ALS Environmental
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July 20, 2018

Analytical Report for Service Request No: K1803975A

Amy Dahl
AECOM
1111 Third Avenue, Suite 1600
Seattle, WA 98101

RE: Portland Harbor Pre-Remedial Design Investigation / 60566335

Dear Amy,

Enclosed are the results of the sample(s) submitted to our laboratory April 30, 2018
For your reference, these analyses have been assigned our service request number **K1803975.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
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Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
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ALS Environmental

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation
Sample Matrix: Sediment, Water

Service Request: K1803975
Date Received: 04/30/2018

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt:

Thirty five sediment, water samples were received for analysis at ALS Environmental on 04/30/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Semivolatiles by GC/MS:

Method 8270D, 5/17/18:The detection limit was elevated for sample PD1-SG-B385-BL1. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. Clean-up of the extract was performed within the scope of the method, but did not eliminate enough of the background components to prevent dilution. The reporting limits are adjusted to reflect the dilution.

Method 8270D SIM-PAH:The detection limits were elevated for both samples due to less than optimal sample volume received for analysis.

Method 8270D SIM-PAH, 05/07/2018:The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS20\0507F002.D: Anthracene. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Method 8270D SIM-PAH, 05/31/2018:The matrix spike recovery of Fluoranthene, Ptrene, Chrysene, Benzo(a)pyrene and Benzo (g,h,i)perylene for sample PDI-SG-B331-BL1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

Semivoa GC:

No significant anomalies were noted with this analysis.

Approved by _____ Date 07/20/2018

Chain of Custody

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K1803975

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SURFACE SEDIMENT
CHAIN OF CUSTODY

Client Contact	Project Contact: Amy Dahl / Chelsey Cook	Site Contact: Jennifer Ray	4/30/2018	COC No:
AECOM	Tel: (206) 438-2261 / (206) 438-2010	Laboratory Contact: Howard-Holmes	Carrier: Courier	1 of 3 COCs
1111 3rd Ave Suite 1600	Analysis Turnaround Time			
Seattle, WA 98101	Calendar (C) or Work Days (W) ______			
Phone: (206) 438-2700 Fax: 1+(866) 495-5288				
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	[x] 21 days			
Portland, OR	[ ] Other ______			
Project #: 60566335 Study: Surface Sediment				

	Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Pesticides, PAHs, Total Solids, BEHP, Tributyltin 1669M, 8270-SIM, 160.3, 8270-LL, Kron/Unger	Sample Specific Notes:
1	PDI-SG-B351-BL1	4/29/2018	10:10	SE		LS	1		X	
2	PDI-SG-B353-BL1	4/29/2018	11:03	SE		LS	1		X	
3	PDI-SG-B359-BL1	4/29/2018	11:55	SE		LS	1		X	
4	PDI-SG-B361-BL1	4/29/2018	12:45	SE		LS	1		X	
5	PDI-SG-B364-BL1	4/29/2018	14:50	SE		LS	1		X	
6	PDI-SG-B370-BL1	4/29/2018	15:45	SE		LS	1		X	
7	PDI-SG-B371-BL1	4/29/2018	16:50	SE		LS	1		X	
8	PDI-SG-B408-BL1	4/28/2018	10:30	SE		LS	1		X	
9	PDI-SG-B386-BL1	4/28/2018	16:40	SE		LS	1		X	
10	PDI-SG-B385-BL1	4/28/2018	17:40	SE		LS	1		X	
11	PDI-SG-B360-BL1	4/28/2018	17:07	SE		MM	1		X	
12	PDI-SG-B350-BL1	4/28/2018	16:22	SE		MM	1		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* [X] *Disposal By Lab* [X] *Archive For 12 Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Michael McGoey	AECOM	4-30-18 1205	[signature]	ALS	4/30/18 1205
[signature]	ALS	4/30/18 1315	[signature]	ALS	4/30/18 1315

K1803975

ALS Environmental Kelso	
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SURFACE SEDIMENT
CHAIN OF CUSTODY

Client Contact	Project Contact: Amy Dahl / Chelsey Cook	Site Contact: Jennifer Ray	4/30/2018	COC No:
AECOM	Tel: (206) 438-2261 / (206) 438-2010	Laboratory Contact: Howard Holmes	Carrier: Courier	2 of 3 COCs
1111 3rd Ave Suite 1600	Analysis Turnaround Time			
Seattle, WA 98101	Calendar (C) or Work Days (W)			
Phone: (206) 438-2700 Fax: 1-(866) 495-5288	[x] 21 days			
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	[ ] Other ______			
Portland, OR				
Project #: 60566335 Study: Surface Sediment				

Pesticides, PAHs, TS, BETHP, TBT for AECOM HBH 5/1/18

	Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Analysis	Sample Specific Notes:
13	PDI-SG-B400-BL1	4/28/2018	14:40	SE		LS	1		X	
14	PDI-SG-B343-BL1	4/28/2018	15:36	SE		MM	1		X	
15	PDI-SG-B340-BL1	4/28/2018	14:38	SE		MM	1		X	
16	PDI-SG-B347-BL1	4/28/2018	13:42	SE		MM	1		X	
17	PDI-SG-B347-BL1-D	4/28/2018	13:42	SE		MM	1		X	
18	PDI-SG-B339-BL1	4/28/2018	11:47	SE		MM	1		X	
19	PDI-SG-B341-BL1	4/28/2018	10:56	SE		MM	1		X	
20	PDI-SG-B345-BL1	4/28/2018	10:05	SE		MM	1		X	
21	PDI-SG-B312-BL1	4/27/2018	10:24	SE		MM	1		X	
22	PDI-SG-B328-BL1	4/27/2018	14:39	SE		MM	1		X	
23	PDI-SG-B331-BL1	4/27/2018	15:45	SE	MS/MSD	MM	3		X	
24	PDI-SG-B336-BL1	4/27/2018	16:45	SE		MM	1		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 [X] Disposal By Lab [X] Archive For 12 Months

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

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	AECOM	4-30-18 1205	[signature]	HLV	4/30/18 1205
[signature]	HLV	4/30/18 1315	[signature]	ALS	4/30/18 1315

K1803975

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SURFACE SEDIMENT
CHAIN OF CUSTODY

Client Contact	**Project Contact: Amy Dahl / Chelsey Cook**	**Site Contact: Jennifer Ray**	**4/30/2018**	COC No:
AECOM	**Tel: (206) 438-2261 / (206) 438-2010**	**Laboratory Contact: Howard-Holmes**	**Carrier: Courier**	_3_ of _3_ COCs
1111 3rd Ave Suite 1600	**Analysis Turnaround Time**			
Seattle, WA 98101	Calendar (C) or Work Days (W) ______			
Phone: (206) 438-2700 Fax: 1+(866) 495-5288				
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	[x] 21 days			
Portland, OR	[ ] Other ______			
Project #: 60566335 Study: Surface Sediment				

	Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Pesticides, PAHs, Total Solids, BEHP, Tributyltin 1669M, 8270-SIM, 160.3, 8270-LL, Kron/Unger	WQ - Pesticides 1669M	WQ - PAHs 8270-SIM	WQ - BEHP EPA 8270D-LL	WQ - Tributyltin Krone/Unger	Sample Specific Notes:
25	PDI-SG-B365-BL1	4/27/2018	17:41	SE		TP	1		X					
26	PDI-SG-B369-BL1	4/27/2018	16:55	SE		TP	1		X					
27	PDI-SG-B376-BL1	4/27/2018	16:07	SE		TP	1		X					
28	PDI-SG-B375-BL1	4/27/2018	15:20	SE		TP	1		X					
29	PDI-SG-B388-BL1	4/27/2018	14:02	SE		TP	1		X					
30	PDI-SG-B388-BL1-D	4/27/2018	14:02	SE		TP	1		X					
31	PDI-SG-B381-BL1	4/29/2018	13:30	SE		TP	1		X					
32	PDI-SG-B381-BL1-D	4/29/2018	13:32	SE		TP	1		X					
33	PDI-SG-B379-BL1	4/29/2018	14:55	SE		TP	1		X					
34	PDI-RB-VV-180429-1730	4/29/2018	17:30	SE		LS	8			X	X	X	X	
35	PDI-RB-VV-180429-1800	4/29/2018	18:00	SE		TP	8			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 [X] Disposal By Lab [X] Archive For **12** Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Michael McCoy	AECOM	4-30-18 1205	[signature]	ALS	4/30/18 120[illegible]
[signature]	ALS	4/30/18 1315	[signature]	ALS	4/30/18 1315

PC H2

Cooler Receipt and Preservation Form

Client AECOM Service Request *K18* 03975

Received: 4/30/18 Opened: 4/30/18 By: [illegible] Unloaded: 4/30/18 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? one, front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

	Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number (NA)	File
*	7.2	7.2	1.2	1.2	0	308	Soils		
*	5.6	5.7	8.3	8.4	+0.1	360	Waters		

4. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____

5. Were custody papers properly filled out (ink, signed, etc.)?	NA	(Y)	N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.*	NA	(Y)	N
If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*			
7. Were all sample labels complete (i.e analysis, preservation, etc.)?	NA	(Y)	N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.*	NA	Y	(N)
9. Were appropriate bottles/containers and volumes received for the tests indicated?	NA	Y	(N)
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below*	(NA)	Y	N
11. Were VOA vials received without headspace? *Indicate in the table below.*	(NA)	Y	N
12. Was C12/Res negative?	NA	(Y)	N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Rec'd TestAmer COC for pg 2 of 3.

* Temp Blank placed b/t 2 bags of ice. Raw temp is more indicative of samp temp.

* Ambient temp taken b/t ice bag + amber bottle. Temp blank at bottom corn of cooler away from ice bag.

Cooler Receipt and Preservation Form

Client _____ Service Request ~~KIT~~ 1803975

Notes, Discrepancies & Resolutions:

For " PDI-RB-VV-180429-1800" recd 6 bottles, not 8.

Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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www.alsglobal.com

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 - 04/29/18
Sample Matrix:	Sediment	**Date Received:**	04/30/18
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PDI-SG-B351-BL1	K1803975-001	**43.8**	-	-	1	04/30/18 17:04	
PDI-SG-B353-BL1	K1803975-002	**42.5**	-	-	1	04/30/18 17:04	
PDI-SG-B359-BL1	K1803975-003	**41.4**	-	-	1	04/30/18 17:04	
PDI-SG-B361-BL1	K1803975-004	**44.0**	-	-	1	04/30/18 17:04	
PDI-SG-B364-BL1	K1803975-005	**42.5**	-	-	1	04/30/18 17:04	
PDI-SG-B370-BL1	K1803975-006	**58.8**	-	-	1	04/30/18 17:04	
PDI-SG-B371-BL1	K1803975-007	**39.3**	-	-	1	04/30/18 17:04	
PDI-SG-B408-BL1	K1803975-008	**59.5**	-	-	1	04/30/18 17:04	
PDI-SG-B386-BL1	K1803975-009	**44.1**	-	-	1	04/30/18 17:04	
PDI-SG-B385-BL1	K1803975-010	**42.1**	-	-	1	04/30/18 17:04	
PDI-SG-B360-BL1	K1803975-011	**45.0**	-	-	1	04/30/18 17:04	
PDI-SG-B350-BL1	K1803975-012	**41.6**	-	-	1	04/30/18 17:04	
PDI-SG-B400-BL1	K1803975-013	**38.7**	-	-	1	04/30/18 17:04	
PDI-SG-B343-BL1	K1803975-014	**49.3**	-	-	1	04/30/18 17:04	
PDI-SG-B340-BL1	K1803975-015	**50.2**	-	-	1	04/30/18 17:04	
PDI-SG-B347-BL1	K1803975-016	**50.2**	-	-	1	04/30/18 17:04	
PDI-SG-B347-BL1-D	K1803975-017	**50.2**	-	-	1	04/30/18 17:04	
PDI-SG-B339-BL1	K1803975-018	**58.4**	-	-	1	04/30/18 17:04	
PDI-SG-B341-BL1	K1803975-019	**58.1**	-	-	1	04/30/18 17:04	
PDI-SG-B345-BL1	K1803975-020	**44.1**	-	-	1	04/30/18 17:04	
PDI-SG-B312-BL1	K1803975-021	**69.9**	-	-	1	05/01/18 15:41	
PDI-SG-B328-BL1	K1803975-022	**64.0**	-	-	1	05/01/18 15:41	
PDI-SG-B331-BL1	K1803975-023	**51.6**	-	-	1	05/01/18 15:41	
PDI-SG-B336-BL1	K1803975-024	**52.4**	-	-	1	05/01/18 15:41	
PDI-SG-B365-BL1	K1803975-025	**42.2**	-	-	1	05/01/18 15:41	
PDI-SG-B369-BL1	K1803975-026	**43.6**	-	-	1	05/01/18 15:41	
PDI-SG-B376-BL1	K1803975-027	**40.9**	-	-	1	05/01/18 15:41	
PDI-SG-B375-BL1	K1803975-028	**44.0**	-	-	1	05/01/18 15:41	
PDI-SG-B388-BL1	K1803975-029	**49.5**	-	-	1	05/01/18 15:41	
PDI-SG-B388-BL1-D	K1803975-030	**48.9**	-	-	1	05/01/18 15:41	
PDI-SG-B381-BL1	K1803975-031	**41.9**	-	-	1	05/01/18 15:41	
PDI-SG-B381-BL1-D	K1803975-032	**41.9**	-	-	1	05/01/18 15:41	
PDI-SG-B379-BL1	K1803975-033	**38.2**	-	-	1	05/01/18 15:41	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 - 04/29/18
Sample Matrix:	Sediment	**Date Received:**	04/30/18
Analysis Method:	160.3 Modified	**Units:**	Percent
Prep Method:	None	**Basis:**	As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
PDI-SG-B351-BL1	K1803975-001DUP	-	-	43.8	44.5	44.2	2	20	04/30/18
PDI-SG-B360-BL1	K1803975-011DUP	-	-	45.0	44.8	44.9	<1	20	04/30/18
PDI-SG-B331-BL1	K1803975-023DUP	-	-	51.6	52.4	52.0	2	20	05/01/18
PDI-SG-B381-BL1	K1803975-031DUP	-	-	41.9	42.1	42.0	<1	20	05/01/18

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Butyltins

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 10:10
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B351-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-001	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**1.0 J**	2.3	0.97	1	06/11/18 16:05	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	100	10 - 120	06/11/18 16:05	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 11:03
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B353-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-002	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	1.1	1	06/11/18 18:13	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	100	10 - 120	06/11/18 18:13	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 11:55
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B359-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-003	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	06/11/18 18:32	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	86	10 - 120	06/11/18 18:32	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 12:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B361-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-004	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**1.7 J**	2.3	0.98	1	06/13/18 16:22	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	83	10 - 120	06/13/18 16:22	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 14:50
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B364-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-005	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	1.0	1	06/11/18 19:09	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	97	10 - 120	06/11/18 19:09	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 15:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B370-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-006	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.7	0.72	1	06/11/18 19:27	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	61	10 - 120	06/11/18 19:27	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 16:50
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B371-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-007	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.5	1.1	1	06/11/18 19:45	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	103	10 - 120	06/11/18 19:45	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 10:30
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B408-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-008	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**2.0**	1.6	0.71	1	06/13/18 16:41	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	92	10 - 120	06/13/18 16:41	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 16:40
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B386-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-009	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	0.97	1	06/11/18 20:22	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	89	10 - 120	06/11/18 20:22	

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 17:40
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B385-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-010	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	06/13/18 18:14	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	91	10 - 120	06/13/18 18:14	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 17:07
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B360-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-011	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.2	0.95	1	06/13/18 16:59	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	82	10 - 120	06/13/18 16:59	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 16:22
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B350-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-012	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	06/11/18 21:35	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	96	10 - 120	06/11/18 21:35	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 14:40
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B400-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-013	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.5	1.1	1	06/11/18 21:54	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	83	10 - 120	06/11/18 21:54	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 15:36
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B343-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-014	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.0	0.87	1	06/11/18 22:12	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	61	10 - 120	06/11/18 22:12	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 14:38
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B340-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-015	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**44 P**	2.0	0.85	1	06/13/18 17:19	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	88	10 - 120	06/13/18 17:19	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 13:42
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B347-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-016	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.0	0.85	1	06/11/18 22:49	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	90	10 - 120	06/11/18 22:49	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 13:42
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B347-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-017	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.0	0.85	1	06/11/18 23:08	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	99	10 - 120	06/11/18 23:08	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 11:47
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B339-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-018	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**2.0 P**	1.7	0.74	1	06/13/18 17:37	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	80	10 - 120	06/13/18 17:37	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 10:56
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B341-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-019	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND Ui	2.8	2.8	1	06/13/18 17:55	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	87	10 - 120	06/13/18 17:55	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 10:05
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B345-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-020	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.2	0.96	1	06/12/18 00:03	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	96	10 - 120	06/12/18 00:03	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 10:24
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B312-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-021	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**48**	1.4	0.62	1	06/07/18 16:20	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	06/07/18 16:20	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 14:39
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B328-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-022	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**5.5**	1.6	0.68	1	06/07/18 16:38	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	71	10 - 120	06/07/18 16:38	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 15:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B331-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-023	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**20**	1.9	0.83	1	06/07/18 16:57	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	79	10 - 120	06/07/18 16:57	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 16:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B336-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-024	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.9	0.81	1	06/07/18 17:53	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	55	10 - 120	06/07/18 17:53	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 17:41
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B365-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-025	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	1.1	1	06/07/18 18:12	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	06/07/18 18:12	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 16:55
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B369-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-026	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	0.98	1	06/07/18 18:30	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	59	10 - 120	06/07/18 18:30	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 16:07
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B376-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-027	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	06/07/18 19:25	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	60	10 - 120	06/07/18 19:25	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 15:20
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B375-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-028	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	0.97	1	06/07/18 19:43	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	66	10 - 120	06/07/18 19:43	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 14:02
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B388-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-029	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	**0.92 J**	2.0	0.87	1	06/26/18 19:07	6/21/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	54	10 - 120	06/26/18 19:07	

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Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 14:02
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B388-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-030	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.0	0.88	1	06/07/18 20:20	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	06/07/18 20:20	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 13:30
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B381-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-031	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.4	1.1	1	06/07/18 20:39	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	72	10 - 120	06/07/18 20:39	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 13:32
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B381-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-032	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.3	1.1	1	06/07/18 20:57	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	80	10 - 120	06/07/18 20:57	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 14:55
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B379-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-033	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	2.6	1.2	1	06/07/18 21:16	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	67	10 - 120	06/07/18 21:16	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 17:30
Sample Matrix:	Water	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-RB-VV-180429-1730	**Units:**	ug/L
Lab Code:	K1803975-034	**Basis:**	NA

Butyltins

Analysis Method: ALS SOP
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.050	0.012	1	06/08/18 16:39	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	116	31 - 137	06/08/18 16:39	

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 18:00
Sample Matrix:	Water	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-RB-VV-180429-1800	**Units:**	ug/L
Lab Code:	K1803975-035	**Basis:**	NA

Butyltins

Analysis Method: ALS SOP
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.050	0.012	1	06/08/18 16:58	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	111	31 - 137	06/08/18 16:58	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1805597-04	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.98	0.43	1	06/11/18 17:18	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	65	10 - 120	06/11/18 17:18	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1805611-04	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.98	0.43	1	06/07/18 16:02	5/11/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	74	10 - 120	06/07/18 16:02	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ1805737-03	**Basis:**	NA

Butyltins

Analysis Method: ALS SOP
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	0.050	0.012	1	06/08/18 15:44	5/3/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	97	31 - 137	06/08/18 15:44	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1808444-03	**Basis:**	Dry

Butyltins

Analysis Method: ALS SOP
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Tri-n-butyltin Cation	ND U	1.0	0.43	1	06/26/18 20:02	6/21/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tri-n-propyltin	57	10 - 120	06/26/18 20:02	

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Butyltins

Analysis Method: ALS SOP
Extraction Method: Method

Sample Name	Lab Code	Tri-n-propyltin 10-120
PDI-SG-B351-BL1	K1803975-001	100
PDI-SG-B353-BL1	K1803975-002	100
PDI-SG-B359-BL1	K1803975-003	86
PDI-SG-B361-BL1	K1803975-004	83
PDI-SG-B364-BL1	K1803975-005	97
PDI-SG-B370-BL1	K1803975-006	61
PDI-SG-B371-BL1	K1803975-007	103
PDI-SG-B408-BL1	K1803975-008	92
PDI-SG-B386-BL1	K1803975-009	89
PDI-SG-B385-BL1	K1803975-010	91
PDI-SG-B360-BL1	K1803975-011	82
PDI-SG-B350-BL1	K1803975-012	96
PDI-SG-B400-BL1	K1803975-013	83
PDI-SG-B343-BL1	K1803975-014	61
PDI-SG-B340-BL1	K1803975-015	88
PDI-SG-B347-BL1	K1803975-016	90
PDI-SG-B347-BL1-D	K1803975-017	99
PDI-SG-B339-BL1	K1803975-018	80
PDI-SG-B341-BL1	K1803975-019	87
PDI-SG-B345-BL1	K1803975-020	96
PDI-SG-B312-BL1	K1803975-021	72
PDI-SG-B328-BL1	K1803975-022	71
PDI-SG-B331-BL1	K1803975-023	79
PDI-SG-B336-BL1	K1803975-024	55
PDI-SG-B365-BL1	K1803975-025	72
PDI-SG-B369-BL1	K1803975-026	59
PDI-SG-B376-BL1	K1803975-027	60
PDI-SG-B375-BL1	K1803975-028	66
PDI-SG-B388-BL1	K1803975-029	54
PDI-SG-B388-BL1-D	K1803975-030	72
PDI-SG-B381-BL1	K1803975-031	72
PDI-SG-B381-BL1-D	K1803975-032	80
PDI-SG-B379-BL1	K1803975-033	67
Method Blank	KQ1805597-04	65
Method Blank	KQ1805611-04	74
Method Blank	KQ1808444-03	57
Lab Control Sample	KQ1805597-03	78

Client: AECOM **Service Request:** K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Butyltins

Analysis Method: ALS SOP

Extraction Method: Method

Sample Name	Lab Code	Tri-n-propyltin 10-120
Lab Control Sample	KQ1805611-03	73
Lab Control Sample	KQ1808444-01	60
Duplicate Lab Control Sample	KQ1808444-02	43
PDI-SG-B351-BL1	KQ1805597-01	98
PDI-SG-B351-BL1	KQ1805597-02	82
PDI-SG-B331-BL1	KQ1805611-01	70
PDI-SG-B331-BL1	KQ1805611-02	74

Client: AECOM **Service Request:** K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Butyltins

Analysis Method: ALS SOP

Extraction Method: Method

Sample Name	Lab Code	Tri-n-propyltin 10-120
PDI-RB-VV-180429-1730	K1803975-034	116
PDI-RB-VV-180429-1800	K1803975-035	111
Method Blank	KQ1805737-03	97
Lab Control Sample	KQ1805737-01	94
Duplicate Lab Control Sample	KQ1805737-02	113

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18
Sample Matrix:	Sediment	**Date Received:**	04/30/18
		Date Analyzed:	06/11/18
		Date Extracted:	05/11/18

Duplicate Matrix Spike Summary
Butyltins

Sample Name:	PDI-SG-B351-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-001	**Basis:**	Dry
Analysis Method:	ALS SOP		
Prep Method:	Method		

		Matrix Spike KQ1805597-01			Duplicate Matrix Spike KQ1805597-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Tri-n-butyltin Cation	1.0 J	53.3	50.1	104	47.4	50.1	93	10-115	12	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18
Sample Matrix:	Sediment	**Date Received:**	04/30/18
		Date Analyzed:	06/7/18
		Date Extracted:	05/11/18

Duplicate Matrix Spike Summary
Butyltins

Sample Name:	PDI-SG-B331-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-023	**Basis:**	Dry
Analysis Method:	ALS SOP		
Prep Method:	Method		

		Matrix Spike KQ1805611-01			Duplicate Matrix Spike KQ1805611-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Tri-n-butyltin Cation	20	41.1	42.8	48	44.8	42.9	57	10-115	9	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18
Sample Matrix:	Sediment	**Date Extracted:**	05/11/18

Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	Method	**Basis:**	Dry
		Analysis Lot:	594221

Lab Control Sample
KQ1805597-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Tri-n-butyltin Cation	20.8	22.3	94	10-122

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18
Sample Matrix:	Sediment	**Date Extracted:**	05/11/18

Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	Method	**Basis:**	Dry
		Analysis Lot:	593340

Lab Control Sample
KQ1805611-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Tri-n-butyltin Cation	19.4	22.3	87	10-122

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18
Sample Matrix:	Water	**Date Extracted:**	05/03/18

Duplicate Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	**Units:**	ug/L
Prep Method:	EPA 3520C	**Basis:**	NA
		Analysis Lot:	594110

	Lab Control Sample KQ1805737-01			Duplicate Lab Control Sample KQ1805737-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Tri-n-butyltin Cation	0.431	0.446	97	0.527	0.446	118	32-122	20	30

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18
Sample Matrix:	Sediment	**Date Extracted:**	06/21/18

Duplicate Lab Control Sample Summary
Butyltins

Analysis Method:	ALS SOP	**Units:**	ug/Kg
Prep Method:	Method	**Basis:**	Dry
		Analysis Lot:	596431

	Lab Control Sample KQ1808444-01			Duplicate Lab Control Sample KQ1808444-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Tri-n-butyltin Cation	22.3	22.3	100	18.1	22.3	81	10-122	21	40

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 17:18
Sample Matrix:	Sediment	**Date Extracted:**	05/11/18

Method Blank Summary
Butyltins

Sample Name:	Method Blank	**Instrument ID:**	K-GC-26
Lab Code:	KQ1805597-04	**File ID:**	J:\GC26\DATA\061118\0611F029.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	594221,594642
Prep Method:	Method	**Extraction Lot:**	312940

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B351-BL1	K1803975-001	J:\GC26\DATA\061118\0611F025.D\	06/11/18 16:05
PDI-SG-B351-BL1MS	KQ1805597-01	J:\GC26\DATA\061118\0611F026.D\	06/11/18 16:23
PDI-SG-B351-BL1DMS	KQ1805597-02	J:\GC26\DATA\061118\0611F027.D\	06/11/18 16:41
Lab Control Sample	KQ1805597-03	J:\GC26\DATA\061118\0611F028.D\	06/11/18 17:00
PDI-SG-B353-BL1	K1803975-002	J:\GC26\DATA\061118\0611F032.D\	06/11/18 18:13
PDI-SG-B359-BL1	K1803975-003	J:\GC26\DATA\061118\0611F033.D\	06/11/18 18:32
PDI-SG-B364-BL1	K1803975-005	J:\GC26\DATA\061118\0611F035.D\	06/11/18 19:09
PDI-SG-B370-BL1	K1803975-006	J:\GC26\DATA\061118\0611F036.D\	06/11/18 19:27
PDI-SG-B371-BL1	K1803975-007	J:\GC26\DATA\061118\0611F037.D\	06/11/18 19:45
PDI-SG-B386-BL1	K1803975-009	J:\GC26\DATA\061118\0611F039.D\	06/11/18 20:22
PDI-SG-B350-BL1	K1803975-012	J:\GC26\DATA\061118\0611F043.D\	06/11/18 21:35
PDI-SG-B400-BL1	K1803975-013	J:\GC26\DATA\061118\0611F044.D\	06/11/18 21:54
PDI-SG-B343-BL1	K1803975-014	J:\GC26\DATA\061118\0611F045.D\	06/11/18 22:12
PDI-SG-B347-BL1	K1803975-016	J:\GC26\DATA\061118\0611F047.D\	06/11/18 22:49
PDI-SG-B347-BL1-D	K1803975-017	J:\GC26\DATA\061118\0611F048.D\	06/11/18 23:08
PDI-SG-B345-BL1	K1803975-020	J:\GC26\DATA\061118\0611F051.D\	06/12/18 00:03
PDI-SG-B361-BL1	K1803975-004	J:\GC26\DATA\061318\0613F019.D\	06/13/18 16:22
PDI-SG-B408-BL1	K1803975-008	J:\GC26\DATA\061318\0613F020.D\	06/13/18 16:41
PDI-SG-B360-BL1	K1803975-011	J:\GC26\DATA\061318\0613F021.D\	06/13/18 16:59
PDI-SG-B340-BL1	K1803975-015	J:\GC26\DATA\061318\0613F022.D\	06/13/18 17:19
PDI-SG-B339-BL1	K1803975-018	J:\GC26\DATA\061318\0613F023.D\	06/13/18 17:37
PDI-SG-B341-BL1	K1803975-019	J:\GC26\DATA\061318\0613F024.D\	06/13/18 17:55
PDI-SG-B385-BL1	K1803975-010	J:\GC26\DATA\061318\0613F025.D\	06/13/18 18:14

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 16:02
Sample Matrix:	Sediment	**Date Extracted:**	05/11/18

Method Blank Summary
Butyltins

Sample Name:	Method Blank	**Instrument ID:**	K-GC-26
Lab Code:	KQ1805611-04	**File ID:**	J:\GC26\DATA\060718\0607F027.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	593340
Prep Method:	Method	**Extraction Lot:**	312957

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805611-03	J:\GC26\DATA\060718\0607F026.D\	06/07/18 15:43
PDI-SG-B312-BL1	K1803975-021	J:\GC26\DATA\060718\0607F028.D\	06/07/18 16:20
PDI-SG-B328-BL1	K1803975-022	J:\GC26\DATA\060718\0607F029.D\	06/07/18 16:38
PDI-SG-B331-BL1	K1803975-023	J:\GC26\DATA\060718\0607F030.D\	06/07/18 16:57
PDI-SG-B331-BL1MS	KQ1805611-01	J:\GC26\DATA\060718\0607F031.D\	06/07/18 17:15
PDI-SG-B331-BL1DMS	KQ1805611-02	J:\GC26\DATA\060718\0607F032.D\	06/07/18 17:35
PDI-SG-B336-BL1	K1803975-024	J:\GC26\DATA\060718\0607F033.D\	06/07/18 17:53
PDI-SG-B365-BL1	K1803975-025	J:\GC26\DATA\060718\0607F034.D\	06/07/18 18:12
PDI-SG-B369-BL1	K1803975-026	J:\GC26\DATA\060718\0607F035.D\	06/07/18 18:30
PDI-SG-B376-BL1	K1803975-027	J:\GC26\DATA\060718\0607F038.D\	06/07/18 19:25
PDI-SG-B375-BL1	K1803975-028	J:\GC26\DATA\060718\0607F039.D\	06/07/18 19:43
PDI-SG-B388-BL1-D	K1803975-030	J:\GC26\DATA\060718\0607F041.D\	06/07/18 20:20
PDI-SG-B381-BL1	K1803975-031	J:\GC26\DATA\060718\0607F042.D\	06/07/18 20:39
PDI-SG-B381-BL1-D	K1803975-032	J:\GC26\DATA\060718\0607F043.D\	06/07/18 20:57
PDI-SG-B379-BL1	K1803975-033	J:\GC26\DATA\060718\0607F044.D\	06/07/18 21:16

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18 15:44
Sample Matrix:	Water	**Date Extracted:**	05/03/18

Method Blank Summary
Butyltins

Sample Name:	Method Blank	**Instrument ID:**	K-GC-26
Lab Code:	KQ1805737-03	**File ID:**	J:\GC26\DATA\060818\0608F012.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	594110
Prep Method:	EPA 3520C	**Extraction Lot:**	313118

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805737-01	J:\GC26\DATA\060818\0608F010.D\	06/08/18 15:07
Duplicate Lab Control Sample	KQ1805737-02	J:\GC26\DATA\060818\0608F011.D\	06/08/18 15:25
PDI-RB-VV-180429-1730	K1803975-034	J:\GC26\DATA\060818\0608F015.D\	06/08/18 16:39
PDI-RB-VV-180429-1800	K1803975-035	J:\GC26\DATA\060818\0608F016.D\	06/08/18 16:58

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18 20:02
Sample Matrix:	Sediment	**Date Extracted:**	06/21/18

Method Blank Summary
Butyltins

Sample Name:	Method Blank	**Instrument ID:**	K-GC-26
Lab Code:	KQ1808444-03	**File ID:**	J:\GC26\DATA\062618\0626F009.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	596431
Prep Method:	Method	**Extraction Lot:**	316148

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B388-BL1	K1803975-029	J:\GC26\DATA\062618\0626F006.D\	06/26/18 19:07
Lab Control Sample	KQ1808444-01	J:\GC26\DATA\062618\0626F007.D\	06/26/18 19:25
Duplicate Lab Control Sample	KQ1808444-02	J:\GC26\DATA\062618\0626F008.D\	06/26/18 19:44

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 17:00
Sample Matrix:	Sediment	**Date Extracted:**	05/11/18

Lab Control Sample Summary
Butyltins

Sample Name:	Lab Control Sample	**Instrument ID:**	K-GC-26
Lab Code:	KQ1805597-03	**File ID:**	J:\GC26\DATA\061118\0611F028.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	594221,594642
Prep Method:	Method	**Extraction Lot:**	312940

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B351-BL1	K1803975-001	J:\GC26\DATA\061118\0611F025.D\	06/11/18 16:05
PDI-SG-B351-BL1MS	KQ1805597-01	J:\GC26\DATA\061118\0611F026.D\	06/11/18 16:23
PDI-SG-B351-BL1DMS	KQ1805597-02	J:\GC26\DATA\061118\0611F027.D\	06/11/18 16:41
Method Blank	KQ1805597-04	J:\GC26\DATA\061118\0611F029.D\	06/11/18 17:18
PDI-SG-B353-BL1	K1803975-002	J:\GC26\DATA\061118\0611F032.D\	06/11/18 18:13
PDI-SG-B359-BL1	K1803975-003	J:\GC26\DATA\061118\0611F033.D\	06/11/18 18:32
PDI-SG-B364-BL1	K1803975-005	J:\GC26\DATA\061118\0611F035.D\	06/11/18 19:09
PDI-SG-B370-BL1	K1803975-006	J:\GC26\DATA\061118\0611F036.D\	06/11/18 19:27
PDI-SG-B371-BL1	K1803975-007	J:\GC26\DATA\061118\0611F037.D\	06/11/18 19:45
PDI-SG-B386-BL1	K1803975-009	J:\GC26\DATA\061118\0611F039.D\	06/11/18 20:22
PDI-SG-B350-BL1	K1803975-012	J:\GC26\DATA\061118\0611F043.D\	06/11/18 21:35
PDI-SG-B400-BL1	K1803975-013	J:\GC26\DATA\061118\0611F044.D\	06/11/18 21:54
PDI-SG-B343-BL1	K1803975-014	J:\GC26\DATA\061118\0611F045.D\	06/11/18 22:12
PDI-SG-B347-BL1	K1803975-016	J:\GC26\DATA\061118\0611F047.D\	06/11/18 22:49
PDI-SG-B347-BL1-D	K1803975-017	J:\GC26\DATA\061118\0611F048.D\	06/11/18 23:08
PDI-SG-B345-BL1	K1803975-020	J:\GC26\DATA\061118\0611F051.D\	06/12/18 00:03
PDI-SG-B361-BL1	K1803975-004	J:\GC26\DATA\061318\0613F019.D\	06/13/18 16:22
PDI-SG-B408-BL1	K1803975-008	J:\GC26\DATA\061318\0613F020.D\	06/13/18 16:41
PDI-SG-B360-BL1	K1803975-011	J:\GC26\DATA\061318\0613F021.D\	06/13/18 16:59
PDI-SG-B340-BL1	K1803975-015	J:\GC26\DATA\061318\0613F022.D\	06/13/18 17:19
PDI-SG-B339-BL1	K1803975-018	J:\GC26\DATA\061318\0613F023.D\	06/13/18 17:37
PDI-SG-B341-BL1	K1803975-019	J:\GC26\DATA\061318\0613F024.D\	06/13/18 17:55
PDI-SG-B385-BL1	K1803975-010	J:\GC26\DATA\061318\0613F025.D\	06/13/18 18:14

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QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 15:43
Sample Matrix:	Sediment	**Date Extracted:**	05/11/18

Lab Control Sample Summary
Butyltins

Sample Name:	Lab Control Sample	**Instrument ID:**	K-GC-26
Lab Code:	KQ1805611-03	**File ID:**	J:\GC26\DATA\060718\0607F026.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	593340
Prep Method:	Method	**Extraction Lot:**	312957

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805611-04	J:\GC26\DATA\060718\0607F027.D\	06/07/18 16:02
PDI-SG-B312-BL1	K1803975-021	J:\GC26\DATA\060718\0607F028.D\	06/07/18 16:20
PDI-SG-B328-BL1	K1803975-022	J:\GC26\DATA\060718\0607F029.D\	06/07/18 16:38
PDI-SG-B331-BL1	K1803975-023	J:\GC26\DATA\060718\0607F030.D\	06/07/18 16:57
PDI-SG-B331-BL1MS	KQ1805611-01	J:\GC26\DATA\060718\0607F031.D\	06/07/18 17:15
PDI-SG-B331-BL1DMS	KQ1805611-02	J:\GC26\DATA\060718\0607F032.D\	06/07/18 17:35
PDI-SG-B336-BL1	K1803975-024	J:\GC26\DATA\060718\0607F033.D\	06/07/18 17:53
PDI-SG-B365-BL1	K1803975-025	J:\GC26\DATA\060718\0607F034.D\	06/07/18 18:12
PDI-SG-B369-BL1	K1803975-026	J:\GC26\DATA\060718\0607F035.D\	06/07/18 18:30
PDI-SG-B376-BL1	K1803975-027	J:\GC26\DATA\060718\0607F038.D\	06/07/18 19:25
PDI-SG-B375-BL1	K1803975-028	J:\GC26\DATA\060718\0607F039.D\	06/07/18 19:43
PDI-SG-B388-BL1-D	K1803975-030	J:\GC26\DATA\060718\0607F041.D\	06/07/18 20:20
PDI-SG-B381-BL1	K1803975-031	J:\GC26\DATA\060718\0607F042.D\	06/07/18 20:39
PDI-SG-B381-BL1-D	K1803975-032	J:\GC26\DATA\060718\0607F043.D\	06/07/18 20:57
PDI-SG-B379-BL1	K1803975-033	J:\GC26\DATA\060718\0607F044.D\	06/07/18 21:16

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18 15:07
Sample Matrix:	Water	**Date Extracted:**	05/03/18

Lab Control Sample Summary
Butyltins

Sample Name:	Lab Control Sample	**Instrument ID:**	K-GC-26
Lab Code:	KQ1805737-01	**File ID:**	J:\GC26\DATA\060818\0608F010.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	594110
Prep Method:	EPA 3520C	**Extraction Lot:**	313118

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ1805737-02	J:\GC26\DATA\060818\0608F011.D\	06/08/18 15:25
Method Blank	KQ1805737-03	J:\GC26\DATA\060818\0608F012.D\	06/08/18 15:44
PDI-RB-VV-180429-1730	K1803975-034	J:\GC26\DATA\060818\0608F015.D\	06/08/18 16:39
PDI-RB-VV-180429-1800	K1803975-035	J:\GC26\DATA\060818\0608F016.D\	06/08/18 16:58

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18 19:25
Sample Matrix:	Sediment	**Date Extracted:**	06/21/18

Lab Control Sample Summary
Butyltins

Sample Name:	Lab Control Sample	**Instrument ID:**	K-GC-26
Lab Code:	KQ1808444-01	**File ID:**	J:\GC26\DATA\062618\0626F007.D\
Analysis Method:	ALS SOP	**Analysis Lot:**	596431
Prep Method:	Method	**Extraction Lot:**	316148

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B388-BL1	K1803975-029	J:\GC26\DATA\062618\0626F006.D\	06/26/18 19:07
Duplicate Lab Control Sample	KQ1808444-02	J:\GC26\DATA\062618\0626F008.D\	06/26/18 19:44
Method Blank	KQ1808444-03	J:\GC26\DATA\062618\0626F009.D\	06/26/18 20:02

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242 **Signal ID:** RTX-1
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800242-01	OT5-010A 2PPB	J:\GC26\DATA\060718\0607F011.D	06/07/2018 09:49
02	KC1800242-02	OT5-010B 5PPB	J:\GC26\DATA\060718\0607F012.D	06/07/2018 10:08
03	KC1800242-03	OT5-010C 10 PPB	J:\GC26\DATA\060718\0607F013.D	06/07/2018 10:26
04	KC1800242-04	OT5-010D 20 PPB	J:\GC26\DATA\060718\0607F014.D	06/07/2018 10:45
05	KC1800242-05	OT5-090 50 PPB	J:\GC26\DATA\060718\0607F015.D	06/07/2018 11:04
06	KC1800242-06	OT5-010E 200 PPB	J:\GC26\DATA\060718\0607F016.D	06/07/2018 11:22
07	KC1800242-07	OT5-010F 500 PPB	J:\GC26\DATA\060718\0607F017.D	06/07/2018 11:41

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	4.116E4	02	4.455	3.983E4	03	8.910	4.337E4	04	17.820	4.171E4
05	44.550	4.619E4	06	178.200	4.378E4	07	445.500	4.202E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	3.481E4	02	5.000	3.36E4	03	10.000	3.686E4	04	20.000	3.208E4
05	50.000	3.429E4	06	200.000	3.467E4	07	500.000	3.409E4			

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242 **Signal ID:** RTX-1
Instrument ID: K-GC-26

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	4.9	≤20	4.258E4	
Tri-n-propyltin	SURR	Average RF	% RSD	4.2	≤20	3.434E4	

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242 **Signal ID:** RTX-35
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800242-01	OT5-010A 2PPB	J:\GC26\DATA\060718\0607F011.D	06/07/2018 09:49
02	KC1800242-02	OT5-010B 5PPB	J:\GC26\DATA\060718\0607F012.D	06/07/2018 10:08
03	KC1800242-03	OT5-010C 10 PPB	J:\GC26\DATA\060718\0607F013.D	06/07/2018 10:26
04	KC1800242-04	OT5-010D 20 PPB	J:\GC26\DATA\060718\0607F014.D	06/07/2018 10:45
05	KC1800242-05	OT5-090 50 PPB	J:\GC26\DATA\060718\0607F015.D	06/07/2018 11:04
06	KC1800242-06	OT5-010E 200 PPB	J:\GC26\DATA\060718\0607F016.D	06/07/2018 11:22
07	KC1800242-07	OT5-010F 500 PPB	J:\GC26\DATA\060718\0607F017.D	06/07/2018 11:41

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	1.129E5	02	4.455	1.146E5	03	8.910	1.123E5	04	17.820	1.186E5
05	44.550	1.136E5	06	178.200	1.125E5	07	445.500	1.07E5			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.508E5	02	5.000	8.335E4	03	10.000	9.444E4	04	20.000	9.268E4
05	50.000	9.379E4	06	200.000	9.02E4	07	500.000	8.504E4			

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/7/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800242 **Signal ID:** RTX-35
Instrument ID: K-GC-26

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	3.0	≤20	1.131E5	
Tri-n-propyltin	SURR	Linear	R2	0.9994	≥0.99	9.861E4	

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/13/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800264 **Signal ID:** RTX-1
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800264-01	OT5-10A 2 PPB	J:\GC26\DATA\061318\0613F004.D	06/13/2018 10:58
02	KC1800264-02	OT5-10B 5 PPB	J:\GC26\DATA\061318\0613F005.D	06/13/2018 11:18
03	KC1800264-03	OT5-10C 10 PPB	J:\GC26\DATA\061318\0613F006.D	06/13/2018 11:38
04	KC1800264-04	OT5-10D 20 PPB	J:\GC26\DATA\061318\0613F007.D	06/13/2018 11:58
05	KC1800264-05	OT5-090 50 PPB	J:\GC26\DATA\061318\0613F008.D	06/13/2018 12:19
06	KC1800264-06	OT5-10E 200 PPB	J:\GC26\DATA\061318\0613F009.D	06/13/2018 12:39
07	KC1800264-07	OT5-10F 500 PPB	J:\GC26\DATA\061318\0613F010.D	06/13/2018 13:00

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	4.968E4	02	4.455	5.356E4	03	8.910	5.013E4	04	17.820	5.364E4
05	44.550	5.46E4	06	178.200	6.055E4	07	445.500	5.969E4			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	4.929E4	02	5.000	3.918E4	03	10.000	3.885E4	04	20.000	3.986E4
05	50.000	4.17E4	06	200.000	4.731E4	07	500.000	4.862E4			

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/13/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800264 **Signal ID:** RTX-1
Instrument ID: K-GC-26

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	7.8	≤20	5.455E4	
Tri-n-propyltin	SURR	Average RF	% RSD	10.7	≤20	4.354E4	

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/13/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800264 **Signal ID:** RTX-35
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800264-01	OT5-10A 2 PPB	J:\GC26\DATA\061318\0613F004.D	06/13/2018 10:58
02	KC1800264-02	OT5-10B 5 PPB	J:\GC26\DATA\061318\0613F005.D	06/13/2018 11:18
03	KC1800264-03	OT5-10C 10 PPB	J:\GC26\DATA\061318\0613F006.D	06/13/2018 11:38
04	KC1800264-04	OT5-10D 20 PPB	J:\GC26\DATA\061318\0613F007.D	06/13/2018 11:58
05	KC1800264-05	OT5-090 50 PPB	J:\GC26\DATA\061318\0613F008.D	06/13/2018 12:19
06	KC1800264-06	OT5-10E 200 PPB	J:\GC26\DATA\061318\0613F009.D	06/13/2018 12:39
07	KC1800264-07	OT5-10F 500 PPB	J:\GC26\DATA\061318\0613F010.D	06/13/2018 13:00

Analyte

Tri-n-butyltin Cation

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.782	1.236E5	02	4.455	1.131E5	03	8.910	1.183E5	04	17.820	1.161E5
05	44.550	1.152E5	06	178.200	1.161E5	07	445.500	1.117E5			

Tri-n-propyltin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	2.000	1.237E5	02	5.000	1.107E5	03	10.000	9.725E4	04	20.000	9.086E4
05	50.000	8.957E4	06	200.000	9.349E4	07	500.000	9.01E4			

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/13/2018

Initial Calibration Summary
Butyltins

Calibration ID: KC1800264 **Signal ID:** RTX-35
Instrument ID: K-GC-26

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Tri-n-butyltin Cation	TRG	Average RF	% RSD	3.3	≤20	1.163E5	
Tri-n-propyltin	SURR	Average RF	% RSD	13.1	≤20	9.938E4	

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/7/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800242 **Signal ID:** RTX-1
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800242-08	OT5-09P ICV	J:\GC26\DATA\060718\0607F019.D	06/07/2018 12:18

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.4	4.258E4	3.956E4	-7.084	±25	Average RF

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/7/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800242 **Signal ID:** RTX-35
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800242-08	OT5-09P ICV	J:\GC26\DATA\060718\0607F019.D	06/07/2018 12:18

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	50.3	1.131E5	1.277E5	12.89	±25	Average RF

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/13/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800264 **Signal ID:** RTX-1
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800264-08	OT5-09P 50 PPB ICV	J:\GC26\DATA\061318\0613F012.D	06/13/2018 13:43

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	49.7	5.455E4	6.091E4	11.66	±25	Average RF

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 6/13/2018

Initial Calibration Verification Summary
Butyltins

Calibration ID: KC1800264 **Signal ID:** RTX-35
Instrument ID: K-GC-26

#	Lab Code	Sample Name	File Location	Acquisition Date
08	KC1800264-08	OT5-09P 50 PPB ICV	J:\GC26\DATA\061318\0613F012.D	06/13/2018 13:43

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	51.5	1.163E5	1.343E5	15.51	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 14:28

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060718\0607F022.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	593340
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	36.1	4.258E4	3.451E4	-19.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	40.0	3.434E4	2.745E4	-20.1	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 14:28

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060718\0607F022.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	593340
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.8	1.131E5	1.163E5	2.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	52.4	9.861E4	9.419E4	NA	4.8	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 18:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060718\0607F036.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	593340
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	39.5	4.258E4	3.776E4	-11.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	41.8	3.434E4	2.87E4	-16.4	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 18:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060718\0607F036.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	593340
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	46.3	1.131E5	1.175E5	3.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	53.8	9.861E4	9.653E4	NA	7.5	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 21:34

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060718\0607F045.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	593340
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.7	4.258E4	3.982E4	-6.5	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	44.0	3.434E4	3.024E4	-11.9	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/07/18 21:34

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060718\0607F045.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	593340
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	47.7	1.131E5	1.211E5	7.1	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	52.2	9.861E4	9.397E4	NA	4.5	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18 14:29

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060818\0608F008.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	594110
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	43.9	4.258E4	4.198E4	-1.4	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	42.7	3.434E4	2.93E4	-14.7	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18 14:29

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060818\0608F008.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	594110
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	47.1	1.131E5	1.196E5	5.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	46.7	9.861E4	8.46E4	NA	-6.5	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18 17:16

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060818\0608F017.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	594110
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	52.2	4.258E4	4.991E4	17.2	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	55.1	3.434E4	3.785E4	10.2	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/08/18 17:16

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\060818\0608F017.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	594110
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	54.0	1.131E5	1.37E5	21.1	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	54.0	9.861E4	9.691E4	NA	7.9	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 13:38

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F017.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	46.6	1.131E5	1.184E5	4.7	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	55.4	9.861E4	9.937E4	NA	10.8	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 13:38

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F017.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	54.5	4.258E4	5.208E4	22.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	55.8	3.434E4	3.834E4	11.6	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 17:36

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F030.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	51.4	1.131E5	1.304E5	15.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	56.8	9.861E4	1.017E5	NA	13.6	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 17:36

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F030.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	56.6	4.258E4	5.412E4	27.1*	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	62.8	3.434E4	4.31E4	25.5*	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 20:59

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F041.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	52.3	1.131E5	1.327E5	17.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	58.0	9.861E4	1.038E5	NA	16.1	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/11/18 20:59

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F041.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	57.9	4.258E4	5.533E4	29.9*	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	62.5	3.434E4	4.289E4	24.9	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/12/18 00:40

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F053.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-35	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	54.0	1.131E5	1.371E5	21.2	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	57.1	9.861E4	1.023E5	NA	14.3	±25	Linear

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/12/18 00:40

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/7/2018
File ID:	J:\GC26\DATA\061118\0611F053.D\	**Calibration ID:**	KC1800242
Signal ID:	RTX-1	**Analysis Lot:**	594221
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	61.3	4.258E4	5.86E4	37.6*	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	65.2	3.434E4	4.475E4	30.3*	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/13/18 14:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\061318\0613F014.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-1	**Analysis Lot:**	594642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	43.9	5.455E4	5.381E4	-1.4	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.2	4.354E4	4.194E4	-3.7	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/13/18 14:48

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\061318\0613F014.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-35	**Analysis Lot:**	594642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.9	1.163E5	1.199E5	3.1	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	46.9	9.938E4	9.329E4	-6.1	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/13/18 18:32

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\061318\0613F026.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-1	**Analysis Lot:**	594642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	46.3	5.455E4	5.672E4	4.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	51.6	4.354E4	4.495E4	3.2	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/13/18 18:32

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\061318\0613F026.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-35	**Analysis Lot:**	594642
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	48.1	1.163E5	1.256E5	8.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	51.1	9.938E4	1.016E5	2.2	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18 18:11

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\062618\0626F003.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-1	**Analysis Lot:**	596431
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	43.7	5.455E4	5.347E4	-2.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	46.5	4.354E4	4.046E4	-7.1	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18 18:11

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\062618\0626F003.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-35	**Analysis Lot:**	596431
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	45.0	1.163E5	1.174E5	1.0	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.2	9.938E4	9.59E4	-3.5	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18 20:21

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\062618\0626F010.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-35	**Analysis Lot:**	596431
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	41.7	1.163E5	1.087E5	-6.5	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	48.8	9.938E4	9.699E4	-2.4	NA	±25	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	06/26/18 20:21

Continuing Calibration Verification (CCV) Summary
Butyltins

Analysis Method:	ALS SOP	**Calibration Date:**	6/13/2018
File ID:	J:\GC26\DATA\062618\0626F010.D\	**Calibration ID:**	KC1800264
Signal ID:	RTX-1	**Analysis Lot:**	596431
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-butyltin Cation	44.6	48.3	5.455E4	5.91E4	8.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Tri-n-propyltin	50.0	51.1	4.354E4	4.454E4	2.3	NA	±25	Average RF

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**593340
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\060718\0607F022.D\	Continuing Calibration Verification	KQ1807678-01	6/7/2018	14:28:00	
J:\GC26\DATA\060718\0607F023.D\	ZZZZZZZ	ZZZZZZZ	6/7/2018	14:48:00	
J:\GC26\DATA\060718\0607F024.D\	ZZZZZZZ	ZZZZZZZ	6/7/2018	15:06:00	
J:\GC26\DATA\060718\0607F025.D\	ZZZZZZZ	ZZZZZZZ	6/7/2018	15:25:00	
J:\GC26\DATA\060718\0607F026.D\	Lab Control Sample	KQ1805611-03	6/7/2018	15:43:00	
J:\GC26\DATA\060718\0607F027.D\	Method Blank	KQ1805611-04	6/7/2018	16:02:00	
J:\GC26\DATA\060718\0607F028.D\	PDI-SG-B312-BL1	K1803975-021	6/7/2018	16:20:00	
J:\GC26\DATA\060718\0607F029.D\	PDI-SG-B328-BL1	K1803975-022	6/7/2018	16:38:00	
J:\GC26\DATA\060718\0607F030.D\	PDI-SG-B331-BL1	K1803975-023	6/7/2018	16:57:00	
J:\GC26\DATA\060718\0607F031.D\	PDI-SG-B331-BL1 MS	KQ1805611-01	6/7/2018	17:15:00	
J:\GC26\DATA\060718\0607F032.D\	PDI-SG-B331-BL1 DMS	KQ1805611-02	6/7/2018	17:35:00	
J:\GC26\DATA\060718\0607F033.D\	PDI-SG-B336-BL1	K1803975-024	6/7/2018	17:53:00	
J:\GC26\DATA\060718\0607F034.D\	PDI-SG-B365-BL1	K1803975-025	6/7/2018	18:12:00	
J:\GC26\DATA\060718\0607F035.D\	PDI-SG-B369-BL1	K1803975-026	6/7/2018	18:30:00	
J:\GC26\DATA\060718\0607F036.D\	Continuing Calibration Verification	KQ1807678-02	6/7/2018	18:48:00	
J:\GC26\DATA\060718\0607F037.D\	ZZZZZZZ	ZZZZZZZ	6/7/2018	19:07:00	
J:\GC26\DATA\060718\0607F038.D\	PDI-SG-B376-BL1	K1803975-027	6/7/2018	19:25:00	
J:\GC26\DATA\060718\0607F039.D\	PDI-SG-B375-BL1	K1803975-028	6/7/2018	19:43:00	
J:\GC26\DATA\060718\0607F041.D\	PDI-SG-B388-BL1-D	K1803975-030	6/7/2018	20:20:00	
J:\GC26\DATA\060718\0607F042.D\	PDI-SG-B381-BL1	K1803975-031	6/7/2018	20:39:00	
J:\GC26\DATA\060718\0607F043.D\	PDI-SG-B381-BL1-D	K1803975-032	6/7/2018	20:57:00	
J:\GC26\DATA\060718\0607F044.D\	PDI-SG-B379-BL1	K1803975-033	6/7/2018	21:16:00	
J:\GC26\DATA\060718\0607F045.D\	Continuing Calibration Verification	KQ1807678-03	6/7/2018	21:34:00	
J:\GC26\DATA\060718\0607F046.D\	ZZZZZZZ	ZZZZZZZ	6/7/2018	21:53:00	

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QA/QC Report

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**594110
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\060818\0608F008.D\	Continuing Calibration Verification	KQ1807702-01	6/8/2018	14:29:00	
J:\GC26\DATA\060818\0608F009.D\	ZZZZZZZ	ZZZZZZZ	6/8/2018	14:47:00	
J:\GC26\DATA\060818\0608F010.D\	Lab Control Sample	KQ1805737-01	6/8/2018	15:07:00	
J:\GC26\DATA\060818\0608F011.D\	Duplicate Lab Control Sample	KQ1805737-02	6/8/2018	15:25:00	
J:\GC26\DATA\060818\0608F012.D\	Method Blank	KQ1805737-03	6/8/2018	15:44:00	
J:\GC26\DATA\060818\0608F013.D\	ZZZZZZZ	ZZZZZZZ	6/8/2018	16:02:00	
J:\GC26\DATA\060818\0608F014.D\	ZZZZZZZ	ZZZZZZZ	6/8/2018	16:21:00	
J:\GC26\DATA\060818\0608F015.D\	PDI-RB-VV-180429-1730	K1803975-034	6/8/2018	16:39:00	
J:\GC26\DATA\060818\0608F016.D\	PDI-RB-VV-180429-1800	K1803975-035	6/8/2018	16:58:00	
J:\GC26\DATA\060818\0608F017.D\	Continuing Calibration Verification	KQ1807702-02	6/8/2018	17:16:00	
J:\GC26\DATA\060818\0608F018.D\	ZZZZZZZ	ZZZZZZZ	6/8/2018	17:35:00	

Client: AECOM **Service Request:**K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: **Analysis Lot:**594221

Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\061118\0611F003.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	09:00:00	
J:\GC26\DATA\061118\0611F004.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	09:20:00	
J:\GC26\DATA\061118\0611F005.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	09:55:00	
J:\GC26\DATA\061118\0611F006.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	10:15:00	
J:\GC26\DATA\061118\0611F007.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	10:33:00	
J:\GC26\DATA\061118\0611F008.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	10:52:00	
J:\GC26\DATA\061118\0611F009.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	11:10:00	
J:\GC26\DATA\061118\0611F010.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	11:29:00	
J:\GC26\DATA\061118\0611F011.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	11:47:00	
J:\GC26\DATA\061118\0611F012.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	12:06:00	
J:\GC26\DATA\061118\0611F013.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	12:24:00	
J:\GC26\DATA\061118\0611F014.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	12:43:00	
J:\GC26\DATA\061118\0611F015.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	13:01:00	
J:\GC26\DATA\061118\0611F016.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	13:19:00	
J:\GC26\DATA\061118\0611F017.D\	Continuing Calibration Verification	KQ1807846-02	6/11/2018	13:38:00	
J:\GC26\DATA\061118\0611F018.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	13:56:00	
J:\GC26\DATA\061118\0611F022.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	15:09:00	
J:\GC26\DATA\061118\0611F023.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	15:28:00	
J:\GC26\DATA\061118\0611F024.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	15:46:00	
J:\GC26\DATA\061118\0611F025.D\	PDI-SG-B351-BL1	K1803975-001	6/11/2018	16:05:00	
J:\GC26\DATA\061118\0611F026.D\	PDI-SG-B351-BL1 MS	KQ1805597-01	6/11/2018	16:23:00	
J:\GC26\DATA\061118\0611F027.D\	PDI-SG-B351-BL1 DMS	KQ1805597-02	6/11/2018	16:41:00	
J:\GC26\DATA\061118\0611F028.D\	Lab Control Sample	KQ1805597-03	6/11/2018	17:00:00	
J:\GC26\DATA\061118\0611F029.D\	Method Blank	KQ1805597-04	6/11/2018	17:18:00	
J:\GC26\DATA\061118\0611F030.D\	Continuing Calibration Verification	KQ1807846-03	6/11/2018	17:36:00	
J:\GC26\DATA\061118\0611F031.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	17:55:00	
J:\GC26\DATA\061118\0611F032.D\	PDI-SG-B353-BL1	K1803975-002	6/11/2018	18:13:00	
J:\GC26\DATA\061118\0611F033.D\	PDI-SG-B359-BL1	K1803975-003	6/11/2018	18:32:00	
J:\GC26\DATA\061118\0611F035.D\	PDI-SG-B364-BL1	K1803975-005	6/11/2018	19:09:00	
J:\GC26\DATA\061118\0611F036.D\	PDI-SG-B370-BL1	K1803975-006	6/11/2018	19:27:00	
J:\GC26\DATA\061118\0611F037.D\	PDI-SG-B371-BL1	K1803975-007	6/11/2018	19:45:00	
J:\GC26\DATA\061118\0611F039.D\	PDI-SG-B386-BL1	K1803975-009	6/11/2018	20:22:00	
J:\GC26\DATA\061118\0611F041.D\	Continuing Calibration Verification	KQ1807846-04	6/11/2018	20:59:00	
J:\GC26\DATA\061118\0611F042.D\	ZZZZZZZ	ZZZZZZZ	6/11/2018	21:17:00	
J:\GC26\DATA\061118\0611F043.D\	PDI-SG-B350-BL1	K1803975-012	6/11/2018	21:35:00	
J:\GC26\DATA\061118\0611F044.D\	PDI-SG-B400-BL1	K1803975-013	6/11/2018	21:54:00	
J:\GC26\DATA\061118\0611F045.D\	PDI-SG-B343-BL1	K1803975-014	6/11/2018	22:12:00	
J:\GC26\DATA\061118\0611F047.D\	PDI-SG-B347-BL1	K1803975-016	6/11/2018	22:49:00	
J:\GC26\DATA\061118\0611F048.D\	PDI-SG-B347-BL1-D	K1803975-017	6/11/2018	23:08:00	
J:\GC26\DATA\061118\0611F051.D\	PDI-SG-B345-BL1	K1803975-020	6/12/2018	00:03:00	
J:\GC26\DATA\061118\0611F053.D\	Continuing Calibration Verification	KQ1807846-05	6/12/2018	00:40:00	
J:\GC26\DATA\061118\0611F054.D\	ZZZZZZZ	ZZZZZZZ	6/12/2018	00:58:00	

Client: AECOM **Service Request:**K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**594642

Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\061318\0613F014.D\	Continuing Calibration Verification	KQ1808469-01	6/13/2018	14:48:00	
J:\GC26\DATA\061318\0613F014.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	14:48:00	
J:\GC26\DATA\061318\0613F015.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	15:07:00	
J:\GC26\DATA\061318\0613F016.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	15:26:00	
J:\GC26\DATA\061318\0613F017.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	15:45:00	
J:\GC26\DATA\061318\0613F018.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	16:03:00	
J:\GC26\DATA\061318\0613F019.D\	PDI-SG-B361-BL1	K1803975-004	6/13/2018	16:22:00	
J:\GC26\DATA\061318\0613F020.D\	PDI-SG-B408-BL1	K1803975-008	6/13/2018	16:41:00	
J:\GC26\DATA\061318\0613F021.D\	PDI-SG-B360-BL1	K1803975-011	6/13/2018	16:59:00	
J:\GC26\DATA\061318\0613F022.D\	PDI-SG-B340-BL1	K1803975-015	6/13/2018	17:19:00	
J:\GC26\DATA\061318\0613F023.D\	PDI-SG-B339-BL1	K1803975-018	6/13/2018	17:37:00	
J:\GC26\DATA\061318\0613F024.D\	PDI-SG-B341-BL1	K1803975-019	6/13/2018	17:55:00	
J:\GC26\DATA\061318\0613F025.D\	PDI-SG-B385-BL1	K1803975-010	6/13/2018	18:14:00	
J:\GC26\DATA\061318\0613F026.D\	Continuing Calibration Verification	KQ1808469-02	6/13/2018	18:32:00	
J:\GC26\DATA\061318\0613F026.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	18:32:00	
J:\GC26\DATA\061318\0613F027.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	18:51:00	
J:\GC26\DATA\061318\0613F028.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	19:09:00	
J:\GC26\DATA\061318\0613F029.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	19:28:00	
J:\GC26\DATA\061318\0613F030.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	19:46:00	
J:\GC26\DATA\061318\0613F031.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	20:04:00	
J:\GC26\DATA\061318\0613F032.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	20:23:00	
J:\GC26\DATA\061318\0613F033.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	20:41:00	
J:\GC26\DATA\061318\0613F034.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	21:00:00	
J:\GC26\DATA\061318\0613F035.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	21:18:00	
J:\GC26\DATA\061318\0613F036.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	21:37:00	
J:\GC26\DATA\061318\0613F037.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	21:55:00	
J:\GC26\DATA\061318\0613F038.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	22:14:00	
J:\GC26\DATA\061318\0613F039.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	22:32:00	
J:\GC26\DATA\061318\0613F040.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	22:51:00	
J:\GC26\DATA\061318\0613F041.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	23:09:00	
J:\GC26\DATA\061318\0613F041.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	23:09:00	
J:\GC26\DATA\061318\0613F042.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	23:28:00	
J:\GC26\DATA\061318\0613F043.D\	ZZZZZZZ	ZZZZZZZ	6/13/2018	23:46:00	
J:\GC26\DATA\061318\0613F044.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	00:05:00	
J:\GC26\DATA\061318\0613F045.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	00:23:00	
J:\GC26\DATA\061318\0613F046.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	00:42:00	
J:\GC26\DATA\061318\0613F047.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	01:00:00	
J:\GC26\DATA\061318\0613F048.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	01:19:00	
J:\GC26\DATA\061318\0613F049.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	01:37:00	
J:\GC26\DATA\061318\0613F050.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	01:56:00	
J:\GC26\DATA\061318\0613F051.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	02:15:00	
J:\GC26\DATA\061318\0613F052.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	02:33:00	
J:\GC26\DATA\061318\0613F053.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	02:52:00	
J:\GC26\DATA\061318\0613F054.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	03:10:00	
J:\GC26\DATA\061318\0613F055.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	03:29:00	
J:\GC26\DATA\061318\0613F056.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	03:47:00	

ALS Group USA, Corp.
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QA/QC Report

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**594642
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\061318\0613F057.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	04:05:00	
J:\GC26\DATA\061318\0613F058.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	04:24:00	
J:\GC26\DATA\061318\0613F059.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	04:42:00	
J:\GC26\DATA\061318\0613F060.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	05:01:00	
J:\GC26\DATA\061318\0613F060.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	05:01:00	
J:\GC26\DATA\061318\0613F061.D\	ZZZZZZZ	ZZZZZZZ	6/14/2018	05:19:00	

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Butyltins

Analysis Method: ALS SOP **Analysis Lot:**596431
Instrument ID:K-GC-26

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\GC26\DATA\062618\0626F003.D\	Continuing Calibration Verification	KQ1808700-01	6/26/2018	18:11:00	
J:\GC26\DATA\062618\0626F003.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	18:11:00	
J:\GC26\DATA\062618\0626F004.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	18:30:00	
J:\GC26\DATA\062618\0626F005.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	18:48:00	
J:\GC26\DATA\062618\0626F006.D\	PDI-SG-B388-BL1	K1803975-029	6/26/2018	19:07:00	
J:\GC26\DATA\062618\0626F007.D\	Lab Control Sample	KQ1808444-01	6/26/2018	19:25:00	
J:\GC26\DATA\062618\0626F008.D\	Duplicate Lab Control Sample	KQ1808444-02	6/26/2018	19:44:00	
J:\GC26\DATA\062618\0626F009.D\	Method Blank	KQ1808444-03	6/26/2018	20:02:00	
J:\GC26\DATA\062618\0626F010.D\	Continuing Calibration Verification	KQ1808700-02	6/26/2018	20:21:00	
J:\GC26\DATA\062618\0626F010.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	20:21:00	
J:\GC26\DATA\062618\0626F011.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	20:39:00	
J:\GC26\DATA\062618\0626F012.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	20:57:00	
J:\GC26\DATA\062618\0626F013.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	21:16:00	
J:\GC26\DATA\062618\0626F014.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	21:34:00	
J:\GC26\DATA\062618\0626F015.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	21:52:00	
J:\GC26\DATA\062618\0626F016.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	22:12:00	
J:\GC26\DATA\062618\0626F017.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	22:30:00	
J:\GC26\DATA\062618\0626F018.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	22:49:00	
J:\GC26\DATA\062618\0626F019.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	23:08:00	
J:\GC26\DATA\062618\0626F020.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	23:27:00	
J:\GC26\DATA\062618\0626F021.D\	ZZZZZZZ	ZZZZZZZ	6/26/2018	23:45:00	
J:\GC26\DATA\062618\0626F022.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	00:04:00	
J:\GC26\DATA\062618\0626F023.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	00:22:00	
J:\GC26\DATA\062618\0626F024.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	00:41:00	
J:\GC26\DATA\062618\0626F025.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	00:59:00	
J:\GC26\DATA\062618\0626F026.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	01:18:00	
J:\GC26\DATA\062618\0626F027.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	01:36:00	
J:\GC26\DATA\062618\0626F028.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	01:55:00	
J:\GC26\DATA\062618\0626F028.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	01:55:00	
J:\GC26\DATA\062618\0626F029.D\	ZZZZZZZ	ZZZZZZZ	6/27/2018	02:14:00	

Prep Summary Report

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Butyltins

Prep Method: Method **Extraction Lot:** 312940
Analytical Method: ALS SOP **Extraction Date:** 05/11/18 15:45

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B351-BL1	K1803975-001	4/29/18	4/30/18	20.247 g	4 mL	43.8
PDI-SG-B353-BL1	K1803975-002	4/29/18	4/30/18	20.200 g	4 mL	42.5
PDI-SG-B359-BL1	K1803975-003	4/29/18	4/30/18	20.216 g	4 mL	41.4
PDI-SG-B361-BL1	K1803975-004	4/29/18	4/30/18	20.103 g	4 mL	44.0
PDI-SG-B364-BL1	K1803975-005	4/29/18	4/30/18	20.297 g	4 mL	42.5
PDI-SG-B370-BL1	K1803975-006	4/29/18	4/30/18	20.442 g	4 mL	58.8
PDI-SG-B371-BL1	K1803975-007	4/29/18	4/30/18	20.198 g	4 mL	39.3
PDI-SG-B408-BL1	K1803975-008	4/28/18	4/30/18	20.411 g	4 mL	59.5
PDI-SG-B386-BL1	K1803975-009	4/28/18	4/30/18	20.136 g	4 mL	44.1
PDI-SG-B385-BL1	K1803975-010	4/28/18	4/30/18	20.048 g	4 mL	42.1
PDI-SG-B360-BL1	K1803975-011	4/28/18	4/30/18	20.317 g	4 mL	45.0
PDI-SG-B350-BL1	K1803975-012	4/28/18	4/30/18	20.233 g	4 mL	41.6
PDI-SG-B400-BL1	K1803975-013	4/28/18	4/30/18	20.272 g	4 mL	38.7
PDI-SG-B343-BL1	K1803975-014	4/28/18	4/30/18	20.055 g	4 mL	49.3
PDI-SG-B340-BL1	K1803975-015	4/28/18	4/30/18	20.323 g	4 mL	50.2
PDI-SG-B347-BL1	K1803975-016	4/28/18	4/30/18	20.258 g	4 mL	50.2
PDI-SG-B347-BL1-D	K1803975-017	4/28/18	4/30/18	20.168 g	4 mL	50.2
PDI-SG-B339-BL1	K1803975-018	4/28/18	4/30/18	20.018 g	4 mL	58.4
PDI-SG-B341-BL1	K1803975-019	4/28/18	4/30/18	20.084 g	4 mL	58.1
PDI-SG-B345-BL1	K1803975-020	4/28/18	4/30/18	20.461 g	4 mL	44.1
Matrix Spike	KQ1805597-01MS	4/29/18	4/30/18	20.283 g	4 mL	43.8
Duplicate Matrix Spike	KQ1805597-02DMS	4/29/18	4/30/18	20.305 g	4 mL	43.8
Lab Control Sample	KQ1805597-03LCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1805597-04MB	NA	NA	20.4610 g	4 mL	

Prep Summary Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Butyltins

Prep Method: Method **Extraction Lot:** 312957
Analytical Method: ALS SOP **Extraction Date:** 05/11/18 15:45

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B312-BL1	K1803975-021	4/27/18	4/30/18	20.061 g	4 mL	69.9
PDI-SG-B328-BL1	K1803975-022	4/27/18	4/30/18	20.026 g	4 mL	64.0
PDI-SG-B331-BL1	K1803975-023	4/27/18	4/30/18	20.241 g	4 mL	51.6
PDI-SG-B336-BL1	K1803975-024	4/27/18	4/30/18	20.335 g	4 mL	52.4
PDI-SG-B365-BL1	K1803975-025	4/27/18	4/30/18	20.306 g	4 mL	42.2
PDI-SG-B369-BL1	K1803975-026	4/27/18	4/30/18	20.225 g	4 mL	43.6
PDI-SG-B376-BL1	K1803975-027	4/27/18	4/30/18	20.178 g	4 mL	40.9
PDI-SG-B375-BL1	K1803975-028	4/27/18	4/30/18	20.164 g	4 mL	44.0
PDI-SG-B388-BL1-D	K1803975-030	4/27/18	4/30/18	20.207 g	4 mL	48.9
PDI-SG-B381-BL1	K1803975-031	4/29/18	4/30/18	20.293 g	4 mL	41.9
PDI-SG-B381-BL1-D	K1803975-032	4/29/18	4/30/18	20.346 g	4 mL	41.9
PDI-SG-B379-BL1	K1803975-033	4/29/18	4/30/18	20.172 g	4 mL	38.2
Matrix Spike	KQ1805611-01MS	4/27/18	4/30/18	20.183 g	4 mL	51.6
Duplicate Matrix Spike	KQ1805611-02DMS	4/27/18	4/30/18	20.148 g	4 mL	51.6
Lab Control Sample	KQ1805611-03LCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1805611-04MB	NA	NA	20.3460 g	4 mL	

Prep Summary Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Butyltins

Prep Method: Method **Extraction Lot:** 316148
Analytical Method: ALS SOP **Extraction Date:** 06/21/18 16:34

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B388-BL1	K1803975-029	4/27/18	4/30/18	20.067 g	4 mL	49.5
Lab Control Sample	KQ1808444-01LCS	NA	NA	20.00 g	4 mL	
Duplicate Lab Control Sample	KQ1808444-02DLCS	NA	NA	20.00 g	4 mL	
Method Blank	KQ1808444-03MB	NA	NA	20.0670 g	4 mL	

Prep Summary Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Butyltins

Prep Method: EPA 3520C **Extraction Lot:** 313118
Analytical Method: ALS SOP **Extraction Date:** 05/03/18 14:20

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-RB-VV-180429-1730	K1803975-034	4/29/18	4/30/18	500 mL	1 mL	
PDI-RB-VV-180429-1800	K1803975-035	4/29/18	4/30/18	500 mL	1 mL	
Lab Control Sample	KQ1805737-01LCS	NA	NA	500 mL	1 mL	
Duplicate Lab Control Sample	KQ1805737-02DLCS	NA	NA	500 mL	1 mL	
Method Blank	KQ1805737-03MB	NA	NA	500 mL	1 mL	

Polynuclear Aromatic Hydrocarbons

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
PDI-SG-B351-BL1	K1803975-001	04/29/2018	04/30/2018
PDI-SG-B353-BL1	K1803975-002	04/29/2018	04/30/2018
PDI-SG-B359-BL1	K1803975-003	04/29/2018	04/30/2018
PDI-SG-B361-BL1	K1803975-004	04/29/2018	04/30/2018
PDI-SG-B364-BL1	K1803975-005	04/29/2018	04/30/2018
PDI-SG-B370-BL1	K1803975-006	04/29/2018	04/30/2018
PDI-SG-B371-BL1	K1803975-007	04/29/2018	04/30/2018
PDI-SG-B408-BL1	K1803975-008	04/28/2018	04/30/2018
PDI-SG-B386-BL1	K1803975-009	04/28/2018	04/30/2018
PDI-SG-B385-BL1	K1803975-010	04/28/2018	04/30/2018
PDI-SG-B360-BL1	K1803975-011	04/28/2018	04/30/2018
PDI-SG-B350-BL1	K1803975-012	04/28/2018	04/30/2018
PDI-SG-B400-BL1	K1803975-013	04/28/2018	04/30/2018
PDI-SG-B343-BL1	K1803975-014	04/28/2018	04/30/2018
PDI-SG-B340-BL1	K1803975-015	04/28/2018	04/30/2018
PDI-SG-B347-BL1	K1803975-016	04/28/2018	04/30/2018
PDI-SG-B347-BL1-D	K1803975-017	04/28/2018	04/30/2018
PDI-SG-B339-BL1	K1803975-018	04/28/2018	04/30/2018
PDI-SG-B341-BL1	K1803975-019	04/28/2018	04/30/2018
PDI-SG-B345-BL1	K1803975-020	04/28/2018	04/30/2018
PDI-SG-B312-BL1	K1803975-021	04/27/2018	04/30/2018
PDI-SG-B328-BL1	K1803975-022	04/27/2018	04/30/2018
PDI-SG-B331-BL1	K1803975-023	04/27/2018	04/30/2018
PDI-SG-B336-BL1	K1803975-024	04/27/2018	04/30/2018
PDI-SG-B365-BL1	K1803975-025	04/27/2018	04/30/2018
PDI-SG-B369-BL1	K1803975-026	04/27/2018	04/30/2018
PDI-SG-B376-BL1	K1803975-027	04/27/2018	04/30/2018
PDI-SG-B375-BL1	K1803975-028	04/27/2018	04/30/2018
PDI-SG-B388-BL1	K1803975-029	04/27/2018	04/30/2018
PDI-SG-B388-BL1-D	K1803975-030	04/27/2018	04/30/2018
PDI-SG-B381-BL1	K1803975-031	04/29/2018	04/30/2018
PDI-SG-B381-BL1-D	K1803975-032	04/29/2018	04/30/2018
PDI-SG-B379-BL1	K1803975-033	04/29/2018	04/30/2018
PDI-SG-B331-BL1MS	KWG1802296-1	04/27/2018	04/30/2018
PDI-SG-B331-BL1DMS	KWG1802296-2	04/27/2018	04/30/2018
PDI-SG-B359-BL1MS	KWG1802297-1	04/29/2018	04/30/2018
PDI-SG-B359-BL1DMS	KWG1802297-2	04/29/2018	04/30/2018

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B351-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-001	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**11**		1.2	0.18	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**5.5**		1.2	0.14	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**4.3**		0.57	0.053	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**9.5**		0.57	0.054	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**7.8**		0.57	0.060	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**66**		0.57	0.075	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**13**		0.57	0.044	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**130**		0.57	0.056	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**130**		0.57	0.057	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**40**		0.57	0.044	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**70**		0.57	0.063	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**78**		0.57	0.075	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**25**		0.57	0.065	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**55**		0.57	0.083	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**40**		0.57	0.11	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**9.1**		0.57	0.098	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**38**		0.57	0.11	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	42-106	05/31/18	Acceptable
Fluoranthene-d10	80	45-109	05/31/18	Acceptable
Terphenyl-d14	87	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B353-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-002	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.4**		1.2	0.18	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**2.4**		1.2	0.15	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**1.6**		0.59	0.054	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**2.0**		0.59	0.055	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**3.6**		0.59	0.061	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**21**		0.59	0.078	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**4.0**		0.59	0.045	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**46**		0.59	0.058	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**46**		0.59	0.059	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**16**		0.59	0.045	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**26**		0.59	0.065	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**27**		0.59	0.078	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**7.8**		0.59	0.067	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**17**		0.59	0.086	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**14**		0.59	0.12	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**3.0**		0.59	0.11	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**17**		0.59	0.12	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	74	42-106	05/31/18	Acceptable
Fluoranthene-d10	86	45-109	05/31/18	Acceptable
Terphenyl-d14	94	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B359-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-003	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.6**		1.2	0.18	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**2.8**		1.2	0.15	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**1.3**		0.60	0.056	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**4.7**		0.60	0.057	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**5.6**		0.60	0.063	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**36**		0.60	0.080	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**6.2**		0.60	0.046	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**68**		0.60	0.059	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**64**		0.60	0.060	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**29**		0.60	0.046	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**38**		0.60	0.066	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**45**		0.60	0.080	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**14**		0.60	0.069	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**33**		0.60	0.088	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**26**		0.60	0.12	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**5.6**		0.60	0.11	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**25**		0.60	0.12	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	05/31/18	Acceptable
Fluoranthene-d10	78	45-109	05/31/18	Acceptable
Terphenyl-d14	86	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B361-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-004	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.8**		1.2	0.17	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**2.7**		1.2	0.14	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**2.2**		0.57	0.052	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**2.7**		0.57	0.054	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**5.0**		0.57	0.059	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**40**		0.57	0.075	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**11**		0.57	0.043	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**130**		0.57	0.056	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**110**		0.57	0.057	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**49**		0.57	0.043	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**67**		0.57	0.063	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**49**		0.57	0.075	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**17**		0.57	0.065	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**29**		0.57	0.083	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**21**		0.57	0.11	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**4.8**		0.57	0.098	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**22**		0.57	0.11	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	67	42-106	05/31/18	Acceptable
Fluoranthene-d10	80	45-109	05/31/18	Acceptable
Terphenyl-d14	89	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B364-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-005	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**5.0**		1.2	0.18	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**2.8**		1.2	0.15	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**3.0**		0.59	0.054	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**1.7**		0.59	0.055	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**2.7**		0.59	0.061	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**24**		0.59	0.078	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**5.3**		0.59	0.045	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**63**		0.59	0.058	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**60**		0.59	0.059	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**26**		0.59	0.045	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**37**		0.59	0.065	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**42**		0.59	0.078	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**13**		0.59	0.067	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**29**		0.59	0.086	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**23**		0.59	0.12	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**5.3**		0.59	0.11	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**25**		0.59	0.12	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	67	42-106	05/31/18	Acceptable
Fluoranthene-d10	82	45-109	05/31/18	Acceptable
Terphenyl-d14	88	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B370-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-006	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.8**		0.85	0.15	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**0.94**		0.85	0.12	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**1.3**		0.43	0.046	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**4.3**		0.43	0.047	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**1.2**		0.43	0.052	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**8.9**		0.43	0.066	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**1.6**		0.43	0.038	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**18**		0.43	0.049	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**19**		0.43	0.050	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**5.5**		0.43	0.038	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**8.9**		0.43	0.055	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**9.4**		0.43	0.066	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**2.7**		0.43	0.057	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**6.0**		0.43	0.073	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**5.5**		0.43	0.096	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**1.1**		0.43	0.086	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**6.9**		0.43	0.095	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	42-106	05/31/18	Acceptable
Fluoranthene-d10	74	45-109	05/31/18	Acceptable
Terphenyl-d14	79	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B371-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-007	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**4.2**		1.3	0.19	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**2.8**		1.3	0.16	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**2.8**		0.64	0.059	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**3.4**		0.64	0.060	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**4.9**		0.64	0.066	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**50**		0.64	0.084	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**9.2**		0.64	0.049	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**97**		0.64	0.063	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**95**		0.64	0.064	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**28**		0.64	0.049	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**43**		0.64	0.070	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**42**		0.64	0.084	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**13**		0.64	0.073	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**26**		0.64	0.093	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**23**		0.64	0.13	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**5.0**		0.64	0.11	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**23**		0.64	0.13	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	05/31/18	Acceptable
Fluoranthene-d10	75	45-109	05/31/18	Acceptable
Terphenyl-d14	81	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B408-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-008	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.0**		0.84	0.15	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**1.9**		0.84	0.12	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**4.2**		0.42	0.046	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**1.0**		0.42	0.047	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**1.9**		0.42	0.052	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**16**		0.42	0.066	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**4.4**		0.42	0.038	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**42**		0.42	0.049	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**42**		0.42	0.050	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**21**		0.42	0.038	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**28**		0.42	0.055	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**43**		0.42	0.066	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**15**		0.42	0.057	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**33**		0.42	0.073	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**26**		0.42	0.096	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**6.4**		0.42	0.086	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**22**		0.42	0.095	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	05/31/18	Acceptable
Fluoranthene-d10	79	45-109	05/31/18	Acceptable
Terphenyl-d14	85	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B386-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-009	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**9.9**		1.2	0.17	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**7.1**		1.2	0.14	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**5.9**		0.57	0.052	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**18**		0.57	0.054	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**15**		0.57	0.059	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**48**		0.57	0.075	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**14**		0.57	0.043	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**84**		0.57	0.056	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**100**		0.57	0.057	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**69**		0.57	0.043	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**130**		0.57	0.063	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**110**		0.57	0.075	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**36**		0.57	0.065	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**69**		0.57	0.083	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**55**		0.57	0.11	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**11**		0.57	0.098	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**54**		0.57	0.11	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	60	42-106	05/31/18	Acceptable
Fluoranthene-d10	72	45-109	05/31/18	Acceptable
Terphenyl-d14	79	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B385-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-010	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.1**	D	2.4	0.36	2	05/07/18	06/04/18	KWG1802297	
2-Methylnaphthalene	**2.0**	JD	2.4	0.29	2	05/07/18	06/04/18	KWG1802297	
Acenaphthylene	**2.4**	D	1.2	0.11	2	05/07/18	06/04/18	KWG1802297	
Acenaphthene	**0.93**	JD	1.2	0.12	2	05/07/18	06/04/18	KWG1802297	
Fluorene	**2.3**	D	1.2	0.13	2	05/07/18	06/04/18	KWG1802297	
Phenanthrene	**13**	D	1.2	0.16	2	05/07/18	06/04/18	KWG1802297	
Anthracene	**4.7**	D	1.2	0.090	2	05/07/18	06/04/18	KWG1802297	
Fluoranthene	**40**	D	1.2	0.12	2	05/07/18	06/04/18	KWG1802297	
Pyrene	**43**	D	1.2	0.12	2	05/07/18	06/04/18	KWG1802297	
Benz(a)anthracene	**16**	D	1.2	0.090	2	05/07/18	06/04/18	KWG1802297	
Chrysene	**18**	D	1.2	0.13	2	05/07/18	06/04/18	KWG1802297	
Benzo(b)fluoranthene†	**30**	D	1.2	0.16	2	05/07/18	06/04/18	KWG1802297	
Benzo(k)fluoranthene	**7.5**	D	1.2	0.14	2	05/07/18	06/04/18	KWG1802297	
Benzo(a)pyrene	**18**	D	1.2	0.18	2	05/07/18	06/04/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**18**	D	1.2	0.23	2	05/07/18	06/04/18	KWG1802297	
Dibenz(a,h)anthracene	**5.0**	D	1.2	0.21	2	05/07/18	06/04/18	KWG1802297	
Benzo(g,h,i)perylene	**24**	D	1.2	0.23	2	05/07/18	06/04/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	68	42-106	06/04/18	Acceptable
Fluoranthene-d10	79	45-109	06/04/18	Acceptable
Terphenyl-d14	83	41-102	06/04/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B360-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-011	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.9**		1.2	0.17	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**2.0**		1.2	0.14	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**1.6**		0.56	0.051	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**1.0**		0.56	0.053	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**2.2**		0.56	0.058	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**14**		0.56	0.074	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**3.6**		0.56	0.043	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**41**		0.56	0.055	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**39**		0.56	0.056	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**13**		0.56	0.043	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**22**		0.56	0.061	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**23**		0.56	0.074	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**7.0**		0.56	0.064	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**14**		0.56	0.081	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**12**		0.56	0.11	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**2.5**		0.56	0.096	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**15**		0.56	0.11	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	68	42-106	05/31/18	Acceptable
Fluoranthene-d10	80	45-109	05/31/18	Acceptable
Terphenyl-d14	85	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B350-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-012	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.6**		1.2	0.18	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**1.8**		1.2	0.15	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**1.3**		0.60	0.056	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**1.1**		0.60	0.057	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**2.0**		0.60	0.063	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**12**		0.60	0.080	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**2.7**		0.60	0.046	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**24**		0.60	0.059	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**26**		0.60	0.060	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**9.6**		0.60	0.046	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**16**		0.60	0.066	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**18**		0.60	0.080	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**5.2**		0.60	0.069	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**12**		0.60	0.088	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**12**		0.60	0.12	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**2.6**		0.60	0.11	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**14**		0.60	0.12	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	68	42-106	05/31/18	Acceptable
Fluoranthene-d10	80	45-109	05/31/18	Acceptable
Terphenyl-d14	87	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B400-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-013	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.9**		1.3	0.20	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**3.1**		1.3	0.16	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**2.1**		0.65	0.060	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**1.0**		0.65	0.061	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**2.1**		0.65	0.067	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**13**		0.65	0.085	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**4.2**		0.65	0.049	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**27**		0.65	0.063	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**32**		0.65	0.065	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**11**		0.65	0.049	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**20**		0.65	0.071	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**17**		0.65	0.085	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**4.9**		0.65	0.074	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**12**		0.65	0.094	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**11**		0.65	0.13	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**2.6**		0.65	0.12	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**14**		0.65	0.13	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	71	42-106	05/31/18	Acceptable
Fluoranthene-d10	87	45-109	05/31/18	Acceptable
Terphenyl-d14	89	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B343-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-014	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.6**		1.1	0.16	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	**1.7**		1.1	0.13	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	**1.3**		0.51	0.047	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	**0.84**		0.51	0.048	1	05/07/18	05/31/18	KWG1802297	
Fluorene	**1.6**		0.51	0.053	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	**9.4**		0.51	0.067	1	05/07/18	05/31/18	KWG1802297	
Anthracene	**2.5**		0.51	0.039	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	**22**		0.51	0.050	1	05/07/18	05/31/18	KWG1802297	
Pyrene	**24**		0.51	0.051	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	**9.6**		0.51	0.039	1	05/07/18	05/31/18	KWG1802297	
Chrysene	**14**		0.51	0.056	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	**17**		0.51	0.067	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	**5.2**		0.51	0.058	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	**12**		0.51	0.074	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**10**		0.51	0.097	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	**2.2**		0.51	0.087	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	**12**		0.51	0.096	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	42-106	05/31/18	Acceptable
Fluoranthene-d10	75	45-109	05/31/18	Acceptable
Terphenyl-d14	78	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B340-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-015	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**41**		1.0	0.15	1	05/07/18	06/01/18	KWG1802297	
2-Methylnaphthalene	**9.0**		1.0	0.12	1	05/07/18	06/01/18	KWG1802297	
Acenaphthylene	**12**		0.50	0.046	1	05/07/18	06/01/18	KWG1802297	
Acenaphthene	**33**		0.50	0.047	1	05/07/18	06/01/18	KWG1802297	
Fluorene	**12**		0.50	0.052	1	05/07/18	06/01/18	KWG1802297	
Phenanthrene	**100**		0.50	0.066	1	05/07/18	06/01/18	KWG1802297	
Anthracene	**15**		0.50	0.038	1	05/07/18	06/01/18	KWG1802297	
Fluoranthene	**190**	D	2.5	0.25	5	05/07/18	06/04/18	KWG1802297	
Pyrene	**200**	D	2.5	0.25	5	05/07/18	06/04/18	KWG1802297	
Benz(a)anthracene	**100**	D	2.5	0.19	5	05/07/18	06/04/18	KWG1802297	
Chrysene	**130**	D	2.5	0.28	5	05/07/18	06/04/18	KWG1802297	
Benzo(b)fluoranthene†	**170**	D	2.5	0.33	5	05/07/18	06/04/18	KWG1802297	
Benzo(k)fluoranthene	**60**	D	2.5	0.29	5	05/07/18	06/04/18	KWG1802297	
Benzo(a)pyrene	**140**		0.50	0.073	1	05/07/18	06/01/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**160**		0.50	0.096	1	05/07/18	06/01/18	KWG1802297	
Dibenz(a,h)anthracene	**40**		0.50	0.086	1	05/07/18	06/01/18	KWG1802297	
Benzo(g,h,i)perylene	**150**		0.50	0.095	1	05/07/18	06/01/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	84	42-106	06/01/18	Acceptable
Fluoranthene-d10	86	45-109	06/04/18	Acceptable
Terphenyl-d14	94	41-102	06/04/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B347-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-016	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**1.9**		0.99	0.15	1	05/07/18	06/01/18	KWG1802297	
2-Methylnaphthalene	**1.3**		0.99	0.12	1	05/07/18	06/01/18	KWG1802297	
Acenaphthylene	**1.0**		0.50	0.046	1	05/07/18	06/01/18	KWG1802297	
Acenaphthene	**1.1**		0.50	0.047	1	05/07/18	06/01/18	KWG1802297	
Fluorene	**1.8**		0.50	0.052	1	05/07/18	06/01/18	KWG1802297	
Phenanthrene	**7.3**		0.50	0.066	1	05/07/18	06/01/18	KWG1802297	
Anthracene	**2.5**		0.50	0.038	1	05/07/18	06/01/18	KWG1802297	
Fluoranthene	**17**		0.50	0.049	1	05/07/18	06/01/18	KWG1802297	
Pyrene	**17**		0.50	0.050	1	05/07/18	06/01/18	KWG1802297	
Benz(a)anthracene	**8.5**		0.50	0.038	1	05/07/18	06/01/18	KWG1802297	
Chrysene	**17**		0.50	0.055	1	05/07/18	06/01/18	KWG1802297	
Benzo(b)fluoranthene†	**13**		0.50	0.066	1	05/07/18	06/01/18	KWG1802297	
Benzo(k)fluoranthene	**5.0**		0.50	0.057	1	05/07/18	06/01/18	KWG1802297	
Benzo(a)pyrene	**8.6**		0.50	0.073	1	05/07/18	06/01/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**11**		0.50	0.096	1	05/07/18	06/01/18	KWG1802297	
Dibenz(a,h)anthracene	**3.2**		0.50	0.086	1	05/07/18	06/01/18	KWG1802297	
Benzo(g,h,i)perylene	**13**		0.50	0.095	1	05/07/18	06/01/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	06/01/18	Acceptable
Fluoranthene-d10	82	45-109	06/01/18	Acceptable
Terphenyl-d14	81	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B347-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-017	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**1.9**		0.99	0.15	1	05/07/18	06/01/18	KWG1802297	
2-Methylnaphthalene	**1.6**		0.99	0.12	1	05/07/18	06/01/18	KWG1802297	
Acenaphthylene	**0.87**		0.50	0.046	1	05/07/18	06/01/18	KWG1802297	
Acenaphthene	**1.4**		0.50	0.047	1	05/07/18	06/01/18	KWG1802297	
Fluorene	**2.2**		0.50	0.052	1	05/07/18	06/01/18	KWG1802297	
Phenanthrene	**15**		0.50	0.066	1	05/07/18	06/01/18	KWG1802297	
Anthracene	**3.0**		0.50	0.038	1	05/07/18	06/01/18	KWG1802297	
Fluoranthene	**41**		0.50	0.049	1	05/07/18	06/01/18	KWG1802297	
Pyrene	**35**		0.50	0.050	1	05/07/18	06/01/18	KWG1802297	
Benz(a)anthracene	**16**		0.50	0.038	1	05/07/18	06/01/18	KWG1802297	
Chrysene	**24**		0.50	0.055	1	05/07/18	06/01/18	KWG1802297	
Benzo(b)fluoranthene†	**25**		0.50	0.066	1	05/07/18	06/01/18	KWG1802297	
Benzo(k)fluoranthene	**9.0**		0.50	0.057	1	05/07/18	06/01/18	KWG1802297	
Benzo(a)pyrene	**14**		0.50	0.073	1	05/07/18	06/01/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**13**		0.50	0.096	1	05/07/18	06/01/18	KWG1802297	
Dibenz(a,h)anthracene	**3.7**		0.50	0.086	1	05/07/18	06/01/18	KWG1802297	
Benzo(g,h,i)perylene	**15**		0.50	0.095	1	05/07/18	06/01/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	74	42-106	06/01/18	Acceptable
Fluoranthene-d10	85	45-109	06/01/18	Acceptable
Terphenyl-d14	88	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B339-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-018	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.4**		0.86	0.15	1	05/07/18	06/01/18	KWG1802297	
2-Methylnaphthalene	**1.9**		0.86	0.12	1	05/07/18	06/01/18	KWG1802297	
Acenaphthylene	**1.2**		0.43	0.046	1	05/07/18	06/01/18	KWG1802297	
Acenaphthene	**3.8**		0.43	0.047	1	05/07/18	06/01/18	KWG1802297	
Fluorene	**2.2**		0.43	0.052	1	05/07/18	06/01/18	KWG1802297	
Phenanthrene	**18**		0.43	0.066	1	05/07/18	06/01/18	KWG1802297	
Anthracene	**2.6**		0.43	0.038	1	05/07/18	06/01/18	KWG1802297	
Fluoranthene	**44**		0.43	0.049	1	05/07/18	06/01/18	KWG1802297	
Pyrene	**46**		0.43	0.050	1	05/07/18	06/01/18	KWG1802297	
Benz(a)anthracene	**15**		0.43	0.038	1	05/07/18	06/01/18	KWG1802297	
Chrysene	**28**		0.43	0.055	1	05/07/18	06/01/18	KWG1802297	
Benzo(b)fluoranthene†	**28**		0.43	0.066	1	05/07/18	06/01/18	KWG1802297	
Benzo(k)fluoranthene	**10**		0.43	0.057	1	05/07/18	06/01/18	KWG1802297	
Benzo(a)pyrene	**17**		0.43	0.073	1	05/07/18	06/01/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**15**		0.43	0.096	1	05/07/18	06/01/18	KWG1802297	
Dibenz(a,h)anthracene	**3.4**		0.43	0.086	1	05/07/18	06/01/18	KWG1802297	
Benzo(g,h,i)perylene	**15**		0.43	0.095	1	05/07/18	06/01/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	42-106	06/01/18	Acceptable
Fluoranthene-d10	81	45-109	06/01/18	Acceptable
Terphenyl-d14	85	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B341-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-019	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.0**		0.86	0.15	1	05/07/18	06/01/18	KWG1802297	
2-Methylnaphthalene	**1.7**		0.86	0.12	1	05/07/18	06/01/18	KWG1802297	
Acenaphthylene	**0.89**		0.43	0.046	1	05/07/18	06/01/18	KWG1802297	
Acenaphthene	**2.3**		0.43	0.047	1	05/07/18	06/01/18	KWG1802297	
Fluorene	**2.3**		0.43	0.052	1	05/07/18	06/01/18	KWG1802297	
Phenanthrene	**12**		0.43	0.066	1	05/07/18	06/01/18	KWG1802297	
Anthracene	**2.4**		0.43	0.038	1	05/07/18	06/01/18	KWG1802297	
Fluoranthene	**27**		0.43	0.049	1	05/07/18	06/01/18	KWG1802297	
Pyrene	**26**		0.43	0.050	1	05/07/18	06/01/18	KWG1802297	
Benz(a)anthracene	**12**		0.43	0.038	1	05/07/18	06/01/18	KWG1802297	
Chrysene	**15**		0.43	0.055	1	05/07/18	06/01/18	KWG1802297	
Benzo(b)fluoranthene†	**17**		0.43	0.066	1	05/07/18	06/01/18	KWG1802297	
Benzo(k)fluoranthene	**5.9**		0.43	0.057	1	05/07/18	06/01/18	KWG1802297	
Benzo(a)pyrene	**11**		0.43	0.073	1	05/07/18	06/01/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**9.4**		0.43	0.096	1	05/07/18	06/01/18	KWG1802297	
Dibenz(a,h)anthracene	**2.4**		0.43	0.086	1	05/07/18	06/01/18	KWG1802297	
Benzo(g,h,i)perylene	**10**		0.43	0.095	1	05/07/18	06/01/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	72	42-106	06/01/18	Acceptable
Fluoranthene-d10	96	45-109	06/01/18	Acceptable
Terphenyl-d14	100	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B345-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-020	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.2**		1.2	0.17	1	05/07/18	06/01/18	KWG1802297	
2-Methylnaphthalene	**1.6**		1.2	0.14	1	05/07/18	06/01/18	KWG1802297	
Acenaphthylene	**1.2**		0.57	0.053	1	05/07/18	06/01/18	KWG1802297	
Acenaphthene	**1.1**		0.57	0.054	1	05/07/18	06/01/18	KWG1802297	
Fluorene	**2.0**		0.57	0.059	1	05/07/18	06/01/18	KWG1802297	
Phenanthrene	**9.3**		0.57	0.075	1	05/07/18	06/01/18	KWG1802297	
Anthracene	**2.4**		0.57	0.043	1	05/07/18	06/01/18	KWG1802297	
Fluoranthene	**22**		0.57	0.056	1	05/07/18	06/01/18	KWG1802297	
Pyrene	**21**		0.57	0.057	1	05/07/18	06/01/18	KWG1802297	
Benz(a)anthracene	**9.7**		0.57	0.043	1	05/07/18	06/01/18	KWG1802297	
Chrysene	**17**		0.57	0.063	1	05/07/18	06/01/18	KWG1802297	
Benzo(b)fluoranthene†	**17**		0.57	0.075	1	05/07/18	06/01/18	KWG1802297	
Benzo(k)fluoranthene	**5.6**		0.57	0.065	1	05/07/18	06/01/18	KWG1802297	
Benzo(a)pyrene	**9.8**		0.57	0.083	1	05/07/18	06/01/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	**10**		0.57	0.11	1	05/07/18	06/01/18	KWG1802297	
Dibenz(a,h)anthracene	**2.4**		0.57	0.098	1	05/07/18	06/01/18	KWG1802297	
Benzo(g,h,i)perylene	**13**		0.57	0.11	1	05/07/18	06/01/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	86	45-109	06/01/18	Acceptable
Terphenyl-d14	86	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B312-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-021	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.9**		0.71	0.15	1	05/07/18	05/31/18	KWG1802296	
2-Methylnaphthalene	**1.3**		0.71	0.12	1	05/07/18	05/31/18	KWG1802296	
Acenaphthylene	**0.96**		0.36	0.046	1	05/07/18	05/31/18	KWG1802296	
Acenaphthene	**1.4**		0.36	0.047	1	05/07/18	05/31/18	KWG1802296	
Fluorene	**1.7**		0.36	0.052	1	05/07/18	05/31/18	KWG1802296	
Phenanthrene	**9.4**		0.36	0.066	1	05/07/18	05/31/18	KWG1802296	
Anthracene	**3.4**		0.36	0.038	1	05/07/18	05/31/18	KWG1802296	
Fluoranthene	**20**		0.36	0.049	1	05/07/18	05/31/18	KWG1802296	
Pyrene	**22**		0.36	0.050	1	05/07/18	05/31/18	KWG1802296	
Benz(a)anthracene	**8.3**		0.36	0.038	1	05/07/18	05/31/18	KWG1802296	
Chrysene	**12**		0.36	0.055	1	05/07/18	05/31/18	KWG1802296	
Benzo(b)fluoranthene†	**15**		0.36	0.066	1	05/07/18	05/31/18	KWG1802296	
Benzo(k)fluoranthene	**4.8**		0.36	0.057	1	05/07/18	05/31/18	KWG1802296	
Benzo(a)pyrene	**11**		0.36	0.073	1	05/07/18	05/31/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**10**		0.36	0.096	1	05/07/18	05/31/18	KWG1802296	
Dibenz(a,h)anthracene	**2.1**		0.36	0.086	1	05/07/18	05/31/18	KWG1802296	
Benzo(g,h,i)perylene	**11**		0.36	0.095	1	05/07/18	05/31/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	05/31/18	Acceptable
Fluoranthene-d10	81	45-109	05/31/18	Acceptable
Terphenyl-d14	85	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B328-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-022	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**16**		0.78	0.15	1	05/07/18	05/31/18	KWG1802296	
2-Methylnaphthalene	**4.4**		0.78	0.12	1	05/07/18	05/31/18	KWG1802296	
Acenaphthylene	**4.1**		0.39	0.046	1	05/07/18	05/31/18	KWG1802296	
Acenaphthene	**6.4**		0.39	0.047	1	05/07/18	05/31/18	KWG1802296	
Fluorene	**4.6**		0.39	0.052	1	05/07/18	05/31/18	KWG1802296	
Phenanthrene	**38**		0.39	0.066	1	05/07/18	05/31/18	KWG1802296	
Anthracene	**7.5**		0.39	0.038	1	05/07/18	05/31/18	KWG1802296	
Fluoranthene	**70**		0.39	0.049	1	05/07/18	05/31/18	KWG1802296	
Pyrene	**77**		0.39	0.050	1	05/07/18	05/31/18	KWG1802296	
Benz(a)anthracene	**39**		0.39	0.038	1	05/07/18	05/31/18	KWG1802296	
Chrysene	**50**		0.39	0.055	1	05/07/18	05/31/18	KWG1802296	
Benzo(b)fluoranthene†	**63**		0.39	0.066	1	05/07/18	05/31/18	KWG1802296	
Benzo(k)fluoranthene	**19**		0.39	0.057	1	05/07/18	05/31/18	KWG1802296	
Benzo(a)pyrene	**48**		0.39	0.073	1	05/07/18	05/31/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**36**		0.39	0.096	1	05/07/18	05/31/18	KWG1802296	
Dibenz(a,h)anthracene	**9.0**		0.39	0.086	1	05/07/18	05/31/18	KWG1802296	
Benzo(g,h,i)perylene	**35**		0.39	0.095	1	05/07/18	05/31/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	42-106	05/31/18	Acceptable
Fluoranthene-d10	79	45-109	05/31/18	Acceptable
Terphenyl-d14	86	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B331-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-023	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**13**		0.97	0.15	1	05/07/18	05/31/18	KWG1802296	
2-Methylnaphthalene	**4.1**		0.97	0.12	1	05/07/18	05/31/18	KWG1802296	
Acenaphthylene	**7.2**		0.49	0.046	1	05/07/18	05/31/18	KWG1802296	
Acenaphthene	**11**		0.49	0.047	1	05/07/18	05/31/18	KWG1802296	
Fluorene	**8.4**		0.49	0.052	1	05/07/18	05/31/18	KWG1802296	
Phenanthrene	**63**		0.49	0.066	1	05/07/18	05/31/18	KWG1802296	
Anthracene	**14**		0.49	0.038	1	05/07/18	05/31/18	KWG1802296	
Fluoranthene	**140**		0.49	0.049	1	05/07/18	05/31/18	KWG1802296	
Pyrene	**170**		0.49	0.050	1	05/07/18	05/31/18	KWG1802296	
Benz(a)anthracene	**73**		0.49	0.038	1	05/07/18	05/31/18	KWG1802296	
Chrysene	**95**		0.49	0.055	1	05/07/18	05/31/18	KWG1802296	
Benzo(b)fluoranthene†	**110**		0.49	0.066	1	05/07/18	05/31/18	KWG1802296	
Benzo(k)fluoranthene	**39**		0.49	0.057	1	05/07/18	05/31/18	KWG1802296	
Benzo(a)pyrene	**93**		0.49	0.073	1	05/07/18	05/31/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**74**		0.49	0.096	1	05/07/18	05/31/18	KWG1802296	
Dibenz(a,h)anthracene	**16**		0.49	0.086	1	05/07/18	05/31/18	KWG1802296	
Benzo(g,h,i)perylene	**70**		0.49	0.095	1	05/07/18	05/31/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	71	42-106	05/31/18	Acceptable
Fluoranthene-d10	80	45-109	05/31/18	Acceptable
Terphenyl-d14	90	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B336-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-024	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**4.5**		0.95	0.15	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**1.5**		0.95	0.12	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**2.2**		0.48	0.046	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**11**		0.48	0.047	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.1**		0.48	0.052	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**14**		0.48	0.066	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**2.9**		0.48	0.038	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**45**		0.48	0.049	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**47**		0.48	0.050	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**10**		0.48	0.038	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**20**		0.48	0.055	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**19**		0.48	0.066	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**5.9**		0.48	0.057	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**11**		0.48	0.073	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**10**		0.48	0.096	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**2.1**		0.48	0.086	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**11**		0.48	0.095	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	68	42-106	06/01/18	Acceptable
Fluoranthene-d10	84	45-109	06/01/18	Acceptable
Terphenyl-d14	86	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B365-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-025	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**4.2**		1.2	0.18	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**2.0**		1.2	0.15	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**2.4**		0.59	0.054	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**1.3**		0.59	0.056	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.4**		0.59	0.061	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**18**		0.59	0.078	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**4.3**		0.59	0.045	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**46**		0.59	0.058	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**49**		0.59	0.059	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**22**		0.59	0.045	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**29**		0.59	0.065	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**33**		0.59	0.078	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**10**		0.59	0.067	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**23**		0.59	0.086	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**19**		0.59	0.12	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**4.1**		0.59	0.11	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**20**		0.59	0.12	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	69	42-106	06/01/18	Acceptable
Fluoranthene-d10	83	45-109	06/01/18	Acceptable
Terphenyl-d14	90	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B369-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-026	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.3**		1.2	0.18	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**2.1**		1.2	0.14	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**2.0**		0.58	0.053	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**0.94**		0.58	0.054	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.5**		0.58	0.060	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**15**		0.58	0.076	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**4.2**		0.58	0.044	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**41**		0.58	0.056	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**41**		0.58	0.058	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**18**		0.58	0.044	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**30**		0.58	0.063	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**32**		0.58	0.076	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**9.1**		0.58	0.066	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**20**		0.58	0.084	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**17**		0.58	0.11	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**3.6**		0.58	0.099	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**19**		0.58	0.11	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	06/01/18	Acceptable
Fluoranthene-d10	79	45-109	06/01/18	Acceptable
Terphenyl-d14	78	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B376-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-027	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.3**		1.3	0.19	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**2.0**		1.3	0.15	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**2.1**		0.61	0.056	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**1.1**		0.61	0.058	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.2**		0.61	0.064	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**15**		0.61	0.081	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**3.7**		0.61	0.047	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**35**		0.61	0.060	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**38**		0.61	0.061	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**14**		0.61	0.047	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**22**		0.61	0.067	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**29**		0.61	0.081	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**8.3**		0.61	0.070	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**20**		0.61	0.089	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**18**		0.61	0.12	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**3.4**		0.61	0.11	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**20**		0.61	0.12	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	06/01/18	Acceptable
Fluoranthene-d10	80	45-109	06/01/18	Acceptable
Terphenyl-d14	82	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B375-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-028	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.3**		1.2	0.18	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**1.9**		1.2	0.14	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**3.4**		0.57	0.053	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**0.97**		0.57	0.054	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.2**		0.57	0.060	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**13**		0.57	0.075	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**4.2**		0.57	0.044	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**44**		0.57	0.056	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**49**		0.57	0.057	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**17**		0.57	0.044	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**29**		0.57	0.063	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**35**		0.57	0.075	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**10**		0.57	0.065	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**25**		0.57	0.083	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**23**		0.57	0.11	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**4.1**		0.57	0.098	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**26**		0.57	0.11	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	62	42-106	06/01/18	Acceptable
Fluoranthene-d10	76	45-109	06/01/18	Acceptable
Terphenyl-d14	77	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B388-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-029	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.8**		1.1	0.16	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**2.3**		1.1	0.13	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**13**		0.51	0.047	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**1.7**		0.51	0.048	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**5.9**		0.51	0.053	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**56**		0.51	0.067	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**36**		0.51	0.039	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**2000**	D	11	0.99	20	05/07/18	06/01/18	KWG1802296	
Pyrene	**1800**	D	11	1.1	20	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**490**	D	11	0.77	20	05/07/18	06/01/18	KWG1802296	
Chrysene	**820**	D	11	1.2	20	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**850**	D	11	1.4	20	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**240**	D	11	1.2	20	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**310**	D	11	1.5	20	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**180**		0.51	0.097	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**62**		0.51	0.087	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**150**		0.51	0.096	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	06/01/18	Acceptable
Fluoranthene-d10	81	45-109	06/01/18	Acceptable
Terphenyl-d14	86	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B388-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-030	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**6.5**		1.1	0.16	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**3.4**		1.1	0.13	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**15**		0.51	0.047	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**1.8**		0.51	0.048	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**3.3**		0.51	0.053	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**27**		0.51	0.067	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**14**		0.51	0.039	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**100**		0.51	0.050	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**120**		0.51	0.051	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**55**		0.51	0.039	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**80**		0.51	0.056	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**120**		0.51	0.067	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**35**		0.51	0.058	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**98**		0.51	0.074	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**86**		0.51	0.098	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**14**		0.51	0.087	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**85**		0.51	0.097	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	06/01/18	Acceptable
Fluoranthene-d10	79	45-109	06/01/18	Acceptable
Terphenyl-d14	83	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B381-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-031	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.0**		1.2	0.18	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**2.0**		1.2	0.15	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**1.6**		0.60	0.055	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**1.1**		0.60	0.056	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.2**		0.60	0.062	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**14**		0.60	0.078	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**3.5**		0.60	0.045	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**32**		0.60	0.058	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**34**		0.60	0.060	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**13**		0.60	0.045	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**20**		0.60	0.065	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**23**		0.60	0.078	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**6.4**		0.60	0.068	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**15**		0.60	0.087	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**13**		0.60	0.12	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**2.8**		0.60	0.11	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**15**		0.60	0.12	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	63	42-106	06/01/18	Acceptable
Fluoranthene-d10	74	45-109	06/01/18	Acceptable
Terphenyl-d14	80	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B381-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-032	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**2.8**		1.2	0.18	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**1.9**		1.2	0.15	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**1.9**		0.60	0.055	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**2.8**		0.60	0.056	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**4.3**		0.60	0.062	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**35**		0.60	0.079	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**10**		0.60	0.046	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**58**		0.60	0.059	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**59**		0.60	0.060	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**20**		0.60	0.046	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**30**		0.60	0.066	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**35**		0.60	0.079	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**11**		0.60	0.068	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**26**		0.60	0.087	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**23**		0.60	0.12	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**4.1**		0.60	0.11	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**24**		0.60	0.12	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	64	42-106	06/01/18	Acceptable
Fluoranthene-d10	78	45-109	06/01/18	Acceptable
Terphenyl-d14	84	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Sediment	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B379-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-033	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**3.2**		1.3	0.20	1	05/07/18	06/01/18	KWG1802296	
2-Methylnaphthalene	**2.3**		1.3	0.16	1	05/07/18	06/01/18	KWG1802296	
Acenaphthylene	**2.4**		0.65	0.060	1	05/07/18	06/01/18	KWG1802296	
Acenaphthene	**1.2**		0.65	0.061	1	05/07/18	06/01/18	KWG1802296	
Fluorene	**2.8**		0.65	0.068	1	05/07/18	06/01/18	KWG1802296	
Phenanthrene	**28**		0.65	0.086	1	05/07/18	06/01/18	KWG1802296	
Anthracene	**5.1**		0.65	0.050	1	05/07/18	06/01/18	KWG1802296	
Fluoranthene	**47**		0.65	0.064	1	05/07/18	06/01/18	KWG1802296	
Pyrene	**46**		0.65	0.065	1	05/07/18	06/01/18	KWG1802296	
Benz(a)anthracene	**15**		0.65	0.050	1	05/07/18	06/01/18	KWG1802296	
Chrysene	**27**		0.65	0.072	1	05/07/18	06/01/18	KWG1802296	
Benzo(b)fluoranthene†	**33**		0.65	0.086	1	05/07/18	06/01/18	KWG1802296	
Benzo(k)fluoranthene	**9.4**		0.65	0.074	1	05/07/18	06/01/18	KWG1802296	
Benzo(a)pyrene	**20**		0.65	0.095	1	05/07/18	06/01/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	**19**		0.65	0.13	1	05/07/18	06/01/18	KWG1802296	
Dibenz(a,h)anthracene	**3.7**		0.65	0.12	1	05/07/18	06/01/18	KWG1802296	
Benzo(g,h,i)perylene	**21**		0.65	0.13	1	05/07/18	06/01/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	72	42-106	06/01/18	Acceptable
Fluoranthene-d10	89	45-109	06/01/18	Acceptable
Terphenyl-d14	91	41-102	06/01/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KWG1802296-4	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.50	0.15	1	05/07/18	05/31/18	KWG1802296	
2-Methylnaphthalene	ND	U	0.50	0.12	1	05/07/18	05/31/18	KWG1802296	
Acenaphthylene	ND	U	0.25	0.046	1	05/07/18	05/31/18	KWG1802296	
Acenaphthene	ND	U	0.25	0.047	1	05/07/18	05/31/18	KWG1802296	
Fluorene	ND	U	0.25	0.052	1	05/07/18	05/31/18	KWG1802296	
Phenanthrene	ND	U	0.25	0.066	1	05/07/18	05/31/18	KWG1802296	
Anthracene	ND	U	0.25	0.038	1	05/07/18	05/31/18	KWG1802296	
Fluoranthene	ND	U	0.25	0.049	1	05/07/18	05/31/18	KWG1802296	
Pyrene	ND	U	0.25	0.050	1	05/07/18	05/31/18	KWG1802296	
Benz(a)anthracene	ND	U	0.25	0.038	1	05/07/18	05/31/18	KWG1802296	
Chrysene	ND	U	0.25	0.055	1	05/07/18	05/31/18	KWG1802296	
Benzo(b)fluoranthene†	ND	U	0.25	0.066	1	05/07/18	05/31/18	KWG1802296	
Benzo(k)fluoranthene	ND	U	0.25	0.057	1	05/07/18	05/31/18	KWG1802296	
Benzo(a)pyrene	ND	U	0.25	0.073	1	05/07/18	05/31/18	KWG1802296	
Indeno(1,2,3-cd)pyrene	ND	U	0.25	0.096	1	05/07/18	05/31/18	KWG1802296	
Dibenz(a,h)anthracene	ND	U	0.25	0.086	1	05/07/18	05/31/18	KWG1802296	
Benzo(g,h,i)perylene	ND	U	0.25	0.095	1	05/07/18	05/31/18	KWG1802296	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	66	42-106	05/31/18	Acceptable
Fluoranthene-d10	74	45-109	05/31/18	Acceptable
Terphenyl-d14	78	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KWG1802297-4	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.50	0.15	1	05/07/18	05/31/18	KWG1802297	
2-Methylnaphthalene	ND	U	0.50	0.12	1	05/07/18	05/31/18	KWG1802297	
Acenaphthylene	ND	U	0.25	0.046	1	05/07/18	05/31/18	KWG1802297	
Acenaphthene	ND	U	0.25	0.047	1	05/07/18	05/31/18	KWG1802297	
Fluorene	ND	U	0.25	0.052	1	05/07/18	05/31/18	KWG1802297	
Phenanthrene	ND	U	0.25	0.066	1	05/07/18	05/31/18	KWG1802297	
Anthracene	ND	U	0.25	0.038	1	05/07/18	05/31/18	KWG1802297	
Fluoranthene	ND	U	0.25	0.049	1	05/07/18	05/31/18	KWG1802297	
Pyrene	ND	U	0.25	0.050	1	05/07/18	05/31/18	KWG1802297	
Benz(a)anthracene	ND	U	0.25	0.038	1	05/07/18	05/31/18	KWG1802297	
Chrysene	ND	U	0.25	0.055	1	05/07/18	05/31/18	KWG1802297	
Benzo(b)fluoranthene†	ND	U	0.25	0.066	1	05/07/18	05/31/18	KWG1802297	
Benzo(k)fluoranthene	ND	U	0.25	0.057	1	05/07/18	05/31/18	KWG1802297	
Benzo(a)pyrene	ND	U	0.25	0.073	1	05/07/18	05/31/18	KWG1802297	
Indeno(1,2,3-cd)pyrene	ND	U	0.25	0.096	1	05/07/18	05/31/18	KWG1802297	
Dibenz(a,h)anthracene	ND	U	0.25	0.086	1	05/07/18	05/31/18	KWG1802297	
Benzo(g,h,i)perylene	ND	U	0.25	0.095	1	05/07/18	05/31/18	KWG1802297	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	65	42-106	05/31/18	Acceptable
Fluoranthene-d10	74	45-109	05/31/18	Acceptable
Terphenyl-d14	79	41-102	05/31/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

QA/QC Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541 **Units:** Percent
Analysis Method: 8270D SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
PDI-SG-B351-BL1	K1803975-001	66	80	87
PDI-SG-B353-BL1	K1803975-002	74	86	94
PDI-SG-B359-BL1	K1803975-003	65	78	86
PDI-SG-B361-BL1	K1803975-004	67	80	89
PDI-SG-B364-BL1	K1803975-005	67	82	88
PDI-SG-B370-BL1	K1803975-006	62	74	79
PDI-SG-B371-BL1	K1803975-007	64	75	81
PDI-SG-B408-BL1	K1803975-008	65	79	85
PDI-SG-B386-BL1	K1803975-009	60	72	79
PDI-SG-B385-BL1	K1803975-010	68 D	79 D	83 D
PDI-SG-B360-BL1	K1803975-011	68	80	85
PDI-SG-B350-BL1	K1803975-012	68	80	87
PDI-SG-B400-BL1	K1803975-013	71	87	89
PDI-SG-B343-BL1	K1803975-014	62	75	78
PDI-SG-B340-BL1	K1803975-015	84	86 D	94 D
PDI-SG-B347-BL1	K1803975-016	65	82	81
PDI-SG-B347-BL1-D	K1803975-017	74	85	88
PDI-SG-B339-BL1	K1803975-018	66	81	85
PDI-SG-B341-BL1	K1803975-019	72	96	100
PDI-SG-B345-BL1	K1803975-020	63	86	86
PDI-SG-B312-BL1	K1803975-021	63	81	85
PDI-SG-B328-BL1	K1803975-022	66	79	86
PDI-SG-B331-BL1	K1803975-023	71	80	90
PDI-SG-B336-BL1	K1803975-024	68	84	86
PDI-SG-B365-BL1	K1803975-025	69	83	90
PDI-SG-B369-BL1	K1803975-026	64	79	78
PDI-SG-B376-BL1	K1803975-027	65	80	82
PDI-SG-B375-BL1	K1803975-028	62	76	77
PDI-SG-B388-BL1	K1803975-029	65	81	86
PDI-SG-B388-BL1-D	K1803975-030	64	79	83
PDI-SG-B381-BL1	K1803975-031	63	74	80
PDI-SG-B381-BL1-D	K1803975-032	64	78	84
PDI-SG-B379-BL1	K1803975-033	72	89	91
Method Blank	KWG1802296-4	66	74	78
Method Blank	KWG1802297-4	65	74	79

Surrogate Recovery Control Limits (%)

Sur1	=	Fluorene-d10	42-106
Sur2	=	Fluoranthene-d10	45-109
Sur3	=	Terphenyl-d14	41-102

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541 **Units:** Percent
Analysis Method: 8270D SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
PDI-SG-B331-BL1MS	KWG1802296-1	74	84	94
PDI-SG-B331-BL1DMS	KWG1802296-2	71	82	92
PDI-SG-B359-BL1MS	KWG1802297-1	67	79	91
PDI-SG-B359-BL1DMS	KWG1802297-2	68	80	89
Lab Control Sample	KWG1802296-3	65	74	81
Lab Control Sample	KWG1802297-3	64	74	80

Surrogate Recovery Control Limits (%)

Sur1	=	Fluorene-d10	42-106
Sur2	=	Fluoranthene-d10	45-109
Sur3	=	Terphenyl-d14	41-102

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018
Time Analyzed: 06:32

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\053118\0531F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802803-2
Analysis Lot: KWG1802803

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	68,995	5.94	35,421	8.26	70,553	11.44
	Upper Limit ==>	137,990	6.44	70,842	8.76	141,106	11.94
	Lower Limit ==>	34,498	5.44	17,711	7.76	35,277	10.94
	ICAL Result ==>	90,101	6.06	44,197	8.42	87,517	11.64
Associated Analyses							
Method Blank	KWG1802297-4	72,975	5.94	39,604	8.26	83,140	11.44
Lab Control Sample	KWG1802297-3	75,053	5.94	39,119	8.26	83,871	11.43
PDI-SG-B359-BL1MS	KWG1802297-1	77,753	5.94	40,677	8.26	83,477	11.43
PDI-SG-B359-BL1DMS	KWG1802297-2	76,819	5.94	39,911	8.26	83,078	11.44
PDI-SG-B359-BL1	K1803975-003	74,405	5.94	41,646	8.26	82,614	11.44
PDI-SG-B351-BL1	K1803975-001	72,824	5.94	41,456	8.26	82,121	11.44
PDI-SG-B353-BL1	K1803975-002	68,740	5.95	39,276	8.27	79,976	11.45
PDI-SG-B361-BL1	K1803975-004	68,123	5.94	39,752	8.27	79,094	11.45
PDI-SG-B364-BL1	K1803975-005	65,335	5.95	38,761	8.27	76,737	11.45
PDI-SG-B370-BL1	K1803975-006	68,067	5.95	39,633	8.27	80,253	11.45
PDI-SG-B371-BL1	K1803975-007	69,202	5.94	39,767	8.27	79,438	11.45
PDI-SG-B408-BL1	K1803975-008	67,505	5.94	39,169	8.27	77,313	11.45
PDI-SG-B386-BL1	K1803975-009	67,783	5.94	38,880	8.27	77,254	11.45
PDI-SG-B360-BL1	K1803975-011	65,033	5.95	36,470	8.27	74,321	11.45
PDI-SG-B350-BL1	K1803975-012	64,651	5.95	36,981	8.27	74,319	11.45
PDI-SG-B400-BL1	K1803975-013	67,716	5.95	38,085	8.27	75,260	11.45
PDI-SG-B343-BL1	K1803975-014	66,216	5.95	38,818	8.27	76,702	11.45

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018
Time Analyzed: 06:32

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\053118\0531F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802803-2
Analysis Lot: KWG1802803

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	76,165	18.79	85,642	23.07
	Upper Limit ==>	152,330	19.29	171,284	23.57
	Lower Limit ==>	38,083	18.29	42,821	22.57
	ICAL Result ==>	105,110	19.00	102,151	23.35
Associated Analyses					
Method Blank	KWG1802297-4	98,207	18.80	112,638	23.07
Lab Control Sample	KWG1802297-3	93,873	18.79	107,851	23.06
PDI-SG-B359-BL1MS	KWG1802297-1	87,927	18.79	105,085	23.08
PDI-SG-B359-BL1DMS	KWG1802297-2	88,994	18.80	105,591	23.09
PDI-SG-B359-BL1	K1803975-003	91,983	18.80	107,172	23.10
PDI-SG-B351-BL1	K1803975-001	89,745	18.81	101,140	23.13
PDI-SG-B353-BL1	K1803975-002	88,517	18.81	102,347	23.11
PDI-SG-B361-BL1	K1803975-004	86,723	18.82	101,401	23.11
PDI-SG-B364-BL1	K1803975-005	86,516	18.82	98,924	23.12
PDI-SG-B370-BL1	K1803975-006	91,296	18.81	101,940	23.11
PDI-SG-B371-BL1	K1803975-007	88,893	18.81	102,124	23.11
PDI-SG-B408-BL1	K1803975-008	88,210	18.82	101,410	23.12
PDI-SG-B386-BL1	K1803975-009	86,227	18.82	98,940	23.12
PDI-SG-B360-BL1	K1803975-011	85,553	18.82	96,553	23.12
PDI-SG-B350-BL1	K1803975-012	83,473	18.82	94,454	23.11
PDI-SG-B400-BL1	K1803975-013	88,273	18.82	98,175	23.13
PDI-SG-B343-BL1	K1803975-014	87,273	18.82	96,819	23.12

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018
Time Analyzed: 19:11

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\053118\0531F021.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802833-2
Analysis Lot: KWG1802833

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	65,016	5.95	34,697	8.27	73,364	11.45
	Upper Limit ==>	130,032	6.45	69,394	8.77	146,728	11.95
	Lower Limit ==>	32,508	5.45	17,349	7.77	36,682	10.95
	ICAL Result ==>	90,101	6.06	44,197	8.42	87,517	11.64
Associated Analyses							
Method Blank	KWG1802296-4	66,321	5.94	36,857	8.27	77,570	11.45
Lab Control Sample	KWG1802296-3	64,268	5.94	35,352	8.26	76,166	11.44
PDI-SG-B331-BL1MS	KWG1802296-1	68,191	5.94	36,393	8.26	73,916	11.44
PDI-SG-B331-BL1DMS	KWG1802296-2	68,204	5.94	37,076	8.26	75,078	11.45
PDI-SG-B331-BL1	K1803975-023	66,472	5.94	37,150	8.26	75,416	11.45
PDI-SG-B312-BL1	K1803975-021	64,567	5.94	37,512	8.27	73,882	11.45
PDI-SG-B328-BL1	K1803975-022	65,116	5.94	36,586	8.27	71,057	11.45
PDI-SG-B336-BL1	K1803975-024	63,775	5.94	36,450	8.26	71,176	11.45
PDI-SG-B365-BL1	K1803975-025	65,829	5.94	37,184	8.27	74,057	11.45
PDI-SG-B369-BL1	K1803975-026	62,907	5.94	35,779	8.27	70,531	11.45
PDI-SG-B376-BL1	K1803975-027	64,987	5.94	36,584	8.27	72,964	11.45
PDI-SG-B375-BL1	K1803975-028	62,338	5.95	35,924	8.27	70,972	11.45
PDI-SG-B388-BL1	K1803975-029	63,437	5.94	36,087	8.27	69,652	11.45
PDI-SG-B388-BL1-D	K1803975-030	62,957	5.94	35,862	8.27	69,955	11.45
PDI-SG-B381-BL1	K1803975-031	63,158	5.95	35,827	8.27	72,393	11.45
PDI-SG-B381-BL1-D	K1803975-032	61,607	5.94	35,062	8.27	69,446	11.45
PDI-SG-B379-BL1	K1803975-033	61,977	5.94	35,040	8.27	69,164	11.45

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018
Time Analyzed: 19:11

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\053118\0531F021.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802833-2
Analysis Lot: KWG1802833

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	81,101	18.81	92,488	23.10
	Upper Limit ==>	162,202	19.31	184,976	23.60
	Lower Limit ==>	40,551	18.31	46,244	22.60
	ICAL Result ==>	105,110	19.00	102,151	23.35
Associated Analyses					
Method Blank	KWG1802296-4	89,972	18.81	102,483	23.10
Lab Control Sample	KWG1802296-3	84,863	18.80	98,476	23.08
PDI-SG-B331-BL1MS	KWG1802296-1	78,858	18.82	94,705	23.13
PDI-SG-B331-BL1DMS	KWG1802296-2	80,795	18.83	95,679	23.13
PDI-SG-B331-BL1	K1803975-023	80,275	18.83	94,157	23.13
PDI-SG-B312-BL1	K1803975-021	85,041	18.82	94,564	23.12
PDI-SG-B328-BL1	K1803975-022	78,489	18.83	92,820	23.14
PDI-SG-B336-BL1	K1803975-024	82,928	18.82	93,380	23.12
PDI-SG-B365-BL1	K1803975-025	84,051	18.81	96,298	23.12
PDI-SG-B369-BL1	K1803975-026	81,681	18.82	91,991	23.11
PDI-SG-B376-BL1	K1803975-027	84,319	18.81	95,102	23.12
PDI-SG-B375-BL1	K1803975-028	81,647	18.81	93,191	23.12
PDI-SG-B388-BL1	K1803975-029	76,057	18.83	95,666	23.13
PDI-SG-B388-BL1-D	K1803975-030	80,959	18.82	92,308	23.12
PDI-SG-B381-BL1	K1803975-031	81,730	18.82	93,371	23.12
PDI-SG-B381-BL1-D	K1803975-032	79,220	18.82	88,930	23.12
PDI-SG-B379-BL1	K1803975-033	80,799	18.82	89,988	23.12

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/01/2018
Time Analyzed: 06:45

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\060118\0601F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802860-2
Analysis Lot: KWG1802860

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	27,667	4.63	17,898	6.22	38,922	7.46
	Upper Limit ==>	55,334	5.13	35,796	6.72	77,844	7.96
	Lower Limit ==>	13,834	4.13	8,949	5.72	19,461	6.96
	ICAL Result ==>	45,603	4.78	23,247	6.33	49,507	7.56
Associated Analyses							
PDI-SG-B340-BL1	K1803975-015	24,280	4.62	20,382	6.22	75,910	7.47
PDI-SG-B347-BL1	K1803975-016	26,677	4.61	19,079	6.22	38,601	7.46
PDI-SG-B347-BL1-D	K1803975-017	25,000	4.62	19,099	6.22	40,127	7.46
PDI-SG-B339-BL1	K1803975-018	24,606	4.62	19,831	6.22	41,589	7.46
PDI-SG-B341-BL1	K1803975-019	24,621	4.61	19,864	6.22	41,554	7.46
PDI-SG-B345-BL1	K1803975-020	23,528	4.61	18,407	6.22	39,283	7.46
PDI-SG-B388-BL1DL	K1803975-029	21,568	4.63	21,185	6.22	47,291	7.46

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/01/2018
Time Analyzed: 06:45

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\060118\0601F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1802860-2
Analysis Lot: KWG1802860

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	49,059	9.95	58,664	12.97
	Upper Limit ==>	98,118	10.45	117,328	13.47
	Lower Limit ==>	24,530	9.45	29,332	12.47
	ICAL Result ==>	64,481	10.08	65,038	13.14
Associated Analyses					
PDI-SG-B340-BL1	K1803975-015	151,167*	10.01	91,149	13.22
PDI-SG-B347-BL1	K1803975-016	52,977	9.97	51,269	13.05
PDI-SG-B347-BL1-D	K1803975-017	51,045	9.97	50,800	13.04
PDI-SG-B339-BL1	K1803975-018	50,697	9.97	51,745	13.03
PDI-SG-B341-BL1	K1803975-019	49,018	9.96	49,904	13.03
PDI-SG-B345-BL1	K1803975-020	48,276	9.97	48,065	13.04
PDI-SG-B388-BL1DL	K1803975-029	44,956	9.96	53,831	13.00

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/04/2018
Time Analyzed: 06:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060418\0604F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802872-2
Analysis Lot: KWG1802872

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	61,387	5.95	33,515	8.26	72,390	11.44
	Upper Limit ==>	122,774	6.45	67,030	8.76	144,780	11.94
	Lower Limit ==>	30,694	5.45	16,758	7.76	36,195	10.94
	ICAL Result ==>	90,101	6.06	44,197	8.42	87,517	11.64
Associated Analyses							
PDI-SG-B385-BL1	K1803975-010	61,756	5.94	34,152	8.26	67,903	11.44
PDI-SG-B340-BL1DL	K1803975-015	60,829	5.95	35,112	8.27	67,209	11.45

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/04/2018
Time Analyzed: 06:58

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060418\0604F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802872-2
Analysis Lot: KWG1802872

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	81,154	18.80	91,080	23.09
	Upper Limit ==>	162,308	19.30	182,160	23.59
	Lower Limit ==>	40,577	18.30	45,540	22.59
	ICAL Result ==>	105,110	19.00	102,151	23.35
Associated Analyses					
PDI-SG-B385-BL1	K1803975-010	75,677	18.81	83,832	23.12
PDI-SG-B340-BL1DL	K1803975-015	73,823	18.82	86,376	23.12

Results flagged with an asterisk (*) indicate values outside control criteria.

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B331-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-023	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802296

		PDI-SG-B331-BL1MS KWG1802296-1 Matrix Spike			PDI-SG-B331-BL1DMS KWG1802296-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	13	73.1	96.3	62	64.8	96.3	53	37-104	12	40
2-Methylnaphthalene	4.1	70.5	96.3	69	63.7	96.3	62	39-115	10	40
Acenaphthylene	7.2	81.9	96.3	78	71.2	96.3	66	39-115	14	40
Acenaphthene	11	84.6	96.3	76	74.4	96.3	66	41-116	13	40
Fluorene	8.4	86.4	96.3	81	75.8	96.3	70	43-117	13	40
Phenanthrene	63	114	96.3	54	107	96.3	46	42-119	7	40
Anthracene	14	88.8	96.3	78	80.2	96.3	69	42-124	10	40
Fluoranthene	140	177	96.3	38 *	158	96.3	17 *	42-130	12	40
Pyrene	170	193E	96.3	27 *	169	96.3	1 *	33-125	13	40
Benz(a)anthracene	73	135	96.3	65	124	96.3	54	42-123	8	40
Chrysene	95	144	96.3	51	131	96.3	38 *	40-134	9	40
Benzo(b)fluoranthene	110	137	96.3	25 *	130	96.3	17 *	27-139	5	40
Benzo(k)fluoranthene	39	104	96.3	68	94.0	96.3	57	40-125	10	40
Benzo(a)pyrene	93	132	96.3	41	124	96.3	32 *	39-130	6	40
Indeno(1,2,3-cd)pyrene	74	122	96.3	51	112	96.3	40	37-143	9	40
Dibenz(a,h)anthracene	16	96.7	96.3	84	87.1	96.3	74	39-141	10	40
Benzo(g,h,i)perylene	70	109	96.3	41	99.8	96.3	31 *	35-140	9	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-SG-B359-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-003	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802297

		PDI-SG-B359-BL1MS KWG1802297-1 Matrix Spike			PDI-SG-B359-BL1DMS KWG1802297-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	3.6	73.8	119	59	75.9	120	60	37-104	3	40
2-Methylnaphthalene	2.8	80.9	119	65	80.6	120	65	39-115	0	40
Acenaphthylene	1.3	90.6	119	75	89.9	120	74	39-115	1	40
Acenaphthene	4.7	89.1	119	71	88.5	120	70	41-116	1	40
Fluorene	5.6	97.4	119	77	97.9	120	77	43-117	1	40
Phenanthrene	36	122	119	72	120	120	70	42-119	2	40
Anthracene	6.2	96.0	119	75	98.9	120	77	42-124	3	40
Fluoranthene	68	159	119	76	152	120	70	42-130	4	40
Pyrene	64	174	119	92	164	120	83	33-125	6	40
Benz(a)anthracene	29	145	119	97	134	120	88	42-123	7	40
Chrysene	38	147	119	92	135	120	80	40-134	9	40
Benzo(b)fluoranthene	45	134	119	74	124	120	66	27-139	7	40
Benzo(k)fluoranthene	14	106	119	77	108	120	78	40-125	2	40
Benzo(a)pyrene	33	127	119	79	122	120	74	39-130	4	40
Indeno(1,2,3-cd)pyrene	26	122	119	81	121	120	79	37-143	1	40
Dibenz(a,h)anthracene	5.6	111	119	89	111	120	87	39-141	1	40
Benzo(g,h,i)perylene	25	111	119	72	111	120	72	35-140	0	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method:	EPA 3541	**Units:**	ug/Kg
Analysis Method:	8270D SIM	**Basis:**	Dry
		Level:	Low
		Extraction Lot:	KWG1802296

Lab Control Sample
KWG1802296-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Naphthalene	71.9	100	72	42-107
2-Methylnaphthalene	73.0	100	73	40-116
Acenaphthylene	74.2	100	74	41-112
Acenaphthene	70.4	100	70	43-113
Fluorene	72.2	100	72	44-114
Phenanthrene	69.1	100	69	44-115
Anthracene	73.4	100	73	45-121
Fluoranthene	78.9	100	79	47-123
Pyrene	86.2	100	86	41-121
Benz(a)anthracene	92.3	100	92	42-123
Chrysene	85.5	100	86	46-130
Benzo(b)fluoranthene	83.1	100	83	46-125
Benzo(k)fluoranthene	79.4	100	79	47-125
Benzo(a)pyrene	85.6	100	86	45-128
Indeno(1,2,3-cd)pyrene	86.5	100	86	45-128
Dibenz(a,h)anthracene	86.6	100	87	44-128
Benzo(g,h,i)perylene	74.6	100	75	43-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method:	EPA 3541	**Units:**	ug/Kg
Analysis Method:	8270D SIM	**Basis:**	Dry
		Level:	Low
		Extraction Lot:	KWG1802297

Lab Control Sample
KWG1802297-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Naphthalene	66.1	100	66	42-107
2-Methylnaphthalene	68.4	100	68	40-116
Acenaphthylene	73.2	100	73	41-112
Acenaphthene	69.4	100	69	43-113
Fluorene	72.1	100	72	44-114
Phenanthrene	70.4	100	70	44-115
Anthracene	73.6	100	74	45-121
Fluoranthene	80.2	100	80	47-123
Pyrene	87.0	100	87	41-121
Benz(a)anthracene	93.4	100	93	42-123
Chrysene	85.7	100	86	46-130
Benzo(b)fluoranthene	84.6	100	85	46-125
Benzo(k)fluoranthene	81.1	100	81	47-125
Benzo(a)pyrene	85.2	100	85	45-128
Indeno(1,2,3-cd)pyrene	88.3	100	88	45-128
Dibenz(a,h)anthracene	87.2	100	87	44-128
Benzo(g,h,i)perylene	79.0	100	79	43-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018
		Time Analyzed:	19:51

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Instrument ID:**	MS20
Lab Code:	KWG1802296-4	**File ID:**	J:\MS20\DATA\053118\0531F022.D
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802296

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1802296-3	J:\MS20\DATA\053118\0531F023.D	05/31/18	20:30
PDI-SG-B331-BL1MS	KWG1802296-1	J:\MS20\DATA\053118\0531F024.D	05/31/18	21:10
PDI-SG-B331-BL1DMS	KWG1802296-2	J:\MS20\DATA\053118\0531F025.D	05/31/18	21:49
PDI-SG-B331-BL1	K1803975-023	J:\MS20\DATA\053118\0531F026.D	05/31/18	22:29
PDI-SG-B312-BL1	K1803975-021	J:\MS20\DATA\053118\0531F027.D	05/31/18	23:08
PDI-SG-B328-BL1	K1803975-022	J:\MS20\DATA\053118\0531F028.D	05/31/18	23:48
PDI-SG-B336-BL1	K1803975-024	J:\MS20\DATA\053118\0531F029.D	06/01/18	00:27
PDI-SG-B365-BL1	K1803975-025	J:\MS20\DATA\053118\0531F030.D	06/01/18	01:06
PDI-SG-B369-BL1	K1803975-026	J:\MS20\DATA\053118\0531F031.D	06/01/18	01:46
PDI-SG-B376-BL1	K1803975-027	J:\MS20\DATA\053118\0531F032.D	06/01/18	02:25
PDI-SG-B375-BL1	K1803975-028	J:\MS20\DATA\053118\0531F033.D	06/01/18	03:05
PDI-SG-B388-BL1	K1803975-029	J:\MS20\DATA\053118\0531F034.D	06/01/18	03:44
PDI-SG-B388-BL1-D	K1803975-030	J:\MS20\DATA\053118\0531F035.D	06/01/18	04:23
PDI-SG-B381-BL1	K1803975-031	J:\MS20\DATA\053118\0531F036.D	06/01/18	05:03
PDI-SG-B381-BL1-D	K1803975-032	J:\MS20\DATA\053118\0531F037.D	06/01/18	05:42
PDI-SG-B379-BL1	K1803975-033	J:\MS20\DATA\053118\0531F038.D	06/01/18	06:21
PDI-SG-B388-BL1	K1803975-029	J:\MS14\DATA\060118\0601F023.D	06/01/18	15:37

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018
		Time Analyzed:	07:20

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Instrument ID:**	MS20
Lab Code:	KWG1802297-4	**File ID:**	J:\MS20\DATA\053118\0531F003.D
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802297

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1802297-3	J:\MS20\DATA\053118\0531F004.D	05/31/18	08:00
PDI-SG-B359-BL1MS	KWG1802297-1	J:\MS20\DATA\053118\0531F005.D	05/31/18	08:39
PDI-SG-B359-BL1DMS	KWG1802297-2	J:\MS20\DATA\053118\0531F006.D	05/31/18	09:18
PDI-SG-B359-BL1	K1803975-003	J:\MS20\DATA\053118\0531F007.D	05/31/18	09:58
PDI-SG-B351-BL1	K1803975-001	J:\MS20\DATA\053118\0531F008.D	05/31/18	10:37
PDI-SG-B353-BL1	K1803975-002	J:\MS20\DATA\053118\0531F009.D	05/31/18	11:17
PDI-SG-B361-BL1	K1803975-004	J:\MS20\DATA\053118\0531F010.D	05/31/18	11:57
PDI-SG-B364-BL1	K1803975-005	J:\MS20\DATA\053118\0531F011.D	05/31/18	12:36
PDI-SG-B370-BL1	K1803975-006	J:\MS20\DATA\053118\0531F012.D	05/31/18	13:16
PDI-SG-B371-BL1	K1803975-007	J:\MS20\DATA\053118\0531F013.D	05/31/18	13:56
PDI-SG-B408-BL1	K1803975-008	J:\MS20\DATA\053118\0531F014.D	05/31/18	14:35
PDI-SG-B386-BL1	K1803975-009	J:\MS20\DATA\053118\0531F015.D	05/31/18	15:15
PDI-SG-B360-BL1	K1803975-011	J:\MS20\DATA\053118\0531F016.D	05/31/18	15:54
PDI-SG-B350-BL1	K1803975-012	J:\MS20\DATA\053118\0531F017.D	05/31/18	16:33
PDI-SG-B400-BL1	K1803975-013	J:\MS20\DATA\053118\0531F018.D	05/31/18	17:13
PDI-SG-B343-BL1	K1803975-014	J:\MS20\DATA\053118\0531F019.D	05/31/18	17:52
PDI-SG-B340-BL1	K1803975-015	J:\MS14\DATA\060118\0601F017.D	06/01/18	13:09
PDI-SG-B347-BL1	K1803975-016	J:\MS14\DATA\060118\0601F018.D	06/01/18	13:34
PDI-SG-B347-BL1-D	K1803975-017	J:\MS14\DATA\060118\0601F019.D	06/01/18	13:58
PDI-SG-B339-BL1	K1803975-018	J:\MS14\DATA\060118\0601F020.D	06/01/18	14:23
PDI-SG-B341-BL1	K1803975-019	J:\MS14\DATA\060118\0601F021.D	06/01/18	14:48
PDI-SG-B345-BL1	K1803975-020	J:\MS14\DATA\060118\0601F022.D	06/01/18	15:12
PDI-SG-B385-BL1	K1803975-010	J:\MS20\DATA\060418\0604F007.D	06/04/18	10:16
PDI-SG-B340-BL1	K1803975-015	J:\MS20\DATA\060418\0604F008.D	06/04/18	10:55

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018
		Time Analyzed:	20:30

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	**Instrument ID:**	MS20
Lab Code:	KWG1802296-3	**File ID:**	J:\MS20\DATA\053118\0531F023.D
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802296

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1802296-4	J:\MS20\DATA\053118\0531F022.D	05/31/18	19:51
PDI-SG-B331-BL1MS	KWG1802296-1	J:\MS20\DATA\053118\0531F024.D	05/31/18	21:10
PDI-SG-B331-BL1DMS	KWG1802296-2	J:\MS20\DATA\053118\0531F025.D	05/31/18	21:49
PDI-SG-B331-BL1	K1803975-023	J:\MS20\DATA\053118\0531F026.D	05/31/18	22:29
PDI-SG-B312-BL1	K1803975-021	J:\MS20\DATA\053118\0531F027.D	05/31/18	23:08
PDI-SG-B328-BL1	K1803975-022	J:\MS20\DATA\053118\0531F028.D	05/31/18	23:48
PDI-SG-B336-BL1	K1803975-024	J:\MS20\DATA\053118\0531F029.D	06/01/18	00:27
PDI-SG-B365-BL1	K1803975-025	J:\MS20\DATA\053118\0531F030.D	06/01/18	01:06
PDI-SG-B369-BL1	K1803975-026	J:\MS20\DATA\053118\0531F031.D	06/01/18	01:46
PDI-SG-B376-BL1	K1803975-027	J:\MS20\DATA\053118\0531F032.D	06/01/18	02:25
PDI-SG-B375-BL1	K1803975-028	J:\MS20\DATA\053118\0531F033.D	06/01/18	03:05
PDI-SG-B388-BL1	K1803975-029	J:\MS20\DATA\053118\0531F034.D	06/01/18	03:44
PDI-SG-B388-BL1-D	K1803975-030	J:\MS20\DATA\053118\0531F035.D	06/01/18	04:23
PDI-SG-B381-BL1	K1803975-031	J:\MS20\DATA\053118\0531F036.D	06/01/18	05:03
PDI-SG-B381-BL1-D	K1803975-032	J:\MS20\DATA\053118\0531F037.D	06/01/18	05:42
PDI-SG-B379-BL1	K1803975-033	J:\MS20\DATA\053118\0531F038.D	06/01/18	06:21
PDI-SG-B388-BL1	K1803975-029	J:\MS14\DATA\060118\0601F023.D	06/01/18	15:37

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/07/2018
Sample Matrix:	Sediment	**Date Analyzed:**	05/31/2018
		Time Analyzed:	08:00

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	**Instrument ID:**	MS20
Lab Code:	KWG1802297-3	**File ID:**	J:\MS20\DATA\053118\0531F004.D
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802297

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1802297-4	J:\MS20\DATA\053118\0531F003.D	05/31/18	07:20
PDI-SG-B359-BL1MS	KWG1802297-1	J:\MS20\DATA\053118\0531F005.D	05/31/18	08:39
PDI-SG-B359-BL1DMS	KWG1802297-2	J:\MS20\DATA\053118\0531F006.D	05/31/18	09:18
PDI-SG-B359-BL1	K1803975-003	J:\MS20\DATA\053118\0531F007.D	05/31/18	09:58
PDI-SG-B351-BL1	K1803975-001	J:\MS20\DATA\053118\0531F008.D	05/31/18	10:37
PDI-SG-B353-BL1	K1803975-002	J:\MS20\DATA\053118\0531F009.D	05/31/18	11:17
PDI-SG-B361-BL1	K1803975-004	J:\MS20\DATA\053118\0531F010.D	05/31/18	11:57
PDI-SG-B364-BL1	K1803975-005	J:\MS20\DATA\053118\0531F011.D	05/31/18	12:36
PDI-SG-B370-BL1	K1803975-006	J:\MS20\DATA\053118\0531F012.D	05/31/18	13:16
PDI-SG-B371-BL1	K1803975-007	J:\MS20\DATA\053118\0531F013.D	05/31/18	13:56
PDI-SG-B408-BL1	K1803975-008	J:\MS20\DATA\053118\0531F014.D	05/31/18	14:35
PDI-SG-B386-BL1	K1803975-009	J:\MS20\DATA\053118\0531F015.D	05/31/18	15:15
PDI-SG-B360-BL1	K1803975-011	J:\MS20\DATA\053118\0531F016.D	05/31/18	15:54
PDI-SG-B350-BL1	K1803975-012	J:\MS20\DATA\053118\0531F017.D	05/31/18	16:33
PDI-SG-B400-BL1	K1803975-013	J:\MS20\DATA\053118\0531F018.D	05/31/18	17:13
PDI-SG-B343-BL1	K1803975-014	J:\MS20\DATA\053118\0531F019.D	05/31/18	17:52
PDI-SG-B340-BL1	K1803975-015	J:\MS14\DATA\060118\0601F017.D	06/01/18	13:09
PDI-SG-B347-BL1	K1803975-016	J:\MS14\DATA\060118\0601F018.D	06/01/18	13:34
PDI-SG-B347-BL1-D	K1803975-017	J:\MS14\DATA\060118\0601F019.D	06/01/18	13:58
PDI-SG-B339-BL1	K1803975-018	J:\MS14\DATA\060118\0601F020.D	06/01/18	14:23
PDI-SG-B341-BL1	K1803975-019	J:\MS14\DATA\060118\0601F021.D	06/01/18	14:48
PDI-SG-B345-BL1	K1803975-020	J:\MS14\DATA\060118\0601F022.D	06/01/18	15:12
PDI-SG-B385-BL1	K1803975-010	J:\MS20\DATA\060418\0604F007.D	06/04/18	10:16
PDI-SG-B340-BL1	K1803975-015	J:\MS20\DATA\060418\0604F008.D	06/04/18	10:55

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018
Time Analyzed: 05:53

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\053118\0531F001.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802803

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	22.1	53215	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	24.0	57786	PASS
70	69	0	2	0.2	141	PASS
127	198	10	80	37.0	89373	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	35.3	241258	PASS
199	198	5	9	6.7	16269	PASS
275	198	10	60	37.8	91306	PASS
365	442	1	50	2.1	14320	PASS
441	443	0	100	82.7	108821	PASS
442	442	100	100	100.0	682922	PASS
443	442	15	24	19.3	131597	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802803-2	J:\MS20\DATA\053118\0531F002.D	05/31/2018	06:32	
Method Blank	KWG1802297-4	J:\MS20\DATA\053118\0531F003.D	05/31/2018	07:20	
Lab Control Sample	KWG1802297-3	J:\MS20\DATA\053118\0531F004.D	05/31/2018	08:00	
PDI-SG-B359-BL1MS	KWG1802297-1	J:\MS20\DATA\053118\0531F005.D	05/31/2018	08:39	
PDI-SG-B359-BL1DMS	KWG1802297-2	J:\MS20\DATA\053118\0531F006.D	05/31/2018	09:18	
PDI-SG-B359-BL1	K1803975-003	J:\MS20\DATA\053118\0531F007.D	05/31/2018	09:58	
PDI-SG-B351-BL1	K1803975-001	J:\MS20\DATA\053118\0531F008.D	05/31/2018	10:37	
PDI-SG-B353-BL1	K1803975-002	J:\MS20\DATA\053118\0531F009.D	05/31/2018	11:17	
PDI-SG-B361-BL1	K1803975-004	J:\MS20\DATA\053118\0531F010.D	05/31/2018	11:57	
PDI-SG-B364-BL1	K1803975-005	J:\MS20\DATA\053118\0531F011.D	05/31/2018	12:36	
PDI-SG-B370-BL1	K1803975-006	J:\MS20\DATA\053118\0531F012.D	05/31/2018	13:16	
PDI-SG-B371-BL1	K1803975-007	J:\MS20\DATA\053118\0531F013.D	05/31/2018	13:56	
PDI-SG-B408-BL1	K1803975-008	J:\MS20\DATA\053118\0531F014.D	05/31/2018	14:35	
PDI-SG-B386-BL1	K1803975-009	J:\MS20\DATA\053118\0531F015.D	05/31/2018	15:15	
PDI-SG-B360-BL1	K1803975-011	J:\MS20\DATA\053118\0531F016.D	05/31/2018	15:54	
PDI-SG-B350-BL1	K1803975-012	J:\MS20\DATA\053118\0531F017.D	05/31/2018	16:33	
PDI-SG-B400-BL1	K1803975-013	J:\MS20\DATA\053118\0531F018.D	05/31/2018	17:13	
PDI-SG-B343-BL1	K1803975-014	J:\MS20\DATA\053118\0531F019.D	05/31/2018	17:52	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018
Time Analyzed: 18:32

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\053118\0531F020.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802833

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	23.1	57992	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	24.8	62337	PASS
70	69	0	2	0.5	322	PASS
127	198	10	80	37.6	94461	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	38.6	250944	PASS
199	198	5	9	6.7	16875	PASS
275	198	10	60	36.4	91325	PASS
365	442	1	50	2.2	14308	PASS
441	443	0	100	80.3	102464	PASS
442	442	100	100	100.0	649280	PASS
443	442	15	24	19.6	127525	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802833-2	J:\MS20\DATA\053118\0531F021.D	05/31/2018	19:11	
Method Blank	KWG1802296-4	J:\MS20\DATA\053118\0531F022.D	05/31/2018	19:51	
Lab Control Sample	KWG1802296-3	J:\MS20\DATA\053118\0531F023.D	05/31/2018	20:30	
PDI-SG-B331-BL1MS	KWG1802296-1	J:\MS20\DATA\053118\0531F024.D	05/31/2018	21:10	
PDI-SG-B331-BL1DMS	KWG1802296-2	J:\MS20\DATA\053118\0531F025.D	05/31/2018	21:49	
PDI-SG-B331-BL1	K1803975-023	J:\MS20\DATA\053118\0531F026.D	05/31/2018	22:29	
PDI-SG-B312-BL1	K1803975-021	J:\MS20\DATA\053118\0531F027.D	05/31/2018	23:08	
PDI-SG-B328-BL1	K1803975-022	J:\MS20\DATA\053118\0531F028.D	05/31/2018	23:48	
PDI-SG-B336-BL1	K1803975-024	J:\MS20\DATA\053118\0531F029.D	06/01/2018	00:27	
PDI-SG-B365-BL1	K1803975-025	J:\MS20\DATA\053118\0531F030.D	06/01/2018	01:06	
PDI-SG-B369-BL1	K1803975-026	J:\MS20\DATA\053118\0531F031.D	06/01/2018	01:46	
PDI-SG-B376-BL1	K1803975-027	J:\MS20\DATA\053118\0531F032.D	06/01/2018	02:25	
PDI-SG-B375-BL1	K1803975-028	J:\MS20\DATA\053118\0531F033.D	06/01/2018	03:05	
PDI-SG-B388-BL1	K1803975-029	J:\MS20\DATA\053118\0531F034.D	06/01/2018	03:44	
PDI-SG-B388-BL1-D	K1803975-030	J:\MS20\DATA\053118\0531F035.D	06/01/2018	04:23	
PDI-SG-B381-BL1	K1803975-031	J:\MS20\DATA\053118\0531F036.D	06/01/2018	05:03	
PDI-SG-B381-BL1-D	K1803975-032	J:\MS20\DATA\053118\0531F037.D	06/01/2018	05:42	
PDI-SG-B379-BL1	K1803975-033	J:\MS20\DATA\053118\0531F038.D	06/01/2018	06:21	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/01/2018
Time Analyzed: 06:20

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\060118\0601F001.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802860

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	44.0	118517	PASS
68	69	0	2	1.7	1986	PASS
69	198	0	100	42.2	113664	PASS
70	69	0	2	0.4	469	PASS
127	198	10	80	53.0	142842	PASS
197	198	0	2	0.5	1287	PASS
198	442	30	100	43.9	269568	PASS
199	198	5	9	7.0	18823	PASS
275	198	10	60	36.8	99288	PASS
365	442	1	50	4.1	25026	PASS
441	443	0	100	74.4	86848	PASS
442	442	100	100	100.0	614314	PASS
443	442	15	24	19.0	116709	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802860-2	J:\MS14\DATA\060118\0601F002.D	06/01/2018	06:45	
PDI-SG-B340-BL1	K1803975-015	J:\MS14\DATA\060118\0601F017.D	06/01/2018	13:09	
PDI-SG-B347-BL1	K1803975-016	J:\MS14\DATA\060118\0601F018.D	06/01/2018	13:34	
PDI-SG-B347-BL1-D	K1803975-017	J:\MS14\DATA\060118\0601F019.D	06/01/2018	13:58	
PDI-SG-B339-BL1	K1803975-018	J:\MS14\DATA\060118\0601F020.D	06/01/2018	14:23	
PDI-SG-B341-BL1	K1803975-019	J:\MS14\DATA\060118\0601F021.D	06/01/2018	14:48	
PDI-SG-B345-BL1	K1803975-020	J:\MS14\DATA\060118\0601F022.D	06/01/2018	15:12	
PDI-SG-B388-BL1	K1803975-029	J:\MS14\DATA\060118\0601F023.D	06/01/2018	15:37	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/04/2018
Time Analyzed: 06:19

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\060418\0604F001.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802872

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	23.0	60552	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	24.7	64880	PASS
70	69	0	2	0.4	248	PASS
127	198	10	80	37.0	97261	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	38.8	262784	PASS
199	198	5	9	6.7	17536	PASS
275	198	10	60	36.1	94986	PASS
365	442	1	50	2.2	15201	PASS
441	443	0	100	82.1	107778	PASS
442	442	100	100	100.0	676714	PASS
443	442	15	24	19.4	131338	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802872-2	J:\MS20\DATA\060418\0604F002.D	06/04/2018	06:58	
PDI-SG-B385-BL1	K1803975-010	J:\MS20\DATA\060418\0604F007.D	06/04/2018	10:16	
PDI-SG-B340-BL1	K1803975-015	J:\MS20\DATA\060418\0604F008.D	06/04/2018	10:55	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579 **Column:** MS
Instrument ID: MS14

Level ID	File ID	Level ID	File ID
A	J:\MS14\DATA\101317\1013F003.D	F	J:\MS14\DATA\101317\1013F008.D
B	J:\MS14\DATA\101317\1013F004.D	G	J:\MS14\DATA\101317\1013F009.D
C	J:\MS14\DATA\101317\1013F005.D	H	J:\MS14\DATA\101317\1013F010.D
D	J:\MS14\DATA\101317\1013F006.D	I	J:\MS14\DATA\101317\1013F011.D
E	J:\MS14\DATA\101317\1013F007.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	4.0	1.18	B	8.0	1.19	C	20	1.14	D	100	1.10	E	200	1.11
	F	400	1.15	G	1000	1.13	H	1600	1.13	I	2000	1.12			
2-Methylnaphthalene	A	4.0	0.984	B	8.0	0.814	C	20	0.820	D	100	0.773	E	200	0.768
	F	400	0.768	G	1000	0.737	H	1600	0.739	I	2000	0.736			
Acenaphthylene	A	4.0	2.48	B	8.0	2.37	C	20	2.40	D	100	2.32	E	200	2.36
	F	400	2.47	G	1000	2.51	H	1600	2.56	I	2000	2.57			
Acenaphthene	A	4.0	1.34	B	8.0	1.36	C	20	1.34	D	100	1.31	E	200	1.33
	F	400	1.38	G	1000	1.41	H	1600	1.45	I	2000	1.46			
Fluorene	A	4.0	1.73	B	8.0	1.67	C	20	1.65	D	100	1.63	E	200	1.65
	F	400	1.70	G	1000	1.71	H	1600	1.75	I	2000	1.77			
Phenanthrene	A	4.0	1.33	B	8.0	1.25	C	20	1.21	D	100	1.17	E	200	1.18
	F	400	1.22	G	1000	1.24	H	1600	1.27	I	2000	1.29			
Anthracene	A	4.0	1.23	B	8.0	1.19	C	20	1.20	D	100	1.17	E	200	1.20
	F	400	1.23	G	1000	1.25	H	1600	1.27	I	2000	1.28			
Fluoranthene	A	4.0	1.48	B	8.0	1.41	C	20	1.44	D	100	1.41	E	200	1.41
	F	400	1.48	G	1000	1.53	H	1600	1.54	I	2000	1.55			
Pyrene	A	4.0	1.21	B	8.0	1.17	C	20	1.17	D	100	1.14	E	200	1.15
	F	400	1.20	G	1000	1.24	H	1600	1.28	I	2000	1.29			
Benz(a)anthracene	A	4.0	1.30	B	8.0	1.21	C	20	1.17	D	100	1.12	E	200	1.14
	F	400	1.20	G	1000	1.23	H	1600	1.25	I	2000	1.25			
Chrysene	A	4.0	1.13	B	8.0	1.14	C	20	1.10	D	100	1.08	E	200	1.09
	F	400	1.12	G	1000	1.14	H	1600	1.17	I	2000	1.17			
Benzo(b)fluoranthene	A	4.0	1.37	B	8.0	1.19	C	20	1.21	D	100	1.18	E	200	1.23
	F	400	1.28	G	1000	1.30	H	1600	1.31	I	2000	1.30			
Benzo(k)fluoranthene	A	4.0	1.29	B	8.0	1.22	C	20	1.19	D	100	1.19	E	200	1.22
	F	400	1.28	G	1000	1.25	H	1600	1.27	I	2000	1.26			
Benzo(a)pyrene	A	4.0	1.11	B	8.0	1.07	C	20	1.08	D	100	1.05	E	200	1.07
	F	400	1.12	G	1000	1.13	H	1600	1.15	I	2000	1.14			
Indeno(1,2,3-cd)pyrene	A	4.0	1.07	B	8.0	0.946	C	20	0.945	D	100	0.956	E	200	0.969
	F	400	1.02	G	1000	1.00	H	1600	1.01	I	2000	1.00			

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579 **Column:** MS
Instrument ID: MS14

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Dibenz(a,h)anthracene	A	4.0	1.14	B	8.0	1.13	C	20	0.979	D	100	0.947	E	200	0.961
	F	400	0.975	G	1000	0.975	H	1600	0.993	I	2000	0.983			
Benzo(g,h,i)perylene	A	4.0	1.28	B	8.0	1.15	C	20	1.07	D	100	1.07	E	200	1.08
	F	400	1.11	G	1000	1.07	H	1600	1.06	I	2000	1.04			
Fluorene-d10	A	4.0	1.65	B	8.0	1.44	C	20	1.31	D	100	1.26	E	200	1.27
	F	400	1.31	G	1000	1.33	H	1600	1.37	I	2000	1.38			
Fluoranthene-d10	A	4.0	1.21	B	8.0	1.18	C	20	1.19	D	100	1.19	E	200	1.20
	F	400	1.27	G	1000	1.34	H	1600	1.37	I	2000	1.36			
Terphenyl-d14	A	4.0	0.889	B	8.0	0.855	C	20	0.825	D	100	0.800	E	200	0.814
	F	400	0.833	G	1000	0.845	H	1600	0.864	I	2000	0.864			

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579 **Column:** MS
Instrument ID: MS14

		Calibration Evaluation					RRF Evaluation		
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**	**Average RRF**	**Q**	**Minimum RRF**
Naphthalene	MS	AverageRF	% RSD	2.6		≤ 20	1.14		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	9.8		≤ 20	0.793		0.40
Acenaphthylene	MS	AverageRF	% RSD	3.6		≤ 20	2.45		0.90
Acenaphthene	MS	AverageRF	% RSD	3.8		≤ 20	1.38		0.90
Fluorene	MS	AverageRF	% RSD	2.8		≤ 20	1.70		0.90
Phenanthrene	MS	AverageRF	% RSD	4.1		≤ 20	1.24		0.70
Anthracene	MS	AverageRF	% RSD	3.0		≤ 20	1.22		0.70
Fluoranthene	MS	AverageRF	% RSD	4.0		≤ 20	1.47		0.60
Pyrene	MS	AverageRF	% RSD	4.6		≤ 20	1.21		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	4.8		≤ 20	1.21		0.80
Chrysene	MS	AverageRF	% RSD	2.9		≤ 20	1.13		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	4.9		≤ 20	1.26		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	3.1		≤ 20	1.24		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	3.3		≤ 20	1.10		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	4.1		≤ 20	0.992		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	7.2		≤ 20	1.01		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	6.5		≤ 20	1.10		0.50
Fluorene-d10	SURR	AverageRF	% RSD	8.8		≤ 20	1.37		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	6.5		≤ 20	1.26		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	3.3		≤ 20	0.843		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Calibration Date: 10/13/2017
Date Analyzed: 10/13/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15579
Units: ng/ml

File ID: J:\MS14\DATA\101317\1013F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	380	1.14	1.08	-6	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	360	0.793	0.716	-10	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.45	2.30	-6	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.38	1.32	-4	NA	± 30 %	AverageRF
Fluorene	400	380	1.70	1.60	-6	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.24	1.14	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.22	1.15	-6	NA	± 30 %	AverageRF
Fluoranthene	400	390	1.47	1.44	-2	NA	± 30 %	AverageRF
Pyrene	400	380	1.21	1.14	-6	NA	± 30 %	AverageRF
Benz(a)anthracene	400	380	1.21	1.15	-5	NA	± 30 %	AverageRF
Chrysene	400	380	1.13	1.08	-4	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	390	1.26	1.22	-3	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.24	1.20	-3	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	380	1.10	1.05	-5	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	0.992	0.913	-8	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	370	1.01	0.924	-8	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	370	1.10	1.02	-7	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594 **Column:** MS
Instrument ID: MS20

Level ID	File ID	Level ID	File ID
A	J:\MS20\DATA\110217\1102F003.D	G	J:\MS20\DATA\110217\1102F009.D
B	J:\MS20\DATA\110217\1102F004.D	H	J:\MS20\DATA\110217\1102F010.D
C	J:\MS20\DATA\110217\1102F005.D	I	J:\MS20\DATA\110217\1102F011.D
D	J:\MS20\DATA\110217\1102F006.D	J	J:\MS20\DATA\110217\1102F012.D
E	J:\MS20\DATA\110217\1102F007.D		
F	J:\MS20\DATA\110217\1102F008.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	2.0	1.21	B	4.0	1.04	C	8.0	1.03	D	20	0.996	E	100	0.990
	F	200	0.989	G	400	1.02	H	1000	1.01	I	1600	0.972	J	2000	0.967
2-Methylnaphthalene	A	2.0	0.781	B	4.0	0.671	C	8.0	0.661	D	20	0.679	E	100	0.678
	F	200	0.694	G	400	0.692	H	1000	0.678	I	1600	0.645	J	2000	0.644
Acenaphthylene	A	2.0	2.23	B	4.0	1.95	C	8.0	1.92	D	20	1.97	E	100	1.97
	F	200	2.00	G	400	2.07	H	1000	2.08	I	1600	2.05	J	2000	2.02
Acenaphthene	A	2.0	1.45	B	4.0	1.25	C	8.0	1.25	D	20	1.24	E	100	1.21
	F	200	1.22	G	400	1.25	H	1000	1.23	I	1600	1.21	J	2000	1.19
Fluorene	A	2.0	1.81	B	4.0	1.46	C	8.0	1.44	D	20	1.44	E	100	1.46
	F	200	1.47	G	400	1.51	H	1000	1.48	I	1600	1.45	J	2000	1.44
Phenanthrene	A	2.0	1.50	B	4.0	1.16	C	8.0	1.16	D	20	1.16	E	100	1.12
	F	200	1.13	G	400	1.15	H	1000	1.14	I	1600	1.10	J	2000	1.09
Anthracene	A	2.0	1.32	B	4.0	1.05	C	8.0	1.04	D	20	1.03	E	100	1.03
	F	200	1.06	G	400	1.10	H	1000	1.11	I	1600	1.08	J	2000	1.06
Fluoranthene	A	2.0	1.51	B	4.0	1.20	C	8.0	1.19	D	20	1.24	E	100	1.23
	F	200	1.27	G	400	1.32	H	1000	1.30	I	1600	1.25	J	2000	1.24
Pyrene	A	2.0	1.34	B	4.0	1.10	C	8.0	1.09	D	20	1.10	E	100	1.08
	F	200	1.09	G	400	1.12	H	1000	1.13	I	1600	1.12	J	2000	1.11
Benz(a)anthracene	A	2.0	1.36	B	4.0	1.13	C	8.0	1.03	D	20	1.02	E	100	0.986
	F	200	1.01	G	400	1.05	H	1000	1.09	I	1600	1.09	J	2000	1.10
Chrysene	A	2.0	1.26	B	4.0	1.06	C	8.0	1.08	D	20	1.07	E	100	1.06
	F	200	1.06	G	400	1.07	H	1000	1.06	I	1600	1.06	J	2000	1.04
Benzo(b)fluoranthene	A	2.0	1.22	B	4.0	1.06	C	8.0	1.06	D	20	1.10	E	100	1.10
	F	200	1.12	G	400	1.17	H	1000	1.19	I	1600	1.20	J	2000	1.18
Benzo(k)fluoranthene	A	2.0	1.19	B	4.0	1.07	C	8.0	1.09	D	20	1.09	E	100	1.15
	F	200	1.18	G	400	1.20	H	1000	1.19	I	1600	1.19	J	2000	1.18
Benzo(a)pyrene	A	2.0	0.956	B	4.0	0.883	C	8.0	0.866	D	20	0.903	E	100	0.955
	F	200	1.00	G	400	1.06	H	1000	1.06	I	1600	1.08	J	2000	1.08

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594 **Column:** MS
Instrument ID: MS20

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Indeno(1,2,3-cd)pyrene	A	2.0	1.05	B	4.0	0.927	C	8.0	0.901	D	20	0.943	E	100	0.987
	F	200	1.03	G	400	1.10	H	1000	1.08	I	1600	1.07	J	2000	1.07
Dibenz(a,h)anthracene	A	2.0	1.02	B	4.0	0.967	C	8.0	0.953	D	20	1.01	E	100	1.05
	F	200	1.08	G	400	1.13	H	1000	1.11	I	1600	1.10	J	2000	1.10
Benzo(g,h,i)perylene	A	2.0	1.36	B	4.0	1.19	C	8.0	1.17	D	20	1.25	E	100	1.21
	F	200	1.23	G	400	1.27	H	1000	1.18	I	1600	1.17	J	2000	1.16
Fluorene-d10				B	4.0	1.51	C	8.0	1.31	D	20	1.26	E	100	1.23
	F	200	1.23	G	400	1.27	H	1000	1.25	I	1600	1.23	J	2000	1.21
Fluoranthene-d10	A	2.0	1.49	B	4.0	1.12	C	8.0	1.07	D	20	1.08	E	100	1.06
	F	200	1.10	G	400	1.15	H	1000	1.17	I	1600	1.16	J	2000	1.15
Terphenyl-d14	A	2.0	1.04	B	4.0	0.848	C	8.0	0.825	D	20	0.837	E	100	0.817
	F	200	0.826	G	400	0.831	H	1000	0.840	I	1600	0.837	J	2000	0.829

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594 **Column:** MS
Instrument ID: MS20

		Calibration Evaluation					RRF Evaluation		
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**	**Average RRF**	**Q**	**Minimum RRF**
Naphthalene	MS	AverageRF	% RSD	6.8		≤ 20	1.02		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	5.7		≤ 20	0.682		0.40
Acenaphthylene	MS	AverageRF	% RSD	4.4		≤ 20	2.03		0.90
Acenaphthene	MS	AverageRF	% RSD	5.8		≤ 20	1.25		0.90
Fluorene	MS	AverageRF	% RSD	7.5		≤ 20	1.50		0.90
Phenanthrene	MS	AverageRF	% RSD	10.0		≤ 20	1.17		0.70
Anthracene	MS	AverageRF	% RSD	7.9		≤ 20	1.09		0.70
Fluoranthene	MS	AverageRF	% RSD	7.2		≤ 20	1.27		0.60
Pyrene	MS	AverageRF	% RSD	6.7		≤ 20	1.13		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	9.8		≤ 20	1.09		0.80
Chrysene	MS	AverageRF	% RSD	5.7		≤ 20	1.08		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	5.0		≤ 20	1.14		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	4.4		≤ 20	1.15		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	8.4		≤ 20	0.984		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	7.1		≤ 20	1.02		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	5.9		≤ 20	1.05		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	5.1		≤ 20	1.22		0.50
Fluorene-d10	SURR	AverageRF	% RSD	7.1		≤ 20	1.28		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	10.7		≤ 20	1.15		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	7.7		≤ 20	0.853		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Calibration Date: 11/02/2017
Date Analyzed: 11/02/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15594
Units: ng/ml

File ID: J:\MS20\DATA\110217\1102F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	1.02	0.924	-10	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	380	0.682	0.644	-6	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.03	1.93	-5	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.25	1.17	-6	NA	± 30 %	AverageRF
Fluorene	400	370	1.50	1.39	-7	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.17	1.08	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.09	1.03	-6	NA	± 30 %	AverageRF
Fluoranthene	400	400	1.27	1.28	0	NA	± 30 %	AverageRF
Pyrene	400	380	1.13	1.08	-5	NA	± 30 %	AverageRF
Benz(a)anthracene	400	370	1.09	0.996	-8	NA	± 30 %	AverageRF
Chrysene	400	380	1.08	1.03	-5	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	380	1.14	1.10	-4	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.15	1.13	-2	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	400	0.984	0.973	-1	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	1.02	0.946	-7	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	380	1.05	1.00	-5	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	360	1.22	1.11	-9	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/31/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/02/2017
Calibration ID: CAL15594
Analysis Lot: KWG1802803
Units: ng/ml

File ID: J:\MS20\DATA\053118\0531F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	400	0.70	1.02	1.02	0	NA	± 20	AverageRF
2-Methylnaphthalene	400	400	0.40	0.682	0.683	0	NA	± 20	AverageRF
Acenaphthylene	400	410	0.90	2.03	2.07	2	NA	± 20	AverageRF
Acenaphthene	400	390	0.90	1.25	1.22	-2	NA	± 20	AverageRF
Fluorene	400	390	0.90	1.50	1.46	-2	NA	± 20	AverageRF
Phenanthrene	400	380	0.70	1.17	1.12	-4	NA	± 20	AverageRF
Anthracene	400	350	0.70	1.09	0.965	-11	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.27	1.34	5	NA	± 20	AverageRF
Pyrene	400	460	0.60	1.13	1.31	16	NA	± 20	AverageRF
Benz(a)anthracene	400	450	0.80	1.09	1.21	12	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.08	1.16	7	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	410	0.70	1.14	1.17	2	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	400	0.70	1.15	1.15	0	NA	± 20	AverageRF
Benzo(a)pyrene	400	420	0.70	0.984	1.04	6	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	430	0.50	1.02	1.08	7	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	430	0.40	1.05	1.12	7	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	390	0.50	1.22	1.19	-3	NA	± 20	AverageRF
Fluorene-d10	400	390	0.01	1.28	1.26	-1	NA	± 20	AverageRF
Fluoranthene-d10	400	430	0.01	1.15	1.25	9	NA	± 20	AverageRF
Terphenyl-d14	400	430	0.01	0.853	0.923	8	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:** 05/31/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard **Calibration Date:** 11/02/2017
Analysis Method: 8270D SIM **Calibration ID:** CAL15594
Analysis Lot: KWG1802833
Units: ng/ml

File ID: J:\MS20\DATA\053118\0531F021.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	410	0.70	1.02	1.04	1	NA	± 20	AverageRF
2-Methylnaphthalene	400	410	0.40	0.682	0.695	2	NA	± 20	AverageRF
Acenaphthylene	400	410	0.90	2.03	2.09	3	NA	± 20	AverageRF
Acenaphthene	400	390	0.90	1.25	1.23	-1	NA	± 20	AverageRF
Fluorene	400	400	0.90	1.50	1.51	1	NA	± 20	AverageRF
Phenanthrene	400	380	0.70	1.17	1.12	-4	NA	± 20	AverageRF
Anthracene	400	360	0.70	1.09	0.994	-9	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.27	1.33	4	NA	± 20	AverageRF
Pyrene	400	460	0.60	1.13	1.29	14	NA	± 20	AverageRF
Benz(a)anthracene	400	450	0.80	1.09	1.22	12	NA	± 20	AverageRF
Chrysene	400	420	0.70	1.08	1.13	5	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	410	0.70	1.14	1.16	2	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	400	0.70	1.15	1.16	0	NA	± 20	AverageRF
Benzo(a)pyrene	400	430	0.70	0.984	1.06	7	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	430	0.50	1.02	1.09	8	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	430	0.40	1.05	1.14	8	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	380	0.50	1.22	1.16	-5	NA	± 20	AverageRF
Fluorene-d10	400	410	0.01	1.28	1.32	3	NA	± 20	AverageRF
Fluoranthene-d10	400	440	0.01	1.15	1.27	10	NA	± 20	AverageRF
Terphenyl-d14	400	440	0.01	0.853	0.932	9	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:** 06/01/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard **Calibration Date:** 10/13/2017
Analysis Method: 8270D SIM **Calibration ID:** CAL15579
Analysis Lot: KWG1802860
Units: ng/ml

File ID: J:\MS14\DATA\060118\0601F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	0.70	1.14	1.03	-10	NA	± 20	AverageRF
2-Methylnaphthalene	400	410	0.40	0.793	0.807	2	NA	± 20	AverageRF
Acenaphthylene	400	350	0.90	2.45	2.16	-12	NA	± 20	AverageRF
Acenaphthene	400	370	0.90	1.38	1.27	-8	NA	± 20	AverageRF
Fluorene	400	370	0.90	1.70	1.58	-7	NA	± 20	AverageRF
Phenanthrene	400	370	0.70	1.24	1.16	-6	NA	± 20	AverageRF
Anthracene	400	350	0.70	1.22	1.07	-13	NA	± 20	AverageRF
Fluoranthene	400	380	0.60	1.47	1.39	-5	NA	± 20	AverageRF
Pyrene	400	380	0.60	1.21	1.16	-4	NA	± 20	AverageRF
Benz(a)anthracene	400	430	0.80	1.21	1.28	6	NA	± 20	AverageRF
Chrysene	400	420	0.70	1.13	1.18	4	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	400	0.70	1.26	1.26	0	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	390	0.70	1.24	1.20	-3	NA	± 20	AverageRF
Benzo(a)pyrene	400	400	0.70	1.10	1.11	1	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	390	0.50	0.992	0.969	-2	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	350	0.40	1.01	0.895	-11	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	340	0.50	1.10	0.938	-15	NA	± 20	AverageRF
Fluorene-d10	400	400	0.01	1.37	1.38	1	NA	± 20	AverageRF
Fluoranthene-d10	400	420	0.01	1.26	1.31	4	NA	± 20	AverageRF
Terphenyl-d14	400	380	0.01	0.843	0.807	-4	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 06/04/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/02/2017
Calibration ID: CAL15594
Analysis Lot: KWG1802872
Units: ng/ml

File ID: J:\MS20\DATA\060418\0604F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.70	1.02	1.07	5	NA	± 20	AverageRF
2-Methylnaphthalene	400	420	0.40	0.682	0.719	5	NA	± 20	AverageRF
Acenaphthylene	400	420	0.90	2.03	2.12	4	NA	± 20	AverageRF
Acenaphthene	400	400	0.90	1.25	1.24	-1	NA	± 20	AverageRF
Fluorene	400	410	0.90	1.50	1.52	2	NA	± 20	AverageRF
Phenanthrene	400	380	0.70	1.17	1.12	-4	NA	± 20	AverageRF
Anthracene	400	370	0.70	1.09	1.01	-7	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.27	1.34	5	NA	± 20	AverageRF
Pyrene	400	450	0.60	1.13	1.26	12	NA	± 20	AverageRF
Benz(a)anthracene	400	450	0.80	1.09	1.23	14	NA	± 20	AverageRF
Chrysene	400	430	0.70	1.08	1.16	7	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	410	0.70	1.14	1.18	3	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	410	0.70	1.15	1.18	2	NA	± 20	AverageRF
Benzo(a)pyrene	400	440	0.70	0.984	1.07	9	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.50	1.02	1.13	11	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	440	0.40	1.05	1.16	10	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	390	0.50	1.22	1.18	-3	NA	± 20	AverageRF
Fluorene-d10	400	420	0.01	1.28	1.33	4	NA	± 20	AverageRF
Fluoranthene-d10	400	440	0.01	1.15	1.28	11	NA	± 20	AverageRF
Terphenyl-d14	400	440	0.01	0.853	0.945	11	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM **Analysis Lot:** KWG1802860
Instrument ID: MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0601F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802860-1	6/1/2018	06:20		6/1/2018	06:40
0601F002.D	Continuing Calibration Verification	KWG1802860-2	6/1/2018	06:45		6/1/2018	07:04
0601F004.D	ZZZZZZ	ZZZZZZ	6/1/2018	07:38		6/1/2018	07:57
0601F005.D	ZZZZZZ	ZZZZZZ	6/1/2018	08:03		6/1/2018	08:22
0601F006.D	ZZZZZZ	ZZZZZZ	6/1/2018	08:28		6/1/2018	08:47
0601F007.D	ZZZZZZ	ZZZZZZ	6/1/2018	08:54		6/1/2018	09:13
0601F008.D	ZZZZZZ	ZZZZZZ	6/1/2018	09:19		6/1/2018	09:38
0601F009.D	ZZZZZZ	ZZZZZZ	6/1/2018	09:45		6/1/2018	10:04
0601F010.D	ZZZZZZ	ZZZZZZ	6/1/2018	10:11		6/1/2018	10:30
0601F011.D	ZZZZZZ	ZZZZZZ	6/1/2018	10:36		6/1/2018	10:55
0601F012.D	ZZZZZZ	ZZZZZZ	6/1/2018	11:02		6/1/2018	11:21
0601F013.D	ZZZZZZ	ZZZZZZ	6/1/2018	11:28		6/1/2018	11:47
0601F014.D	ZZZZZZ	ZZZZZZ	6/1/2018	11:53		6/1/2018	12:12
0601F015.D	ZZZZZZ	ZZZZZZ	6/1/2018	12:18		6/1/2018	12:37
0601F016.D	ZZZZZZ	ZZZZZZ	6/1/2018	12:44		6/1/2018	13:03
0601F017.D	PDI-SG-B340-BL1	K1803975-015	6/1/2018	13:09		6/1/2018	13:28
0601F018.D	PDI-SG-B347-BL1	K1803975-016	6/1/2018	13:34		6/1/2018	13:53
0601F019.D	PDI-SG-B347-BL1-D	K1803975-017	6/1/2018	13:58		6/1/2018	14:17
0601F020.D	PDI-SG-B339-BL1	K1803975-018	6/1/2018	14:23		6/1/2018	14:42
0601F021.D	PDI-SG-B341-BL1	K1803975-019	6/1/2018	14:48		6/1/2018	15:07
0601F022.D	PDI-SG-B345-BL1	K1803975-020	6/1/2018	15:12		6/1/2018	15:31
0601F023.D	PDI-SG-B388-BL1	K1803975-029	6/1/2018	15:37		6/1/2018	15:56
0601F024.D	ZZZZZZ	ZZZZZZ	6/1/2018	16:01		6/1/2018	16:20
0601F025.D	ZZZZZZ	ZZZZZZ	6/1/2018	16:26		6/1/2018	16:45
0601F026.D	ZZZZZZ	ZZZZZZ	6/1/2018	16:49		6/1/2018	17:08
0601F027.D	ZZZZZZ	ZZZZZZ	6/1/2018	17:14		6/1/2018	17:33
0601F028.D	ZZZZZZ	ZZZZZZ	6/1/2018	17:38		6/1/2018	17:57

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM **Analysis Lot:** KWG1802803
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0531F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802803-1	5/31/2018	05:53		5/31/2018	06:23
0531F002.D	Continuing Calibration Verification	KWG1802803-2	5/31/2018	06:32		5/31/2018	07:01
0531F003.D	Method Blank	KWG1802297-4	5/31/2018	07:20		5/31/2018	07:49
0531F004.D	Lab Control Sample	KWG1802297-3	5/31/2018	08:00		5/31/2018	08:29
0531F005.D	PDI-SG-B359-BL1MS	KWG1802297-1	5/31/2018	08:39		5/31/2018	09:08
0531F006.D	PDI-SG-B359-BL1DMS	KWG1802297-2	5/31/2018	09:18		5/31/2018	09:47
0531F007.D	PDI-SG-B359-BL1	K1803975-003	5/31/2018	09:58		5/31/2018	10:27
0531F008.D	PDI-SG-B351-BL1	K1803975-001	5/31/2018	10:37		5/31/2018	11:06
0531F009.D	PDI-SG-B353-BL1	K1803975-002	5/31/2018	11:17		5/31/2018	11:46
0531F010.D	PDI-SG-B361-BL1	K1803975-004	5/31/2018	11:57		5/31/2018	12:26
0531F011.D	PDI-SG-B364-BL1	K1803975-005	5/31/2018	12:36		5/31/2018	13:05
0531F012.D	PDI-SG-B370-BL1	K1803975-006	5/31/2018	13:16		5/31/2018	13:45
0531F013.D	PDI-SG-B371-BL1	K1803975-007	5/31/2018	13:56		5/31/2018	14:25
0531F014.D	PDI-SG-B408-BL1	K1803975-008	5/31/2018	14:35		5/31/2018	15:04
0531F015.D	PDI-SG-B386-BL1	K1803975-009	5/31/2018	15:15		5/31/2018	15:44
0531F016.D	PDI-SG-B360-BL1	K1803975-011	5/31/2018	15:54		5/31/2018	16:23
0531F017.D	PDI-SG-B350-BL1	K1803975-012	5/31/2018	16:33		5/31/2018	17:02
0531F018.D	PDI-SG-B400-BL1	K1803975-013	5/31/2018	17:13		5/31/2018	17:42
0531F019.D	PDI-SG-B343-BL1	K1803975-014	5/31/2018	17:52		5/31/2018	18:21

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM **Analysis Lot:** KWG1802833
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0531F020.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802833-1	5/31/2018	18:32		5/31/2018	19:02
0531F021.D	Continuing Calibration Verification	KWG1802833-2	5/31/2018	19:11		5/31/2018	19:40
0531F022.D	Method Blank	KWG1802296-4	5/31/2018	19:51		5/31/2018	20:20
0531F023.D	Lab Control Sample	KWG1802296-3	5/31/2018	20:30		5/31/2018	20:59
0531F024.D	PDI-SG-B331-BL1MS	KWG1802296-1	5/31/2018	21:10		5/31/2018	21:39
0531F025.D	PDI-SG-B331-BL1DMS	KWG1802296-2	5/31/2018	21:49		5/31/2018	22:18
0531F026.D	PDI-SG-B331-BL1	K1803975-023	5/31/2018	22:29		5/31/2018	22:58
0531F027.D	PDI-SG-B312-BL1	K1803975-021	5/31/2018	23:08		5/31/2018	23:37
0531F028.D	PDI-SG-B328-BL1	K1803975-022	5/31/2018	23:48		6/1/2018	00:17
0531F029.D	PDI-SG-B336-BL1	K1803975-024	6/1/2018	00:27		6/1/2018	00:56
0531F030.D	PDI-SG-B365-BL1	K1803975-025	6/1/2018	01:06		6/1/2018	01:35
0531F031.D	PDI-SG-B369-BL1	K1803975-026	6/1/2018	01:46		6/1/2018	02:15
0531F032.D	PDI-SG-B376-BL1	K1803975-027	6/1/2018	02:25		6/1/2018	02:54
0531F033.D	PDI-SG-B375-BL1	K1803975-028	6/1/2018	03:05		6/1/2018	03:34
0531F034.D	PDI-SG-B388-BL1	K1803975-029	6/1/2018	03:44		6/1/2018	04:13
0531F035.D	PDI-SG-B388-BL1-D	K1803975-030	6/1/2018	04:23		6/1/2018	04:52
0531F036.D	PDI-SG-B381-BL1	K1803975-031	6/1/2018	05:03		6/1/2018	05:32
0531F037.D	PDI-SG-B381-BL1-D	K1803975-032	6/1/2018	05:42		6/1/2018	06:11
0531F038.D	PDI-SG-B379-BL1	K1803975-033	6/1/2018	06:21		6/1/2018	06:50

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM **Analysis Lot:** KWG1802872
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0604F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802872-1	6/4/2018	06:19		6/4/2018	06:49
0604F002.D	Continuing Calibration Verification	KWG1802872-2	6/4/2018	06:58		6/4/2018	07:27
0604F004.D	ZZZZZZ	ZZZZZZ	6/4/2018	08:17		6/4/2018	08:46
0604F005.D	ZZZZZZ	ZZZZZZ	6/4/2018	08:57		6/4/2018	09:26
0604F006.D	ZZZZZZ	ZZZZZZ	6/4/2018	09:36		6/4/2018	10:05
0604F007.D	PDI-SG-B385-BL1	K1803975-010	6/4/2018	10:16		6/4/2018	10:45
0604F008.D	PDI-SG-B340-BL1	K1803975-015	6/4/2018	10:55		6/4/2018	11:24
0604F009.D	ZZZZZZ	ZZZZZZ	6/4/2018	11:35		6/4/2018	12:04
0604F010.D	ZZZZZZ	ZZZZZZ	6/4/2018	12:15		6/4/2018	12:44
0604F011.D	ZZZZZZ	ZZZZZZ	6/4/2018	12:54		6/4/2018	13:23
0604F012.D	ZZZZZZ	ZZZZZZ	6/4/2018	13:33		6/4/2018	14:02
0604F013.D	ZZZZZZ	ZZZZZZ	6/4/2018	14:13		6/4/2018	14:42
0604F014.D	ZZZZZZ	ZZZZZZ	6/4/2018	14:52		6/4/2018	15:21
0604F015.D	ZZZZZZ	ZZZZZZ	6/4/2018	15:32		6/4/2018	16:01
0604F016.D	ZZZZZZ	ZZZZZZ	6/4/2018	16:11		6/4/2018	16:40
0604F017.D	ZZZZZZ	ZZZZZZ	6/4/2018	16:51		6/4/2018	17:20
0604F018.D	ZZZZZZ	ZZZZZZ	6/4/2018	17:30		6/4/2018	17:59
0604F019.D	ZZZZZZ	ZZZZZZ	6/4/2018	18:10		6/4/2018	18:39

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803975
Date Extracted: 05/07/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Extraction Lot: KWG1802296
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-SG-B312-BL1	K1803975-021	04/27/18	04/30/18	40.336g	2mL	69.9	
PDI-SG-B328-BL1	K1803975-022	04/27/18	04/30/18	40.326g	2mL	64	
PDI-SG-B331-BL1	K1803975-023	04/27/18	04/30/18	40.200g	2mL	51.6	
PDI-SG-B336-BL1	K1803975-024	04/27/18	04/30/18	40.492g	2mL	52.4	
PDI-SG-B365-BL1	K1803975-025	04/27/18	04/30/18	40.434g	2mL	42.2	
PDI-SG-B369-BL1	K1803975-026	04/27/18	04/30/18	40.184g	2mL	43.6	
PDI-SG-B376-BL1	K1803975-027	04/27/18	04/30/18	40.266g	2mL	40.9	
PDI-SG-B375-BL1	K1803975-028	04/27/18	04/30/18	40.012g	2mL	44	
PDI-SG-B388-BL1	K1803975-029	04/27/18	04/30/18	40.280g	2mL	49.5	
PDI-SG-B388-BL1DL	K1803975-029	04/27/18	04/30/18	40.280g	2mL	49.5	
PDI-SG-B388-BL1-D	K1803975-030	04/27/18	04/30/18	40.454g	2mL	48.9	
PDI-SG-B381-BL1	K1803975-031	04/29/18	04/30/18	40.410g	2mL	41.9	
PDI-SG-B381-BL1-D	K1803975-032	04/29/18	04/30/18	40.209g	2mL	41.9	
PDI-SG-B379-BL1	K1803975-033	04/29/18	04/30/18	40.364g	2mL	38.2	
Method Blank	KWG1802296-4	NA	NA	40.492g	2mL	NA	
PDI-SG-B331-BL1MS	KWG1802296-1	04/27/18	04/30/18	40.245g	2mL	51.6	
PDI-SG-B331-BL1DMS	KWG1802296-2	04/27/18	04/30/18	40.233g	2mL	51.6	
Lab Control Sample	KWG1802296-3	NA	NA	20.000g	2mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Service Request: K1803975
Date Extracted: 05/07/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270D SIM

Extraction Lot: KWG1802297
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-SG-B351-BL1	K1803975-001	04/29/18	04/30/18	40.204g	2mL	43.8	
PDI-SG-B353-BL1	K1803975-002	04/29/18	04/30/18	40.301g	2mL	42.5	
PDI-SG-B359-BL1	K1803975-003	04/29/18	04/30/18	40.288g	2mL	41.4	
PDI-SG-B361-BL1	K1803975-004	04/29/18	04/30/18	40.294g	2mL	44	
PDI-SG-B364-BL1	K1803975-005	04/29/18	04/30/18	40.238g	2mL	42.5	
PDI-SG-B370-BL1	K1803975-006	04/29/18	04/30/18	40.165g	2mL	58.8	
PDI-SG-B371-BL1	K1803975-007	04/29/18	04/30/18	40.191g	2mL	39.3	
PDI-SG-B408-BL1	K1803975-008	04/28/18	04/30/18	40.433g	2mL	59.5	
PDI-SG-B386-BL1	K1803975-009	04/28/18	04/30/18	40.176g	2mL	44.1	
PDI-SG-B385-BL1	K1803975-010	04/28/18	04/30/18	40.216g	2mL	42.1	
PDI-SG-B360-BL1	K1803975-011	04/28/18	04/30/18	40.147g	2mL	45	
PDI-SG-B350-BL1	K1803975-012	04/28/18	04/30/18	40.122g	2mL	41.6	
PDI-SG-B400-BL1	K1803975-013	04/28/18	04/30/18	40.261g	2mL	38.7	
PDI-SG-B343-BL1	K1803975-014	04/28/18	04/30/18	40.397g	2mL	49.3	
PDI-SG-B340-BL1DL	K1803975-015	04/28/18	04/30/18	40.112g	2mL	50.2	
PDI-SG-B340-BL1	K1803975-015	04/28/18	04/30/18	40.112g	2mL	50.2	
PDI-SG-B347-BL1	K1803975-016	04/28/18	04/30/18	40.302g	2mL	50.2	
PDI-SG-B347-BL1-D	K1803975-017	04/28/18	04/30/18	40.373g	2mL	50.2	
PDI-SG-B339-BL1	K1803975-018	04/28/18	04/30/18	40.188g	2mL	58.4	
PDI-SG-B341-BL1	K1803975-019	04/28/18	04/30/18	40.386g	2mL	58.1	
PDI-SG-B345-BL1	K1803975-020	04/28/18	04/30/18	40.114g	2mL	44.1	
Method Blank	KWG1802297-4	NA	NA	40.476g	2mL	NA	
PDI-SG-B359-BL1MS	KWG1802297-1	04/29/18	04/30/18	40.476g	2mL	41.4	
PDI-SG-B359-BL1DMS	KWG1802297-2	04/29/18	04/30/18	40.216g	2mL	41.4	
Lab Control Sample	KWG1802297-3	NA	NA	20.000g	2mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
PDI-RB-VV-180429-1730	K1803975-034	04/29/2018	04/30/2018
PDI-RB-VV-180429-1800	K1803975-035	04/29/2018	04/30/2018

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Water	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-RB-VV-180429-1730	**Units:**	ug/L
Lab Code:	K1803975-034	**Basis:**	NA
Extraction Method:	EPA 3511	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.0052**	J	0.021	0.0015	1	05/04/18	05/07/18	KWG1802288	
2-Methylnaphthalene	**0.0022**	J	0.021	0.0014	1	05/04/18	05/07/18	KWG1802288	
Acenaphthylene	ND	U	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Acenaphthene	ND	U	0.021	0.0013	1	05/04/18	05/07/18	KWG1802288	
Fluorene	ND	U	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Phenanthrene	**0.0028**	J	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Anthracene	ND	U	0.021	0.00085	1	05/04/18	05/07/18	KWG1802288	*
Fluoranthene	ND	U	0.021	0.00085	1	05/04/18	05/07/18	KWG1802288	
Pyrene	ND	U	0.021	0.0011	1	05/04/18	05/07/18	KWG1802288	
Benz(a)anthracene	ND	U	0.021	0.0011	1	05/04/18	05/07/18	KWG1802288	
Chrysene	ND	U	0.021	0.00079	1	05/04/18	05/07/18	KWG1802288	
Benzo(b)fluoranthene†	ND	U	0.021	0.00086	1	05/04/18	05/07/18	KWG1802288	
Benzo(k)fluoranthene	ND	U	0.021	0.00098	1	05/04/18	05/07/18	KWG1802288	
Benzo(a)pyrene	ND	U	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.00093	1	05/04/18	05/07/18	KWG1802288	
Dibenz(a,h)anthracene	ND	U	0.021	0.0014	1	05/04/18	05/07/18	KWG1802288	
Benzo(g,h,i)perylene	ND	U	0.021	0.00089	1	05/04/18	05/07/18	KWG1802288	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	101	42-131	05/07/18	Acceptable
Fluoranthene-d10	100	42-133	05/07/18	Acceptable
Terphenyl-d14	103	32-129	05/07/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/2018
Sample Matrix:	Water	**Date Received:**	04/30/2018

Polynuclear Aromatic Hydrocarbons

Sample Name:	PDI-RB-VV-180429-1800	**Units:**	ug/L
Lab Code:	K1803975-035	**Basis:**	NA
Extraction Method:	EPA 3511	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.0037**	J	0.021	0.0015	1	05/04/18	05/07/18	KWG1802288	
2-Methylnaphthalene	**0.0017**	J	0.021	0.0014	1	05/04/18	05/07/18	KWG1802288	
Acenaphthylene	ND	U	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Acenaphthene	ND	U	0.021	0.0013	1	05/04/18	05/07/18	KWG1802288	
Fluorene	ND	U	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Phenanthrene	**0.0026**	J	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Anthracene	ND	U	0.021	0.00085	1	05/04/18	05/07/18	KWG1802288	*
Fluoranthene	ND	U	0.021	0.00085	1	05/04/18	05/07/18	KWG1802288	
Pyrene	ND	U	0.021	0.0011	1	05/04/18	05/07/18	KWG1802288	
Benz(a)anthracene	ND	U	0.021	0.0011	1	05/04/18	05/07/18	KWG1802288	
Chrysene	ND	U	0.021	0.00079	1	05/04/18	05/07/18	KWG1802288	
Benzo(b)fluoranthene†	ND	U	0.021	0.00086	1	05/04/18	05/07/18	KWG1802288	
Benzo(k)fluoranthene	ND	U	0.021	0.00098	1	05/04/18	05/07/18	KWG1802288	
Benzo(a)pyrene	ND	U	0.021	0.0012	1	05/04/18	05/07/18	KWG1802288	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.00093	1	05/04/18	05/07/18	KWG1802288	
Dibenz(a,h)anthracene	ND	U	0.021	0.0014	1	05/04/18	05/07/18	KWG1802288	
Benzo(g,h,i)perylene	ND	U	0.021	0.00089	1	05/04/18	05/07/18	KWG1802288	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	101	42-131	05/07/18	Acceptable
Fluoranthene-d10	108	42-133	05/07/18	Acceptable
Terphenyl-d14	96	32-129	05/07/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1802288-6	**Basis:**	NA
Extraction Method:	EPA 3511	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0014	1	05/04/18	05/07/18	KWG1802288	
2-Methylnaphthalene	ND	U	0.020	0.0013	1	05/04/18	05/07/18	KWG1802288	
Acenaphthylene	ND	U	0.020	0.0011	1	05/04/18	05/07/18	KWG1802288	
Acenaphthene	ND	U	0.020	0.0012	1	05/04/18	05/07/18	KWG1802288	
Fluorene	ND	U	0.020	0.0011	1	05/04/18	05/07/18	KWG1802288	
Phenanthrene	**0.0013**	J	0.020	0.0011	1	05/04/18	05/07/18	KWG1802288	
Anthracene	ND	U	0.020	0.00082	1	05/04/18	05/07/18	KWG1802288	*
Fluoranthene	ND	U	0.020	0.00082	1	05/04/18	05/07/18	KWG1802288	
Pyrene	ND	U	0.020	0.0010	1	05/04/18	05/07/18	KWG1802288	
Benz(a)anthracene	**0.0020**	J	0.020	0.00097	1	05/04/18	05/07/18	KWG1802288	
Chrysene	ND	U	0.020	0.00076	1	05/04/18	05/07/18	KWG1802288	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	05/04/18	05/07/18	KWG1802288	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	05/04/18	05/07/18	KWG1802288	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	05/04/18	05/07/18	KWG1802288	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	05/04/18	05/07/18	KWG1802288	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	05/04/18	05/07/18	KWG1802288	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	05/04/18	05/07/18	KWG1802288	

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	99	42-131	05/07/18	Acceptable
Fluoranthene-d10	101	42-133	05/07/18	Acceptable
Terphenyl-d14	105	32-129	05/07/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene	This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

QA/QC Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511 **Units:** Percent
Analysis Method: 8270D SIM **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
PDI-RB-VV-180429-1730	K1803975-034	101	100	103
PDI-RB-VV-180429-1800	K1803975-035	101	108	96
Method Blank	KWG1802288-6	99	101	105
Lab Control Sample	KWG1802288-5	84	94	96

Surrogate Recovery Control Limits (%)

Sur1	=	Fluorene-d10	42-131
Sur2	=	Fluoranthene-d10	42-133
Sur3	=	Terphenyl-d14	32-129

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/07/2018
Time Analyzed: 05:52

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\050718\0507F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802325-2
Analysis Lot: KWG1802325

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	114,589	5.96	59,279	8.29	125,233	11.47
	Upper Limit ==>	229,178	6.46	118,558	8.79	250,466	11.97
	Lower Limit ==>	57,295	5.46	29,640	7.79	62,617	10.97
	ICAL Result ==>	90,101	6.06	44,197	8.42	87,517	11.64
Associated Analyses							
Method Blank	KWG1802288-6	98,790	5.97	53,796	8.28	104,015	11.48
Lab Control Sample	KWG1802288-5	108,620	5.97	57,019	8.28	108,656	11.47
PDI-RB-VV-180429-1730	K1803975-034	75,602	5.98	42,910	8.29	88,534	11.49
PDI-RB-VV-180429-1800	K1803975-035	72,308	5.98	40,466	8.29	82,780	11.49

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/07/2018
Time Analyzed: 05:52

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\050718\0507F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1802325-2
Analysis Lot: KWG1802325

		Chrysene-d12		Perylene-d12	
		Area	**RT**	**Area**	**RT**
	Results ==>	133,094	18.83	134,758	23.12
	Upper Limit ==>	266,188	19.33	269,516	23.62
	Lower Limit ==>	66,547	18.33	67,379	22.62
	ICAL Result ==>	105,110	19.00	102,151	23.35
Associated Analyses					
Method Blank	KWG1802288-6	105,865	18.83	121,881	23.12
Lab Control Sample	KWG1802288-5	107,333	18.83	120,875	23.12
PDI-RB-VV-180429-1730	K1803975-034	91,040	18.84	99,604	23.14
PDI-RB-VV-180429-1800	K1803975-035	94,147	18.83	103,971	23.13

Results flagged with an asterisk (*) indicate values outside control criteria.

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/04/2018
Sample Matrix:	Water	**Date Analyzed:**	05/07/2018

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method:	EPA 3511	**Units:**	ug/L
Analysis Method:	8270D SIM	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1802288

Lab Control Sample
KWG1802288-5
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Naphthalene	2.49	2.78	90	52-115
2-Methylnaphthalene	2.31	2.78	83	48-120
Acenaphthylene	2.46	2.78	88	58-124
Acenaphthene	2.42	2.78	87	63-121
Fluorene	2.35	2.78	85	68-121
Phenanthrene	2.55	2.78	92	64-126
Anthracene	2.71	2.78	97	68-127
Fluoranthene	2.47	2.78	89	70-127
Pyrene	3.02	2.78	109	72-127
Benz(a)anthracene	3.15	2.78	113	74-124
Chrysene	2.97	2.78	107	74-132
Benzo(b)fluoranthene	2.86	2.78	103	73-136
Benzo(k)fluoranthene	2.79	2.78	100	74-134
Benzo(a)pyrene	2.94	2.78	106	75-131
Indeno(1,2,3-cd)pyrene	2.96	2.78	107	63-136
Dibenz(a,h)anthracene	2.91	2.78	105	59-135
Benzo(g,h,i)perylene	2.62	2.78	94	63-127

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/04/2018
Sample Matrix:	Water	**Date Analyzed:**	05/07/2018
		Time Analyzed:	06:31

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Instrument ID:**	MS20
Lab Code:	KWG1802288-6	**File ID:**	J:\MS20\DATA\050718\0507F003.D
Extraction Method:	EPA 3511	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802288

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1802288-5	J:\MS20\DATA\050718\0507F004.D	05/07/18	07:10
PDI-RB-VV-180429-1730	K1803975-034	J:\MS20\DATA\050718\0507F013.D	05/07/18	13:06
PDI-RB-VV-180429-1800	K1803975-035	J:\MS20\DATA\050718\0507F014.D	05/07/18	13:46

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Extracted:**	05/04/2018
Sample Matrix:	Water	**Date Analyzed:**	05/07/2018
		Time Analyzed:	07:10

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	**Instrument ID:**	MS20
Lab Code:	KWG1802288-5	**File ID:**	J:\MS20\DATA\050718\0507F004.D
Extraction Method:	EPA 3511	**Level:**	Low
Analysis Method:	8270D SIM	**Extraction Lot:**	KWG1802288

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1802288-6	J:\MS20\DATA\050718\0507F003.D	05/07/18	06:31
PDI-RB-VV-180429-1730	K1803975-034	J:\MS20\DATA\050718\0507F013.D	05/07/18	13:06
PDI-RB-VV-180429-1800	K1803975-035	J:\MS20\DATA\050718\0507F014.D	05/07/18	13:46

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Date Analyzed: 05/07/2018
Time Analyzed: 05:12

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\050718\0507F001.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1802325

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	25.8	119072	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	28.3	130410	PASS
70	69	0	2	0.5	701	PASS
127	198	10	80	40.3	185962	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	40.4	460970	PASS
199	198	5	9	6.9	31824	PASS
275	198	10	60	35.3	162624	PASS
365	442	1	50	2.1	23906	PASS
441	443	0	100	81.5	180992	PASS
442	442	100	100	100.0	1142101	PASS
443	442	15	24	19.4	222101	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1802325-2	J:\MS20\DATA\050718\0507F002.D	05/07/2018	05:52	
Method Blank	KWG1802288-6	J:\MS20\DATA\050718\0507F003.D	05/07/2018	06:31	
Lab Control Sample	KWG1802288-5	J:\MS20\DATA\050718\0507F004.D	05/07/2018	07:10	
PDI-RB-VV-180429-1730	K1803975-034	J:\MS20\DATA\050718\0507F013.D	05/07/2018	13:06	
PDI-RB-VV-180429-1800	K1803975-035	J:\MS20\DATA\050718\0507F014.D	05/07/2018	13:46	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594 **Column:** MS
Instrument ID: MS20

Level ID	File ID	Level ID	File ID
A	J:\MS20\DATA\110217\1102F003.D	G	J:\MS20\DATA\110217\1102F009.D
B	J:\MS20\DATA\110217\1102F004.D	H	J:\MS20\DATA\110217\1102F010.D
C	J:\MS20\DATA\110217\1102F005.D	I	J:\MS20\DATA\110217\1102F011.D
D	J:\MS20\DATA\110217\1102F006.D	J	J:\MS20\DATA\110217\1102F012.D
E	J:\MS20\DATA\110217\1102F007.D		
F	J:\MS20\DATA\110217\1102F008.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	2.0	1.21	B	4.0	1.04	C	8.0	1.03	D	20	0.996	E	100	0.990
	F	200	0.989	G	400	1.02	H	1000	1.01	I	1600	0.972	J	2000	0.967
2-Methylnaphthalene	A	2.0	0.781	B	4.0	0.671	C	8.0	0.661	D	20	0.679	E	100	0.678
	F	200	0.694	G	400	0.692	H	1000	0.678	I	1600	0.645	J	2000	0.644
Acenaphthylene	A	2.0	2.23	B	4.0	1.95	C	8.0	1.92	D	20	1.97	E	100	1.97
	F	200	2.00	G	400	2.07	H	1000	2.08	I	1600	2.05	J	2000	2.02
Acenaphthene	A	2.0	1.45	B	4.0	1.25	C	8.0	1.25	D	20	1.24	E	100	1.21
	F	200	1.22	G	400	1.25	H	1000	1.23	I	1600	1.21	J	2000	1.19
Fluorene	A	2.0	1.81	B	4.0	1.46	C	8.0	1.44	D	20	1.44	E	100	1.46
	F	200	1.47	G	400	1.51	H	1000	1.48	I	1600	1.45	J	2000	1.44
Phenanthrene	A	2.0	1.50	B	4.0	1.16	C	8.0	1.16	D	20	1.16	E	100	1.12
	F	200	1.13	G	400	1.15	H	1000	1.14	I	1600	1.10	J	2000	1.09
Anthracene	A	2.0	1.32	B	4.0	1.05	C	8.0	1.04	D	20	1.03	E	100	1.03
	F	200	1.06	G	400	1.10	H	1000	1.11	I	1600	1.08	J	2000	1.06
Fluoranthene	A	2.0	1.51	B	4.0	1.20	C	8.0	1.19	D	20	1.24	E	100	1.23
	F	200	1.27	G	400	1.32	H	1000	1.30	I	1600	1.25	J	2000	1.24
Pyrene	A	2.0	1.34	B	4.0	1.10	C	8.0	1.09	D	20	1.10	E	100	1.08
	F	200	1.09	G	400	1.12	H	1000	1.13	I	1600	1.12	J	2000	1.11
Benz(a)anthracene	A	2.0	1.36	B	4.0	1.13	C	8.0	1.03	D	20	1.02	E	100	0.986
	F	200	1.01	G	400	1.05	H	1000	1.09	I	1600	1.09	J	2000	1.10
Chrysene	A	2.0	1.26	B	4.0	1.06	C	8.0	1.08	D	20	1.07	E	100	1.06
	F	200	1.06	G	400	1.07	H	1000	1.06	I	1600	1.06	J	2000	1.04
Benzo(b)fluoranthene	A	2.0	1.22	B	4.0	1.06	C	8.0	1.06	D	20	1.10	E	100	1.10
	F	200	1.12	G	400	1.17	H	1000	1.19	I	1600	1.20	J	2000	1.18
Benzo(k)fluoranthene	A	2.0	1.19	B	4.0	1.07	C	8.0	1.09	D	20	1.09	E	100	1.15
	F	200	1.18	G	400	1.20	H	1000	1.19	I	1600	1.19	J	2000	1.18
Benzo(a)pyrene	A	2.0	0.956	B	4.0	0.883	C	8.0	0.866	D	20	0.903	E	100	0.955
	F	200	1.00	G	400	1.06	H	1000	1.06	I	1600	1.08	J	2000	1.08

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594 **Column:** MS
Instrument ID: MS20

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Indeno(1,2,3-cd)pyrene	A	2.0	1.05	B	4.0	0.927	C	8.0	0.901	D	20	0.943	E	100	0.987
	F	200	1.03	G	400	1.10	H	1000	1.08	I	1600	1.07	J	2000	1.07
Dibenz(a,h)anthracene	A	2.0	1.02	B	4.0	0.967	C	8.0	0.953	D	20	1.01	E	100	1.05
	F	200	1.08	G	400	1.13	H	1000	1.11	I	1600	1.10	J	2000	1.10
Benzo(g,h,i)perylene	A	2.0	1.36	B	4.0	1.19	C	8.0	1.17	D	20	1.25	E	100	1.21
	F	200	1.23	G	400	1.27	H	1000	1.18	I	1600	1.17	J	2000	1.16
Fluorene-d10				B	4.0	1.51	C	8.0	1.31	D	20	1.26	E	100	1.23
	F	200	1.23	G	400	1.27	H	1000	1.25	I	1600	1.23	J	2000	1.21
Fluoranthene-d10	A	2.0	1.49	B	4.0	1.12	C	8.0	1.07	D	20	1.08	E	100	1.06
	F	200	1.10	G	400	1.15	H	1000	1.17	I	1600	1.16	J	2000	1.15
Terphenyl-d14	A	2.0	1.04	B	4.0	0.848	C	8.0	0.825	D	20	0.837	E	100	0.817
	F	200	0.826	G	400	0.831	H	1000	0.840	I	1600	0.837	J	2000	0.829

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Calibration Date:** 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594 **Column:** MS
Instrument ID: MS20

		Calibration Evaluation					RRF Evaluation		
Analyte Name	**Compound Type**	**Fit Type**	**Eval.**	**Eval. Result**	**Q**	**Control Criteria**	**Average RRF**	**Q**	**Minimum RRF**
Naphthalene	MS	AverageRF	% RSD	6.8		≤ 20	1.02		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	5.7		≤ 20	0.682		0.40
Acenaphthylene	MS	AverageRF	% RSD	4.4		≤ 20	2.03		0.90
Acenaphthene	MS	AverageRF	% RSD	5.8		≤ 20	1.25		0.90
Fluorene	MS	AverageRF	% RSD	7.5		≤ 20	1.50		0.90
Phenanthrene	MS	AverageRF	% RSD	10.0		≤ 20	1.17		0.70
Anthracene	MS	AverageRF	% RSD	7.9		≤ 20	1.09		0.70
Fluoranthene	MS	AverageRF	% RSD	7.2		≤ 20	1.27		0.60
Pyrene	MS	AverageRF	% RSD	6.7		≤ 20	1.13		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	9.8		≤ 20	1.09		0.80
Chrysene	MS	AverageRF	% RSD	5.7		≤ 20	1.08		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	5.0		≤ 20	1.14		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	4.4		≤ 20	1.15		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	8.4		≤ 20	0.984		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	7.1		≤ 20	1.02		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	5.9		≤ 20	1.05		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	5.1		≤ 20	1.22		0.50
Fluorene-d10	SURR	AverageRF	% RSD	7.1		≤ 20	1.28		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	10.7		≤ 20	1.15		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	7.7		≤ 20	0.853		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Service Request: K1803975
Calibration Date: 11/02/2017
Date Analyzed: 11/02/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15594
Units: ng/ml

File ID: J:\MS20\DATA\110217\1102F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	1.02	0.924	-10	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	380	0.682	0.644	-6	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.03	1.93	-5	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.25	1.17	-6	NA	± 30 %	AverageRF
Fluorene	400	370	1.50	1.39	-7	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.17	1.08	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.09	1.03	-6	NA	± 30 %	AverageRF
Fluoranthene	400	400	1.27	1.28	0	NA	± 30 %	AverageRF
Pyrene	400	380	1.13	1.08	-5	NA	± 30 %	AverageRF
Benz(a)anthracene	400	370	1.09	0.996	-8	NA	± 30 %	AverageRF
Chrysene	400	380	1.08	1.03	-5	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	380	1.14	1.10	-4	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.15	1.13	-2	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	400	0.984	0.973	-1	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	1.02	0.946	-7	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	380	1.05	1.00	-5	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	360	1.22	1.11	-9	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:** 05/07/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard **Calibration Date:** 11/02/2017
Analysis Method: 8270D SIM **Calibration ID:** CAL15594
Analysis Lot: KWG1802325
Units: ng/ml

File ID: J:\MS20\DATA\050718\0507F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D		%Drift	Criteria	Curve Fit
Naphthalene	400	380	0.70	1.02	0.972	-5		NA	± 20	AverageRF
2-Methylnaphthalene	400	360	0.40	0.682	0.619	-9		NA	± 20	AverageRF
Acenaphthylene	400	360	0.90	2.03	1.85	-9		NA	± 20	AverageRF
Acenaphthene	400	370	0.90	1.25	1.14	-9		NA	± 20	AverageRF
Fluorene	400	360	0.90	1.50	1.34	-11		NA	± 20	AverageRF
Phenanthrene	400	350	0.70	1.17	1.03	-12		NA	± 20	AverageRF
Anthracene	400	310	0.70	1.09	0.855	-22	*	NA	± 20	AverageRF
Fluoranthene	400	360	0.60	1.27	1.15	-10		NA	± 20	AverageRF
Pyrene	400	400	0.60	1.13	1.14	1		NA	± 20	AverageRF
Benz(a)anthracene	400	400	0.80	1.09	1.10	1		NA	± 20	AverageRF
Chrysene	400	390	0.70	1.08	1.05	-3		NA	± 20	AverageRF
Benzo(b)fluoranthene	400	400	0.70	1.14	1.13	-1		NA	± 20	AverageRF
Benzo(k)fluoranthene	400	390	0.70	1.15	1.13	-2		NA	± 20	AverageRF
Benzo(a)pyrene	400	380	0.70	0.984	0.942	-4		NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	400	0.50	1.02	1.02	0		NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	400	0.40	1.05	1.05	0		NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	360	0.50	1.22	1.09	-11		NA	± 20	AverageRF
Fluorene-d10	400	380	0.01	1.28	1.20	-6		NA	± 20	AverageRF
Fluoranthene-d10	400	380	0.01	1.15	1.10	-5		NA	± 20	AverageRF
Terphenyl-d14	400	400	0.01	0.853	0.858	1		NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound **‡ CCC Compound**

QA/QC Results

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM **Analysis Lot:** KWG1802325
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0507F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1802325-1	5/7/2018	05:12		5/7/2018	05:42
0507F002.D	Continuing Calibration Verification	KWG1802325-2	5/7/2018	05:52		5/7/2018	06:21
0507F003.D	Method Blank	KWG1802288-6	5/7/2018	06:31		5/7/2018	07:00
0507F004.D	Lab Control Sample	KWG1802288-5	5/7/2018	07:10		5/7/2018	07:39
0507F005.D	ZZZZZZ	ZZZZZZ	5/7/2018	07:50		5/7/2018	08:19
0507F006.D	ZZZZZZ	ZZZZZZ	5/7/2018	08:30		5/7/2018	08:59
0507F007.D	ZZZZZZ	ZZZZZZ	5/7/2018	09:09		5/7/2018	09:38
0507F008.D	ZZZZZZ	ZZZZZZ	5/7/2018	09:49		5/7/2018	10:18
0507F009.D	ZZZZZZ	ZZZZZZ	5/7/2018	10:28		5/7/2018	10:57
0507F010.D	ZZZZZZ	ZZZZZZ	5/7/2018	11:08		5/7/2018	11:37
0507F011.D	ZZZZZZ	ZZZZZZ	5/7/2018	11:47		5/7/2018	12:16
0507F012.D	ZZZZZZ	ZZZZZZ	5/7/2018	12:27		5/7/2018	12:56
0507F013.D	PDI-RB-VV-180429-1730	K1803975-034	5/7/2018	13:06		5/7/2018	13:35
0507F014.D	PDI-RB-VV-180429-1800	K1803975-035	5/7/2018	13:46		5/7/2018	14:15
0507F015.D	ZZZZZZ	ZZZZZZ	5/7/2018	14:26		5/7/2018	14:55
0507F016.D	ZZZZZZ	ZZZZZZ	5/7/2018	15:05		5/7/2018	15:34
0507F017.D	ZZZZZZ	ZZZZZZ	5/7/2018	15:45		5/7/2018	16:14
0507F018.D	ZZZZZZ	ZZZZZZ	5/7/2018	16:24		5/7/2018	16:53
0507F019.D	ZZZZZZ	ZZZZZZ	5/7/2018	17:04		5/7/2018	17:33

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Service Request: K1803975
Date Extracted: 05/04/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Extraction Lot: KWG1802288
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
PDI-RB-VV-180429-1730	K1803975-034	04/29/18	04/30/18	435ml	2ml	NA	
PDI-RB-VV-180429-1800	K1803975-035	04/29/18	04/30/18	435ml	2ml	NA	
Method Blank	KWG1802288-6	NA	NA	460ml	2ml	NA	
Lab Control Sample	KWG1802288-5	NA	NA	450ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Low Level Semivolatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 10:10
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B351-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-001	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**95 J**	110	11	1	05/17/18 05:41	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	80	30 - 102	05/17/18 05:41	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 11:03
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B353-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-002	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**310**	120	11	1	05/17/18 06:09	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	80	30 - 102	05/17/18 06:09	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 11:55
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B359-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-003	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**86 J**	120	11	1	05/17/18 06:38	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	77	30 - 102	05/17/18 06:38	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 12:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B361-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-004	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**97 J**	110	11	1	05/17/18 05:12	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	85	30 - 102	05/17/18 05:12	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 14:50
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B364-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-005	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**82 J**	120	11	1	05/17/18 07:06	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	74	30 - 102	05/17/18 07:06	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 15:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B370-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-006	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**60 J**	85	8.9	1	05/17/18 07:35	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	83	30 - 102	05/17/18 07:35	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 16:50
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B371-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-007	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**110 J**	130	12	1	05/17/18 08:03	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	83	30 - 102	05/17/18 08:03	

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 10:30
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B408-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-008	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**50 J**	84	8.9	1	05/17/18 08:32	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	79	30 - 102	05/17/18 08:32	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 16:40
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B386-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-009	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**93 J**	110	11	1	05/17/18 09:00	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	83	30 - 102	05/17/18 09:00	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 17:40
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B385-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-010	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**120 J**	590	53	5	05/17/18 09:29	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	05/17/18 09:29	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 17:07
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B360-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-011	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**88 J**	110	9.9	1	05/17/18 09:57	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	89	30 - 102	05/17/18 09:57	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 16:22
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B350-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-012	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**110 J**	120	11	1	05/17/18 10:26	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	85	30 - 102	05/17/18 10:26	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 14:40
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B400-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-013	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**100 J**	130	12	1	05/17/18 10:54	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	86	30 - 102	05/17/18 10:54	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 15:36
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B343-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-014	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**71 J**	100	9.0	1	05/17/18 11:23	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	75	30 - 102	05/17/18 11:23	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 14:38
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B340-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-015	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**170**	99	8.9	1	05/17/18 11:51	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	83	30 - 102	05/17/18 11:51	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 13:42
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B347-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-016	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**56 J**	98	8.9	1	05/17/18 12:20	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	05/17/18 12:20	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 13:42
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B347-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-017	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**130**	99	8.9	1	05/17/18 12:48	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	80	30 - 102	05/17/18 12:48	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 11:47
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B339-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-018	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**38 J**	85	8.9	1	05/17/18 13:17	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	76	30 - 102	05/17/18 13:17	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 10:56
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B341-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-019	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**35 J**	85	8.9	1	05/17/18 13:46	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	82	30 - 102	05/17/18 13:46	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/28/18 10:05
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B345-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-020	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**74 J**	110	11	1	05/17/18 14:14	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	77	30 - 102	05/17/18 14:14	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 10:24
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B312-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-021	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**38 J**	71	8.9	1	05/30/18 12:32	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	56	30 - 102	05/30/18 12:32	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 14:39
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B328-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-022	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**47 J**	77	8.9	1	05/30/18 13:01	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	49	30 - 102	05/30/18 13:01	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 15:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B331-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-023	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**110**	97	8.9	1	05/30/18 13:30	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	64	30 - 102	05/30/18 13:30	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 16:45
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B336-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-024	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**46 J**	95	8.9	1	05/30/18 13:59	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	67	30 - 102	05/30/18 13:59	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 17:41
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B365-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-025	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**75 J**	120	11	1	05/30/18 14:27	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	60	30 - 102	05/30/18 14:27	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 16:55
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B369-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-026	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**69 J**	110	11	1	05/30/18 14:56	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	56	30 - 102	05/30/18 14:56	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 16:07
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B376-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-027	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**87 J**	120	11	1	05/30/18 15:25	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	56	30 - 102	05/30/18 15:25	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 15:20
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B375-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-028	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**81 J**	110	11	1	05/30/18 15:53	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	60	30 - 102	05/30/18 15:53	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 14:02
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B388-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-029	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**100**	100	8.9	1	05/30/18 16:22	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	54	30 - 102	05/30/18 16:22	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18 14:02
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B388-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-030	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**62 J**	100	9.1	1	05/30/18 16:50	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	53	30 - 102	05/30/18 16:50	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 13:30
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B381-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-031	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**120 J**	120	11	1	05/30/18 17:19	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	54	30 - 102	05/30/18 17:19	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 13:32
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B381-BL1-D	**Units:**	ug/Kg
Lab Code:	K1803975-032	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**63 J**	120	11	1	05/30/18 17:47	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	54	30 - 102	05/30/18 17:47	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 14:55
Sample Matrix:	Sediment	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-SG-B379-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-033	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**110 J**	130	12	1	05/30/18 18:16	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	57	30 - 102	05/30/18 18:16	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 17:30
Sample Matrix:	Water	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-RB-VV-180429-1730	**Units:**	ug/L
Lab Code:	K1803975-034	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.91** J	0.95	0.13	1	05/08/18 15:33	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	56	48 - 109	05/08/18 15:33	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18 18:00
Sample Matrix:	Water	**Date Received:**	04/30/18 13:15
Sample Name:	PDI-RB-VV-180429-1800	**Units:**	ug/L
Lab Code:	K1803975-035	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.94** J	0.98	0.13	1	05/08/18 16:01	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	85	48 - 109	05/08/18 16:01	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ1805575-03	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.91** J	0.95	0.13	1	05/09/18 13:15	4/30/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	107	48 - 109	05/09/18 13:15	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1805600-04	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	49	8.9	1	05/17/18 03:18	5/1/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	82	30 - 102	05/17/18 03:18	

Analytical Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	NA
Sample Matrix:	Sediment	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1805616-04	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	49	8.9	1	05/30/18 10:38	5/9/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	46	30 - 102	05/30/18 10:38	

Client: AECOM **Service Request:** K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D

Extraction Method: EPA 3541

Sample Name	Lab Code	p-Terphenyl-d14 30-102
PDI-SG-B351-BL1	K1803975-001	80
PDI-SG-B353-BL1	K1803975-002	80
PDI-SG-B359-BL1	K1803975-003	77
PDI-SG-B361-BL1	K1803975-004	85
PDI-SG-B364-BL1	K1803975-005	74
PDI-SG-B370-BL1	K1803975-006	83
PDI-SG-B371-BL1	K1803975-007	83
PDI-SG-B408-BL1	K1803975-008	79
PDI-SG-B386-BL1	K1803975-009	83
PDI-SG-B385-BL1	K1803975-010	76
PDI-SG-B360-BL1	K1803975-011	89
PDI-SG-B350-BL1	K1803975-012	85
PDI-SG-B400-BL1	K1803975-013	86
PDI-SG-B343-BL1	K1803975-014	75
PDI-SG-B340-BL1	K1803975-015	83
PDI-SG-B347-BL1	K1803975-016	76
PDI-SG-B347-BL1-D	K1803975-017	80
PDI-SG-B339-BL1	K1803975-018	76
PDI-SG-B341-BL1	K1803975-019	82
PDI-SG-B345-BL1	K1803975-020	77
PDI-SG-B312-BL1	K1803975-021	56
PDI-SG-B328-BL1	K1803975-022	49
PDI-SG-B331-BL1	K1803975-023	64
PDI-SG-B336-BL1	K1803975-024	67
PDI-SG-B365-BL1	K1803975-025	60
PDI-SG-B369-BL1	K1803975-026	56
PDI-SG-B376-BL1	K1803975-027	56
PDI-SG-B375-BL1	K1803975-028	60
PDI-SG-B388-BL1	K1803975-029	54
PDI-SG-B388-BL1-D	K1803975-030	53
PDI-SG-B381-BL1	K1803975-031	54
PDI-SG-B381-BL1-D	K1803975-032	54
PDI-SG-B379-BL1	K1803975-033	57
Method Blank	KQ1805600-04	82
Method Blank	KQ1805616-04	46
Lab Control Sample	KQ1805600-03	76
Lab Control Sample	KQ1805616-03	61

Client: AECOM **Service Request:** K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Sample Matrix: Sediment

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D

Extraction Method: EPA 3541

Sample Name	Lab Code	p-Terphenyl-d14 30-102
PDI-SG-B361-BL1	KQ1805600-01	86
PDI-SG-B361-BL1	KQ1805600-02	88
PDI-SG-B331-BL1	KQ1805616-01	44
PDI-SG-B331-BL1	KQ1805616-02	57

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:** 05/08/18 13:05

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\050818\0508F002.D\ **Lab Code:** KQ1806015-02
Instrument ID: K-MS-29 **Analysis Lot:** 590252
Analysis Method: 8270D **Signal ID:** 1

		Chrysene-d12	
		Area	**RT**
	ICAL Result ==>	282,399	15.41
	Upper Limit ==>	564,798	15.91
	Lower Limit ==>	141,200	14.91
Associated Analyses			
PDI-RB-VV-180429-1730	K1803975-034	266496	15.42
PDI-RB-VV-180429-1800	K1803975-035	256715	15.42

Client: AECOM **Service Request:** K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:** 05/09/18 12:46

Internal Standard Area and RT SUMMARY

Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\050918\0509F002.D\ **Lab Code:** KQ1806147-04

Instrument ID: K-MS-29 **Analysis Lot:** 590552

Analysis Method: 8270D **Signal ID:** 1

		Chrysene-d12	
		Area	**RT**
	ICAL Result ==>	303,314	15.42
	Upper Limit ==>	606,628	15.92
	Lower Limit ==>	151,657	14.92
Associated Analyses			
Method Blank	KQ1805575-03	233532	15.43
Lab Control Sample	KQ1805575-01	279638	15.42
Duplicate Lab Control Sample	KQ1805575-02	286059	15.42

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:**05/17/18 02:49

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051618\0516F029.D\ **Lab Code:**KQ1806478-02
Instrument ID: K-MS-29 **Analysis Lot:**591288
Analysis Method: 8270D **Signal ID:**1

		Chrysene-d12	
		Area	**RT**
	ICAL Result ==>	277,599	15.47
	Upper Limit ==>	555,198	15.97
	Lower Limit ==>	138,800	14.97
Associated Analyses			
Method Blank	KQ1805600-04	255696	15.47
Lab Control Sample	KQ1805600-03	263394	15.47
PDI-SG-B361-BL1	KQ1805600-01	305780	15.48
PDI-SG-B361-BL1	KQ1805600-02	311236	15.48
PDI-SG-B361-BL1	K1803975-004	307646	15.48
PDI-SG-B351-BL1	K1803975-001	307711	15.49
PDI-SG-B353-BL1	K1803975-002	310409	15.48
PDI-SG-B359-BL1	K1803975-003	308532	15.48
PDI-SG-B364-BL1	K1803975-005	305029	15.48
PDI-SG-B370-BL1	K1803975-006	307025	15.48
PDI-SG-B371-BL1	K1803975-007	304219	15.49
PDI-SG-B408-BL1	K1803975-008	311270	15.49
PDI-SG-B386-BL1	K1803975-009	312790	15.49
PDI-SG-B385-BL1	K1803975-010	295860	15.48
PDI-SG-B360-BL1	K1803975-011	312992	15.49
PDI-SG-B350-BL1	K1803975-012	304830	15.49
PDI-SG-B400-BL1	K1803975-013	301040	15.49
PDI-SG-B343-BL1	K1803975-014	301981	15.49
PDI-SG-B340-BL1	K1803975-015	308833	15.50
PDI-SG-B347-BL1	K1803975-016	295266	15.49
PDI-SG-B347-BL1-D	K1803975-017	294421	15.49
PDI-SG-B339-BL1	K1803975-018	298198	15.48
PDI-SG-B341-BL1	K1803975-019	312505	15.49
PDI-SG-B345-BL1	K1803975-020	298755	15.49

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:** 05/30/18 10:09

Internal Standard Area and RT SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\053018\0530F002.D\ **Lab Code:** KQ1807436-02
Instrument ID: K-MS-29 **Analysis Lot:** 593440
Analysis Method: 8270D **Signal ID:** 1

		Chrysene-d12	
		Area	**RT**
	ICAL Result ==>	262,537	15.41
	Upper Limit ==>	525,074	15.91
	Lower Limit ==>	131,269	14.91
Associated Analyses			
Method Blank	KQ1805616-04	245688	15.41
Lab Control Sample	KQ1805616-03	248477	15.41
PDI-SG-B331-BL1	KQ1805616-01	287362	15.41
PDI-SG-B331-BL1	KQ1805616-02	280281	15.41
PDI-SG-B312-BL1	K1803975-021	271091	15.41
PDI-SG-B328-BL1	K1803975-022	272296	15.41
PDI-SG-B331-BL1	K1803975-023	281158	15.41
PDI-SG-B336-BL1	K1803975-024	278454	15.41
PDI-SG-B365-BL1	K1803975-025	281391	15.41
PDI-SG-B369-BL1	K1803975-026	277830	15.41
PDI-SG-B376-BL1	K1803975-027	272092	15.41
PDI-SG-B375-BL1	K1803975-028	275690	15.41
PDI-SG-B388-BL1	K1803975-029	278834	15.41
PDI-SG-B388-BL1-D	K1803975-030	283318	15.41
PDI-SG-B381-BL1	K1803975-031	273433	15.42
PDI-SG-B381-BL1-D	K1803975-032	279487	15.41
PDI-SG-B379-BL1	K1803975-033	271690	15.42

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/29/18
Sample Matrix:	Sediment	**Date Received:**	04/30/18
		Date Analyzed:	05/17/18
		Date Extracted:	05/1/18

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	PDI-SG-B361-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-004	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike KQ1805600-01			Duplicate Matrix Spike KQ1805600-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	97 J	337	282	85	318	283	78	23-123	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Collected:**	04/27/18
Sample Matrix:	Sediment	**Date Received:**	04/30/18
		Date Analyzed:	05/30/18
		Date Extracted:	05/9/18

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	PDI-SG-B331-BL1	**Units:**	ug/Kg
Lab Code:	K1803975-023	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike KQ1805616-01			Duplicate Matrix Spike KQ1805616-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	110	320	242	85	372	242	107	23-123	15	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/17/18
Sample Matrix:	Sediment	**Date Extracted:**	05/01/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	591288

Lab Control Sample
KQ1805600-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	192	250	77	39-113

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/30/18
Sample Matrix:	Sediment	**Date Extracted:**	05/09/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	593440

Lab Control Sample
KQ1805616-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	170	250	68	39-113

QA/QC Report

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/09/18
Sample Matrix:	Water	**Date Extracted:**	04/30/18

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3520C	**Basis:**	NA
		Analysis Lot:	590552

	Lab Control Sample KQ1805575-01			Duplicate Lab Control Sample KQ1805575-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	4.65	5.00	93	4.62	5.00	92	42-147	<1	30

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/09/18 13:15
Sample Matrix:	Water	**Date Extracted:**	04/30/18

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-29
Lab Code:	KQ1805575-03	**File ID:**	J:\MS29\DATA\050918\0509F003.D\
Analysis Method:	8270D	**Analysis Lot:**	590252,590552
Prep Method:	EPA 3520C	**Extraction Lot:**	312914

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-RB-VV-180429-1730	K1803975-034	J:\MS29\DATA\050818\0508F007.D\	05/08/18 15:33
PDI-RB-VV-180429-1800	K1803975-035	J:\MS29\DATA\050818\0508F008.D\	05/08/18 16:01
Lab Control Sample	KQ1805575-01	J:\MS29\DATA\050918\0509F004.D\	05/09/18 13:43
Duplicate Lab Control Sample	KQ1805575-02	J:\MS29\DATA\050918\0509F005.D\	05/09/18 14:12

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/17/18 03:18
Sample Matrix:	Sediment	**Date Extracted:**	05/01/18

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-29
Lab Code:	KQ1805600-04	**File ID:**	J:\MS29\DATA\051618\0516F030.D\
Analysis Method:	8270D	**Analysis Lot:**	591288
Prep Method:	EPA 3541	**Extraction Lot:**	312944

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805600-03	J:\MS29\DATA\051618\0516F031.D\	05/17/18 03:46
PDI-SG-B361-BL1MS	KQ1805600-01	J:\MS29\DATA\051618\0516F032.D\	05/17/18 04:15
PDI-SG-B361-BL1DMS	KQ1805600-02	J:\MS29\DATA\051618\0516F033.D\	05/17/18 04:44
PDI-SG-B361-BL1	K1803975-004	J:\MS29\DATA\051618\0516F034.D\	05/17/18 05:12
PDI-SG-B351-BL1	K1803975-001	J:\MS29\DATA\051618\0516F035.D\	05/17/18 05:41
PDI-SG-B353-BL1	K1803975-002	J:\MS29\DATA\051618\0516F036.D\	05/17/18 06:09
PDI-SG-B359-BL1	K1803975-003	J:\MS29\DATA\051618\0516F037.D\	05/17/18 06:38
PDI-SG-B364-BL1	K1803975-005	J:\MS29\DATA\051618\0516F038.D\	05/17/18 07:06
PDI-SG-B370-BL1	K1803975-006	J:\MS29\DATA\051618\0516F039.D\	05/17/18 07:35
PDI-SG-B371-BL1	K1803975-007	J:\MS29\DATA\051618\0516F040.D\	05/17/18 08:03
PDI-SG-B408-BL1	K1803975-008	J:\MS29\DATA\051618\0516F041.D\	05/17/18 08:32
PDI-SG-B386-BL1	K1803975-009	J:\MS29\DATA\051618\0516F042.D\	05/17/18 09:00
PDI-SG-B385-BL1	K1803975-010	J:\MS29\DATA\051618\0516F043.D\	05/17/18 09:29
PDI-SG-B360-BL1	K1803975-011	J:\MS29\DATA\051618\0516F044.D\	05/17/18 09:57
PDI-SG-B350-BL1	K1803975-012	J:\MS29\DATA\051618\0516F045.D\	05/17/18 10:26
PDI-SG-B400-BL1	K1803975-013	J:\MS29\DATA\051618\0516F046.D\	05/17/18 10:54
PDI-SG-B343-BL1	K1803975-014	J:\MS29\DATA\051618\0516F047.D\	05/17/18 11:23
PDI-SG-B340-BL1	K1803975-015	J:\MS29\DATA\051618\0516F048.D\	05/17/18 11:51
PDI-SG-B347-BL1	K1803975-016	J:\MS29\DATA\051618\0516F049.D\	05/17/18 12:20
PDI-SG-B347-BL1-D	K1803975-017	J:\MS29\DATA\051618\0516F050.D\	05/17/18 12:48
PDI-SG-B339-BL1	K1803975-018	J:\MS29\DATA\051618\0516F051.D\	05/17/18 13:17
PDI-SG-B341-BL1	K1803975-019	J:\MS29\DATA\051618\0516F052.D\	05/17/18 13:46
PDI-SG-B345-BL1	K1803975-020	J:\MS29\DATA\051618\0516F053.D\	05/17/18 14:14

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/30/18 10:38
Sample Matrix:	Sediment	**Date Extracted:**	05/09/18

Method Blank Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-MS-29
Lab Code:	KQ1805616-04	**File ID:**	J:\MS29\DATA\053018\0530F003.D\
Analysis Method:	8270D	**Analysis Lot:**	593440
Prep Method:	EPA 3541	**Extraction Lot:**	312961

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805616-03	J:\MS29\DATA\053018\0530F004.D\	05/30/18 11:06
PDI-SG-B331-BL1MS	KQ1805616-01	J:\MS29\DATA\053018\0530F005.D\	05/30/18 11:35
PDI-SG-B331-BL1DMS	KQ1805616-02	J:\MS29\DATA\053018\0530F006.D\	05/30/18 12:04
PDI-SG-B312-BL1	K1803975-021	J:\MS29\DATA\053018\0530F007.D\	05/30/18 12:32
PDI-SG-B328-BL1	K1803975-022	J:\MS29\DATA\053018\0530F008.D\	05/30/18 13:01
PDI-SG-B331-BL1	K1803975-023	J:\MS29\DATA\053018\0530F009.D\	05/30/18 13:30
PDI-SG-B336-BL1	K1803975-024	J:\MS29\DATA\053018\0530F010.D\	05/30/18 13:59
PDI-SG-B365-BL1	K1803975-025	J:\MS29\DATA\053018\0530F011.D\	05/30/18 14:27
PDI-SG-B369-BL1	K1803975-026	J:\MS29\DATA\053018\0530F012.D\	05/30/18 14:56
PDI-SG-B376-BL1	K1803975-027	J:\MS29\DATA\053018\0530F013.D\	05/30/18 15:25
PDI-SG-B375-BL1	K1803975-028	J:\MS29\DATA\053018\0530F014.D\	05/30/18 15:53
PDI-SG-B388-BL1	K1803975-029	J:\MS29\DATA\053018\0530F015.D\	05/30/18 16:22
PDI-SG-B388-BL1-D	K1803975-030	J:\MS29\DATA\053018\0530F016.D\	05/30/18 16:50
PDI-SG-B381-BL1	K1803975-031	J:\MS29\DATA\053018\0530F017.D\	05/30/18 17:19
PDI-SG-B381-BL1-D	K1803975-032	J:\MS29\DATA\053018\0530F018.D\	05/30/18 17:47
PDI-SG-B379-BL1	K1803975-033	J:\MS29\DATA\053018\0530F019.D\	05/30/18 18:16

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/09/18 13:43
Sample Matrix:	Water	**Date Extracted:**	04/30/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-29
Lab Code:	KQ1805575-01	**File ID:**	J:\MS29\DATA\050918\0509F004.D\
Analysis Method:	8270D	**Analysis Lot:**	590252,590552
Prep Method:	EPA 3520C	**Extraction Lot:**	312914

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-RB-VV-180429-1730	K1803975-034	J:\MS29\DATA\050818\0508F007.D\	05/08/18 15:33
PDI-RB-VV-180429-1800	K1803975-035	J:\MS29\DATA\050818\0508F008.D\	05/08/18 16:01
Method Blank	KQ1805575-03	J:\MS29\DATA\050918\0509F003.D\	05/09/18 13:15
Duplicate Lab Control Sample	KQ1805575-02	J:\MS29\DATA\050918\0509F005.D\	05/09/18 14:12

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/17/18 03:46
Sample Matrix:	Sediment	**Date Extracted:**	05/01/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-29
Lab Code:	KQ1805600-03	**File ID:**	J:\MS29\DATA\051618\0516F031.D\
Analysis Method:	8270D	**Analysis Lot:**	591288
Prep Method:	EPA 3541	**Extraction Lot:**	312944

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805600-04	J:\MS29\DATA\051618\0516F030.D\	05/17/18 03:18
PDI-SG-B361-BL1MS	KQ1805600-01	J:\MS29\DATA\051618\0516F032.D\	05/17/18 04:15
PDI-SG-B361-BL1DMS	KQ1805600-02	J:\MS29\DATA\051618\0516F033.D\	05/17/18 04:44
PDI-SG-B361-BL1	K1803975-004	J:\MS29\DATA\051618\0516F034.D\	05/17/18 05:12
PDI-SG-B351-BL1	K1803975-001	J:\MS29\DATA\051618\0516F035.D\	05/17/18 05:41
PDI-SG-B353-BL1	K1803975-002	J:\MS29\DATA\051618\0516F036.D\	05/17/18 06:09
PDI-SG-B359-BL1	K1803975-003	J:\MS29\DATA\051618\0516F037.D\	05/17/18 06:38
PDI-SG-B364-BL1	K1803975-005	J:\MS29\DATA\051618\0516F038.D\	05/17/18 07:06
PDI-SG-B370-BL1	K1803975-006	J:\MS29\DATA\051618\0516F039.D\	05/17/18 07:35
PDI-SG-B371-BL1	K1803975-007	J:\MS29\DATA\051618\0516F040.D\	05/17/18 08:03
PDI-SG-B408-BL1	K1803975-008	J:\MS29\DATA\051618\0516F041.D\	05/17/18 08:32
PDI-SG-B386-BL1	K1803975-009	J:\MS29\DATA\051618\0516F042.D\	05/17/18 09:00
PDI-SG-B385-BL1	K1803975-010	J:\MS29\DATA\051618\0516F043.D\	05/17/18 09:29
PDI-SG-B360-BL1	K1803975-011	J:\MS29\DATA\051618\0516F044.D\	05/17/18 09:57
PDI-SG-B350-BL1	K1803975-012	J:\MS29\DATA\051618\0516F045.D\	05/17/18 10:26
PDI-SG-B400-BL1	K1803975-013	J:\MS29\DATA\051618\0516F046.D\	05/17/18 10:54
PDI-SG-B343-BL1	K1803975-014	J:\MS29\DATA\051618\0516F047.D\	05/17/18 11:23
PDI-SG-B340-BL1	K1803975-015	J:\MS29\DATA\051618\0516F048.D\	05/17/18 11:51
PDI-SG-B347-BL1	K1803975-016	J:\MS29\DATA\051618\0516F049.D\	05/17/18 12:20
PDI-SG-B347-BL1-D	K1803975-017	J:\MS29\DATA\051618\0516F050.D\	05/17/18 12:48
PDI-SG-B339-BL1	K1803975-018	J:\MS29\DATA\051618\0516F051.D\	05/17/18 13:17
PDI-SG-B341-BL1	K1803975-019	J:\MS29\DATA\051618\0516F052.D\	05/17/18 13:46
PDI-SG-B345-BL1	K1803975-020	J:\MS29\DATA\051618\0516F053.D\	05/17/18 14:14

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/30/18 11:06
Sample Matrix:	Sediment	**Date Extracted:**	05/09/18

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-MS-29
Lab Code:	KQ1805616-03	**File ID:**	J:\MS29\DATA\053018\0530F004.D\
Analysis Method:	8270D	**Analysis Lot:**	593440
Prep Method:	EPA 3541	**Extraction Lot:**	312961

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805616-04	J:\MS29\DATA\053018\0530F003.D\	05/30/18 10:38
PDI-SG-B331-BL1MS	KQ1805616-01	J:\MS29\DATA\053018\0530F005.D\	05/30/18 11:35
PDI-SG-B331-BL1DMS	KQ1805616-02	J:\MS29\DATA\053018\0530F006.D\	05/30/18 12:04
PDI-SG-B312-BL1	K1803975-021	J:\MS29\DATA\053018\0530F007.D\	05/30/18 12:32
PDI-SG-B328-BL1	K1803975-022	J:\MS29\DATA\053018\0530F008.D\	05/30/18 13:01
PDI-SG-B331-BL1	K1803975-023	J:\MS29\DATA\053018\0530F009.D\	05/30/18 13:30
PDI-SG-B336-BL1	K1803975-024	J:\MS29\DATA\053018\0530F010.D\	05/30/18 13:59
PDI-SG-B365-BL1	K1803975-025	J:\MS29\DATA\053018\0530F011.D\	05/30/18 14:27
PDI-SG-B369-BL1	K1803975-026	J:\MS29\DATA\053018\0530F012.D\	05/30/18 14:56
PDI-SG-B376-BL1	K1803975-027	J:\MS29\DATA\053018\0530F013.D\	05/30/18 15:25
PDI-SG-B375-BL1	K1803975-028	J:\MS29\DATA\053018\0530F014.D\	05/30/18 15:53
PDI-SG-B388-BL1	K1803975-029	J:\MS29\DATA\053018\0530F015.D\	05/30/18 16:22
PDI-SG-B388-BL1-D	K1803975-030	J:\MS29\DATA\053018\0530F016.D\	05/30/18 16:50
PDI-SG-B381-BL1	K1803975-031	J:\MS29\DATA\053018\0530F017.D\	05/30/18 17:19
PDI-SG-B381-BL1-D	K1803975-032	J:\MS29\DATA\053018\0530F018.D\	05/30/18 17:47
PDI-SG-B379-BL1	K1803975-033	J:\MS29\DATA\053018\0530F019.D\	05/30/18 18:16

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:**05/08/18 12:37

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\050818\0508F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-29 **Analysis Lot:** 590252

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	25.80	489578	Pass
68	69	0	2	1.69	10065	Pass
69	198	0	100	31.47	597248	Pass
70	69	0	2	0.49	2911	Pass
127	198	10	80	42.95	815082	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	63.49	1897920	Pass
199	198	5	9	6.55	124285	Pass
275	198	10	60	31.08	589824	Pass
365	442	1	50	2.31	69093	Pass
441	443	0.01	100	79.07	453504	Pass
442	442	30	100	100.00	2989397	Pass
443	442	15	24	19.19	573525	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806015-02	J:\MS29\DATA\050818\0508F002.D\	05/08/18 13:05	
PDI-RB-VV-180429-1730	K1803975-034	J:\MS29\DATA\050818\0508F007.D\	05/08/18 15:33	
PDI-RB-VV-180429-1800	K1803975-035	J:\MS29\DATA\050818\0508F008.D\	05/08/18 16:01	

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:**05/09/18 12:18

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\050918\0509F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-29 **Analysis Lot:** 590552

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	25.61	522133	Pass
68	69	0	2	1.76	11254	Pass
69	198	0	100	31.42	640782	Pass
70	69	0	2	0.49	3157	Pass
127	198	10	80	42.42	864960	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	65.87	2039125	Pass
199	198	5	9	6.59	134376	Pass
275	198	10	60	30.75	627072	Pass
365	442	1	50	2.29	71018	Pass
441	443	0.01	100	78.90	471850	Pass
442	442	30	100	100.00	3095552	Pass
443	442	15	24	19.32	598016	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806147-04	J:\MS29\DATA\050918\0509F002.D\	05/09/18 12:46	
Method Blank	KQ1805575-03	J:\MS29\DATA\050918\0509F003.D\	05/09/18 13:15	
Lab Control Sample	KQ1805575-01	J:\MS29\DATA\050918\0509F004.D\	05/09/18 13:43	
Duplicate Lab Control Sample	KQ1805575-02	J:\MS29\DATA\050918\0509F005.D\	05/09/18 14:12	

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:**05/17/18 02:21

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\051618\0516F028.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-29 **Analysis Lot:** 591288

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	25.54	598400	Pass
68	69	0	2	1.90	13822	Pass
69	198	0	100	31.00	726087	Pass
70	69	0	2	0.49	3532	Pass
127	198	10	80	42.33	991616	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	63.46	2342570	Pass
199	198	5	9	6.63	155402	Pass
275	198	10	60	31.07	727914	Pass
365	442	1	50	2.14	79162	Pass
441	443	0.01	100	77.90	553450	Pass
442	442	30	100	100.00	3691349	Pass
443	442	15	24	19.25	710485	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1806478-02	J:\MS29\DATA\051618\0516F029.D\	05/17/18 02:49	
Method Blank	KQ1805600-04	J:\MS29\DATA\051618\0516F030.D\	05/17/18 03:18	
Lab Control Sample	KQ1805600-03	J:\MS29\DATA\051618\0516F031.D\	05/17/18 03:46	
PDI-SG-B361-BL1	KQ1805600-01	J:\MS29\DATA\051618\0516F032.D\	05/17/18 04:15	
PDI-SG-B361-BL1	KQ1805600-02	J:\MS29\DATA\051618\0516F033.D\	05/17/18 04:44	
PDI-SG-B361-BL1	K1803975-004	J:\MS29\DATA\051618\0516F034.D\	05/17/18 05:12	
PDI-SG-B351-BL1	K1803975-001	J:\MS29\DATA\051618\0516F035.D\	05/17/18 05:41	
PDI-SG-B353-BL1	K1803975-002	J:\MS29\DATA\051618\0516F036.D\	05/17/18 06:09	
PDI-SG-B359-BL1	K1803975-003	J:\MS29\DATA\051618\0516F037.D\	05/17/18 06:38	
PDI-SG-B364-BL1	K1803975-005	J:\MS29\DATA\051618\0516F038.D\	05/17/18 07:06	
PDI-SG-B370-BL1	K1803975-006	J:\MS29\DATA\051618\0516F039.D\	05/17/18 07:35	
PDI-SG-B371-BL1	K1803975-007	J:\MS29\DATA\051618\0516F040.D\	05/17/18 08:03	
PDI-SG-B408-BL1	K1803975-008	J:\MS29\DATA\051618\0516F041.D\	05/17/18 08:32	
PDI-SG-B386-BL1	K1803975-009	J:\MS29\DATA\051618\0516F042.D\	05/17/18 09:00	
PDI-SG-B385-BL1	K1803975-010	J:\MS29\DATA\051618\0516F043.D\	05/17/18 09:29	
PDI-SG-B360-BL1	K1803975-011	J:\MS29\DATA\051618\0516F044.D\	05/17/18 09:57	
PDI-SG-B350-BL1	K1803975-012	J:\MS29\DATA\051618\0516F045.D\	05/17/18 10:26	
PDI-SG-B400-BL1	K1803975-013	J:\MS29\DATA\051618\0516F046.D\	05/17/18 10:54	
PDI-SG-B343-BL1	K1803975-014	J:\MS29\DATA\051618\0516F047.D\	05/17/18 11:23	

PDI-SG-B340-BL1	K1803975-015	J:\MS29\DATA\051618\0516F048.D\	05/17/18 11:51
PDI-SG-B347-BL1	K1803975-016	J:\MS29\DATA\051618\0516F049.D\	05/17/18 12:20
PDI-SG-B347-BL1-D	K1803975-017	J:\MS29\DATA\051618\0516F050.D\	05/17/18 12:48
PDI-SG-B339-BL1	K1803975-018	J:\MS29\DATA\051618\0516F051.D\	05/17/18 13:17
PDI-SG-B341-BL1	K1803975-019	J:\MS29\DATA\051618\0516F052.D\	05/17/18 13:46
PDI-SG-B345-BL1	K1803975-020	J:\MS29\DATA\051618\0516F053.D\	05/17/18 14:14

Client: AECOM **Service Request:**K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335 **Date Analyzed:**05/30/18 09:41

Tune Summary
Low Level Semivolatile Organic Compounds by GC/MS

File ID: J:\MS29\DATA\053018\0530F001.D\ **Analytical Method:** 8270D
Instrument ID: K-MS-29 **Analysis Lot:** 593440

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	26.63	827754	Pass
68	69	0	2	1.64	16628	Pass
69	198	0	100	32.57	1012540	Pass
70	69	0	2	0.43	4336	Pass
127	198	10	80	44.25	1375701	Pass
197	198	0	2	0.00	0	Pass
198	442	30	100	75.69	3108864	Pass
199	198	5	9	6.59	204928	Pass
275	198	10	60	29.30	910805	Pass
365	442	1	50	2.25	92394	Pass
441	443	0.01	100	78.03	621162	Pass
442	442	30	100	100.00	4107093	Pass
443	442	15	24	19.38	796010	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1807436-02	J:\MS29\DATA\053018\0530F002.D\	05/30/18 10:09	
Method Blank	KQ1805616-04	J:\MS29\DATA\053018\0530F003.D\	05/30/18 10:38	
Lab Control Sample	KQ1805616-03	J:\MS29\DATA\053018\0530F004.D\	05/30/18 11:06	
PDI-SG-B331-BL1	KQ1805616-01	J:\MS29\DATA\053018\0530F005.D\	05/30/18 11:35	
PDI-SG-B331-BL1	KQ1805616-02	J:\MS29\DATA\053018\0530F006.D\	05/30/18 12:04	
PDI-SG-B312-BL1	K1803975-021	J:\MS29\DATA\053018\0530F007.D\	05/30/18 12:32	
PDI-SG-B328-BL1	K1803975-022	J:\MS29\DATA\053018\0530F008.D\	05/30/18 13:01	
PDI-SG-B331-BL1	K1803975-023	J:\MS29\DATA\053018\0530F009.D\	05/30/18 13:30	
PDI-SG-B336-BL1	K1803975-024	J:\MS29\DATA\053018\0530F010.D\	05/30/18 13:59	
PDI-SG-B365-BL1	K1803975-025	J:\MS29\DATA\053018\0530F011.D\	05/30/18 14:27	
PDI-SG-B369-BL1	K1803975-026	J:\MS29\DATA\053018\0530F012.D\	05/30/18 14:56	
PDI-SG-B376-BL1	K1803975-027	J:\MS29\DATA\053018\0530F013.D\	05/30/18 15:25	
PDI-SG-B375-BL1	K1803975-028	J:\MS29\DATA\053018\0530F014.D\	05/30/18 15:53	
PDI-SG-B388-BL1	K1803975-029	J:\MS29\DATA\053018\0530F015.D\	05/30/18 16:22	
PDI-SG-B388-BL1-D	K1803975-030	J:\MS29\DATA\053018\0530F016.D\	05/30/18 16:50	
PDI-SG-B381-BL1	K1803975-031	J:\MS29\DATA\053018\0530F017.D\	05/30/18 17:19	
PDI-SG-B381-BL1-D	K1803975-032	J:\MS29\DATA\053018\0530F018.D\	05/30/18 17:47	
PDI-SG-B379-BL1	K1803975-033	J:\MS29\DATA\053018\0530F019.D\	05/30/18 18:16	

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800181 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800181-01	SVO_LL ICAL @ 0.05ug/mL | SVM57-73A	J:\MS29\DATA\022718A\0227A003.D	02/27/2018 09:27
02	KC1800181-02	SVO_LL ICAL @ 0.10ug/mL | SVM57-73B	J:\MS29\DATA\022718A\0227A004.D	02/27/2018 09:55
03	KC1800181-03	SVO_LL ICAL @ 0.20ug/mL | SVM57-73C	J:\MS29\DATA\022718A\0227A005.D	02/27/2018 10:24
04	KC1800181-04	SVO_LL ICAL @ 0.50ug/mL | SVM57-73D	J:\MS29\DATA\022718A\0227A006.D	02/27/2018 10:52
05	KC1800181-05	SVO_LL ICAL @ 1.0ug/mL | SVM57-73E	J:\MS29\DATA\022718A\0227A007.D	02/27/2018 11:21
06	KC1800181-06	SVO_LL ICAL @ 2.0ug/mL | SVM57-73F	J:\MS29\DATA\022718A\0227A008.D	02/27/2018 11:50
07	KC1800181-07	SVO_LL ICAL @ 3.0ug/mL | SVM57-73G	J:\MS29\DATA\022718A\0227A009.D	02/27/2018 12:18
08	KC1800181-08	SVO_LL ICAL @ 5.0ug/mL | SVM57-73H	J:\MS29\DATA\022718A\0227A010.D	02/27/2018 12:47
09	KC1800181-09	SVO_LL ICAL @ 7.0ug/mL | SVM57-73I	J:\MS29\DATA\022718A\0227A011.D	02/27/2018 13:15
10	KC1800181-10	SVO_LL ICAL @ 10ug/mL | SVM57-73J	J:\MS29\DATA\022718A\0227A012.D	02/27/2018 13:44

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	0.6474	03	200.000	0.5702	04	500.000	0.6761	05	1000.000	0.7395
06	2000.000	0.8035	07	3000.000	0.8376	08	5000.000	0.8421	09	7000.000	0.8761
10	10000.000	0.8523									

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9129	02	100.000	0.8792	03	200.000	0.9298	04	500.000	0.9017
05	1000.000	0.8251	06	2000.000	0.866	07	3000.000	0.854	08	5000.000	0.8188
09	7000.000	0.8877	10	10000.000	0.8579						

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800181 **Signal ID:** 1
Instrument ID: K-MS-29

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	14.2	≤20	0.7605	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.1	≤20	0.8733	0.010

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 5/29/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800235 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800235-01	SVO_LL ICAL @ 0.05ppm | SVM57-73A	J:\MS29\DATA\052918A\0529A003.D	05/29/2018 15:45
02	KC1800235-02	SVO_LL ICAL @ 0.10ppm | SVM57-73B	J:\MS29\DATA\052918A\0529A004.D	05/29/2018 16:14
03	KC1800235-03	SVO_LL ICAL @ 0.20ppm | SVM57-73C	J:\MS29\DATA\052918A\0529A005.D	05/29/2018 16:42
04	KC1800235-04	SVO_LL ICAL @ 0.50ppm | SVM57-73D	J:\MS29\DATA\052918A\0529A006.D	05/29/2018 17:11
05	KC1800235-05	SVO_LL ICAL @ 1.0ppm | SVM57-73E	J:\MS29\DATA\052918A\0529A007.D	05/29/2018 17:40
06	KC1800235-06	SVO_LL ICAL @ 2.0ppm | SVM57-73F	J:\MS29\DATA\052918A\0529A008.D	05/29/2018 18:08
07	KC1800235-07	SVO_LL ICAL @ 3.0ppm | SVM57-73G	J:\MS29\DATA\052918A\0529A009.D	05/29/2018 18:37
08	KC1800235-08	SVO_LL ICAL @ 5.0ppm | SVM57-73H	J:\MS29\DATA\052918A\0529A010.D	05/29/2018 19:05
09	KC1800235-09	SVO_LL ICAL @ 7.0ppm | SVM57-73I	J:\MS29\DATA\052918A\0529A011.D	05/29/2018 19:34
10	KC1800235-10	SVO_LL ICAL @ 10ppm | SVM57-73J	J:\MS29\DATA\052918A\0529A012.D	05/29/2018 20:03

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.6315	02	100.000	0.6174	03	200.000	0.6534	04	500.000	0.7102
05	1000.000	0.7399	06	2000.000	0.8322	07	3000.000	0.8351	08	5000.000	0.8504
09	7000.000	0.8483	10	10000.000	0.8536						

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9757	02	100.000	0.9361	03	200.000	0.9256	04	500.000	0.8922
05	1000.000	0.9197	06	2000.000	0.9417	07	3000.000	0.9336	08	5000.000	0.9404
09	7000.000	0.8918	10	10000.000	0.922						

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 5/29/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800235 **Signal ID:** 1
Instrument ID: K-MS-29

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	13.0	≤20	0.7572	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	2.6	≤20	0.9279	0.010

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800085-01	SVO_LL ICAL @ 0.05ug/mL | SVM57-73A	J:\MS29\DATA\022718\0227F003.D	02/27/2018 09:27
02	KC1800085-02	SVO_LL ICAL @ 0.10ug/mL | SVM57-73B	J:\MS29\DATA\022718\0227F004.D	02/27/2018 09:55
03	KC1800085-03	SVO_LL ICAL @ 0.20ug/mL | SVM57-73C	J:\MS29\DATA\022718\0227F005.D	02/27/2018 10:24
04	KC1800085-04	SVO_LL ICAL @ 0.50ug/mL | SVM57-73D	J:\MS29\DATA\022718\0227F006.D	02/27/2018 10:52
05	KC1800085-05	SVO_LL ICAL @ 1.0ug/mL | SVM57-73E	J:\MS29\DATA\022718\0227F007.D	02/27/2018 11:21
06	KC1800085-06	SVO_LL ICAL @ 2.0ug/mL | SVM57-73F	J:\MS29\DATA\022718\0227F008.D	02/27/2018 11:50
07	KC1800085-07	SVO_LL ICAL @ 3.0ug/mL | SVM57-73G	J:\MS29\DATA\022718\0227F009.D	02/27/2018 12:18
08	KC1800085-08	SVO_LL ICAL @ 5.0ug/mL | SVM57-73H	J:\MS29\DATA\022718\0227F010.D	02/27/2018 12:47
09	KC1800085-09	SVO_LL ICAL @ 7.0ug/mL | SVM57-73I	J:\MS29\DATA\022718\0227F011.D	02/27/2018 13:15
10	KC1800085-10	SVO_LL ICAL @ 10ug/mL | SVM57 -73J	J:\MS29\DATA\022718\0227F012.D	02/27/2018 13:44

Analyte

Bis(2-ethylhexyl) Phthalate

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	100.000	0.6474	03	200.000	0.5702	04	500.000	0.6761	05	1000.000	0.7395
06	2000.000	0.8035	07	3000.000	0.8376	08	5000.000	0.8421	09	7000.000	0.8761
10	10000.000	0.8523									

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	50.000	0.9129	02	100.000	0.8792	03	200.000	0.9298	04	500.000	0.9017
05	1000.000	0.8251	06	2000.000	0.866	07	3000.000	0.854	08	5000.000	0.8188
09	7000.000	0.8877	10	10000.000	0.8579						

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 2/27/2018

Initial Calibration Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085 **Signal ID:** 1
Instrument ID: K-MS-29

		Calibration Evaluation				Calibration Evaluation	
Analyte Name	Compound Type	Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
Bis(2-ethylhexyl) Phthalate	TRG	Average RF	% RSD	14.2	≤20	0.7605	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	4.1	≤20	0.8733	0.010

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 2/27/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800181 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800181-11	SVO_LL ICV @ 3.0ug/mL | SVM57-77C	J:\MS29\DATA\022718A\0227A013.D	02/27/2018 14:12

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3350	7.605E-1	8.486E-1	11.58	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
p-Terphenyl-d14	3000	3770	8.733E-1	1.096E0	25.51	±30	Average RF

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 5/29/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800235 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800235-11	SVO_LL ICV @ 3.0ppm | SVM58-18A	J:\MS29\DATA\052918A\0529A013.D	05/29/2018 20:31

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3370	7.572E-1	8.511E-1	12.40	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
p-Terphenyl-d14	3000	2960	9.279E-1	9.161E-1	-1.272	±30	Average RF

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation **Calibration Date:** 2/27/2018

Initial Calibration Verification Summary
Low Level Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800085 **Signal ID:** 1
Instrument ID: K-MS-29

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800085-11	SVO_LL ICV @ 3.0ug/mL | SVM57-77C	J:\MS29\DATA\022718\0227F013.D	02/27/2018 14:12

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3350	7.605E-1	8.486E-1	11.58	±30	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
p-Terphenyl-d14	3000	3770	8.733E-1	1.096E0	25.51	±30	Average RF

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Service Request: K1803975
Date Analyzed: 05/08/18 13:05

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\050818\0508F002.D\
Signal ID: 1
Calibration Date: 2/27/2018
Calibration ID: KC1800181
Analysis Lot: 590252
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	2900	0.7605	0.7347	-3.4	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	2990	0.8733	0.8716	-0.2	NA	±20	Average RF

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Service Request: K1803975
Date Analyzed: 05/09/18 12:46

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
File ID: J:\MS29\DATA\050918\0509F002.D\
Signal ID: 1
Calibration Date: 2/27/2018
Calibration ID: KC1800085
Analysis Lot: 590552
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	2890	0.7605	0.7339	-3.5	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	2930	0.8733	0.8516	-2.5	NA	±20	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/17/18 02:49

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Calibration Date:**	2/27/2018
File ID:	J:\MS29\DATA\051618\0516F029.D\	**Calibration ID:**	KC1800181
Signal ID:	1	**Analysis Lot:**	591288
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3170	0.7605	0.804	5.7	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	3140	0.8733	0.9154	4.8	NA	±20	Average RF

Client:	AECOM	**Service Request:**	K1803975
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	**Date Analyzed:**	05/30/18 10:09

Continuing Calibration Verification (CCV) Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Calibration Date:**	5/29/2018
File ID:	J:\MS29\DATA\053018\0530F002.D\	**Calibration ID:**	KC1800235
Signal ID:	1	**Analysis Lot:**	593440
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
Bis(2-ethylhexyl) Phthalate	3000	3030	0.7572	0.7635	0.8	NA	±20	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
p-Terphenyl-d14	3000	2940	0.9279	0.9089	-2.0	NA	±20	Average RF

Client: AECOM **Service Request:**K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**590252

Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\050818\0508F001.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	12:37:00	
J:\MS29\DATA\050818\0508F001.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	12:37:00	
J:\MS29\DATA\050818\0508F002.D\	Continuing Calibration Verification	KQ1806015-02	5/8/2018	13:05:00	
J:\MS29\DATA\050818\0508F002.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	13:05:00	
J:\MS29\DATA\050818\0508F003.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	13:39:00	
J:\MS29\DATA\050818\0508F004.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	14:07:00	
J:\MS29\DATA\050818\0508F005.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	14:36:00	
J:\MS29\DATA\050818\0508F006.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	15:04:00	
J:\MS29\DATA\050818\0508F007.D\	PDI-RB-VV-180429-1730	K1803975-034	5/8/2018	15:33:00	
J:\MS29\DATA\050818\0508F008.D\	PDI-RB-VV-180429-1800	K1803975-035	5/8/2018	16:01:00	
J:\MS29\DATA\050818\0508F009.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	16:30:00	
J:\MS29\DATA\050818\0508F010.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	16:58:00	
J:\MS29\DATA\050818\0508F011.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	17:27:00	
J:\MS29\DATA\050818\0508F012.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	17:55:00	
J:\MS29\DATA\050818\0508F013.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	18:24:00	
J:\MS29\DATA\050818\0508F014.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	18:52:00	
J:\MS29\DATA\050818\0508F015.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	19:21:00	
J:\MS29\DATA\050818\0508F016.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	19:49:00	
J:\MS29\DATA\050818\0508F017.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	20:18:00	
J:\MS29\DATA\050818\0508F018.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	20:46:00	
J:\MS29\DATA\050818\0508F019.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	21:15:00	
J:\MS29\DATA\050818\0508F020.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	21:43:00	
J:\MS29\DATA\050818\0508F021.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	22:12:00	
J:\MS29\DATA\050818\0508F023.D\	ZZZZZZZ	ZZZZZZZ	5/8/2018	23:09:00	

Client: AECOM **Service Request:**K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:

Analysis Lot:590552

Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\050918\0509F001.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	12:18:00	
J:\MS29\DATA\050918\0509F001.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	12:18:00	
J:\MS29\DATA\050918\0509F002.D\	Continuing Calibration Verification	KQ1806147-04	5/9/2018	12:46:00	
J:\MS29\DATA\050918\0509F002.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	12:46:00	
J:\MS29\DATA\050918\0509F003.D\	Method Blank	KQ1805575-03	5/9/2018	13:15:00	
J:\MS29\DATA\050918\0509F004.D\	Lab Control Sample	KQ1805575-01	5/9/2018	13:43:00	
J:\MS29\DATA\050918\0509F005.D\	Duplicate Lab Control Sample	KQ1805575-02	5/9/2018	14:12:00	
J:\MS29\DATA\050918\0509F006.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	14:40:00	
J:\MS29\DATA\050918\0509F007.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	15:09:00	
J:\MS29\DATA\050918\0509F008.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	15:37:00	
J:\MS29\DATA\050918\0509F009.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	16:06:00	
J:\MS29\DATA\050918\0509F010.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	16:34:00	
J:\MS29\DATA\050918\0509F011.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	17:03:00	
J:\MS29\DATA\050918\0509F012.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	17:31:00	
J:\MS29\DATA\050918\0509F013.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	18:00:00	
J:\MS29\DATA\050918\0509F014.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	18:28:00	
J:\MS29\DATA\050918\0509F015.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	18:57:00	
J:\MS29\DATA\050918\0509F016.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	19:25:00	
J:\MS29\DATA\050918\0509F017.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	19:54:00	
J:\MS29\DATA\050918\0509F018.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	20:22:00	
J:\MS29\DATA\050918\0509F019.D\	ZZZZZZZ	ZZZZZZZ	5/9/2018	20:51:00	

Client: AECOM **Service Request:**K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**591288

Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\051618\0516F028.D\	ZZZZZZZ	ZZZZZZZ	5/17/2018	02:21:00	
J:\MS29\DATA\051618\0516F029.D\	Continuing Calibration Verification	KQ1806478-02	5/17/2018	02:49:00	
J:\MS29\DATA\051618\0516F030.D\	Method Blank	KQ1805600-04	5/17/2018	03:18:00	
J:\MS29\DATA\051618\0516F031.D\	Lab Control Sample	KQ1805600-03	5/17/2018	03:46:00	
J:\MS29\DATA\051618\0516F032.D\	PDI-SG-B361-BL1 MS	KQ1805600-01	5/17/2018	04:15:00	
J:\MS29\DATA\051618\0516F033.D\	PDI-SG-B361-BL1 DMS	KQ1805600-02	5/17/2018	04:44:00	
J:\MS29\DATA\051618\0516F034.D\	PDI-SG-B361-BL1	K1803975-004	5/17/2018	05:12:00	
J:\MS29\DATA\051618\0516F035.D\	PDI-SG-B351-BL1	K1803975-001	5/17/2018	05:41:00	
J:\MS29\DATA\051618\0516F036.D\	PDI-SG-B353-BL1	K1803975-002	5/17/2018	06:09:00	
J:\MS29\DATA\051618\0516F037.D\	PDI-SG-B359-BL1	K1803975-003	5/17/2018	06:38:00	
J:\MS29\DATA\051618\0516F038.D\	PDI-SG-B364-BL1	K1803975-005	5/17/2018	07:06:00	
J:\MS29\DATA\051618\0516F039.D\	PDI-SG-B370-BL1	K1803975-006	5/17/2018	07:35:00	
J:\MS29\DATA\051618\0516F040.D\	PDI-SG-B371-BL1	K1803975-007	5/17/2018	08:03:00	
J:\MS29\DATA\051618\0516F041.D\	PDI-SG-B408-BL1	K1803975-008	5/17/2018	08:32:00	
J:\MS29\DATA\051618\0516F042.D\	PDI-SG-B386-BL1	K1803975-009	5/17/2018	09:00:00	
J:\MS29\DATA\051618\0516F043.D\	PDI-SG-B385-BL1	K1803975-010	5/17/2018	09:29:00	
J:\MS29\DATA\051618\0516F044.D\	PDI-SG-B360-BL1	K1803975-011	5/17/2018	09:57:00	
J:\MS29\DATA\051618\0516F045.D\	PDI-SG-B350-BL1	K1803975-012	5/17/2018	10:26:00	
J:\MS29\DATA\051618\0516F046.D\	PDI-SG-B400-BL1	K1803975-013	5/17/2018	10:54:00	
J:\MS29\DATA\051618\0516F047.D\	PDI-SG-B343-BL1	K1803975-014	5/17/2018	11:23:00	
J:\MS29\DATA\051618\0516F048.D\	PDI-SG-B340-BL1	K1803975-015	5/17/2018	11:51:00	
J:\MS29\DATA\051618\0516F049.D\	PDI-SG-B347-BL1	K1803975-016	5/17/2018	12:20:00	
J:\MS29\DATA\051618\0516F050.D\	PDI-SG-B347-BL1-D	K1803975-017	5/17/2018	12:48:00	
J:\MS29\DATA\051618\0516F051.D\	PDI-SG-B339-BL1	K1803975-018	5/17/2018	13:17:00	
J:\MS29\DATA\051618\0516F052.D\	PDI-SG-B341-BL1	K1803975-019	5/17/2018	13:46:00	
J:\MS29\DATA\051618\0516F053.D\	PDI-SG-B345-BL1	K1803975-020	5/17/2018	14:14:00	

Client: AECOM **Service Request:**K1803975

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: **Analysis Lot:**593440

Instrument ID:K-MS-29

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS29\DATA\053018\0530F001.D\	ZZZZZZZ	ZZZZZZZ	5/30/2018	09:41:00	
J:\MS29\DATA\053018\0530F002.D\	Continuing Calibration Verification	KQ1807436-02	5/30/2018	10:09:00	
J:\MS29\DATA\053018\0530F003.D\	Method Blank	KQ1805616-04	5/30/2018	10:38:00	
J:\MS29\DATA\053018\0530F004.D\	Lab Control Sample	KQ1805616-03	5/30/2018	11:06:00	
J:\MS29\DATA\053018\0530F005.D\	PDI-SG-B331-BL1 MS	KQ1805616-01	5/30/2018	11:35:00	
J:\MS29\DATA\053018\0530F006.D\	PDI-SG-B331-BL1 DMS	KQ1805616-02	5/30/2018	12:04:00	
J:\MS29\DATA\053018\0530F007.D\	PDI-SG-B312-BL1	K1803975-021	5/30/2018	12:32:00	
J:\MS29\DATA\053018\0530F008.D\	PDI-SG-B328-BL1	K1803975-022	5/30/2018	13:01:00	
J:\MS29\DATA\053018\0530F009.D\	PDI-SG-B331-BL1	K1803975-023	5/30/2018	13:30:00	
J:\MS29\DATA\053018\0530F010.D\	PDI-SG-B336-BL1	K1803975-024	5/30/2018	13:59:00	
J:\MS29\DATA\053018\0530F011.D\	PDI-SG-B365-BL1	K1803975-025	5/30/2018	14:27:00	
J:\MS29\DATA\053018\0530F012.D\	PDI-SG-B369-BL1	K1803975-026	5/30/2018	14:56:00	
J:\MS29\DATA\053018\0530F013.D\	PDI-SG-B376-BL1	K1803975-027	5/30/2018	15:25:00	
J:\MS29\DATA\053018\0530F014.D\	PDI-SG-B375-BL1	K1803975-028	5/30/2018	15:53:00	
J:\MS29\DATA\053018\0530F015.D\	PDI-SG-B388-BL1	K1803975-029	5/30/2018	16:22:00	
J:\MS29\DATA\053018\0530F016.D\	PDI-SG-B388-BL1-D	K1803975-030	5/30/2018	16:50:00	
J:\MS29\DATA\053018\0530F017.D\	PDI-SG-B381-BL1	K1803975-031	5/30/2018	17:19:00	
J:\MS29\DATA\053018\0530F018.D\	PDI-SG-B381-BL1-D	K1803975-032	5/30/2018	17:47:00	
J:\MS29\DATA\053018\0530F019.D\	PDI-SG-B379-BL1	K1803975-033	5/30/2018	18:16:00	

Prep Summary Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3541 **Extraction Lot:** 312944
Analytical Method: 8270D **Extraction Date:** 05/01/18 09:03

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B351-BL1	K1803975-001	4/29/18	4/30/18	40.475 g	2 mL	43.8
PDI-SG-B353-BL1	K1803975-002	4/29/18	4/30/18	40.345 g	2 mL	42.5
PDI-SG-B359-BL1	K1803975-003	4/29/18	4/30/18	40.431 g	2 mL	41.4
PDI-SG-B361-BL1	K1803975-004	4/29/18	4/30/18	40.205 g	2 mL	44.0
PDI-SG-B364-BL1	K1803975-005	4/29/18	4/30/18	40.155 g	2 mL	42.5
PDI-SG-B370-BL1	K1803975-006	4/29/18	4/30/18	40.154 g	2 mL	58.8
PDI-SG-B371-BL1	K1803975-007	4/29/18	4/30/18	40.012 g	2 mL	39.3
PDI-SG-B408-BL1	K1803975-008	4/28/18	4/30/18	40.235 g	2 mL	59.5
PDI-SG-B386-BL1	K1803975-009	4/28/18	4/30/18	40.074 g	2 mL	44.1
PDI-SG-B385-BL1	K1803975-010	4/28/18	4/30/18	40.217 g	2 mL	42.1
PDI-SG-B360-BL1	K1803975-011	4/28/18	4/30/18	40.093 g	2 mL	45.0
PDI-SG-B350-BL1	K1803975-012	4/28/18	4/30/18	40.093 g	2 mL	41.6
PDI-SG-B400-BL1	K1803975-013	4/28/18	4/30/18	40.154 g	2 mL	38.7
PDI-SG-B343-BL1	K1803975-014	4/28/18	4/30/18	40.445 g	2 mL	49.3
PDI-SG-B340-BL1	K1803975-015	4/28/18	4/30/18	40.069 g	2 mL	50.2
PDI-SG-B347-BL1	K1803975-016	4/28/18	4/30/18	40.475 g	2 mL	50.2
PDI-SG-B347-BL1-D	K1803975-017	4/28/18	4/30/18	40.162 g	2 mL	50.2
PDI-SG-B339-BL1	K1803975-018	4/28/18	4/30/18	40.350 g	2 mL	58.4
PDI-SG-B341-BL1	K1803975-019	4/28/18	4/30/18	40.394 g	2 mL	58.1
PDI-SG-B345-BL1	K1803975-020	4/28/18	4/30/18	40.131 g	2 mL	44.1
Matrix Spike	KQ1805600-01MS	4/29/18	4/30/18	40.260 g	2 mL	44.0
Duplicate Matrix Spike	KQ1805600-02DMS	4/29/18	4/30/18	40.190 g	2 mL	44.0
Lab Control Sample	KQ1805600-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1805600-04MB	NA	NA	40.4750 g	2 mL	

Prep Summary Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3541 **Extraction Lot:** 312961
Analytical Method: 8270D **Extraction Date:** 05/09/18 09:51

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B312-BL1	K1803975-021	4/27/18	4/30/18	40.325 g	2 mL	69.9
PDI-SG-B328-BL1	K1803975-022	4/27/18	4/30/18	40.372 g	2 mL	64.0
PDI-SG-B331-BL1	K1803975-023	4/27/18	4/30/18	40.137 g	2 mL	51.6
PDI-SG-B336-BL1	K1803975-024	4/27/18	4/30/18	40.113 g	2 mL	52.4
PDI-SG-B365-BL1	K1803975-025	4/27/18	4/30/18	40.275 g	2 mL	42.2
PDI-SG-B369-BL1	K1803975-026	4/27/18	4/30/18	40.356 g	2 mL	43.6
PDI-SG-B376-BL1	K1803975-027	4/27/18	4/30/18	40.262 g	2 mL	40.9
PDI-SG-B375-BL1	K1803975-028	4/27/18	4/30/18	40.054 g	2 mL	44.0
PDI-SG-B388-BL1	K1803975-029	4/27/18	4/30/18	40.424 g	2 mL	49.5
PDI-SG-B388-BL1-D	K1803975-030	4/27/18	4/30/18	40.287 g	2 mL	48.9
PDI-SG-B381-BL1	K1803975-031	4/29/18	4/30/18	40.416 g	2 mL	41.9
PDI-SG-B381-BL1-D	K1803975-032	4/29/18	4/30/18	40.070 g	2 mL	41.9
PDI-SG-B379-BL1	K1803975-033	4/29/18	4/30/18	40.375 g	2 mL	38.2
Matrix Spike	KQ1805616-01MS	4/27/18	4/30/18	40.015 g	2 mL	51.6
Duplicate Matrix Spike	KQ1805616-02DMS	4/27/18	4/30/18	40.090 g	2 mL	51.6
Lab Control Sample	KQ1805616-03LCS	NA	NA	20.00 g	2 mL	
Method Blank	KQ1805616-04MB	NA	NA	40.4240 g	2 mL	

Prep Summary Report

Client: AECOM **Service Request:** K1803975
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Water

Low Level Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3520C **Extraction Lot:** 312914
Analytical Method: 8270D **Extraction Date:** 04/30/18 15:43

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-RB-VV-180429-1730	K1803975-034	4/29/18	4/30/18	1050.0000	2 mL	
PDI-RB-VV-180429-1800	K1803975-035	4/29/18	4/30/18	1020.0000	2 mL	
Lab Control Sample	KQ1805575-01LCS	NA	NA	1000 mL	2 mL	
Duplicate Lab Control Sample	KQ1805575-02DLCS	NA	NA	1000 mL	2 mL	
Method Blank	KQ1805575-03MB	NA	NA	1050.0000	2 mL	