

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 580-78750-3

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

AECOM  
1111 Third Ave  
Suite 1600  
Seattle, Washington 98101

Attn: Amy Dahl

*M. Elaine Walker*

Authorized for release by:  
9/11/2018 5:01:25 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*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.*

1

2

3

4

5

6

7

8

9

10

11

12



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Definitions . . . . .	4
Client Sample Results . . . . .	6
QC Sample Results . . . . .	21
Chronicle . . . . .	29
Certification Summary . . . . .	30
Sample Summary . . . . .	31
Chain of Custody . . . . .	32
Receipt Checklists . . . . .	36
Isotope Dilution Summary . . . . .	37

# Case Narrative

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

TestAmerica Job ID: 580-78750-3

**Job ID: 580-78750-3**

**Laboratory: TestAmerica Seattle**

## Narrative

### CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-78750-3

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

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

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

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

#### **RECEIPT**

Three samples were received on 7/11/2018 1:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

The following samples were activated for all on hold analysis by the client on 8/16/18: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3).

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

This report contains results for PCB Congeners by Method 1668A, performed at TestAmerica Knoxville.

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.

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

**Samples PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) were analyzed for polychlorinated biphenyls congeners (PCBs) in accordance with EPA Method 1668A.** The samples were prepared on 08/28/2018 and analyzed on 09/07/2018.

Several analytes were detected in method blank MB 140-23147/17-B 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.

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

# Definitions/Glossary

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

TestAmerica Job ID: 580-78750-3

## Qualifiers

### Dioxin

Qualifier	Qualifier Description
C93	The compound co-eluted with PCB-93
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
C90	The compound co-eluted with PCB-90
C98	The compound co-eluted with PCB-98
B	Compound was found in the blank and sample.
C	The compound co-eluted with other compounds
C86	The compound co-eluted with PCB-86
C110	The compound co-eluted with PCB-110
C85	The compound co-eluted with PCB-85
C108	The compound co-eluted with PCB-108
C12	The compound co-eluted with PCB-12
C129	The compound co-eluted with PCB-129
C139	The compound co-eluted with PCB-139
C134	The compound co-eluted with PCB-134
C147	The compound co-eluted with PCB-147
C135	The compound co-eluted with PCB-135
C156	The compound co-eluted with PCB-156
C128	The compound co-eluted with PCB-128
C153	The compound co-eluted with PCB-153
C171	The compound co-eluted with PCB-171
C183	The compound co-eluted with PCB-183
C180	The compound co-eluted with PCB-180
C198	The compound co-eluted with PCB-198
C20	The compound co-eluted with PCB-20
C26	The compound co-eluted with PCB-26
C18	The compound co-eluted with PCB-18
C21	The compound co-eluted with PCB-21
C40	The compound co-eluted with PCB-40
C44	The compound co-eluted with PCB-44
C45	The compound co-eluted with PCB-45
C50	The compound co-eluted with PCB-50
C59	The compound co-eluted with PCB-59
C49	The compound co-eluted with PCB-49
C61	The compound co-eluted with PCB-61
C43	The compound co-eluted with PCB-43
C88	The compound co-eluted with PCB-88
C83	The compound co-eluted with PCB-83

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

TestAmerica Seattle

# Definitions/Glossary

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

TestAmerica Job ID: 580-78750-3

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B475**

**Lab Sample ID: 580-78750-1**

Date Collected: 07/09/18 14:00

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 51.8

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.0098	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-2</b>	<b>0.011</b>	<b>B</b>	0.0098	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-3</b>	<b>0.0013</b>	<b>J q</b>	0.0098	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-4	ND		0.020	0.0056	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-5	ND		0.0098	0.0046	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-6	ND		0.0098	0.0040	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-7	ND		0.0098	0.0041	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-8</b>	<b>0.0072</b>	<b>J q</b>	0.020	0.0037	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-9	ND		0.0098	0.0042	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-10	ND		0.0098	0.0045	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-11</b>	<b>0.036</b>	<b>q B</b>	0.020	0.0040	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-12	ND	C	0.020	0.0041	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-13	ND	C12	0.020	0.0041	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-14	ND		0.0098	0.0035	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-15</b>	<b>0.0062</b>	<b>J q</b>	0.0098	0.0044	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-16</b>	<b>0.0034</b>	<b>J q</b>	0.0098	0.00027	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-17</b>	<b>0.0047</b>	<b>J q</b>	0.0098	0.00024	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-18</b>	<b>0.013</b>	<b>J q C B</b>	0.020	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-19</b>	<b>0.0024</b>	<b>J q</b>	0.0098	0.00029	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-20</b>	<b>0.025</b>	<b>q C</b>	0.020	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-21</b>	<b>0.0080</b>	<b>J q C B</b>	0.020	0.00057	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-22</b>	<b>0.0066</b>	<b>J q</b>	0.0098	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-23	ND		0.0098	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-24	ND		0.0098	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-25</b>	<b>0.0022</b>	<b>J q</b>	0.0098	0.00054	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-26</b>	<b>0.0046</b>	<b>J q C</b>	0.020	0.00058	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-27</b>	<b>0.0012</b>	<b>J q</b>	0.0098	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-28</b>	<b>0.025</b>	<b>q C20</b>	0.020	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-29</b>	<b>0.0046</b>	<b>J q C26</b>	0.020	0.00058	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-30</b>	<b>0.013</b>	<b>J q C18 B</b>	0.020	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-31</b>	<b>0.021</b>		0.020	0.00057	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-32</b>	<b>0.0039</b>	<b>J B</b>	0.0098	0.00017	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-33</b>	<b>0.0080</b>	<b>J q C21 B</b>	0.020	0.00057	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-34	ND		0.0098	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-35	ND		0.0098	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-36	ND		0.0098	0.00058	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-37</b>	<b>0.0065</b>	<b>J q</b>	0.0098	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-38	ND		0.0098	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-39	ND		0.0098	0.00056	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-40</b>	<b>0.017</b>	<b>J q C</b>	0.029	0.00096	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-41</b>	<b>0.017</b>	<b>J q C40</b>	0.029	0.00096	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-42</b>	<b>0.011</b>		0.0098	0.00096	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-43	ND	C	0.020	0.00090	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-44</b>	<b>0.043</b>	<b>C B</b>	0.029	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-45</b>	<b>0.0049</b>	<b>J C</b>	0.020	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-46	ND		0.0098	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-47</b>	<b>0.043</b>	<b>C44 B</b>	0.029	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-48</b>	<b>0.0037</b>	<b>J q</b>	0.0098	0.00096	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-49</b>	<b>0.028</b>	<b>C</b>	0.020	0.00078	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B475**

**Lab Sample ID: 580-78750-1**

Date Collected: 07/09/18 14:00

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 51.8

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.0042	J C	0.020	0.00093	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-51	0.0049	J C45	0.020	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-52	0.052	B	0.0098	0.00095	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-53	0.0042	J C50	0.020	0.00093	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-54	ND		0.0098	0.000031	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-55	0.0013	J q	0.0098	0.00070	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-56	0.014		0.0098	0.00070	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-57	ND		0.0098	0.00071	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-58	ND		0.0098	0.00072	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-59	0.0032	J q C	0.029	0.00068	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-60	0.0064	J q	0.0098	0.00071	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-61	0.072	C B	0.039	0.00067	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-62	0.0032	J q C59	0.029	0.00068	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-63	0.0027	J	0.0098	0.00065	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-64	0.016		0.0098	0.00064	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-65	0.043	C44 B	0.029	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-66	0.047		0.0098	0.00066	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-67	ND		0.0098	0.00061	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-68	ND		0.0098	0.00063	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-69	0.028	C49	0.020	0.00078	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-70	0.072	C61 B	0.039	0.00067	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-71	0.017	J q C40	0.029	0.00096	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-72	ND		0.0098	0.00069	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-73	ND	C43	0.020	0.00090	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-74	0.072	C61 B	0.039	0.00067	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-75	0.0032	J q C59	0.029	0.00068	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-76	0.072	C61 B	0.039	0.00067	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-77	0.0059	J	0.0098	0.00071	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-78	ND		0.0098	0.00072	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-79	ND		0.0098	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-80	ND		0.0098	0.00061	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-81	ND		0.0098	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-82	0.0087	J	0.0098	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-83	0.064	C	0.020	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-84	0.017		0.0098	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-85	0.020	J C	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-86	0.051	J C	0.059	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-87	0.051	J C86	0.059	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-88	0.011	J q C	0.020	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-89	ND		0.0098	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-90	0.088	C	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-91	0.011	J q C88	0.020	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-92	0.017		0.0098	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-93	0.0015	J q C	0.020	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-94	ND		0.0098	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-95	0.053	q	0.0098	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-96	ND		0.0098	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-97	0.051	J C86	0.059	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-98	ND	C	0.020	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B475**

**Lab Sample ID: 580-78750-1**

Date Collected: 07/09/18 14:00

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 51.8

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.064	C83	0.020	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-100	0.0015	J q C93	0.020	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-101	0.088	C90	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-102	ND	C98	0.020	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-103	ND		0.0098	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-104	ND		0.0098	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-105	0.026	q	0.0098	0.00093	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-106	ND		0.0098	0.00098	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-107	0.0087	J q	0.0098	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-108	0.0036	J C B	0.020	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-109	0.051	J C86	0.059	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-110	0.10	C B	0.020	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-111	ND		0.0098	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-112	ND		0.0098	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-113	0.088	C90	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-114	ND		0.0098	0.00092	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-115	0.10	C110 B	0.020	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-116	0.020	J C85	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-117	0.020	J C85	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-118	0.088		0.0098	0.00093	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-119	0.051	J C86	0.059	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-120	ND		0.0098	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-121	ND		0.0098	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-122	ND		0.0098	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-123	0.0022	J q	0.0098	0.00099	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-124	0.0036	J C108 B	0.020	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-125	0.051	J C86	0.059	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-126	ND		0.0098	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-127	ND		0.0098	0.00098	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-128	0.021	C	0.020	0.0015	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-129	0.17	C B	0.039	0.0016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-130	0.0068	J q	0.0098	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-131	ND		0.0098	0.0022	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-132	0.027	q	0.0098	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-133	ND		0.0098	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-134	0.0044	J q C	0.020	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-135	0.035	C	0.020	0.000082	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-136	0.010		0.0098	0.000059	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-137	0.0066	J	0.0098	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-138	0.17	C129 B	0.039	0.0016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-139	ND	C	0.020	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-140	ND	C139	0.020	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-141	0.027		0.0098	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-142	ND		0.0098	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-143	0.0044	J q C134	0.020	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-144	0.0042	J	0.0098	0.000075	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-145	ND		0.0098	0.000056	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-146	0.023		0.0098	0.0017	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-147	0.10	C B	0.020	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B475**

**Lab Sample ID: 580-78750-1**

Date Collected: 07/09/18 14:00

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 51.8

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0098	0.000080	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-149</b>	<b>0.10</b>	<b>C147 B</b>	0.020	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-150	ND		0.0098	0.000054	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-151</b>	<b>0.035</b>	<b>C135</b>	0.020	0.000082	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-152	ND		0.0098	0.000058	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-153</b>	<b>0.12</b>	<b>C B</b>	0.020	0.0014	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-154	ND		0.0098	0.000064	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-155	ND		0.0098	0.000054	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-156</b>	<b>0.017</b>	<b>J C B</b>	0.020	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-157</b>	<b>0.017</b>	<b>J C156 B</b>	0.020	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-158</b>	<b>0.014</b>		0.0098	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-159	ND		0.0098	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-160</b>	<b>0.17</b>	<b>C129 B</b>	0.039	0.0016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-161	ND		0.0098	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-162	ND		0.0098	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-163</b>	<b>0.17</b>	<b>C129 B</b>	0.039	0.0016	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-164</b>	<b>0.0084</b>	<b>J</b>	0.0098	0.0014	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-165	ND		0.0098	0.0015	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-166</b>	<b>0.021</b>	<b>C128</b>	0.020	0.0015	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-167</b>	<b>0.0065</b>	<b>J</b>	0.0098	0.00096	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-168</b>	<b>0.12</b>	<b>C153 B</b>	0.020	0.0014	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-169	ND		0.0098	0.00097	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-170</b>	<b>0.037</b>		0.0098	0.00057	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-171</b>	<b>0.013</b>	<b>J C</b>	0.020	0.00055	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-172</b>	<b>0.010</b>		0.0098	0.00054	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-173</b>	<b>0.013</b>	<b>J C171</b>	0.020	0.00055	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-174</b>	<b>0.036</b>		0.0098	0.00051	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-175	ND		0.0098	0.00049	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-176</b>	<b>0.0029</b>	<b>J q</b>	0.0098	0.00037	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-177</b>	<b>0.022</b>		0.0098	0.00052	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-178</b>	<b>0.0085</b>	<b>J q</b>	0.0098	0.00053	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-179</b>	<b>0.016</b>		0.0098	0.00039	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-180</b>	<b>0.091</b>	<b>C B</b>	0.020	0.00041	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-181	ND		0.0098	0.00049	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-182	ND		0.0098	0.00047	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-183</b>	<b>0.030</b>	<b>C</b>	0.020	0.00048	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-184	ND		0.0098	0.00040	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-185</b>	<b>0.030</b>	<b>C183</b>	0.020	0.00048	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-186	ND		0.0098	0.00039	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-187</b>	<b>0.058</b>		0.0098	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-188	ND		0.0098	0.00034	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-189	ND		0.0098	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-190</b>	<b>0.0070</b>	<b>J</b>	0.0098	0.00036	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-191</b>	<b>0.0014</b>	<b>J q</b>	0.0098	0.00037	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-192	ND		0.0098	0.00041	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-193</b>	<b>0.091</b>	<b>C180 B</b>	0.020	0.00041	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-194</b>	<b>0.019</b>	<b>B</b>	0.0098	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-195</b>	<b>0.0068</b>	<b>J q</b>	0.0098	0.00050	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-196</b>	<b>0.0094</b>	<b>J q</b>	0.0098	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B475**

**Lab Sample ID: 580-78750-1**

Date Collected: 07/09/18 14:00

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 51.8

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.0098	0.000091	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-198</b>	<b>0.025</b>	<b>C</b>	0.020	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-199</b>	<b>0.025</b>	<b>C198</b>	0.020	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-200</b>	<b>0.0015</b>	<b>J q</b>	0.0098	0.000081	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-201</b>	<b>0.0023</b>	<b>J q</b>	0.0098	0.000083	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-202</b>	<b>0.0048</b>	<b>J q</b>	0.0098	0.000093	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-203</b>	<b>0.016</b>	<b>B</b>	0.0098	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-204	ND		0.0098	0.000091	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
PCB-205	ND		0.0098	0.00039	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-206</b>	<b>0.018</b>		0.0098	0.0015	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-207</b>	<b>0.0021</b>	<b>J</b>	0.0098	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-208</b>	<b>0.0052</b>	<b>J q</b>	0.0098	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
<b>PCB-209</b>	<b>0.026</b>	<b>q</b>	0.0098	0.000058	ng/g	☼	08/28/18 06:14	09/07/18 19:34	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-1L	64		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-3L	69		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-4L	68		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-15L	72		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-19L	79		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-37L	84		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-54L	70		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-77L	76		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-81L	78		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-104L	80		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-105L	90		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-114L	89		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-118L	87		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-123L	88		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-126L	84		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-155L	85		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-156L	85	C	30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-157L	85	C156	30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-167L	89		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-169L	88		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-170L	85		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-188L	87		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-189L	81		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-202L	93		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-205L	73		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-206L	82		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-208L	85		30 - 140				08/28/18 06:14	09/07/18 19:34	1
PCB-209L	78		30 - 140				08/28/18 06:14	09/07/18 19:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-28L	97		40 - 125				08/28/18 06:14	09/07/18 19:34	1
PCB-111L	82		40 - 125				08/28/18 06:14	09/07/18 19:34	1
PCB-178L	100		40 - 125				08/28/18 06:14	09/07/18 19:34	1

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B476**

**Lab Sample ID: 580-78750-2**

Date Collected: 07/09/18 15:05

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 50.3

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.00077	J q	0.0097	0.00010	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-2	0.0076	J B	0.0097	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-3	0.00084	J q	0.0097	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-4	ND		0.019	0.0051	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-5	ND		0.0097	0.0041	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-6	ND		0.0097	0.0036	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-7	ND		0.0097	0.0037	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-8	0.0067	J q	0.019	0.0033	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-9	ND		0.0097	0.0038	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-10	ND		0.0097	0.0041	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-11	0.042	q B	0.019	0.0035	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-12	ND	C	0.019	0.0037	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-13	ND	C12	0.019	0.0037	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-14	ND		0.0097	0.0031	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-15	0.0053	J q	0.0097	0.0039	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-16	0.0026	J	0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-17	0.0029	J q	0.0097	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-18	0.0095	J C B	0.019	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-19	ND		0.0097	0.00022	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-20	0.025	C	0.019	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-21	0.0080	J q C B	0.019	0.00045	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-22	0.0086	J	0.0097	0.00047	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-23	ND		0.0097	0.00047	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-24	ND		0.0097	0.00015	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-25	0.0026	J	0.0097	0.00043	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-26	0.0042	J C	0.019	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-27	ND		0.0097	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-28	0.025	C20	0.019	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-29	0.0042	J C26	0.019	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-30	0.0095	J C18 B	0.019	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-31	0.018	J	0.019	0.00045	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-32	0.0034	J q B	0.0097	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-33	0.0080	J q C21 B	0.019	0.00045	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-34	ND		0.0097	0.00049	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-35	ND		0.0097	0.00048	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-36	ND		0.0097	0.00046	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-37	0.0085	J	0.0097	0.00047	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-38	ND		0.0097	0.00049	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-39	ND		0.0097	0.00044	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-40	0.0098	J q C	0.029	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-41	0.0098	J q C40	0.029	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-42	0.0062	J q	0.0097	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-43	ND	C	0.019	0.00080	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-44	0.033	C B	0.029	0.00075	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-45	0.0044	J C	0.019	0.00089	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-46	ND		0.0097	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-47	0.033	C44 B	0.029	0.00075	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-48	0.0036	J q	0.0097	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-49	0.021	C	0.019	0.00070	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B476**

**Lab Sample ID: 580-78750-2**

Date Collected: 07/09/18 15:05

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 50.3

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.0026	J C	0.019	0.00083	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-51	0.0044	J C45	0.019	0.00089	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-52	0.048	B	0.0097	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-53	0.0026	J C50	0.019	0.00083	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-54	ND		0.0097	0.000023	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-55	0.0015	J q	0.0097	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-56	0.013		0.0097	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-57	ND		0.0097	0.00063	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-58	ND		0.0097	0.00064	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-59	0.0026	J q C	0.029	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-60	0.0059	J	0.0097	0.00063	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-61	0.059	C B	0.039	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-62	0.0026	J q C59	0.029	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-63	ND		0.0097	0.00058	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-64	0.014		0.0097	0.00057	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-65	0.033	C44 B	0.029	0.00075	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-66	0.035	q	0.0097	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-67	0.00062	J q	0.0097	0.00054	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-68	ND		0.0097	0.00056	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-69	0.021	C49	0.019	0.00070	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-70	0.059	C61 B	0.039	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-71	0.0098	J q C40	0.029	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-72	ND		0.0097	0.00062	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-73	ND	C43	0.019	0.00080	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-74	0.059	C61 B	0.039	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-75	0.0026	J q C59	0.029	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-76	0.059	C61 B	0.039	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-77	0.0050	J	0.0097	0.00060	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-78	ND		0.0097	0.00064	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-79	ND		0.0097	0.00055	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-80	ND		0.0097	0.00054	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-81	ND		0.0097	0.00058	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-82	0.0081	J q	0.0097	0.00022	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-83	0.056	C	0.019	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-84	0.021		0.0097	0.00022	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-85	0.013	J q C	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-86	0.053	J q C	0.058	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-87	0.053	J q C86	0.058	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-88	0.013	J C	0.019	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-89	ND		0.0097	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-90	0.099	C	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-91	0.013	J C88	0.019	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-92	0.017		0.0097	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-93	0.0025	J C	0.019	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-94	ND		0.0097	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-95	0.068	q	0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-96	ND		0.0097	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-97	0.053	J q C86	0.058	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-98	0.0025	J C	0.019	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B476**

**Lab Sample ID: 580-78750-2**

Date Collected: 07/09/18 15:05

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 50.3

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.056	C83	0.019	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-100	0.0025	J C93	0.019	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-101	0.099	C90	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-102	0.0025	J C98	0.019	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-103	ND		0.0097	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-104	ND		0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-105	0.036		0.0097	0.00088	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-106	ND		0.0097	0.00091	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-107	0.0078	J	0.0097	0.00097	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-108	0.0039	J C B	0.019	0.00093	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-109	0.053	J q C86	0.058	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-110	0.11	C B	0.019	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-111	ND		0.0097	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-112	ND		0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-113	0.099	C90	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-114	ND		0.0097	0.00085	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-115	0.11	C110 B	0.019	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-116	0.013	J q C85	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-117	0.013	J q C85	0.029	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-118	0.087		0.0097	0.00083	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-119	0.053	J q C86	0.058	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-120	ND		0.0097	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-121	ND		0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-122	ND		0.0097	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-123	ND		0.0097	0.00090	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-124	0.0039	J C108 B	0.019	0.00093	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-125	0.053	J q C86	0.058	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-126	ND		0.0097	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-127	ND		0.0097	0.00091	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-128	0.029	C	0.019	0.00097	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-129	0.18	C B	0.039	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-130	0.011		0.0097	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-131	ND		0.0097	0.0014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-132	0.046		0.0097	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-133	0.0031	J q	0.0097	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-134	0.0062	J C	0.019	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-135	0.049	C	0.019	0.000031	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-136	0.012		0.0097	0.000022	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-137	0.0066	J	0.0097	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-138	0.18	C129 B	0.039	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-139	0.0030	J C	0.019	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-140	0.0030	J C139	0.019	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-141	0.027		0.0097	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-142	ND		0.0097	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-143	0.0062	J C134	0.019	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-144	0.0036	J q	0.0097	0.000028	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-145	ND		0.0097	0.000021	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-146	0.026		0.0097	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-147	0.12	C B	0.019	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1

TestAmerica Seattle



# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B476**

**Lab Sample ID: 580-78750-2**

Date Collected: 07/09/18 15:05

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 50.3

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.0097	0.000030	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-149</b>	<b>0.12</b>	<b>C147 B</b>	0.019	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-150	ND		0.0097	0.000020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-151</b>	<b>0.049</b>	<b>C135</b>	0.019	0.000031	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-152	ND		0.0097	0.000022	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-153</b>	<b>0.13</b>	<b>C B</b>	0.019	0.00088	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-154</b>	<b>0.00095</b>	<b>J q</b>	0.0097	0.000024	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-155	ND		0.0097	0.000020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-156</b>	<b>0.015</b>	<b>J q C B</b>	0.019	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-157</b>	<b>0.015</b>	<b>J q C156 E</b>	0.019	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-158</b>	<b>0.016</b>		0.0097	0.00079	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-159	ND		0.0097	0.00084	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-160</b>	<b>0.18</b>	<b>C129 B</b>	0.039	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-161	ND		0.0097	0.00083	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-162	ND		0.0097	0.00082	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-163</b>	<b>0.18</b>	<b>C129 B</b>	0.039	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-164</b>	<b>0.011</b>	<b>q</b>	0.0097	0.00088	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-165	ND		0.0097	0.00094	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-166</b>	<b>0.029</b>	<b>C128</b>	0.019	0.00097	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-167</b>	<b>0.0060</b>	<b>J</b>	0.0097	0.00059	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-168</b>	<b>0.13</b>	<b>C153 B</b>	0.019	0.00088	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-169	ND		0.0097	0.00057	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-170</b>	<b>0.042</b>		0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-171</b>	<b>0.013</b>	<b>J C</b>	0.019	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-172</b>	<b>0.0072</b>	<b>J</b>	0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-173</b>	<b>0.013</b>	<b>J C171</b>	0.019	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-174</b>	<b>0.035</b>	<b>q</b>	0.0097	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-175	ND		0.0097	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-176</b>	<b>0.0035</b>	<b>J</b>	0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-177</b>	<b>0.027</b>		0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-178</b>	<b>0.0086</b>	<b>J q</b>	0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-179</b>	<b>0.017</b>		0.0097	0.00015	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-180</b>	<b>0.089</b>	<b>C B</b>	0.019	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-181	ND		0.0097	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-182	ND		0.0097	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-183</b>	<b>0.024</b>	<b>C</b>	0.019	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-184	ND		0.0097	0.00015	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-185</b>	<b>0.024</b>	<b>C183</b>	0.019	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-186	ND		0.0097	0.00015	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-187</b>	<b>0.057</b>		0.0097	0.00017	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-188	ND		0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-189	ND		0.0097	0.00065	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-190</b>	<b>0.0079</b>	<b>J q</b>	0.0097	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-191</b>	<b>0.0015</b>	<b>J q</b>	0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-192	ND		0.0097	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-193</b>	<b>0.089</b>	<b>C180 B</b>	0.019	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-194</b>	<b>0.020</b>	<b>B</b>	0.0097	0.00049	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-195	ND		0.0097	0.00053	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
<b>PCB-196</b>	<b>0.010</b>		0.0097	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B476**

**Lab Sample ID: 580-78750-2**

Date Collected: 07/09/18 15:05

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 50.3

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.00055	J q	0.0097	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-198	0.027	C	0.019	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-199	0.027	C198	0.019	0.00016	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-200	0.0022	J	0.0097	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-201	0.0020	J q	0.0097	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-202	0.0048	J q	0.0097	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-203	0.011	q B	0.0097	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-204	ND		0.0097	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-205	ND		0.0097	0.00041	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-206	0.013	q	0.0097	0.0014	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-207	ND		0.0097	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-208	0.0047	J q	0.0097	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
PCB-209	0.031		0.0097	0.00020	ng/g	☼	08/28/18 06:14	09/07/18 20:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-1L	73		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-3L	73		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-4L	77		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-15L	77		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-19L	85		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-37L	83		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-54L	70		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-77L	88		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-81L	90		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-104L	77		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-105L	92		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-114L	91		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-118L	92		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-123L	89		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-126L	84		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-155L	77		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-156L	81	C	30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-157L	81	C156	30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-167L	89		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-169L	92		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-170L	85		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-188L	88		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-189L	83		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-202L	99		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-205L	74		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-206L	82		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-208L	82		30 - 140				08/28/18 06:14	09/07/18 20:35	1
PCB-209L	81		30 - 140				08/28/18 06:14	09/07/18 20:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
PCB-28L	94		40 - 125				08/28/18 06:14	09/07/18 20:35	1
PCB-111L	89		40 - 125				08/28/18 06:14	09/07/18 20:35	1
PCB-178L	99		40 - 125				08/28/18 06:14	09/07/18 20:35	1



# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B477**

**Lab Sample ID: 580-78750-3**

Date Collected: 07/09/18 12:45

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 60.6

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	0.0032	J	0.0096	0.00028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-2	0.0048	J B	0.0096	0.00032	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-3	0.0024	J q	0.0096	0.00034	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-4	0.0099	J q	0.019	0.0062	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-5	ND		0.0096	0.0051	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-6	ND		0.0096	0.0045	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-7	ND		0.0096	0.0046	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-8	0.016	J q	0.019	0.0041	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-9	ND		0.0096	0.0047	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-10	ND		0.0096	0.0050	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-11	0.031	B	0.019	0.0044	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-12	0.0047	J q C	0.019	0.0045	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-13	0.0047	J q C12	0.019	0.0045	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-14	ND		0.0096	0.0039	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-15	0.016	q	0.0096	0.0049	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-16	0.021		0.0096	0.00028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-17	0.027		0.0096	0.00025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-18	0.037	q C B	0.019	0.00022	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-19	0.0027	J q	0.0096	0.00031	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-20	0.093	C	0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-21	0.038	C B	0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-22	0.023		0.0096	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-23	ND		0.0096	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-24	ND		0.0096	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-25	0.0060	J q	0.0096	0.00095	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-26	0.012	J C	0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-27	0.0046	J	0.0096	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-28	0.093	C20	0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-29	0.012	J C26	0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-30	0.037	q C18 B	0.019	0.00022	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-31	0.067		0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-32	0.016	B	0.0096	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-33	0.038	C21 B	0.019	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-34	ND		0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-35	0.0019	J q	0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-36	ND		0.0096	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-37	0.025		0.0096	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-38	ND		0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-39	ND		0.0096	0.00098	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-40	0.051	C	0.029	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-41	0.051	C40	0.029	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-42	0.033	q	0.0096	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-43	ND	C	0.019	0.0027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-44	0.15	C B	0.029	0.0025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-45	0.014	J q C	0.019	0.0030	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-46	ND		0.0096	0.0036	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-47	0.15	C44 B	0.029	0.0025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-48	0.021		0.0096	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-49	0.12	C	0.019	0.0023	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B477**

**Lab Sample ID: 580-78750-3**

Date Collected: 07/09/18 12:45

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 60.6

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	0.0094	J q C	0.019	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-51	0.014	J q C45	0.019	0.0030	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-52	0.19	B	0.0096	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-53	0.0094	J q C50	0.019	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-54	ND		0.0096	0.000029	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-55	ND		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-56	0.049		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-57	ND		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-58	ND		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-59	0.012	J C	0.029	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-60	0.013		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-61	0.21	C B	0.038	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-62	0.012	J C59	0.029	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-63	0.0057	J	0.0096	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-64	0.047		0.0096	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-65	0.15	C44 B	0.029	0.0025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-66	0.14		0.0096	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-67	ND		0.0096	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-68	ND		0.0096	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-69	0.12	C49	0.019	0.0023	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-70	0.21	C61 B	0.038	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-71	0.051	C40	0.029	0.0028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-72	0.0084	J	0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-73	ND	C43	0.019	0.0027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-74	0.21	C61 B	0.038	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-75	0.012	J C59	0.029	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-76	0.21	C61 B	0.038	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-77	0.012		0.0096	0.0020	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-78	ND		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-79	ND		0.0096	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-80	ND		0.0096	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-81	ND		0.0096	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-82	0.032		0.0096	0.00015	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-83	0.31	C	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-84	0.074		0.0096	0.00015	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-85	0.048	q C	0.029	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-86	0.21	C	0.058	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-87	0.21	C86	0.058	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-88	0.071	C	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-89	ND		0.0096	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-90	0.44	C	0.029	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-91	0.071	C88	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-92	0.099		0.0096	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-93	0.026	q C	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-94	ND		0.0096	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-95	0.37		0.0096	0.00014	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-96	ND		0.0096	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-97	0.21	C86	0.058	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-98	0.0089	J C	0.019	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B477**

**Lab Sample ID: 580-78750-3**

Date Collected: 07/09/18 12:45

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 60.6

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	0.31	C83	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-100	0.026	q C93	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-101	0.44	C90	0.029	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-102	0.0089	J C98	0.019	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-103	0.011	q	0.0096	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-104	ND		0.0096	0.000097	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-105	0.068		0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-106	ND		0.0096	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-107	0.039		0.0096	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-108	0.0071	J C B	0.019	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-109	0.21	C86	0.058	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-110	0.42	C B	0.019	0.000093	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-111	ND		0.0096	0.000090	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-112	ND		0.0096	0.000095	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-113	0.44	C90	0.029	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-114	0.0038	J q	0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-115	0.42	C110 B	0.019	0.000093	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-116	0.048	q C85	0.029	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-117	0.048	q C85	0.029	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-118	0.24		0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-119	0.21	C86	0.058	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-120	0.0038	J q	0.0096	0.000091	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-121	ND		0.0096	0.000094	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-122	ND		0.0096	0.0014	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-123	0.0042	J q	0.0096	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-124	0.0071	J C108 B	0.019	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-125	0.21	C86	0.058	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-126	ND		0.0096	0.0013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-127	ND		0.0096	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-128	0.064	C	0.019	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-129	0.57	C B	0.038	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-130	0.046		0.0096	0.0025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-131	ND		0.0096	0.0026	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-132	0.18		0.0096	0.0024	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-133	0.013		0.0096	0.0024	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-134	0.032	C	0.019	0.0025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-135	0.18	q C	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-136	0.10		0.0096	0.000091	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-137	0.014		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-138	0.57	C129 B	0.038	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-139	0.0093	J C	0.019	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-140	0.0093	J C139	0.019	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-141	0.089		0.0096	0.0022	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-142	ND		0.0096	0.0024	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-143	0.032	C134	0.019	0.0025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-144	0.023		0.0096	0.00011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-145	ND		0.0096	0.000086	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-146	0.15		0.0096	0.0021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-147	0.69	C B	0.019	0.0024	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B477**

**Lab Sample ID: 580-78750-3**

Date Collected: 07/09/18 12:45

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 60.6

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	0.0023	J q	0.0096	0.00012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-149	0.69	C147 B	0.019	0.0024	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-150	0.0022	J q	0.0096	0.000083	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-151	0.18	q C135	0.019	0.00013	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-152	ND		0.0096	0.000089	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-153	0.57	C B	0.019	0.0017	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-154	0.023		0.0096	0.000098	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-155	ND		0.0096	0.000083	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-156	0.034	C B	0.019	0.0023	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-157	0.034	C156 B	0.019	0.0023	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-158	0.035		0.0096	0.0015	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-159	0.0066	J	0.0096	0.0016	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-160	0.57	C129 B	0.038	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-161	ND		0.0096	0.0016	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-162	ND		0.0096	0.0015	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-163	0.57	C129 B	0.038	0.0019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-164	0.045		0.0096	0.0017	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-165	ND		0.0096	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-166	0.064	C128	0.019	0.0018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-167	0.0096	q	0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-168	0.57	C153 B	0.019	0.0017	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-169	ND		0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-170	0.17		0.0096	0.00041	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-171	0.053	C	0.019	0.00039	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-172	0.035		0.0096	0.00039	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-173	0.053	C171	0.019	0.00039	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-174	0.20		0.0096	0.00037	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-175	0.0051	J q	0.0096	0.00035	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-176	0.026		0.0096	0.00027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-177	0.13		0.0096	0.00038	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-178	0.038	q	0.0096	0.00038	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-179	0.099		0.0096	0.00028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-180	0.38	C B	0.019	0.00030	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-181	ND		0.0096	0.00035	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-182	ND		0.0096	0.00034	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-183	0.14	C	0.019	0.00035	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-184	ND		0.0096	0.00029	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-185	0.14	C183	0.019	0.00035	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-186	ND		0.0096	0.00028	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-187	0.26		0.0096	0.00033	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-188	ND		0.0096	0.00025	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-189	0.0045	J	0.0096	0.0010	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-190	0.025		0.0096	0.00026	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-191	0.0051	J q	0.0096	0.00027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-192	ND		0.0096	0.00030	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-193	0.38	C180 B	0.019	0.00030	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-194	0.077	B	0.0096	0.0011	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-195	0.039		0.0096	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-196	0.033		0.0096	0.00027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1

TestAmerica Seattle

# Client Sample Results

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

TestAmerica Job ID: 580-78750-3

**Client Sample ID: PDI-SG-B477**

**Lab Sample ID: 580-78750-3**

Date Collected: 07/09/18 12:45

Matrix: Solid

Date Received: 07/11/18 13:40

Percent Solids: 60.6

**Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)**

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	0.0031	J	0.0096	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-198	0.093	C	0.019	0.00027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-199	0.093	C198	0.019	0.00027	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-200	0.011		0.0096	0.00018	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-201	0.0092	J	0.0096	0.00019	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-202	0.021		0.0096	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-203	0.054	B	0.0096	0.00024	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-204	ND		0.0096	0.00021	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-205	ND		0.0096	0.00089	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-206	0.031		0.0096	0.0012	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-207	0.0040	J q	0.0096	0.00083	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-208	0.0095	J	0.0096	0.00082	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1
PCB-209	0.048		0.0096	0.00022	ng/g	☼	08/28/18 06:14	09/07/18 21:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-1L	77		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-3L	77		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-4L	77		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-15L	77		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-19L	88		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-37L	84		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-54L	66		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-77L	81		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-81L	83		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-104L	75		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-105L	90		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-114L	89		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-118L	86		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-123L	87		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-126L	83		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-155L	78		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-156L	84	C	30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-157L	84	C156	30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-167L	89		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-169L	87		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-170L	82		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-188L	87		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-189L	81		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-202L	101		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-205L	75		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-206L	82		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-208L	88		30 - 140	08/28/18 06:14	09/07/18 21:37	1
PCB-209L	79		30 - 140	08/28/18 06:14	09/07/18 21:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	94		40 - 125	08/28/18 06:14	09/07/18 21:37	1
PCB-111L	95		40 - 125	08/28/18 06:14	09/07/18 21:37	1
PCB-178L	95		40 - 125	08/28/18 06:14	09/07/18 21:37	1

TestAmerica Seattle



# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

**Lab Sample ID: MB 140-23147/17-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.010	0.000050	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-2	0.000311	J q	0.010	0.000059	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-3	ND		0.010	0.000068	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-4	ND		0.020	0.0057	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-5	ND		0.010	0.0049	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-6	ND		0.010	0.0043	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-7	ND		0.010	0.0044	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-8	ND		0.020	0.0040	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-9	ND		0.010	0.0046	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-10	ND		0.010	0.0049	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-11	0.00426	J q	0.020	0.0042	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-12	ND	C	0.020	0.0044	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-13	ND	C12	0.020	0.0044	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-14	ND		0.010	0.0037	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-15	ND		0.010	0.0049	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-16	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-17	ND		0.010	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-18	0.00152	J C	0.020	0.000092	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-19	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-20	ND	C	0.020	0.00031	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-21	0.000625	J q C	0.020	0.00030	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-22	ND		0.010	0.00032	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-23	ND		0.010	0.00031	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-24	ND		0.010	0.000088	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-25	ND		0.010	0.00029	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-26	ND	C	0.020	0.00030	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-27	ND		0.010	0.000076	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-28	ND	C20	0.020	0.00031	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-29	ND	C26	0.020	0.00030	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-30	0.00152	J C18	0.020	0.000092	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-31	ND		0.020	0.00030	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-32	0.000358	J q	0.010	0.000073	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-33	0.000625	J q C21	0.020	0.00030	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-34	ND		0.010	0.00033	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-35	ND		0.010	0.00032	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-36	ND		0.010	0.00031	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-37	ND		0.010	0.00032	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-38	ND		0.010	0.00033	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-39	ND		0.010	0.00029	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-40	ND	C	0.030	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-41	ND	C40	0.030	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-42	ND		0.010	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-43	ND	C	0.020	0.00018	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-44	0.00310	J q C	0.030	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-45	ND	C	0.020	0.00021	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-46	ND		0.010	0.00025	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-47	0.00310	J q C44	0.030	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-48	ND		0.010	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: MB 140-23147/17-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	ND	C	0.020	0.00016	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-50	ND	C	0.020	0.00019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-51	ND	C45	0.020	0.00021	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-52	0.00139	J q	0.010	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-53	ND	C50	0.020	0.00019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-54	ND		0.010	0.000042	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-55	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-56	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-57	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-58	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-59	ND	C	0.030	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-60	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-61	0.00209	J C	0.040	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-62	ND	C59	0.030	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-63	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-64	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-65	0.00310	J q C44	0.030	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-66	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-67	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-68	0.000790	J q	0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-69	ND	C49	0.020	0.00016	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-70	0.00209	J C61	0.040	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-71	ND	C40	0.030	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-72	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-73	ND	C43	0.020	0.00018	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-74	0.00209	J C61	0.040	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-75	ND	C59	0.030	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-76	0.00209	J C61	0.040	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-77	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-78	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-79	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-80	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-81	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-82	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-83	ND	C	0.020	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-84	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-85	ND	C	0.030	0.000084	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-86	ND	C	0.060	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-87	ND	C86	0.060	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-88	ND	C	0.020	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-89	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-90	ND	C	0.030	0.000086	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-91	ND	C88	0.020	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-92	ND		0.010	0.000098	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-93	ND	C	0.020	0.000099	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-94	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-95	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-96	ND		0.010	0.000084	ng/g		08/28/18 06:15	09/06/18 13:29	1

TestAmerica Seattle



# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: MB 140-23147/17-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	MB MB		RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-97	ND	C86	0.060	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-98	ND	C	0.020	0.000096	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-99	ND	C83	0.020	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-100	ND	C93	0.020	0.000099	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-101	ND	C90	0.030	0.000086	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-102	ND	C98	0.020	0.000096	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-103	ND		0.010	0.000099	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-104	ND		0.010	0.000075	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-105	ND		0.010	0.000097	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-106	ND		0.010	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-107	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-108	0.000682	J q C	0.020	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-109	ND	C86	0.060	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-110	0.00114	J q C	0.020	0.000072	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-111	ND		0.010	0.000069	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-112	ND		0.010	0.000073	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-113	ND	C90	0.030	0.000086	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-114	ND		0.010	0.000095	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-115	0.00114	J q C110	0.020	0.000072	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-116	ND	C85	0.030	0.000084	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-117	ND	C85	0.030	0.000084	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-118	ND		0.010	0.000093	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-119	ND	C86	0.060	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-120	ND		0.010	0.000071	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-121	ND		0.010	0.000073	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-122	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-123	ND		0.010	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-124	0.000682	J q C108	0.020	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-125	ND	C86	0.060	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-126	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-127	ND		0.010	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-128	ND	C	0.020	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-129	0.00115	J q C	0.040	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-130	ND		0.010	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-131	ND		0.010	0.00021	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-132	ND		0.010	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-133	ND		0.010	0.00019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-134	ND	C	0.020	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-135	ND	C	0.020	0.000027	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-136	ND		0.010	0.000020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-137	ND		0.010	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-138	0.00115	J q C129	0.040	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-139	ND	C	0.020	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-140	ND	C139	0.020	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-141	ND		0.010	0.00018	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-142	ND		0.010	0.00019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-143	ND	C134	0.020	0.00020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-144	ND		0.010	0.000025	ng/g		08/28/18 06:15	09/06/18 13:29	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: MB 140-23147/17-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-145	ND		0.010	0.000019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-146	ND		0.010	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-147	0.000980	J q C	0.020	0.00019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-148	ND		0.010	0.000026	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-149	0.000980	J q C147	0.020	0.00019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-150	ND		0.010	0.000018	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-151	ND	C135	0.020	0.000027	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-152	ND		0.010	0.000019	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-153	0.00120	J q C	0.020	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-154	ND		0.010	0.000021	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-155	ND		0.010	0.000018	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-156	0.000422	J q C	0.020	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-157	0.000422	J q C156	0.020	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-158	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-159	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-160	0.00115	J q C129	0.040	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-161	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-162	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-163	0.00115	J q C129	0.040	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-164	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-165	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-166	ND	C128	0.020	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-167	ND		0.010	0.000096	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-168	0.00120	J q C153	0.020	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-169	ND		0.010	0.000093	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-170	ND		0.010	0.00017	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-171	ND	C	0.020	0.00016	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-172	ND		0.010	0.00016	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-173	ND	C171	0.020	0.00016	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-174	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-175	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-176	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-177	ND		0.010	0.00015	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-178	ND		0.010	0.00016	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-179	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-180	0.000363	J q C	0.020	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-181	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-182	ND		0.010	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-183	ND	C	0.020	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-184	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-185	ND	C183	0.020	0.00014	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-186	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-187	ND		0.010	0.00013	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-188	ND		0.010	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-189	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-190	ND		0.010	0.00010	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-191	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-192	ND		0.010	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: MB 140-23147/17-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-193	0.000363	J q C180	0.020	0.00012	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-194	0.000470	J q	0.010	0.000042	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-195	ND		0.010	0.000046	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-196	ND		0.010	0.000029	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-197	ND		0.010	0.000022	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-198	ND	C	0.020	0.000029	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-199	ND	C198	0.020	0.000029	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-200	ND		0.010	0.000020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-201	ND		0.010	0.000020	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-202	ND		0.010	0.000023	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-203	0.000540	J q	0.010	0.000026	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-204	ND		0.010	0.000022	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-205	ND		0.010	0.000035	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-206	ND		0.010	0.00011	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-207	ND		0.010	0.000081	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-208	ND		0.010	0.000085	ng/g		08/28/18 06:15	09/06/18 13:29	1
PCB-209	ND		0.010	0.000067	ng/g		08/28/18 06:15	09/06/18 13:29	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
PCB-1L	77		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-3L	75		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-4L	74		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-15L	70		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-19L	81		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-37L	80		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-54L	72		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-77L	78		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-81L	78		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-104L	80		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-105L	88		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-114L	87		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-118L	89		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-123L	84		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-126L	84		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-155L	84		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-156L	85	C	30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-157L	85	C156	30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-167L	86		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-169L	90		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-170L	87		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-188L	88		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-189L	80		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-202L	100		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-205L	73		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-206L	83		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-208L	81		30 - 140	08/28/18 06:15	09/06/18 13:29	1
PCB-209L	80		30 - 140	08/28/18 06:15	09/06/18 13:29	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: MB 140-23147/17-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
PCB-28L	89		40 - 125	08/28/18 06:15	09/06/18 13:29	1
PCB-111L	95		40 - 125	08/28/18 06:15	09/06/18 13:29	1
PCB-178L	95		40 - 125	08/28/18 06:15	09/06/18 13:29	1

**Lab Sample ID: LCS 140-23147/18-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-3	0.500	0.438		ng/g		88	50 - 150
PCB-4	0.500	0.485		ng/g		97	50 - 150
PCB-15	0.500	0.547		ng/g		109	50 - 150
PCB-19	0.500	0.562		ng/g		112	50 - 150
PCB-37	0.500	0.526		ng/g		105	50 - 150
PCB-54	0.500	0.525		ng/g		105	50 - 150
PCB-77	0.500	0.521		ng/g		104	50 - 150
PCB-81	0.500	0.490		ng/g		98	50 - 150
PCB-104	0.500	0.549		ng/g		110	50 - 150
PCB-105	0.500	0.551		ng/g		110	50 - 150
PCB-114	0.500	0.574		ng/g		115	50 - 150
PCB-118	0.500	0.570		ng/g		114	50 - 150
PCB-123	0.500	0.579		ng/g		116	50 - 150
PCB-126	0.500	0.589		ng/g		118	50 - 150
PCB-155	0.500	0.537		ng/g		107	50 - 150
PCB-156	1.00	1.11	C	ng/g		111	50 - 150
PCB-157	1.00	1.11	C156	ng/g		111	50 - 150
PCB-167	0.500	0.551		ng/g		110	50 - 150
PCB-169	0.500	0.498		ng/g		100	50 - 150
PCB-188	0.500	0.525		ng/g		105	50 - 150
PCB-189	0.500	0.581		ng/g		116	50 - 150
PCB-202	0.500	0.501		ng/g		100	50 - 150
PCB-205	0.500	0.605		ng/g		121	50 - 150
PCB-206	0.500	0.568		ng/g		114	50 - 150
PCB-208	0.500	0.567		ng/g		113	50 - 150
PCB-209	0.500	0.558		ng/g		112	50 - 150

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
PCB-1L	74		30 - 140
PCB-3L	72		30 - 140
PCB-4L	77		30 - 140
PCB-15L	75		30 - 140
PCB-19L	90		30 - 140
PCB-37L	80		30 - 140
PCB-54L	77		30 - 140
PCB-77L	76		30 - 140
PCB-81L	77		30 - 140
PCB-104L	79		30 - 140

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: LCS 140-23147/18-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

<i>Isotope Dilution</i>	<b>LCS LCS</b>		<b>Limits</b>
	<b>%Recovery</b>	<b>Qualifier</b>	
PCB-105L	88		30 - 140
PCB-114L	87		30 - 140
PCB-118L	86		30 - 140
PCB-123L	84		30 - 140
PCB-126L	84		30 - 140
PCB-155L	89		30 - 140
PCB-156L	85	C	30 - 140
PCB-157L	85	C156	30 - 140
PCB-167L	86		30 - 140
PCB-169L	86		30 - 140
PCB-170L	85		30 - 140
PCB-188L	94		30 - 140
PCB-189L	80		30 - 140
PCB-202L	98		30 - 140
PCB-205L	74		30 - 140
PCB-206L	80		30 - 140
PCB-208L	77		30 - 140
PCB-209L	81		30 - 140

<b>Surrogate</b>	<b>LCS LCS</b>		<b>Limits</b>
	<b>%Recovery</b>	<b>Qualifier</b>	
PCB-28L	92		40 - 125
PCB-111L	89		40 - 125
PCB-178L	98		40 - 125

**Lab Sample ID: LCSD 140-23147/19-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

<b>Analyte</b>	<b>Spike Added</b>	<b>LCSD Result</b>	<b>LCSD Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec.</b>		<b>RPD</b>	
							<b>Limits</b>	<b>RPD</b>	<b>Limit</b>	
PCB-1	0.500	0.441		ng/g		88	50 - 150	0	50	
PCB-3	0.500	0.465		ng/g		93	50 - 150	6	50	
PCB-4	0.500	0.521		ng/g		104	50 - 150	7	50	
PCB-15	0.500	0.539		ng/g		108	50 - 150	1	50	
PCB-19	0.500	0.569		ng/g		114	50 - 150	1	50	
PCB-37	0.500	0.529		ng/g		106	50 - 150	1	50	
PCB-54	0.500	0.533		ng/g		107	50 - 150	1	50	
PCB-77	0.500	0.524		ng/g		105	50 - 150	1	50	
PCB-81	0.500	0.508		ng/g		102	50 - 150	4	50	
PCB-104	0.500	0.556		ng/g		111	50 - 150	1	50	
PCB-105	0.500	0.545		ng/g		109	50 - 150	1	50	
PCB-114	0.500	0.591		ng/g		118	50 - 150	3	50	
PCB-118	0.500	0.562		ng/g		112	50 - 150	1	50	
PCB-123	0.500	0.604		ng/g		121	50 - 150	4	50	
PCB-126	0.500	0.590		ng/g		118	50 - 150	0	50	
PCB-155	0.500	0.538		ng/g		108	50 - 150	0	50	
PCB-156	1.00	1.10	C	ng/g		110	50 - 150	1	50	
PCB-157	1.00	1.10	C156	ng/g		110	50 - 150	1	50	
PCB-167	0.500	0.569		ng/g		114	50 - 150	3	50	

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS) (Continued)

**Lab Sample ID: LCSD 140-23147/19-B**  
**Matrix: Solid**  
**Analysis Batch: 23367**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 23147**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-169	0.500	0.505		ng/g		101	50 - 150	1	50
PCB-188	0.500	0.554		ng/g		111	50 - 150	5	50
PCB-189	0.500	0.562		ng/g		112	50 - 150	3	50
PCB-202	0.500	0.510		ng/g		102	50 - 150	2	50
PCB-205	0.500	0.603		ng/g		121	50 - 150	0	50
PCB-206	0.500	0.546		ng/g		109	50 - 150	4	50
PCB-208	0.500	0.538		ng/g		108	50 - 150	5	50
PCB-209	0.500	0.568		ng/g		114	50 - 150	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
PCB-1L	73		30 - 140
PCB-3L	70		30 - 140
PCB-4L	75		30 - 140
PCB-15L	72		30 - 140
PCB-19L	92		30 - 140
PCB-37L	82		30 - 140
PCB-54L	74		30 - 140
PCB-77L	80		30 - 140
PCB-81L	79		30 - 140
PCB-104L	77		30 - 140
PCB-105L	87		30 - 140
PCB-114L	88		30 - 140
PCB-118L	86		30 - 140
PCB-123L	85		30 - 140
PCB-126L	82		30 - 140
PCB-155L	81		30 - 140
PCB-156L	86	C	30 - 140
PCB-157L	86	C156	30 - 140
PCB-167L	84		30 - 140
PCB-169L	89		30 - 140
PCB-170L	86		30 - 140
PCB-188L	86		30 - 140
PCB-189L	76		30 - 140
PCB-202L	98		30 - 140
PCB-205L	72		30 - 140
PCB-206L	80		30 - 140
PCB-208L	81		30 - 140
PCB-209L	82		30 - 140

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
PCB-28L	88		40 - 125
PCB-111L	92		40 - 125
PCB-178L	97		40 - 125

# Lab Chronicle

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

TestAmerica Job ID: 580-78750-3

## Client Sample ID: PDI-SG-B475

Date Collected: 07/09/18 14:00

Date Received: 07/11/18 13:40

## Lab Sample ID: 580-78750-1

Matrix: Solid

Percent Solids: 51.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23147	08/28/18 06:14	CLI	TAL KNX
Total/NA	Cleanup	Split			23274	08/31/18 10:46	ALS	TAL KNX
Total/NA	Analysis	1668A		1	23410	09/07/18 19:34	JMN	TAL KNX

## Client Sample ID: PDI-SG-B476

Date Collected: 07/09/18 15:05

Date Received: 07/11/18 13:40

## Lab Sample ID: 580-78750-2

Matrix: Solid

Percent Solids: 50.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23147	08/28/18 06:14	CLI	TAL KNX
Total/NA	Cleanup	Split			23274	08/31/18 10:46	ALS	TAL KNX
Total/NA	Analysis	1668A		1	23410	09/07/18 20:35	JMN	TAL KNX

## Client Sample ID: PDI-SG-B477

Date Collected: 07/09/18 12:45

Date Received: 07/11/18 13:40

## Lab Sample ID: 580-78750-3

Matrix: Solid

Percent Solids: 60.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			23147	08/28/18 06:14	CLI	TAL KNX
Total/NA	Cleanup	Split			23274	08/31/18 10:46	ALS	TAL KNX
Total/NA	Analysis	1668A		1	23410	09/07/18 21:37	JMN	TAL KNX

### Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



# Accreditation/Certification Summary

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

TestAmerica Job ID: 580-78750-3

## 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

## Laboratory: TestAmerica Knoxville

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
	AFCEE		N/A	
ANAB	DoD ELAP		L2311	02-13-19
Arkansas DEQ	State Program	6	88-0688	06-16-19
California	State Program	9	2423	06-30-19
Colorado	State Program	8	TN00009	02-28-19
Connecticut	State Program	1	PH-0223	09-30-19
Florida	NELAP	4	E87177	06-30-19
Georgia	State Program	4	906	04-13-20
Hawaii	State Program	9	N/A	04-13-19
Kansas	NELAP	7	E-10349	10-31-18
Kentucky (DW)	State Program	4	90101	12-31-18
Louisiana	NELAP	6	83979	06-30-19
Louisiana (DW)	NELAP	6	LA160005	12-31-18
Maryland	State Program	3	277	03-31-19
Michigan	State Program	5	9933	04-13-20
Nevada	State Program	9	TN00009	07-31-19
New Jersey	NELAP	2	TN001	06-30-19
New York	NELAP	2	10781	03-31-19
North Carolina (DW)	State Program	4	21705	07-31-19
North Carolina (WW/SW)	State Program	4	64	12-31-18
Ohio VAP	State Program	5	CL0059	08-28-20
Oklahoma	State Program	6	9415	08-31-19
Oregon	NELAP	10	TNI0189	01-01-19
Pennsylvania	NELAP	3	68-00576	12-31-18
Tennessee	State Program	4	2014	04-13-20
Texas	NELAP	6	T104704380-16-9	08-31-19
US Fish & Wildlife	Federal		LE-058448-0	07-31-19
USDA	Federal		P330-16-00262	08-20-19
Utah	NELAP	8	TN00009	07-31-18 *
Virginia	NELAP	3	460176	09-14-18
Washington	State Program	10	C593	01-19-19
West Virginia (DW)	State Program	3	9955C	12-31-18
West Virginia DEP	State Program	3	345	04-30-19
Wisconsin	State Program	5	998044300	08-31-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Sample Summary

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

TestAmerica Job ID: 580-78750-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78750-1	PDI-SG-B475	Solid	07/09/18 14:00	07/11/18 13:40
580-78750-2	PDI-SG-B476	Solid	07/09/18 15:05	07/11/18 13:40
580-78750-3	PDI-SG-B477	Solid	07/09/18 12:45	07/11/18 13:40

1

2

3

4

5

6

7

8

9

10

11

12

# SURFACE SEDIMENT CHAIN OF CUSTODY

**TestAmerica-Seattle**  
 5755-8th-Street-East  
 Tacoma, WA 98424-1317  
 Ph: 253-922-2310 Fax: 253-922-5047

**Client Contact**  
 AECOM  
 1111 3rd Ave Suite 1600  
 Seattle, WA 98101  
 Phone: (206) 438-2700 Fax: 1+(866) 495-5288  
 Project Name: Portland Harbor Pre-Remedial Design  
 Investigation and Baseline Sampling  
 Portland, OR  
 Project #: 60566335 Study: Surface Sediment  
 Sample Type: DUU

**Project Contact:** Amy Dahl / Chelsey Cook  
 Tel: (206) 438-2261 / (206) 438-2010  
**Laboratory Contact:** Elaine Walker  
 Analysis Turnaround Time  
 Calendar (C) or Work Days (W)  
 21 days  
 21 days  
 Other \_ASAP\_ (sediments only)

Site Contact: Jennifer Ray  
 Laboratory Contact: Elaine Walker  
 7/5/2018 COC No: 1 of 1 pages

Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.
7/9/2018	14:00	SS		JH	8
7/9/2018	15:05	SS		JH	8
7/9/2018	12:45	SS		JH	8

Fraction	PCB Congeners 168A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LI, Kron/Unger	Alterberg Limits ASTM D4318	WQ - PCB Congeners 168A	WQ - PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx	6020B, 7471A	WQ - Total Organic Carbon SMS310B	WQ - PAHs 8270-SIM	WQ - BEHP EPA 8270D-LI	WQ - Tributyltin Kron/Unger
	H	H	H	X*	X*	H	H	H								
	H	H	H	X*	X*	H	H	H								
	H	H	H	X*	X*	H	H	H								



580-78750 Chain of Custody

**Container Type:** WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column  
**Preservative:** HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid  
**Fraction:** D = Dissolved, PRT = Particulate, T = Total (unfiltered)

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

Special Instructions/QC Requirements & Comments:  
 Separate reports for each lab.  
 x\* - Analyze for grain size, metals (6020B analytes only), Mn, and TOC (9060 @ 104C & 70C) ASAP. Rush TAT for these take precedent over remaining rush grain size analyses requested ASAP.  
 H - Hold analyses pending further instruction.

Relinquished by: *[Signature]*  
 Relinquished by: *[Signature]*  
 Relinquished by: *[Signature]*

Company	Date/Time
Green	7/11/18 1153
M-E	7/11/18 1340


Company	Date/Time
M-E	7/11/18 1153
TAPOOR	7/11/18 1340

4.8





TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Containers, Broken	7. RECEIVED SAMPLE 580-R050-F-3 P. 1
2. Were ambient air containers received intact?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Checked in lab	RECEIVED LOC BY EMAIL ON 7-17-18
3. The coolers/containers custody seal if present, is it intact?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Yes <input type="checkbox"/> NA	RECEIVED BY Sample Manager 7-17-18 10:00 AM JAKX
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>566</u> Correction factor: <u>0.0°C</u>	<input checked="" type="checkbox"/>			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	CUSTOMY SEALS INTACT RECEIVED AT N131/C13.1C DISK 7-17-18 VORTEX FOR #4 H423 0750 W30 PD
5. Were all of the sample containers received intact?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	<input checked="" type="checkbox"/>			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input checked="" type="checkbox"/> COC Not Received	 580-78750 Chain of Custody
8. Were all of the samples listed on the COC received?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	<input checked="" type="checkbox"/>			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Sampler Not Listed on COC	
11. Is the client and project name/# identified?	<input checked="" type="checkbox"/>			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	<input checked="" type="checkbox"/>			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	<input checked="" type="checkbox"/>			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	<input checked="" type="checkbox"/>			<input type="checkbox"/> COC Incorrect/Incomplete	
15. Were samples received within holding time?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?	<input checked="" type="checkbox"/>			<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	Box 16A: pH Preservation Box 18A: Residual Chlorine
17. Were VOA samples received without headspace? (e.g. 1613B, 1668)	<input checked="" type="checkbox"/>			<input type="checkbox"/> Headspace (VOA only) <input type="checkbox"/> Residual Chlorine	Preservative: Lot Number: Exp Date: Analyst: Date: Time:
18. Did you check for residual chlorine, if necessary? Chlorine test strip lot number:	<input checked="" type="checkbox"/>			<input type="checkbox"/> Residual Chlorine	
19. For 1613B water samples is pH<9?	<input checked="" type="checkbox"/>			<input type="checkbox"/> If no, lab will adjust	
20. For rad samples was sample activity info. Provided?	<input checked="" type="checkbox"/>			<input type="checkbox"/> Project missing info	
Project #: _____ PM Instructions: _____					

Sample Receiving Associate: Sample Manager Date: 7-17-18





**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab P#:	Center Tracking Net#:	COG No:
Client Contact:		Walker, Elaine M	Walker, Elaine M		580-57202.1
Shipping/Receiving		Phone:	E-Mail:	State of Origin:	Page:
Company:			elaine.walker@testamerica.com	Oregon	Page 1 of 1
Address:		Due Date Requested:	Accreditations Required (See note):	Job #:	580-78750-3
5815 Middlebrook Pike,		7/30/2018		Preservation Codes:	
City:		TAT Requested (days):		A - HCL	M - Hexane
Knoxville				B - NAOH	N - None
State, Zip:		PO #:		C - Zn Acetate	O - AsNaO2
TN, 37921		WO #:		D - Nitric Acid	P - Na2O4S
Phone:		Project #:		E - NaHSO4	R - Na2SO3
865-291-3000(Tel) 865-584-4315(Fax)		58012120		F - MeOH	G - Na2S2O3
Email:		SSOW#:		H - Acetic Acid	S - H2SO4
Project Name:				I - Ice	T - TSP Dodecaldehyde
Portland Harbor Pre-Remedial Design				J - DI Water	U - Acetone
Site:				K - EDTA	V - MCAA
				L - EDA	W - pH 4-5
				Other:	Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Swab, D-water, etc)	Field Filtered Sample (Yes or No)	1688A/1688 P_Sox (MOD) 209 PCBs plus Totals (Hold)	Screen, 1688/screen_PCB_P_S (Hold)	Total Number of Containers	Special Instructions/Notes:
PDI-SG-B475 (580-78750-1)	7/9/18	14:00 Pacific	Solid	Solid	X	X	X	1	
PDI-SG-B476 (580-78750-2)	7/9/18	15:05 Pacific	Solid	Solid	X	X	X	1	
PDI-SG-B477 (580-78750-3)	7/9/18	12:45 Pacific	Solid	Solid	X	X	X	1	

**Possible Hazard Identification**

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_

Primary Deliverable Rank: 2

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: *[Signature]* Date: 7/16/18 1400

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_

Δ Yes Δ No

Special Instructions/OC Requirements: \_\_\_\_\_

Method of Shipment: \_\_\_\_\_

Time: \_\_\_\_\_

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Received by: *[Signature]* Date/Time: 7-17-18 10:00

Resealed by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

Company: TA XXX

Company: TA XXX

Company: TA XXX

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78750-3

**Login Number: 78750**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Antonson, Angeline D**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





# Isotope Dilution Summary

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

TestAmerica Job ID: 580-78750-3

## Method: 1668A - Chlorinated Biphenyl Congeners (HRGC/HRMS)

**Matrix: Solid**

**Prep Type: Total/NA**

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB1L (30-140)	PCB3L (30-140)	PCB4L (30-140)	PCB15L (30-140)	PCB19L (30-140)	PCB37L (30-140)	PCB54L (30-140)	PCB77L (30-140)
580-78750-1	PDI-SG-B475	64	69	68	72	79	84	70	76
580-78750-2	PDI-SG-B476	73	73	77	77	85	83	70	88
580-78750-3	PDI-SG-B477	77	77	77	77	88	84	66	81
LCS 140-23147/18-B	Lab Control Sample	74	72	77	75	90	80	77	76
LCSD 140-23147/19-B	Lab Control Sample Dup	73	70	75	72	92	82	74	80
MB 140-23147/17-B	Method Blank	77	75	74	70	81	80	72	78

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB81L (30-140)	PCB104L (30-140)	PCB105L (30-140)	P114L (30-140)	PCB118L (30-140)	PCB123L (30-140)	PCB126L (30-140)	PCB155L (30-140)
580-78750-1	PDI-SG-B475	78	80	90	89	87	88	84	85
580-78750-2	PDI-SG-B476	90	77	92	91	92	89	84	77
580-78750-3	PDI-SG-B477	83	75	90	89	86	87	83	78
LCS 140-23147/18-B	Lab Control Sample	77	79	88	87	86	84	84	89
LCSD 140-23147/19-B	Lab Control Sample Dup	79	77	87	88	86	85	82	81
MB 140-23147/17-B	Method Blank	78	80	88	87	89	84	84	84

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB156L (30-140)	PCB157L (30-140)	PCB167L (30-140)	PCB169L (30-140)	PCB170L (30-140)	PCB188L (30-140)	PCB189L (30-140)	PCB202L (30-140)
580-78750-1	PDI-SG-B475	85 C	85 C156	89	88	85	87	81	93
580-78750-2	PDI-SG-B476	81 C	81 C156	89	92	85	88	83	99
580-78750-3	PDI-SG-B477	84 C	84 C156	89	87	82	87	81	101
LCS 140-23147/18-B	Lab Control Sample	85 C	85 C156	86	86	85	94	80	98
LCSD 140-23147/19-B	Lab Control Sample Dup	86 C	86 C156	84	89	86	86	76	98
MB 140-23147/17-B	Method Blank	85 C	85 C156	86	90	87	88	80	100

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)			
		PCB205L (30-140)	PCB206L (30-140)	PCB208L (30-140)	PCB209L (30-140)
580-78750-1	PDI-SG-B475	73	82	85	78
580-78750-2	PDI-SG-B476	74	82	82	81
580-78750-3	PDI-SG-B477	75	82	88	79
LCS 140-23147/18-B	Lab Control Sample	74	80	77	81
LCSD 140-23147/19-B	Lab Control Sample Dup	72	80	81	82
MB 140-23147/17-B	Method Blank	73	83	81	80

#### Surrogate Legend

- PCB1L = PCB-1L
- PCB3L = PCB-3L
- PCB4L = PCB-4L
- PCB15L = PCB-15L
- PCB19L = PCB-19L
- PCB37L = PCB-37L
- PCB54L = PCB-54L
- PCB77L = PCB-77L
- PCB81L = PCB-81L
- PCB104L = PCB-104L
- PCB105L = PCB-105L
- P114L = PCB-114L
- PCB118L = PCB-118L
- PCB123L = PCB-123L

TestAmerica Seattle

# Isotope Dilution Summary

Client: AECOM

Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78750-3

PCB126L = PCB-126L  
PCB155L = PCB-155L  
PCB156L = PCB-156L  
PCB157L = PCB-157L  
PCB167L = PCB-167L  
PCB169L = PCB-169L  
PCB170L = PCB-170L  
PCB188L = PCB-188L  
PCB189L = PCB-189L  
PCB202L = PCB-202L  
PCB205L = PCB-205L  
PCB206L = PCB-206L  
PCB208L = PCB-208L  
PCB209L = PCB-209L

1

2

3

4

5

6

7

8

9

10

11

12