylene	500		12	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Anthracene	5200	B	12	1.5	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Benzo[a]anthracene	3100	B	12	1.8	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Benzo[a]pyrene	3300		12	0.97	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Benzo[b]fluoranthene	2600	B	12	1.4	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Benzo[g,h,i]perylene	2000		12	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Benzo[k]fluoranthene	1100	B	12	1.5	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Chrysene	4300		12	3.6	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Dibenz(a,h)anthracene	350		12	1.7	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Fluoranthene	10000	B	12	3.4	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Fluorene	4100		12	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Indeno[1,2,3-cd]pyrene	2300		12	1.5	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Naphthalene	250	B	12	1.9	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Phenanthrene	24000	B	12	1.7	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	10
Pyrene	14000	B	12	2.3	ug/Kg	☼	10/03/18 09:32	10/06/18 17:23	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	82		57 - 120				10/03/18 09:32	10/06/18 17:23	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.5	0.43	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	1
PCB-1221	ND		2.5	1.2	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	1
PCB-1232	ND		2.5	0.60	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	1
PCB-1242	ND		2.5	0.62	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	1
PCB-1248	ND		2.5	0.20	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	1
PCB-1254	ND		2.5	1.0	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	1
<b>PCB-1260</b>	<b>1.0</b>	<b>J</b>	2.5	0.43	ug/Kg	☼	10/03/18 09:09	10/04/18 14:25	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	69		54 - 142				10/03/18 09:09	10/04/18 14:25	1
Tetrachloro-m-xylene	73		58 - 122				10/03/18 09:09	10/04/18 14:25	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2000	B	2000	44	mg/Kg			08/28/18 09:24	1
Total Solids	78.0	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	79	H	0.10	0.10	%			09/04/18 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/04/18 13:37	1
Coarse Sand	0.2				%			09/04/18 13:37	1
Medium Sand	21.3				%			09/04/18 13:37	1
Fine Sand	74.6				%			09/04/18 13:37	1
Silt	3.8				%			09/04/18 13:37	1
Clay	0.0				%			09/04/18 13:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-3.6to5.6**

**Lab Sample ID: 580-79672-3**

Date Collected: 08/15/18 16:45

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 48.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	6100		89	8.0	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Acenaphthene	31000		89	11	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Acenaphthylene	2200		89	8.9	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Anthracene	15000	B	89	11	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Benzo[a]anthracene	16000	B	89	13	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Benzo[a]pyrene	25000		89	7.1	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Benzo[b]fluoranthene	21000	B	89	10	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Benzo[g,h,i]perylene	18000		89	8.9	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Benzo[k]fluoranthene	8100	B	89	11	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Chrysene	22000		89	27	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Dibenz(a,h)anthracene	2600		89	13	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Fluoranthene	59000	B	89	25	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Fluorene	14000		89	8.9	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Indeno[1,2,3-cd]pyrene	21000		89	11	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Naphthalene	10000	B	89	14	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Phenanthrene	88000	B	89	12	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	50
Pyrene	75000	B	89	17	ug/Kg	☼	10/03/18 09:32	10/06/18 17:46	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	83		57 - 120				10/03/18 09:32	10/06/18 17:46	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	0.67	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	1
PCB-1221	ND		3.9	1.9	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	1
PCB-1232	ND		3.9	0.93	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	1
PCB-1242	ND		3.9	0.97	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	1
PCB-1248	ND		3.9	0.32	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	1
PCB-1254	ND		3.9	1.6	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	1
<b>PCB-1260</b>	<b>10</b>		3.9	0.67	ug/Kg	☼	10/03/18 09:09	10/04/18 14:42	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	69		54 - 142				10/03/18 09:09	10/04/18 14:42	1
Tetrachloro-m-xylene	69		58 - 122				10/03/18 09:09	10/04/18 14:42	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	54000	B	2000	44	mg/Kg			08/28/18 09:38	1
Total Solids	48.7	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	50	H	0.10	0.10	%			09/04/18 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/04/18 13:37	1
Coarse Sand	0.9				%			09/04/18 13:37	1
Medium Sand	2.4				%			09/04/18 13:37	1
Fine Sand	30.3				%			09/04/18 13:37	1
Silt	57.4				%			09/04/18 13:37	1
Clay	9.0				%			09/04/18 13:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-5.6to7.4**

**Lab Sample ID: 580-79672-4**

Date Collected: 08/15/18 16:50

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 59.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	7300		72	6.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Acenaphthene	28000		72	8.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Acenaphthylene	1600		72	7.2	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Anthracene	15000	B	72	8.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Benzo[a]anthracene	12000	B	72	11	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Benzo[a]pyrene	18000		72	5.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Benzo[b]fluoranthene	15000	B	72	8.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Benzo[g,h,i]perylene	12000		72	7.2	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Benzo[k]fluoranthene	5700	B	72	8.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Chrysene	16000		72	22	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Dibenz(a,h)anthracene	1700		72	10	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Fluoranthene	47000	B	72	20	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Fluorene	14000		72	7.2	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Indeno[1,2,3-cd]pyrene	14000		72	8.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Naphthalene	9000	B	72	12	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Phenanthrene	78000	B	72	10	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	50
Pyrene	59000	B	72	14	ug/Kg	☼	10/03/18 09:32	10/06/18 18:09	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	83		57 - 120				10/03/18 09:32	10/06/18 18:09	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	0.56	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	1
PCB-1232	ND		3.3	0.78	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	1
PCB-1242	ND		3.3	0.81	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	1
PCB-1248	ND		3.3	0.26	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	1
<b>PCB-1260</b>	<b>16</b>		3.3	0.56	ug/Kg	☼	10/03/18 09:09	10/04/18 14:59	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	68		54 - 142				10/03/18 09:09	10/04/18 14:59	1
Tetrachloro-m-xylene	76		58 - 122				10/03/18 09:09	10/04/18 14:59	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	40000	B	2000	44	mg/Kg			08/28/18 09:45	1
Total Solids	59.0	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	59	H	0.10	0.10	%			09/04/18 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/04/18 13:37	1
Coarse Sand	0.1				%			09/04/18 13:37	1
Medium Sand	6.0				%			09/04/18 13:37	1
Fine Sand	39.4				%			09/04/18 13:37	1
Silt	44.4				%			09/04/18 13:37	1
Clay	10.1				%			09/04/18 13:37	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-7.4to10**

**Lab Sample ID: 580-79672-5**

Date Collected: 08/15/18 16:55

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 77.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	4100		55	5.0	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Acenaphthene	12000		55	6.6	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Acenaphthylene	500		55	5.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Anthracene	5700	B	55	6.6	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Benzo[a]anthracene	4000	B	55	8.4	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Benzo[a]pyrene	5200		55	4.4	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Benzo[b]fluoranthene	4500	B	55	6.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Benzo[g,h,i]perylene	3400		55	5.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Benzo[k]fluoranthene	1700	B	55	6.6	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Chrysene	5600		55	17	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Dibenz(a,h)anthracene	510		55	8.0	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Fluoranthene	16000	B	55	15	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Fluorene	5400		55	5.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Indeno[1,2,3-cd]pyrene	4100		55	6.6	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Naphthalene	3400	B	55	8.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Phenanthrene	31000	B	55	7.6	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	50
Pyrene	20000	B	55	11	ug/Kg	☼	10/03/18 09:32	10/06/18 18:32	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	77		57 - 120				10/03/18 09:32	10/06/18 18:32	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.5	0.43	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	1
PCB-1221	ND		2.5	1.2	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	1
PCB-1232	ND		2.5	0.59	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	1
PCB-1242	ND		2.5	0.62	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	1
PCB-1248	ND		2.5	0.20	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	1
PCB-1254	ND		2.5	0.99	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	1
<b>PCB-1260</b>	<b>3.3</b>		2.5	0.43	ug/Kg	☼	10/03/18 09:09	10/04/18 15:15	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	72		54 - 142				10/03/18 09:09	10/04/18 15:15	1
Tetrachloro-m-xylene	73		58 - 122				10/03/18 09:09	10/04/18 15:15	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6900	B	2000	44	mg/Kg			08/28/18 09:52	1
Total Solids	77.4	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	79	H	0.10	0.10	%			09/04/18 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/04/18 13:37	1
Coarse Sand	0.1				%			09/04/18 13:37	1
Medium Sand	16.7				%			09/04/18 13:37	1
Fine Sand	71.0				%			09/04/18 13:37	1
Silt	8.9				%			09/04/18 13:37	1
Clay	3.3				%			09/04/18 13:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-10to12**

**Lab Sample ID: 580-79672-6**

Date Collected: 08/15/18 17:00

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 82.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	6600		57	5.1	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Acenaphthene	18000		57	6.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Acenaphthylene	730		57	5.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Anthracene	7800	B	57	6.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Benzo[a]anthracene	5400	B	57	8.6	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Benzo[a]pyrene	7400		57	4.5	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Benzo[b]fluoranthene	6200	B	57	6.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Benzo[g,h,i]perylene	5000		57	5.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Benzo[k]fluoranthene	2300	B	57	6.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Chrysene	7100		57	17	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Dibenz(a,h)anthracene	750		57	8.2	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Fluoranthene	21000	B	57	16	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Fluorene	8000		57	5.7	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Indeno[1,2,3-cd]pyrene	6000		57	6.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Naphthalene	4700	B	57	9.1	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Phenanthrene	43000	B	57	7.8	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	50
Pyrene	27000	B	57	11	ug/Kg	☼	10/03/18 09:32	10/06/18 18:55	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	73		57 - 120				10/03/18 09:32	10/06/18 18:55	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.4	0.40	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	1
PCB-1221	ND		2.4	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	1
PCB-1232	ND		2.4	0.56	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	1
PCB-1242	ND		2.4	0.58	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	1
PCB-1248	ND		2.4	0.19	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	1
PCB-1254	ND		2.4	0.94	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	1
<b>PCB-1260</b>	<b>2.3</b>	<b>J</b>	2.4	0.40	ug/Kg	☼	10/03/18 09:09	10/04/18 15:32	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	65		54 - 142				10/03/18 09:09	10/04/18 15:32	1
Tetrachloro-m-xylene	66		58 - 122				10/03/18 09:09	10/04/18 15:32	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6500	B	2000	44	mg/Kg			08/28/18 09:58	1
Total Solids	82.2	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	82	H	0.10	0.10	%			09/04/18 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.3				%			09/04/18 13:37	1
Coarse Sand	0.0				%			09/04/18 13:37	1
Medium Sand	19.5				%			09/04/18 13:37	1
Fine Sand	72.8				%			09/04/18 13:37	1
Silt	5.7				%			09/04/18 13:37	1
Clay	1.7				%			09/04/18 13:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-12to13.8**

**Lab Sample ID: 580-79672-7**

Date Collected: 08/15/18 17:05

Matrix: Solid

Date Received: 08/17/18 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	3400		61	5.5	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Acenaphthene	35000		61	7.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Acenaphthylene	1400		61	6.1	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Anthracene	16000	B	61	7.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Benzo[a]anthracene	11000	B	61	9.3	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Benzo[a]pyrene	15000		61	4.9	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Benzo[b]fluoranthene	13000	B	61	7.2	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Benzo[g,h,i]perylene	9700		61	6.1	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Benzo[k]fluoranthene	4500	B	61	7.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Chrysene	14000		61	18	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Dibenz(a,h)anthracene	1400		61	8.8	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Fluoranthene	42000	B	61	17	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Fluorene	16000		61	6.1	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Indeno[1,2,3-cd]pyrene	11000		61	7.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Naphthalene	3900	B	61	9.8	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Phenanthrene	87000	B	61	8.5	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50
Pyrene	52000	B	61	12	ug/Kg	☼	10/03/18 09:32	10/06/18 19:17	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	81		57 - 120	10/03/18 09:32	10/06/18 19:17	50

## 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	☼	10/03/18 09:09	10/04/18 15:49	1
PCB-1221	ND		2.5	1.2	ug/Kg	☼	10/03/18 09:09	10/04/18 15:49	1
PCB-1232	ND		2.5	0.58	ug/Kg	☼	10/03/18 09:09	10/04/18 15:49	1
PCB-1242	ND		2.5	0.61	ug/Kg	☼	10/03/18 09:09	10/04/18 15:49	1
PCB-1248	ND		2.5	0.20	ug/Kg	☼	10/03/18 09:09	10/04/18 15:49	1
PCB-1254	ND		2.5	0.98	ug/Kg	☼	10/03/18 09:09	10/04/18 15:49	1
PCB-1260	2.5		2.5	0.42	ug/Kg	☼	10/03/18 09:09	10/04/18 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	69		54 - 142	10/03/18 09:09	10/04/18 15:49	1
Tetrachloro-m-xylene	76		58 - 122	10/03/18 09:09	10/04/18 15:49	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	7600	B	2000	44	mg/Kg			08/28/18 10:05	1
Total Solids	79.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	82	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.0				%			09/06/18 08:03	1
Medium Sand	22.4				%			09/06/18 08:03	1
Fine Sand	72.8				%			09/06/18 08:03	1
Silt	3.1				%			09/06/18 08:03	1
Clay	1.6				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-0to2**

**Lab Sample ID: 580-79672-8**

Date Collected: 08/15/18 18:00

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 75.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3000		64	5.8	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Acenaphthene	25000		64	7.7	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Acenaphthylene	1900		64	6.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Anthracene	14000	B	64	7.7	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Benzo[a]anthracene	12000	B	64	9.8	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Benzo[a]pyrene	15000		64	5.1	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Benzo[b]fluoranthene	14000	B	64	7.6	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Benzo[g,h,i]perylene	10000		64	6.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Benzo[k]fluoranthene	4600	B	64	7.7	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Chrysene	14000		64	19	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Dibenz(a,h)anthracene	1400		64	9.2	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Fluoranthene	49000	B	64	18	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Fluorene	14000		64	6.4	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Indeno[1,2,3-cd]pyrene	12000		64	7.7	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Naphthalene	18000	B	64	10	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Phenanthrene	78000	B	64	8.9	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	50
Pyrene	58000	B	64	12	ug/Kg	☼	10/03/18 09:32	10/06/18 19:40	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	76		57 - 120				10/03/18 09:32	10/06/18 19:40	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.6	0.45	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	1
PCB-1221	ND		2.6	1.2	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	1
PCB-1232	ND		2.6	0.62	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	1
PCB-1242	ND		2.6	0.64	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	1
PCB-1248	ND		2.6	0.21	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	1
PCB-1254	ND		2.6	1.0	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	1
<b>PCB-1260</b>	<b>2.7</b>		2.6	0.45	ug/Kg	☼	10/03/18 09:09	10/04/18 16:06	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				10/03/18 09:09	10/04/18 16:06	1
Tetrachloro-m-xylene	61		58 - 122				10/03/18 09:09	10/04/18 16:06	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	20000	B	2000	44	mg/Kg			08/28/18 10:12	1
Total Solids	75.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	76	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.1				%			09/06/18 08:03	1
Coarse Sand	0.9				%			09/06/18 08:03	1
Medium Sand	22.6				%			09/06/18 08:03	1
Fine Sand	54.7				%			09/06/18 08:03	1
Silt	18.1				%			09/06/18 08:03	1
Clay	2.6				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-2to4**

**Lab Sample ID: 580-79672-9**

Date Collected: 08/15/18 18:05

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 84.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	34		11	1.0	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Acenaphthene	1600		11	1.3	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Acenaphthylene	220		11	1.1	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Anthracene	1200	B	11	1.3	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Benzo[a]anthracene	1200	B	11	1.7	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Benzo[a]pyrene	1800		11	0.89	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Benzo[b]fluoranthene	1700	B	11	1.3	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Benzo[g,h,i]perylene	1200		11	1.1	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Benzo[k]fluoranthene	520	B	11	1.3	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Chrysene	1800		11	3.4	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Dibenz(a,h)anthracene	180		11	1.6	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Fluoranthene	4300	B	11	3.1	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Fluorene	990		11	1.1	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Indeno[1,2,3-cd]pyrene	1500		11	1.3	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Naphthalene	190	B	11	1.8	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Phenanthrene	4800	B	11	1.5	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	10
Pyrene	5000	B	11	2.2	ug/Kg	☼	10/03/18 09:32	10/06/18 20:03	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	93		57 - 120				10/03/18 09:32	10/06/18 20:03	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.3	0.40	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	1
PCB-1221	ND		2.3	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	1
PCB-1232	ND		2.3	0.55	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	1
PCB-1242	ND		2.3	0.57	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	1
PCB-1248	ND		2.3	0.19	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	1
PCB-1254	ND		2.3	0.93	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	1
PCB-1260	0.69	J	2.3	0.40	ug/Kg	☼	10/03/18 09:09	10/04/18 16:22	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	79		54 - 142				10/03/18 09:09	10/04/18 16:22	1
Tetrachloro-m-xylene	70		58 - 122				10/03/18 09:09	10/04/18 16:22	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2500	B	2000	44	mg/Kg			08/28/18 10:19	1
Total Solids	84.5	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	86	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.7				%			09/06/18 08:03	1
Medium Sand	38.4				%			09/06/18 08:03	1
Fine Sand	57.6				%			09/06/18 08:03	1
Silt	1.7				%			09/06/18 08:03	1
Clay	1.6				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-4to6**

**Lab Sample ID: 580-79672-10**

Date Collected: 08/15/18 18:10

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 84.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	33	J F2 F1	50	4.5	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Acenaphthene	1600	F2	50	6.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Acenaphthylene	150	F2 F1	50	5.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Anthracene	1200	F2	50	6.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Benzo[a]anthracene	1000	F2	50	7.7	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Benzo[a]pyrene	1200	F2	50	4.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Benzo[b]fluoranthene	1200	F2	50	5.9	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Benzo[g,h,i]perylene	1100	F2	50	5.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Benzo[k]fluoranthene	470	F2 F1	50	6.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Chrysene	1300	F2	50	15	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Dibenz(a,h)anthracene	170	F2 F1	50	7.3	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Fluoranthene	4400	F2	50	14	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Fluorene	910	F2 F1	50	5.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Indeno[1,2,3-cd]pyrene	1100	F2	50	6.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Naphthalene	240	F1	50	8.1	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Phenanthrene	5800	F2	50	7.0	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	10
Pyrene	5200	F2	50	9.8	ug/Kg	☼	10/12/18 10:24	10/15/18 09:18	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	92		57 - 120				10/12/18 10:24	10/15/18 09:18	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.3	0.39	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	1
PCB-1221	ND		2.3	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	1
PCB-1232	ND		2.3	0.54	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	1
PCB-1242	ND		2.3	0.57	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	1
PCB-1248	ND		2.3	0.19	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	1
PCB-1254	ND		2.3	0.92	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	1
<b>PCB-1260</b>	<b>0.95</b>	<b>J F1</b>	2.3	0.39	ug/Kg	☼	10/03/18 09:09	10/04/18 16:39	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	80		54 - 142				10/03/18 09:09	10/04/18 16:39	1
Tetrachloro-m-xylene	65		58 - 122				10/03/18 09:09	10/04/18 16:39	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2300	B	2000	44	mg/Kg			08/28/18 08:50	1
Total Solids	84.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	86	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	1.0				%			09/06/18 08:03	1
Medium Sand	39.2				%			09/06/18 08:03	1
Fine Sand	57.0				%			09/06/18 08:03	1
Silt	2.0				%			09/06/18 08:03	1
Clay	0.8				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-6to8**

**Lab Sample ID: 580-79672-11**

Date Collected: 08/15/18 18:15

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 85.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	730		56	5.0	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Acenaphthene	1400		56	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Acenaphthylene	94		56	5.6	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Anthracene	1000		56	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Benzo[a]anthracene	510		56	8.5	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Benzo[a]pyrene	620		56	4.5	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Benzo[b]fluoranthene	610		56	6.6	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Benzo[g,h,i]perylene	610		56	5.6	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Benzo[k]fluoranthene	210		56	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Chrysene	660		56	17	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Dibenz(a,h)anthracene	88		56	8.1	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Fluoranthene	2800		56	16	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Fluorene	990		56	5.6	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Indeno[1,2,3-cd]pyrene	600		56	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Naphthalene	6400		56	8.9	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Phenanthrene	5300		56	7.7	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10
Pyrene	3200		56	11	ug/Kg	☼	10/12/18 10:24	10/15/18 10:31	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		57 - 120	10/12/18 10:24	10/15/18 10:31	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.3	0.40	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1
PCB-1221	ND		2.3	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1
PCB-1232	ND		2.3	0.55	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1
PCB-1242	ND		2.3	0.57	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1
PCB-1248	ND		2.3	0.19	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1
PCB-1254	ND		2.3	0.92	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1
PCB-1260	0.47	J	2.3	0.40	ug/Kg	☼	10/03/18 09:09	10/04/18 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	78		54 - 142	10/03/18 09:09	10/04/18 19:44	1
Tetrachloro-m-xylene	60		58 - 122	10/03/18 09:09	10/04/18 19:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2000	B	2000	44	mg/Kg			08/28/18 10:25	1
Total Solids	85.5	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	86	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.2				%			09/06/18 08:03	1
Medium Sand	40.5				%			09/06/18 08:03	1
Fine Sand	56.9				%			09/06/18 08:03	1
Silt	1.5				%			09/06/18 08:03	1
Clay	0.8				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-8to10**

**Lab Sample ID: 580-79672-12**

Date Collected: 08/15/18 18:20

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 72.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1200	J	3000	270	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Acenaphthene	31000		3000	360	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Acenaphthylene	2000	J	3000	300	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Anthracene	26000		3000	360	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Benzo[a]anthracene	18000		3000	460	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Benzo[a]pyrene	25000		3000	240	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Benzo[b]fluoranthene	22000		3000	360	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Benzo[g,h,i]perylene	24000		3000	300	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Benzo[k]fluoranthene	8900		3000	360	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Chrysene	23000		3000	910	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Dibenz(a,h)anthracene	3300		3000	440	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Fluoranthene	79000		3000	850	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Fluorene	15000		3000	300	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Indeno[1,2,3-cd]pyrene	23000		3000	360	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Naphthalene	11000		3000	480	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Phenanthrene	110000		3000	420	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500
Pyrene	93000		3000	590	ug/Kg	☼	10/12/18 10:24	10/15/18 10:56	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	123	X	57 - 120	10/12/18 10:24	10/15/18 10:56	500

## 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	☼	10/03/18 09:09	10/04/18 20:00	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	10/03/18 09:09	10/04/18 20:00	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	10/03/18 09:09	10/04/18 20:00	1
PCB-1242	ND		2.7	0.66	ug/Kg	☼	10/03/18 09:09	10/04/18 20:00	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	10/03/18 09:09	10/04/18 20:00	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 20:00	1
PCB-1260	7.0		2.7	0.46	ug/Kg	☼	10/03/18 09:09	10/04/18 20:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	87		54 - 142	10/03/18 09:09	10/04/18 20:00	1
Tetrachloro-m-xylene	61		58 - 122	10/03/18 09:09	10/04/18 20:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	34000	B	2000	44	mg/Kg			08/28/18 10:32	1
Total Solids	72.5	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	74	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.4				%			09/06/18 08:03	1
Medium Sand	29.2				%			09/06/18 08:03	1
Fine Sand	54.5				%			09/06/18 08:03	1
Silt	11.5				%			09/06/18 08:03	1
Clay	4.5				%			09/06/18 08:03	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-10to11.3**

**Lab Sample ID: 580-79672-13**

Date Collected: 08/15/18 18:25

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 56.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	19000		800	72	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Acenaphthene	230000		800	96	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Acenaphthylene	20000		800	80	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Anthracene	120000		800	96	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Benzo[a]anthracene	120000		800	120	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Benzo[a]pyrene	160000		800	64	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Benzo[b]fluoranthene	160000		800	94	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Benzo[g,h,i]perylene	130000		800	80	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Benzo[k]fluoranthene	47000		800	96	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Chrysene	140000		800	240	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Dibenz(a,h)anthracene	25000		800	110	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Fluoranthene	550000		800	220	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Fluorene	89000		800	80	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Indeno[1,2,3-cd]pyrene	130000		800	96	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Naphthalene	130000		800	130	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Phenanthrene	510000		800	110	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	100
Pyrene	640000		800	150	ug/Kg	☼	10/12/18 10:24	10/15/18 11:20	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	99		57 - 120				10/12/18 10:24	10/15/18 11:20	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		120	21	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	1
PCB-1221	ND		120	58	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	1
PCB-1232	ND		120	29	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	1
PCB-1242	ND		120	30	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	1
PCB-1248	ND		120	9.8	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	1
PCB-1254	ND		120	48	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	1
PCB-1260	ND		120	21	ug/Kg	☼	10/05/18 13:05	10/08/18 13:59	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	96		54 - 142				10/05/18 13:05	10/08/18 13:59	1
Tetrachloro-m-xylene	69		58 - 122				10/05/18 13:05	10/08/18 13:59	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	200000	B	2000	44	mg/Kg			08/28/18 13:17	1
Total Solids	56.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	60	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.5				%			09/06/18 08:03	1
Coarse Sand	4.4				%			09/06/18 08:03	1
Medium Sand	26.1				%			09/06/18 08:03	1
Fine Sand	55.4				%			09/06/18 08:03	1
Silt	7.8				%			09/06/18 08:03	1
Clay	0.8				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S131-0to2**

**Lab Sample ID: 580-79672-14**

Date Collected: 08/16/18 08:50

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 46.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		260	23	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Acenaphthene	ND		260	31	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Acenaphthylene	ND		260	26	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Anthracene	ND		260	31	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Benzo[a]anthracene</b>	<b>41</b>	<b>J</b>	260	39	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Benzo[a]pyrene	ND		260	21	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Benzo[b]fluoranthene</b>	<b>78</b>	<b>J</b>	260	30	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Benzo[g,h,i]perylene</b>	<b>40</b>	<b>J</b>	260	26	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Benzo[k]fluoranthene	ND		260	31	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Chrysene</b>	<b>84</b>	<b>J</b>	260	78	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Dibenz(a,h)anthracene	ND		260	37	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Fluoranthene</b>	<b>170</b>	<b>J</b>	260	72	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Fluorene	ND		260	26	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Indeno[1,2,3-cd]pyrene	ND		260	31	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Naphthalene</b>	<b>47</b>	<b>J</b>	260	41	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
Phenanthrene	ND		260	36	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Pyrene</b>	<b>140</b>	<b>J</b>	260	50	ug/Kg	☼	10/12/18 10:24	10/15/18 12:10	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	86		57 - 120				10/12/18 10:24	10/15/18 12:10	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.3	0.74	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	1
PCB-1221	ND		4.3	2.1	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	1
PCB-1232	ND		4.3	1.0	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	1
PCB-1242	ND		4.3	1.1	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	1
PCB-1248	ND		4.3	0.35	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	1
PCB-1254	ND		4.3	1.7	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	1
<b>PCB-1260</b>	<b>5.4</b>		4.3	0.74	ug/Kg	☼	10/03/18 09:09	10/04/18 20:17	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				10/03/18 09:09	10/04/18 20:17	1
Tetrachloro-m-xylene	62		58 - 122				10/03/18 09:09	10/04/18 20:17	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>51000</b>	<b>B</b>	2000	44	mg/Kg			08/28/18 11:20	1
<b>Total Solids</b>	<b>46.2</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>47</b>	<b>H</b>	0.10	0.10	%			09/06/18 08:03	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>				%			09/06/18 08:03	1
<b>Coarse Sand</b>	<b>0.0</b>				%			09/06/18 08:03	1
<b>Medium Sand</b>	<b>0.2</b>				%			09/06/18 08:03	1
<b>Fine Sand</b>	<b>14.7</b>				%			09/06/18 08:03	1
<b>Silt</b>	<b>72.3</b>				%			09/06/18 08:03	1
<b>Clay</b>	<b>12.7</b>				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S131-2to4**

**Lab Sample ID: 580-79672-15**

Date Collected: 08/16/18 08:55

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 50.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	50	J	240	22	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Acenaphthene	96	J	240	29	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Acenaphthylene	36	J	240	24	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Anthracene	97	J	240	29	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Benzo[a]anthracene	130	J	240	36	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Benzo[a]pyrene	130	J	240	19	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Benzo[b]fluoranthene	210	J	240	28	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Benzo[g,h,i]perylene	110	J	240	24	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Benzo[k]fluoranthene	82	J	240	29	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Chrysene	230	J	240	72	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Dibenz(a,h)anthracene	40	J	240	35	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Fluoranthene	530		240	67	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Fluorene	76	J	240	24	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Indeno[1,2,3-cd]pyrene	100	J	240	29	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Naphthalene	170	J	240	38	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Phenanthrene	300		240	33	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25
Pyrene	500		240	47	ug/Kg	☼	10/12/18 10:24	10/15/18 12:35	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	85		57 - 120	10/12/18 10:24	10/15/18 12:35	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.9	0.67	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1
PCB-1221	ND		3.9	1.9	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1
PCB-1232	ND		3.9	0.92	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1
PCB-1242	ND		3.9	0.96	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1
PCB-1248	ND		3.9	0.31	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1
PCB-1254	ND		3.9	1.6	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1
PCB-1260	5.2		3.9	0.67	ug/Kg	☼	10/03/18 09:09	10/04/18 20:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	66		54 - 142	10/03/18 09:09	10/04/18 20:34	1
Tetrachloro-m-xylene	61		58 - 122	10/03/18 09:09	10/04/18 20:34	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	59000	B	2000	44	mg/Kg			08/28/18 11:26	1
Total Solids	50.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	50	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.0				%			09/06/18 08:03	1
Medium Sand	0.1				%			09/06/18 08:03	1
Fine Sand	8.2				%			09/06/18 08:03	1
Silt	73.1				%			09/06/18 08:03	1
Clay	18.5				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S131-4to6**

**Lab Sample ID: 580-79672-16**

Date Collected: 08/16/18 09:00

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 51.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	190	J	450	41	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Acenaphthene	580		450	54	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Acenaphthylene	51	J	450	45	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Anthracene	370	J	450	54	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Benzo[a]anthracene	350	J	450	69	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Benzo[a]pyrene	290	J	450	36	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Benzo[b]fluoranthene	400	J	450	53	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Benzo[g,h,i]perylene	200	J	450	45	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Benzo[k]fluoranthene	160	J	450	54	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Chrysene	470		450	140	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Dibenz(a,h)anthracene	ND		450	65	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Fluoranthene	1500		450	130	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Fluorene	570		450	45	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Indeno[1,2,3-cd]pyrene	210	J	450	54	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Naphthalene	510		450	72	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Phenanthrene	1800		450	62	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	50
Pyrene	1400		450	88	ug/Kg	☼	10/12/18 10:24	10/15/18 12:59	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	88		57 - 120				10/12/18 10:24	10/15/18 12:59	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	☼	10/03/18 09:09	10/04/18 20:51	1
PCB-1221	ND		3.9	1.8	ug/Kg	☼	10/03/18 09:09	10/04/18 20:51	1
PCB-1232	ND		3.9	0.91	ug/Kg	☼	10/03/18 09:09	10/04/18 20:51	1
PCB-1242	ND		3.9	0.95	ug/Kg	☼	10/03/18 09:09	10/04/18 20:51	1
PCB-1248	ND		3.9	0.31	ug/Kg	☼	10/03/18 09:09	10/04/18 20:51	1
<b>PCB-1254</b>	<b>21</b>		3.9	1.5	ug/Kg	☼	10/03/18 09:09	10/04/18 20:51	1
PCB-1260	ND		3.9	0.66	ug/Kg	☼	10/03/18 09:09	10/04/18 20:51	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	67		54 - 142				10/03/18 09:09	10/04/18 20:51	1
Tetrachloro-m-xylene	58		58 - 122				10/03/18 09:09	10/04/18 20:51	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	74000	B	2000	44	mg/Kg			08/28/18 11:33	1
Total Solids	51.7	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	52	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.7				%			09/06/18 08:03	1
Medium Sand	0.7				%			09/06/18 08:03	1
Fine Sand	7.9				%			09/06/18 08:03	1
Silt	71.3				%			09/06/18 08:03	1
Clay	19.4				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S131-6to8**

**Lab Sample ID: 580-79672-17**

Date Collected: 08/16/18 09:05

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 52.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	76	J	240	21	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Acenaphthene	300		240	28	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Acenaphthylene	42	J	240	24	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Anthracene	250		240	28	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Benzo[a]anthracene	530		240	36	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Benzo[a]pyrene	380		240	19	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Benzo[b]fluoranthene	740		240	28	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Benzo[g,h,i]perylene	220	J	240	24	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Benzo[k]fluoranthene	260		240	28	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Chrysene	760		240	71	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Dibenz(a,h)anthracene	77	J	240	34	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Fluoranthene	1400		240	66	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Fluorene	230	J	240	24	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Indeno[1,2,3-cd]pyrene	230	J	240	28	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Naphthalene	180	J	240	38	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Phenanthrene	860		240	33	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
Pyrene	1300		240	46	ug/Kg	☼	10/12/18 10:24	10/15/18 13:24	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	83		57 - 120				10/12/18 10:24	10/15/18 13:24	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.7	0.63	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	1
PCB-1221	ND		3.7	1.8	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	1
PCB-1232	ND		3.7	0.87	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	1
PCB-1242	ND		3.7	0.91	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	1
PCB-1248	ND		3.7	0.30	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	1
<b>PCB-1254</b>	<b>18</b>		3.7	1.5	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	1
PCB-1260	ND		3.7	0.63	ug/Kg	☼	10/03/18 09:09	10/04/18 21:07	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	38	X	54 - 142				10/03/18 09:09	10/04/18 21:07	1
Tetrachloro-m-xylene	36	X	58 - 122				10/03/18 09:09	10/04/18 21:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	78000	B	2000	44	mg/Kg			08/28/18 11:42	1
Total Solids	52.1	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	52	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.5				%			09/06/18 08:03	1
Medium Sand	0.5				%			09/06/18 08:03	1
Fine Sand	6.1				%			09/06/18 08:03	1
Silt	74.8				%			09/06/18 08:03	1
Clay	18.1				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-0to2**

**Lab Sample ID: 580-79672-18**

Date Collected: 08/16/18 10:25

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 59.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		190	17	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Acenaphthene</b>	<b>43</b>	<b>J</b>	190	23	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
Acenaphthylene	ND		190	19	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Anthracene</b>	<b>39</b>	<b>J</b>	190	23	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Benzo[a]anthracene</b>	<b>72</b>	<b>J</b>	190	29	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Benzo[a]pyrene</b>	<b>99</b>	<b>J</b>	190	15	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Benzo[b]fluoranthene</b>	<b>100</b>	<b>J</b>	190	22	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Benzo[g,h,i]perylene</b>	<b>120</b>	<b>J</b>	190	19	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Benzo[k]fluoranthene</b>	<b>47</b>	<b>J</b>	190	23	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Chrysene</b>	<b>120</b>	<b>J</b>	190	57	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
Dibenz(a,h)anthracene	ND		190	27	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Fluoranthene</b>	<b>300</b>		190	53	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Fluorene</b>	<b>20</b>	<b>J</b>	190	19	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Indeno[1,2,3-cd]pyrene</b>	<b>110</b>	<b>J</b>	190	23	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
Naphthalene	ND		190	30	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Phenanthrene</b>	<b>180</b>	<b>J</b>	190	26	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Pyrene</b>	<b>350</b>		190	37	ug/Kg	☼	10/12/18 10:24	10/15/18 13:48	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	83		57 - 120				10/12/18 10:24	10/15/18 13:48	25

## 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	☼	10/03/18 09:09	10/04/18 21:24	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	10/03/18 09:09	10/04/18 21:24	1
PCB-1232	ND		3.3	0.77	ug/Kg	☼	10/03/18 09:09	10/04/18 21:24	1
PCB-1242	ND		3.3	0.81	ug/Kg	☼	10/03/18 09:09	10/04/18 21:24	1
PCB-1248	ND		3.3	0.26	ug/Kg	☼	10/03/18 09:09	10/04/18 21:24	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	10/03/18 09:09	10/04/18 21:24	1
<b>PCB-1260</b>	<b>7.1</b>		3.3	0.56	ug/Kg	☼	10/03/18 09:09	10/04/18 21:24	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	50	X	54 - 142				10/03/18 09:09	10/04/18 21:24	1
Tetrachloro-m-xylene	59		58 - 122				10/03/18 09:09	10/04/18 21:24	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>35000</b>	<b>B</b>	2000	44	mg/Kg			08/28/18 11:49	1
<b>Total Solids</b>	<b>59.7</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>61</b>	<b>H</b>	0.10	0.10	%			09/06/18 08:03	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>				%			09/06/18 08:03	1
<b>Coarse Sand</b>	<b>0.2</b>				%			09/06/18 08:03	1
<b>Medium Sand</b>	<b>0.2</b>				%			09/06/18 08:03	1
<b>Fine Sand</b>	<b>10.7</b>				%			09/06/18 08:03	1
<b>Silt</b>	<b>83.4</b>				%			09/06/18 08:03	1
<b>Clay</b>	<b>5.5</b>				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-2to4**

**Lab Sample ID: 580-79672-19**

Date Collected: 08/16/18 10:30

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 59.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		180	16	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Acenaphthene</b>	<b>52</b>	<b>J</b>	180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
Acenaphthylene	ND		180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Anthracene</b>	<b>72</b>	<b>J</b>	180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Benzo[a]anthracene</b>	<b>89</b>	<b>J</b>	180	27	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Benzo[a]pyrene</b>	<b>130</b>	<b>J</b>	180	14	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Benzo[b]fluoranthene</b>	<b>150</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Benzo[g,h,i]perylene</b>	<b>140</b>	<b>J</b>	180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Benzo[k]fluoranthene</b>	<b>56</b>	<b>J</b>	180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Chrysene</b>	<b>170</b>	<b>J</b>	180	54	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
Dibenz(a,h)anthracene	ND		180	26	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Fluoranthene</b>	<b>390</b>		180	50	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Fluorene</b>	<b>35</b>	<b>J</b>	180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Indeno[1,2,3-cd]pyrene</b>	<b>120</b>	<b>J</b>	180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Naphthalene</b>	<b>35</b>	<b>J</b>	180	29	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Phenanthrene</b>	<b>260</b>		180	25	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Pyrene</b>	<b>450</b>		180	35	ug/Kg	☼	10/12/18 10:24	10/15/18 14:12	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	80		57 - 120				10/12/18 10:24	10/15/18 14:12	25

## 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	☼	10/03/18 09:09	10/04/18 21:41	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	10/03/18 09:09	10/04/18 21:41	1
PCB-1232	ND		3.3	0.78	ug/Kg	☼	10/03/18 09:09	10/04/18 21:41	1
PCB-1242	ND		3.3	0.81	ug/Kg	☼	10/03/18 09:09	10/04/18 21:41	1
PCB-1248	ND		3.3	0.26	ug/Kg	☼	10/03/18 09:09	10/04/18 21:41	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	10/03/18 09:09	10/04/18 21:41	1
<b>PCB-1260</b>	<b>58</b>		3.3	0.56	ug/Kg	☼	10/03/18 09:09	10/04/18 21:41	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				10/03/18 09:09	10/04/18 21:41	1
Tetrachloro-m-xylene	57	X	58 - 122				10/03/18 09:09	10/04/18 21:41	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>45000</b>	<b>B</b>	2000	44	mg/Kg			08/28/18 11:56	1
<b>Total Solids</b>	<b>59.7</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>61</b>	<b>H</b>	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gravel</b>	<b>0.1</b>				%			09/06/18 08:03	1
<b>Coarse Sand</b>	<b>0.0</b>				%			09/06/18 08:03	1
<b>Medium Sand</b>	<b>0.2</b>				%			09/06/18 08:03	1
<b>Fine Sand</b>	<b>13.2</b>				%			09/06/18 08:03	1
<b>Silt</b>	<b>80.0</b>				%			09/06/18 08:03	1
<b>Clay</b>	<b>6.5</b>				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-2to4D**

**Lab Sample ID: 580-79672-20**

Date Collected: 08/16/18 10:30

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 61.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		180	16	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Acenaphthene</b>	<b>55</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
Acenaphthylene	ND		180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Anthracene</b>	<b>62</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Benzo[a]anthracene</b>	<b>79</b>	<b>J</b>	180	27	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Benzo[a]pyrene</b>	<b>130</b>	<b>J</b>	180	14	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Benzo[b]fluoranthene</b>	<b>140</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Benzo[g,h,i]perylene</b>	<b>130</b>	<b>J</b>	180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Benzo[k]fluoranthene</b>	<b>50</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Chrysene</b>	<b>150</b>	<b>J</b>	180	53	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
Dibenz(a,h)anthracene	ND		180	25	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Fluoranthene</b>	<b>360</b>		180	49	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Fluorene</b>	<b>33</b>	<b>J</b>	180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Indeno[1,2,3-cd]pyrene</b>	<b>110</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Naphthalene</b>	<b>34</b>	<b>J</b>	180	28	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Phenanthrene</b>	<b>240</b>		180	24	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<b>Pyrene</b>	<b>410</b>		180	34	ug/Kg	☼	10/12/18 10:24	10/15/18 14:37	25
<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				10/12/18 10:24	10/15/18 14:37	25

## 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	☼	10/03/18 09:09	10/04/18 21:57	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	10/03/18 09:09	10/04/18 21:57	1
PCB-1232	ND		3.2	0.76	ug/Kg	☼	10/03/18 09:09	10/04/18 21:57	1
PCB-1242	ND		3.2	0.79	ug/Kg	☼	10/03/18 09:09	10/04/18 21:57	1
PCB-1248	ND		3.2	0.26	ug/Kg	☼	10/03/18 09:09	10/04/18 21:57	1
PCB-1254	ND		3.2	1.3	ug/Kg	☼	10/03/18 09:09	10/04/18 21:57	1
<b>PCB-1260</b>	<b>59</b>		3.2	0.55	ug/Kg	☼	10/03/18 09:09	10/04/18 21:57	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	52	X	54 - 142				10/03/18 09:09	10/04/18 21:57	1
Tetrachloro-m-xylene	55	X	58 - 122				10/03/18 09:09	10/04/18 21:57	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>50000</b>	<b>B</b>	2000	44	mg/Kg			08/30/18 11:46	1
<b>Total Solids</b>	<b>61.4</b>	<b>H</b>	0.1	0.1	%			09/28/18 11:21	1
<b>Total Solids @ 70°C</b>	<b>61</b>	<b>H</b>	0.10	0.10	%			09/28/18 11:18	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-4to6**

**Lab Sample ID: 580-79672-21**

Date Collected: 08/16/18 10:35

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 63.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		180	17	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
Acenaphthene	ND		180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
Acenaphthylene	ND		180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
Anthracene	ND		180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Benzo[a]anthracene</b>	<b>87</b>	<b>J</b>	180	28	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Benzo[a]pyrene</b>	<b>140</b>	<b>J</b>	180	15	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Benzo[b]fluoranthene</b>	<b>180</b>		180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Benzo[g,h,i]perylene</b>	<b>150</b>	<b>J</b>	180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Benzo[k]fluoranthene</b>	<b>54</b>	<b>J</b>	180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Chrysene</b>	<b>160</b>	<b>J</b>	180	55	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
Dibenz(a,h)anthracene	ND		180	27	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Fluoranthene</b>	<b>280</b>		180	52	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
Fluorene	ND		180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Indeno[1,2,3-cd]pyrene</b>	<b>130</b>	<b>J</b>	180	22	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Naphthalene</b>	<b>39</b>	<b>J</b>	180	29	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Phenanthrene</b>	<b>140</b>	<b>J</b>	180	25	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Pyrene</b>	<b>350</b>		180	36	ug/Kg	☼	10/12/18 10:24	10/15/18 15:01	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Terphenyl-d14	86		57 - 120				10/12/18 10:24	10/15/18 15:01	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>PCB-1016</b>	<b>7.6</b>		3.1	0.52	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	1
PCB-1221	ND		3.1	1.5	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	1
PCB-1232	ND		3.1	0.72	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	1
PCB-1242	ND		3.1	0.75	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	1
PCB-1248	ND		3.1	0.24	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	1
PCB-1254	ND		3.1	1.2	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	1
<b>PCB-1260</b>	<b>70</b>		3.1	0.52	ug/Kg	☼	10/03/18 09:17	10/04/18 14:38	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				10/03/18 09:17	10/04/18 14:38	1
Tetrachloro-m-xylene	51	X	58 - 122				10/03/18 09:17	10/04/18 14:38	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>53000</b>	<b>B</b>	2000	44	mg/Kg			08/30/18 11:54	1
<b>Total Solids</b>	<b>63.7</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>63</b>	<b>H</b>	0.10	0.10	%			09/06/18 08:03	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>				%			09/06/18 08:03	1
<b>Coarse Sand</b>	<b>0.3</b>				%			09/06/18 08:03	1
<b>Medium Sand</b>	<b>1.8</b>				%			09/06/18 08:03	1
<b>Fine Sand</b>	<b>18.0</b>				%			09/06/18 08:03	1
<b>Silt</b>	<b>72.5</b>				%			09/06/18 08:03	1
<b>Clay</b>	<b>7.4</b>				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-6to8.7**

**Lab Sample ID: 580-79672-22**

Date Collected: 08/16/18 10:40

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 62.0

## 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>35</b>	<b>J</b>	180	16	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
Acenaphthene	ND		180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
Acenaphthylene	ND		180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Anthracene</b>	<b>67</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Benzo[a]anthracene</b>	<b>100</b>	<b>J</b>	180	27	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Benzo[a]pyrene</b>	<b>150</b>	<b>J</b>	180	14	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Benzo[b]fluoranthene</b>	<b>170</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Benzo[g,h,i]perylene</b>	<b>150</b>	<b>J</b>	180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Benzo[k]fluoranthene</b>	<b>73</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Chrysene</b>	<b>180</b>		180	54	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
Dibenz(a,h)anthracene	ND		180	26	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Fluoranthene</b>	<b>380</b>		180	50	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
Fluorene	ND		180	18	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Indeno[1,2,3-cd]pyrene</b>	<b>140</b>	<b>J</b>	180	21	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Naphthalene</b>	<b>94</b>	<b>J</b>	180	29	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Phenanthrene</b>	<b>280</b>		180	25	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<b>Pyrene</b>	<b>470</b>		180	35	ug/Kg	☼	10/12/18 10:24	10/15/18 15:26	25
<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				10/12/18 10:24	10/15/18 15:26	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>PCB-1016</b>	<b>22</b>		3.1	0.53	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	1
PCB-1221	ND		3.1	1.5	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	1
PCB-1232	ND		3.1	0.73	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	1
PCB-1242	ND		3.1	0.76	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	1
PCB-1248	ND		3.1	0.25	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	1
PCB-1254	ND		3.1	1.2	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	1
<b>PCB-1260</b>	<b>190</b>		3.1	0.53	ug/Kg	☼	10/03/18 09:17	10/04/18 14:55	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				10/03/18 09:17	10/04/18 14:55	1
Tetrachloro-m-xylene	52	X	58 - 122				10/03/18 09:17	10/04/18 14:55	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>51000</b>	<b>B</b>	2000	44	mg/Kg			08/30/18 12:09	1
<b>Total Solids</b>	<b>62.0</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>62</b>	<b>H</b>	0.10	0.10	%			09/06/18 08:03	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>				%			09/06/18 08:03	1
<b>Coarse Sand</b>	<b>0.1</b>				%			09/06/18 08:03	1
<b>Medium Sand</b>	<b>1.1</b>				%			09/06/18 08:03	1
<b>Fine Sand</b>	<b>17.2</b>				%			09/06/18 08:03	1
<b>Silt</b>	<b>73.0</b>				%			09/06/18 08:03	1
<b>Clay</b>	<b>8.7</b>				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-8.7to9.7**

**Lab Sample ID: 580-79672-23**

Date Collected: 08/16/18 10:45

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 62.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	51	J	74	6.6	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Acenaphthene	58	J	74	8.9	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Acenaphthylene	39	J	74	7.4	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Anthracene	57	J	74	8.9	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Benzo[a]anthracene	88		74	11	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Benzo[a]pyrene	120		74	5.9	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Benzo[b]fluoranthene	140		74	8.7	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Benzo[g,h,i]perylene	130		74	7.4	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Benzo[k]fluoranthene	59	J	74	8.9	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Chrysene	160		74	22	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Dibenz(a,h)anthracene	24	J	74	11	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Fluoranthene	370		74	21	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Fluorene	50	J	74	7.4	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Indeno[1,2,3-cd]pyrene	110		74	8.9	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Naphthalene	150		74	12	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Phenanthrene	310		74	10	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10
Pyrene	460		74	14	ug/Kg	☼	10/12/18 10:24	10/15/18 15:50	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		57 - 120	10/12/18 10:24	10/15/18 15:50	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	19		3.2	0.54	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1
PCB-1232	ND		3.2	0.74	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1
PCB-1242	ND		3.2	0.77	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1
PCB-1248	ND		3.2	0.25	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1
PCB-1254	ND		3.2	1.2	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1
PCB-1260	92		3.2	0.54	ug/Kg	☼	10/03/18 09:17	10/04/18 15:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		54 - 142	10/03/18 09:17	10/04/18 15:13	1
Tetrachloro-m-xylene	55	X	58 - 122	10/03/18 09:17	10/04/18 15:13	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	65000	B	2000	44	mg/Kg			08/30/18 12:16	1
Total Solids	62.1	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	62	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.1				%			09/06/18 08:03	1
Medium Sand	0.9				%			09/06/18 08:03	1
Fine Sand	19.5				%			09/06/18 08:03	1
Silt	69.9				%			09/06/18 08:03	1
Clay	9.6				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-9.7to10.7**

**Lab Sample ID: 580-79672-24**

Date Collected: 08/16/18 10:50

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 61.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	82		81	7.3	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Acenaphthene	160		81	9.7	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Acenaphthylene	68	J	81	8.1	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Anthracene	100		81	9.7	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Benzo[a]anthracene	130		81	12	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Benzo[a]pyrene	100		81	6.4	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Benzo[b]fluoranthene	130		81	9.5	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Benzo[g,h,i]perylene	95		81	8.1	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Benzo[k]fluoranthene	45	J	81	9.7	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Chrysene	160		81	24	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Dibenz(a,h)anthracene	21	J	81	12	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Fluoranthene	530		81	23	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Fluorene	100		81	8.1	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Indeno[1,2,3-cd]pyrene	76	J	81	9.7	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Naphthalene	320		81	13	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Phenanthrene	540		81	11	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10
Pyrene	560		81	16	ug/Kg	☼	10/12/18 10:24	10/15/18 16:15	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	81		57 - 120	10/12/18 10:24	10/15/18 16:15	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	4.9		3.2	0.54	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1
PCB-1221	ND		3.2	1.5	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1
PCB-1232	ND		3.2	0.75	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1
PCB-1242	ND		3.2	0.78	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1
PCB-1248	ND		3.2	0.26	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1
PCB-1254	ND		3.2	1.3	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1
PCB-1260	20		3.2	0.54	ug/Kg	☼	10/03/18 09:17	10/04/18 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	51	X	54 - 142	10/03/18 09:17	10/04/18 15:31	1
Tetrachloro-m-xylene	56	X	58 - 122	10/03/18 09:17	10/04/18 15:31	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	67000	B	2000	44	mg/Kg			08/30/18 12:23	1
Total Solids	61.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	64	H	0.10	0.10	%			09/06/18 08:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/06/18 08:03	1
Coarse Sand	0.0				%			09/06/18 08:03	1
Medium Sand	2.9				%			09/06/18 08:03	1
Fine Sand	39.1				%			09/06/18 08:03	1
Silt	49.5				%			09/06/18 08:03	1
Clay	8.4				%			09/06/18 08:03	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S232-0to2**

**Lab Sample ID: 580-79672-25**

Date Collected: 08/16/18 15:10

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 58.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	150		85	7.6	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Acenaphthene	150		85	10	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Acenaphthylene	91		85	8.5	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Anthracene	92		85	10	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Benzo[a]anthracene	140		85	13	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Benzo[a]pyrene	160		85	6.8	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Benzo[b]fluoranthene	170		85	10	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Benzo[g,h,i]perylene	130		85	8.5	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Benzo[k]fluoranthene	55	J	85	10	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Chrysene	180		85	25	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Dibenz(a,h)anthracene	ND		85	12	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Fluoranthene	550		85	24	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Fluorene	110		85	8.5	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Indeno[1,2,3-cd]pyrene	110		85	10	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Naphthalene	400		85	14	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Phenanthrene	550		85	12	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10
Pyrene	750		85	16	ug/Kg	☼	10/12/18 10:24	10/15/18 16:39	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	76		57 - 120	10/12/18 10:24	10/15/18 16:39	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	10		3.3	0.56	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1
PCB-1232	ND		3.3	0.78	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1
PCB-1242	ND		3.3	0.81	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1
PCB-1248	ND		3.3	0.27	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1
PCB-1260	36		3.3	0.56	ug/Kg	☼	10/03/18 09:17	10/04/18 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		54 - 142	10/03/18 09:17	10/04/18 15:49	1
Tetrachloro-m-xylene	60		58 - 122	10/03/18 09:17	10/04/18 15:49	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	53000	B	2000	44	mg/Kg			08/30/18 12:31	1
Total Solids	58.8	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	59	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.0				%			09/07/18 12:35	1
Medium Sand	0.2				%			09/07/18 12:35	1
Fine Sand	20.1				%			09/07/18 12:35	1
Silt	69.7				%			09/07/18 12:35	1
Clay	10.0				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S232-2to4**

**Lab Sample ID: 580-79672-26**

Date Collected: 08/16/18 15:15

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 55.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	260	F2 F1	15	1.4	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Acenaphthene	230	F1	15	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Acenaphthylene	110		15	1.5	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Anthracene	110	F1	15	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Benzo[a]anthracene	130	F1	15	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Benzo[a]pyrene	97	F2 F1	15	1.2	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Benzo[b]fluoranthene	130		15	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Benzo[g,h,i]perylene	110	F2 F1	15	1.5	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Benzo[k]fluoranthene	41	F2 F1	15	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Chrysene	180	F2 F1	15	4.6	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Dibenz(a,h)anthracene	ND	F2 F1	15	2.2	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Fluoranthene	470	F2 F1 B	15	4.3	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Fluorene	150	F1	15	1.5	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Indeno[1,2,3-cd]pyrene	94	F2	15	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Naphthalene	1200	F2 F1	15	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Phenanthrene	590	F1	15	2.1	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	10
Pyrene	550	F2 F1	15	3.0	ug/Kg	☼	10/03/18 09:25	10/07/18 16:30	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	71		57 - 120				10/03/18 09:25	10/07/18 16:30	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.5	0.60	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	1
PCB-1221	ND		3.5	1.7	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	1
PCB-1232	ND		3.5	0.83	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	1
PCB-1242	ND		3.5	0.86	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	1
PCB-1248	ND		3.5	0.28	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	1
PCB-1254	ND		3.5	1.4	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	1
<b>PCB-1260</b>	<b>48</b>	<b>F1</b>	3.5	0.60	ug/Kg	☼	10/03/18 09:17	10/04/18 16:06	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	67		54 - 142				10/03/18 09:17	10/04/18 16:06	1
Tetrachloro-m-xylene	60		58 - 122				10/03/18 09:17	10/04/18 16:06	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	79000	B	2000	44	mg/Kg			08/30/18 11:15	1
Total Solids	55.8	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	58	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.1				%			09/07/18 12:35	1
Medium Sand	0.8				%			09/07/18 12:35	1
Fine Sand	24.3				%			09/07/18 12:35	1
Silt	61.6				%			09/07/18 12:35	1
Clay	13.2				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S232-4to6.2**

**Lab Sample ID: 580-79672-27**

Date Collected: 08/16/18 15:20

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 65.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	69		68	6.1	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Acenaphthene	87		68	8.2	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Acenaphthylene	37	J	68	6.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Anthracene	26	J	68	8.2	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Benzo[a]anthracene	25	J	68	10	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Benzo[a]pyrene	28	J	68	5.4	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Benzo[b]fluoranthene	35	J	68	8.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Benzo[g,h,i]perylene	30	J	68	6.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Benzo[k]fluoranthene	14	J	68	8.2	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Chrysene	43	J	68	20	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Dibenz(a,h)anthracene	ND		68	9.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Fluoranthene	140		68	19	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Fluorene	44	J	68	6.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Indeno[1,2,3-cd]pyrene	25	J	68	8.2	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Naphthalene	340		68	11	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Phenanthrene	190		68	9.4	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	10
Pyrene	160		68	13	ug/Kg	☼	10/12/18 10:24	10/15/18 17:04	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	62		57 - 120				10/12/18 10:24	10/15/18 17:04	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.9	0.49	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	1
PCB-1221	ND		2.9	1.4	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	1
PCB-1232	ND		2.9	0.68	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	1
PCB-1242	ND		2.9	0.71	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	1
PCB-1248	ND		2.9	0.23	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	1
PCB-1254	ND		2.9	1.1	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	1
<b>PCB-1260</b>	<b>11</b>		2.9	0.49	ug/Kg	☼	10/03/18 09:17	10/04/18 16:59	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	57		54 - 142				10/03/18 09:17	10/04/18 16:59	1
Tetrachloro-m-xylene	56	X	58 - 122				10/03/18 09:17	10/04/18 16:59	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	29000	B	2000	44	mg/Kg			08/30/18 12:38	1
Total Solids	65.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	68	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.0				%			09/07/18 12:35	1
Medium Sand	0.3				%			09/07/18 12:35	1
Fine Sand	50.2				%			09/07/18 12:35	1
Silt	41.6				%			09/07/18 12:35	1
Clay	7.9				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S263-0to2**

**Lab Sample ID: 580-79672-28**

Date Collected: 08/16/18 16:10

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 73.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		33	3.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Acenaphthene	5.2	J	33	4.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Acenaphthylene	4.3	J	33	3.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Anthracene	7.9	J	33	4.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Benzo[a]anthracene	29	J	33	5.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Benzo[a]pyrene	60		33	2.6	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Benzo[b]fluoranthene	47		33	3.9	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Benzo[g,h,i]perylene	47		33	3.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Benzo[k]fluoranthene	18	J	33	4.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Chrysene	41		33	9.9	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Dibenz(a,h)anthracene	ND		33	4.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Fluoranthene	81		33	9.2	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Fluorene	5.1	J	33	3.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Indeno[1,2,3-cd]pyrene	43		33	4.0	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Naphthalene	6.3	J	33	5.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Phenanthrene	38		33	4.6	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	5
Pyrene	100		33	6.4	ug/Kg	☼	10/12/18 10:24	10/15/18 17:29	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	92		57 - 120				10/12/18 10:24	10/15/18 17:29	5

## 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	☼	10/03/18 09:17	10/04/18 17:17	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	10/03/18 09:17	10/04/18 17:17	1
PCB-1232	ND		2.7	0.63	ug/Kg	☼	10/03/18 09:17	10/04/18 17:17	1
PCB-1242	ND		2.7	0.65	ug/Kg	☼	10/03/18 09:17	10/04/18 17:17	1
PCB-1248	ND		2.7	0.21	ug/Kg	☼	10/03/18 09:17	10/04/18 17:17	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	10/03/18 09:17	10/04/18 17:17	1
PCB-1260	2.5	J	2.7	0.45	ug/Kg	☼	10/03/18 09:17	10/04/18 17:17	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				10/03/18 09:17	10/04/18 17:17	1
Tetrachloro-m-xylene	65		58 - 122				10/03/18 09:17	10/04/18 17:17	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	14000	B	2000	44	mg/Kg			08/30/18 12:45	1
Total Solids	73.2	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	74	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	1.4				%			09/07/18 12:35	1
Medium Sand	6.4				%			09/07/18 12:35	1
Fine Sand	73.2				%			09/07/18 12:35	1
Silt	13.8				%			09/07/18 12:35	1
Clay	5.1				%			09/07/18 12:35	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S263-2to3.8**

**Lab Sample ID: 580-79672-29**

Date Collected: 08/16/18 16:15

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 67.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		73	6.6	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Acenaphthene</b>	<b>20</b>	<b>J</b>	73	8.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
Acenaphthylene	ND		73	7.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Anthracene</b>	<b>11</b>	<b>J</b>	73	8.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Benzo[a]anthracene</b>	<b>25</b>	<b>J</b>	73	11	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Benzo[a]pyrene</b>	<b>32</b>	<b>J</b>	73	5.9	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Benzo[b]fluoranthene</b>	<b>40</b>	<b>J</b>	73	8.6	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Benzo[g,h,i]perylene</b>	<b>23</b>	<b>J</b>	73	7.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Benzo[k]fluoranthene</b>	<b>15</b>	<b>J</b>	73	8.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Chrysene</b>	<b>40</b>	<b>J</b>	73	22	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
Dibenz(a,h)anthracene	ND		73	11	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Fluoranthene</b>	<b>81</b>		73	20	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Fluorene</b>	<b>14</b>	<b>J</b>	73	7.3	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Indeno[1,2,3-cd]pyrene</b>	<b>23</b>	<b>J</b>	73	8.8	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Naphthalene</b>	<b>12</b>	<b>J</b>	73	12	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Phenanthrene</b>	<b>57</b>	<b>J</b>	73	10	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	10
<b>Pyrene</b>	<b>81</b>		73	14	ug/Kg	☼	10/12/18 10:24	10/15/18 17:53	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	86		57 - 120				10/12/18 10:24	10/15/18 17:53	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.9	0.50	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	1
PCB-1221	ND		2.9	1.4	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	1
PCB-1232	ND		2.9	0.69	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	1
PCB-1242	ND		2.9	0.72	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	1
PCB-1248	ND		2.9	0.24	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	1
PCB-1254	ND		2.9	1.2	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	1
<b>PCB-1260</b>	<b>4.4</b>		2.9	0.50	ug/Kg	☼	10/03/18 09:17	10/04/18 17:34	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	55		54 - 142				10/03/18 09:17	10/04/18 17:34	1
Tetrachloro-m-xylene	62		58 - 122				10/03/18 09:17	10/04/18 17:34	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>20000</b>	<b>B</b>	2000	44	mg/Kg			08/30/18 12:52	1
<b>Total Solids</b>	<b>67.2</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>61</b>	<b>H</b>	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gravel</b>	<b>30.0</b>				%			09/07/18 12:35	1
<b>Coarse Sand</b>	<b>2.2</b>				%			09/07/18 12:35	1
<b>Medium Sand</b>	<b>2.8</b>				%			09/07/18 12:35	1
<b>Fine Sand</b>	<b>42.7</b>				%			09/07/18 12:35	1
<b>Silt</b>	<b>15.5</b>				%			09/07/18 12:35	1
<b>Clay</b>	<b>6.8</b>				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S263-3.8to5.9**

**Lab Sample ID: 580-79672-30**

Date Collected: 08/16/18 16:20

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 66.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	15	J	67	6.0	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Acenaphthene	15	J	67	8.0	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Acenaphthylene	14	J	67	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Anthracene	20	J	67	8.0	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Benzo[a]anthracene	33	J	67	10	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Benzo[a]pyrene	47	J	67	5.3	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Benzo[b]fluoranthene	54	J	67	7.9	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Benzo[g,h,i]perylene	41	J	67	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Benzo[k]fluoranthene	18	J	67	8.0	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Chrysene	51	J	67	20	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Dibenz(a,h)anthracene	ND		67	9.6	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Fluoranthene	110		67	19	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Fluorene	16	J	67	6.7	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Indeno[1,2,3-cd]pyrene	41	J	67	8.0	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Naphthalene	40	J	67	11	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Phenanthrene	86		67	9.2	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10
Pyrene	110		67	13	ug/Kg	☼	10/12/18 10:24	10/15/18 18:18	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	10/12/18 10:24	10/15/18 18:18	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	0.50	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1
PCB-1221	ND		3.0	1.4	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1
PCB-1232	ND		3.0	0.70	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1
PCB-1242	ND		3.0	0.73	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1
PCB-1248	ND		3.0	0.24	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1
PCB-1254	ND		3.0	1.2	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1
PCB-1260	4.8	F1	3.0	0.50	ug/Kg	☼	09/28/18 10:09	10/01/18 13:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	51	X	54 - 142	09/28/18 10:09	10/01/18 13:41	1
Tetrachloro-m-xylene	46	X	58 - 122	09/28/18 10:09	10/01/18 13:41	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	32000	B	2000	44	mg/Kg			08/30/18 12:59	1
Total Solids	66.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	69	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	48.0				%			09/07/18 12:35	1
Coarse Sand	2.1				%			09/07/18 12:35	1
Medium Sand	0.9				%			09/07/18 12:35	1
Fine Sand	31.9				%			09/07/18 12:35	1
Silt	12.4				%			09/07/18 12:35	1
Clay	4.7				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-0to1.9**

**Lab Sample ID: 580-79672-31**

Date Collected: 08/16/18 18:15

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 53.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	230		17	1.5	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Acenaphthene	230		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Acenaphthylene	50		17	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Anthracene	180		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Benzo[a]anthracene	350		17	2.5	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Benzo[a]pyrene	290		17	1.3	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Benzo[b]fluoranthene	410		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Benzo[g,h,i]perylene	230		17	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Benzo[k]fluoranthene	130		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Chrysene	420		17	5.0	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Dibenz(a,h)anthracene	56		17	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Fluoranthene	1000	B	17	4.7	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Fluorene	190		17	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Indeno[1,2,3-cd]pyrene	300		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Naphthalene	580		17	2.7	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Phenanthrene	840		17	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10
Pyrene	1000		17	3.2	ug/Kg	☼	10/03/18 09:25	10/07/18 17:38	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	72		57 - 120	10/03/18 09:25	10/07/18 17:38	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.7	0.64	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1
PCB-1221	ND		3.7	1.8	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1
PCB-1232	ND		3.7	0.88	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1
PCB-1242	ND		3.7	0.92	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1
PCB-1248	ND		3.7	0.30	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1
PCB-1254	ND		3.7	1.5	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1
PCB-1260	66		3.7	0.64	ug/Kg	☼	09/28/18 10:09	10/01/18 14:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	97		54 - 142	09/28/18 10:09	10/01/18 14:31	1
Tetrachloro-m-xylene	60		58 - 122	09/28/18 10:09	10/01/18 14:31	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	76000	B	2000	44	mg/Kg			08/30/18 13:06	1
Total Solids	53.1	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	55	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	2.2				%			09/07/18 12:35	1
Medium Sand	2.0				%			09/07/18 12:35	1
Fine Sand	63.1				%			09/07/18 12:35	1
Silt	28.0				%			09/07/18 12:35	1
Clay	4.7				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-1.9to3**

**Lab Sample ID: 580-79672-32**

Date Collected: 08/16/18 18:20

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 44.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	640		96	8.6	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Acenaphthene	630		96	11	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Acenaphthylene	93	J	96	9.6	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Anthracene	380		96	11	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Benzo[a]anthracene	620		96	15	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Benzo[a]pyrene	470		96	7.6	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Benzo[b]fluoranthene	650		96	11	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Benzo[g,h,i]perylene	370		96	9.6	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Benzo[k]fluoranthene	200		96	11	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Chrysene	760		96	29	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Dibenz(a,h)anthracene	81	J	96	14	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Fluoranthene	1800	B	96	27	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Fluorene	460		96	9.6	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Indeno[1,2,3-cd]pyrene	420		96	11	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Naphthalene	1600		96	15	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Phenanthrene	1800		96	13	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	50
Pyrene	1900		96	19	ug/Kg	☼	10/03/18 09:25	10/07/18 18:00	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	73		57 - 120				10/03/18 09:25	10/07/18 18:00	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	0.76	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	1
PCB-1221	ND		4.4	2.1	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	1
PCB-1232	ND		4.4	1.0	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	1
PCB-1242	ND		4.4	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	1
PCB-1248	ND		4.4	0.36	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	1
PCB-1254	ND		4.4	1.8	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	1
<b>PCB-1260</b>	<b>42</b>		4.4	0.76	ug/Kg	☼	09/28/18 10:09	10/01/18 14:48	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	49	X	54 - 142				09/28/18 10:09	10/01/18 14:48	1
Tetrachloro-m-xylene	50	X	58 - 122				09/28/18 10:09	10/01/18 14:48	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	210000	B	2000	44	mg/Kg			08/30/18 13:21	1
Total Solids	44.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	44	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	3.2				%			09/07/18 12:35	1
Coarse Sand	2.1				%			09/07/18 12:35	1
Medium Sand	3.3				%			09/07/18 12:35	1
Fine Sand	48.4				%			09/07/18 12:35	1
Silt	35.7				%			09/07/18 12:35	1
Clay	7.3				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-3to4.7**

**Lab Sample ID: 580-79672-33**

Date Collected: 08/16/18 18:25

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 42.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	790		23	2.1	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Acenaphthene	770		23	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Acenaphthylene	210		23	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Anthracene	450		23	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Benzo[a]anthracene	610		23	3.5	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Benzo[a]pyrene	640		23	1.9	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Benzo[b]fluoranthene	720		23	2.7	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Benzo[g,h,i]perylene	500		23	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Benzo[k]fluoranthene	230		23	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Chrysene	780		23	7.0	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Dibenz(a,h)anthracene	76		23	3.4	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Fluoranthene	1900	B	23	6.5	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Fluorene	520		23	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Indeno[1,2,3-cd]pyrene	550		23	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Naphthalene	2300		23	3.7	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Phenanthrene	2300		23	3.2	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10
Pyrene	2300		23	4.5	ug/Kg	☼	10/03/18 09:25	10/07/18 18:23	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		57 - 120	10/03/18 09:25	10/07/18 18:23	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.6	0.78	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1
PCB-1221	ND		4.6	2.2	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1
PCB-1232	ND		4.6	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1
PCB-1242	ND		4.6	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1
PCB-1248	ND		4.6	0.37	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1
PCB-1254	ND		4.6	1.8	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1
PCB-1260	19		4.6	0.78	ug/Kg	☼	09/28/18 10:09	10/01/18 15:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	49	X	54 - 142	09/28/18 10:09	10/01/18 15:05	1
Tetrachloro-m-xylene	51	X	58 - 122	09/28/18 10:09	10/01/18 15:05	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	390000	B	2000	44	mg/Kg			08/30/18 13:29	1
Total Solids	42.3	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	41	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	14.8				%			09/07/18 12:35	1
Coarse Sand	3.8				%			09/07/18 12:35	1
Medium Sand	5.8				%			09/07/18 12:35	1
Fine Sand	36.1				%			09/07/18 12:35	1
Silt	33.0				%			09/07/18 12:35	1
Clay	6.4				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-4.7to6.7**

**Lab Sample ID: 580-79672-34**

Date Collected: 08/16/18 18:30

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 49.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	910		20	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Acenaphthene	680		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Acenaphthylene	370		20	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Anthracene	530		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Benzo[a]anthracene	490		20	3.1	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Benzo[a]pyrene	540		20	1.6	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Benzo[b]fluoranthene	670		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Benzo[g,h,i]perylene	510		20	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Benzo[k]fluoranthene	150		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Chrysene	700		20	6.1	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Dibenz(a,h)anthracene	57		20	2.9	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Fluoranthene	2000	B	20	5.7	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Fluorene	590		20	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Indeno[1,2,3-cd]pyrene	480		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Naphthalene	3100		20	3.2	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Phenanthrene	3000		20	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10
Pyrene	2800		20	3.9	ug/Kg	☼	10/03/18 09:25	10/07/18 18:46	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	65		57 - 120	10/03/18 09:25	10/07/18 18:46	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.0	0.69	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1
PCB-1221	ND		4.0	1.9	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1
PCB-1232	ND		4.0	0.95	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1
PCB-1242	ND		4.0	0.99	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1
PCB-1248	ND		4.0	0.32	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1
PCB-1254	ND		4.0	1.6	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1
PCB-1260	4.7		4.0	0.69	ug/Kg	☼	09/28/18 10:09	10/01/18 15:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	47	X	54 - 142	09/28/18 10:09	10/01/18 15:21	1
Tetrachloro-m-xylene	47	X	58 - 122	09/28/18 10:09	10/01/18 15:21	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	190000	B	2000	44	mg/Kg			08/30/18 13:39	1
Total Solids	49.2	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	50	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	2.3				%			09/07/18 12:35	1
Coarse Sand	2.5				%			09/07/18 12:35	1
Medium Sand	4.8				%			09/07/18 12:35	1
Fine Sand	59.0				%			09/07/18 12:35	1
Silt	26.0				%			09/07/18 12:35	1
Clay	5.3				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-6.7to8.8**

**Lab Sample ID: 580-79672-35**

Date Collected: 08/16/18 18:35

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 68.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	24		6.9	0.62	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Acenaphthene	15		6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Acenaphthylene	5.8	J	6.9	0.69	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Anthracene	10		6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Benzo[a]anthracene	15		6.9	1.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Benzo[a]pyrene	16		6.9	0.55	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Benzo[b]fluoranthene	18		6.9	0.82	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Benzo[g,h,i]perylene	16		6.9	0.69	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Benzo[k]fluoranthene	5.2	J	6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Chrysene	17		6.9	2.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Dibenz(a,h)anthracene	ND		6.9	1.0	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Fluoranthene	38	B	6.9	1.9	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Fluorene	13		6.9	0.69	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Indeno[1,2,3-cd]pyrene	16		6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Naphthalene	59		6.9	1.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Phenanthrene	54		6.9	0.96	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5
Pyrene	54		6.9	1.3	ug/Kg	☼	10/03/18 09:25	10/07/18 19:09	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	78		57 - 120	10/03/18 09:25	10/07/18 19:09	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	☼	09/28/18 10:09	10/01/18 15:38	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 15:38	1
PCB-1232	ND		2.8	0.67	ug/Kg	☼	09/28/18 10:09	10/01/18 15:38	1
PCB-1242	ND		2.8	0.70	ug/Kg	☼	09/28/18 10:09	10/01/18 15:38	1
PCB-1248	ND		2.8	0.23	ug/Kg	☼	09/28/18 10:09	10/01/18 15:38	1
PCB-1254	ND		2.8	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 15:38	1
PCB-1260	ND		2.8	0.48	ug/Kg	☼	09/28/18 10:09	10/01/18 15:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	50	X	54 - 142	09/28/18 10:09	10/01/18 15:38	1
Tetrachloro-m-xylene	50	X	58 - 122	09/28/18 10:09	10/01/18 15:38	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	15000	B	2000	44	mg/Kg			08/30/18 13:48	1
Total Solids	68.7	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	70	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.2				%			09/07/18 12:35	1
Medium Sand	0.5				%			09/07/18 12:35	1
Fine Sand	52.8				%			09/07/18 12:35	1
Silt	38.8				%			09/07/18 12:35	1
Clay	7.7				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-6.7to8.8D**

**Lab Sample ID: 580-79672-36**

Date Collected: 08/16/18 18:35

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 70.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	22		7.0	0.63	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Acenaphthene	15		7.0	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Acenaphthylene	6.3	J	7.0	0.70	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Anthracene	13		7.0	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Benzo[a]anthracene	12		7.0	1.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Benzo[a]pyrene	11		7.0	0.56	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Benzo[b]fluoranthene	13		7.0	0.82	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Benzo[g,h,i]perylene	12		7.0	0.70	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Benzo[k]fluoranthene	3.8	J	7.0	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Chrysene	16		7.0	2.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Dibenz(a,h)anthracene	ND		7.0	1.0	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Fluoranthene	51	B	7.0	1.9	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Fluorene	14		7.0	0.70	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Indeno[1,2,3-cd]pyrene	12		7.0	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Naphthalene	64		7.0	1.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Phenanthrene	67		7.0	0.96	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	5
Pyrene	67		7.0	1.3	ug/Kg	☼	10/03/18 09:25	10/07/18 19:31	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	85		57 - 120				10/03/18 09:25	10/07/18 19:31	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	☼	10/03/18 09:17	10/04/18 17:52	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	10/03/18 09:17	10/04/18 17:52	1
PCB-1232	ND		2.8	0.66	ug/Kg	☼	10/03/18 09:17	10/04/18 17:52	1
PCB-1242	ND		2.8	0.69	ug/Kg	☼	10/03/18 09:17	10/04/18 17:52	1
PCB-1248	ND		2.8	0.22	ug/Kg	☼	10/03/18 09:17	10/04/18 17:52	1
PCB-1254	ND		2.8	1.1	ug/Kg	☼	10/03/18 09:17	10/04/18 17:52	1
PCB-1260	ND		2.8	0.48	ug/Kg	☼	10/03/18 09:17	10/04/18 17:52	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	65		54 - 142				10/03/18 09:17	10/04/18 17:52	1
Tetrachloro-m-xylene	62		58 - 122				10/03/18 09:17	10/04/18 17:52	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	15000	B	2000	44	mg/Kg			08/30/18 13:55	1
Total Solids	70.4	H	0.1	0.1	%			09/28/18 11:21	1
Total Solids @ 70°C	70	H	0.10	0.10	%			09/28/18 11:18	1



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-8.8to9.8**

**Lab Sample ID: 580-79672-37**

Date Collected: 08/16/18 18:40

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 70.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	22		6.9	0.62	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Acenaphthene	15		6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Acenaphthylene	11		6.9	0.69	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Anthracene	15		6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Benzo[a]anthracene	16		6.9	1.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Benzo[a]pyrene	18		6.9	0.55	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Benzo[b]fluoranthene	20		6.9	0.82	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Benzo[g,h,i]perylene	16		6.9	0.69	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Benzo[k]fluoranthene	5.8	J	6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Chrysene	20		6.9	2.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Dibenz(a,h)anthracene	ND		6.9	1.0	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Fluoranthene	55	B	6.9	1.9	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Fluorene	15		6.9	0.69	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Indeno[1,2,3-cd]pyrene	17		6.9	0.83	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Naphthalene	74		6.9	1.1	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Phenanthrene	86		6.9	0.96	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	5
Pyrene	68		6.9	1.3	ug/Kg	☼	10/03/18 09:25	10/07/18 19:54	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	83		57 - 120				10/03/18 09:25	10/07/18 19:54	5

## 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	☼	09/28/18 10:09	10/01/18 15:55	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 15:55	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	09/28/18 10:09	10/01/18 15:55	1
PCB-1242	ND		2.7	0.67	ug/Kg	☼	09/28/18 10:09	10/01/18 15:55	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	09/28/18 10:09	10/01/18 15:55	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 15:55	1
PCB-1260	ND		2.7	0.46	ug/Kg	☼	09/28/18 10:09	10/01/18 15:55	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	57		54 - 142				09/28/18 10:09	10/01/18 15:55	1
Tetrachloro-m-xylene	52	X	58 - 122				09/28/18 10:09	10/01/18 15:55	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000	B	2000	44	mg/Kg			08/30/18 14:02	1
Total Solids	70.0	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	71	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.0				%			09/07/18 12:35	1
Medium Sand	0.2				%			09/07/18 12:35	1
Fine Sand	48.0				%			09/07/18 12:35	1
Silt	43.2				%			09/07/18 12:35	1
Clay	8.6				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-0to2**

**Lab Sample ID: 580-79672-38**

Date Collected: 08/17/18 10:10

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 49.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	27		20	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Acenaphthene	24		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Acenaphthylene	13	J	20	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Anthracene	25		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Benzo[a]anthracene	32		20	3.0	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Benzo[a]pyrene	27		20	1.6	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Benzo[b]fluoranthene	39		20	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Benzo[g,h,i]perylene	31		20	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Benzo[k]fluoranthene	12	J	20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Chrysene	48		20	5.9	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Dibenz(a,h)anthracene	ND		20	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Fluoranthene	130	B	20	5.5	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Fluorene	33		20	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Indeno[1,2,3-cd]pyrene	26		20	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Naphthalene	50		20	3.2	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Phenanthrene	130		20	2.7	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10
Pyrene	120		20	3.8	ug/Kg	☼	10/03/18 09:25	10/07/18 20:17	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	73		57 - 120	10/03/18 09:25	10/07/18 20:17	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.0	0.68	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1
PCB-1221	ND		4.0	1.9	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1
PCB-1232	ND		4.0	0.94	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1
PCB-1242	ND		4.0	0.98	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1
PCB-1248	ND		4.0	0.32	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1
PCB-1254	ND		4.0	1.6	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1
PCB-1260	1.2	J	4.0	0.68	ug/Kg	☼	09/28/18 10:09	10/01/18 16:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	49	X	54 - 142	09/28/18 10:09	10/01/18 16:12	1
Tetrachloro-m-xylene	45	X	58 - 122	09/28/18 10:09	10/01/18 16:12	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	59000	B	2000	44	mg/Kg			08/30/18 14:09	1
Total Solids	49.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	51	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.8				%			09/07/18 12:35	1
Medium Sand	0.8				%			09/07/18 12:35	1
Fine Sand	26.8				%			09/07/18 12:35	1
Silt	57.4				%			09/07/18 12:35	1
Clay	14.2				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-2to3.7**

**Lab Sample ID: 580-79672-39**

Date Collected: 08/17/18 10:15

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 74.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	140		6.3	0.56	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Acenaphthene	110		6.3	0.75	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Acenaphthylene	17		6.3	0.63	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Anthracene	64		6.3	0.75	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Benzo[a]anthracene	60		6.3	0.95	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Benzo[a]pyrene	38		6.3	0.50	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Benzo[b]fluoranthene	48		6.3	0.74	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Benzo[g,h,i]perylene	31		6.3	0.63	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Benzo[k]fluoranthene	13		6.3	0.75	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Chrysene	81		6.3	1.9	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Dibenz(a,h)anthracene	ND		6.3	0.90	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Fluoranthene	250	B	6.3	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Fluorene	140		6.3	0.63	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Indeno[1,2,3-cd]pyrene	29		6.3	0.75	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Naphthalene	120		6.3	1.0	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Phenanthrene	390		6.3	0.86	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	5
Pyrene	230		6.3	1.2	ug/Kg	☼	10/03/18 09:25	10/07/18 20:40	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	71		57 - 120				10/03/18 09:25	10/07/18 20:40	5

### 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	☼	09/28/18 10:09	10/01/18 16:28	1
PCB-1221	ND		2.6	1.2	ug/Kg	☼	09/28/18 10:09	10/01/18 16:28	1
PCB-1232	ND		2.6	0.61	ug/Kg	☼	09/28/18 10:09	10/01/18 16:28	1
PCB-1242	ND		2.6	0.63	ug/Kg	☼	09/28/18 10:09	10/01/18 16:28	1
PCB-1248	ND		2.6	0.21	ug/Kg	☼	09/28/18 10:09	10/01/18 16:28	1
PCB-1254	ND		2.6	1.0	ug/Kg	☼	09/28/18 10:09	10/01/18 16:28	1
<b>PCB-1260</b>	<b>1.6</b>	<b>J</b>	2.6	0.44	ug/Kg	☼	09/28/18 10:09	10/01/18 16:28	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	69		54 - 142				09/28/18 10:09	10/01/18 16:28	1
Tetrachloro-m-xylene	54	X	58 - 122				09/28/18 10:09	10/01/18 16:28	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	15000	B	2000	44	mg/Kg			08/30/18 14:16	1
Total Solids	74.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	75	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.2				%			09/07/18 12:35	1
Medium Sand	1.8				%			09/07/18 12:35	1
Fine Sand	74.6				%			09/07/18 12:35	1
Silt	19.8				%			09/07/18 12:35	1
Clay	3.7				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-3.7to6**

**Lab Sample ID: 580-79672-40**

Date Collected: 08/17/18 10:20

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 72.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	2.1		1.3	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Acenaphthene	1.2	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Acenaphthylene	0.28	J	1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Anthracene	0.96	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Benzo[a]anthracene	1.1	J	1.3	0.20	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Benzo[a]pyrene	0.81	J	1.3	0.10	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Benzo[b]fluoranthene	1.2	J	1.3	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Benzo[g,h,i]perylene	1.4		1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Benzo[k]fluoranthene	0.23	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Chrysene	1.3		1.3	0.39	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Dibenz(a,h)anthracene	ND		1.3	0.19	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Fluoranthene	4.2	B	1.3	0.37	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Fluorene	2.0		1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Indeno[1,2,3-cd]pyrene	0.93	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Naphthalene	1.9		1.3	0.21	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Phenanthrene	4.8		1.3	0.18	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	1
Pyrene	3.8		1.3	0.25	ug/Kg	☼	10/03/18 09:25	10/07/18 21:02	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	85		57 - 120				10/03/18 09:25	10/07/18 21:02	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	0.46	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	1
PCB-1242	ND		2.7	0.66	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	1
PCB-1260	ND		2.7	0.46	ug/Kg	☼	09/28/18 10:09	10/01/18 16:45	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	67		54 - 142				09/28/18 10:09	10/01/18 16:45	1
Tetrachloro-m-xylene	49	X	58 - 122				09/28/18 10:09	10/01/18 16:45	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1200	J	2000	44	mg/Kg			08/30/18 15:25	1
Total Solids	72.8	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	73	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.7				%			09/07/18 12:35	1
Coarse Sand	0.7				%			09/07/18 12:35	1
Medium Sand	0.5				%			09/07/18 12:35	1
Fine Sand	41.1				%			09/07/18 12:35	1
Silt	54.1				%			09/07/18 12:35	1
Clay	1.9				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-6to8**

**Lab Sample ID: 580-79672-41**

Date Collected: 08/17/18 10:25

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 70.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.3	F2	1.3	0.12	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Acenaphthene	2.0	F2	1.3	0.16	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Acenaphthylene	0.59	J	1.3	0.13	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Anthracene	1.8	B	1.3	0.16	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Benzo[a]anthracene	2.1	B	1.3	0.20	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Benzo[a]pyrene	2.1		1.3	0.11	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Benzo[b]fluoranthene	2.6	B	1.3	0.16	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Benzo[g,h,i]perylene	2.0		1.3	0.13	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Benzo[k]fluoranthene	0.92	J B	1.3	0.16	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Chrysene	2.6		1.3	0.40	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Dibenz(a,h)anthracene	ND		1.3	0.19	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Fluoranthene	6.4	B	1.3	0.38	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Fluorene	1.6	F1	1.3	0.13	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Indeno[1,2,3-cd]pyrene	2.2		1.3	0.16	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Naphthalene	1.5	F2 F1 B	1.3	0.21	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Phenanthrene	8.3	B	1.3	0.19	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	1
Pyrene	6.8	B	1.3	0.26	ug/Kg	☼	10/03/18 09:32	10/06/18 20:26	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	78		57 - 120				10/03/18 09:32	10/06/18 20:26	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	0.47	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	1
PCB-1232	ND		2.7	0.64	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	1
PCB-1242	ND		2.7	0.67	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	1
PCB-1260	ND		2.7	0.47	ug/Kg	☼	10/03/18 09:17	10/04/18 18:10	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	73		54 - 142				10/03/18 09:17	10/04/18 18:10	1
Tetrachloro-m-xylene	58		58 - 122				10/03/18 09:17	10/04/18 18:10	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1400	J	2000	44	mg/Kg			08/30/18 16:51	1
Total Solids	70.9	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	73	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.2				%			09/07/18 12:35	1
Medium Sand	0.0				%			09/07/18 12:35	1
Fine Sand	58.1				%			09/07/18 12:35	1
Silt	38.0				%			09/07/18 12:35	1
Clay	3.8				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-8to10**

**Lab Sample ID: 580-79672-42**

Date Collected: 08/17/18 10:30

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 73.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.94	J	1.3	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Acenaphthene	0.33	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Acenaphthylene	0.33	J	1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Anthracene	0.39	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Benzo[a]anthracene	1.0	J	1.3	0.20	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Benzo[a]pyrene	0.78	J	1.3	0.10	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Benzo[b]fluoranthene	1.4		1.3	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Benzo[g,h,i]perylene	1.4		1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Benzo[k]fluoranthene	0.30	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Chrysene	1.2	J	1.3	0.39	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Dibenz(a,h)anthracene	ND		1.3	0.19	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Fluoranthene	1.7	B	1.3	0.36	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Fluorene	0.49	J	1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Indeno[1,2,3-cd]pyrene	1.1	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Naphthalene	0.80	J	1.3	0.21	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Phenanthrene	1.7		1.3	0.18	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	1
Pyrene	1.7		1.3	0.25	ug/Kg	☼	10/03/18 09:25	10/07/18 21:25	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	81		57 - 120				10/03/18 09:25	10/07/18 21:25	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	0.46	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	1
PCB-1221	ND		2.7	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	1
PCB-1232	ND		2.7	0.63	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	1
PCB-1242	ND		2.7	0.66	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	1
PCB-1248	ND		2.7	0.22	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	1
PCB-1254	ND		2.7	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	1
PCB-1260	ND		2.7	0.46	ug/Kg	☼	09/28/18 10:09	10/01/18 17:02	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				09/28/18 10:09	10/01/18 17:02	1
Tetrachloro-m-xylene	52	X	58 - 122				09/28/18 10:09	10/01/18 17:02	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6200		2000	44	mg/Kg			08/30/18 15:32	1
Total Solids	73.2	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	75	H	0.10	0.10	%			09/07/18 12:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/07/18 12:35	1
Coarse Sand	0.0				%			09/07/18 12:35	1
Medium Sand	0.0				%			09/07/18 12:35	1
Fine Sand	44.3				%			09/07/18 12:35	1
Silt	51.3				%			09/07/18 12:35	1
Clay	4.4				%			09/07/18 12:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-10to12.4**

**Lab Sample ID: 580-79672-43**

Date Collected: 08/17/18 10:35

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 75.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.97	J	1.2	0.11	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Acenaphthene	0.32	J	1.2	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Acenaphthylene	ND		1.2	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Anthracene	0.30	J	1.2	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Benzo[a]anthracene	0.62	J	1.2	0.19	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Benzo[a]pyrene	0.56	J	1.2	0.10	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Benzo[b]fluoranthene	1.3		1.2	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Benzo[g,h,i]perylene	1.2		1.2	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Benzo[k]fluoranthene	0.43	J	1.2	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Chrysene	0.99	J	1.2	0.37	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Dibenz(a,h)anthracene	ND		1.2	0.18	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Fluoranthene	1.6	B	1.2	0.35	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Fluorene	0.63	J	1.2	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Indeno[1,2,3-cd]pyrene	0.79	J	1.2	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Naphthalene	0.67	J	1.2	0.20	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Phenanthrene	2.1		1.2	0.17	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	1
Pyrene	1.4		1.2	0.24	ug/Kg	☼	10/03/18 09:25	10/07/18 21:48	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	75		57 - 120				10/03/18 09:25	10/07/18 21:48	1

## 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	☼	09/28/18 10:09	10/01/18 17:19	1
PCB-1221	ND		2.6	1.2	ug/Kg	☼	09/28/18 10:09	10/01/18 17:19	1
PCB-1232	ND		2.6	0.61	ug/Kg	☼	09/28/18 10:09	10/01/18 17:19	1
PCB-1242	ND		2.6	0.63	ug/Kg	☼	09/28/18 10:09	10/01/18 17:19	1
PCB-1248	ND		2.6	0.21	ug/Kg	☼	09/28/18 10:09	10/01/18 17:19	1
PCB-1254	ND		2.6	1.0	ug/Kg	☼	09/28/18 10:09	10/01/18 17:19	1
PCB-1260	ND		2.6	0.44	ug/Kg	☼	09/28/18 10:09	10/01/18 17:19	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	73		54 - 142				09/28/18 10:09	10/01/18 17:19	1
Tetrachloro-m-xylene	58		58 - 122				09/28/18 10:09	10/01/18 17:19	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	8700		2000	44	mg/Kg			08/30/18 15:47	1
Total Solids	75.3	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	75	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.0				%			09/10/18 15:49	1
Medium Sand	0.0				%			09/10/18 15:49	1
Fine Sand	36.8				%			09/10/18 15:49	1
Silt	57.9				%			09/10/18 15:49	1
Clay	5.3				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-12.4to14**

**Lab Sample ID: 580-79672-44**

Date Collected: 08/17/18 10:40

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 73.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.2	J	1.3	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Acenaphthene	0.48	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Acenaphthylene	ND		1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Anthracene	0.49	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Benzo[a]anthracene	0.56	J	1.3	0.20	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Benzo[a]pyrene	36		1.3	0.10	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Benzo[b]fluoranthene	0.82	J	1.3	0.15	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Benzo[g,h,i]perylene	0.90	J	1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Benzo[k]fluoranthene	0.48	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Chrysene	0.82	J	1.3	0.39	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Dibenz(a,h)anthracene	ND		1.3	0.19	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Fluoranthene	2.3	B	1.3	0.36	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Fluorene	0.96	J	1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Indeno[1,2,3-cd]pyrene	0.58	J	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Naphthalene	0.86	J	1.3	0.21	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Phenanthrene	2.6		1.3	0.18	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	1
Pyrene	1.9		1.3	0.25	ug/Kg	☼	10/03/18 09:25	10/07/18 22:11	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	87		57 - 120				10/03/18 09:25	10/07/18 22:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.6	0.45	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	1
PCB-1221	ND		2.6	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	1
PCB-1232	ND		2.6	0.62	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	1
PCB-1242	ND		2.6	0.65	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	1
PCB-1248	ND		2.6	0.21	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	1
PCB-1254	ND		2.6	1.0	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	1
PCB-1260	ND		2.6	0.45	ug/Kg	☼	09/28/18 10:09	10/01/18 17:35	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	71		54 - 142				09/28/18 10:09	10/01/18 17:35	1
Tetrachloro-m-xylene	24	X	58 - 122				09/28/18 10:09	10/01/18 17:35	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	11000		2000	44	mg/Kg			08/30/18 15:54	1
Total Solids	73.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	75	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.0				%			09/10/18 15:49	1
Medium Sand	0.1				%			09/10/18 15:49	1
Fine Sand	13.3				%			09/10/18 15:49	1
Silt	80.8				%			09/10/18 15:49	1
Clay	5.9				%			09/10/18 15:49	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-14to15.9**

**Lab Sample ID: 580-79672-45**

Date Collected: 08/17/18 10:50

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 74.5

## 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>1.9</b>		1.3	0.12	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
Acenaphthene	ND		1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
Acenaphthylene	ND		1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Anthracene</b>	<b>0.21</b>	<b>J</b>	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Benzo[a]anthracene</b>	<b>0.63</b>	<b>J</b>	1.3	0.20	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
Benzo[a]pyrene	ND		1.3	0.11	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Benzo[b]fluoranthene</b>	<b>1.2</b>	<b>J</b>	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Benzo[g,h,i]perylene</b>	<b>1.4</b>		1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Benzo[k]fluoranthene</b>	<b>0.47</b>	<b>J</b>	1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Chrysene</b>	<b>1.0</b>	<b>J</b>	1.3	0.40	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
Dibenz(a,h)anthracene	ND		1.3	0.19	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Fluoranthene</b>	<b>1.1</b>	<b>J B</b>	1.3	0.37	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Fluorene</b>	<b>0.38</b>	<b>J</b>	1.3	0.13	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
Indeno[1,2,3-cd]pyrene	ND		1.3	0.16	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Naphthalene</b>	<b>1.3</b>		1.3	0.21	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Phenanthrene</b>	<b>1.7</b>		1.3	0.18	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	1
<b>Pyrene</b>	<b>0.93</b>	<b>J</b>	1.3	0.26	ug/Kg	☼	10/03/18 09:25	10/07/18 22:33	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	79		57 - 120				10/03/18 09:25	10/07/18 22:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.6	0.45	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	1
PCB-1221	ND		2.6	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	1
PCB-1232	ND		2.6	0.62	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	1
PCB-1242	ND		2.6	0.65	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	1
PCB-1248	ND		2.6	0.21	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	1
PCB-1254	ND		2.6	1.0	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	1
PCB-1260	ND		2.6	0.45	ug/Kg	☼	09/28/18 10:09	10/01/18 17:52	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				09/28/18 10:09	10/01/18 17:52	1
Tetrachloro-m-xylene	53	X	58 - 122				09/28/18 10:09	10/01/18 17:52	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon - Duplicates</b>	<b>11000</b>		2000	44	mg/Kg			08/30/18 16:01	1
<b>Total Solids</b>	<b>74.5</b>	<b>H</b>	0.1	0.1	%			09/25/18 16:44	1
<b>Total Solids @ 70°C</b>	<b>74</b>	<b>H</b>	0.10	0.10	%			09/10/18 15:49	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>				%			09/10/18 15:49	1
<b>Coarse Sand</b>	<b>0.0</b>				%			09/10/18 15:49	1
<b>Medium Sand</b>	<b>0.0</b>				%			09/10/18 15:49	1
<b>Fine Sand</b>	<b>20.5</b>				%			09/10/18 15:49	1
<b>Silt</b>	<b>71.8</b>				%			09/10/18 15:49	1
<b>Clay</b>	<b>7.7</b>				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-RB-SS-180816-1110**

**Lab Sample ID: 580-79672-46**

**Date Collected: 08/16/18 11:10**

**Matrix: Water**

**Date Received: 08/17/18 15:30**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.098	0.018	ug/L		08/22/18 19:09	08/28/18 16:54	1
2-Methylnaphthalene	ND		0.098	0.020	ug/L		08/22/18 19:09	08/28/18 16:54	1
Acenaphthylene	ND		0.20	0.043	ug/L		08/22/18 19:09	08/28/18 16:54	1
Acenaphthene	ND	*	0.098	0.0059	ug/L		08/22/18 19:09	08/28/18 16:54	1
Fluorene	ND		0.098	0.013	ug/L		08/22/18 19:09	08/28/18 16:54	1
Phenanthrene	ND		0.098	0.019	ug/L		08/22/18 19:09	08/28/18 16:54	1
Anthracene	ND	*	0.098	0.0068	ug/L		08/22/18 19:09	08/28/18 16:54	1
Fluoranthene	ND		0.098	0.013	ug/L		08/22/18 19:09	08/28/18 16:54	1
Pyrene	ND		0.098	0.0088	ug/L		08/22/18 19:09	08/28/18 16:54	1
Benzo[a]anthracene	ND		0.098	0.0059	ug/L		08/22/18 19:09	08/28/18 16:54	1
Chrysene	ND		0.098	0.0059	ug/L		08/22/18 19:09	08/28/18 16:54	1
Benzo[b]fluoranthene	ND		0.098	0.0059	ug/L		08/22/18 19:09	08/28/18 16:54	1
Benzo[k]fluoranthene	ND		0.098	0.013	ug/L		08/22/18 19:09	08/28/18 16:54	1
Benzo[a]pyrene	ND		0.098	0.034	ug/L		08/22/18 19:09	08/28/18 16:54	1
Indeno[1,2,3-cd]pyrene	ND		0.098	0.0059	ug/L		08/22/18 19:09	08/28/18 16:54	1
Dibenz(a,h)anthracene	ND		0.098	0.0059	ug/L		08/22/18 19:09	08/28/18 16:54	1
Benzo[g,h,i]perylene	ND		0.20	0.074	ug/L		08/22/18 19:09	08/28/18 16:54	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	90		54 - 120				08/22/18 19:09	08/28/18 16:54	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		08/22/18 09:21	08/31/18 20:58	1
PCB-1221	ND		0.45	0.075	ug/L		08/22/18 09:21	08/31/18 20:58	1
PCB-1232	ND		0.45	0.063	ug/L		08/22/18 09:21	08/31/18 20:58	1
PCB-1242	ND		0.45	0.059	ug/L		08/22/18 09:21	08/31/18 20:58	1
PCB-1248	ND		0.45	0.052	ug/L		08/22/18 09:21	08/31/18 20:58	1
PCB-1254	ND		0.45	0.075	ug/L		08/22/18 09:21	08/31/18 20:58	1
PCB-1260	ND		0.45	0.061	ug/L		08/22/18 09:21	08/31/18 20:58	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	46		38 - 140				08/22/18 09:21	08/31/18 20:58	1
Tetrachloro-m-xylene	72		40 - 120				08/22/18 09:21	08/31/18 20:58	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.20	J	1.0	0.19	mg/L			08/27/18 11:17	1

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-RB-SS-180817**

**Lab Sample ID: 580-79672-47**

**Date Collected: 08/17/18 07:45**

**Matrix: Water**

**Date Received: 08/17/18 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		08/22/18 19:09	08/28/18 17:16	1
2-Methylnaphthalene	ND		0.10	0.020	ug/L		08/22/18 19:09	08/28/18 17:16	1
Acenaphthylene	ND		0.20	0.045	ug/L		08/22/18 19:09	08/28/18 17:16	1
Acenaphthene	ND	*	0.10	0.0061	ug/L		08/22/18 19:09	08/28/18 17:16	1
Fluorene	ND		0.10	0.013	ug/L		08/22/18 19:09	08/28/18 17:16	1
Phenanthrene	ND		0.10	0.019	ug/L		08/22/18 19:09	08/28/18 17:16	1
Anthracene	ND	*	0.10	0.0072	ug/L		08/22/18 19:09	08/28/18 17:16	1
Fluoranthene	ND		0.10	0.013	ug/L		08/22/18 19:09	08/28/18 17:16	1
Pyrene	ND		0.10	0.0092	ug/L		08/22/18 19:09	08/28/18 17:16	1
Benzo[a]anthracene	ND		0.10	0.0061	ug/L		08/22/18 19:09	08/28/18 17:16	1
Chrysene	ND		0.10	0.0061	ug/L		08/22/18 19:09	08/28/18 17:16	1
Benzo[b]fluoranthene	ND		0.10	0.0061	ug/L		08/22/18 19:09	08/28/18 17:16	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/22/18 19:09	08/28/18 17:16	1
Benzo[a]pyrene	ND		0.10	0.036	ug/L		08/22/18 19:09	08/28/18 17:16	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0061	ug/L		08/22/18 19:09	08/28/18 17:16	1
Dibenz(a,h)anthracene	ND		0.10	0.0061	ug/L		08/22/18 19:09	08/28/18 17:16	1
Benzo[g,h,i]perylene	ND		0.20	0.078	ug/L		08/22/18 19:09	08/28/18 17:16	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	87		54 - 120				08/22/18 19:09	08/28/18 17:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.46	0.062	ug/L		08/22/18 09:21	08/31/18 21:16	1
PCB-1221	ND		0.46	0.077	ug/L		08/22/18 09:21	08/31/18 21:16	1
PCB-1232	ND		0.46	0.065	ug/L		08/22/18 09:21	08/31/18 21:16	1
PCB-1242	ND		0.46	0.060	ug/L		08/22/18 09:21	08/31/18 21:16	1
PCB-1248	ND		0.46	0.053	ug/L		08/22/18 09:21	08/31/18 21:16	1
PCB-1254	ND		0.46	0.077	ug/L		08/22/18 09:21	08/31/18 21:16	1
PCB-1260	ND		0.46	0.062	ug/L		08/22/18 09:21	08/31/18 21:16	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	60		38 - 140				08/22/18 09:21	08/31/18 21:16	1
Tetrachloro-m-xylene	72		40 - 120				08/22/18 09:21	08/31/18 21:16	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.30	J	1.0	0.19	mg/L			08/27/18 11:17	1

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-0to2**

**Lab Sample ID: 580-79672-48**

Date Collected: 08/16/18 13:00

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 53.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	57		18	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Acenaphthene	59		18	2.2	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Acenaphthylene	29		18	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Anthracene	82		18	2.2	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Benzo[a]anthracene	180		18	2.8	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Benzo[a]pyrene	240		18	1.5	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Benzo[b]fluoranthene	260		18	2.2	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Benzo[g,h,i]perylene	230		18	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Benzo[k]fluoranthene	88		18	2.2	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Chrysene	240		18	5.5	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Dibenz(a,h)anthracene	39		18	2.7	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Fluoranthene	440	B	18	5.2	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Fluorene	55		18	1.8	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Indeno[1,2,3-cd]pyrene	250		18	2.2	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Naphthalene	130		18	2.9	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Phenanthrene	380		18	2.5	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10
Pyrene	470		18	3.6	ug/Kg	☼	10/03/18 09:25	10/07/18 22:56	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	75		57 - 120	10/03/18 09:25	10/07/18 22:56	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		3.7	0.64	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1
PCB-1221	ND		3.7	1.8	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1
PCB-1232	ND		3.7	0.88	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1
PCB-1242	ND		3.7	0.92	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1
PCB-1248	ND		3.7	0.30	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1
PCB-1254	ND		3.7	1.5	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1
PCB-1260	1.5	J	3.7	0.64	ug/Kg	☼	09/28/18 10:09	10/01/18 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	53	X	54 - 142	09/28/18 10:09	10/01/18 18:09	1
Tetrachloro-m-xylene	46	X	58 - 122	09/28/18 10:09	10/01/18 18:09	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	43000		2000	44	mg/Kg			08/30/18 16:08	1
Total Solids	53.0	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	55	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.0				%			09/10/18 15:49	1
Medium Sand	0.1				%			09/10/18 15:49	1
Fine Sand	39.2				%			09/10/18 15:49	1
Silt	51.2				%			09/10/18 15:49	1
Clay	9.5				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-2to4**

**Lab Sample ID: 580-79672-49**

Date Collected: 08/16/18 13:05

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 57.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	550		17	1.5	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Acenaphthene	2400		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Acenaphthylene	180		17	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Anthracene	670		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Benzo[a]anthracene	1500		17	2.6	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Benzo[a]pyrene	1800		17	1.4	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Benzo[b]fluoranthene	1600		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Benzo[g,h,i]perylene	1400		17	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Benzo[k]fluoranthene	590		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Chrysene	1900		17	5.1	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Dibenz(a,h)anthracene	220		17	2.4	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Fluoranthene	4500	B	17	4.7	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Fluorene	1400		17	1.7	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Indeno[1,2,3-cd]pyrene	1600		17	2.0	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Naphthalene	860		17	2.7	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Phenanthrene	8100		17	2.3	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	10
Pyrene	5700		17	3.3	ug/Kg	☼	10/03/18 09:25	10/07/18 23:19	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	74		57 - 120				10/03/18 09:25	10/07/18 23:19	10

## 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	☼	09/28/18 10:09	10/01/18 18:26	1
PCB-1221	ND		3.3	1.6	ug/Kg	☼	09/28/18 10:09	10/01/18 18:26	1
PCB-1232	ND		3.3	0.79	ug/Kg	☼	09/28/18 10:09	10/01/18 18:26	1
PCB-1242	ND		3.3	0.82	ug/Kg	☼	09/28/18 10:09	10/01/18 18:26	1
PCB-1248	ND		3.3	0.27	ug/Kg	☼	09/28/18 10:09	10/01/18 18:26	1
PCB-1254	ND		3.3	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 18:26	1
<b>PCB-1260</b>	<b>19</b>		3.3	0.57	ug/Kg	☼	09/28/18 10:09	10/01/18 18:26	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	69		54 - 142				09/28/18 10:09	10/01/18 18:26	1
Tetrachloro-m-xylene	50	X	58 - 122				09/28/18 10:09	10/01/18 18:26	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	50000		2000	44	mg/Kg			08/30/18 16:15	1
Total Solids	57.8	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	58	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.5				%			09/10/18 15:49	1
Coarse Sand	0.2				%			09/10/18 15:49	1
Medium Sand	0.3				%			09/10/18 15:49	1
Fine Sand	34.3				%			09/10/18 15:49	1
Silt	52.9				%			09/10/18 15:49	1
Clay	11.8				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-4to6**

**Lab Sample ID: 580-79672-50**

Date Collected: 08/16/18 13:10

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 62.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	570		79	7.1	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Acenaphthene	2000		79	9.5	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Acenaphthylene	490		79	7.9	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Anthracene	1400		79	9.5	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Benzo[a]anthracene	5800		79	12	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Benzo[a]pyrene	8000		79	6.3	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Benzo[b]fluoranthene	7000		79	9.3	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Benzo[g,h,i]perylene	7200		79	7.9	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Benzo[k]fluoranthene	2200		79	9.5	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Chrysene	6800		79	24	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Dibenz(a,h)anthracene	950		79	11	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Fluoranthene	19000	B	79	22	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Fluorene	1900		79	7.9	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Indeno[1,2,3-cd]pyrene	7600		79	9.5	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Naphthalene	1700		79	13	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Phenanthrene	19000		79	11	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	50
Pyrene	25000		79	15	ug/Kg	☼	10/03/18 09:25	10/07/18 23:41	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	80		57 - 120				10/03/18 09:25	10/07/18 23:41	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	☼	09/28/18 10:09	10/01/18 22:21	1
PCB-1221	ND		3.1	1.5	ug/Kg	☼	09/28/18 10:09	10/01/18 22:21	1
PCB-1232	ND		3.1	0.73	ug/Kg	☼	09/28/18 10:09	10/01/18 22:21	1
PCB-1242	ND		3.1	0.76	ug/Kg	☼	09/28/18 10:09	10/01/18 22:21	1
PCB-1248	ND		3.1	0.25	ug/Kg	☼	09/28/18 10:09	10/01/18 22:21	1
PCB-1254	ND		3.1	1.2	ug/Kg	☼	09/28/18 10:09	10/01/18 22:21	1
<b>PCB-1260</b>	<b>5.2</b>		3.1	0.53	ug/Kg	☼	09/28/18 10:09	10/01/18 22:21	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				09/28/18 10:09	10/01/18 22:21	1
Tetrachloro-m-xylene	52	X	58 - 122				09/28/18 10:09	10/01/18 22:21	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	76000		2000	44	mg/Kg			08/30/18 16:23	1
Total Solids	62.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	63	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.7				%			09/10/18 15:49	1
Medium Sand	1.3				%			09/10/18 15:49	1
Fine Sand	41.5				%			09/10/18 15:49	1
Silt	44.5				%			09/10/18 15:49	1
Clay	12.0				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-6to8**

**Lab Sample ID: 580-79672-51**

Date Collected: 08/16/18 13:15

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 65.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	74		15	1.3	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Acenaphthene	170		15	1.7	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Acenaphthylene	140		15	1.5	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Anthracene	310		15	1.7	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Benzo[a]anthracene	550		15	2.2	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Benzo[a]pyrene	850		15	1.2	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Benzo[b]fluoranthene	790		15	1.7	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Benzo[g,h,i]perylene	910		15	1.5	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Benzo[k]fluoranthene	230		15	1.7	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Chrysene	690		15	4.4	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Dibenz(a,h)anthracene	100		15	2.1	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Fluoranthene	2000	B	15	4.1	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Fluorene	150		15	1.5	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Indeno[1,2,3-cd]pyrene	910		15	1.7	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Naphthalene	420		15	2.3	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Phenanthrene	1600		15	2.0	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Pyrene	2700		15	2.8	ug/Kg	☼	10/03/18 09:25	10/08/18 00:04	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		57 - 120				10/03/18 09:25	10/08/18 00:04	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	0.52	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
PCB-1221	ND		3.0	1.4	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
PCB-1232	ND		3.0	0.71	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
PCB-1242	ND		3.0	0.74	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
PCB-1248	ND		3.0	0.24	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
PCB-1254	ND		3.0	1.2	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
PCB-1260	ND		3.0	0.52	ug/Kg	☼	09/28/18 10:09	10/01/18 22:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		54 - 142				09/28/18 10:09	10/01/18 22:37	1
Tetrachloro-m-xylene	48	X	58 - 122				09/28/18 10:09	10/01/18 22:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	23000		2000	44	mg/Kg			08/30/18 16:30	1
Total Solids	65.6	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	66	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.6				%			09/10/18 15:49	1
Medium Sand	0.4				%			09/10/18 15:49	1
Fine Sand	40.5				%			09/10/18 15:49	1
Silt	50.0				%			09/10/18 15:49	1
Clay	8.5				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-8to10**

**Lab Sample ID: 580-79672-52**

Date Collected: 08/16/18 13:20

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 69.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3.6	J	7.0	0.63	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Acenaphthene	3.0	J	7.0	0.84	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Acenaphthylene	3.2	J	7.0	0.70	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Anthracene	8.5		7.0	0.84	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Benzo[a]anthracene	14		7.0	1.1	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Benzo[a]pyrene	24		7.0	0.56	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Benzo[b]fluoranthene	23		7.0	0.83	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Benzo[g,h,i]perylene	28		7.0	0.70	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Benzo[k]fluoranthene	7.1		7.0	0.84	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Chrysene	17		7.0	2.1	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Dibenz(a,h)anthracene	ND		7.0	1.0	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Fluoranthene	35	B	7.0	2.0	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Fluorene	3.3	J	7.0	0.70	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Indeno[1,2,3-cd]pyrene	26		7.0	0.84	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Naphthalene	10		7.0	1.1	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Phenanthrene	34		7.0	0.97	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	5
Pyrene	54		7.0	1.4	ug/Kg	☼	10/03/18 09:25	10/08/18 00:27	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	84		57 - 120				10/03/18 09:25	10/08/18 00:27	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	☼	09/28/18 10:09	10/01/18 22:54	1
PCB-1221	ND		2.8	1.3	ug/Kg	☼	09/28/18 10:09	10/01/18 22:54	1
PCB-1232	ND		2.8	0.66	ug/Kg	☼	09/28/18 10:09	10/01/18 22:54	1
PCB-1242	ND		2.8	0.69	ug/Kg	☼	09/28/18 10:09	10/01/18 22:54	1
PCB-1248	ND		2.8	0.22	ug/Kg	☼	09/28/18 10:09	10/01/18 22:54	1
PCB-1254	ND		2.8	1.1	ug/Kg	☼	09/28/18 10:09	10/01/18 22:54	1
PCB-1260	ND		2.8	0.48	ug/Kg	☼	09/28/18 10:09	10/01/18 22:54	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	66		54 - 142				09/28/18 10:09	10/01/18 22:54	1
Tetrachloro-m-xylene	50	X	58 - 122				09/28/18 10:09	10/01/18 22:54	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6100		2000	44	mg/Kg			08/30/18 16:37	1
Total Solids	69.0	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	69	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.0				%			09/10/18 15:49	1
Medium Sand	0.1				%			09/10/18 15:49	1
Fine Sand	15.5				%			09/10/18 15:49	1
Silt	74.7				%			09/10/18 15:49	1
Clay	9.7				%			09/10/18 15:49	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-10to12.4**

**Lab Sample ID: 580-79672-53**

Date Collected: 08/16/18 15:25

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 66.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3.9	J	6.3	0.57	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Acenaphthene	6.8		6.3	0.76	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Acenaphthylene	3.4	J	6.3	0.63	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Anthracene	7.1	B	6.3	0.76	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Benzo[a]anthracene	10	B	6.3	0.96	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Benzo[a]pyrene	17		6.3	0.51	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Benzo[b]fluoranthene	16	B	6.3	0.75	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Benzo[g,h,i]perylene	17		6.3	0.63	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Benzo[k]fluoranthene	5.6	J B	6.3	0.76	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Chrysene	15		6.3	1.9	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Dibenz(a,h)anthracene	ND		6.3	0.91	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Fluoranthene	39	B	6.3	1.8	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Fluorene	5.5	J	6.3	0.63	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Indeno[1,2,3-cd]pyrene	16		6.3	0.76	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Naphthalene	12	B	6.3	1.0	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Phenanthrene	42	B	6.3	0.87	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	5
Pyrene	46	B	6.3	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 21:34	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	93		57 - 120				10/03/18 09:32	10/06/18 21:34	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.9	0.50	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	1
PCB-1221	ND		2.9	1.4	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	1
PCB-1232	ND		2.9	0.69	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	1
PCB-1242	ND		2.9	0.72	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	1
PCB-1248	ND		2.9	0.23	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	1
PCB-1254	ND		2.9	1.2	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	1
PCB-1260	ND		2.9	0.50	ug/Kg	☼	09/28/18 10:09	10/01/18 23:11	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	67		54 - 142				09/28/18 10:09	10/01/18 23:11	1
Tetrachloro-m-xylene	50	X	58 - 122				09/28/18 10:09	10/01/18 23:11	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	9200		2000	44	mg/Kg			08/30/18 16:44	1
Total Solids	66.4	H	0.1	0.1	%			09/25/18 16:44	1
Total Solids @ 70°C	68	H	0.10	0.10	%			09/10/18 15:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			09/10/18 15:49	1
Coarse Sand	0.1				%			09/10/18 15:49	1
Medium Sand	0.1				%			09/10/18 15:49	1
Fine Sand	14.8				%			09/10/18 15:49	1
Silt	76.6				%			09/10/18 15:49	1
Clay	8.4				%			09/10/18 15:49	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(A)-2.2to4.6D**

**Lab Sample ID: 580-79672-54**

Date Collected: 08/15/18 15:30

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 77.6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	280		12	1.1	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Acenaphthene	4600		12	1.4	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Acenaphthylene	570		12	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Anthracene	4900	B	12	1.4	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Benzo[a]anthracene	3600	B	12	1.8	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Benzo[a]pyrene	4400		12	0.93	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Benzo[b]fluoranthene	3600	B	12	1.4	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Benzo[g,h,i]perylene	2700		12	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Benzo[k]fluoranthene	1400	B	12	1.4	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Chrysene	5000		12	3.5	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Dibenz(a,h)anthracene	500		12	1.7	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Fluoranthene	13000	B	12	3.3	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Fluorene	2200		12	1.2	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Indeno[1,2,3-cd]pyrene	3000		12	1.4	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Naphthalene	240	B	12	1.9	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Phenanthrene	11000	B	12	1.6	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	10
Pyrene	17000	B	12	2.3	ug/Kg	☼	10/03/18 09:32	10/06/18 21:57	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	98		57 - 120				10/03/18 09:32	10/06/18 21:57	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.5	0.43	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	1
PCB-1221	ND		2.5	1.2	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	1
PCB-1232	ND		2.5	0.60	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	1
PCB-1242	ND		2.5	0.62	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	1
PCB-1248	ND		2.5	0.20	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	1
PCB-1254	ND		2.5	1.0	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	1
PCB-1260	1.4	J	2.5	0.43	ug/Kg	☼	10/03/18 09:22	10/04/18 19:03	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	63		54 - 142				10/03/18 09:22	10/04/18 19:03	1
Tetrachloro-m-xylene	63		58 - 122				10/03/18 09:22	10/04/18 19:03	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2000	B	2000	44	mg/Kg			08/28/18 12:03	1
Total Solids	77.6	H	0.1	0.1	%			09/28/18 11:21	1
Total Solids @ 70°C	78	H	0.10	0.10	%			09/28/18 11:18	1

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: MB 580-282236/1-A**  
**Matrix: Water**  
**Analysis Batch: 282676**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 282236**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		0.10	0.020	ug/L		08/22/18 19:09	08/28/18 15:46	1
Acenaphthylene	ND		0.20	0.044	ug/L		08/22/18 19:09	08/28/18 15:46	1
Acenaphthene	ND		0.10	0.0060	ug/L		08/22/18 19:09	08/28/18 15:46	1
Anthracene	ND		0.10	0.0070	ug/L		08/22/18 19:09	08/28/18 15:46	1
Benzo[a]anthracene	ND		0.10	0.0060	ug/L		08/22/18 19:09	08/28/18 15:46	1
Chrysene	ND		0.10	0.0060	ug/L		08/22/18 19:09	08/28/18 15:46	1
Fluoranthene	ND		0.10	0.013	ug/L		08/22/18 19:09	08/28/18 15:46	1
Benzo[b]fluoranthene	ND		0.10	0.0060	ug/L		08/22/18 19:09	08/28/18 15:46	1
Fluorene	ND		0.10	0.013	ug/L		08/22/18 19:09	08/28/18 15:46	1
Benzo[k]fluoranthene	ND		0.10	0.013	ug/L		08/22/18 19:09	08/28/18 15:46	1
Benzo[a]pyrene	ND		0.10	0.035	ug/L		08/22/18 19:09	08/28/18 15:46	1
Naphthalene	ND		0.10	0.018	ug/L		08/22/18 19:09	08/28/18 15:46	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.0060	ug/L		08/22/18 19:09	08/28/18 15:46	1
Phenanthrene	ND		0.10	0.019	ug/L		08/22/18 19:09	08/28/18 15:46	1
Dibenz(a,h)anthracene	ND		0.10	0.0060	ug/L		08/22/18 19:09	08/28/18 15:46	1
Pyrene	ND		0.10	0.0090	ug/L		08/22/18 19:09	08/28/18 15:46	1
Benzo[g,h,i]perylene	ND		0.20	0.076	ug/L		08/22/18 19:09	08/28/18 15:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	90		54 - 120	08/22/18 19:09	08/28/18 15:46	1

**Lab Sample ID: LCS 580-282236/2-A**  
**Matrix: Water**  
**Analysis Batch: 282676**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 282236**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	2.00	1.66		ug/L		83	53 - 120
Acenaphthylene	2.00	1.48		ug/L		74	33 - 130
Acenaphthene	2.00	1.16	*	ug/L		58	64 - 120
Anthracene	2.00	0.950		ug/L		48	46 - 127
Benzo[a]anthracene	2.00	1.90		ug/L		95	70 - 120
Chrysene	2.00	2.07		ug/L		104	65 - 120
Fluoranthene	2.00	1.89		ug/L		94	72 - 120
Benzo[b]fluoranthene	2.00	2.05		ug/L		103	57 - 132
Fluorene	2.00	1.83		ug/L		92	67 - 120
Benzo[k]fluoranthene	2.00	2.06		ug/L		103	61 - 132
Benzo[a]pyrene	2.00	1.79		ug/L		89	23 - 141
Naphthalene	2.00	1.61		ug/L		80	58 - 120
Indeno[1,2,3-cd]pyrene	2.00	2.23		ug/L		111	53 - 133
Phenanthrene	2.00	1.81		ug/L		91	69 - 120
Dibenz(a,h)anthracene	2.00	2.21		ug/L		110	57 - 132
Pyrene	2.00	1.78		ug/L		89	57 - 133
Benzo[g,h,i]perylene	2.00	2.03		ug/L		101	52 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	85		54 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCSD 580-282236/3-A**  
**Matrix: Water**  
**Analysis Batch: 282676**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 282236**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
2-Methylnaphthalene	2.00	1.58		ug/L		79	53 - 120	5	23
Acenaphthylene	2.00	1.50		ug/L		75	33 - 130	1	34
Acenaphthene	2.00	1.66	*	ug/L		83	64 - 120	36	20
Anthracene	2.00	1.71	*	ug/L		85	46 - 127	57	19
Benzo[a]anthracene	2.00	1.91		ug/L		96	70 - 120	1	17
Chrysene	2.00	2.01		ug/L		101	65 - 120	3	19
Fluoranthene	2.00	1.92		ug/L		96	72 - 120	1	21
Benzo[b]fluoranthene	2.00	2.10		ug/L		105	57 - 132	3	25
Fluorene	2.00	1.78		ug/L		89	67 - 120	3	20
Benzo[k]fluoranthene	2.00	1.99		ug/L		99	61 - 132	4	22
Benzo[a]pyrene	2.00	1.88		ug/L		94	23 - 141	5	35
Naphthalene	2.00	1.54		ug/L		77	58 - 120	4	23
Indeno[1,2,3-cd]pyrene	2.00	2.25		ug/L		113	53 - 133	1	25
Phenanthrene	2.00	1.81		ug/L		90	69 - 120	0	21
Dibenz(a,h)anthracene	2.00	2.20		ug/L		110	57 - 132	0	24
Pyrene	2.00	1.90		ug/L		95	57 - 133	6	21
Benzo[g,h,i]perylene	2.00	2.04		ug/L		102	52 - 129	1	24

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	87		54 - 120

**Lab Sample ID: MB 580-285540/1-A**  
**Matrix: Solid**  
**Analysis Batch: 285906**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 285540**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Acenaphthene	ND		1.0	0.12	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Anthracene	ND		1.0	0.12	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Chrysene	ND		1.0	0.30	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Fluoranthene	0.366	J	1.0	0.28	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Fluorene	ND		1.0	0.10	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Naphthalene	ND		1.0	0.16	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Phenanthrene	ND		1.0	0.14	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Pyrene	ND		1.0	0.19	ug/Kg		10/03/18 09:25	10/08/18 12:27	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		10/03/18 09:25	10/08/18 12:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	68		57 - 120	10/03/18 09:25	10/08/18 12:27	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-285540/2-A**  
**Matrix: Solid**  
**Analysis Batch: 285875**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 285540**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	156		ug/Kg		78	68 - 120
Acenaphthylene	200	168		ug/Kg		84	68 - 120
Acenaphthene	200	158		ug/Kg		79	68 - 120
Anthracene	200	173		ug/Kg		86	73 - 125
Benzo[a]anthracene	200	176		ug/Kg		88	66 - 120
Chrysene	200	191		ug/Kg		96	69 - 120
Fluoranthene	200	179		ug/Kg		89	74 - 125
Benzo[b]fluoranthene	200	205		ug/Kg		102	63 - 121
Fluorene	200	159		ug/Kg		80	73 - 120
Benzo[k]fluoranthene	200	194		ug/Kg		97	63 - 123
Benzo[a]pyrene	200	190		ug/Kg		95	72 - 124
Naphthalene	200	149		ug/Kg		74	70 - 120
Indeno[1,2,3-cd]pyrene	200	222		ug/Kg		111	65 - 121
Phenanthrene	200	171		ug/Kg		85	73 - 120
Dibenz(a,h)anthracene	200	212		ug/Kg		106	70 - 125
Pyrene	200	179		ug/Kg		89	70 - 120
Benzo[g,h,i]perylene	200	187		ug/Kg		93	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	90		57 - 120

**Lab Sample ID: 580-79672-26 MS**  
**Matrix: Solid**  
**Analysis Batch: 285875**

**Client Sample ID: PDI-SC-S232-2to4**  
**Prep Type: Total/NA**  
**Prep Batch: 285540**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	260	F2 F1	353	401	F1	ug/Kg	☼	41	68 - 120
Acenaphthene	230	F1	353	398	F1	ug/Kg	☼	47	68 - 120
Acenaphthylene	110		353	365		ug/Kg	☼	73	68 - 120
Anthracene	110	F1	353	335	F1	ug/Kg	☼	64	73 - 125
Benzo[a]anthracene	130	F1	353	332	F1	ug/Kg	☼	58	66 - 120
Benzo[a]pyrene	97	F2 F1	353	300	F1	ug/Kg	☼	57	72 - 124
Benzo[b]fluoranthene	130		353	395		ug/Kg	☼	76	63 - 121
Benzo[g,h,i]perylene	110	F2 F1	353	307	F1	ug/Kg	☼	55	63 - 120
Benzo[k]fluoranthene	41	F2 F1	353	214	F1	ug/Kg	☼	49	63 - 123
Chrysene	180	F2 F1	353	391	F1	ug/Kg	☼	61	69 - 120
Dibenz(a,h)anthracene	ND	F2 F1	353	212	F1	ug/Kg	☼	60	70 - 125
Fluoranthene	470	F2 F1 B	353	661	F1	ug/Kg	☼	54	74 - 125
Fluorene	150	F1	353	358	F1	ug/Kg	☼	58	73 - 120
Indeno[1,2,3-cd]pyrene	94	F2	353	334		ug/Kg	☼	68	65 - 121
Naphthalene	1200	F2 F1	353	639	F1	ug/Kg	☼	-165	70 - 120
Phenanthrene	590	F1	353	744	F1	ug/Kg	☼	43	73 - 120
Pyrene	550	F2 F1	353	737	F1	ug/Kg	☼	52	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	65		57 - 120

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: 580-79672-26 MSD**

**Matrix: Solid**  
**Analysis Batch: 285875**

**Client Sample ID: PDI-SC-S232-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 285540**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
2-Methylnaphthalene	260	F2 F1	328	501	F2	ug/Kg	☼	75	68 - 120	22	12
Acenaphthene	230	F1	328	391	F1	ug/Kg	☼	49	68 - 120	2	12
Acenaphthylene	110		328	402		ug/Kg	☼	90	68 - 120	10	12
Anthracene	110	F1	328	343	F1	ug/Kg	☼	72	73 - 125	2	12
Benzo[a]anthracene	130	F1	328	375		ug/Kg	☼	76	66 - 120	12	14
Benzo[a]pyrene	97	F2 F1	328	408	F2	ug/Kg	☼	95	72 - 124	30	12
Benzo[b]fluoranthene	130		328	427		ug/Kg	☼	92	63 - 121	8	10
Benzo[g,h,i]perylene	110	F2 F1	328	450	F2	ug/Kg	☼	103	63 - 120	38	14
Benzo[k]fluoranthene	41	F2 F1	328	305	F2	ug/Kg	☼	81	63 - 123	35	15
Chrysene	180	F2 F1	328	444	F2	ug/Kg	☼	82	69 - 120	13	10
Dibenz(a,h)anthracene	ND	F2 F1	328	256	F2	ug/Kg	☼	78	70 - 125	19	13
Fluoranthene	470	F2 F1 B	328	841	F2	ug/Kg	☼	113	74 - 125	24	13
Fluorene	150	F1	328	361	F1	ug/Kg	☼	63	73 - 120	1	13
Indeno[1,2,3-cd]pyrene	94	F2	328	441	F2	ug/Kg	☼	106	65 - 121	28	15
Naphthalene	1200	F2 F1	328	764	F2 F1	ug/Kg	☼	-140	70 - 120	18	12
Phenanthrene	590	F1	328	801	F1	ug/Kg	☼	64	73 - 120	7	11
Pyrene	550	F2 F1	328	935	F2	ug/Kg	☼	116	70 - 120	24	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	75		57 - 120

**Lab Sample ID: MB 580-285541/1-A**

**Matrix: Solid**  
**Analysis Batch: 285850**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 285541**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Acenaphthene	ND		1.0	0.12	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Anthracene	0.172	J	1.0	0.12	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Benzo[a]anthracene	0.280	J	1.0	0.15	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Chrysene	ND		1.0	0.30	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Fluoranthene	0.341	J	1.0	0.28	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Benzo[b]fluoranthene	0.411	J *	1.0	0.12	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Fluorene	ND		1.0	0.10	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Benzo[k]fluoranthene	0.462	J *	1.0	0.12	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Benzo[a]pyrene	ND	*	1.0	0.080	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Naphthalene	0.249	J	1.0	0.16	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Indeno[1,2,3-cd]pyrene	ND	*	1.0	0.12	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Phenanthrene	0.577	J	1.0	0.14	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Dibenz(a,h)anthracene	ND	*	1.0	0.14	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Pyrene	0.331	J	1.0	0.19	ug/Kg		10/03/18 09:32	10/06/18 12:50	1
Benzo[g,h,i]perylene	ND	*	1.0	0.10	ug/Kg		10/03/18 09:32	10/06/18 12:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	90		57 - 120	10/03/18 09:32	10/06/18 12:50	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-285541/2-A**  
**Matrix: Solid**  
**Analysis Batch: 285850**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 285541**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	150		ug/Kg		75	68 - 120
Acenaphthylene	200	163		ug/Kg		82	68 - 120
Acenaphthene	200	154		ug/Kg		77	68 - 120
Anthracene	200	153		ug/Kg		77	73 - 125
Benzo[a]anthracene	200	157		ug/Kg		79	66 - 120
Chrysene	200	182		ug/Kg		91	69 - 120
Fluoranthene	200	162		ug/Kg		81	74 - 125
Benzo[b]fluoranthene	200	182		ug/Kg		91	63 - 121
Fluorene	200	155		ug/Kg		77	73 - 120
Benzo[k]fluoranthene	200	183		ug/Kg		92	63 - 123
Benzo[a]pyrene	200	180		ug/Kg		90	72 - 124
Naphthalene	200	144		ug/Kg		72	70 - 120
Indeno[1,2,3-cd]pyrene	200	216		ug/Kg		108	65 - 121
Phenanthrene	200	152		ug/Kg		76	73 - 120
Dibenz(a,h)anthracene	200	209		ug/Kg		104	70 - 125
Pyrene	200	160		ug/Kg		80	70 - 120
Benzo[g,h,i]perylene	200	182		ug/Kg		91	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	84		57 - 120

**Lab Sample ID: 580-79672-41 MS**  
**Matrix: Solid**  
**Analysis Batch: 285850**

**Client Sample ID: PDI-SC-S157-6to8**  
**Prep Type: Total/NA**  
**Prep Batch: 285541**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	1.3	F2	271	197		ug/Kg	☼	72	68 - 120
Acenaphthene	2.0	F2	271	192		ug/Kg	☼	70	68 - 120
Acenaphthylene	0.59	J	271	196		ug/Kg	☼	72	68 - 120
Anthracene	1.8	B	271	202		ug/Kg	☼	74	73 - 125
Benzo[a]anthracene	2.1	B	271	196		ug/Kg	☼	72	66 - 120
Benzo[a]pyrene	2.1		271	213		ug/Kg	☼	78	72 - 124
Benzo[b]fluoranthene	2.6	B	271	222		ug/Kg	☼	81	63 - 121
Benzo[g,h,i]perylene	2.0		271	181		ug/Kg	☼	66	63 - 120
Benzo[k]fluoranthene	0.92	J B	271	207		ug/Kg	☼	76	63 - 123
Chrysene	2.6		271	218		ug/Kg	☼	79	69 - 120
Dibenz(a,h)anthracene	ND		271	226		ug/Kg	☼	83	70 - 125
Fluoranthene	6.4	B	271	223		ug/Kg	☼	80	74 - 125
Fluorene	1.6	F1	271	198	F1	ug/Kg	☼	72	73 - 120
Indeno[1,2,3-cd]pyrene	2.2		271	231		ug/Kg	☼	84	65 - 121
Naphthalene	1.5	F2 F1 B	271	184	F1	ug/Kg	☼	67	70 - 120
Phenanthrene	8.3	B	271	212		ug/Kg	☼	75	73 - 120
Pyrene	6.8	B	271	222		ug/Kg	☼	79	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	2	X	57 - 120

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: 580-79672-41 MSD**

**Matrix: Solid**  
**Analysis Batch: 285850**

**Client Sample ID: PDI-SC-S157-6to8**

**Prep Type: Total/NA**  
**Prep Batch: 285541**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
2-Methylnaphthalene	1.3	F2	272	230	F2	ug/Kg	☼	84	68 - 120	15	12	12
Acenaphthene	2.0	F2	272	219	F2	ug/Kg	☼	80	68 - 120	13	12	12
Acenaphthylene	0.59	J	272	222		ug/Kg	☼	81	68 - 120	12	12	12
Anthracene	1.8	B	272	216		ug/Kg	☼	79	73 - 125	7	12	12
Benzo[a]anthracene	2.1	B	272	216		ug/Kg	☼	79	66 - 120	10	14	14
Benzo[a]pyrene	2.1		272	227		ug/Kg	☼	83	72 - 124	6	12	12
Benzo[b]fluoranthene	2.6	B	272	232		ug/Kg	☼	85	63 - 121	5	10	10
Benzo[g,h,i]perylene	2.0		272	192		ug/Kg	☼	70	63 - 120	6	14	14
Benzo[k]fluoranthene	0.92	J B	272	226		ug/Kg	☼	83	63 - 123	9	15	15
Chrysene	2.6		272	241		ug/Kg	☼	88	69 - 120	10	10	10
Dibenz(a,h)anthracene	ND		272	241		ug/Kg	☼	89	70 - 125	7	13	13
Fluoranthene	6.4	B	272	238		ug/Kg	☼	85	74 - 125	7	13	13
Fluorene	1.6	F1	272	221		ug/Kg	☼	81	73 - 120	11	13	13
Indeno[1,2,3-cd]pyrene	2.2		272	254		ug/Kg	☼	93	65 - 121	10	15	15
Naphthalene	1.5	F2 F1 B	272	220	F2	ug/Kg	☼	80	70 - 120	18	12	12
Phenanthrene	8.3	B	272	229		ug/Kg	☼	81	73 - 120	7	11	11
Pyrene	6.8	B	272	240		ug/Kg	☼	86	70 - 120	7	12	12

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

**Lab Sample ID: MB 580-286333/1-A**

**Matrix: Solid**  
**Analysis Batch: 286592**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 286333**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Acenaphthene	ND		1.0	0.12	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Anthracene	ND		1.0	0.12	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Chrysene	ND		1.0	0.30	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Fluoranthene	ND		1.0	0.28	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Fluorene	ND		1.0	0.10	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Naphthalene	ND		1.0	0.16	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Phenanthrene	ND		1.0	0.14	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Pyrene	ND		1.0	0.19	ug/Kg		10/12/18 10:24	10/16/18 13:11	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		10/12/18 10:24	10/16/18 13:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		57 - 120	10/12/18 10:24	10/16/18 13:11	1

TestAmerica Seattle



# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-286333/2-A**  
**Matrix: Solid**  
**Analysis Batch: 286489**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 286333**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	154		ug/Kg		77	68 - 120
Acenaphthylene	200	165		ug/Kg		82	68 - 120
Acenaphthene	200	166		ug/Kg		83	68 - 120
Anthracene	200	168		ug/Kg		84	73 - 125
Benzo[a]anthracene	200	169		ug/Kg		84	66 - 120
Chrysene	200	155		ug/Kg		77	69 - 120
Fluoranthene	200	192		ug/Kg		96	74 - 125
Benzo[b]fluoranthene	200	165		ug/Kg		83	63 - 121
Fluorene	200	172		ug/Kg		86	73 - 120
Benzo[k]fluoranthene	200	185		ug/Kg		93	63 - 123
Benzo[a]pyrene	200	159		ug/Kg		79	72 - 124
Naphthalene	200	149		ug/Kg		75	70 - 120
Indeno[1,2,3-cd]pyrene	200	190		ug/Kg		95	65 - 121
Phenanthrene	200	167		ug/Kg		83	73 - 120
Dibenz(a,h)anthracene	200	192		ug/Kg		96	70 - 125
Pyrene	200	185		ug/Kg		92	70 - 120
Benzo[g,h,i]perylene	200	181		ug/Kg		91	63 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	89		57 - 120

**Lab Sample ID: 580-79672-10 MS**  
**Matrix: Solid**  
**Analysis Batch: 286489**

**Client Sample ID: PDI-SC-S109-4to6**  
**Prep Type: Total/NA**  
**Prep Batch: 286333**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	33	J F2 F1	230	392	F1	ug/Kg	☼	156	68 - 120
Acenaphthene	1600	F2	230	2280	4	ug/Kg	☼	302	68 - 120
Acenaphthylene	150	F2 F1	230	410		ug/Kg	☼	111	68 - 120
Anthracene	1200	F2	230	1680	4	ug/Kg	☼	228	73 - 125
Benzo[a]anthracene	1000	F2	230	1380	4	ug/Kg	☼	165	66 - 120
Benzo[a]pyrene	1200	F2	230	1640	4	ug/Kg	☼	173	72 - 124
Benzo[b]fluoranthene	1200	F2	230	1590	4	ug/Kg	☼	191	63 - 121
Benzo[g,h,i]perylene	1100	F2	230	1690	4	ug/Kg	☼	241	63 - 120
Benzo[k]fluoranthene	470	F2 F1	230	713		ug/Kg	☼	104	63 - 123
Chrysene	1300	F2	230	1570	4	ug/Kg	☼	138	69 - 120
Dibenz(a,h)anthracene	170	F2 F1	230	433		ug/Kg	☼	113	70 - 125
Fluoranthene	4400	F2	230	5370	4	ug/Kg	☼	434	74 - 125
Fluorene	910	F2 F1	230	1540	F1	ug/Kg	☼	271	73 - 120
Indeno[1,2,3-cd]pyrene	1100	F2	230	1660	4	ug/Kg	☼	236	65 - 121
Naphthalene	240	F1	230	1010	F1	ug/Kg	☼	335	70 - 120
Phenanthrene	5800	F2	230	8280	4	ug/Kg	☼	1058	73 - 120
Pyrene	5200	F2	230	6380	4	ug/Kg	☼	503	70 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Terphenyl-d14	90		57 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: 580-79672-10 MSD**

**Matrix: Solid**  
**Analysis Batch: 286489**

**Client Sample ID: PDI-SC-S109-4to6**

**Prep Type: Total/NA**  
**Prep Batch: 286333**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
2-Methylnaphthalene	33	J F2 F1	218	299	F1 F2	ug/Kg	☼	122	68 - 120	27	12
Acenaphthene	1600	F2	218	5380	4 F2	ug/Kg	☼	1741	68 - 120	81	12
Acenaphthylene	150	F2 F1	218	760	F1 F2	ug/Kg	☼	278	68 - 120	60	12
Anthracene	1200	F2	218	4150	4 F2	ug/Kg	☼	1373	73 - 125	85	12
Benzo[a]anthracene	1000	F2	218	3560	4 F2	ug/Kg	☼	1173	66 - 120	88	14
Benzo[a]pyrene	1200	F2	218	4880	4 F2	ug/Kg	☼	1665	72 - 124	99	12
Benzo[b]fluoranthene	1200	F2	218	4770	4 F2	ug/Kg	☼	1660	63 - 121	100	10
Benzo[g,h,i]perylene	1100	F2	218	4450	4 F2	ug/Kg	☼	1517	63 - 120	90	14
Benzo[k]fluoranthene	470	F2 F1	218	1660	F1 F2	ug/Kg	☼	542	63 - 123	80	15
Chrysene	1300	F2	218	4510	4 F2	ug/Kg	☼	1490	69 - 120	96	10
Dibenz(a,h)anthracene	170	F2 F1	218	888	F1 F2	ug/Kg	☼	327	70 - 125	69	13
Fluoranthene	4400	F2	218	15800	4 F2	ug/Kg	☼	5260	74 - 125	99	13
Fluorene	910	F2 F1	218	3270	4 F2	ug/Kg	☼	1081	73 - 120	72	13
Indeno[1,2,3-cd]pyrene	1100	F2	218	4430	4 F2	ug/Kg	☼	1519	65 - 121	91	15
Naphthalene	240	F1	218	896	F1	ug/Kg	☼	302	70 - 120	12	12
Phenanthrene	5800	F2	218	22000	4 F2	ug/Kg	☼	7407	73 - 120	91	11
Pyrene	5200	F2	218	18800	4 F2	ug/Kg	☼	6249	70 - 120	99	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Terphenyl-d14	88		57 - 120

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

**Lab Sample ID: MB 580-282143/1-A**

**Matrix: Water**  
**Analysis Batch: 283038**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 282143**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.45	0.061	ug/L		08/22/18 09:21	08/31/18 19:47	1
PCB-1221	ND		0.45	0.075	ug/L		08/22/18 09:21	08/31/18 19:47	1
PCB-1232	ND		0.45	0.063	ug/L		08/22/18 09:21	08/31/18 19:47	1
PCB-1242	ND		0.45	0.059	ug/L		08/22/18 09:21	08/31/18 19:47	1
PCB-1248	ND		0.45	0.052	ug/L		08/22/18 09:21	08/31/18 19:47	1
PCB-1254	ND		0.45	0.075	ug/L		08/22/18 09:21	08/31/18 19:47	1
PCB-1260	ND		0.45	0.061	ug/L		08/22/18 09:21	08/31/18 19:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	85		38 - 140	08/22/18 09:21	08/31/18 19:47	1
Tetrachloro-m-xylene	94		40 - 120	08/22/18 09:21	08/31/18 19:47	1

**Lab Sample ID: LCS 580-282143/8-A**

**Matrix: Water**  
**Analysis Batch: 283038**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 282143**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	1.00	0.948		ug/L		95	50 - 121
PCB-1260	1.00	0.980		ug/L		98	55 - 132

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-282143/8-A**  
**Matrix: Water**  
**Analysis Batch: 283038**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 282143**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	81		38 - 140
Tetrachloro-m-xylene	84		40 - 120

**Lab Sample ID: LCSD 580-282143/9-A**  
**Matrix: Water**  
**Analysis Batch: 283038**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 282143**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	1.00	0.954		ug/L		95	50 - 121	1	25
PCB-1260	1.00	0.979		ug/L		98	55 - 132	0	22

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	83		38 - 140
Tetrachloro-m-xylene	87		40 - 120

**Lab Sample ID: MB 580-285153/1-A**  
**Matrix: Solid**  
**Analysis Batch: 285345**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 285153**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		09/28/18 10:09	10/01/18 13:07	1
PCB-1221	ND		2.0	0.95	ug/Kg		09/28/18 10:09	10/01/18 13:07	1
PCB-1232	ND		2.0	0.47	ug/Kg		09/28/18 10:09	10/01/18 13:07	1
PCB-1242	ND		2.0	0.49	ug/Kg		09/28/18 10:09	10/01/18 13:07	1
PCB-1248	ND		2.0	0.16	ug/Kg		09/28/18 10:09	10/01/18 13:07	1
PCB-1254	ND		2.0	0.79	ug/Kg		09/28/18 10:09	10/01/18 13:07	1
PCB-1260	ND		2.0	0.34	ug/Kg		09/28/18 10:09	10/01/18 13:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	88		54 - 142	09/28/18 10:09	10/01/18 13:07	1
Tetrachloro-m-xylene	76		58 - 122	09/28/18 10:09	10/01/18 13:07	1

**Lab Sample ID: LCS 580-285153/2-A**  
**Matrix: Solid**  
**Analysis Batch: 285345**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 285153**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	10.0	8.16		ug/Kg		82	64 - 120
PCB-1260	10.0	7.78		ug/Kg		78	63 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	86		54 - 142
Tetrachloro-m-xylene	76		58 - 122

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: 580-79672-30 MS**

**Matrix: Solid**  
**Analysis Batch: 285345**

**Client Sample ID: PDI-SC-S263-3.8to5.9**

**Prep Type: Total/NA**  
**Prep Batch: 285153**

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
PCB-1016	ND		14.6	11.4		ug/Kg	☼	78	64 - 120
PCB-1260	4.8	F1	14.6	10.4	F1	ug/Kg	☼	39	63 - 130
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
DCB Decachlorobiphenyl	45	X	54 - 142						
Tetrachloro-m-xylene	49	X	58 - 122						

**Lab Sample ID: 580-79672-30 MSD**

**Matrix: Solid**  
**Analysis Batch: 285345**

**Client Sample ID: PDI-SC-S263-3.8to5.9**

**Prep Type: Total/NA**  
**Prep Batch: 285153**

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
PCB-1016	ND		14.8	11.4		ug/Kg	☼	77	64 - 120	0	21
PCB-1260	4.8	F1	14.8	11.3	F1	ug/Kg	☼	44	63 - 130	8	25
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
DCB Decachlorobiphenyl	51	X	54 - 142								
Tetrachloro-m-xylene	51	X	58 - 122								

**Lab Sample ID: MB 580-285536/1-A**

**Matrix: Solid**  
**Analysis Batch: 285642**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 285536**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
PCB-1016	ND		2.0	0.34	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
PCB-1221	ND		2.0	0.95	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
PCB-1232	ND		2.0	0.47	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
PCB-1242	ND		2.0	0.49	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
PCB-1248	ND		2.0	0.16	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
PCB-1254	ND		2.0	0.79	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
PCB-1260	ND		2.0	0.34	ug/Kg		10/03/18 09:09	10/04/18 13:35	1	
<b>MB MB</b>										
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil	Fac			
DCB Decachlorobiphenyl	74		54 - 142	10/03/18 09:09	10/04/18 13:35	1				
Tetrachloro-m-xylene	69		58 - 122	10/03/18 09:09	10/04/18 13:35	1				

**Lab Sample ID: LCS 580-285536/2-A**

**Matrix: Solid**  
**Analysis Batch: 285642**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 285536**

Analyte	Spike	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
PCB-1016	10.0	7.39		ug/Kg		74	64 - 120
PCB-1260	10.0	7.77		ug/Kg		78	63 - 130
<b>LCS LCS</b>							
Surrogate	%Recovery	Qualifier	Limits				
DCB Decachlorobiphenyl	84		54 - 142				
Tetrachloro-m-xylene	73		58 - 122				

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

**Lab Sample ID: 580-79672-10 MS**  
**Matrix: Solid**  
**Analysis Batch: 285642**

**Client Sample ID: PDI-SC-S109-4to6**  
**Prep Type: Total/NA**  
**Prep Batch: 285536**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
PCB-1016	ND		11.5	8.11		ug/Kg	☼	71	64 - 120
PCB-1260	0.95	J F1	11.5	8.23		ug/Kg	☼	63	63 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
DCB Decachlorobiphenyl	79		54 - 142						
Tetrachloro-m-xylene	67		58 - 122						

**Lab Sample ID: 580-79672-10 MSD**  
**Matrix: Solid**  
**Analysis Batch: 285642**

**Client Sample ID: PDI-SC-S109-4to6**  
**Prep Type: Total/NA**  
**Prep Batch: 285536**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	ND		11.5	8.39		ug/Kg	☼	73	64 - 120	3	21
PCB-1260	0.95	J F1	11.5	7.89	F1	ug/Kg	☼	60	63 - 130	4	25
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
DCB Decachlorobiphenyl	83		54 - 142								
Tetrachloro-m-xylene	69		58 - 122								

**Lab Sample ID: MB 580-285538/1-A**  
**Matrix: Solid**  
**Analysis Batch: 285683**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 285538**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
PCB-1221	ND		2.0	0.95	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
PCB-1232	ND		2.0	0.47	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
PCB-1242	ND		2.0	0.49	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
PCB-1248	ND		2.0	0.16	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
PCB-1254	ND		2.0	0.79	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
PCB-1260	ND		2.0	0.34	ug/Kg		10/03/18 09:17	10/04/18 14:03	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	81		54 - 142				10/03/18 09:17	10/04/18 14:03	1
Tetrachloro-m-xylene	78		58 - 122				10/03/18 09:17	10/04/18 14:03	1

**Lab Sample ID: LCS 580-285538/2-A**  
**Matrix: Solid**  
**Analysis Batch: 285683**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 285538**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	10.0	7.55		ug/Kg		75	64 - 120
PCB-1260	10.0	9.04		ug/Kg		90	63 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
DCB Decachlorobiphenyl	86		54 - 142				
Tetrachloro-m-xylene	77		58 - 122				

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: 580-79672-26 MS**

**Matrix: Solid**  
**Analysis Batch: 285683**

**Client Sample ID: PDI-SC-S232-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 285538**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
PCB-1016	ND		17.7	12.8		ug/Kg	☼	72	64 - 120
PCB-1260	48	F1	17.7	37.4	F1	ug/Kg	☼	-62	63 - 130
		<b>MS</b>	<b>MS</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
DCB Decachlorobiphenyl	70		54 - 142						
Tetrachloro-m-xylene	61		58 - 122						

**Lab Sample ID: 580-79672-26 MSD**

**Matrix: Solid**  
**Analysis Batch: 285683**

**Client Sample ID: PDI-SC-S232-2to4**

**Prep Type: Total/NA**  
**Prep Batch: 285538**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
PCB-1016	ND		17.5	13.3		ug/Kg	☼	76	64 - 120	4	21
PCB-1260	48	F1	17.5	37.2	F1	ug/Kg	☼	-64	63 - 130	0	25
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
DCB Decachlorobiphenyl	70		54 - 142								
Tetrachloro-m-xylene	64		58 - 122								

**Lab Sample ID: 580-79672-41 MS**

**Matrix: Solid**  
**Analysis Batch: 285683**

**Client Sample ID: PDI-SC-S157-6to8**

**Prep Type: Total/NA**  
**Prep Batch: 285538**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
PCB-1016	ND		14.0	10.0		ug/Kg	☼	72	64 - 120
PCB-1260	ND		14.0	11.3		ug/Kg	☼	81	63 - 130
		<b>MS</b>	<b>MS</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
DCB Decachlorobiphenyl	78		54 - 142						
Tetrachloro-m-xylene	65		58 - 122						

**Lab Sample ID: 580-79672-41 MSD**

**Matrix: Solid**  
**Analysis Batch: 285683**

**Client Sample ID: PDI-SC-S157-6to8**

**Prep Type: Total/NA**  
**Prep Batch: 285538**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
PCB-1016	ND		13.7	9.71		ug/Kg	☼	71	64 - 120	3	21
PCB-1260	ND		13.7	11.1		ug/Kg	☼	81	63 - 130	2	25
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
DCB Decachlorobiphenyl	79		54 - 142								
Tetrachloro-m-xylene	67		58 - 122								

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: MB 580-285787/1-A**  
**Matrix: Solid**  
**Analysis Batch: 285807**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 285787**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.0	0.34	ug/Kg		10/05/18 13:05	10/05/18 18:07	1
PCB-1221	ND		2.0	0.95	ug/Kg		10/05/18 13:05	10/05/18 18:07	1
PCB-1232	ND		2.0	0.47	ug/Kg		10/05/18 13:05	10/05/18 18:07	1
PCB-1242	ND		2.0	0.49	ug/Kg		10/05/18 13:05	10/05/18 18:07	1
PCB-1248	ND		2.0	0.16	ug/Kg		10/05/18 13:05	10/05/18 18:07	1
PCB-1254	ND		2.0	0.79	ug/Kg		10/05/18 13:05	10/05/18 18:07	1
PCB-1260	ND		2.0	0.34	ug/Kg		10/05/18 13:05	10/05/18 18:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	122		54 - 142	10/05/18 13:05	10/05/18 18:07	1
Tetrachloro-m-xylene	98		58 - 122	10/05/18 13:05	10/05/18 18:07	1

**Lab Sample ID: LCS 580-285787/2-A**  
**Matrix: Solid**  
**Analysis Batch: 285807**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 285787**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	10.0	11.4		ug/Kg		114	64 - 120
PCB-1260	10.0	10.2		ug/Kg		102	63 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	109		54 - 142
Tetrachloro-m-xylene	87		58 - 122

**Lab Sample ID: LCSD 580-285787/3-A**  
**Matrix: Solid**  
**Analysis Batch: 285807**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 285787**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	10.0	9.33		ug/Kg		93	64 - 120	20	21
PCB-1260	10.0	10.2		ug/Kg		102	63 - 130	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	104		54 - 142
Tetrachloro-m-xylene	81		58 - 122

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

**Lab Sample ID: MB 580-282653/5**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**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	114	J	2000	44	mg/Kg			08/28/18 08:39	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-282653/6**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**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	5190		mg/Kg		121	68 - 149

**Lab Sample ID: LCSD 580-282653/7**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**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	5550		mg/Kg		130	68 - 149	7	32

**Lab Sample ID: 580-79672-10 MS**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**Client Sample ID: PDI-SC-S109-4to6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	2300	B	120000	91500		mg/Kg		74	68 - 149

**Lab Sample ID: 580-79672-10 MSD**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**Client Sample ID: PDI-SC-S109-4to6**  
**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	2300	B	120000	104000		mg/Kg		85	68 - 149	13	32

**Lab Sample ID: 580-79672-10 DU**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**Client Sample ID: PDI-SC-S109-4to6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	2300	B		1860	J	mg/Kg				20	50

**Lab Sample ID: 580-79672-10 TRL**  
**Matrix: Solid**  
**Analysis Batch: 282653**

**Client Sample ID: PDI-SC-S109-4to6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	TRL Result	TRL Qualifier	Unit	D	%Rec	%Rec. Limits	RSD	RSD Limit
Total Organic Carbon - Duplicates	2300	B		2730		mg/Kg				19	20

**Lab Sample ID: MB 580-282946/5**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**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	526	J	2000	44	mg/Kg			08/30/18 10:53	1

TestAmerica Seattle



# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-282946/6**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**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	6140		mg/Kg		144	68 - 149

**Lab Sample ID: LCSD 580-282946/7**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**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	5110		mg/Kg		120	68 - 149	18	32

**Lab Sample ID: 580-79672-26 MS**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**Client Sample ID: PDI-SC-S232-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	79000	B	120000	221000		mg/Kg		119	68 - 149

**Lab Sample ID: 580-79672-26 MSD**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**Client Sample ID: PDI-SC-S232-2to4**  
**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	79000	B	120000	186000		mg/Kg		89	68 - 149	17	32

**Lab Sample ID: 580-79672-26 DU**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**Client Sample ID: PDI-SC-S232-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	79000	B		68900		mg/Kg				14	50

**Lab Sample ID: 580-79672-26 TRL**  
**Matrix: Solid**  
**Analysis Batch: 282946**

**Client Sample ID: PDI-SC-S232-2to4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	TRL Result	TRL Qualifier	Unit	D	%Rec	%Rec. Limits	RSD	RSD Limit
Total Organic Carbon - Duplicates	79000	B		77000		mg/Kg				7	20

**Lab Sample ID: MB 580-282947/5**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**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			08/30/18 14:30	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

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

**Lab Sample ID: LCS 580-282947/6**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**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	4750		mg/Kg		111	68 - 149

**Lab Sample ID: LCSD 580-282947/7**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**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	5180		mg/Kg		121	68 - 149	9	32

**Lab Sample ID: 580-79672-41 MS**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**Client Sample ID: PDI-SC-S157-6to8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	1400	J	120000	113000		mg/Kg		93	68 - 149

**Lab Sample ID: 580-79672-41 MSD**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**Client Sample ID: PDI-SC-S157-6to8**  
**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	1400	J	120000	118000		mg/Kg		97	68 - 149	5	32

**Lab Sample ID: 580-79672-41 DU**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**Client Sample ID: PDI-SC-S157-6to8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	1400	J		1410	J	mg/Kg				3	50

**Lab Sample ID: 580-79672-41 TRL**  
**Matrix: Solid**  
**Analysis Batch: 282947**

**Client Sample ID: PDI-SC-S157-6to8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	TRL Result	TRL Qualifier	Unit	D	%Rec	%Rec. Limits	RSD	RSD Limit
Total Organic Carbon - Duplicates	1400	J		1320	J	mg/Kg				3	20

## Method: D 2216 - Percent Moisture

**Lab Sample ID: 580-79672-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 284890**

**Client Sample ID: PDI-SC-S113(A)-0to2.2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Solids	72.4	H		72.2		%				0.3	20

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

**Lab Sample ID: 580-79672-21 DU**  
**Matrix: Solid**  
**Analysis Batch: 284890**

**Client Sample ID: PDI-SC-S256-4to6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	63.7	H	61.8		%		3	20

**Lab Sample ID: 580-79672-53 DU**  
**Matrix: Solid**  
**Analysis Batch: 284890**

**Client Sample ID: PDI-SC-S053-10to12.4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	66.4	H	66.7		%		0.5	20

**Lab Sample ID: 580-79672-20 DU**  
**Matrix: Solid**  
**Analysis Batch: 285176**

**Client Sample ID: PDI-SC-S256-2to4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	61.4	H	61.4		%		0	20

## Method: Moisture 70C - Percent Moisture, 70 C

**Lab Sample ID: 580-79672-7 DU**  
**Matrix: Solid**  
**Analysis Batch: 283794**

**Client Sample ID: PDI-SC-S113(B)-12to13.8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	82	H	81		%		0.8	20

**Lab Sample ID: 580-79672-25 DU**  
**Matrix: Solid**  
**Analysis Batch: 283857**

**Client Sample ID: PDI-SC-S232-0to2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	59	H	59		%		0.2	20

**Lab Sample ID: 580-79672-43 DU**  
**Matrix: Solid**  
**Analysis Batch: 283858**

**Client Sample ID: PDI-SC-S157-10to12.4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	75	H	75		%		0.6	20

**Lab Sample ID: 580-79672-20 DU**  
**Matrix: Solid**  
**Analysis Batch: 285178**

**Client Sample ID: PDI-SC-S256-2to4D**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	61	H	61		%		0.4	20

# QC Sample Results

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

TestAmerica Job ID: 580-79672-1

## Method: SM 5310B - Organic Carbon, Total (TOC)

**Lab Sample ID: MB 580-282597/3**  
**Matrix: Water**  
**Analysis Batch: 282597**

**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	ND		1.0	0.19	mg/L			08/27/18 11:17	1

**Lab Sample ID: LCS 580-282597/4**  
**Matrix: Water**  
**Analysis Batch: 282597**

**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	10.0	10.6		mg/L		106	85 - 115

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

**Lab Sample ID: 580-79672-7 DU**  
**Matrix: Solid**  
**Analysis Batch: 283330**

**Client Sample ID: PDI-SC-S113(B)-12to13.8**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	0.0		0.0		%		NC	20
Coarse Sand	0.0		0.0		%		NC	20
Medium Sand	22.4		22.2		%		0.9	20
Fine Sand	72.8		72.0		%		1	20
Silt	3.1		4.1	F3	%		28	20
Clay	1.6		1.6		%		0	20

**Lab Sample ID: 580-79672-25 DU**  
**Matrix: Solid**  
**Analysis Batch: 283465**

**Client Sample ID: PDI-SC-S232-0to2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	0.0		0.0		%		NC	20
Coarse Sand	0.0		0.2	F3	%		200	20
Medium Sand	0.2		0.2		%		0	20
Fine Sand	20.1		23.2		%		14	20
Silt	69.7		66.0		%		5	20
Clay	10.0		10.4		%		4	20

**Lab Sample ID: 580-79672-43 DU**  
**Matrix: Solid**  
**Analysis Batch: 283627**

**Client Sample ID: PDI-SC-S157-10to12.4**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	0.0		0.0		%		NC	20
Coarse Sand	0.0		0.0		%		NC	20
Medium Sand	0.0		0.0		%		NC	20
Fine Sand	36.8		37.0		%		0.5	20
Silt	57.9		56.0		%		3	20
Clay	5.3		7.0	F3	%		28	20

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(A)-0to2.2**

**Lab Sample ID: 580-79672-1**

**Date Collected: 08/15/18 15:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 09:17	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283856	09/04/18 13:37	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283164	09/04/18 13:37	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(A)-0to2.2**

**Lab Sample ID: 580-79672-1**

**Date Collected: 08/15/18 15:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 72.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546	DL		285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM	DL	1000	286497	10/15/18 11:41	W1T	TAL SEA
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 17:00	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 14:08	APR	TAL SEA

**Client Sample ID: PDI-SC-S113(A)-2.2to4.6**

**Lab Sample ID: 580-79672-2**

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

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 09:24	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283856	09/04/18 13:37	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283164	09/04/18 13:37	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(A)-2.2to4.6**

**Lab Sample ID: 580-79672-2**

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

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 78.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285850	10/06/18 17:23	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 14:25	APR	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-3.6to5.6**

**Lab Sample ID: 580-79672-3**

**Date Collected: 08/15/18 16:45**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 09:38	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283856	09/04/18 13:37	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283164	09/04/18 13:37	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-3.6to5.6**

**Lab Sample ID: 580-79672-3**

**Date Collected: 08/15/18 16:45**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 48.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 17:46	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 14:42	APR	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-5.6to7.4**

**Lab Sample ID: 580-79672-4**

**Date Collected: 08/15/18 16:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 09:45	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283856	09/04/18 13:37	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283164	09/04/18 13:37	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-5.6to7.4**

**Lab Sample ID: 580-79672-4**

**Date Collected: 08/15/18 16:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 59.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 18:09	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 14:59	APR	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-7.4to10**

**Lab Sample ID: 580-79672-5**

**Date Collected: 08/15/18 16:55**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 09:52	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-7.4to10**

**Lab Sample ID: 580-79672-5**

**Date Collected: 08/15/18 16:55**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	283856	09/04/18 13:37	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283164	09/04/18 13:37	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-7.4to10**

**Lab Sample ID: 580-79672-5**

**Date Collected: 08/15/18 16:55**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 77.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 18:32	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 15:15	APR	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-10to12**

**Lab Sample ID: 580-79672-6**

**Date Collected: 08/15/18 17:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 09:58	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283856	09/04/18 13:37	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283164	09/04/18 13:37	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-10to12**

**Lab Sample ID: 580-79672-6**

**Date Collected: 08/15/18 17:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 82.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 18:55	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 15:32	APR	TAL SEA

**Client Sample ID: PDI-SC-S113(B)-12to13.8**

**Lab Sample ID: 580-79672-7**

**Date Collected: 08/15/18 17:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 10:05	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S113(B)-12to13.8**

**Lab Sample ID: 580-79672-7**

**Date Collected: 08/15/18 17:05**

**Matrix: Solid**

**Date Received: 08/17/18 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			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 19:17	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 15:49	APR	TAL SEA

**Client Sample ID: PDI-SC-S109-0to2**

**Lab Sample ID: 580-79672-8**

**Date Collected: 08/15/18 18:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 10:12	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S109-0to2**

**Lab Sample ID: 580-79672-8**

**Date Collected: 08/15/18 18:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 75.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285850	10/06/18 19:40	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 16:06	APR	TAL SEA

**Client Sample ID: PDI-SC-S109-2to4**

**Lab Sample ID: 580-79672-9**

**Date Collected: 08/15/18 18:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 10:19	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S109-2to4**

**Lab Sample ID: 580-79672-9**

**Date Collected: 08/15/18 18:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 84.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285850	10/06/18 20:03	W1T	TAL SEA

TestAmerica Seattle



# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-2to4**

**Lab Sample ID: 580-79672-9**

**Date Collected: 08/15/18 18:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 84.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 16:22	APR	TAL SEA

**Client Sample ID: PDI-SC-S109-4to6**

**Lab Sample ID: 580-79672-10**

**Date Collected: 08/15/18 18:10**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 08:50	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S109-4to6**

**Lab Sample ID: 580-79672-10**

**Date Collected: 08/15/18 18:10**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 84.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 09:18	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285642	10/04/18 16:39	APR	TAL SEA

**Client Sample ID: PDI-SC-S109-6to8**

**Lab Sample ID: 580-79672-11**

**Date Collected: 08/15/18 18:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 10:25	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S109-6to8**

**Lab Sample ID: 580-79672-11**

**Date Collected: 08/15/18 18:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 85.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 10:31	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 19:44	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S109-8to10**

**Lab Sample ID: 580-79672-12**

**Date Collected: 08/15/18 18:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 10:32	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S109-8to10**

**Lab Sample ID: 580-79672-12**

**Date Collected: 08/15/18 18:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 72.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		500	286489	10/15/18 10:56	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 20:00	TL1	TAL SEA

**Client Sample ID: PDI-SC-S109-10to11.3**

**Lab Sample ID: 580-79672-13**

**Date Collected: 08/15/18 18:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 13:17	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S109-10to11.3**

**Lab Sample ID: 580-79672-13**

**Date Collected: 08/15/18 18:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 56.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		100	286489	10/15/18 11:20	W1T	TAL SEA
Total/NA	Prep	3550B			285787	10/05/18 13:05	APR	TAL SEA
Total/NA	Analysis	8082A		1	285909	10/08/18 13:59	APR	TAL SEA

**Client Sample ID: PDI-SC-S131-0to2**

**Lab Sample ID: 580-79672-14**

**Date Collected: 08/16/18 08:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 11:20	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S131-0to2**

**Lab Sample ID: 580-79672-14**

**Date Collected: 08/16/18 08:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S131-0to2**

**Lab Sample ID: 580-79672-14**

**Date Collected: 08/16/18 08:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 46.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 12:10	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 20:17	TL1	TAL SEA

**Client Sample ID: PDI-SC-S131-2to4**

**Lab Sample ID: 580-79672-15**

**Date Collected: 08/16/18 08:55**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 11:26	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S131-2to4**

**Lab Sample ID: 580-79672-15**

**Date Collected: 08/16/18 08:55**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 50.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 12:35	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 20:34	TL1	TAL SEA

**Client Sample ID: PDI-SC-S131-4to6**

**Lab Sample ID: 580-79672-16**

**Date Collected: 08/16/18 09:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 11:33	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S131-4to6**

**Lab Sample ID: 580-79672-16**

**Date Collected: 08/16/18 09:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 51.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	286489	10/15/18 12:59	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 20:51	TL1	TAL SEA

**Client Sample ID: PDI-SC-S131-6to8**

**Lab Sample ID: 580-79672-17**

**Date Collected: 08/16/18 09:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 11:42	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S131-6to8**

**Lab Sample ID: 580-79672-17**

**Date Collected: 08/16/18 09:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 52.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 13:24	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 21:07	TL1	TAL SEA

**Client Sample ID: PDI-SC-S256-0to2**

**Lab Sample ID: 580-79672-18**

**Date Collected: 08/16/18 10:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 11:49	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S256-0to2**

**Lab Sample ID: 580-79672-18**

**Date Collected: 08/16/18 10:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 59.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 13:48	W1T	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-0to2**

**Lab Sample ID: 580-79672-18**

**Date Collected: 08/16/18 10:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 59.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 21:24	TL1	TAL SEA

**Client Sample ID: PDI-SC-S256-2to4**

**Lab Sample ID: 580-79672-19**

**Date Collected: 08/16/18 10:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 11:56	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S256-2to4**

**Lab Sample ID: 580-79672-19**

**Date Collected: 08/16/18 10:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 59.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 14:12	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 21:41	TL1	TAL SEA

**Client Sample ID: PDI-SC-S256-2to4D**

**Lab Sample ID: 580-79672-20**

**Date Collected: 08/16/18 10:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 11:46	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	285176	09/28/18 11:21	A1K	TAL SEA
Total/NA	Analysis	Moisture 70C		1	285178	09/28/18 11:18	A1K	TAL SEA

**Client Sample ID: PDI-SC-S256-2to4D**

**Lab Sample ID: 580-79672-20**

**Date Collected: 08/16/18 10:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 61.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 14:37	W1T	TAL SEA
Total/NA	Prep	3550B			285536	10/03/18 09:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285677	10/04/18 21:57	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-4to6**

**Lab Sample ID: 580-79672-21**

**Date Collected: 08/16/18 10:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 11:54	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S256-4to6**

**Lab Sample ID: 580-79672-21**

**Date Collected: 08/16/18 10:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 63.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 15:01	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 14:38	TL1	TAL SEA

**Client Sample ID: PDI-SC-S256-6to8.7**

**Lab Sample ID: 580-79672-22**

**Date Collected: 08/16/18 10:40**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:09	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S256-6to8.7**

**Lab Sample ID: 580-79672-22**

**Date Collected: 08/16/18 10:40**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 62.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	286489	10/15/18 15:26	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 14:55	TL1	TAL SEA

**Client Sample ID: PDI-SC-S256-8.7to9.7**

**Lab Sample ID: 580-79672-23**

**Date Collected: 08/16/18 10:45**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:16	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S256-8.7to9.7**

**Lab Sample ID: 580-79672-23**

**Date Collected: 08/16/18 10:45**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S256-8.7to9.7**

**Lab Sample ID: 580-79672-23**

**Date Collected: 08/16/18 10:45**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 62.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 15:50	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 15:13	TL1	TAL SEA

**Client Sample ID: PDI-SC-S256-9.7to10.7**

**Lab Sample ID: 580-79672-24**

**Date Collected: 08/16/18 10:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:23	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283794	09/06/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283330	09/06/18 08:03	JKM	TAL SEA

**Client Sample ID: PDI-SC-S256-9.7to10.7**

**Lab Sample ID: 580-79672-24**

**Date Collected: 08/16/18 10:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 61.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 16:15	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 15:31	TL1	TAL SEA

**Client Sample ID: PDI-SC-S232-0to2**

**Lab Sample ID: 580-79672-25**

**Date Collected: 08/16/18 15:10**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:31	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S232-0to2**

**Lab Sample ID: 580-79672-25**

**Date Collected: 08/16/18 15:10**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 58.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 16:39	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 15:49	TL1	TAL SEA

**Client Sample ID: PDI-SC-S232-2to4**

**Lab Sample ID: 580-79672-26**

**Date Collected: 08/16/18 15:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 11:15	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S232-2to4**

**Lab Sample ID: 580-79672-26**

**Date Collected: 08/16/18 15:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 55.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 16:30	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 16:06	TL1	TAL SEA

**Client Sample ID: PDI-SC-S232-4to6.2**

**Lab Sample ID: 580-79672-27**

**Date Collected: 08/16/18 15:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:38	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S232-4to6.2**

**Lab Sample ID: 580-79672-27**

**Date Collected: 08/16/18 15:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 65.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 17:04	W1T	TAL SEA

TestAmerica Seattle



# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S232-4to6.2**

**Lab Sample ID: 580-79672-27**

**Date Collected: 08/16/18 15:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 65.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 16:59	TL1	TAL SEA

**Client Sample ID: PDI-SC-S263-0to2**

**Lab Sample ID: 580-79672-28**

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

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:45	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S263-0to2**

**Lab Sample ID: 580-79672-28**

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

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 73.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	286489	10/15/18 17:29	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 17:17	TL1	TAL SEA

**Client Sample ID: PDI-SC-S263-2to3.8**

**Lab Sample ID: 580-79672-29**

**Date Collected: 08/16/18 16:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:52	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S263-2to3.8**

**Lab Sample ID: 580-79672-29**

**Date Collected: 08/16/18 16:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 67.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 17:53	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 17:34	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S263-3.8to5.9**

**Lab Sample ID: 580-79672-30**

**Date Collected: 08/16/18 16:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 12:59	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S263-3.8to5.9**

**Lab Sample ID: 580-79672-30**

**Date Collected: 08/16/18 16:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 66.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286333	10/12/18 10:24	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286489	10/15/18 18:18	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 13:41	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-0to1.9**

**Lab Sample ID: 580-79672-31**

**Date Collected: 08/16/18 18:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 13:06	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S108-0to1.9**

**Lab Sample ID: 580-79672-31**

**Date Collected: 08/16/18 18:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 53.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 17:38	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 14:31	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-1.9to3**

**Lab Sample ID: 580-79672-32**

**Date Collected: 08/16/18 18:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 13:21	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-1.9to3**

**Lab Sample ID: 580-79672-32**

**Date Collected: 08/16/18 18:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S108-1.9to3**

**Lab Sample ID: 580-79672-32**

**Date Collected: 08/16/18 18:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 44.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285875	10/07/18 18:00	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 14:48	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-3to4.7**

**Lab Sample ID: 580-79672-33**

**Date Collected: 08/16/18 18:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 13:29	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S108-3to4.7**

**Lab Sample ID: 580-79672-33**

**Date Collected: 08/16/18 18:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 42.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 18:23	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 15:05	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-4.7to6.7**

**Lab Sample ID: 580-79672-34**

**Date Collected: 08/16/18 18:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 13:39	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-4.7to6.7**

**Lab Sample ID: 580-79672-34**

**Date Collected: 08/16/18 18:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 49.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 18:46	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 15:21	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-6.7to8.8**

**Lab Sample ID: 580-79672-35**

**Date Collected: 08/16/18 18:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 13:48	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S108-6.7to8.8**

**Lab Sample ID: 580-79672-35**

**Date Collected: 08/16/18 18:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 68.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285875	10/07/18 19:09	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 15:38	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-6.7to8.8D**

**Lab Sample ID: 580-79672-36**

**Date Collected: 08/16/18 18:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 13:55	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	285176	09/28/18 11:21	A1K	TAL SEA
Total/NA	Analysis	Moisture 70C		1	285178	09/28/18 11:18	A1K	TAL SEA

**Client Sample ID: PDI-SC-S108-6.7to8.8D**

**Lab Sample ID: 580-79672-36**

**Date Collected: 08/16/18 18:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 70.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285875	10/07/18 19:31	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S108-6.7to8.8D**

**Lab Sample ID: 580-79672-36**

Date Collected: 08/16/18 18:35

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 70.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8082A		1	285683	10/04/18 17:52	TL1	TAL SEA

**Client Sample ID: PDI-SC-S108-8.8to9.8**

**Lab Sample ID: 580-79672-37**

Date Collected: 08/16/18 18:40

Matrix: Solid

Date Received: 08/17/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 14:02	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S108-8.8to9.8**

**Lab Sample ID: 580-79672-37**

Date Collected: 08/16/18 18:40

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 70.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285875	10/07/18 19:54	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 15:55	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-0to2**

**Lab Sample ID: 580-79672-38**

Date Collected: 08/17/18 10:10

Matrix: Solid

Date Received: 08/17/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 14:09	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-0to2**

**Lab Sample ID: 580-79672-38**

Date Collected: 08/17/18 10:10

Matrix: Solid

Date Received: 08/17/18 15:30

Percent Solids: 49.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 20:17	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 16:12	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-2to3.7**

**Lab Sample ID: 580-79672-39**

**Date Collected: 08/17/18 10:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282946	08/30/18 14:16	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-2to3.7**

**Lab Sample ID: 580-79672-39**

**Date Collected: 08/17/18 10:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 74.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285875	10/07/18 20:40	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 16:28	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-3.7to6**

**Lab Sample ID: 580-79672-40**

**Date Collected: 08/17/18 10:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 15:25	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-3.7to6**

**Lab Sample ID: 580-79672-40**

**Date Collected: 08/17/18 10:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 72.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	285875	10/07/18 21:02	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 16:45	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-6to8**

**Lab Sample ID: 580-79672-41**

**Date Collected: 08/17/18 10:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:51	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-6to8**

**Lab Sample ID: 580-79672-41**

**Date Collected: 08/17/18 10:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-6to8**

**Lab Sample ID: 580-79672-41**

**Date Collected: 08/17/18 10:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 70.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	285850	10/06/18 20:26	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:17	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 18:10	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-8to10**

**Lab Sample ID: 580-79672-42**

**Date Collected: 08/17/18 10:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 15:32	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283857	09/07/18 12:35	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283465	09/07/18 12:35	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-8to10**

**Lab Sample ID: 580-79672-42**

**Date Collected: 08/17/18 10:30**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 73.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	285875	10/07/18 21:25	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 17:02	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-10to12.4**

**Lab Sample ID: 580-79672-43**

**Date Collected: 08/17/18 10:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 15:47	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-10to12.4**

**Lab Sample ID: 580-79672-43**

**Date Collected: 08/17/18 10:35**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 75.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	285875	10/07/18 21:48	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 17:19	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-12.4to14**

**Lab Sample ID: 580-79672-44**

**Date Collected: 08/17/18 10:40**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 15:54	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-12.4to14**

**Lab Sample ID: 580-79672-44**

**Date Collected: 08/17/18 10:40**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 73.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	285875	10/07/18 22:11	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 17:35	TL1	TAL SEA

**Client Sample ID: PDI-SC-S157-14to15.9**

**Lab Sample ID: 580-79672-45**

**Date Collected: 08/17/18 10:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:01	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S157-14to15.9**

**Lab Sample ID: 580-79672-45**

**Date Collected: 08/17/18 10:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 74.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	285875	10/07/18 22:33	W1T	TAL SEA

TestAmerica Seattle



# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S157-14to15.9**

**Lab Sample ID: 580-79672-45**

**Date Collected: 08/17/18 10:50**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 74.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			282236	08/22/18 19:09	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	282676	08/28/18 16:54	CJ	TAL SEA
Total/NA	Prep	3510C			282143	08/22/18 09:21	JCM	TAL SEA
Total/NA	Analysis	8082A		1	283038	08/31/18 20:58	TL1	TAL SEA
Total/NA	Analysis	SM 5310B		1	282597	08/27/18 11:17	TTN	TAL SEA

**Client Sample ID: PDI-RB-SS-180816-1110**

**Lab Sample ID: 580-79672-46**

**Date Collected: 08/16/18 11:10**

**Matrix: Water**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			282236	08/22/18 19:09	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	282676	08/28/18 16:54	CJ	TAL SEA
Total/NA	Prep	3510C			282143	08/22/18 09:21	JCM	TAL SEA
Total/NA	Analysis	8082A		1	283038	08/31/18 20:58	TL1	TAL SEA
Total/NA	Analysis	SM 5310B		1	282597	08/27/18 11:17	TTN	TAL SEA

**Client Sample ID: PDI-RB-SS-180817**

**Lab Sample ID: 580-79672-47**

**Date Collected: 08/17/18 07:45**

**Matrix: Water**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			282236	08/22/18 19:09	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	282676	08/28/18 17:16	CJ	TAL SEA
Total/NA	Prep	3510C			282143	08/22/18 09:21	JCM	TAL SEA
Total/NA	Analysis	8082A		1	283038	08/31/18 21:16	TL1	TAL SEA
Total/NA	Analysis	SM 5310B		1	282597	08/27/18 11:17	TTN	TAL SEA

**Client Sample ID: PDI-SC-S053-0to2**

**Lab Sample ID: 580-79672-48**

**Date Collected: 08/16/18 13:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:08	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S053-0to2**

**Lab Sample ID: 580-79672-48**

**Date Collected: 08/16/18 13:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 53.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 22:56	W1T	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-0to2**

**Lab Sample ID: 580-79672-48**

**Date Collected: 08/16/18 13:00**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 53.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 18:09	TL1	TAL SEA

**Client Sample ID: PDI-SC-S053-2to4**

**Lab Sample ID: 580-79672-49**

**Date Collected: 08/16/18 13:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:15	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S053-2to4**

**Lab Sample ID: 580-79672-49**

**Date Collected: 08/16/18 13:05**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 57.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/07/18 23:19	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285345	10/01/18 18:26	TL1	TAL SEA

**Client Sample ID: PDI-SC-S053-4to6**

**Lab Sample ID: 580-79672-50**

**Date Collected: 08/16/18 13:10**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:23	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S053-4to6**

**Lab Sample ID: 580-79672-50**

**Date Collected: 08/16/18 13:10**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 62.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	285875	10/07/18 23:41	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285370	10/01/18 22:21	TL1	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-6to8**

**Lab Sample ID: 580-79672-51**

**Date Collected: 08/16/18 13:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:30	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S053-6to8**

**Lab Sample ID: 580-79672-51**

**Date Collected: 08/16/18 13:15**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 65.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285875	10/08/18 00:04	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285370	10/01/18 22:37	TL1	TAL SEA

**Client Sample ID: PDI-SC-S053-8to10**

**Lab Sample ID: 580-79672-52**

**Date Collected: 08/16/18 13:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:37	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S053-8to10**

**Lab Sample ID: 580-79672-52**

**Date Collected: 08/16/18 13:20**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 69.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285540	10/03/18 09:25	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285875	10/08/18 00:27	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285370	10/01/18 22:54	TL1	TAL SEA

**Client Sample ID: PDI-SC-S053-10to12.4**

**Lab Sample ID: 580-79672-53**

**Date Collected: 08/16/18 15:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282947	08/30/18 16:44	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	284890	09/25/18 16:44	BAH	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-79672-1

**Client Sample ID: PDI-SC-S053-10to12.4**

**Lab Sample ID: 580-79672-53**

**Date Collected: 08/16/18 15:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture 70C		1	283858	09/10/18 15:49	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	283627	09/10/18 15:49	A1K	TAL SEA

**Client Sample ID: PDI-SC-S053-10to12.4**

**Lab Sample ID: 580-79672-53**

**Date Collected: 08/16/18 15:25**

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 66.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285850	10/06/18 21:34	W1T	TAL SEA
Total/NA	Prep	3550B			285153	09/28/18 10:09	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285370	10/01/18 23:11	TL1	TAL SEA

**Client Sample ID: PDI-SC-S113(A)-2.2to4.6D**

**Lab Sample ID: 580-79672-54**

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

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	282653	08/28/18 12:03	SPP	TAL SEA
Total/NA	Analysis	D 2216		1	285176	09/28/18 11:21	A1K	TAL SEA
Total/NA	Analysis	Moisture 70C		1	285178	09/28/18 11:18	A1K	TAL SEA

**Client Sample ID: PDI-SC-S113(A)-2.2to4.6D**

**Lab Sample ID: 580-79672-54**

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

**Matrix: Solid**

**Date Received: 08/17/18 15:30**

**Percent Solids: 77.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			285541	10/03/18 09:32	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285850	10/06/18 21:57	W1T	TAL SEA
Total/NA	Prep	3550B			285538	10/03/18 09:22	SPS	TAL SEA
Total/NA	Analysis	8082A		1	285683	10/04/18 19:03	TL1	TAL SEA

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-79672-1

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	11-05-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

# Sample Summary

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

TestAmerica Job ID: 580-79672-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79672-1	PDI-SC-S113(A)-0to2.2	Solid	08/15/18 15:25	08/17/18 15:30
580-79672-2	PDI-SC-S113(A)-2.2to4.6	Solid	08/15/18 15:30	08/17/18 15:30
580-79672-3	PDI-SC-S113(B)-3.6to5.6	Solid	08/15/18 16:45	08/17/18 15:30
580-79672-4	PDI-SC-S113(B)-5.6to7.4	Solid	08/15/18 16:50	08/17/18 15:30
580-79672-5	PDI-SC-S113(B)-7.4to10	Solid	08/15/18 16:55	08/17/18 15:30
580-79672-6	PDI-SC-S113(B)-10to12	Solid	08/15/18 17:00	08/17/18 15:30
580-79672-7	PDI-SC-S113(B)-12to13.8	Solid	08/15/18 17:05	08/17/18 15:30
580-79672-8	PDI-SC-S109-0to2	Solid	08/15/18 18:00	08/17/18 15:30
580-79672-9	PDI-SC-S109-2to4	Solid	08/15/18 18:05	08/17/18 15:30
580-79672-10	PDI-SC-S109-4to6	Solid	08/15/18 18:10	08/17/18 15:30
580-79672-11	PDI-SC-S109-6to8	Solid	08/15/18 18:15	08/17/18 15:30
580-79672-12	PDI-SC-S109-8to10	Solid	08/15/18 18:20	08/17/18 15:30
580-79672-13	PDI-SC-S109-10to11.3	Solid	08/15/18 18:25	08/17/18 15:30
580-79672-14	PDI-SC-S131-0to2	Solid	08/16/18 08:50	08/17/18 15:30
580-79672-15	PDI-SC-S131-2to4	Solid	08/16/18 08:55	08/17/18 15:30
580-79672-16	PDI-SC-S131-4to6	Solid	08/16/18 09:00	08/17/18 15:30
580-79672-17	PDI-SC-S131-6to8	Solid	08/16/18 09:05	08/17/18 15:30
580-79672-18	PDI-SC-S256-0to2	Solid	08/16/18 10:25	08/17/18 15:30
580-79672-19	PDI-SC-S256-2to4	Solid	08/16/18 10:30	08/17/18 15:30
580-79672-20	PDI-SC-S256-2to4D	Solid	08/16/18 10:30	08/17/18 15:30
580-79672-21	PDI-SC-S256-4to6	Solid	08/16/18 10:35	08/17/18 15:30
580-79672-22	PDI-SC-S256-6to8.7	Solid	08/16/18 10:40	08/17/18 15:30
580-79672-23	PDI-SC-S256-8.7to9.7	Solid	08/16/18 10:45	08/17/18 15:30
580-79672-24	PDI-SC-S256-9.7to10.7	Solid	08/16/18 10:50	08/17/18 15:30
580-79672-25	PDI-SC-S232-0to2	Solid	08/16/18 15:10	08/17/18 15:30
580-79672-26	PDI-SC-S232-2to4	Solid	08/16/18 15:15	08/17/18 15:30
580-79672-27	PDI-SC-S232-4to6.2	Solid	08/16/18 15:20	08/17/18 15:30
580-79672-28	PDI-SC-S263-0to2	Solid	08/16/18 16:10	08/17/18 15:30
580-79672-29	PDI-SC-S263-2to3.8	Solid	08/16/18 16:15	08/17/18 15:30
580-79672-30	PDI-SC-S263-3.8to5.9	Solid	08/16/18 16:20	08/17/18 15:30
580-79672-31	PDI-SC-S108-0to1.9	Solid	08/16/18 18:15	08/17/18 15:30
580-79672-32	PDI-SC-S108-1.9to3	Solid	08/16/18 18:20	08/17/18 15:30
580-79672-33	PDI-SC-S108-3to4.7	Solid	08/16/18 18:25	08/17/18 15:30
580-79672-34	PDI-SC-S108-4.7to6.7	Solid	08/16/18 18:30	08/17/18 15:30
580-79672-35	PDI-SC-S108-6.7to8.8	Solid	08/16/18 18:35	08/17/18 15:30
580-79672-36	PDI-SC-S108-6.7to8.8D	Solid	08/16/18 18:35	08/17/18 15:30
580-79672-37	PDI-SC-S108-8.8to9.8	Solid	08/16/18 18:40	08/17/18 15:30
580-79672-38	PDI-SC-S157-0to2	Solid	08/17/18 10:10	08/17/18 15:30
580-79672-39	PDI-SC-S157-2to3.7	Solid	08/17/18 10:15	08/17/18 15:30
580-79672-40	PDI-SC-S157-3.7to6	Solid	08/17/18 10:20	08/17/18 15:30
580-79672-41	PDI-SC-S157-6to8	Solid	08/17/18 10:25	08/17/18 15:30
580-79672-42	PDI-SC-S157-8to10	Solid	08/17/18 10:30	08/17/18 15:30
580-79672-43	PDI-SC-S157-10to12.4	Solid	08/17/18 10:35	08/17/18 15:30
580-79672-44	PDI-SC-S157-12.4to14	Solid	08/17/18 10:40	08/17/18 15:30
580-79672-45	PDI-SC-S157-14to15.9	Solid	08/17/18 10:50	08/17/18 15:30
580-79672-46	PDI-RB-SS-180816-1110	Water	08/16/18 11:10	08/17/18 15:30
580-79672-47	PDI-RB-SS-180817	Water	08/17/18 07:45	08/17/18 15:30
580-79672-48	PDI-SC-S053-0to2	Solid	08/16/18 13:00	08/17/18 15:30
580-79672-49	PDI-SC-S053-2to4	Solid	08/16/18 13:05	08/17/18 15:30
580-79672-50	PDI-SC-S053-4to6	Solid	08/16/18 13:10	08/17/18 15:30
580-79672-51	PDI-SC-S053-6to8	Solid	08/16/18 13:15	08/17/18 15:30
580-79672-52	PDI-SC-S053-8to10	Solid	08/16/18 13:20	08/17/18 15:30
580-79672-53	PDI-SC-S053-10to12.4	Solid	08/16/18 15:25	08/17/18 15:30

TestAmerica Seattle

# Sample Summary

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

TestAmerica Job ID: 580-79672-1


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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79672-54	PDI-SC-S113(A)-2.2to4.6D	Solid	08/15/18 15:30	08/17/18 15:30

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**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	<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"/> Other	<b>Site Contact: Jennifer Ray</b> Date: 8/17/18 Carrier: Courier Laboratory Contact: Elaine-Walker COC No: 1 of 5 pages											
Barcode:  580-79672 Chain of Custody														
Atterberg Limits ASTM D4318 Total Solids 8082A, 8270D-SIM, 9060, 160.3 PCB Aroclors, PAHs, Total Organic Carbon, Grain size ASTM D7928/D6913 Archive PCD/RS 1613B														
<b>Sample Identification</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Matrix</b>	<b>QC Sample</b>	<b>Sampler's Initials</b>	<b>Total No. of Cont.</b>	<b>Fraction</b>	<b>PCB/RS 1613B</b>	<b>Archive</b>	<b>Grain size ASTM D7928/D6913</b>	<b>PCB Aroclors, PAHs, Total Organic Carbon,</b>	<b>Total Solids 8082A, 8270D-SIM, 9060, 160.3</b>	<b>Atterberg Limits ASTM D4318</b>	<b>Sample Specific Notes:</b>
PDI-SC-S113(A) - 0 to 2.2	8/15/2018	15:25	SC		ED	4		X	X	X	X			
PDI-SC-S113(A) - 2.2 to 4.6	8/15/2018	15:30	SC		ED	4		X	X	X	X			
PDI-SC-S113(B) - 3.6 to 5.6	8/15/2018	16:45	SC		ED	4		X	X	X	X			FROZEN
PDI-SC-S113(B) - 5.6 to 7.4	8/15/2018	16:50	SC		ED	4		X	X	X	X			
PDI-SC-S113(B) - 7.4 to 10	8/15/2018	16:55	SC		ED	4		X	X	X	X			
PDI-SC-S113(B) - 10 to 12	8/15/2018	17:00	SC		ED	4		X	X	X	X			
PDI-SC-S113(B) - 12 to 13.8	8/15/2018	17:05	SC		ED	4		X	X	X	X			
PDI-SC-S109 - 0 to 2	8/15/2018	18:00	SC		ED	4		X	X	X	X			
PDI-SC-S109 - 2 to 4	8/15/2018	18:05	SC		ED	4		X	X	X	X			
PDI-SC-S109 - 4 to 6	8/15/2018	18:10	SC		ED	4		X	X	X	X			
PDI-SC-S109 - 6 to 8	8/15/2018	18:15	SC		ED	4		X	X	X	X			MS/MSO
PDI-SC-S109 - 8 to 10	8/15/2018	18:20	SC		ED	4		X	X	X	X			ORAK 8/17/18
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)														
<b>Special Instructions/QC Requirements &amp; Comments: Separate reports for each lab</b>														
<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For 12 Months														
Relinquished by:	Company: AFEOM	Date/Time: 8/17/18 1500				Received by:				Company: M.E.	Date/Time: 8/17/18 1500			
Relinquished by:	Company: M.E.	Date/Time: 8/17/18 1530				Received by:				Company: AROL	Date/Time: 8/17/18 1530			
Relinquished by:	Company:	Date/Time:				Received by:				Company:	Date/Time:			

1.9, 3.6, 4.0, 1.7, 1.3, 2.5, 3.1, 4.7

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**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 \_\_\_\_\_

**Site Contact:** Jennifer Ray  
**Laboratory Contact:** Elaine-Walker  
**Date:** 8/17/18  
**Carrier:** Courier

COC No. 1  
3 of 5 pages 5

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction		Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 160.3	Afterberg Limits ASTM D4318	Sample Specific Notes:
							P/D/F/s 1613B	AG					
PDI-SC-S232 - 0 to 2	8/16/2018	15:10	SC		ED	5		X	X	X	X		
PDI-SC-S232 - 2 to 4	8/16/2018	15:15	SC	MS/MSD	ED	6		X	X	X	X		
PDI-SC-S232 - 4 to 6.2	8/16/2018	15:20	SC		ED	4		X	X	X	X		
PDI-SC-S263 - 0 to 2	8/16/2018	16:10	SC		ED	5		X	X	X	X		
PDI-SC-S263 - 2 to 3.8	8/16/2018	16:15	SC		ED	4		X	X	X	X		
PDI-SC-S263 - 3.8 to 5.9	8/16/2018	16:20	SC		ED	4		X	X	X	X		
PDI-SC-S108 - 0 to 1.9	8/16/2018	18:15	SC		ED	4		X	X	X	X		
PDI-SC-S108 - 1.9 to 3	8/16/2018	18:20	SC		ED	4		X	X	X	X		
PDI-SC-S108 - 3 to 4.7	8/16/2018	18:25	SC		ED	4		X	X	X	X		
PDI-SC-S108 - 4.7 to 6.7	8/16/2018	18:30	SC		ED	4		X	X	X	X		
PDI-SC-S108 - 6.7 to 8.8	8/16/2018	18:35	SC		ED	4		X	X	X	X		
PDI-SC-S108 - 6.7 to 8.8D	8/16/2018	18:35	SC		ED	3		X	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:** Separate reports for each lab

**Sample Disposal**  
 Return To Client  Disposal By Lab  Archive For 12 Months

Relinquished by: *[Signature]* Company: AECOM Date/Time: 8/17/18 1500  
Relinquished by: *[Signature]* Company: M.E. Date/Time: 8/17/18 1530  
Relinquished by: *[Signature]* Company: M.E. Date/Time: 8/17/18 1500



**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:** Any 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  
**Laboratory Contact:** Elaine-Walker  
Date: 8/17/18  
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						Sample Specific Notes:							
							PCDD/Fs 1613B	Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9660, 1603	Aterberg Limits ASTM D4318	WQ-PCBA		WQ-PAHs	WQ-D/F	WQ-TOC				
PDI-SC-S108 - 8.8 to 9.8	8/16/2018	18:40	SC		ED	4	X	X	X											
PDI-SC-S157 - 0 to 2	8/17/2018	10:10	SC		ED	5	X	X	X	X										
PDI-SC-S157 - 2 to 3.7	8/17/2018	10:15	SC		ED	4	X	X	X	X										
PDI-SC-S157 - 3.7 to 6	8/17/2018	10:20	SC		ED	4	X	X	X	X										
PDI-SC-S157 - 6 to 8	8/17/2018	10:25	SC		ED	6	X	X	X	X										
PDI-SC-S157 - 8 to 10	8/17/2018	10:30	SC		ED	4	X	X	X	X										
PDI-SC-S157 - 10 to 12.4	8/17/2018	10:35	SC		ED	4	X	X	X	X										
PDI-SC-S157 - 12.4 to 14	8/17/2018	10:40	SC		ED	4	X	X	X	X										
PDI-SC-S157 - 14 to 15.9	8/17/2018	10:45	SC		ED	4	X	X	X	X										
PDI-RB-SS-180816-1110	8/16/2018	11:10	W		ED															
PDI-RB-SS-180817	8/17/2018	7:45	W		ED															

**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: Separate reports for each lab**

**Sample Disposal:**  Return To Client  Dispose By Lab  Archive For 12 Months

Relinquished by: *[Signature]* Date/Time: 8/17/18 1500  
Relinquished by: *[Signature]* Date/Time: 8/17/18 1530  
Relinquished by: *[Signature]* Date/Time: 8/17/18 1500

Company: AECOM  
Company: M.E.  
Company: M.E.

Received by: *[Signature]* Date/Time: 8/17/18 1500  
Received by: *[Signature]* Date/Time: 8/17/18 1530  
Received by: *[Signature]* Date/Time: 8/17/18 1500

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: 8/17/18		COC No: 1				
AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101		Analysis Turnaround Time Calendar (C) or Work Days (W) <u>W</u>				Laboratory Contact: Elaine-Walker				Carrier: Courier		i of e pages 5				
Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling		<input checked="" type="checkbox"/> 21 days		<input type="checkbox"/> Other _____		PCDD/Fs 1613B		Aroclor		Grain size ASTM D7928/D6913		PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 160.3		Atterberg Limits ASTM D4318		
Portland, OR Project #: 60566335 Study: Subsurface Sediment		Sample Type		Sample Identification		Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Barcode: 580-79672 Chain of Custody				
Sample Identification		Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCDD/Fs 1613B	Aroclor	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 160.3	Atterberg Limits ASTM D4318	Sample Specific Notes:		
PDI-SC-S113(A) - 0 to 2.2		8/15/2018	15:25	SC		ED	4		x	x	x	x				
PDI-SC-S113(A) - 2.2 to 4.6		8/15/2018	15:30	SC		ED	4		x	x	x	x				
PDI-SC-S113(B) - 3.6 to 5.6		8/15/2018	16:45	SC		ED	4		x	x	x	x			FROZEN	
PDI-SC-S113(B) - 5.6 to 7.4		8/15/2018	16:50	SC		ED	4		x	x	x	x			↓ MS/MSD DRK 8/17/18	
PDI-SC-S113(B) - 7.4 to 10		8/15/2018	16:55	SC		ED	4		x	x	x	x				
PDI-SC-S113(B) - 10 to 12		8/15/2018	17:00	SC		ED	4		x	x	x	x				
PDI-SC-S113(B) - 12 to 13.8		8/15/2018	17:05	SC		ED	4		x	x	x	x				
PDI-SC-S109 - 0 to 2		8/15/2018	18:00	SC		ED	4		x	x	x	x				
PDI-SC-S109 - 2 to 4		8/15/2018	18:05	SC		ED	4		x	x	x	x				
PDI-SC-S109 - 4 to 6		8/15/2018	18:10	SC		ED	16		x	x	x	x				
PDI-SC-S109 - 6 to 8		8/15/2018	18:15	SC		ED	4		x	x	x	x				
PDI-SC-S109 - 8 to 10		8/15/2018	18:20	SC		ED	4		x	x	x	x				
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"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For 12 Months								
Special Instructions/QC Requirements & Comments: Separate reports for each lab																
1.9, 3.6, 4.0, 1.7, 1.3, 2.5, 3.1, 4.7																
Relinquished by: <i>[Signature]</i>	Company: AECOM	Date/Time: 8/17/18 1500	Received by: <i>[Signature]</i>	Company: M.E.	Date/Time: 8/17/18 1500											
Relinquished by: <i>[Signature]</i>	Company: M.E.	Date/Time: 8/17/18 1530	Received by: <i>[Signature]</i>	Company: APOR	Date/Time: 8/17/18 1530											
Relinquished by: <i>[Signature]</i>	Company: APOR	Date/Time: 8/17/18 1750	Received by: <i>[Signature]</i>	Company: SEATA	Date/Time: 8.18.18 0950											

IR5 = 1.6/1.6 w/c.s. IR5 = 2.5, 9/5, 9, 3.4/3, 4.3, 1/3/1  
 IR4 = 3.3/3.2 w/c. 10/22/2018  
 IR5 = 1.2/1.2 w/c.s.



**TestAmerica-Seattle**  
 5755-8th-Street-East  
 Tacoma, WA 98424-1317  
 Ph: 253-922-2310 Fax: 253-922-5047

## SUBSURFACE SEDIMENT CHAIN OF CUSTODY

<b>Client Contact</b>	<b>Project Contact: Amy Dahl / Chelsey Cook</b> Tel: (206) 438-2261 / (206) 438-2010	<b>Site Contact: Jennifer Ray</b> Laboratory Contact: Elaine-Walker	<b>Date: 8/17/18</b>	<b>COC No: 1</b> 3 of 5 pages 5
<b>AECOM</b> 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	Aroclor	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 160.3	Atrberg Limits ASTM D4318	Sample Specific Notes:
PDI-SC-S232 - 0 to 2	8/16/2018	15:10	SC		ED	5		x	x	x	x	x	
PDI-SC-S232 - 2 to 4	8/16/2018	15:15	SC	MS/MSD	ED	6		x	x	x	x		
PDI-SC-S232 - 4 to 6.2	8/16/2018	15:20	SC		ED	4		x	x	x	x		
PDI-SC-S263 - 0 to 2	8/16/2018	16:10	SC		ED	5		x	x	x	x	x	
PDI-SC-S263 - 2 to 3.8	8/16/2018	16:15	SC		ED	4		x	x	x	x		
PDI-SC-S263 - 3.8 to 5.9	8/16/2018	16:20	SC		ED	4		x	x	x	x		
PDI-SC-S108 - 0 to 1.9	8/16/2018	18:15	SC		ED	4		x	x	x	x		
PDI-SC-S108 - 1.9 to 3	8/16/2018	18:20	SC		ED	4		x	x	x	x		
PDI-SC-S108 - 3 to 4.7	8/16/2018	18:25	SC		ED	4		x	x	x	x		
PDI-SC-S108 - 4.7 to 6.7	8/16/2018	18:30	SC		ED	4		x	x	x	x		
PDI-SC-S108 - 6.7 to 8.8	8/16/2018	18:35	SC		ED	4		x	x	x	x		
PDI-SC-S108 - 6.7 to 8.8D	8/16/2018	18:35	SC		ED	3		x	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)

**Sample Disposal:**  
 Return To Client     Disposal By Lab     Archive For 12 Months

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

Relinquished by:	Company: AECOM	Date/Time: 8/17/18 1500	Received by:	Company: M.E.	Date/Time: 8/17/18 1500
Relinquished by:	Company: M.E.	Date/Time: 8/17/18 1530	Received by:	Company: TAPOR	Date/Time: 8/17/18 1530
Relinquished by:	Company: TAPOR	Date/Time: 8/20/18 1700	Received by:	Company: SRA TA	Date/Time: 8-21-18 1000

**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:

## SUBSURFACE SEDIMENT CHAIN OF CUSTODY

**Project Contact:** Amy Dahl / Chelsey Cook      **Site Contact:** Jennifer Ray      **Date:** 8/17/18  
**Tel:** (206) 438-2261 / (206) 438-2010      **Laboratory Contact:** Elaine-Walker      **Carrier:** Courier      **COC No.:** 1  
 of pages 5

**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	PCDD/Fs 1613B	Aroclor	Grain size ASTM D7928/D913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8700-SIML 9060, 160.3	Alterberg Limits ASTM D4318	WQ-PCBA	WQ-PAHs	WQ-D/F	WQ-TOC	Sample Specific Notes:
PDI-SC-S108 - 8.8 to 9.8	8/16/2018	18:40	SC		ED	4		x	x	x	x						
PDI-SC-S157 - 0 to 2	8/17/2018	10:10	SC		ED	5		x	x	x	x	x					
PDI-SC-S157 - 2 to 3.7	8/17/2018	10:15	SC		ED	4		x	x	x	x						
PDI-SC-S157 - 3.7 to 6	8/17/2018	10:17	SC		ED	4		x	x	x	x						
PDI-SC-S157 - 6 to 8	8/17/2018	10:25	SC	MS/MSD	ED	6		x	x	x	x						
PDI-SC-S157 - 8 to 10	8/17/2018	10:30	SC		ED	4		x	x	x	x						
PDI-SC-S157 - 10 to 12.4	8/17/2018	10:35	SC		ED	4		x	x	x	x						
PDI-SC-S157 - 12.4 to 14	8/17/2018	10:40	SC		ED	4		x	x	x	x						
PDI-SC-S157 - 14 to 15.9	8/17/2018	10:52	SC		ED	4		x	x	x	x						
<del>XXXXXXXXXX</del>	<del>XXXXXXXXXX</del>	<del>XXXXXXXXXX</del>	<del>XXXXXXXXXX</del>		<del>XXXXXXXXXX</del>												
PDI-RB-SS-180816-1110	8/16/2018	11:10	W		ED								x	x	x	x	
PDI-RB-SS-180817	8/17/2018	7:45	W		ED								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:**  Return To Client     Disposal By Lab     Archive For 12 Months

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

Relinquished by:	Company: AECOM	Date/Time: 8/17/18 1500	Received by:	Company: M-E	Date/Time: 8/17/18 1500
Relinquished by:	Company: M.E.	Date/Time: 8/17/18 1530	Received by:	Company: TARR	Date/Time: 8/17/18 1530
Relinquished by:	Company: TAP OR	Date/Time: 8/20/18 1500	Received by:	Company: SEA TA	Date/Time: 8/21/18 1000

ALS Burlington  
 1435 Niagara Court Unit 101  
 Burlington, Ontario Canada L7L 0E6  
 Ph: 1-905-331-3111 Fax: 0

Client Contact  
 AECOM  
 1111 3rd Ave Suite 1600  
 Seattle, WA 98101  
 Phone: (206) 438-2700 Fax: 1+(866) 495-3288  
 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling  
 Portland, OR  
 Project #: 60566335 Study: Subsurface Sediment  
 Sample Type:

## SUBSURFACE SEDIMENT CHAIN OF CUSTODY

Project Contact: Amy Dahl / Chelsey Cook  
 Tel: (206) 438-2261 / (206) 438-2010

Site Contact: Jennifer Ray  
 Laboratory Contact: Whitney Davis

Date: 8/6/18  
 Carrier: FedEx

Analysis Turnaround Time  
 Calendar (C) or Work Days (W) W  
 21 days  
 Other \_\_\_\_\_

COC No: 1  
 5 of 5 pages

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, TOC, Total Solids 8022A, 8270-526	AsTM 1500-160.3	Afterberg Limits 04318
PDI-SC-S053-0 to 2	8/16/18	1300	SC		ED	5		x	x	x	x	x	x
PDI-SC-S053-2 to 4	8/16/18	1305	SC		ED	4		x	x	x	x	x	x
PDI-SC-S053-4 to 6	8/16/18	1310	SC		ED	4		x	x	x	x	x	x
PDI-SC-S053-6 to 8	8/16/18	1315	SC		ED	4		x	x	x	x	x	x
PDI-SC-S053-8 to 10	8/16/18	1320	SC		ED	4		x	x	x	x	x	x
PDI-SC-S053-10 to 12.4	8/16/18	1325	SC		ED	4		x	x	x	x	x	x
PDI-SC-S113(A)-2.2 to 4.6	8/15/18	1530	SC		ED	3		x	x				

Sample Specific Notes:

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)

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

Special Instructions/QC Requirements & Comments:  
 one column text did not fit

Relinquished by:	Company: AECOM	Date/Time: 1500 8/17/18	Received by:	Company: M-E	Date/Time: 8/17/18 1500
Relinquished by:	Company: M.E.	Date/Time: 8/17/18 1530	Received by:	Company: SCA M	Date/Time: 8-21-18 1600
Relinquished by:	Company: SCA M	Date/Time: 8/20/18 1700	Received by:	Company: TAPOR	



# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79672-1

**Login Number: 79672**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: O'Connell, Jason I**

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	

