TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-78527-3
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
AECOM
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Seattle, Washington 98101

Attn: Amy Dahl

M. Elaine Walker

Authorized for release by:
7/31/2018 1:30:20 PM

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Job ID: 580-78527-3

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-78527-3

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

Twenty-six samples were received on 7/2/2018 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 0.1º C, 0.2º C, 0.6º C, 1.7º C, 2.3º C and 3.2º C.

The client changed sample ID for PDI-SG-RB-20180630. It should be PDI-RB-VV-180630.

This report contains results of the PCB Congeners rinse blank sample only, performed at TestAmerica Knoxville. All other analyses are currently on hold.

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.

PCB CONGENERS

Sample PDI-RB-180630 (580-78527-26) was analyzed for PCB Congeners in accordance with 1668A. The samples were prepared on 07/11/2018 and analyzed on 07/19/2018.

Several analytes were detected in method blank MB 140-21886/6-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

One ore more Ion abundance ratios are outside criteria for the Isotope Dilution Analytes (IDA) associated with the following samples: (LCS 140-21886/7-A) and (MB 140-21886/6-A).

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

Qualifiers

Dioxin

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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.
C93	The compound co-eluted with PCB-93
C90	The compound co-eluted with PCB-90
C98	The compound co-eluted with PCB-98
C	The compound co-eluted with other compounds
C86	The compound co-eluted with PCB-86
B	Compound was found in the blank and sample.
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

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 ID: PDI-RB-180630

Date Collected: 06/30/18 17:15
Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-26

Matrix: Water

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	**0.0021**	**J q**	0.043	0.00041	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-2	ND		0.043	0.00048	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-3	**0.0051**	**J B**	0.043	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-4	**0.020**	**J q**	0.064	0.011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-5	ND		0.043	0.0097	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-6	ND		0.043	0.0086	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-7	ND		0.043	0.0088	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-8	**0.021**	**J q**	0.064	0.0079	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-9	ND		0.043	0.0090	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-10	ND		0.043	0.0096	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-11	**0.022**	**J B**	0.064	0.0084	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-12	ND	C	0.085	0.0087	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-13	ND	C12	0.085	0.0087	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-14	ND		0.043	0.0074	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-15	**0.011**	**J q**	0.043	0.0098	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-16	**0.023**	**J**	0.043	0.0014	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-17	**0.010**	**J**	0.043	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-18	**0.023**	**J q C**	0.085	0.0011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-19	**0.0065**	**J q**	0.043	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-20	**0.023**	**J C B**	0.085	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-21	**0.011**	**J C**	0.085	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-22	**0.015**	**J**	0.043	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-23	ND		0.043	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-24	ND		0.043	0.0010	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-25	ND		0.043	0.0019	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-26	**0.0044**	**J q C**	0.085	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-27	**0.0035**	**J q**	0.043	0.00091	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-28	**0.023**	**J C20 B**	0.085	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-29	**0.0044**	**J q C26**	0.085	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-30	**0.023**	**J q C18**	0.085	0.0011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-31	**0.0060**	**J B**	0.043	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-32	**0.0096**	**J q B**	0.043	0.00087	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-33	**0.011**	**J C21**	0.085	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-34	ND		0.043	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-35	ND		0.043	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-36	ND		0.043	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-37	ND		0.043	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-38	ND		0.043	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-39	ND		0.043	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-40	**0.0053**	**J q C B**	0.13	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-41	**0.0053**	**J q C40 B**	0.13	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-42	ND		0.043	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-43	ND	C	0.085	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-44	**0.020**	**J C B**	0.13	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-45	**0.0066**	**J C**	0.085	0.0023	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-46	ND		0.043	0.0028	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-47	**0.020**	**J C44 B**	0.13	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-48	**0.0042**	**J q**	0.043	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-49	**0.0068**	**J q C**	0.085	0.0018	ng/L		07/11/18 14:21	07/19/18 14:41	1

Client Sample ID: PDI-RB-180630
Date Collected: 06/30/18 17:15
Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-26
Matrix: Water

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-50	**0.0050**	**J q C**	0.085	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-51	**0.0066**	**J C45**	0.085	0.0023	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-52	**0.016**	**J B**	0.043	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-53	**0.0050**	**J q C50**	0.085	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-54	ND		0.043	0.00056	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-55	ND		0.043	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-56	**0.0041**	**J q**	0.043	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-57	ND		0.043	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-58	ND		0.043	0.0017	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-59	ND	C	0.13	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-60	**0.0040**	**J B**	0.043	0.0017	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-61	**0.011**	**J C B**	0.17	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-62	ND	C59	0.13	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-63	ND		0.043	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-64	**0.0068**	**J q**	0.043	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-65	**0.020**	**J C44 B**	0.13	0.0020	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-66	**0.0080**	**J B**	0.043	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-67	ND		0.043	0.0014	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-68	ND		0.043	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-69	**0.0068**	**J q C49**	0.085	0.0018	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-70	**0.011**	**J C61 B**	0.17	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-71	**0.0053**	**J q C40 B**	0.13	0.0022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-72	ND		0.043	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-73	ND	C43	0.085	0.0021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-74	**0.011**	**J C61 B**	0.17	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-75	ND	C59	0.13	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-76	**0.011**	**J C61 B**	0.17	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-77	ND		0.043	0.0016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-78	ND		0.043	0.0017	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-79	ND		0.043	0.0014	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-80	ND		0.043	0.0014	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-81	ND		0.043	0.0015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-82	ND		0.043	0.00074	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-83	ND	C	0.085	0.00067	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-84	ND		0.043	0.00075	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-85	ND	C	0.13	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-86	ND	C	0.26	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-87	ND	C86	0.26	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-88	ND	C	0.085	0.00067	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-89	ND		0.043	0.00072	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-90	**0.0038**	**J q C**	0.13	0.00056	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-91	ND	C88	0.085	0.00067	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-92	ND		0.043	0.00063	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-93	ND	C	0.085	0.00064	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-94	ND		0.043	0.00072	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-95	**0.0047**	**J**	0.043	0.00070	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-96	ND		0.043	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-97	ND	C86	0.26	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-98	ND	C	0.085	0.00062	ng/L		07/11/18 14:21	07/19/18 14:41	1

Client Sample ID: PDI-RB-180630
Date Collected: 06/30/18 17:15
Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-26
Matrix: Water

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-99	ND	C83	0.085	0.00067	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-100	ND	C93	0.085	0.00064	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-101	**0.0038**	**J q C90**	0.13	0.00056	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-102	ND	C98	0.085	0.00062	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-103	ND		0.043	0.00064	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-104	ND		0.043	0.00049	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-105	**0.0034**	**J**	0.043	0.00077	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-106	ND		0.043	0.00081	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-107	ND		0.043	0.00086	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-108	ND	C	0.085	0.00083	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-109	ND	C86	0.26	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-110	**0.0065**	**J q C B**	0.085	0.00047	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-111	ND		0.043	0.00045	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-112	ND		0.043	0.00047	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-113	**0.0038**	**J q C90**	0.13	0.00056	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-114	ND		0.043	0.00073	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-115	**0.0065**	**J q C110 B**	0.085	0.00047	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-116	ND	C85	0.13	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-117	ND	C85	0.13	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-118	**0.0036**	**J q B**	0.043	0.00074	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-119	ND	C86	0.26	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-120	ND		0.043	0.00046	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-121	ND		0.043	0.00047	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-122	ND		0.043	0.00093	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-123	ND		0.043	0.00082	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-124	ND	C108	0.085	0.00083	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-125	ND	C86	0.26	0.00055	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-126	ND		0.043	0.00090	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-127	ND		0.043	0.00080	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-128	ND	C	0.085	0.00089	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-129	**0.0026**	**J q C**	0.17	0.00093	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-130	ND		0.043	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-131	ND		0.043	0.0013	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-132	ND		0.043	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-133	ND		0.043	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-134	ND	C	0.085	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-135	ND	C	0.085	0.00023	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-136	ND		0.043	0.00017	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-137	ND		0.043	0.0010	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-138	**0.0026**	**J q C129**	0.17	0.00093	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-139	ND	C	0.085	0.0010	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-140	ND	C139	0.085	0.0010	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-141	ND		0.043	0.0011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-142	ND		0.043	0.0011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-143	ND	C134	0.085	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-144	ND		0.043	0.00021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-145	ND		0.043	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-146	ND		0.043	0.0010	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-147	ND	C	0.085	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1

Client Sample ID: PDI-RB-180630
Date Collected: 06/30/18 17:15
Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-26
Matrix: Water

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-148	ND		0.043	0.00022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-149	ND	C147	0.085	0.0012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-150	ND		0.043	0.00015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-151	ND	C135	0.085	0.00023	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-152	ND		0.043	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-153	**0.0015**	**J q C**	0.085	0.00081	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-154	ND		0.043	0.00018	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-155	ND		0.043	0.00015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-156	ND	C	0.085	0.00098	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-157	ND	C156	0.085	0.00098	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-158	ND		0.043	0.00073	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-159	ND		0.043	0.00077	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-160	**0.0026**	**J q C129**	0.17	0.00093	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-161	ND		0.043	0.00076	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-162	ND		0.043	0.00076	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-163	**0.0026**	**J q C129**	0.17	0.00093	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-164	ND		0.043	0.00081	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-165	ND		0.043	0.00087	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-166	ND	C128	0.085	0.00089	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-167	ND		0.043	0.00058	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-168	**0.0015**	**J q C153**	0.085	0.00081	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-169	ND		0.043	0.00060	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-170	ND		0.043	0.00026	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-171	ND	C	0.085	0.00025	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-172	ND		0.043	0.00025	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-173	ND	C171	0.085	0.00025	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-174	**0.00087**	**J q**	0.043	0.00024	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-175	ND		0.043	0.00023	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-176	ND		0.043	0.00017	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-177	ND		0.043	0.00024	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-178	ND		0.043	0.00025	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-179	ND		0.043	0.00018	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-180	**0.0039**	**J q C B**	0.085	0.00019	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-181	ND		0.043	0.00023	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-182	ND		0.043	0.00022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-183	**0.0022**	**J q C B**	0.085	0.00022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-184	ND		0.043	0.00019	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-185	**0.0022**	**J q C183 B**	0.085	0.00022	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-186	ND		0.043	0.00018	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-187	ND		0.043	0.00021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-188	ND		0.043	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-189	ND		0.043	0.00048	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-190	ND		0.043	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-191	ND		0.043	0.00017	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-192	ND		0.043	0.00019	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-193	**0.0039**	**J q C180 B**	0.085	0.00019	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-194	ND		0.043	0.00019	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-195	ND		0.043	0.00021	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-196	ND		0.043	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1

Client Sample ID: PDI-RB-180630
Date Collected: 06/30/18 17:15
Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-26
Matrix: Water

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

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-197	ND		0.043	0.00012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-198	ND	C	0.085	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-199	ND	C198	0.085	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-200	ND		0.043	0.00011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-201	ND		0.043	0.00011	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-202	ND		0.043	0.00013	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-203	ND		0.043	0.00015	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-204	ND		0.043	0.00012	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-205	ND		0.043	0.00016	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-206	ND		0.043	0.00068	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-207	ND		0.043	0.00048	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-208	ND		0.043	0.00048	ng/L		07/11/18 14:21	07/19/18 14:41	1
PCB-209	ND		0.043	0.000061	ng/L		07/11/18 14:21	07/19/18 14:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*71*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-3L	*68*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-4L	*83*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-15L	*79*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-19L	*92*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-37L	*89*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-54L	*79*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-77L	*78*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-81L	*80*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-104L	*79*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-105L	*92*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-114L	*90*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-118L	*90*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-123L	*88*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-126L	*82*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-155L	*78*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-156L	*84*	*C*	*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-157L	*84*	*C156*	*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-167L	*82*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-169L	*82*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-170L	*72*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-188L	*76*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-189L	*64*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-202L	*87*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-205L	*65*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-206L	*79*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-208L	*82*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-209L	*88*		*30 - 140*	*07/11/18 14:21*	*07/19/18 14:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-28L	*100*		*40 - 125*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-111L	*95*		*40 - 125*	*07/11/18 14:21*	*07/19/18 14:41*	*1*
PCB-178L	*101*		*40 - 125*	*07/11/18 14:21*	*07/19/18 14:41*	*1*

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

Lab Sample ID: MB 140-21886/6-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21886

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1	ND		0.040	0.00037	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-2	0.00290	J q	0.040	0.00040	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-3	0.00424	J	0.040	0.00043	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-4	ND		0.060	0.0095	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-5	ND		0.040	0.0075	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-6	ND		0.040	0.0066	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-7	ND		0.040	0.0067	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-8	ND		0.060	0.0061	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-9	ND		0.040	0.0069	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-10	ND		0.040	0.0073	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-11	0.0235	J	0.060	0.0064	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-12	ND	C	0.080	0.0067	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-13	ND	C12	0.080	0.0067	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-14	ND		0.040	0.0057	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-15	ND		0.040	0.0069	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-16	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-17	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-18	ND	C	0.080	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-19	ND		0.040	0.0015	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-20	0.00416	J C q	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-21	ND	C	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-22	ND		0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-23	ND		0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-24	ND		0.040	0.0010	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-25	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-26	ND	C	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-27	ND		0.040	0.00091	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-28	0.00416	J C20 q	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-29	ND	C26	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-30	ND	C18	0.080	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-31	0.00457	J q	0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-32	0.00229	J q	0.040	0.00087	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-33	ND	C21	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-34	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-35	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-36	ND		0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-37	ND		0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-38	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-39	ND		0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-40	0.00511	J C	0.12	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-41	0.00511	J C40	0.12	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-42	ND		0.040	0.0017	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-43	ND	C	0.080	0.0015	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-44	0.00827	J C q	0.12	0.0015	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-45	ND	C	0.080	0.0017	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-46	ND		0.040	0.0021	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-47	0.00827	J C44 q	0.12	0.0015	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-48	ND		0.040	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1

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

Lab Sample ID: MB 140-21886/6-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21886

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-49	ND	C	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-50	ND	C	0.080	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-51	ND	C45	0.080	0.0017	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-52	0.00518	J q	0.040	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-53	ND	C50	0.080	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-54	ND		0.040	0.00077	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-55	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-56	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-57	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-58	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-59	ND	C	0.12	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-60	0.00359	J	0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-61	0.00378	J C q	0.16	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-62	ND	C59	0.12	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-63	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-64	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-65	0.00827	J C44 q	0.12	0.0015	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-66	0.00599	J	0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-67	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-68	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-69	ND	C49	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-70	0.00378	J C61 q	0.16	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-71	0.00511	J C40	0.12	0.0016	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-72	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-73	ND	C43	0.080	0.0015	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-74	0.00378	J C61 q	0.16	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-75	ND	C59	0.12	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-76	0.00378	J C61 q	0.16	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-77	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-78	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-79	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-80	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-81	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-82	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-83	ND	C	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-84	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-85	ND	C	0.12	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-86	ND	C	0.24	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-87	ND	C86	0.24	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-88	ND	C	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-89	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-90	ND	C	0.12	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-91	ND	C88	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-92	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-93	ND	C	0.080	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-94	ND		0.040	0.0014	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-95	ND		0.040	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-96	ND		0.040	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1

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

Lab Sample ID: MB 140-21886/6-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21886

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-97	ND	C86	0.24	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-98	ND	C	0.080	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-99	ND	C83	0.080	0.0013	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-100	ND	C93	0.080	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-101	ND	C90	0.12	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-102	ND	C98	0.080	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-103	ND		0.040	0.0012	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-104	ND		0.040	0.00094	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-105	ND		0.040	0.00070	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-106	ND		0.040	0.00077	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-107	ND		0.040	0.00082	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-108	ND	C	0.080	0.00079	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-109	ND	C86	0.24	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-110	0.00574	J C q	0.080	0.00090	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-111	ND		0.040	0.00087	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-112	ND		0.040	0.00092	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-113	ND	C90	0.12	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-114	ND		0.040	0.00074	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-115	0.00574	J C110 q	0.080	0.00090	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-116	ND	C85	0.12	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-117	ND	C85	0.12	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-118	0.00604	J	0.040	0.00071	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-119	ND	C86	0.24	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-120	ND		0.040	0.00088	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-121	ND		0.040	0.00091	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-122	ND		0.040	0.00089	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-123	ND		0.040	0.00083	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-124	ND	C108	0.080	0.00079	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-125	ND	C86	0.24	0.0011	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-126	ND		0.040	0.00077	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-127	ND		0.040	0.00076	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-128	ND	C	0.080	0.00043	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-129	ND	C	0.16	0.00044	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-130	0.00227	J	0.040	0.00058	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-131	ND		0.040	0.00060	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-132	ND		0.040	0.00057	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-133	ND		0.040	0.00055	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-134	ND	C	0.080	0.00057	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-135	ND	C	0.080	0.00054	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-136	ND		0.040	0.00039	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-137	ND		0.040	0.00050	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-138	ND	C129	0.16	0.00044	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-139	ND	C	0.080	0.00049	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-140	ND	C139	0.080	0.00049	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-141	ND		0.040	0.00051	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-142	ND		0.040	0.00055	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-143	ND	C134	0.080	0.00057	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-144	ND		0.040	0.00049	ng/L		07/11/18 14:21	07/19/18 13:40	1

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

Lab Sample ID: MB 140-21886/6-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21886

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-145	ND		0.040	0.00037	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-146	ND		0.040	0.00048	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-147	0.00300	J C q	0.080	0.00055	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-148	ND		0.040	0.00052	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-149	0.00300	J C147 q	0.080	0.00055	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-150	ND		0.040	0.00035	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-151	ND	C135	0.080	0.00054	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-152	ND		0.040	0.00038	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-153	ND	C	0.080	0.00038	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-154	ND		0.040	0.00042	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-155	ND		0.040	0.00035	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-156	ND	C	0.080	0.00048	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-157	ND	C156	0.080	0.00048	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-158	ND		0.040	0.00035	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-159	ND		0.040	0.00037	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-160	ND	C129	0.16	0.00044	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-161	ND		0.040	0.00036	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-162	ND		0.040	0.00036	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-163	ND	C129	0.16	0.00044	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-164	ND		0.040	0.00038	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-165	ND		0.040	0.00041	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-166	ND	C128	0.080	0.00043	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-167	ND		0.040	0.00028	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-168	ND	C153	0.080	0.00038	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-169	0.00165	J q	0.040	0.00027	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-170	ND		0.040	0.00083	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-171	ND	C	0.080	0.0010	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-172	ND		0.040	0.0010	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-173	ND	C171	0.080	0.0010	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-174	ND		0.040	0.00093	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-175	ND		0.040	0.00090	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-176	ND		0.040	0.00068	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-177	ND		0.040	0.00096	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-178	ND		0.040	0.00098	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-179	ND		0.040	0.00072	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-180	0.00316	J C q	0.080	0.00076	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-181	ND		0.040	0.00090	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-182	ND		0.040	0.00087	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-183	0.00267	J C q	0.080	0.00088	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-184	ND		0.040	0.00074	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-185	0.00267	J C183 q	0.080	0.00088	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-186	ND		0.040	0.00072	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-187	0.00206	J q	0.040	0.00084	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-188	ND		0.040	0.00076	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-189	0.00212	J q	0.040	0.00045	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-190	ND		0.040	0.00065	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-191	ND		0.040	0.00068	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-192	ND		0.040	0.00076	ng/L		07/11/18 14:21	07/19/18 13:40	1

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

Lab Sample ID: MB 140-21886/6-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21886

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-193	0.00316	J C180 q	0.080	0.00076	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-194	0.00167	J q	0.040	0.00040	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-195	ND		0.040	0.00043	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-196	ND		0.040	0.00032	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-197	ND		0.040	0.00024	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-198	ND	C	0.080	0.00032	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-199	ND	C198	0.080	0.00032	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-200	ND		0.040	0.00022	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-201	ND		0.040	0.00022	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-202	ND		0.040	0.00025	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-203	0.00186	J q	0.040	0.00029	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-204	ND		0.040	0.00024	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-205	0.00504	J	0.040	0.00033	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-206	0.00333	J q	0.040	0.0010	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-207	0.00160	J	0.040	0.00075	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-208	ND		0.040	0.00077	ng/L		07/11/18 14:21	07/19/18 13:40	1
PCB-209	0.00205	J q	0.040	0.000047	ng/L		07/11/18 14:21	07/19/18 13:40	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
PCB-1L	*58*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-3L	*59*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-4L	*70*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-15L	*73*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-19L	*76*	*q*	*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-37L	*81*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-54L	*64*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-77L	*77*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-81L	*73*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-104L	*51*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-105L	*86*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-114L	*82*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-118L	*80*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-123L	*77*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-126L	*84*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-155L	*45*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-156L	*85*	*C*	*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-157L	*85*	*C156*	*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-167L	*83*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-169L	*87*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-170L	*80*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-188L	*54*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-189L	*80*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-202L	*80*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-205L	*79*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-206L	*89*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-208L	*91*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*
PCB-209L	*91*		*30 - 140*	*07/11/18 14:21*	*07/19/18 13:40*	*1*

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

Lab Sample ID: MB 140-21886/6-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21886

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
PCB-28L	101		40 - 125	07/11/18 14:21	07/19/18 13:40	1
PCB-111L	97		40 - 125	07/11/18 14:21	07/19/18 13:40	1
PCB-178L	105		40 - 125	07/11/18 14:21	07/19/18 13:40	1

Lab Sample ID: LCS 140-21886/7-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 21886

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1	1.00	0.927		ng/L		93	50 - 150
PCB-3	1.00	0.932		ng/L		93	50 - 150
PCB-4	1.00	1.04		ng/L		104	50 - 150
PCB-15	1.00	1.11		ng/L		111	50 - 150
PCB-19	1.00	1.12		ng/L		112	50 - 150
PCB-37	1.00	1.02		ng/L		102	50 - 150
PCB-54	1.00	1.15		ng/L		115	50 - 150
PCB-77	1.00	1.02		ng/L		102	50 - 150
PCB-81	1.00	0.953		ng/L		95	50 - 150
PCB-104	1.00	1.25		ng/L		125	50 - 150
PCB-105	1.00	1.02		ng/L		102	50 - 150
PCB-114	1.00	1.07		ng/L		107	50 - 150
PCB-118	1.00	1.11		ng/L		111	50 - 150
PCB-123	1.00	1.16		ng/L		116	50 - 150
PCB-126	1.00	1.10		ng/L		110	50 - 150
PCB-155	1.00	1.24		ng/L		124	50 - 150
PCB-156	2.00	2.18	C	ng/L		109	50 - 150
PCB-157	2.00	2.18	C156	ng/L		109	50 - 150
PCB-167	1.00	1.08		ng/L		108	50 - 150
PCB-169	1.00	0.960		ng/L		96	50 - 150
PCB-188	1.00	1.16		ng/L		116	50 - 150
PCB-189	1.00	1.05		ng/L		105	50 - 150
PCB-202	1.00	1.03		ng/L		103	50 - 150
PCB-205	1.00	1.14		ng/L		114	50 - 150
PCB-206	1.00	0.950		ng/L		95	50 - 150
PCB-208	1.00	1.04		ng/L		104	50 - 150
PCB-209	1.00	1.00		ng/L		100	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-1L	65		30 - 140
PCB-3L	65		30 - 140
PCB-4L	77		30 - 140
PCB-15L	85		30 - 140
PCB-19L	76	q	30 - 140
PCB-37L	86		30 - 140
PCB-54L	77		30 - 140
PCB-77L	79		30 - 140
PCB-81L	78		30 - 140
PCB-104L	70		30 - 140

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

Lab Sample ID: LCS 140-21886/7-A
Matrix: Water
Analysis Batch: 22103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 21886

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
PCB-105L	90		30 - 140
PCB-114L	90		30 - 140
PCB-118L	88		30 - 140
PCB-123L	86		30 - 140
PCB-126L	85		30 - 140
PCB-155L	73		30 - 140
PCB-156L	90	C	30 - 140
PCB-157L	90	C156	30 - 140
PCB-167L	91		30 - 140
PCB-169L	93		30 - 140
PCB-170L	84		30 - 140
PCB-188L	75		30 - 140
PCB-189L	79		30 - 140
PCB-202L	93		30 - 140
PCB-205L	80		30 - 140
PCB-206L	94		30 - 140
PCB-208L	93		30 - 140
PCB-209L	94		30 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
PCB-28L	96		40 - 125
PCB-111L	95		40 - 125
PCB-178L	98		40 - 125

Lab Chronicle

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

TestAmerica Job ID: 580-78527-3

Client Sample ID: PDI-RB-180630
Date Collected: 06/30/18 17:15
Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-26
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sepf			21886	07/11/18 14:21	SMA	TAL KNX
Total/NA	Analysis	1668A		1	22103	07/19/18 14:41	LKM	TAL KNX

Laboratory References:

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

Accreditation/Certification Summary

Client: AECOM
TestAmerica Job ID: 580-78527-3
Project/Site: Portland Harbor Pre-Remedial Design

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
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	11-22-18
Oklahoma	State Program	6	9415	08-31-18
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	08-31-18
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	08-31-18

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

Sample Summary

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

TestAmerica Job ID: 580-78527-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78527-26	PDI-RB-180630	Water	06/30/18 17:15	07/02/18 14:30

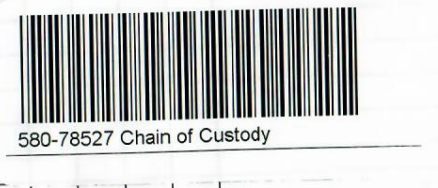
SURFACE SEDIMENT
CHAIN OF CUSTODY

7/2/2018 COC No: 1 — 1 of 3 pages

TestAmerica-Seattle	Project Contact: Amy Dahl / Chelsey Cook
5755-8th-Street-East	Tel: (206) 438-2261 / (206) 438-2010
Tacoma, WA 98424-1317	Analysis Turnaround Time
Ph: 253-922-2310 Fax: 253-922-5047	Calendar (C) or Work Days (W) _____
Client Contact	☐ 21 days
AECOM	☒ Other _ASAP_____
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: D/U	

Site Contact: Jennifer Ray
Laboratory Contact: Elaine-Walker
Carrier: Courier

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Sample Specific Notes:
PDI-SG-B434	6/29/2018	11:36	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B435	6/29/2018	13:43	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B441	6/29/2018	15:20	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B442	6/29/2018	16:22	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B439	6/29/2018	11:51	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B440	6/29/2018	14:12	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B445	6/29/2018	16:35	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B446	6/30/2018	11:36	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B447	6/30/2018	14:02	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B449	6/30/2018	15:38	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B443	6/30/2018	10:21	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B444	6/30/2018	15:20	SS		MT	7		H	H	H	x	H	H	H	



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:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

6,01,67,23,02,30,2

Relinquished by:	Company: AECOM	Date/Time: 7/2/18 1257	Received by:	Company: M-E-	Date/Time: 7/2/18 1257
Relinquished by:	Company: M-E-	Date/Time: 7/2/18 1430	Received by:	Company: TAPOR	Date/Time: 7/2/18 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

7/2/2018 COC No: 1 — 2 of 3 pages

TestAmerica-Seattle	Project Contact: Amy Dahl / Chelsey Cook
5755-8th-Street-East	Tel: (206) 438-2261 / (206) 438-2010
Tacoma, WA 98424-1317	Analysis Turnaround Time
Ph: 253-922-2310 Fax: 253-922-5047	Calendar (C) or Work Days (W) _____
Client Contact	☐ 21 days
AECOM	☒ Other _ASAP_____
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: D/U	

Site Contact: Jennifer Ray
Laboratory Contact: Elaine-Walker
Carrier: Courier

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Krom/Unger	Atterberg Limits ASTM D4318	Sample Specific Notes:
PDI-SG-B448	6/30/2018	12:08	SS		MT	7		H	H	H	x	H	H	H		
PDI-SG-B451	6/30/2018	14:45	SS		AC	7		H	H	H	x	H	H	H		
PDI-SG-B455	6/30/2018	15:55	SS		AC	7		H	H	H	x	H	H	H		
PDI-SG-B450	7/1/2018	10:30	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B454	7/1/2018	1242 1245	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B453	7/1/2018	11:41	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B453-D	7/1/2018	11:41	SS		SH	6		H	H	H		H	H	H		
PDI-SG-B452	7/1/2018	15:13	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B457	7/1/2018	15:30	SS	MS/MSD	AC	13		H	H	H	x	H	H	H		
PDI-SG-B459	7/1/2018	12:20	SS		AC	8		H	H	H	x	H	H	H	H	
PDI-SG-B460	7/1/2018	11:15	SS		MT	8		H	H	H	x	H	H	H	H	
PDI-SG-B461	7/1/2018	10:00	SS		MT	8		H	H	H	x	H	H	H	H	

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:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

Relinquished by:	Company: AECOM	Date/Time: 7/2/18 1257	Received by:	Company: M-E.	Date/Time: 7/2/18 1257
Relinquished by:	Company: M-E.	Date/Time: 7/2/18 1430	Received by:	Company: TAPOR	Date/Time: 7/2/18 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310** **Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**7/2/2018** COC No: 1 3 of 3 pages
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment Sample Type: D/U	**Analysis Turnaround Time** Calendar (C) or Work Days (W) ☐ 21 days ☒ Other _ASAP_____	**Carrier: Courier**	

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Atterberg Limits ASTM D4318	WQ-PCB Congeners 1668A	WQ-PCDD/Fs 1613B	WQ-TPH Diesel NWTPH-Dx	WQ-Metals, Hg 6020B, 7470	WQ-TOC SM5310B	WQ PAHs, 8270 SIM	WQ-BEHP 8270D-LL	WQ-TBT Kaase/Unger	Sample Specific Notes:
PDI-SG-B461-D	7/1/2018	10:00	SS		AC	6		H	H	H		H	H	H		X	X	X	X	X	X	X	X	
PDI-SG-RB-20180630	6/30/18	17:15	W		AC	14										X	X	X	X	X	X	X	X	

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

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

Special Instructions/QC Requirements & Comments:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

Relinquished by:	Company: Aecom	Date/Time: 7/2/18 1257	Received by:	Company: M.E.	Date/Time: 7/2/18 1257
Relinquished by:	Company: M.E.	Date/Time: 7/2/18 1430	Received by:	Company: TAPOA	Date/Time: 7/2/18 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ ☐ 21 days ☒ Other _ASAP_____	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**7/2/2018** **Carrier: Courier**	**COC No: 1** **__1__ of __3__ pages**

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

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury, NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Sample Specific Notes:
PDI-SG-B434	6/29/2018	11:36	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B435	6/29/2018	13:43	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B441	6/29/2018	15:20	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B442	6/29/2018	16:22	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B439	6/29/2018	11:51	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B440	6/29/2018	14:12	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B445	6/29/2018	16:35	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B446	6/30/2018	11:36	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B447	6/30/2018	14:02	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B449	6/30/2018	15:38	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B443	6/30/2018	10:21	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B444	6/30/2018	13:20	SS		MT	7		H	H	H	x	H	H	H	

580-78527 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:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

.6,01,07,23,02,302

	Company	Date/Time		Company	Date/Time
Relinquished by:	AECOM	7/2/18	1257	Received by: M-E-	7/2/18 1257
Relinquished by:	M-E-	7/2/18	1430	Received by: TAPOR	7/2/18 1430
Relinquished by:	TAPOR	7/2/18	1800	Received by: TASEA	7-3-18 0945

IR5 0.3/0.3
1.8/1.8
1.4/1.4/31/2018

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**7/2/2018** COC No: 1 **Carrier: Courier** 2 of 3 pages

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

Analysis Turnaround Time
Calendar (C) or Work Days (W)
☐ 21 days
☒ Other ASAP

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL Kron/Unger	Atterberg Limits ASTM D4318	Sample Specific Notes:
PDI-SG-B448	6/30/2018	12:08	SS		MT	7		H	H	H	x	H	H	H		
PDI-SG-B451	6/30/2018	14:45	SS		AC	7		H	H	H	x	H	H	H		
PDI-SG-B455	6/30/2018	15:55	SS		AC	7		H	H	H	x	H	H	H		
PDI-SG-B450	7/1/2018	10:30	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B454	7/1/2018	1327	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B453	7/1/2018	11:41	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B453-D	7/1/2018	11:41	SS		SH	6		H	H	H		H	H	H		
PDI-SG-B452	7/1/2018	15:13	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B457	7/1/2018	15:30	SS	MS/MSD	AC	13		H	H	H	x	H	H	H		
PDI-SG-B459	7/1/2018	12:20	SS		AC	8		H	H	H	x	H	H	H	H	
PDI-SG-B460	7/1/2018	11:15	SS		MT	8		H	H	H	x	H	H	H	H	
PDI-SG-B461	7/1/2018	10:00	SS		MT	8		H	H	H	x	H	H	H	H	

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:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

Relinquished by:	Company: Aecom	Date/Time: 7/2/18 1257	Received by:	Company: M-E.	Date/Time: 7/2/18 1257
Relinquished by:	Company: M-E.	Date/Time: 7/2/18 1430	Received by:	Company: TAPOR	Date/Time: 7/2/18 1430
Relinquished by:	Company: TAPOR	Date/Time: 7/2/18 1800	Received by:	Company: TAGES	Date/Time: 7-3-18 0945

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	**7/2/2018** **Carrier: Courier**	COC No: 1 3 of 3 pages

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

Analysis Turnaround Time
Calendar (C) or Work Days (W) _____
☐ 21 days
☒ Other ASAP

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury, NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Atterberg Limits ASTM D4318	WQ-PCB Congeners 1668A	WQ-PCDD/Fs 1613B	WQ-TPH Diesel NWTH-Dx	WQ-Metals, Hg 6020B, 7470	WQ-TOC SM5310B	WQ-PAHs 8270 SIM	WQ-BEHP 8270-LL	WQ-TBT Kanes/Unger	Sample Specific Notes:
PDI-SG-B461-D	7/1/2018	10:00	SS		AC	6		H	H	H		H	H	H										
PDI-SG-RB-20180630	6/30/18	17:15	W		AC	14										X	X	X	X	X	X	X	X	

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

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

Special Instructions/QC Requirements & Comments:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

Relinquished by:	Company: AECOM	Date/Time: 7/2/18 1257	Received by:	Company: M.E.	Date/Time: 7/2/18 1257
Relinquished by:	Company: M.E.	Date/Time: 7/2/18 1430	Received by:	Company: TAPOR	Date/Time: 7/2/18 1430
Relinquished by:	Company: TAPOR	Date/Time: 7/2/18 1800	Received by:	Company: TASEA	Date/Time: 7-3-18 0945

Revised 78527

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: DMU

SURFACE SEDIMENT CHAIN OF CUSTODY

Project Contact: Amy Bald / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2010
Analysis Turnaround Time
Calendar (C) or Work Days (W)
☐ 21 days
☒ Other_ASAP_________

Site Contact: Jennifer Roy
Laboratory Contact: Elaine Walker
Carrier: Courier
7/2/2018 COC No: 1
1 of 3 pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Filtered	PCB Congeners 1668A	[illegible] 8270	TPH Metals, Metals, Mercury [illegible] 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, SVOC, Pentachlorophenol, [illegible] 8270 [illegible]	Sample Specific Notes
PDI-SG-B434	6/29/2018	11:38	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B433	6/29/2018	13:03	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B441	6/29/2018	15:20	SS		MT	7		H	H	(H)	(x)	(H)	H	H	
PDI-SG-B442	6/29/2018	16:22	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B439	6/29/2018	11:51	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B440	6/29/2018	14:12	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B445	6/29/2018	16:35	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B446	6/30/2018	11:36	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B447	6/30/2018	14:02	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B449	6/30/2018	15:38	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B443	6/30/2018	10:21	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B444	6/30/2018	12:50	SS		MT	7		H	H	H	x	H	H	H	

Container Type: WMG=Wide Mouth Glass Jar, Poly/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 (implied)

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

Special Instructions/QC Requirements & Comments:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

① ANALYZE SAMPLE PDI-SG-B441 FOR METALS (6020B), TOC (9060, 104 & 70C) AND GRAIN SIZE (ASTM D7928/D6913) ON RUSH TAT.

Relinquished by:	Company: AECOM	Date/Time: 7/2/18 / 1257	Received by: [signature]	Company: TA-[illegible]	Date/Time: 7/2/18 1257
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: K. Hasley	Company: TA	Date/Time: 7/2/18

COC 1414
Samples 1435

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: D/O

Project Contact: Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2818
Analysis Turnaround Time
Calendar (C) or Work Days (W)
☐ 21 days
☑ Other_ASAP__________

Site Contact: Jennifer Kay
Laboratory Contact: Elaine Walker
Carrier: Courier
7/2/2018 COC No: 1
2 of 3 pages

	Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Filtered	PCB Congeners 1668A	PCDD/Fs 1613B	Metals, Mercury [illegible], TBT/TPH	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & TOC)	Archive Archive -20 C	PAHs, SVOC, Tributyltin, 8270-SIM, 8270, LL, [illegible]	Atterberg Limits ASTM D4318	Sample Specific Notes
-	PDI-SG-B448	6/30/2018	12:08	SS		MT	7		H	H	H	x	H	H	H		
-	PDI-SG-B451	6/30/2018	14:45	SS		AC	7		H	H	H	x	H	H	H		
-	PDI-SG-B455	6/30/2018	15:55	SS		AC	7		H	H	(H)	(x)	(H)	H	H		
-	PDI-SG-B490	7/1/2018	10:30	SS		SH	7		H	H	H	x	H	H	H		
-	PDI-SG-B454	7/1/2018	[illegible]	SS		SH	7		H	H	(H)	(x)	(H)	H	H		
-	PDI-SG-B453	7/1/2018	11:41	SS		SH	7		H	H	(H)	(x)	(H)	H	H		
-	PDI-SG-B453-D	7/1/2018	11:41	SS		SH	6		H	H	(H)		(H)	H	H		
-	PDI-SG-B452	7/1/2018	15:13	SS		SH	7		H	H	H	x	H	H	H		
-	PDI-SG-B457	7/1/2018	15:30	SS	MS/MSD	AC	13		H	H	H	x	H	H	H		
-	PDI-SG-B459	7/1/2018	12:30	SS		AC	8		H	H	H	x	H	H	H	H	
-	PDI-SG-B460	7/1/2018	11:15	SS		MT	8		H	H	(H)	(x)	(H)	H	H	H	
-	PDI-SG-B461	7/1/2018	10:00	SS		MT	8 ?		H	H	H	x	H	H	H	H	

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:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

○ ANALYZE SAMPLES PDI-SG-B455, PDI-SG-B453, PDI-SG-454, PDI-SG-B460, AND PDI-SG-453-D FOR METALS (6020), TOC (9060, 104-TOC), AND GRAIN SIZE (ASTM D7928/D6913) ON RUSH TAT.
NO GRAIN SIZE → PDI-SG-453-D

Relinquished by: [signature]	Company: AECOM	Date/Time: 7/2/18/1257	Received by: [signature]	Company: TA-E	Date/Time: 7/2/18 1257
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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: D/U

Project Contacts Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2810
Analysis Turnaround Time
Calendar (C) or Work Days (W)

- [ ] 21 days
- [x] Other_ASAP

Site Contact: Jennifer Kay
Laboratory Contact: Elaine Walker
Carrier: Courier
COC No: 1
3 of 3 pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Freeze	PCB Congeners 1668A	PCB/DRO 8082	TPH Diesel, Metals, Mercury 6010, 8270A	Grain Size ASTM D422/D4464/D7912	Total organic carbon, Total solids 9060 (TOC & 160.3)	Archive Archive -20 C	PAHs, SVOC, Tributyltin, 8270-SIM, 8260, LL Naphthalene	Atterberg Limits ASTM D4318	WD-RB Congeners 1668A	WD-PCDD/Fs 1613B	WD-TPH Diesel NWTPH-Dx	WD-Metals, Hg 6020, 7470	WD-TOC SM5310B	WD-PAHs 8270 SIM	WD-SEHP 8270D-LL	WD-TBT Krone/Unger	Sample Specific Notes
PDI-SG-B461-D	7/1/2018	10:00	SS		AC	6		H	H	H		H	H	H										
~~PDI-SS-RB-~~ PDI-RB-180630 ** Per Aecom 7/22/18 ***	6/30/18	17:15	W		AC	14										x	x	x	x	x	x	x	x	

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, NC=Resin Column
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid
Freezing: B = Blanketed, PRT = Preliminary, T = Total (log/dissolved)

Special Instructions/QC Requirements & Comments:
Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
Separate reports for each lab.

Sample Disposal
- [ ] Return To Client
- [x] Disposal By Lab
- [x] Archive For 12 Months

Relinquished by: [signature]	Company: AECOM	Date/Time: 7/2/18/1257	Received by: [signature]	Company: TA-E.	Date/Time: 7/2/18 1257
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

*** Changed Sample ID to: PDI-RB-180630 Per Aecom 7/22/18 (EW)

*** Added MN to RB sample Per Aecom 7/22/18 (EW)

Chain of Custody Record

580-78527 Chain of Custody

TestAmerica
IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M		
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78527-3
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 7/20/2018			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals (Hold)	Screen_1668/Screen_PCB_P_S (Hold)	Total Number of containers	Special Instructions/Note:
Preservation Code:										
PDI-SG-B434 (580-78527-1)	6/29/18	11:36 Pacific		Solid			X	X	1	
PDI-SG-B435 (580-78527-2)	6/29/18	13:43 Pacific		Solid			X	X	1	
PDI-SG-B441 (580-78527-3)	6/29/18	15:20 Pacific		Solid			X	X	1	
PDI-SG-B442 (580-78527-4)	6/29/18	16:22 Pacific		Solid			X	X	1	
PDI-SG-B439 (580-78527-5)	6/29/18	11:51 Pacific		Solid			X	X	1	
PDI-SG-B440 (580-78527-6)	6/29/18	14:12 Pacific		Solid			X	X	1	
PDI-SG-B445 (580-78527-7)	6/29/18	16:35 Pacific		Solid			X	X	1	
PDI-SG-B446 (580-78527-8)	6/30/18	11:36 Pacific		Solid			X	X	1	
PDI-SG-B447 (580-78527-9)	6/30/18	14:02 Pacific		Solid			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	7/6/18 1430	TA-PDR	[signature]	7/6/18 0920	TA-KNX
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

Page 30 of 36

7/31/2018

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-56869.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 2 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78527-3
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 7/20/2018			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals (Hold)	Screen_1668/Screen_PCB_P_S (Hold)	Total Number of containers	Special Instructions/Note:
Preservation Code:										
PDI-SG-B449 (580-78527-10)	6/30/18	15:38 Pacific		Solid			X	X	1	
PDI-SG-B443 (580-78527-11)	6/30/18	10:21 Pacific		Solid			X	X	1	
PDI-SG-B444 (580-78527-12)	6/30/18	11:10 Pacific		Solid			X	X	1	
PDI-SG-B448 (580-78527-13)	6/30/18	12:08 Pacific		Solid			X	X	1	
PDI-SG-B451 (580-78527-14)	6/30/18	14:45 Pacific		Solid			X	X	1	
PDI-SG-B455 (580-78527-15)	6/30/18	15:55 Pacific		Solid			X	X	1	
PDI-SG-B450 (580-78527-16)	7/1/18	10:30 Pacific		Solid			X	X	1	
PDI-SG-B454 (580-78527-17)	7/1/18	12:42 Pacific		Solid			X	X	1	
PDI-SG-B453 (580-78527-18)	7/1/18	11:41 Pacific		Solid			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	7/1/18 1430	TAL-SOR	[signature]	7/6/18 0920	TA-Nx
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

7/31/2018

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-56869.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 3 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78527-3
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 7/20/2018			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1668A/1668_P_Sox (MOD) 209 PCBs plus Totals (Hold)	Screen_1668/Screen_PCB_P_S (Hold)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B453-D (580-78527-19)	7/1/18	11:41 Pacific		Solid			X	X	1	
PDI-SG-B452 (580-78527-20)	7/1/18	15:13 Pacific		Solid			X	X	1	
PDI-SG-B457 (580-78527-21)	7/1/18	15:30 Pacific		Solid			X	X	1	
PDI-SG-B459 (580-78527-22)	7/1/18	12:20 Pacific		Solid			X	X	1	
PDI-SG-B460 (580-78527-23)	7/1/18	11:15 Pacific		Solid			X	X	1	
PDI-SG-B461 (580-78527-24)	7/1/18	10:00 Pacific		Solid			X	X	1	
PDI-SG-B461-D (580-78527-25)	7/1/18	10:00 Pacific		Solid			X	X	1	
PDI-SG-RB-20180630 (580-78527-26)	6/30/18	17:15 Pacific		Water					1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	7/31/18 1430	TAL	[signature]	7/6/18 0920	TA-Ken
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 09/20/2016

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7/31/2018

Loc: 580
78527

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?
1. Are the shipping containers intact?	/			☐ **Containers, Broken**
2. Were ambient air containers received intact?			/	☐ Checked in lab
3. The coolers/containers custody seal if present, is it intact?	/			☐ Yes ☐ NA
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC68 Correction factor: 0.0°C	/			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**
5. Were all of the sample containers received intact?	/			☐ **Containers, Broken**
6. Were samples received in appropriate containers?	/			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**
7. Do sample container labels match COC? (IDs, Dates, Times)	/			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**
8. Were all of the samples listed on the COC received?	/			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**
9. Is the date/time of sample collection noted?	/			☐ **COC; No Date/Time; Client Contacted**
10. Was the sampler identified on the COC?			/	☐ **Sampler Not Listed on COC**
11. Is the client and project name/# identified?	/			☐ **COC Incorrect/Incomplete**
12. Are tests/parameters listed for each sample?	/			☐ **COC No tests on COC**
13. Is the matrix of the samples noted?	/			☐ **COC Incorrect/Incomplete**
14. Was COC relinquished? (Signed/Dated/Timed)	/			☐ **COC Incorrect/Incomplete**
15. Were samples received within holding time?	/			☐ **Holding Time - Receipt**
16. Were samples received with correct chemical preservative (excluding Encore)?			/	☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**
17. Were VOA samples received without headspace?			/	☐ **Headspace (VOA only)**
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: 7194 2020/04	/			☐ **Residual Chlorine**
19. For 1613B water samples is pH<9?			/	☐ If no, lab will adjust
20. For rad samples was sample activity info. Provided?			/	☐ Project missing info

Comments/Actions Taken

RT: 1.0°C CT: 1.0°C 1 Cooler
Fedex No Custody seal intact
trk# 4423 0750 6241
RC-ND, KW 7/6/18

Labeling Verified by: **Date:**

pH test strip lot number:

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: _____ PM Instructions: _____

Sample Receiving Associate: _____ Date: 7/6/18

QA026R30.doc, 080916

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78527-3

Login Number: 78527
List Number: 1
Creator: Rogers, Angeline D

List Source: TestAmerica Seattle

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

Isotope Dilution Summary

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

TestAmerica Job ID: 580-78527-3

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

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB1L	PCB3L	PCB4L	PCB15L	PCB19L	PCB37L	PCB54L	PCB77L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-78527-26	PDI-RB-180630	71	68	83	79	92	89	79	78
LCS 140-21886/7-A	Lab Control Sample	65	65	77	85	76 q	86	77	79
MB 140-21886/6-A	Method Blank	58	59	70	73	76 q	81	64	77

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB81L	PCB104L	PCB105L	P114L	PCB118L	PCB123L	PCB126L	PCB155L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-78527-26	PDI-RB-180630	80	79	92	90	90	88	82	78
LCS 140-21886/7-A	Lab Control Sample	78	70	90	90	88	86	85	73
MB 140-21886/6-A	Method Blank	73	51	86	82	80	77	84	45

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PCB156L	PCB157L	PCB167L	PCB169L	PCB170L	PCB188L	PCB189L	PCB202L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)	(30-140)
580-78527-26	PDI-RB-180630	84 C	84 C156	82	82	72	76	64	87
LCS 140-21886/7-A	Lab Control Sample	90 C	90 C156	91	93	84	75	79	93
MB 140-21886/6-A	Method Blank	85 C	85 C156	83	87	80	54	80	80

		Percent Isotope Dilution Recovery (Acceptance Limits)			
		PCB205L	PCB206L	PCB208L	PCB209L
Lab Sample ID	Client Sample ID	(30-140)	(30-140)	(30-140)	(30-140)
580-78527-26	PDI-RB-180630	65	79	82	88
LCS 140-21886/7-A	Lab Control Sample	80	94	93	94
MB 140-21886/6-A	Method Blank	79	89	91	91

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
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

Isotope Dilution Summary

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

TestAmerica Job ID: 580-78527-3

PCB208L = PCB-208L
PCB209L = PCB-209L