



ALS Environmental
ALS Group USA, Corp
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July 31, 2018

Analytical Report for Service Request No: K1803759B

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 23, 2018
For your reference, these analyses have been assigned our service request number **K1803759**.

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



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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.pjllabs.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/bsdwlabservice.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/analyte is offered by that state.



Case Narrative

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

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

Service Request: K1803759
Date Received: 04/23/2018

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 one sediment samples and one water sample were received for analysis at ALS Environmental on 04/23/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Semivolatiles by GC/MS:

Method 8270D, 05/04/2018: The detection limits were elevated for sample PDI-SG-RB-VV-180422 due to less than optimal sample volume extracted for analysis.

Method 8270D SIM-PAH, 05/23/2018: The following analyte could not be adequately resolved in sample PDI-SG-B247-BL1, PDI-SG-B300-BL1, PDI-SG-B262-BL1-D, PDI-SG-B286-BL1 and PDI-SG-B268-BL1: Dibenzo(a,h)anthracene. The result for the affected analyte was flagged with "X" to indicate the issue.

Method 8270D SIM-PAH, 05/22/2018: The internal standard recovery of Chrysene-d12 in sample PDI-SG-B263-BL1 and PDI-SG-B275-BL1 was outside control criteria because of suspected matrix interference. The sample was reanalyzed at a dilution with acceptable results. All analytes associated with the affected internal standards was reported from the diluted analysis. The reporting limits were elevated accordingly. No further corrective action was taken.

Method 8270D SIM-PAH, 05/22-30/2018: The control criteria were exceeded for the following surrogate in matrix spike PDI-SG-B247-BL1MS: Fluorene-d10. A re-extraction and reanalysis was not performed because insufficient hold time remained. No further corrective action was possible.

Method 8270D SIM-PAH, 05/22-30/2018: The matrix spike recovery of several analytes for sample PDI-SG-B247-BL1 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was taken.

Method 8270D SIM-PAH, 05/22-30/2018: The Relative Percent Difference (RPD) for Indeno(1,2,3-cd)pyrene and Benzo(g,h,i)perylene in the replicate matrix spike analyses of PDI-SG-B247-BL1 was outside control criteria. In general, the RPD was relatively high for all spiked compounds, which indicated a low bias in the Matrix Spike (MS). All spike recoveries in the DMS, and associated Laboratory Control Sample (LCS) were within acceptance limits, indicating the analytical batch was in control. No further corrective action was appropriate.

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate with this sample batch. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for this sample.

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS14 \0425F002.D: Indeno(1,2,3-cd)pyrene and Benzo(g,h,i)perylene. 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



Approved by _____

Date 07/31/2018

met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 06/02/2018: The upper control criterion was exceeded for 2,4'-DDE in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte in question. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 06/02/2018: The upper control criterion was exceeded for alpha-Chlordane, cis-Nonachlor, gamma-Chlordane, and trans-Nonachlor in Laboratory Control Sample (LCS) KQ1805336-03. The analytes in question were not detected above the MRL in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 06/02/2018: The upper control criterion was exceeded for 2,4'-DDT, 4,4'-DDT, alpha-Chlordane, cis-Nonachlor, gamma-Chlordane, and trans-Nonachlor in Laboratory Control Sample (LCS) KQ1809004-03. The analytes in question were not detected above the MRL in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 06/02/2018: The upper control criterion was exceeded for 2,4'-DDT, Aldrin and cis-Nonachlor in Laboratory Control Samples (LCS/DLCS) KQ1805400-01/02. The analytes in question were not detected above the MRL in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 06/15/2018: The upper control criterion was exceeded for 4,4'-DDD, alpha-Chlordane, cis-Nonachlor, gamma-Chlordane, and trans-Nonachlor in Laboratory Control Sample (LCS) KQ1805337-03. With the exception of 4,4'-DDD in samples PDI-SG-B247-BL1, PDI-SG-B263-BL1, PDI-SG-B300-BL1, PDI-SG-B262-BL1, PDI-SG-B262-BL1-D, PDI-SG-B286-BL1, PDI-SG-B283-BL1, PDI-SG-B277-BL1, PDI-SG-B268-BL1, PDI-SG-B275-BL1, and PDI-SG-B269-BL1 the analytes in question were not detected above the MRL in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. The data has been flagged to indicate the exceedance.

Method ALS SOP, Organochlorine Pesticides by GC/MS/MS 06/02/2018: The Extraction of samples PDI-SG-B247-BL1, PDI-SG-B263-BL1, PDI-SG-B300-BL1, PDI-SG-B262-BL1, PDI-SG-B262-BL1-D, PDI-SG-B286-BL1, PDI-SG-B283-BL1, PDI-SG-B277-BL1, PDI-SG-B268-BL1, PDI-SG-B275-BL1, and PDI-SG-B269-BL1 was performed on 5/2/18 however the instrument analysis was performed 3 days past the analytical holding time of 40 days due to insufficient instrument capacity. Efforts were made to reanalyze the samples as soon as possible. The data was flagged to indicate the analytical holding time violation.

Semivola GC:

No significant anomalies were noted with this analysis.



Approved by _____

Date 07/31/2018



Chain of Custody

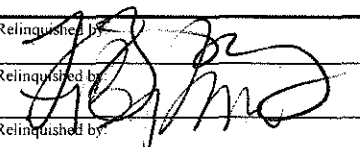
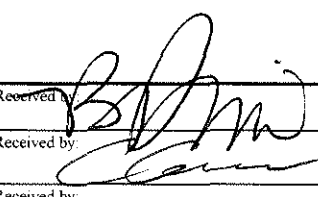
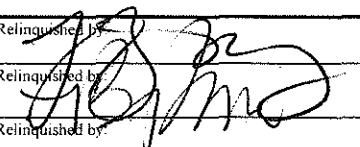
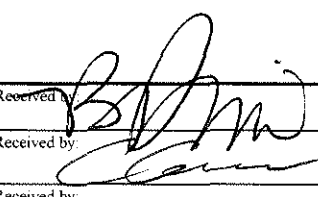
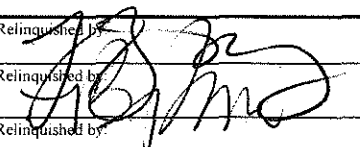
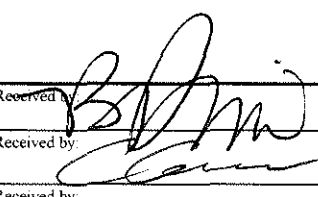
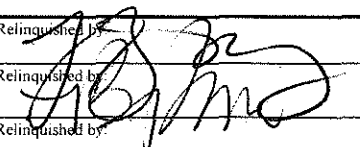
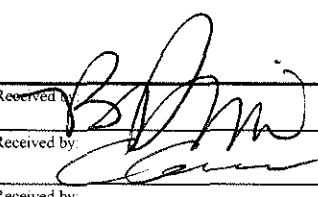
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K1803759

ALS-Environmental-Kelso 1317-S-13th-Ave Kelso, WA 98626 Ph: 360-577-7222 Fax: 360-636-1068							SURFACE SEDIMENT CHAIN OF CUSTODY																					
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment							Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010							Site Contact: Jennifer Ray / Michaela McCoog Laboratory Contact: Howard-Holmes							4/23/2018 COC No: _____ _____ of _____ COCs							
							Analysis Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other _____							Fraction: P=Peccides, PAHs, Total Salts, BHP, Tributyltin, I60PM, 8270-SIM, I60A, 8270-LI, Krom/Unger														
Sample Identification		Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.																					
PDI-SG-B226-BL1	4/20/2018	10:00	SE		LS	1	X																					
PDI-SG-B229-BL1	4/20/2018	11:20	SE		LS	1	X																					
PDI-SG-B231-BL1	4/20/2018	13:40	SE		LS	1	X																					
PDI-SG-B238-BL1	4/20/2018	15:45	SE		LS	1	X																					
PDI-SG-B240-BL1	4/20/2018	16:40	SE		LS	1	X																					
PDI-SG-B230-BL1	4/20/2018	10:24	SE		NM	1	X																					
PDI-SG-B232-BL1	4/20/2018	14:51	SE		NM	1	X																					
PDI-SG-B236-BL1	4/20/2018	15:58	SE		NM	1	X																					
PDI-SG-B239-BL1	4/21/2018	10:48	SE	MS/MSD	NM	3	X																					
PDI-SG-B241-BL1	4/21/2018	11:48	SE		NM	1	X																					
PDI-SG-B245-BL1	4/21/2018	13:03	SE		NM	1	X																					
PDI-SG-B235-BL1	4/21/2018	14:12	SE		NM	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 ☒ Dispose By Lab ☒ Archive For 12 Months																				
Special Instructions/QC Requirements & Comments:																												
Relinquished by: [Signature]		Company: AECOM		Date/Time: 4/23/18/1151		Received by: [Signature]		Company: ALS		Date/Time: 4/23/18 1157																		
Relinquished by: [Signature]		Company: ALS		Date/Time: 4/23/18 1300		Received by: [Signature]		Company: ALS		Date/Time: 4/23/18 1300																		
Relinquished by: [Signature]		Company: ALS		Date/Time:		Received by:		Company:		Date/Time:																		

K1803759

SURFACE SEDIMENT CHAIN OF CUSTODY

ALS-Environmental-Kelso 1317-S-13th-Ave Kelso, WA 98626 Ph: 360-577-7222 Fax: 360-636-1068		Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment										Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other _____										Site Contact: Jennifer Ray / Michaela McCoog Laboratory Contact: Howard-Holmes Carrier: Courier 4/23/2018 COC No. 2 of 3 COCs									
Sample Identification		Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction Pentacdes, PAHs, Total Solids, BOD ₅ , Tributyltin 1669M, 8270-SIM, 1663, 8270-LL, Kron/Unger										Sample Specific Notes:													
PDI-SG-B227-BL1		4/21/2018	15:13	SE		NM	1	X																							
PDI-SG-B222-BL1		4/21/2018	16:12	SE		NM	1	X																							
PDI-SG-B282-BL1		4/21/2018	17:00	SE		NM	1	X																							
PDI-SG-B244-BL1		4/22/2018	10:25	SE		ED	1	X																							
PDI-SG-B248-BL1		4/22/2018	11:40	SE		ED	1	X																							
PDI-SG-B247-BL1		4/22/2018	12:30	SE	MS/MSD	ED	3	X																							
PDI-SG-B249-BL1		4/22/2018	14:25	SE		ED	1	X																							
PDI-SG-B252-BL1		4/22/2018	15:30	SE		ED	1	X																							
PDI-SG-B254-BL1		4/22/2018	16:45	SE		ED	1	X																							
PDI-SG-B263-BL1		4/22/2018	17:25	SE		ED	1	X																							
PDI-SG-B300-BL1		4/22/2018	16:40	SE		AC	1	X																							
PDI-SG-B262-BL1		4/22/2018	9:45	SE		AC	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 ☒ Disposal By Lab ☒ Archive For 12 Months											
Special Instructions/QC Requirements & Comments:																															
Relinquished by: 		Company: AECOM		Date/Time: 4/23/18 1151		Received by: 		Company: ALW		Date/Time: 4/23/18 1151		Relinquished by: 		Company: ALW		Date/Time: 4/23/18 1151		Received by: 		Company: ALS		Date/Time: 4/23/18 1300									
Relinquished by: 		Company: ALW		Date/Time: 4/23/18 1300		Received by: 		Company: ALS		Date/Time: 4/23/18 1300		Relinquished by: 		Company: ALS		Date/Time: 4/23/18 1300		Received by: 		Company: ALS		Date/Time: 4/23/18 1300									

K1803759

[illegible]

PC HH

Cooler Receipt and Preservation Form

Client Accom Service Request K18 03759
 Received: 4/23/18 Opened: 4/23/18 By: CG Unloaded: 4/23/18 By: CG

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? 1 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	Tracking Number	NA	Filed
0.9	0.8	2.8	2.7	-0.1	378	NA		NA	
-0.4	-0.5	5.5	5.4	-0.1	370				

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:



Total Solids

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

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Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Analysis Method: 160.3 Modified
Prep Method: None

Service Request: K1803759
Date Collected: 04/20/18 - 04/22/18
Date Received: 04/23/18
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PDI-SG-B226-BL1	K1803759-001	43.5	-	-	1	04/25/18 13:34	
PDI-SG-B229-BL1	K1803759-002	52.1	-	-	1	04/25/18 13:34	
PDI-SG-B231-BL1	K1803759-003	50.8	-	-	1	04/25/18 13:34	
PDI-SG-B238-BL1	K1803759-004	48.2	-	-	1	04/25/18 13:34	
PDI-SG-B240-BL1	K1803759-005	59.0	-	-	1	04/25/18 13:34	
PDI-SG-B230-BL1	K1803759-006	40.0	-	-	1	04/25/18 13:34	
PDI-SG-B232-BL1	K1803759-007	63.3	-	-	1	04/25/18 13:34	
PDI-SG-B236-BL1	K1803759-008	42.4	-	-	1	04/25/18 13:34	
PDI-SG-B239-BL1	K1803759-009	39.9	-	-	1	04/25/18 13:34	
PDI-SG-B241-BL1	K1803759-010	42.3	-	-	1	04/25/18 13:34	
PDI-SG-B245-BL1	K1803759-011	69.4	-	-	1	04/25/18 13:34	
PDI-SG-B235-BL1	K1803759-012	45.1	-	-	1	04/25/18 13:34	
PDI-SG-B227-BL1	K1803759-013	46.6	-	-	1	04/25/18 13:34	
PDI-SG-B222-BL1	K1803759-014	41.2	-	-	1	04/25/18 13:34	
PDI-SG-B282-BL1	K1803759-015	37.7	-	-	1	04/25/18 13:34	
PDI-SG-B244-BL1	K1803759-016	43.7	-	-	1	04/25/18 13:34	
PDI-SG-B248-BL1	K1803759-017	43.7	-	-	1	04/25/18 13:34	
PDI-SG-B247-BL1	K1803759-018	39.5	-	-	1	04/25/18 13:34	
PDI-SG-B249-BL1	K1803759-019	51.8	-	-	1	04/25/18 13:34	
PDI-SG-B252-BL1	K1803759-020	64.2	-	-	1	04/25/18 13:34	
PDI-SG-B254-BL1	K1803759-021	36.2	-	-	1	04/25/18 15:32	
PDI-SG-B263-BL1	K1803759-022	38.9	-	-	1	04/25/18 15:32	
PDI-SG-B300-BL1	K1803759-023	36.5	-	-	1	04/25/18 15:32	
PDI-SG-B262-BL1	K1803759-024	40.3	-	-	1	04/25/18 15:32	
PDI-SG-B262-BL1-D	K1803759-025	40.2	-	-	1	04/25/18 15:32	
PDI-SG-B286-BL1	K1803759-026	43.3	-	-	1	04/25/18 15:32	
PDI-SG-B283-BL1	K1803759-027	44.9	-	-	1	04/25/18 15:32	
PDI-SG-B277-BL1	K1803759-028	49.6	-	-	1	04/25/18 15:32	
PDI-SG-B268-BL1	K1803759-029	43.7	-	-	1	04/25/18 15:32	
PDI-SG-B275-BL1	K1803759-030	52.9	-	-	1	04/25/18 15:32	
PDI-SG-B269-BL1	K1803759-031	43.5	-	-	1	04/25/18 15:32	

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QA/QC Report

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

Analysis Method: 160.3 Modified
Prep Method: None

Service Request:K1803759
Date Collected:04/21/18 - 04/22/18
Date Received:04/23/18

Units:Percent
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-B239-BL1	K1803759-009DUP	-	-	39.9	39.9	39.9	<1	20	04/25/18
PDI-SG-B247-BL1	K1803759-018DUP	-	-	39.5	39.6	39.6	<1	20	04/25/18
PDI-SG-B254-BL1	K1803759-021DUP	-	-	36.2	35.5	35.9	2	20	04/25/18
PDI-SG-B269-BL1	K1803759-031DUP	-	-	43.5	43.6	43.6	<1	20	04/25/18

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.



Organochlorine Pesticides

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Analytical Report

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

Sample Name: PDI-SG-B226-BL1
Lab Code: K1803759-001

Service Request: K1803759
Date Collected: 04/20/18 10:00
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.57	0.36	5	06/02/18 13:38	4/27/18	
2,4'-DDE	ND U	0.57	0.45	5	06/02/18 13:38	4/27/18	*
2,4'-DDT	ND U	0.57	0.54	5	06/02/18 13:38	4/27/18	
4,4'-DDD	0.76	0.57	0.20	5	06/02/18 13:38	4/27/18	
4,4'-DDE	2.0	0.57	0.40	5	06/02/18 13:38	4/27/18	
4,4'-DDT	0.31 J	0.57	0.27	5	06/02/18 13:38	4/27/18	
Aldrin	ND U	0.57	0.45	5	06/02/18 13:38	4/27/18	
alpha-Chlordane	ND U	1.1	0.36	5	06/02/18 13:38	4/27/18	*
cis-Nonachlor	ND U	0.57	0.55	5	06/02/18 13:38	4/27/18	*
Dieldrin	ND U	1.1	0.44	5	06/02/18 13:38	4/27/18	
gamma-BHC (Lindane)	ND U	0.57	0.18	5	06/02/18 13:38	4/27/18	
gamma-Chlordane	ND U	1.1	0.37	5	06/02/18 13:38	4/27/18	*
Heptachlor	ND U	0.57	0.23	5	06/02/18 13:38	4/27/18	
trans-Nonachlor	ND U	1.1	0.33	5	06/02/18 13:38	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	48	5 - 120	06/02/18 13:38	
S_4,4'-DDT-d4	44	13 - 200	06/02/18 13:38	
S_Aldrin-13C12	23	10 - 143	06/02/18 13:38	
S_Endrin-13C12	45	20 - 157	06/02/18 13:38	
S_GBHC6	25	5 - 124	06/02/18 13:38	
S_Heptachlor-13C10	22	10 - 177	06/02/18 13:38	
S_Heptachlrepox13C10	21	8 - 146	06/02/18 13:38	
S_Oxychlordane-13C10	20	5 - 144	06/02/18 13:38	

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Analytical Report

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

Sample Name: PDI-SG-B229-BL1
Lab Code: K1803759-002

Service Request: K1803759
Date Collected: 04/20/18 11:20
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.49	0.48	0.32	5	06/02/18 14:05	4/27/18	
2,4'-DDE	ND U	0.48	0.40	5	06/02/18 14:05	4/27/18	*
2,4'-DDT	ND U	0.48	0.47	5	06/02/18 14:05	4/27/18	
4,4'-DDD	1.1	0.48	0.18	5	06/02/18 14:05	4/27/18	
4,4'-DDE	1.5	0.48	0.35	5	06/02/18 14:05	4/27/18	
4,4'-DDT	0.38 J	0.48	0.24	5	06/02/18 14:05	4/27/18	
Aldrin	ND U	0.48	0.40	5	06/02/18 14:05	4/27/18	
alpha-Chlordane	ND U	0.96	0.31	5	06/02/18 14:05	4/27/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/02/18 14:05	4/27/18	*
Dieldrin	ND U	1.0	0.39	5	06/02/18 14:05	4/27/18	
gamma-BHC (Lindane)	0.23 J	0.48	0.16	5	06/02/18 14:05	4/27/18	
gamma-Chlordane	ND U	0.96	0.32	5	06/02/18 14:05	4/27/18	*
Heptachlor	ND U	0.48	0.20	5	06/02/18 14:05	4/27/18	
trans-Nonachlor	0.30 J	0.96	0.29	5	06/02/18 14:05	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	53	5 - 120	06/02/18 14:05	
S_4,4'-DDT-d4	54	13 - 200	06/02/18 14:05	
S_Aldrin-13C12	18	10 - 143	06/02/18 14:05	
S_Endrin-13C12	80	20 - 157	06/02/18 14:05	
S_GBHCDD6	15	5 - 124	06/02/18 14:05	
S_Heptachlor-13C10	17	10 - 177	06/02/18 14:05	
S_Heptachlrepox13C10	28	8 - 146	06/02/18 14:05	
S_Oxychlordane-13C10	31	5 - 144	06/02/18 14:05	

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Analytical Report

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

Sample Name: PDI-SG-B231-BL1
Lab Code: K1803759-003

Service Request: K1803759
Date Collected: 04/20/18 13:40
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.48	0.32	5	06/02/18 14:32	4/27/18	
2,4'-DDE	ND U	0.48	0.40	5	06/02/18 14:32	4/27/18	*
2,4'-DDT	ND U	0.48	0.47	5	06/02/18 14:32	4/27/18	
4,4'-DDD	0.60	0.48	0.18	5	06/02/18 14:32	4/27/18	
4,4'-DDE	1.3	0.48	0.35	5	06/02/18 14:32	4/27/18	
4,4'-DDT	0.31 J	0.48	0.24	5	06/02/18 14:32	4/27/18	
Aldrin	ND U	0.48	0.40	5	06/02/18 14:32	4/27/18	
alpha-Chlordane	ND U	0.96	0.31	5	06/02/18 14:32	4/27/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/02/18 14:32	4/27/18	*
Dieldrin	ND U	1.0	0.39	5	06/02/18 14:32	4/27/18	
gamma-BHC (Lindane)	ND U	0.48	0.16	5	06/02/18 14:32	4/27/18	
gamma-Chlordane	ND U	0.96	0.32	5	06/02/18 14:32	4/27/18	*
Heptachlor	ND U	0.48	0.20	5	06/02/18 14:32	4/27/18	
trans-Nonachlor	ND U	0.96	0.29	5	06/02/18 14:32	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	71	5 - 120	06/02/18 14:32	
S_4,4'-DDT-d4	62	13 - 200	06/02/18 14:32	
S_Aldrin-13C12	26	10 - 143	06/02/18 14:32	
S_Endrin-13C12	84	20 - 157	06/02/18 14:32	
S_GBHCDD6	29	5 - 124	06/02/18 14:32	
S_Heptachlor-13C10	29	10 - 177	06/02/18 14:32	
S_Heptachlrepox13C10	28	8 - 146	06/02/18 14:32	
S_Oxychlordane-13C10	38	5 - 144	06/02/18 14:32	

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Analytical Report

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

Sample Name: PDI-SG-B238-BL1
Lab Code: K1803759-004

Service Request: K1803759
Date Collected: 04/20/18 15:45
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.46 J	0.51	0.33	5	06/02/18 15:00	4/27/18	
2,4'-DDE	ND U	0.51	0.41	5	06/02/18 15:00	4/27/18	*
2,4'-DDT	ND U	0.51	0.49	5	06/02/18 15:00	4/27/18	
4,4'-DDD	1.5	0.51	0.18	5	06/02/18 15:00	4/27/18	
4,4'-DDE	2.0	0.51	0.36	5	06/02/18 15:00	4/27/18	
4,4'-DDT	1.0	0.51	0.25	5	06/02/18 15:00	4/27/18	
Aldrin	ND U	0.51	0.41	5	06/02/18 15:00	4/27/18	
alpha-Chlordane	ND U	1.0	0.32	5	06/02/18 15:00	4/27/18	*
cis-Nonachlor	ND U	0.51	0.50	5	06/02/18 15:00	4/27/18	*
Dieldrin	ND U	1.0	0.40	5	06/02/18 15:00	4/27/18	
gamma-BHC (Lindane)	ND U	0.51	0.16	5	06/02/18 15:00	4/27/18	
gamma-Chlordane	0.39 J	1.0	0.33	5	06/02/18 15:00	4/27/18	*
Heptachlor	ND U	0.51	0.20	5	06/02/18 15:00	4/27/18	
trans-Nonachlor	ND U	1.0	0.30	5	06/02/18 15:00	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	62	5 - 120	06/02/18 15:00	
S_4,4'-DDT-d4	57	13 - 200	06/02/18 15:00	
S_Aldrin-13C12	18	10 - 143	06/02/18 15:00	
S_Endrin-13C12	72	20 - 157	06/02/18 15:00	
S_GBHC6	24	5 - 124	06/02/18 15:00	
S_Heptachlor-13C10	25	10 - 177	06/02/18 15:00	
S_Heptachlrepox13C10	27	8 - 146	06/02/18 15:00	
S_Oxychlordane-13C10	33	5 - 144	06/02/18 15:00	

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Analytical Report

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

Sample Name: PDI-SG-B240-BL1
Lab Code: K1803759-005

Service Request: K1803759
Date Collected: 04/20/18 16:40
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.33 J	0.42	0.32	5	06/02/18 15:27	4/27/18	
2,4'-DDE	ND U	0.42	0.40	5	06/02/18 15:27	4/27/18	*
2,4'-DDT	ND U	0.47	0.47	5	06/02/18 15:27	4/27/18	
4,4'-DDD	1.2	0.42	0.18	5	06/02/18 15:27	4/27/18	
4,4'-DDE	2.0	0.42	0.35	5	06/02/18 15:27	4/27/18	
4,4'-DDT	0.81	0.42	0.24	5	06/02/18 15:27	4/27/18	
Aldrin	ND U	0.42	0.40	5	06/02/18 15:27	4/27/18	
alpha-Chlordane	ND U	0.84	0.31	5	06/02/18 15:27	4/27/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/02/18 15:27	4/27/18	*
Dieldrin	0.44 J	1.0	0.39	5	06/02/18 15:27	4/27/18	
gamma-BHC (Lindane)	ND U	0.42	0.16	5	06/02/18 15:27	4/27/18	
gamma-Chlordane	ND U	0.84	0.32	5	06/02/18 15:27	4/27/18	*
Heptachlor	ND U	0.42	0.20	5	06/02/18 15:27	4/27/18	
trans-Nonachlor	ND U	0.84	0.29	5	06/02/18 15:27	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	06/02/18 15:27	
S_4,4'-DDT-d4	57	13 - 200	06/02/18 15:27	
S_Aldrin-13C12	25	10 - 143	06/02/18 15:27	
S_Endrin-13C12	63	20 - 157	06/02/18 15:27	
S_GBHC6	26	5 - 124	06/02/18 15:27	
S_Heptachlor-13C10	27	10 - 177	06/02/18 15:27	
S_Heptachlrepox13C10	31	8 - 146	06/02/18 15:27	
S_Oxychlordane-13C10	37	5 - 144	06/02/18 15:27	

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Analytical Report

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

Sample Name: PDI-SG-B230-BL1
Lab Code: K1803759-006

Service Request: K1803759
Date Collected: 04/20/18 10:24
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	2.3 J	2.3	1.5	1	07/20/18 22:38	7/6/18	
2,4'-DDE	ND U	2.3	1.9	1	07/20/18 22:38	7/6/18	
2,4'-DDT	ND U	2.3	2.3	1	07/20/18 22:38	7/6/18	*
4,4'-DDD	5.4	2.3	0.83	1	07/20/18 22:38	7/6/18	
4,4'-DDE	4.9	2.3	1.7	1	07/20/18 22:38	7/6/18	
4,4'-DDT	1.5 J	2.3	1.2	1	07/20/18 22:38	7/6/18	*
Aldrin	ND U	2.3	1.9	1	07/20/18 22:38	7/6/18	
alpha-Chlordane	ND U	4.7	1.5	1	07/20/18 22:38	7/6/18	*
cis-Nonachlor	ND U	2.3	2.3	1	07/20/18 22:38	7/6/18	*
Dieldrin	ND U	4.7	1.9	1	07/20/18 22:38	7/6/18	
gamma-BHC (Lindane)	ND U	2.3	0.73	1	07/20/18 22:38	7/6/18	
gamma-Chlordane	ND U	4.7	1.5	1	07/20/18 22:38	7/6/18	*
Heptachlor	ND U	2.3	0.92	1	07/20/18 22:38	7/6/18	
trans-Nonachlor	ND U	4.7	1.4	1	07/20/18 22:38	7/6/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	69	5 - 120	07/20/18 22:38	
S_4,4'-DDT-d4	83	13 - 200	07/20/18 22:38	
S_Aldrin-13C12	25	10 - 143	07/20/18 22:38	
S_Endrin-13C12	60	20 - 157	07/20/18 22:38	
S_GBHC6	32	5 - 124	07/20/18 22:38	
S_Heptachlor-13C10	38	10 - 177	07/20/18 22:38	
S_Heptachlrepox13C10	37	8 - 146	07/20/18 22:38	
S_Oxychlordane-13C10	38	5 - 144	07/20/18 22:38	

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Analytical Report

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

Sample Name: PDI-SG-B232-BL1
Lab Code: K1803759-007

Service Request: K1803759
Date Collected: 04/20/18 14:51
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	4.8	1.5	0.97	1	07/20/18 23:05	7/6/18	
2,4'-DDE	ND U	1.5	1.3	1	07/20/18 23:05	7/6/18	
2,4'-DDT	ND U	1.5	1.5	1	07/20/18 23:05	7/6/18	*
4,4'-DDD	10	1.5	0.54	1	07/20/18 23:05	7/6/18	
4,4'-DDE	3.5	1.5	1.1	1	07/20/18 23:05	7/6/18	
4,4'-DDT	0.77 J	1.5	0.72	1	07/20/18 23:05	7/6/18	*
Aldrin	ND U	1.5	1.3	1	07/20/18 23:05	7/6/18	
alpha-Chlordane	ND U	3.0	0.95	1	07/20/18 23:05	7/6/18	*
cis-Nonachlor	ND U	1.5	1.5	1	07/20/18 23:05	7/6/18	*
Dieldrin	ND U	3.0	1.2	1	07/20/18 23:05	7/6/18	
gamma-BHC (Lindane)	ND U	1.5	0.48	1	07/20/18 23:05	7/6/18	
gamma-Chlordane	ND U	3.0	0.98	1	07/20/18 23:05	7/6/18	*
Heptachlor	ND U	1.5	0.60	1	07/20/18 23:05	7/6/18	
trans-Nonachlor	ND U	3.0	0.89	1	07/20/18 23:05	7/6/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	69	5 - 120	07/20/18 23:05	
S_4,4'-DDT-d4	76	13 - 200	07/20/18 23:05	
S_Aldrin-13C12	29	10 - 143	07/20/18 23:05	
S_Endrin-13C12	59	20 - 157	07/20/18 23:05	
S_GBHCDD6	27	5 - 124	07/20/18 23:05	
S_Heptachlor-13C10	33	10 - 177	07/20/18 23:05	
S_Heptachlrepox13C10	36	8 - 146	07/20/18 23:05	
S_Oxychlordane-13C10	36	5 - 144	07/20/18 23:05	

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Analytical Report

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

Sample Name: PDI-SG-B236-BL1
Lab Code: K1803759-008

Service Request: K1803759
Date Collected: 04/20/18 15:58
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.71	0.59	0.38	5	06/02/18 16:49	4/27/18	
2,4'-DDE	ND U	0.59	0.47	5	06/02/18 16:49	4/27/18	*
2,4'-DDT	ND U	0.59	0.56	5	06/02/18 16:49	4/27/18	
4,4'-DDD	2.0	0.59	0.21	5	06/02/18 16:49	4/27/18	
4,4'-DDE	2.2	0.59	0.42	5	06/02/18 16:49	4/27/18	
4,4'-DDT	0.67	0.59	0.28	5	06/02/18 16:49	4/27/18	
Aldrin	ND U	0.59	0.47	5	06/02/18 16:49	4/27/18	
alpha-Chlordane	0.38 J	1.2	0.37	5	06/02/18 16:49	4/27/18	*
cis-Nonachlor	ND U	0.59	0.58	5	06/02/18 16:49	4/27/18	*
Dieldrin	ND U	1.2	0.46	5	06/02/18 16:49	4/27/18	
gamma-BHC (Lindane)	ND U	0.59	0.19	5	06/02/18 16:49	4/27/18	
gamma-Chlordane	ND U	1.2	0.38	5	06/02/18 16:49	4/27/18	*
Heptachlor	ND U	0.59	0.23	5	06/02/18 16:49	4/27/18	
trans-Nonachlor	ND U	1.2	0.35	5	06/02/18 16:49	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	54	5 - 120	06/02/18 16:49	
S_4,4'-DDT-d4	46	13 - 200	06/02/18 16:49	
S_Aldrin-13C12	17	10 - 143	06/02/18 16:49	
S_Endrin-13C12	56	20 - 157	06/02/18 16:49	
S_GBHCDD6	20	5 - 124	06/02/18 16:49	
S_Heptachlor-13C10	20	10 - 177	06/02/18 16:49	
S_Heptachlrepox13C10	19	8 - 146	06/02/18 16:49	
S_Oxychlordane-13C10	23	5 - 144	06/02/18 16:49	

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Analytical Report

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

Sample Name: PDI-SG-B239-BL1
Lab Code: K1803759-009

Service Request: K1803759
Date Collected: 04/21/18 10:48
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	1.1	0.61	0.39	5	06/02/18 17:17	4/27/18	
2,4'-DDE	ND U	0.61	0.49	5	06/02/18 17:17	4/27/18	*
2,4'-DDT	ND U	0.61	0.58	5	06/02/18 17:17	4/27/18	
4,4'-DDD	3.0	0.61	0.22	5	06/02/18 17:17	4/27/18	
4,4'-DDE	2.9	0.61	0.44	5	06/02/18 17:17	4/27/18	
4,4'-DDT	0.96	0.61	0.29	5	06/02/18 17:17	4/27/18	
Aldrin	ND U	0.61	0.49	5	06/02/18 17:17	4/27/18	
alpha-Chlordane	ND U	1.2	0.39	5	06/02/18 17:17	4/27/18	*
cis-Nonachlor	ND U	0.61	0.60	5	06/02/18 17:17	4/27/18	*
Dieldrin	ND U	1.2	0.48	5	06/02/18 17:17	4/27/18	
gamma-BHC (Lindane)	ND U	0.61	0.20	5	06/02/18 17:17	4/27/18	
gamma-Chlordane	ND U	1.2	0.40	5	06/02/18 17:17	4/27/18	*
Heptachlor	ND U	0.61	0.24	5	06/02/18 17:17	4/27/18	
trans-Nonachlor	ND U	1.2	0.36	5	06/02/18 17:17	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	67	5 - 120	06/02/18 17:17	
S_4,4'-DDT-d4	62	13 - 200	06/02/18 17:17	
S_Aldrin-13C12	19	10 - 143	06/02/18 17:17	
S_Endrin-13C12	59	20 - 157	06/02/18 17:17	
S_GBHC6	22	5 - 124	06/02/18 17:17	
S_Heptachlor-13C10	22	10 - 177	06/02/18 17:17	
S_Heptachlrepox13C10	26	8 - 146	06/02/18 17:17	
S_Oxychlordane-13C10	34	5 - 144	06/02/18 17:17	

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Analytical Report

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

Sample Name: PDI-SG-B241-BL1
Lab Code: K1803759-010

Service Request: K1803759
Date Collected: 04/21/18 11:48
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.90	0.58	0.37	5	06/02/18 17:44	4/27/18	
2,4'-DDE	ND U	0.58	0.46	5	06/02/18 17:44	4/27/18	*
2,4'-DDT	ND U	0.58	0.55	5	06/02/18 17:44	4/27/18	
4,4'-DDD	2.2	0.58	0.21	5	06/02/18 17:44	4/27/18	
4,4'-DDE	2.6	0.58	0.41	5	06/02/18 17:44	4/27/18	
4,4'-DDT	0.46 J	0.58	0.28	5	06/02/18 17:44	4/27/18	
Aldrin	ND U	0.58	0.46	5	06/02/18 17:44	4/27/18	
alpha-Chlordane	ND U	1.2	0.36	5	06/02/18 17:44	4/27/18	*
cis-Nonachlor	ND U	0.58	0.57	5	06/02/18 17:44	4/27/18	*
Dieldrin	ND U	1.2	0.45	5	06/02/18 17:44	4/27/18	
gamma-BHC (Lindane)	ND U	0.58	0.18	5	06/02/18 17:44	4/27/18	
gamma-Chlordane	0.42 J	1.2	0.37	5	06/02/18 17:44	4/27/18	*
Heptachlor	ND U	0.58	0.23	5	06/02/18 17:44	4/27/18	
trans-Nonachlor	ND U	1.2	0.34	5	06/02/18 17:44	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	59	5 - 120	06/02/18 17:44	
S_4,4'-DDT-d4	54	13 - 200	06/02/18 17:44	
S_Aldrin-13C12	15	10 - 143	06/02/18 17:44	
S_Endrin-13C12	65	20 - 157	06/02/18 17:44	
S_GBHC6	21	5 - 124	06/02/18 17:44	
S_Heptachlor-13C10	18	10 - 177	06/02/18 17:44	
S_Heptachlrepox13C10	22	8 - 146	06/02/18 17:44	
S_Oxychlordane-13C10	20	5 - 144	06/02/18 17:44	

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Analytical Report

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

Sample Name: PDI-SG-B245-BL1
Lab Code: K1803759-011

Service Request: K1803759
Date Collected: 04/21/18 13:03
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.36	0.32	5	06/02/18 21:40	4/27/18	
2,4'-DDE	ND U	0.40	0.40	5	06/02/18 21:40	4/27/18	*
2,4'-DDT	ND U	0.47	0.47	5	06/02/18 21:40	4/27/18	
4,4'-DDD	0.47	0.36	0.18	5	06/02/18 21:40	4/27/18	
4,4'-DDE	0.38	0.36	0.35	5	06/02/18 21:40	4/27/18	
4,4'-DDT	0.71	0.36	0.24	5	06/02/18 21:40	4/27/18	
Aldrin	ND U	0.40	0.40	5	06/02/18 21:40	4/27/18	
alpha-Chlordane	ND U	0.71	0.31	5	06/02/18 21:40	4/27/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/02/18 21:40	4/27/18	*
Dieldrin	ND U	1.0	0.39	5	06/02/18 21:40	4/27/18	
gamma-BHC (Lindane)	ND U	0.36	0.16	5	06/02/18 21:40	4/27/18	
gamma-Chlordane	ND U	0.71	0.32	5	06/02/18 21:40	4/27/18	*
Heptachlor	ND U	0.36	0.20	5	06/02/18 21:40	4/27/18	
trans-Nonachlor	ND U	0.71	0.29	5	06/02/18 21:40	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	82	5 - 120	06/02/18 21:40	
S_4,4'-DDT-d4	68	13 - 200	06/02/18 21:40	
S_Aldrin-13C12	27	10 - 143	06/02/18 21:40	
S_Endrin-13C12	89	20 - 157	06/02/18 21:40	
S_GBHCD6	29	5 - 124	06/02/18 21:40	
S_Heptachlor-13C10	27	10 - 177	06/02/18 21:40	
S_Heptachlrepox13C10	32	8 - 146	06/02/18 21:40	
S_Oxychlordane-13C10	31	5 - 144	06/02/18 21:40	

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Analytical Report

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

Sample Name: PDI-SG-B235-BL1
Lab Code: K1803759-012

Service Request: K1803759
Date Collected: 04/21/18 14:12
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.55	0.35	5	06/02/18 22:07	4/27/18	
2,4'-DDE	ND U	0.55	0.44	5	06/02/18 22:07	4/27/18	*
2,4'-DDT	ND U	0.55	0.52	5	06/02/18 22:07	4/27/18	
4,4'-DDD	0.85	0.55	0.20	5	06/02/18 22:07	4/27/18	
4,4'-DDE	1.7	0.55	0.39	5	06/02/18 22:07	4/27/18	
4,4'-DDT	0.31 J	0.55	0.26	5	06/02/18 22:07	4/27/18	
Aldrin	ND U	0.55	0.44	5	06/02/18 22:07	4/27/18	
alpha-Chlordane	ND U	1.1	0.35	5	06/02/18 22:07	4/27/18	*
cis-Nonachlor	ND U	0.55	0.54	5	06/02/18 22:07	4/27/18	*
Dieldrin	ND U	1.1	0.43	5	06/02/18 22:07	4/27/18	
gamma-BHC (Lindane)	ND U	0.55	0.18	5	06/02/18 22:07	4/27/18	
gamma-Chlordane	ND U	1.1	0.36	5	06/02/18 22:07	4/27/18	*
Heptachlor	ND U	0.55	0.22	5	06/02/18 22:07	4/27/18	
trans-Nonachlor	ND U	1.1	0.32	5	06/02/18 22:07	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	72	5 - 120	06/02/18 22:07	
S_4,4'-DDT-d4	61	13 - 200	06/02/18 22:07	
S_Aldrin-13C12	23	10 - 143	06/02/18 22:07	
S_Endrin-13C12	92	20 - 157	06/02/18 22:07	
S_GBHCDD6	29	5 - 124	06/02/18 22:07	
S_Heptachlor-13C10	32	10 - 177	06/02/18 22:07	
S_Heptachlrepox13C10	36	8 - 146	06/02/18 22:07	
S_Oxychlordane-13C10	38	5 - 144	06/02/18 22:07	

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Analytical Report

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

Sample Name: PDI-SG-B227-BL1
Lab Code: K1803759-013

Service Request: K1803759
Date Collected: 04/21/18 15:13
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.53	0.34	5	06/02/18 22:34	4/27/18	
2,4'-DDE	ND U	0.53	0.42	5	06/02/18 22:34	4/27/18	*
2,4'-DDT	ND U	0.53	0.50	5	06/02/18 22:34	4/27/18	
4,4'-DDD	0.74	0.53	0.19	5	06/02/18 22:34	4/27/18	
4,4'-DDE	1.5	0.53	0.38	5	06/02/18 22:34	4/27/18	
4,4'-DDT	0.34 J	0.53	0.25	5	06/02/18 22:34	4/27/18	
Aldrin	ND U	0.53	0.42	5	06/02/18 22:34	4/27/18	
alpha-Chlordane	ND U	1.1	0.33	5	06/02/18 22:34	4/27/18	*
cis-Nonachlor	ND U	0.53	0.52	5	06/02/18 22:34	4/27/18	*
Dieldrin	ND U	1.1	0.41	5	06/02/18 22:34	4/27/18	
gamma-BHC (Lindane)	ND U	0.53	0.17	5	06/02/18 22:34	4/27/18	
gamma-Chlordane	ND U	1.1	0.34	5	06/02/18 22:34	4/27/18	*
Heptachlor	ND U	0.53	0.21	5	06/02/18 22:34	4/27/18	
trans-Nonachlor	ND U	1.1	0.31	5	06/02/18 22:34	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	62	5 - 120	06/02/18 22:34	
S_4,4'-DDT-d4	53	13 - 200	06/02/18 22:34	
S_Aldrin-13C12	22	10 - 143	06/02/18 22:34	
S_Endrin-13C12	60	20 - 157	06/02/18 22:34	
S_GBHC6	27	5 - 124	06/02/18 22:34	
S_Heptachlor-13C10	27	10 - 177	06/02/18 22:34	
S_Heptachlrepox13C10	26	8 - 146	06/02/18 22:34	
S_Oxychlordane-13C10	27	5 - 144	06/02/18 22:34	

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Analytical Report

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

Sample Name: PDI-SG-B222-BL1
Lab Code: K1803759-014

Service Request: K1803759
Date Collected: 04/21/18 16:12
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.59 J	0.60	0.38	5	06/02/18 23:01	4/27/18	
2,4'-DDE	ND U	0.60	0.48	5	06/02/18 23:01	4/27/18	*
2,4'-DDT	ND U	0.60	0.57	5	06/02/18 23:01	4/27/18	
4,4'-DDD	1.5	0.60	0.21	5	06/02/18 23:01	4/27/18	
4,4'-DDE	2.1	0.60	0.42	5	06/02/18 23:01	4/27/18	
4,4'-DDT	0.94	0.60	0.29	5	06/02/18 23:01	4/27/18	
Aldrin	ND U	0.60	0.48	5	06/02/18 23:01	4/27/18	
alpha-Chlordane	ND U	1.2	0.38	5	06/02/18 23:01	4/27/18	*
cis-Nonachlor	ND U	0.60	0.58	5	06/02/18 23:01	4/27/18	*
Dieldrin	ND U	1.2	0.46	5	06/02/18 23:01	4/27/18	
gamma-BHC (Lindane)	ND U	0.60	0.19	5	06/02/18 23:01	4/27/18	
gamma-Chlordane	ND U	1.2	0.39	5	06/02/18 23:01	4/27/18	*
Heptachlor	ND U	0.60	0.24	5	06/02/18 23:01	4/27/18	
trans-Nonachlor	ND U	1.2	0.35	5	06/02/18 23:01	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	69	5 - 120	06/02/18 23:01	
S_4,4'-DDT-d4	67	13 - 200	06/02/18 23:01	
S_Aldrin-13C12	19	10 - 143	06/02/18 23:01	
S_Endrin-13C12	67	20 - 157	06/02/18 23:01	
S_GBHC6	25	5 - 124	06/02/18 23:01	
S_Heptachlor-13C10	27	10 - 177	06/02/18 23:01	
S_Heptachlrepox13C10	27	8 - 146	06/02/18 23:01	
S_Oxychlordane-13C10	41	5 - 144	06/02/18 23:01	

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Analytical Report

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

Sample Name: PDI-SG-B282-BL1
Lab Code: K1803759-015

Service Request: K1803759
Date Collected: 04/21/18 17:00
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.66	0.42	5	06/02/18 23:29	4/27/18	
2,4'-DDE	ND U	0.66	0.52	5	06/02/18 23:29	4/27/18	*
2,4'-DDT	ND U	0.66	0.62	5	06/02/18 23:29	4/27/18	
4,4'-DDD	0.82	0.66	0.23	5	06/02/18 23:29	4/27/18	
4,4'-DDE	1.9	0.66	0.46	5	06/02/18 23:29	4/27/18	
4,4'-DDT	0.55 J	0.66	0.31	5	06/02/18 23:29	4/27/18	
Aldrin	ND U	0.66	0.52	5	06/02/18 23:29	4/27/18	
alpha-Chlordane	ND U	1.3	0.41	5	06/02/18 23:29	4/27/18	*
cis-Nonachlor	ND U	0.66	0.64	5	06/02/18 23:29	4/27/18	*
Dieldrin	ND U	1.3	0.51	5	06/02/18 23:29	4/27/18	
gamma-BHC (Lindane)	ND U	0.66	0.21	5	06/02/18 23:29	4/27/18	
gamma-Chlordane	ND U	1.3	0.43	5	06/02/18 23:29	4/27/18	*
Heptachlor	ND U	0.66	0.26	5	06/02/18 23:29	4/27/18	
trans-Nonachlor	ND U	1.3	0.39	5	06/02/18 23:29	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	52	5 - 120	06/02/18 23:29	
S_4,4'-DDT-d4	39	13 - 200	06/02/18 23:29	
S_Aldrin-13C12	15	10 - 143	06/02/18 23:29	
S_Endrin-13C12	61	20 - 157	06/02/18 23:29	
S_GBHC6	21	5 - 124	06/02/18 23:29	
S_Heptachlor-13C10	23	10 - 177	06/02/18 23:29	
S_Heptachlrepox13C10	24	8 - 146	06/02/18 23:29	
S_Oxychlordane-13C10	26	5 - 144	06/02/18 23:29	

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Analytical Report

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

Service Request: K1803759
Date Collected: 04/22/18 10:25
Date Received: 04/23/18 13:00

Sample Name: PDI-SG-B244-BL1
Lab Code: K1803759-016

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	2.3	1.5	1	07/20/18 23:33	7/6/18	
2,4'-DDE	ND U	2.3	1.8	1	07/20/18 23:33	7/6/18	
2,4'-DDT	ND U	2.3	2.2	1	07/20/18 23:33	7/6/18	*
4,4'-DDD	3.0	2.3	0.79	1	07/20/18 23:33	7/6/18	
4,4'-DDE	3.6	2.3	1.6	1	07/20/18 23:33	7/6/18	
4,4'-DDT	ND U	2.3	1.1	1	07/20/18 23:33	7/6/18	*
Aldrin	ND U	2.3	1.8	1	07/20/18 23:33	7/6/18	
alpha-Chlordane	ND U	4.5	1.4	1	07/20/18 23:33	7/6/18	*
cis-Nonachlor	ND U	2.3	2.2	1	07/20/18 23:33	7/6/18	*
Dieldrin	ND U	4.5	1.8	1	07/20/18 23:33	7/6/18	
gamma-BHC (Lindane)	ND U	2.3	0.70	1	07/20/18 23:33	7/6/18	
gamma-Chlordane	ND U	4.5	1.5	1	07/20/18 23:33	7/6/18	*
Heptachlor	ND U	2.3	0.88	1	07/20/18 23:33	7/6/18	
trans-Nonachlor	ND U	4.5	1.4	1	07/20/18 23:33	7/6/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	66	5 - 120	07/20/18 23:33	
S_4,4'-DDT-d4	71	13 - 200	07/20/18 23:33	
S_Aldrin-13C12	27	10 - 143	07/20/18 23:33	
S_Endrin-13C12	55	20 - 157	07/20/18 23:33	
S_GBHCDD6	32	5 - 124	07/20/18 23:33	
S_Heptachlor-13C10	35	10 - 177	07/20/18 23:33	
S_Heptachlrepox13C10	38	8 - 146	07/20/18 23:33	
S_Oxychlordane-13C10	42	5 - 144	07/20/18 23:33	

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Analytical Report

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

Sample Name: PDI-SG-B248-BL1
Lab Code: K1803759-017

Service Request: K1803759
Date Collected: 04/22/18 11:40
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.69	0.57	0.36	5	06/03/18 00:23	4/27/18	
2,4'-DDE	ND U	0.57	0.46	5	06/03/18 00:23	4/27/18	*
2,4'-DDT	ND U	0.57	0.54	5	06/03/18 00:23	4/27/18	
4,4'-DDD	1.4	0.57	0.20	5	06/03/18 00:23	4/27/18	
4,4'-DDE	3.0	0.57	0.40	5	06/03/18 00:23	4/27/18	
4,4'-DDT	0.88	0.57	0.27	5	06/03/18 00:23	4/27/18	
Aldrin	ND U	0.57	0.46	5	06/03/18 00:23	4/27/18	
alpha-Chlordane	ND U	1.1	0.36	5	06/03/18 00:23	4/27/18	*
cis-Nonachlor	ND U	0.57	0.56	5	06/03/18 00:23	4/27/18	*
Dieldrin	ND U	1.1	0.44	5	06/03/18 00:23	4/27/18	
gamma-BHC (Lindane)	0.43 J	0.57	0.18	5	06/03/18 00:23	4/27/18	
gamma-Chlordane	0.41 J	1.1	0.37	5	06/03/18 00:23	4/27/18	*
Heptachlor	ND U	0.57	0.23	5	06/03/18 00:23	4/27/18	
trans-Nonachlor	0.35 J	1.1	0.34	5	06/03/18 00:23	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	06/03/18 00:23	
S_4,4'-DDT-d4	59	13 - 200	06/03/18 00:23	
S_Aldrin-13C12	18	10 - 143	06/03/18 00:23	
S_Endrin-13C12	93	20 - 157	06/03/18 00:23	
S_GBHCD6	17	5 - 124	06/03/18 00:23	
S_Heptachlor-13C10	20	10 - 177	06/03/18 00:23	
S_Heptachlrepox13C10	33	8 - 146	06/03/18 00:23	
S_Oxychlordane-13C10	43	5 - 144	06/03/18 00:23	

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Analytical Report

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

Sample Name: PDI-SG-B247-BL1
Lab Code: K1803759-018

Service Request: K1803759
Date Collected: 04/22/18 12:30
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.63	0.40	5	06/15/18 19:13	5/2/18	*
2,4'-DDE	ND U	0.63	0.50	5	06/15/18 19:13	5/2/18	*
2,4'-DDT	ND U	0.63	0.59	5	06/15/18 19:13	5/2/18	*
4,4'-DDD	0.91	0.63	0.22	5	06/15/18 19:13	5/2/18	*
4,4'-DDE	2.0	0.63	0.44	5	06/15/18 19:13	5/2/18	*
4,4'-DDT	0.34 J	0.63	0.30	5	06/15/18 19:13	5/2/18	*
Aldrin	ND U	0.63	0.50	5	06/15/18 19:13	5/2/18	*
alpha-Chlordane	ND U	1.3	0.39	5	06/15/18 19:13	5/2/18	*
cis-Nonachlor	ND U	0.63	0.61	5	06/15/18 19:13	5/2/18	*
Dieldrin	ND U	1.3	0.49	5	06/15/18 19:13	5/2/18	*
gamma-BHC (Lindane)	ND U	0.63	0.20	5	06/15/18 19:13	5/2/18	*
gamma-Chlordane	ND U	1.3	0.41	5	06/15/18 19:13	5/2/18	*
Heptachlor	ND U	0.63	0.25	5	06/15/18 19:13	5/2/18	*
trans-Nonachlor	ND U	1.3	0.37	5	06/15/18 19:13	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	06/15/18 19:13	
S_4,4'-DDT-d4	71	13 - 200	06/15/18 19:13	
S_Aldrin-13C12	34	10 - 143	06/15/18 19:13	
S_Endrin-13C12	94	20 - 157	06/15/18 19:13	
S_GBHCDD6	43	5 - 124	06/15/18 19:13	
S_Heptachlor-13C10	46	10 - 177	06/15/18 19:13	
S_Heptachlrepx13C10	50	8 - 146	06/15/18 19:13	
S_Oxychlordane-13C10	55	5 - 144	06/15/18 19:13	

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Analytical Report

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

Sample Name: PDI-SG-B249-BL1
Lab Code: K1803759-019

Service Request: K1803759
Date Collected: 04/22/18 14:25
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.48	0.32	5	06/03/18 00:50	4/27/18	
2,4'-DDE	ND U	0.48	0.40	5	06/03/18 00:50	4/27/18	*
2,4'-DDT	ND U	0.48	0.47	5	06/03/18 00:50	4/27/18	
4,4'-DDD	0.60	0.48	0.18	5	06/03/18 00:50	4/27/18	
4,4'-DDE	1.1	0.48	0.35	5	06/03/18 00:50	4/27/18	
4,4'-DDT	0.44 J	0.48	0.24	5	06/03/18 00:50	4/27/18	
Aldrin	ND U	0.48	0.40	5	06/03/18 00:50	4/27/18	
alpha-Chlordane	ND U	0.95	0.31	5	06/03/18 00:50	4/27/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/03/18 00:50	4/27/18	*
Dieldrin	ND U	1.0	0.39	5	06/03/18 00:50	4/27/18	
gamma-BHC (Lindane)	ND U	0.48	0.16	5	06/03/18 00:50	4/27/18	
gamma-Chlordane	ND U	0.95	0.32	5	06/03/18 00:50	4/27/18	*
Heptachlor	ND U	0.48	0.20	5	06/03/18 00:50	4/27/18	
trans-Nonachlor	ND U	0.95	0.29	5	06/03/18 00:50	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	06/03/18 00:50	
S_4,4'-DDT-d4	57	13 - 200	06/03/18 00:50	
S_Aldrin-13C12	20	10 - 143	06/03/18 00:50	
S_Endrin-13C12	67	20 - 157	06/03/18 00:50	
S_GBHCDD6	32	5 - 124	06/03/18 00:50	
S_Heptachlor-13C10	26	10 - 177	06/03/18 00:50	
S_Heptachlrepox13C10	22	8 - 146	06/03/18 00:50	
S_Oxychlordane-13C10	29	5 - 144	06/03/18 00:50	

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Analytical Report

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

Sample Name: PDI-SG-B252-BL1
Lab Code: K1803759-020

Service Request: K1803759
Date Collected: 04/22/18 15:30
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.33 J	0.39	0.32	5	06/03/18 01:18	4/27/18	
2,4'-DDE	ND U	0.40	0.40	5	06/03/18 01:18	4/27/18	*
2,4'-DDT	ND U	0.47	0.47	5	06/03/18 01:18	4/27/18	
4,4'-DDD	1.3	0.39	0.18	5	06/03/18 01:18	4/27/18	
4,4'-DDE	1.6	0.39	0.35	5	06/03/18 01:18	4/27/18	
4,4'-DDT	0.74	0.39	0.24	5	06/03/18 01:18	4/27/18	
Aldrin	ND U	0.40	0.40	5	06/03/18 01:18	4/27/18	
alpha-Chlordane	ND U	0.78	0.31	5	06/03/18 01:18	4/27/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/03/18 01:18	4/27/18	*
Dieldrin	ND U	1.0	0.39	5	06/03/18 01:18	4/27/18	
gamma-BHC (Lindane)	ND U	0.39	0.16	5	06/03/18 01:18	4/27/18	
gamma-Chlordane	ND U	0.78	0.32	5	06/03/18 01:18	4/27/18	*
Heptachlor	ND U	0.39	0.20	5	06/03/18 01:18	4/27/18	
trans-Nonachlor	ND U	0.78	0.29	5	06/03/18 01:18	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	68	5 - 120	06/03/18 01:18	
S_4,4'-DDT-d4	56	13 - 200	06/03/18 01:18	
S_Aldrin-13C12	20	10 - 143	06/03/18 01:18	
S_Endrin-13C12	67	20 - 157	06/03/18 01:18	
S_GBHC6	25	5 - 124	06/03/18 01:18	
S_Heptachlor-13C10	23	10 - 177	06/03/18 01:18	
S_Heptachlrepox13C10	29	8 - 146	06/03/18 01:18	
S_Oxychlordane-13C10	31	5 - 144	06/03/18 01:18	

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Analytical Report

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

Sample Name: PDI-SG-B254-BL1
Lab Code: K1803759-021

Service Request: K1803759
Date Collected: 04/22/18 16:45
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.45 J	0.69	0.44	5	06/03/18 01:45	4/27/18	
2,4'-DDE	ND U	0.69	0.55	5	06/03/18 01:45	4/27/18	*
2,4'-DDT	ND U	0.69	0.65	5	06/03/18 01:45	4/27/18	
4,4'-DDD	1.2	0.69	0.25	5	06/03/18 01:45	4/27/18	
4,4'-DDE	2.4	0.69	0.49	5	06/03/18 01:45	4/27/18	
4,4'-DDT	0.97	0.69	0.33	5	06/03/18 01:45	4/27/18	
Aldrin	ND U	0.69	0.55	5	06/03/18 01:45	4/27/18	
alpha-Chlordane	ND U	1.4	0.43	5	06/03/18 01:45	4/27/18	*
cis-Nonachlor	ND U	0.69	0.67	5	06/03/18 01:45	4/27/18	*
Dieldrin	ND U	1.4	0.54	5	06/03/18 01:45	4/27/18	
gamma-BHC (Lindane)	ND U	0.69	0.22	5	06/03/18 01:45	4/27/18	
gamma-Chlordane	ND U	1.4	0.45	5	06/03/18 01:45	4/27/18	*
Heptachlor	ND U	0.69	0.27	5	06/03/18 01:45	4/27/18	
trans-Nonachlor	0.50 J	1.4	0.40	5	06/03/18 01:45	4/27/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	66	5 - 120	06/03/18 01:45	
S_4,4'-DDT-d4	60	13 - 200	06/03/18 01:45	
S_Aldrin-13C12	18	10 - 143	06/03/18 01:45	
S_Endrin-13C12	57	20 - 157	06/03/18 01:45	
S_GBHCD6	28	5 - 124	06/03/18 01:45	
S_Heptachlor-13C10	24	10 - 177	06/03/18 01:45	
S_Heptachlrepox13C10	28	8 - 146	06/03/18 01:45	
S_Oxychlordane-13C10	25	5 - 144	06/03/18 01:45	

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Analytical Report

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

Sample Name: PDI-SG-B263-BL1
Lab Code: K1803759-022

Service Request: K1803759
Date Collected: 04/22/18 17:25
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.61 J	0.64	0.41	5	06/15/18 19:43	5/2/18	*
2,4'-DDE	ND U	0.64	0.51	5	06/15/18 19:43	5/2/18	*
2,4'-DDT	ND U	0.64	0.60	5	06/15/18 19:43	5/2/18	*
4,4'-DDD	2.3	0.64	0.23	5	06/15/18 19:43	5/2/18	*
4,4'-DDE	3.4	0.64	0.45	5	06/15/18 19:43	5/2/18	*
4,4'-DDT	1.0	0.64	0.30	5	06/15/18 19:43	5/2/18	*
Aldrin	ND U	0.64	0.51	5	06/15/18 19:43	5/2/18	*
alpha-Chlordane	ND U	1.3	0.40	5	06/15/18 19:43	5/2/18	*
cis-Nonachlor	ND U	0.64	0.62	5	06/15/18 19:43	5/2/18	*
Dieldrin	ND U	1.3	0.50	5	06/15/18 19:43	5/2/18	*
gamma-BHC (Lindane)	ND U	0.64	0.20	5	06/15/18 19:43	5/2/18	*
gamma-Chlordane	ND U	1.3	0.41	5	06/15/18 19:43	5/2/18	*
Heptachlor	ND U	0.64	0.25	5	06/15/18 19:43	5/2/18	*
trans-Nonachlor	ND U	1.3	0.37	5	06/15/18 19:43	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	60	5 - 120	06/15/18 19:43	
S_4,4'-DDT-d4	69	13 - 200	06/15/18 19:43	
S_Aldrin-13C12	48	10 - 143	06/15/18 19:43	
S_Endrin-13C12	69	20 - 157	06/15/18 19:43	
S_GBHCDD6	39	5 - 124	06/15/18 19:43	
S_Heptachlor-13C10	43	10 - 177	06/15/18 19:43	
S_Heptachlrepox13C10	82	8 - 146	06/15/18 19:43	
S_Oxychlordane-13C10	78	5 - 144	06/15/18 19:43	

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Analytical Report

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

Sample Name: PDI-SG-B300-BL1
Lab Code: K1803759-023

Service Request: K1803759
Date Collected: 04/22/18 16:40
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.67	0.43	5	06/15/18 20:12	5/2/18	*
2,4'-DDE	ND U	0.67	0.53	5	06/15/18 20:12	5/2/18	*
2,4'-DDT	ND U	0.67	0.63	5	06/15/18 20:12	5/2/18	*
4,4'-DDD	0.95	0.67	0.24	5	06/15/18 20:12	5/2/18	*
4,4'-DDE	2.2	0.67	0.47	5	06/15/18 20:12	5/2/18	*
4,4'-DDT	0.54 J	0.67	0.32	5	06/15/18 20:12	5/2/18	*
Aldrin	ND U	0.67	0.53	5	06/15/18 20:12	5/2/18	*
alpha-Chlordane	ND U	1.3	0.42	5	06/15/18 20:12	5/2/18	*
cis-Nonachlor	ND U	0.67	0.65	5	06/15/18 20:12	5/2/18	*
Dieldrin	ND U	1.3	0.52	5	06/15/18 20:12	5/2/18	*
gamma-BHC (Lindane)	ND U	0.67	0.21	5	06/15/18 20:12	5/2/18	*
gamma-Chlordane	ND U	1.3	0.43	5	06/15/18 20:12	5/2/18	*
Heptachlor	ND U	0.67	0.27	5	06/15/18 20:12	5/2/18	*
trans-Nonachlor	ND U	1.3	0.39	5	06/15/18 20:12	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	06/15/18 20:12	
S_4,4'-DDT-d4	74	13 - 200	06/15/18 20:12	
S_Aldrin-13C12	42	10 - 143	06/15/18 20:12	
S_Endrin-13C12	100	20 - 157	06/15/18 20:12	
S_GBHCDD6	40	5 - 124	06/15/18 20:12	
S_Heptachlor-13C10	47	10 - 177	06/15/18 20:12	
S_Heptachlrepx13C10	71	8 - 146	06/15/18 20:12	
S_Oxychlordane-13C10	74	5 - 144	06/15/18 20:12	

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Analytical Report

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

Sample Name: PDI-SG-B262-BL1
Lab Code: K1803759-024

Service Request: K1803759
Date Collected: 04/22/18 09:45
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.61	0.39	5	06/15/18 20:42	5/2/18	*
2,4'-DDE	ND U	0.61	0.49	5	06/15/18 20:42	5/2/18	*
2,4'-DDT	ND U	0.61	0.58	5	06/15/18 20:42	5/2/18	*
4,4'-DDD	1.3	0.61	0.22	5	06/15/18 20:42	5/2/18	*
4,4'-DDE	2.5	0.61	0.43	5	06/15/18 20:42	5/2/18	*
4,4'-DDT	1.6	0.61	0.29	5	06/15/18 20:42	5/2/18	*
Aldrin	ND U	0.61	0.49	5	06/15/18 20:42	5/2/18	*
alpha-Chlordane	ND U	1.2	0.39	5	06/15/18 20:42	5/2/18	*
cis-Nonachlor	ND U	0.61	0.60	5	06/15/18 20:42	5/2/18	*
Dieldrin	ND U	1.2	0.48	5	06/15/18 20:42	5/2/18	*
gamma-BHC (Lindane)	ND U	0.61	0.20	5	06/15/18 20:42	5/2/18	*
gamma-Chlordane	0.45 J	1.2	0.40	5	06/15/18 20:42	5/2/18	*
Heptachlor	ND U	0.61	0.24	5	06/15/18 20:42	5/2/18	*
trans-Nonachlor	0.62 J	1.2	0.36	5	06/15/18 20:42	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	64	5 - 120	06/15/18 20:42	
S_4,4'-DDT-d4	66	13 - 200	06/15/18 20:42	
S_Aldrin-13C12	36	10 - 143	06/15/18 20:42	
S_Endrin-13C12	91	20 - 157	06/15/18 20:42	
S_GBHCDD6	38	5 - 124	06/15/18 20:42	
S_Heptachlor-13C10	47	10 - 177	06/15/18 20:42	
S_Heptachlrepox13C10	58	8 - 146	06/15/18 20:42	
S_Oxychlordane-13C10	36	5 - 144	06/15/18 20:42	

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Analytical Report

Client: AECOM
Project: Portland Harbor Pre-Remedial Design Investigation/60566335
Sample Matrix: Sediment
Sample Name: PDI-SG-B262-BL1-D
Lab Code: K1803759-025

Service Request: K1803759
Date Collected: 04/22/18 09:45
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.61	0.39	5	06/15/18 21:12	5/2/18	*
2,4'-DDE	ND U	0.61	0.49	5	06/15/18 21:12	5/2/18	*
2,4'-DDT	ND U	0.61	0.58	5	06/15/18 21:12	5/2/18	*
4,4'-DDD	1.4	0.61	0.22	5	06/15/18 21:12	5/2/18	*
4,4'-DDE	2.6	0.61	0.43	5	06/15/18 21:12	5/2/18	*
4,4'-DDT	0.90	0.61	0.29	5	06/15/18 21:12	5/2/18	*
Aldrin	ND U	0.61	0.49	5	06/15/18 21:12	5/2/18	*
alpha-Chlordane	ND U	1.2	0.38	5	06/15/18 21:12	5/2/18	*
cis-Nonachlor	ND U	0.61	0.59	5	06/15/18 21:12	5/2/18	*
Dieldrin	0.61 J	1.2	0.47	5	06/15/18 21:12	5/2/18	*
gamma-BHC (Lindane)	ND U	0.61	0.19	5	06/15/18 21:12	5/2/18	*
gamma-Chlordane	0.42 J	1.2	0.39	5	06/15/18 21:12	5/2/18	*
Heptachlor	ND U	0.61	0.24	5	06/15/18 21:12	5/2/18	*
trans-Nonachlor	ND U	1.2	0.36	5	06/15/18 21:12	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	64	5 - 120	06/15/18 21:12	
S_4,4'-DDT-d4	60	13 - 200	06/15/18 21:12	
S_Aldrin-13C12	37	10 - 143	06/15/18 21:12	
S_Endrin-13C12	78	20 - 157	06/15/18 21:12	
S_GBHCDD6	37	5 - 124	06/15/18 21:12	
S_Heptachlor-13C10	43	10 - 177	06/15/18 21:12	
S_Heptachlrepox13C10	57	8 - 146	06/15/18 21:12	
S_Oxychlordane-13C10	56	5 - 144	06/15/18 21:12	

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Analytical Report

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

Sample Name: PDI-SG-B286-BL1
Lab Code: K1803759-026

Service Request: K1803759
Date Collected: 04/22/18 15:37
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.57	0.36	5	06/15/18 21:42	5/2/18	*
2,4'-DDE	ND U	0.57	0.45	5	06/15/18 21:42	5/2/18	*
2,4'-DDT	ND U	0.57	0.54	5	06/15/18 21:42	5/2/18	*
4,4'-DDD	1.3	0.57	0.20	5	06/15/18 21:42	5/2/18	*
4,4'-DDE	2.3	0.57	0.40	5	06/15/18 21:42	5/2/18	*
4,4'-DDT	0.46 J	0.57	0.27	5	06/15/18 21:42	5/2/18	*
Aldrin	ND U	0.57	0.45	5	06/15/18 21:42	5/2/18	*
alpha-Chlordane	ND U	1.1	0.36	5	06/15/18 21:42	5/2/18	*
cis-Nonachlor	ND U	0.57	0.55	5	06/15/18 21:42	5/2/18	*
Dieldrin	ND U	1.1	0.44	5	06/15/18 21:42	5/2/18	*
gamma-BHC (Lindane)	ND U	0.57	0.18	5	06/15/18 21:42	5/2/18	*
gamma-Chlordane	ND U	1.1	0.37	5	06/15/18 21:42	5/2/18	*
Heptachlor	ND U	0.57	0.23	5	06/15/18 21:42	5/2/18	*
trans-Nonachlor	ND U	1.1	0.33	5	06/15/18 21:42	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	61	5 - 120	06/15/18 21:42	
S_4,4'-DDT-d4	66	13 - 200	06/15/18 21:42	
S_Aldrin-13C12	37	10 - 143	06/15/18 21:42	
S_Endrin-13C12	91	20 - 157	06/15/18 21:42	
S_GBHCDD6	41	5 - 124	06/15/18 21:42	
S_Heptachlor-13C10	42	10 - 177	06/15/18 21:42	
S_Heptachlrepox13C10	51	8 - 146	06/15/18 21:42	
S_Oxychlordane-13C10	49	5 - 144	06/15/18 21:42	

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Analytical Report

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

Sample Name: PDI-SG-B283-BL1
Lab Code: K1803759-027

Service Request: K1803759
Date Collected: 04/22/18 14:53
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.40 J	0.55	0.35	5	06/15/18 22:12	5/2/18	*
2,4'-DDE	ND U	0.55	0.44	5	06/15/18 22:12	5/2/18	*
2,4'-DDT	ND U	0.55	0.53	5	06/15/18 22:12	5/2/18	*
4,4'-DDD	1.6	0.55	0.20	5	06/15/18 22:12	5/2/18	*
4,4'-DDE	2.4	0.55	0.39	5	06/15/18 22:12	5/2/18	*
4,4'-DDT	0.39 J	0.55	0.27	5	06/15/18 22:12	5/2/18	*
Aldrin	ND U	0.55	0.44	5	06/15/18 22:12	5/2/18	*
alpha-Chlordane	ND U	1.1	0.35	5	06/15/18 22:12	5/2/18	*
cis-Nonachlor	ND U	0.55	0.54	5	06/15/18 22:12	5/2/18	*
Dieldrin	ND U	1.1	0.43	5	06/15/18 22:12	5/2/18	*
gamma-BHC (Lindane)	ND U	0.55	0.18	5	06/15/18 22:12	5/2/18	*
gamma-Chlordane	ND U	1.1	0.36	5	06/15/18 22:12	5/2/18	*
Heptachlor	ND U	0.55	0.22	5	06/15/18 22:12	5/2/18	*
trans-Nonachlor	ND U	1.1	0.33	5	06/15/18 22:12	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	62	5 - 120	06/15/18 22:12	
S_4,4'-DDT-d4	68	13 - 200	06/15/18 22:12	
S_Aldrin-13C12	34	10 - 143	06/15/18 22:12	
S_Endrin-13C12	81	20 - 157	06/15/18 22:12	
S_GBHCDD6	41	5 - 124	06/15/18 22:12	
S_Heptachlor-13C10	41	10 - 177	06/15/18 22:12	
S_Heptachlrepox13C10	68	8 - 146	06/15/18 22:12	
S_Oxychlordane-13C10	50	5 - 144	06/15/18 22:12	

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Analytical Report

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

Sample Name: PDI-SG-B277-BL1
Lab Code: K1803759-028

Service Request: K1803759
Date Collected: 04/22/18 14:03
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.55	0.50	0.32	5	06/15/18 22:43	5/2/18	*
2,4'-DDE	ND U	0.50	0.40	5	06/15/18 22:43	5/2/18	*
2,4'-DDT	ND U	0.50	0.48	5	06/15/18 22:43	5/2/18	*
4,4'-DDD	2.4	0.50	0.18	5	06/15/18 22:43	5/2/18	*
4,4'-DDE	2.8	0.50	0.36	5	06/15/18 22:43	5/2/18	*
4,4'-DDT	0.30 J	0.50	0.24	5	06/15/18 22:43	5/2/18	*
Aldrin	ND U	0.50	0.40	5	06/15/18 22:43	5/2/18	*
alpha-Chlordane	ND U	1.0	0.32	5	06/15/18 22:43	5/2/18	*
cis-Nonachlor	ND U	0.50	0.49	5	06/15/18 22:43	5/2/18	*
Dieldrin	ND U	1.0	0.39	5	06/15/18 22:43	5/2/18	*
gamma-BHC (Lindane)	ND U	0.50	0.16	5	06/15/18 22:43	5/2/18	*
gamma-Chlordane	ND U	1.0	0.33	5	06/15/18 22:43	5/2/18	*
Heptachlor	ND U	0.50	0.20	5	06/15/18 22:43	5/2/18	*
trans-Nonachlor	ND U	1.0	0.30	5	06/15/18 22:43	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	64	5 - 120	06/15/18 22:43	
S_4,4'-DDT-d4	74	13 - 200	06/15/18 22:43	
S_Aldrin-13C12	40	10 - 143	06/15/18 22:43	
S_Endrin-13C12	100	20 - 157	06/15/18 22:43	
S_GBHC6	38	5 - 124	06/15/18 22:43	
S_Heptachlor-13C10	46	10 - 177	06/15/18 22:43	
S_Heptachlrepox13C10	53	8 - 146	06/15/18 22:43	
S_Oxychlordane-13C10	81	5 - 144	06/15/18 22:43	

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Analytical Report

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

Sample Name: PDI-SG-B268-BL1
Lab Code: K1803759-029

Service Request: K1803759
Date Collected: 04/22/18 10:35
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.45 J	0.56	0.36	5	06/15/18 23:13	5/2/18	*
2,4'-DDE	ND U	0.56	0.45	5	06/15/18 23:13	5/2/18	*
2,4'-DDT	ND U	0.56	0.53	5	06/15/18 23:13	5/2/18	*
4,4'-DDD	1.7	0.56	0.20	5	06/15/18 23:13	5/2/18	*
4,4'-DDE	2.4	0.56	0.40	5	06/15/18 23:13	5/2/18	*
4,4'-DDT	0.45 J	0.56	0.27	5	06/15/18 23:13	5/2/18	*
Aldrin	ND U	0.56	0.45	5	06/15/18 23:13	5/2/18	*
alpha-Chlordane	ND U	1.1	0.35	5	06/15/18 23:13	5/2/18	*
cis-Nonachlor	ND U	0.56	0.55	5	06/15/18 23:13	5/2/18	*
Dieldrin	ND U	1.1	0.44	5	06/15/18 23:13	5/2/18	*
gamma-BHC (Lindane)	ND U	0.56	0.18	5	06/15/18 23:13	5/2/18	*
gamma-Chlordane	ND U	1.1	0.36	5	06/15/18 23:13	5/2/18	*
Heptachlor	ND U	0.56	0.22	5	06/15/18 23:13	5/2/18	*
trans-Nonachlor	ND U	1.1	0.33	5	06/15/18 23:13	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	68	5 - 120	06/15/18 23:13	
S_4,4'-DDT-d4	68	13 - 200	06/15/18 23:13	
S_Aldrin-13C12	46	10 - 143	06/15/18 23:13	
S_Endrin-13C12	88	20 - 157	06/15/18 23:13	
S_GBHC6	40	5 - 124	06/15/18 23:13	
S_Heptachlor-13C10	46	10 - 177	06/15/18 23:13	
S_Heptachlrepox13C10	71	8 - 146	06/15/18 23:13	
S_Oxychlordane-13C10	48	5 - 144	06/15/18 23:13	

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Analytical Report

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

Sample Name: PDI-SG-B275-BL1
Lab Code: K1803759-030

Service Request: K1803759
Date Collected: 04/22/18 12:35
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	1.7	0.46	0.32	5	06/15/18 23:44	5/2/18	*
2,4'-DDE	0.50	0.46	0.40	5	06/15/18 23:44	5/2/18	*
2,4'-DDT	ND U	0.47	0.47	5	06/15/18 23:44	5/2/18	*
4,4'-DDD	5.6	0.46	0.18	5	06/15/18 23:44	5/2/18	*
4,4'-DDE	7.1	0.46	0.35	5	06/15/18 23:44	5/2/18	*
4,4'-DDT	0.84	0.46	0.24	5	06/15/18 23:44	5/2/18	*
Aldrin	ND U	0.46	0.40	5	06/15/18 23:44	5/2/18	*
alpha-Chlordane	ND U	0.92	0.31	5	06/15/18 23:44	5/2/18	*
cis-Nonachlor	ND U	0.49	0.49	5	06/15/18 23:44	5/2/18	*
Dieldrin	ND U	1.0	0.39	5	06/15/18 23:44	5/2/18	*
gamma-BHC (Lindane)	ND U	0.46	0.16	5	06/15/18 23:44	5/2/18	*
gamma-Chlordane	ND U	0.92	0.32	5	06/15/18 23:44	5/2/18	*
Heptachlor	ND U	0.46	0.20	5	06/15/18 23:44	5/2/18	*
trans-Nonachlor	ND U	0.92	0.29	5	06/15/18 23:44	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	63	5 - 120	06/15/18 23:44	
S_4,4'-DDT-d4	69	13 - 200	06/15/18 23:44	
S_Aldrin-13C12	68	10 - 143	06/15/18 23:44	
S_Endrin-13C12	99	20 - 157	06/15/18 23:44	
S_GBHCDD6	39	5 - 124	06/15/18 23:44	
S_Heptachlor-13C10	68	10 - 177	06/15/18 23:44	
S_Heptachlrepox13C10	100	8 - 146	06/15/18 23:44	
S_Oxychlordane-13C10	94	5 - 144	06/15/18 23:44	

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Analytical Report

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

Sample Name: PDI-SG-B269-BL1
Lab Code: K1803759-031

Service Request: K1803759
Date Collected: 04/22/18 11:18
Date Received: 04/23/18 13:00

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	0.57 J	0.57	0.36	5	06/16/18 00:15	5/2/18	*
2,4'-DDE	ND U	0.57	0.45	5	06/16/18 00:15	5/2/18	*
2,4'-DDT	ND U	0.57	0.54	5	06/16/18 00:15	5/2/18	*
4,4'-DDD	1.9	0.57	0.20	5	06/16/18 00:15	5/2/18	*
4,4'-DDE	2.9	0.57	0.40	5	06/16/18 00:15	5/2/18	*
4,4'-DDT	0.29 J	0.57	0.27	5	06/16/18 00:15	5/2/18	*
Aldrin	ND U	0.57	0.45	5	06/16/18 00:15	5/2/18	*
alpha-Chlordane	ND U	1.1	0.36	5	06/16/18 00:15	5/2/18	*
cis-Nonachlor	ND U	0.57	0.55	5	06/16/18 00:15	5/2/18	*
Dieldrin	0.69 J	1.1	0.44	5	06/16/18 00:15	5/2/18	*
gamma-BHC (Lindane)	ND U	0.57	0.18	5	06/16/18 00:15	5/2/18	*
gamma-Chlordane	ND U	1.1	0.37	5	06/16/18 00:15	5/2/18	*
Heptachlor	ND U	0.57	0.23	5	06/16/18 00:15	5/2/18	*
trans-Nonachlor	ND U	1.1	0.33	5	06/16/18 00:15	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	63	5 - 120	06/16/18 00:15	
S_4,4'-DDT-d4	74	13 - 200	06/16/18 00:15	
S_Aldrin-13C12	50	10 - 143	06/16/18 00:15	
S_Endrin-13C12	92	20 - 157	06/16/18 00:15	
S_GBHC6	48	5 - 124	06/16/18 00:15	
S_Heptachlor-13C10	53	10 - 177	06/16/18 00:15	
S_Heptachlrepox13C10	75	8 - 146	06/16/18 00:15	
S_Oxychlordane-13C10	63	5 - 144	06/16/18 00:15	

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Analytical Report

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

Service Request: K1803759
Date Collected: 04/22/18 17:50
Date Received: 04/23/18 13:00

Sample Name: PDI-SG-RB-VV-180422
Lab Code: K1803759-032

Units: ng/L
Basis: NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.52	0.12	1	06/02/18 12:16	4/26/18	
2,4'-DDE	ND U	0.52	0.12	1	06/02/18 12:16	4/26/18	
2,4'-DDT	ND U	0.52	0.090	1	06/02/18 12:16	4/26/18	
4,4'-DDD	ND U	0.52	0.11	1	06/02/18 12:16	4/26/18	
4,4'-DDE	ND U	0.52	0.078	1	06/02/18 12:16	4/26/18	
4,4'-DDT	0.74	0.52	0.091	1	06/02/18 12:16	4/26/18	
Aldrin	ND U	1.0	0.48	1	06/02/18 12:16	4/26/18	*
alpha-Chlordane	ND U	0.52	0.14	1	06/02/18 12:16	4/26/18	
cis-Nonachlor	ND U	0.52	0.18	1	06/02/18 12:16	4/26/18	*
Dieldrin	ND U	5.2	0.77	1	06/02/18 12:16	4/26/18	
gamma-BHC (Lindane)	ND U	0.52	0.31	1	06/02/18 12:16	4/26/18	
gamma-Chlordane	ND U	0.52	0.18	1	06/02/18 12:16	4/26/18	
Heptachlor	ND U	1.0	0.13	1	06/02/18 12:16	4/26/18	
trans-Nonachlor	0.15 J	0.52	0.13	1	06/02/18 12:16	4/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	84	5 - 120	06/02/18 12:16	
S_4,4'-DDT-d4	86	13 - 200	06/02/18 12:16	
S_Aldrin-13C12	30	5 - 126	06/02/18 12:16	
S_Endrin-13C12	68	20 - 157	06/02/18 12:16	
S_GBHC6	40	5 - 124	06/02/18 12:16	
S_Heptachlor-13C10	40	5 - 128	06/02/18 12:16	
S_Heptachlrepox13C10	33	8 - 146	06/02/18 12:16	
S_Oxychlordane-13C10	40	5 - 144	06/02/18 12:16	

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Analytical Report

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

Sample Name: Method Blank
Lab Code: KQ1805336-04

Service Request: K1803759
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	06/02/18 19:50	4/27/18	
2,4'-DDE	ND U	0.079	0.079	1	06/02/18 19:50	4/27/18	
2,4'-DDT	ND U	0.094	0.094	1	06/02/18 19:50	4/27/18	
4,4'-DDD	ND U	0.049	0.035	1	06/02/18 19:50	4/27/18	
4,4'-DDE	ND U	0.070	0.070	1	06/02/18 19:50	4/27/18	
4,4'-DDT	ND U	0.049	0.047	1	06/02/18 19:50	4/27/18	
Aldrin	ND U	0.079	0.079	1	06/02/18 19:50	4/27/18	
alpha-Chlordane	ND U	0.098	0.062	1	06/02/18 19:50	4/27/18	
cis-Nonachlor	ND U	0.097	0.097	1	06/02/18 19:50	4/27/18	
Dieldrin	ND U	0.20	0.077	1	06/02/18 19:50	4/27/18	
gamma-BHC (Lindane)	ND U	0.049	0.031	1	06/02/18 19:50	4/27/18	
gamma-Chlordane	ND U	0.098	0.064	1	06/02/18 19:50	4/27/18	
Heptachlor	ND U	0.049	0.039	1	06/02/18 19:50	4/27/18	
trans-Nonachlor	ND U	0.098	0.058	1	06/02/18 19:50	4/27/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	65	5 - 120	06/02/18 19:50	
S_4,4'-DDT-d4	61	13 - 200	06/02/18 19:50	
S_Aldrin-13C12	22	10 - 143	06/02/18 19:50	
S_Endrin-13C12	68	20 - 157	06/02/18 19:50	
S_GBHC6	28	5 - 124	06/02/18 19:50	
S_Heptachlor-13C10	26	10 - 177	06/02/18 19:50	
S_Heptachlrepox13C10	29	8 - 146	06/02/18 19:50	
S_Oxychlordane-13C10	35	5 - 144	06/02/18 19:50	

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Analytical Report

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

Sample Name: Method Blank
Lab Code: KQ1805337-04

Service Request: K1803759
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.063	0.063	1	06/15/18 16:17	5/2/18	*
2,4'-DDE	ND U	0.079	0.079	1	06/15/18 16:17	5/2/18	*
2,4'-DDT	ND U	0.094	0.094	1	06/15/18 16:17	5/2/18	*
4,4'-DDD	ND U	0.049	0.035	1	06/15/18 16:17	5/2/18	*
4,4'-DDE	ND U	0.070	0.070	1	06/15/18 16:17	5/2/18	*
4,4'-DDT	ND U	0.049	0.047	1	06/15/18 16:17	5/2/18	*
Aldrin	ND U	0.079	0.079	1	06/15/18 16:17	5/2/18	*
alpha-Chlordane	ND U	0.098	0.062	1	06/15/18 16:17	5/2/18	*
cis-Nonachlor	ND U	0.097	0.097	1	06/15/18 16:17	5/2/18	*
Dieldrin	ND U	0.20	0.077	1	06/15/18 16:17	5/2/18	*
gamma-BHC (Lindane)	ND U	0.049	0.031	1	06/15/18 16:17	5/2/18	*
gamma-Chlordane	ND U	0.098	0.064	1	06/15/18 16:17	5/2/18	*
Heptachlor	ND U	0.049	0.039	1	06/15/18 16:17	5/2/18	*
trans-Nonachlor	ND U	0.098	0.058	1	06/15/18 16:17	5/2/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	68	5 - 120	06/15/18 16:17	
S_4,4'-DDT-d4	70	13 - 200	06/15/18 16:17	
S_Aldrin-13C12	40	10 - 143	06/15/18 16:17	
S_Endrin-13C12	80	20 - 157	06/15/18 16:17	
S_GBHC6	37	5 - 124	06/15/18 16:17	
S_Heptachlor-13C10	36	10 - 177	06/15/18 16:17	
S_Heptachlrepox13C10	53	8 - 146	06/15/18 16:17	
S_Oxychlordane-13C10	50	5 - 144	06/15/18 16:17	

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Analytical Report

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

Sample Name: Method Blank
Lab Code: KQ1805400-03

Service Request: K1803759
Date Collected: NA
Date Received: NA

Units: ng/L
Basis: NA

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3535A

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.50	0.11	1	06/02/18 09:21	4/26/18	
2,4'-DDE	ND U	0.50	0.11	1	06/02/18 09:21	4/26/18	
2,4'-DDT	ND U	0.50	0.087	1	06/02/18 09:21	4/26/18	
4,4'-DDD	ND U	0.50	0.10	1	06/02/18 09:21	4/26/18	
4,4'-DDE	ND U	0.50	0.075	1	06/02/18 09:21	4/26/18	
4,4'-DDT	ND U	0.50	0.088	1	06/02/18 09:21	4/26/18	
Aldrin	ND U	1.0	0.46	1	06/02/18 09:21	4/26/18	
alpha-Chlordane	ND U	0.50	0.13	1	06/02/18 09:21	4/26/18	
cis-Nonachlor	ND U	0.50	0.17	1	06/02/18 09:21	4/26/18	
Dieldrin	ND U	5.0	0.74	1	06/02/18 09:21	4/26/18	
gamma-BHC (Lindane)	ND U	0.50	0.30	1	06/02/18 09:21	4/26/18	
gamma-Chlordane	ND U	0.50	0.17	1	06/02/18 09:21	4/26/18	
Heptachlor	0.13 J	0.99	0.12	1	06/02/18 09:21	4/26/18	
trans-Nonachlor	ND U	0.50	0.12	1	06/02/18 09:21	4/26/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	70	5 - 120	06/02/18 09:21	
S_4,4'-DDT-d4	68	13 - 200	06/02/18 09:21	
S_Aldrin-13C12	33	5 - 126	06/02/18 09:21	
S_Endrin-13C12	73	20 - 157	06/02/18 09:21	
S_GBHC6	45	5 - 124	06/02/18 09:21	
S_Heptachlor-13C10	46	5 - 128	06/02/18 09:21	
S_Heptachlrepox13C10	43	8 - 146	06/02/18 09:21	
S_Oxychlordane-13C10	52	5 - 144	06/02/18 09:21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

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

Sample Name: Method Blank
Lab Code: KQ1809004-04

Service Request: K1803759
Date Collected: NA
Date Received: NA

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4'-DDD	ND U	0.10	0.063	1	07/20/18 18:33	7/6/18	
2,4'-DDE	ND U	0.10	0.079	1	07/20/18 18:33	7/6/18	
2,4'-DDT	ND U	0.10	0.094	1	07/20/18 18:33	7/6/18	
4,4'-DDD	ND U	0.10	0.035	1	07/20/18 18:33	7/6/18	
4,4'-DDE	ND U	0.10	0.070	1	07/20/18 18:33	7/6/18	
4,4'-DDT	ND U	0.10	0.047	1	07/20/18 18:33	7/6/18	
Aldrin	ND U	0.10	0.079	1	07/20/18 18:33	7/6/18	
alpha-Chlordane	ND U	0.20	0.062	1	07/20/18 18:33	7/6/18	
cis-Nonachlor	ND U	0.10	0.097	1	07/20/18 18:33	7/6/18	
Dieldrin	ND U	0.20	0.077	1	07/20/18 18:33	7/6/18	
gamma-BHC (Lindane)	ND U	0.10	0.031	1	07/20/18 18:33	7/6/18	
gamma-Chlordane	ND U	0.20	0.064	1	07/20/18 18:33	7/6/18	
Heptachlor	ND U	0.10	0.039	1	07/20/18 18:33	7/6/18	
trans-Nonachlor	ND U	0.20	0.058	1	07/20/18 18:33	7/6/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	73	5 - 120	07/20/18 18:33	
S_4,4'-DDT-d4	68	13 - 200	07/20/18 18:33	
S_Aldrin-13C12	37	10 - 143	07/20/18 18:33	
S_Endrin-13C12	59	20 - 157	07/20/18 18:33	
S_GBHC6	34	5 - 124	07/20/18 18:33	
S_Heptachlor-13C10	41	10 - 177	07/20/18 18:33	
S_Heptachlrepox13C10	37	8 - 146	07/20/18 18:33	
S_Oxychlordane-13C10	48	5 - 144	07/20/18 18:33	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_4,4'DDD-d4	S_4,4'-DDT-d4	S_Aldrin-13C12
		5-120	13-200	10-143
PDI-SG-B226-BL1	K1803759-001	48	44	23
PDI-SG-B229-BL1	K1803759-002	53	54	18
PDI-SG-B231-BL1	K1803759-003	71	62	26
PDI-SG-B238-BL1	K1803759-004	62	57	18
PDI-SG-B240-BL1	K1803759-005	70	57	25
PDI-SG-B230-BL1	K1803759-006	69	83	25
PDI-SG-B232-BL1	K1803759-007	69	76	29
PDI-SG-B236-BL1	K1803759-008	54	46	17
PDI-SG-B239-BL1	K1803759-009	67	62	19
PDI-SG-B241-BL1	K1803759-010	59	54	15
PDI-SG-B245-BL1	K1803759-011	82	68	27
PDI-SG-B235-BL1	K1803759-012	72	61	23
PDI-SG-B227-BL1	K1803759-013	62	53	22
PDI-SG-B222-BL1	K1803759-014	69	67	19
PDI-SG-B282-BL1	K1803759-015	52	39	15
PDI-SG-B244-BL1	K1803759-016	66	71	27
PDI-SG-B248-BL1	K1803759-017	70	59	18
PDI-SG-B247-BL1	K1803759-018	70	71	34
PDI-SG-B249-BL1	K1803759-019	70	57	20
PDI-SG-B252-BL1	K1803759-020	68	56	20
PDI-SG-B254-BL1	K1803759-021	66	60	18
PDI-SG-B263-BL1	K1803759-022	60	69	48
PDI-SG-B300-BL1	K1803759-023	70	74	42
PDI-SG-B262-BL1	K1803759-024	64	66	36
PDI-SG-B262-BL1-D	K1803759-025	64	60	37
PDI-SG-B286-BL1	K1803759-026	61	66	37
PDI-SG-B283-BL1	K1803759-027	62	68	34
PDI-SG-B277-BL1	K1803759-028	64	74	40
PDI-SG-B268-BL1	K1803759-029	68	68	46
PDI-SG-B275-BL1	K1803759-030	63	69	68
PDI-SG-B269-BL1	K1803759-031	63	74	50
Batch QC	K1803850-019	64	69	22
Method Blank	KQ1805336-04	65	61	22
Method Blank	KQ1805337-04	68	70	40
Method Blank	KQ1809004-04	73	68	37
Lab Control Sample	KQ1805336-03	72	69	23
Lab Control Sample	KQ1805337-03	65	73	38

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_4,4'DDD-d4	S_4,4'-DDT-d4	S_Aldrin-13C12
		5-120	13-200	10-143
Lab Control Sample	KQ1809004-03	75	71	35
PDI-SG-B239-BL1	KQ1805336-01	58	55	17
PDI-SG-B239-BL1	KQ1805336-02	51	46	23
PDI-SG-B247-BL1	KQ1805337-01	72	73	31
PDI-SG-B247-BL1	KQ1805337-02	63	63	40
Batch QC	KQ1809004-01	77	78	29
Batch QC	KQ1809004-02	72	73	27

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Endrin-13C12	S_GBHCD6	S_Heptachlor-13C10
		20-157	5-124	10-177
PDI-SG-B226-BL1	K1803759-001	45	25	22
PDI-SG-B229-BL1	K1803759-002	80	15	17
PDI-SG-B231-BL1	K1803759-003	84	29	29
PDI-SG-B238-BL1	K1803759-004	72	24	25
PDI-SG-B240-BL1	K1803759-005	63	26	27
PDI-SG-B230-BL1	K1803759-006	60	32	38
PDI-SG-B232-BL1	K1803759-007	59	27	33
PDI-SG-B236-BL1	K1803759-008	56	20	20
PDI-SG-B239-BL1	K1803759-009	59	22	22
PDI-SG-B241-BL1	K1803759-010	65	21	18
PDI-SG-B245-BL1	K1803759-011	89	29	27
PDI-SG-B235-BL1	K1803759-012	92	29	32
PDI-SG-B227-BL1	K1803759-013	60	27	27
PDI-SG-B222-BL1	K1803759-014	67	25	27
PDI-SG-B282-BL1	K1803759-015	61	21	23
PDI-SG-B244-BL1	K1803759-016	55	32	35
PDI-SG-B248-BL1	K1803759-017	93	17	20
PDI-SG-B247-BL1	K1803759-018	94	43	46
PDI-SG-B249-BL1	K1803759-019	67	32	26
PDI-SG-B252-BL1	K1803759-020	67	25	23
PDI-SG-B254-BL1	K1803759-021	57	28	24
PDI-SG-B263-BL1	K1803759-022	69	39	43
PDI-SG-B300-BL1	K1803759-023	100	40	47
PDI-SG-B262-BL1	K1803759-024	91	38	47
PDI-SG-B262-BL1-D	K1803759-025	78	37	43
PDI-SG-B286-BL1	K1803759-026	91	41	42
PDI-SG-B283-BL1	K1803759-027	81	41	41
PDI-SG-B277-BL1	K1803759-028	100	38	46
PDI-SG-B268-BL1	K1803759-029	88	40	46
PDI-SG-B275-BL1	K1803759-030	99	39	68
PDI-SG-B269-BL1	K1803759-031	92	48	53
Batch QC	K1803850-019	79	18	26
Method Blank	KQ1805336-04	68	28	26
Method Blank	KQ1805337-04	80	37	36
Method Blank	KQ1809004-04	59	34	41
Lab Control Sample	KQ1805336-03	88	27	27
Lab Control Sample	KQ1805337-03	81	38	40

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Endrin-13C12	S_GBHCD6	S_Heptachlor-13C10
		20-157	5-124	10-177
Lab Control Sample	KQ1809004-03	68	39	47
PDI-SG-B239-BL1	KQ1805336-01	67	23	20
PDI-SG-B239-BL1	KQ1805336-02	72	24	25
PDI-SG-B247-BL1	KQ1805337-01	91	41	46
PDI-SG-B247-BL1	KQ1805337-02	75	37	38
Batch QC	KQ1809004-01	83	27	36
Batch QC	KQ1809004-02	71	28	35

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Heptachlrepx13C10	S_Oxychlordan-13C10
		8-146	5-144
PDI-SG-B226-BL1	K1803759-001	21	20
PDI-SG-B229-BL1	K1803759-002	28	31
PDI-SG-B231-BL1	K1803759-003	28	38
PDI-SG-B238-BL1	K1803759-004	27	33
PDI-SG-B240-BL1	K1803759-005	31	37
PDI-SG-B230-BL1	K1803759-006	37	38
PDI-SG-B232-BL1	K1803759-007	36	36
PDI-SG-B236-BL1	K1803759-008	19	23
PDI-SG-B239-BL1	K1803759-009	26	34
PDI-SG-B241-BL1	K1803759-010	22	20
PDI-SG-B245-BL1	K1803759-011	32	31
PDI-SG-B235-BL1	K1803759-012	36	38
PDI-SG-B227-BL1	K1803759-013	26	27
PDI-SG-B222-BL1	K1803759-014	27	41
PDI-SG-B282-BL1	K1803759-015	24	26
PDI-SG-B244-BL1	K1803759-016	38	42
PDI-SG-B248-BL1	K1803759-017	33	43
PDI-SG-B247-BL1	K1803759-018	50	55
PDI-SG-B249-BL1	K1803759-019	22	29
PDI-SG-B252-BL1	K1803759-020	29	31
PDI-SG-B254-BL1	K1803759-021	28	25
PDI-SG-B263-BL1	K1803759-022	82	78
PDI-SG-B300-BL1	K1803759-023	71	74
PDI-SG-B262-BL1	K1803759-024	58	36
PDI-SG-B262-BL1-D	K1803759-025	57	56
PDI-SG-B286-BL1	K1803759-026	51	49
PDI-SG-B283-BL1	K1803759-027	68	50
PDI-SG-B277-BL1	K1803759-028	53	81
PDI-SG-B268-BL1	K1803759-029	71	48
PDI-SG-B275-BL1	K1803759-030	100	94
PDI-SG-B269-BL1	K1803759-031	75	63
Batch QC	K1803850-019	34	35
Method Blank	KQ1805336-04	29	35
Method Blank	KQ1805337-04	53	50
Method Blank	KQ1809004-04	37	48
Lab Control Sample	KQ1805336-03	34	39
Lab Control Sample	KQ1805337-03	65	51

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Heptachlrepox13C10	S_Oxychlordan-13C10
		8-146	5-144
Lab Control Sample	KQ1809004-03	47	32
PDI-SG-B239-BL1	KQ1805336-01	27	30
PDI-SG-B239-BL1	KQ1805336-02	25	27
PDI-SG-B247-BL1	KQ1805337-01	72	54
PDI-SG-B247-BL1	KQ1805337-02	42	49
Batch QC	KQ1809004-01	39	47
Batch QC	KQ1809004-02	40	42

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_4,4'DDD-d4	S_4,4'-DDT-d4	S_Aldrin-13C12
		5-120	13-200	10-143
PDI-SG-RB-VV-180422	K1803759-032	84	86	30
Method Blank	KQ1805400-03	70	68	33
Lab Control Sample	KQ1805400-01	86	84	34
Duplicate Lab Control Sample	KQ1805400-02	77	74	31

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Endrin-13C12	S_GBHCD6	S_Heptachlor-13C10
		20-157	5-124	10-177
PDI-SG-RB-VV-180422	K1803759-032	68	40	40
Method Blank	KQ1805400-03	73	45	46
Lab Control Sample	KQ1805400-01	71	46	44
Duplicate Lab Control Sample	KQ1805400-02	59	47	44

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Extraction Method: EPA 3541

Sample Name	Lab Code	S_Heptachlrepox13C10	S_Oxychlordane-13C10
		8-146	5-144
PDI-SG-RB-VV-180422	K1803759-032	33	40
Method Blank	KQ1805400-03	43	52
Lab Control Sample	KQ1805400-01	39	50
Duplicate Lab Control Sample	KQ1805400-02	37	47

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 08:44

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\060118\060118F051.D\
Instrument ID: K-MSMS-01
Analysis Method: ALS SOP

Lab Code: KQ1807317-01
Analysis Lot: 593201
Signal ID: 1

	Pyrene-d10	
	Area	RT
ICAL Result ==>	33,816	14.1471
Upper Limit ==>	67,632	14.65
Lower Limit ==>	16,908	13.65

Associated Analyses

Continuing Calibration Verification	KQ1807317-01	62875.3	14.1457
Method Blank	KQ1805400-03	57817.7	14.1471
Lab Control Sample	KQ1805400-01	50109.7	14.1472
Duplicate Lab Control Sample	KQ1805400-02	50328.5	14.1471
PDI-SG-RB-VV-180422	K1803759-032	56035	14.1457
PDI-SG-B226-BL1	K1803759-001	59159.2	14.1471
PDI-SG-B229-BL1	K1803759-002	59822.8	14.1472
PDI-SG-B231-BL1	K1803759-003	59964.2	14.1471
PDI-SG-B238-BL1	K1803759-004	58289.2	14.1471
PDI-SG-B240-BL1	K1803759-005	61893.2	14.1457
PDI-SG-B236-BL1	K1803759-008	60882.3	14.1471
PDI-SG-B239-BL1	K1803759-009	58822.3	14.1472
PDI-SG-B241-BL1	K1803759-010	57176.6	14.1471

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dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 19:23

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\060218\060218F003.D\
Instrument ID: K-MSMS-01
Analysis Method: ALS SOP

Lab Code: KQ1807365-01
Analysis Lot: 593303
Signal ID: 1

	Pyrene-d10	
	Area	RT
ICAL Result ==>	33,816	14.1471
Upper Limit ==>	67,632	14.65
Lower Limit ==>	16,908	13.65

Associated Analyses

Continuing Calibration Verification	KQ1807365-01	62033.3	14.1472
Method Blank	KQ1805336-04	54653	14.1471
Lab Control Sample	KQ1805336-03	59584.6	14.1471
PDI-SG-B239-BL1MS	KQ1805336-01	59251.5	14.1471
PDI-SG-B239-BL1DMS	KQ1805336-02	59432.7	14.1471
PDI-SG-B245-BL1	K1803759-011	56420.7	14.1471
PDI-SG-B235-BL1	K1803759-012	58456.4	14.1471
PDI-SG-B227-BL1	K1803759-013	58493.4	14.1471
PDI-SG-B222-BL1	K1803759-014	56946.2	14.1472
PDI-SG-B282-BL1	K1803759-015	55483	14.1472
PDI-SG-B248-BL1	K1803759-017	59266.9	14.1471
PDI-SG-B249-BL1	K1803759-019	58890.6	14.1472
PDI-SG-B252-BL1	K1803759-020	57960.7	14.1472
PDI-SG-B254-BL1	K1803759-021	54504.9	14.1471

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/15/18 15:48

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\061418\061418F068.D\
Instrument ID: K-MSMS-01
Analysis Method: ALS SOP

Lab Code: KQ1807976-01
Analysis Lot: 594695
Signal ID: 1

	Pyrene-d10	
	Area	RT
ICAL Result ==>	34,051	14.1471
Upper Limit ==>	68,101	14.65
Lower Limit ==>	17,025	13.65

Associated Analyses

Continuing Calibration Verification	KQ1807976-01	41723.4	14.1471
Method Blank	KQ1805337-04	43875.8	14.1472
Lab Control Sample	KQ1805337-03	46777.3	14.1472
PDI-SG-B247-BL1MS	KQ1805337-01	49243	14.1471
PDI-SG-B247-BL1DMS	KQ1805337-02	47179	14.1471
PDI-SG-B247-BL1	K1803759-018	45634.4	14.1471
PDI-SG-B263-BL1	K1803759-022	51112.2	14.1728
PDI-SG-B300-BL1	K1803759-023	52319.1	14.1713
PDI-SG-B262-BL1	K1803759-024	52041.9	14.1728
PDI-SG-B262-BL1-D	K1803759-025	50987.7	14.1728
PDI-SG-B286-BL1	K1803759-026	50656.9	14.1728
PDI-SG-B283-BL1	K1803759-027	50117.8	14.1472
PDI-SG-B277-BL1	K1803759-028	51822.1	14.1728
PDI-SG-B268-BL1	K1803759-029	54163.5	14.1471
PDI-SG-B275-BL1	K1803759-030	56507.1	14.1729
PDI-SG-B269-BL1	K1803759-031	54582.6	14.1728

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Analyzed: 07/20/18 18:06

Internal Standard Area and RT SUMMARY
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\072018\072018F021.D\
Instrument ID: K-MSMS-01
Analysis Method: ALS SOP

Lab Code: KQ1809858-01
Analysis Lot: 599464
Signal ID: 1

	Pyrene-d10	
	Area	RT
ICAL Result ==>	16,930	14.6139
Upper Limit ==>	33,860	15.11
Lower Limit ==>	8,465	14.11

Associated Analyses

Continuing Calibration Verification	KQ1809858-01	27411.6	14.6397
Method Blank	KQ1809004-04	18399.8	14.6139
Lab Control Sample	KQ1809004-03	18883.7	14.6397
Batch QCMS	KQ1809004-01	23328.5	14.6397
Batch QCDMS	KQ1809004-02	25095.5	14.6397
PDI-SG-B230-BL1	K1803759-006	26139.2	14.6139
PDI-SG-B232-BL1	K1803759-007	25761.1	14.6139
PDI-SG-B244-BL1	K1803759-016	29358.8	14.6139
Batch QC	K1803850-019	33106.7	14.6139

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Collected: 04/21/18
Date Received: 04/23/18
Date Analyzed: 06/2/18
Date Extracted: 04/27/18

Duplicate Matrix Spike Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: PDI-SG-B239-BL1
Lab Code: K1803759-009
Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike			Duplicate Matrix Spike			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
2,4'-DDD	1.1	3.52	2.49	98	3.76	2.46	108	32-169	6	40
2,4'-DDE	ND U	2.35	2.49	95	2.59	2.46	106	43-155	10	40
2,4'-DDT	ND U	3.39	2.49	136	3.57	2.46	145	55-161	5	40
4,4'-DDD	3.0	5.70	2.49	109	5.70	2.46	110	10-190	<1	40
4,4'-DDE	2.9	5.37	2.49	101	5.57	2.46	111	35-162	4	40
4,4'-DDT	0.96	3.55	2.49	104	3.96	2.46	122	24-183	11	40
Aldrin	ND U	2.63	2.49	106	1.49	2.46	61	52-151	55*	40
alpha-Chlordane	ND U	3.87	2.49	156	3.26	2.46	133	31-156	17	40
cis-Nonachlor	ND U	5.68	2.49	229 *	5.48	2.46	223 *	27-144	4	40
Dieldrin	ND U	1.20 J	2.49	48	0.884 J	2.46	36	28-150	30	40
gamma-BHC (Lindane)	ND U	2.76	2.49	111	2.24	2.46	91	64-135	21	40
gamma-Chlordane	ND U	3.06	2.49	123	3.69	2.46	150	31-158	19	40
Heptachlor	ND U	2.37	2.49	95	2.30	2.46	94	76-117	3	40
trans-Nonachlor	ND U	3.53	2.49	142	4.33	2.46	176 *	35-153	20	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.

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Date Collected: 04/22/18
Date Received: 04/23/18
Date Analyzed: 06/15/18
Date Extracted: 05/2/18

Duplicate Matrix Spike Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: PDI-SG-B247-BL1
Lab Code: K1803759-018
Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike			Duplicate Matrix Spike					
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,4'-DDD	ND U	2.75	2.50	110	2.82	2.50	113	32-169	3	40
2,4'-DDE	ND U	1.95	2.50	78	1.87	2.50	75	43-155	4	40
2,4'-DDT	ND U	2.78	2.50	111	2.91	2.50	116	55-161	5	40
4,4'-DDD	0.91	3.95	2.50	122	4.32	2.50	136	10-190	9	40
4,4'-DDE	2.0	4.34	2.50	94	4.70	2.50	109	35-162	8	40
4,4'-DDT	0.34 J	3.08	2.50	110	3.02	2.50	107	24-183	2	40
Aldrin	ND U	3.62	2.50	145	2.34	2.50	94	52-151	43*	40
alpha-Chlordane	ND U	3.27	2.50	131	3.03	2.50	121	31-156	8	40
cis-Nonachlor	ND U	4.12	2.50	165 *	3.96	2.50	158 *	27-144	4	40
Dieldrin	ND U	2.12	2.50	85	2.70	2.50	108	28-150	24	40
gamma-BHC (Lindane)	ND U	2.60	2.50	104	2.57	2.50	103	64-135	<1	40
gamma-Chlordane	ND U	3.54	2.50	142	3.00	2.50	120	31-158	16	40
Heptachlor	ND U	2.51	2.50	101	2.55	2.50	102	76-117	1	40
trans-Nonachlor	ND U	4.02	2.50	161 *	3.67	2.50	147	35-153	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.

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18
Date Extracted: 04/27/18

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry
Analysis Lot: 593303

Lab Control Sample
KQ1805336-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4'-DDD	1.99	2.00	99	73-122
2,4'-DDE	1.89	2.00	95	54-145
2,4'-DDT	2.30	2.00	115	77-118
4,4'-DDD	1.76	2.00	88	74-117
4,4'-DDE	1.76	2.00	88	66-132
4,4'-DDT	2.03	2.00	101	78-116
Aldrin	1.93	2.00	96	74-122
alpha-Chlordane	3.00	2.00	150 *	74-130
cis-Nonachlor	3.93	2.00	196 *	69-134
Dieldrin	1.40	2.00	70	62-131
gamma-BHC (Lindane)	2.04	2.00	102	79-116
gamma-Chlordane	2.63	2.00	131 *	76-128
Heptachlor	1.92	2.00	96	81-114
trans-Nonachlor	3.02	2.00	151 *	76-124

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/15/18
Date Extracted: 05/02/18

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry
Analysis Lot: 594695

Lab Control Sample
KQ1805337-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4'-DDD	2.31	2.00	116	73-122
2,4'-DDE	1.96	2.00	98	54-145
2,4'-DDT	2.29	2.00	115	77-118
4,4'-DDD	2.58	2.00	129 *	74-117
4,4'-DDE	2.12	2.00	106	66-132
4,4'-DDT	2.13	2.00	107	78-116
Aldrin	2.15	2.00	107	74-122
alpha-Chlordane	2.97	2.00	149 *	74-130
cis-Nonachlor	3.39	2.00	169 *	69-134
Dieldrin	2.20	2.00	110	62-131
gamma-BHC (Lindane)	2.03	2.00	102	79-116
gamma-Chlordane	3.14	2.00	157 *	76-128
Heptachlor	2.00	2.00	100	81-114
trans-Nonachlor	3.40	2.00	170 *	76-124

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Analyzed: 07/20/18
Date Extracted: 07/06/18

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
Prep Method: EPA 3541

Units: ug/Kg
Basis: Dry
Analysis Lot: 599464

Lab Control Sample
KQ1809004-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4'-DDD	2.15	2.00	107	73-122
2,4'-DDE	1.79	2.00	90	54-145
2,4'-DDT	2.65	2.00	133 *	77-118
4,4'-DDD	2.19	2.00	110	74-117
4,4'-DDE	2.18	2.00	109	66-132
4,4'-DDT	2.47	2.00	123 *	78-116
Aldrin	2.26	2.00	113	74-122
alpha-Chlordane	3.23	2.00	162 *	74-130
cis-Nonachlor	3.82	2.00	191 *	69-134
Dieldrin	1.79	2.00	89	62-131
gamma-BHC (Lindane)	2.23	2.00	112	79-116
gamma-Chlordane	2.96	2.00	148 *	76-128
Heptachlor	2.13	2.00	106	81-114
trans-Nonachlor	3.39	2.00	169 *	76-124

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	AECOM	Service Request:	K1803759
Project:	Portland Harbor Pre-Remedial Design Investigation/60566335	Date Analyzed:	06/02/18
Sample Matrix:	Water	Date Extracted:	04/26/18

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method:	ALS SOP	Units:	ng/L
Prep Method:	EPA 3535A	Basis:	NA
		Analysis Lot:	593201

Lab Control Sample
KQ1805400-01

Duplicate Lab Control Sample
KQ1805400-02

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,4'-DDD	19.0	20.0	95	19.1	20.0	95	79-113	<1	30
2,4'-DDE	16.2	20.0	81	16.5	20.0	82	75-117	2	30
2,4'-DDT	20.6	20.0	103	20.4	20.0	102	77-114	<1	30
4,4'-DDD	16.0	20.0	80	15.7	20.0	79	78-114	1	30
4,4'-DDE	16.7	20.0	84	16.1	20.0	81	76-115	3	30
4,4'-DDT	20.1	20.0	100	20.2	20.0	101	85-113	<1	30
Aldrin	17.3	20.0	86	15.4	20.0	77 *	81-113	11	30
alpha-Chlordane	20.0	20.0	100	19.0	20.0	95	69-130	5	30
cis-Nonachlor	33.5	20.0	168 *	27.1	20.0	136	59-138	21	30
Dieldrin	13.7	20.0	69	14.0	20.0	70	62-111	2	30
gamma-BHC (Lindane)	19.1	20.0	95	19.5	20.0	97	66-130	2	30
gamma-Chlordane	20.3	20.0	101	19.1	20.0	96	72-127	6	30
Heptachlor	19.0	20.0	95	17.5	20.0	88	81-115	8	30
trans-Nonachlor	20.5	20.0	103	18.3	20.0	91	72-127	12	30

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 19:50
Date Extracted: 04/27/18

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: Method Blank **Instrument ID:** K-MSMS-01
Lab Code: KQ1805336-04 **File ID:** J:\MS21\Data\060218\060218F004.D\
Analysis Method: ALS SOP **Analysis Lot:** 593201,593303
Prep Method: EPA 3541 **Extraction Lot:** 312623

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B226-BL1	K1803759-001	J:\MS21\Data\060118\060118F061.D\	06/02/18 13:38
PDI-SG-B229-BL1	K1803759-002	J:\MS21\Data\060118\060118F062.D\	06/02/18 14:05
PDI-SG-B231-BL1	K1803759-003	J:\MS21\Data\060118\060118F063.D\	06/02/18 14:32
PDI-SG-B238-BL1	K1803759-004	J:\MS21\Data\060118\060118F064.D\	06/02/18 15:00
PDI-SG-B240-BL1	K1803759-005	J:\MS21\Data\060118\060118F065.D\	06/02/18 15:27
PDI-SG-B236-BL1	K1803759-008	J:\MS21\Data\060118\060118F068.D\	06/02/18 16:49
PDI-SG-B239-BL1	K1803759-009	J:\MS21\Data\060118\060118F069.D\	06/02/18 17:17
PDI-SG-B241-BL1	K1803759-010	J:\MS21\Data\060118\060118F070.D\	06/02/18 17:44
Lab Control Sample	KQ1805336-03	J:\MS21\Data\060218\060218F005.D\	06/02/18 20:17
PDI-SG-B239-BL1MS	KQ1805336-01	J:\MS21\Data\060218\060218F006.D\	06/02/18 20:45
PDI-SG-B239-BL1DMS	KQ1805336-02	J:\MS21\Data\060218\060218F007.D\	06/02/18 21:12
PDI-SG-B245-BL1	K1803759-011	J:\MS21\Data\060218\060218F008.D\	06/02/18 21:40
PDI-SG-B235-BL1	K1803759-012	J:\MS21\Data\060218\060218F009.D\	06/02/18 22:07
PDI-SG-B227-BL1	K1803759-013	J:\MS21\Data\060218\060218F010.D\	06/02/18 22:34
PDI-SG-B222-BL1	K1803759-014	J:\MS21\Data\060218\060218F011.D\	06/02/18 23:01
PDI-SG-B282-BL1	K1803759-015	J:\MS21\Data\060218\060218F012.D\	06/02/18 23:29
PDI-SG-B248-BL1	K1803759-017	J:\MS21\Data\060218\060218F014.D\	06/03/18 00:23
PDI-SG-B249-BL1	K1803759-019	J:\MS21\Data\060218\060218F015.D\	06/03/18 00:50
PDI-SG-B252-BL1	K1803759-020	J:\MS21\Data\060218\060218F016.D\	06/03/18 01:18
PDI-SG-B254-BL1	K1803759-021	J:\MS21\Data\060218\060218F017.D\	06/03/18 01:45

QA/QC Report

Service Request: K1803759
Date Analyzed: 06/15/18 16:17
Date Extracted: 05/02/18

Sample Name:	Method Blank	Instrument ID: K-MSMS-01
Lab Code:	KQ1805337-04	File ID: J:\MS21\Data\061418\061418F069.D\
Analysis Method:	ALS SOP	Analysis Lot: 594695
Prep Method:	EPA 3541	Extraction Lot: 312624

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805337-03	J:\MS21\Data\061418\061418F070.D\	06/15/18 16:46
PDI-SG-B247-BL1MS	KQ1805337-01	J:\MS21\Data\061418\061418F071.D\	06/15/18 17:16
PDI-SG-B247-BL1DMS	KQ1805337-02	J:\MS21\Data\061418\061418F072.D\	06/15/18 17:45
PDI-SG-B247-BL1	K1803759-018	J:\MS21\Data\061418\061418F075.D\	06/15/18 19:13
PDI-SG-B263-BL1	K1803759-022	J:\MS21\Data\061418\061418F076.D\	06/15/18 19:43
PDI-SG-B300-BL1	K1803759-023	J:\MS21\Data\061418\061418F077.D\	06/15/18 20:12
PDI-SG-B262-BL1	K1803759-024	J:\MS21\Data\061418\061418F078.D\	06/15/18 20:42
PDI-SG-B262-BL1-D	K1803759-025	J:\MS21\Data\061418\061418F079.D\	06/15/18 21:12
PDI-SG-B286-BL1	K1803759-026	J:\MS21\Data\061418\061418F080.D\	06/15/18 21:42
PDI-SG-B283-BL1	K1803759-027	J:\MS21\Data\061418\061418F081.D\	06/15/18 22:12
PDI-SG-B277-BL1	K1803759-028	J:\MS21\Data\061418\061418F082.D\	06/15/18 22:43
PDI-SG-B268-BL1	K1803759-029	J:\MS21\Data\061418\061418F083.D\	06/15/18 23:13
PDI-SG-B275-BL1	K1803759-030	J:\MS21\Data\061418\061418F084.D\	06/15/18 23:44
PDI-SG-B269-BL1	K1803759-031	J:\MS21\Data\061418\061418F085.D\	06/16/18 00:15

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 09:21
Date Extracted: 04/26/18

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Method Blank	Instrument ID:	K-MSMS-01
Lab Code:	KQ1805400-03	File ID:	J:\MS21\Data\060118\060118F052.D\
Analysis Method:	ALS SOP	Analysis Lot:	593201
Prep Method:	EPA 3535A	Extraction Lot:	312718

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1805400-01	J:\MS21\Data\060118\060118F053.D\	06/02/18 09:59
Duplicate Lab Control Sample	KQ1805400-02	J:\MS21\Data\060118\060118F054.D\	06/02/18 10:27
PDI-SG-RB-VV-180422	K1803759-032	J:\MS21\Data\060118\060118F058.D\	06/02/18 12:16

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: NA
Date Extracted: 04/27/18

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Instrument ID:
Lab Code:	File ID:
Analysis Method: ALS SOP	Analysis Lot: 593201
Prep Method: EPA 3541	Extraction Lot: 312623

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B226-BL1	K1803759-001	J:\MS21\Data\060118\060118F061.D\	06/02/18 13:38
PDI-SG-B229-BL1	K1803759-002	J:\MS21\Data\060118\060118F062.D\	06/02/18 14:05
PDI-SG-B231-BL1	K1803759-003	J:\MS21\Data\060118\060118F063.D\	06/02/18 14:32
PDI-SG-B238-BL1	K1803759-004	J:\MS21\Data\060118\060118F064.D\	06/02/18 15:00
PDI-SG-B240-BL1	K1803759-005	J:\MS21\Data\060118\060118F065.D\	06/02/18 15:27
PDI-SG-B236-BL1	K1803759-008	J:\MS21\Data\060118\060118F068.D\	06/02/18 16:49
PDI-SG-B239-BL1	K1803759-009	J:\MS21\Data\060118\060118F069.D\	06/02/18 17:17
PDI-SG-B241-BL1	K1803759-010	J:\MS21\Data\060118\060118F070.D\	06/02/18 17:44

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 07/20/18 18:33
Date Extracted: 07/06/18

Method Blank Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: Method Blank
Lab Code: KQ1809004-04
Analysis Method: ALS SOP
Prep Method: EPA 3541

Instrument ID: K-MSMS-01
File ID: J:\MS21\Data\072018\072018F022.D\
Analysis Lot: 599464
Extraction Lot: 317186

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1809004-03	J:\MS21\Data\072018\072018F023.D\	07/20/18 19:00
Batch QCMS	KQ1809004-01	J:\MS21\Data\072018\072018F024.D\	07/20/18 19:28
Batch QCDMS	KQ1809004-02	J:\MS21\Data\072018\072018F025.D\	07/20/18 19:55
PDI-SG-B230-BL1	K1803759-006	J:\MS21\Data\072018\072018F031.D\	07/20/18 22:38
PDI-SG-B232-BL1	K1803759-007	J:\MS21\Data\072018\072018F032.D\	07/20/18 23:05
PDI-SG-B244-BL1	K1803759-016	J:\MS21\Data\072018\072018F033.D\	07/20/18 23:33
Batch QC	K1803850-019	J:\MS21\Data\072018\072018F034.D\	07/21/18 00:01

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QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803759**Date Analyzed:** 06/02/18 20:17**Date Extracted:** 04/27/18**Lab Control Sample Summary**
Organochlorine Pesticides by GC/MS/MS**Sample Name:** Lab Control Sample**Instrument ID:** K-MSMS-01**Lab Code:** KQ1805336-03**File ID:** J:\MS21\Data\060218\060218F005.D**Analysis Method:** ALS SOP**Analysis Lot:** 593201,593303**Prep Method:** EPA 3541**Extraction Lot:** 312623

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B226-BL1	K1803759-001	J:\MS21\Data\060118\060118F061.D\	06/02/18 13:38
PDI-SG-B229-BL1	K1803759-002	J:\MS21\Data\060118\060118F062.D\	06/02/18 14:05
PDI-SG-B231-BL1	K1803759-003	J:\MS21\Data\060118\060118F063.D\	06/02/18 14:32
PDI-SG-B238-BL1	K1803759-004	J:\MS21\Data\060118\060118F064.D\	06/02/18 15:00
PDI-SG-B240-BL1	K1803759-005	J:\MS21\Data\060118\060118F065.D\	06/02/18 15:27
PDI-SG-B236-BL1	K1803759-008	J:\MS21\Data\060118\060118F068.D\	06/02/18 16:49
PDI-SG-B239-BL1	K1803759-009	J:\MS21\Data\060118\060118F069.D\	06/02/18 17:17
PDI-SG-B241-BL1	K1803759-010	J:\MS21\Data\060118\060118F070.D\	06/02/18 17:44
Method Blank	KQ1805336-04	J:\MS21\Data\060218\060218F004.D\	06/02/18 19:50
PDI-SG-B239-BL1MS	KQ1805336-01	J:\MS21\Data\060218\060218F006.D\	06/02/18 20:45
PDI-SG-B239-BL1DMS	KQ1805336-02	J:\MS21\Data\060218\060218F007.D\	06/02/18 21:12
PDI-SG-B245-BL1	K1803759-011	J:\MS21\Data\060218\060218F008.D\	06/02/18 21:40
PDI-SG-B235-BL1	K1803759-012	J:\MS21\Data\060218\060218F009.D\	06/02/18 22:07
PDI-SG-B227-BL1	K1803759-013	J:\MS21\Data\060218\060218F010.D\	06/02/18 22:34
PDI-SG-B222-BL1	K1803759-014	J:\MS21\Data\060218\060218F011.D\	06/02/18 23:01
PDI-SG-B282-BL1	K1803759-015	J:\MS21\Data\060218\060218F012.D\	06/02/18 23:29
PDI-SG-B248-BL1	K1803759-017	J:\MS21\Data\060218\060218F014.D\	06/03/18 00:23
PDI-SG-B249-BL1	K1803759-019	J:\MS21\Data\060218\060218F015.D\	06/03/18 00:50
PDI-SG-B252-BL1	K1803759-020	J:\MS21\Data\060218\060218F016.D\	06/03/18 01:18
PDI-SG-B254-BL1	K1803759-021	J:\MS21\Data\060218\060218F017.D\	06/03/18 01:45

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QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803759**Date Analyzed:** 06/15/18 16:46**Date Extracted:** 05/02/18**Lab Control Sample Summary**
Organochlorine Pesticides by GC/MS/MS**Sample Name:** Lab Control Sample**Instrument ID:** K-MSMS-01**Lab Code:** KQ1805337-03**File ID:** J:\MS21\Data\061418\061418F070.D**Analysis Method:** ALS SOP**Analysis Lot:** 594695**Prep Method:** EPA 3541**Extraction Lot:** 312624

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805337-04	J:\MS21\Data\061418\061418F069.D\	06/15/18 16:17
PDI-SG-B247-BL1MS	KQ1805337-01	J:\MS21\Data\061418\061418F071.D\	06/15/18 17:16
PDI-SG-B247-BL1DMS	KQ1805337-02	J:\MS21\Data\061418\061418F072.D\	06/15/18 17:45
PDI-SG-B247-BL1	K1803759-018	J:\MS21\Data\061418\061418F075.D\	06/15/18 19:13
PDI-SG-B263-BL1	K1803759-022	J:\MS21\Data\061418\061418F076.D\	06/15/18 19:43
PDI-SG-B300-BL1	K1803759-023	J:\MS21\Data\061418\061418F077.D\	06/15/18 20:12
PDI-SG-B262-BL1	K1803759-024	J:\MS21\Data\061418\061418F078.D\	06/15/18 20:42
PDI-SG-B262-BL1-D	K1803759-025	J:\MS21\Data\061418\061418F079.D\	06/15/18 21:12
PDI-SG-B286-BL1	K1803759-026	J:\MS21\Data\061418\061418F080.D\	06/15/18 21:42
PDI-SG-B283-BL1	K1803759-027	J:\MS21\Data\061418\061418F081.D\	06/15/18 22:12
PDI-SG-B277-BL1	K1803759-028	J:\MS21\Data\061418\061418F082.D\	06/15/18 22:43
PDI-SG-B268-BL1	K1803759-029	J:\MS21\Data\061418\061418F083.D\	06/15/18 23:13
PDI-SG-B275-BL1	K1803759-030	J:\MS21\Data\061418\061418F084.D\	06/15/18 23:44
PDI-SG-B269-BL1	K1803759-031	J:\MS21\Data\061418\061418F085.D\	06/16/18 00:15

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 09:59
Date Extracted: 04/26/18

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name: Lab Control Sample **Instrument ID:** K-MSMS-01
Lab Code: KQ1805400-01 **File ID:** J:\MS21\Data\060118\060118F053.D\
Analysis Method: ALS SOP **Analysis Lot:** 593201
Prep Method: EPA 3535A **Extraction Lot:** 312718

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1805400-03	J:\MS21\Data\060118\060118F052.D\	06/02/18 09:21
Duplicate Lab Control Sample	KQ1805400-02	J:\MS21\Data\060118\060118F054.D\	06/02/18 10:27
PDI-SG-RB-VV-180422	K1803759-032	J:\MS21\Data\060118\060118F058.D\	06/02/18 12:16

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: NA
Date Extracted: 04/27/18

Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS

Sample Name:	Instrument ID:
Lab Code:	File ID:
Analysis Method: ALS SOP	Analysis Lot: 593201
Prep Method: EPA 3541	Extraction Lot: 312623

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
PDI-SG-B226-BL1	K1803759-001	J:\MS21\Data\060118\060118F061.D\	06/02/18 13:38
PDI-SG-B229-BL1	K1803759-002	J:\MS21\Data\060118\060118F062.D\	06/02/18 14:05
PDI-SG-B231-BL1	K1803759-003	J:\MS21\Data\060118\060118F063.D\	06/02/18 14:32
PDI-SG-B238-BL1	K1803759-004	J:\MS21\Data\060118\060118F064.D\	06/02/18 15:00
PDI-SG-B240-BL1	K1803759-005	J:\MS21\Data\060118\060118F065.D\	06/02/18 15:27
PDI-SG-B236-BL1	K1803759-008	J:\MS21\Data\060118\060118F068.D\	06/02/18 16:49
PDI-SG-B239-BL1	K1803759-009	J:\MS21\Data\060118\060118F069.D\	06/02/18 17:17
PDI-SG-B241-BL1	K1803759-010	J:\MS21\Data\060118\060118F070.D\	06/02/18 17:44

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QA/QC Report

Client: AECOM**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335**Sample Matrix:** Sediment**Service Request:** K1803759**Date Analyzed:** 07/20/18 19:00**Date Extracted:** 07/06/18**Lab Control Sample Summary
Organochlorine Pesticides by GC/MS/MS****Sample Name:** Lab Control Sample**Instrument ID:** K-MSMS-01**Lab Code:** KQ1809004-03**File ID:** J:\MS21\Data\072018\072018F023.D**Analysis Method:** ALS SOP**Analysis Lot:** 599464**Prep Method:** EPA 3541**Extraction Lot:** 317186

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1809004-04	J:\MS21\Data\072018\072018F022.D\	07/20/18 18:33
Batch QCMS	KQ1809004-01	J:\MS21\Data\072018\072018F024.D\	07/20/18 19:28
Batch QCDMS	KQ1809004-02	J:\MS21\Data\072018\072018F025.D\	07/20/18 19:55
PDI-SG-B230-BL1	K1803759-006	J:\MS21\Data\072018\072018F031.D\	07/20/18 22:38
PDI-SG-B232-BL1	K1803759-007	J:\MS21\Data\072018\072018F032.D\	07/20/18 23:05
PDI-SG-B244-BL1	K1803759-016	J:\MS21\Data\072018\072018F033.D\	07/20/18 23:33
Batch QC	K1803850-019	J:\MS21\Data\072018\072018F034.D\	07/21/18 00:01

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QC/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 08:44

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\060118\060118F051.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 593201

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1807317-01	J:\MS21\Data\060118\060118F051.D\	06/02/18 08:44	
Method Blank	KQ1805400-03	J:\MS21\Data\060118\060118F052.D\	06/02/18 09:21	
Lab Control Sample	KQ1805400-01	J:\MS21\Data\060118\060118F053.D\	06/02/18 09:59	
Duplicate Lab Control Sample	KQ1805400-02	J:\MS21\Data\060118\060118F054.D\	06/02/18 10:27	
PDI-SG-RB-VV-180422	K1803759-032	J:\MS21\Data\060118\060118F058.D\	06/02/18 12:16	
PDI-SG-B226-BL1	K1803759-001	J:\MS21\Data\060118\060118F061.D\	06/02/18 13:38	
PDI-SG-B229-BL1	K1803759-002	J:\MS21\Data\060118\060118F062.D\	06/02/18 14:05	
PDI-SG-B231-BL1	K1803759-003	J:\MS21\Data\060118\060118F063.D\	06/02/18 14:32	
PDI-SG-B238-BL1	K1803759-004	J:\MS21\Data\060118\060118F064.D\	06/02/18 15:00	
PDI-SG-B240-BL1	K1803759-005	J:\MS21\Data\060118\060118F065.D\	06/02/18 15:27	
PDI-SG-B236-BL1	K1803759-008	J:\MS21\Data\060118\060118F068.D\	06/02/18 16:49	
PDI-SG-B239-BL1	K1803759-009	J:\MS21\Data\060118\060118F069.D\	06/02/18 17:17	
PDI-SG-B241-BL1	K1803759-010	J:\MS21\Data\060118\060118F070.D\	06/02/18 17:44	

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QC/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 19:23

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\060218\060218F003.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 593303

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1807365-01	J:\MS21\Data\060218\060218F003.D\	06/02/18 19:23	
Method Blank	KQ1805336-04	J:\MS21\Data\060218\060218F004.D\	06/02/18 19:50	
Lab Control Sample	KQ1805336-03	J:\MS21\Data\060218\060218F005.D\	06/02/18 20:17	
PDI-SG-B239-BL1	KQ1805336-01	J:\MS21\Data\060218\060218F006.D\	06/02/18 20:45	
PDI-SG-B239-BL1	KQ1805336-02	J:\MS21\Data\060218\060218F007.D\	06/02/18 21:12	
PDI-SG-B245-BL1	K1803759-011	J:\MS21\Data\060218\060218F008.D\	06/02/18 21:40	
PDI-SG-B235-BL1	K1803759-012	J:\MS21\Data\060218\060218F009.D\	06/02/18 22:07	
PDI-SG-B227-BL1	K1803759-013	J:\MS21\Data\060218\060218F010.D\	06/02/18 22:34	
PDI-SG-B222-BL1	K1803759-014	J:\MS21\Data\060218\060218F011.D\	06/02/18 23:01	
PDI-SG-B282-BL1	K1803759-015	J:\MS21\Data\060218\060218F012.D\	06/02/18 23:29	
PDI-SG-B248-BL1	K1803759-017	J:\MS21\Data\060218\060218F014.D\	06/03/18 00:23	
PDI-SG-B249-BL1	K1803759-019	J:\MS21\Data\060218\060218F015.D\	06/03/18 00:50	
PDI-SG-B252-BL1	K1803759-020	J:\MS21\Data\060218\060218F016.D\	06/03/18 01:18	
PDI-SG-B254-BL1	K1803759-021	J:\MS21\Data\060218\060218F017.D\	06/03/18 01:45	

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QC/QC Report

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

Service Request: K1803759
Date Analyzed: 06/15/18 15:48

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\061418\061418F068.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 594695

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1807976-01	J:\MS21\Data\061418\061418F068.D\	06/15/18 15:48	
Method Blank	KQ1805337-04	J:\MS21\Data\061418\061418F069.D\	06/15/18 16:17	
Lab Control Sample	KQ1805337-03	J:\MS21\Data\061418\061418F070.D\	06/15/18 16:46	
PDI-SG-B247-BL1	KQ1805337-01	J:\MS21\Data\061418\061418F071.D\	06/15/18 17:16	
PDI-SG-B247-BL1	KQ1805337-02	J:\MS21\Data\061418\061418F072.D\	06/15/18 17:45	
PDI-SG-B247-BL1	K1803759-018	J:\MS21\Data\061418\061418F075.D\	06/15/18 19:13	
PDI-SG-B263-BL1	K1803759-022	J:\MS21\Data\061418\061418F076.D\	06/15/18 19:43	
PDI-SG-B300-BL1	K1803759-023	J:\MS21\Data\061418\061418F077.D\	06/15/18 20:12	
PDI-SG-B262-BL1	K1803759-024	J:\MS21\Data\061418\061418F078.D\	06/15/18 20:42	
PDI-SG-B262-BL1-D	K1803759-025	J:\MS21\Data\061418\061418F079.D\	06/15/18 21:12	
PDI-SG-B286-BL1	K1803759-026	J:\MS21\Data\061418\061418F080.D\	06/15/18 21:42	
PDI-SG-B283-BL1	K1803759-027	J:\MS21\Data\061418\061418F081.D\	06/15/18 22:12	
PDI-SG-B277-BL1	K1803759-028	J:\MS21\Data\061418\061418F082.D\	06/15/18 22:43	
PDI-SG-B268-BL1	K1803759-029	J:\MS21\Data\061418\061418F083.D\	06/15/18 23:13	
PDI-SG-B275-BL1	K1803759-030	J:\MS21\Data\061418\061418F084.D\	06/15/18 23:44	
PDI-SG-B269-BL1	K1803759-031	J:\MS21\Data\061418\061418F085.D\	06/16/18 00:15	

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QC/QC Report

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

Service Request: K1803759
Date Analyzed: 07/20/18 18:06

Tune Summary
Organochlorine Pesticides by GC/MS/MS

File ID: J:\MS21\Data\072018\072018F021.D\
Instrument ID: K-MSMS-01

Analytical Method: ALS SOP
Analysis Lot: 599464

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1809858-01	J:\MS21\Data\072018\072018F021.D\	07/20/18 18:06	
Method Blank	KQ1809004-04	J:\MS21\Data\072018\072018F022.D\	07/20/18 18:33	
Lab Control Sample	KQ1809004-03	J:\MS21\Data\072018\072018F023.D\	07/20/18 19:00	
Batch QC	KQ1809004-01	J:\MS21\Data\072018\072018F024.D\	07/20/18 19:28	
Batch QC	KQ1809004-02	J:\MS21\Data\072018\072018F025.D\	07/20/18 19:55	
PDI-SG-B230-BL1	K1803759-006	J:\MS21\Data\072018\072018F031.D\	07/20/18 22:38	
PDI-SG-B232-BL1	K1803759-007	J:\MS21\Data\072018\072018F032.D\	07/20/18 23:05	
PDI-SG-B244-BL1	K1803759-016	J:\MS21\Data\072018\072018F033.D\	07/20/18 23:33	
Batch QC	K1803850-019	J:\MS21\Data\072018\072018F034.D\	07/21/18 00:01	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

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

Service Request: K1803759
Calibration Date: 5/30/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800252
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800252-01		J:\MS21\Data\053018\053018F023.D	05/30/2018 18:37
02	KC1800252-02		J:\MS21\Data\053018\053018F024.D	05/30/2018 19:05
03	KC1800252-03		J:\MS21\Data\053018\053018F025.D	05/30/2018 19:32
04	KC1800252-04		J:\MS21\Data\053018\053018F026.D	05/30/2018 19:59
05	KC1800252-05		J:\MS21\Data\053018\053018F027.D	05/30/2018 20:26
06	KC1800252-06		J:\MS21\Data\053018\053018F028.D	05/30/2018 20:54
07	KC1800252-07		J:\MS21\Data\053018\053018F029.D	05/30/2018 21:21
08	KC1800252-08		J:\MS21\Data\053018\053018F030.D	05/30/2018 21:48
09	KC1800252-09		J:\MS21\Data\053018\053018F031.D	05/30/2018 22:16
10	KC1800252-10		J:\MS21\Data\053018\053018F032.D	05/30/2018 22:43

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6106	02	1.0	0.5699	03	2.0	0.5303	04	5.0	0.4775
05	10	0.4761	06	20	0.4464	07	40	0.4339	08	60	0.4494
09	80	0.4587	10	100	0.4613						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.3918	02	1.0	0.4198	03	2.0	0.4108	04	5.0	0.3525
05	10	0.3457	06	20	0.3267	07	40	0.3096	08	60	0.3263
09	80	0.3334	10	100	0.3378						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6388	02	1.0	0.6242	03	2.0	0.6204	04	5.0	0.5751
05	10	0.5586	06	20	0.5684	07	40	0.5227	08	60	0.5864
09	80	0.5642	10	100	0.5569						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.9566	02	1.0	0.9563	03	2.0	0.88	04	5.0	0.7722
05	10	0.7585	06	20	0.7306	07	40	0.7335	08	60	0.7504
09	80	0.7654	10	100	0.8065						

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.4	02	1.0	0.3826	03	2.0	0.3455	04	5.0	0.3186
05	10	0.3021	06	20	0.2998	07	40	0.2839	08	60	0.2918
09	80	0.2932	10	100	0.3082						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7444	02	1.0	0.7782	03	2.0	0.7322	04	5.0	0.6749
05	10	0.6562	06	20	0.6512	07	40	0.6278	08	60	0.689

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QA/QC Report

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

Service Request: K1803759
Calibration Date: 5/30/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800252
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	80	0.6741	10	100	0.6821						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.32	02	1.0	1.435	03	2.0	0.9955	04	5.0	0.8834
05	10	0.9619	06	20	0.9171	07	40	0.8866	08	60	0.8827
09	80	0.9071	10	100	0.8567						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	1.0	1.594	03	2.0	1.076	04	5.0	1.257	05	10	1.068
06	20	1.085	07	40	0.979	08	60	1.099	09	80	1.076
10	100	1.059									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.022	02	1.0	1.194	03	2.0	1.053	04	5.0	0.9796
05	10	0.9124	06	20	0.9467	07	40	0.8621	08	60	0.9095
09	80	0.8879	10	100	0.8801						

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	5.463	02	5	5.662	03	5	5.812	04	5	5.547
05	5	5.536	06	5	5.967	07	5	6.112	08	5	5.844
09	5	5.975	10	5	6.153						

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	8.764	02	5	9.4	03	5	9.368	04	5	9.159
05	5	8.989	06	5	9.432	07	5	9.091	08	5	9.246
09	5	8.986	10	5	9.007						

S_Aldrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.2829	02	20	0.3176	03	20	0.2957	04	20	0.2965
05	20	0.2801	06	20	0.2986	07	20	0.2761	08	20	0.2721
09	20	0.2791	10	20	0.2955						

S_Endrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1214	02	20	0.1414	03	20	0.151	04	20	0.1257
05	20	0.1234	06	20	0.1255	07	20	0.1302	08	20	0.1182
09	20	0.1247	10	20	0.1319						

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.7324	02	20	0.757	03	20	0.7845	04	20	0.7194

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Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800252
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	20	0.7101	06	20	0.7507	07	20	0.751	08	20	0.7386
09	20	0.8009	10	20	0.8102						

S_Heptachlor-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.5558	02	20	0.6326	03	20	0.6376	04	20	0.5926
05	20	0.5965	06	20	0.6153	07	20	0.6318	08	20	0.6328
09	20	0.6767	10	20	0.6981						

S_Heptachlrepox13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.2668	02	20	0.2612	03	20	0.2879	04	20	0.2518
05	20	0.2429	06	20	0.2627	07	20	0.2473	08	20	0.2254
09	20	0.2378	10	20	0.2484						

S_Oxychlordane-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1582	02	20	0.1546	03	20	0.1625	04	20	0.1504
05	20	0.1586	06	20	0.1377	07	20	0.1493	08	20	0.1392
09	20	0.1465	10	20	0.1364						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.541	02	1.0	2.859	03	2.0	2.458	04	5.0	2.577
05	10	2.411	06	20	2.772	07	40	2.398	08	60	2.565
09	80	2.518	10	100	2.801						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.717	02	1.0	2.659	03	2.0	2.583	04	5.0	1.94
05	10	1.961	06	20	2.28	07	40	1.845	08	60	2.082
09	80	2.028	10	100	2.214						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7295	02	1.0	0.7072	03	2.0	0.5518	04	5.0	0.5816
05	10	0.5561	06	20	0.5213	07	40	0.5163	08	60	0.5422
09	80	0.5022	10	100	0.5271						

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.719	02	1.0	3.306	03	2.0	3.314	04	5.0	2.835
05	10	2.574	06	20	2.805	07	40	2.596	08	60	2.978
09	80	2.773	10	100	2.91						

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Service Request: K1803759
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Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800252
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.628	02	1.0	2.704	03	2.0	2.322	04	5.0	1.908
05	10	1.971	06	20	2.04	07	40	1.786	08	60	1.902
09	80	1.834	10	100	2.038						

Client: AECOM
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Service Request: K1803759
Calibration Date: 5/30/2018

Initial Calibration Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800252
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	12.0	≤20	0.4914	0.01
2,4'-DDE	TRG	Average RF	% RSD	10.8	≤20	0.3554	0.01
2,4'-DDT	TRG	Average RF	% RSD	6.2	≤20	0.5816	0.01
4,4'-DDD	TRG	Average RF	% RSD	10.8	≤20	0.811	0.01
4,4'-DDE	TRG	Average RF	% RSD	12.5	≤20	0.3226	0.01
4,4'-DDT	TRG	Average RF	% RSD	6.7	≤20	0.691	0.01
Aldrin	TRG	Quadratic	COD	0.9991	≥	1.005	0.01
Dieldrin	TRG	Average RF	% RSD	16.1	≤20	1.144	0.01
Heptachlor	TRG	Average RF	% RSD	10.6	≤20	0.9647	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	4.3	≤	5.807	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	2.4	≤	9.144	0.01
S_Aldrin-13C12	SURR	Average RF	% RSD	4.8	≤	0.2894	0.01
S_Endrin-13C12	SURR	Average RF	% RSD	7.7	≤	0.1293	0.01
S_GBHCD6	SURR	Average RF	% RSD	4.4	≤	0.7555	0.01
S_Heptachlor-13C10	SURR	Average RF	% RSD	6.5	≤	0.627	0.01
S_Heptachlrepox13C10	SURR	Average RF	% RSD	6.9	≤	0.2532	0.01
S_Oxychlordane-13C10	SURR	Average RF	% RSD	6.2	≤	0.1493	0.01
alpha-Chlordane	TRG	Average RF	% RSD	12.7	≤20	2.69	0.01
cis-Nonachlor	TRG	Average RF	% RSD	14.3	≤20	2.231	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	13.9	≤20	0.5735	0.01
gamma-Chlordane	TRG	Average RF	% RSD	12.1	≤20	2.981	0.01
trans-Nonachlor	TRG	Average RF	% RSD	15.5	≤20	2.113	0.01

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Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803759
Calibration Date: 7/19/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800347
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800347-01		J:\MS21\Data\071918\071918F005.D	07/19/2018 10:46
02	KC1800347-02		J:\MS21\Data\071918\071918F006.D	07/19/2018 11:14
03	KC1800347-03		J:\MS21\Data\071918\071918F007.D	07/19/2018 11:43
04	KC1800347-04		J:\MS21\Data\071918\071918F008.D	07/19/2018 12:11
05	KC1800347-05		J:\MS21\Data\071918\071918F009.D	07/19/2018 12:40
06	KC1800347-06		J:\MS21\Data\071918\071918F010.D	07/19/2018 13:09
07	KC1800347-07		J:\MS21\Data\071918\071918F011.D	07/19/2018 13:37
08	KC1800347-08		J:\MS21\Data\071918\071918F012.D	07/19/2018 14:04
09	KC1800347-09		J:\MS21\Data\071918\071918F013.D	07/19/2018 14:31
10	KC1800347-10		J:\MS21\Data\071918\071918F014.D	07/19/2018 14:59

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.4196	02	1.0	0.4572	03	2.0	0.4022	04	5.0	0.3774
05	10	0.3761	06	20	0.3903	07	40	0.3725	08	60	0.3898
09	80	0.371	10	100	0.3683						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.3186	02	1.0	0.3218	03	2.0	0.3204	04	5.0	0.2823
05	10	0.2862	06	20	0.2911	07	40	0.2844	08	60	0.2838
09	80	0.2812	10	100	0.2708						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.4874	02	1.0	0.4627	03	2.0	0.4311	04	5.0	0.4146
05	10	0.4533	06	20	0.4498	07	40	0.4754	08	60	0.4595
09	80	0.464	10	100	0.422						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6779	02	1.0	0.685	03	2.0	0.6055	04	5.0	0.5748
05	10	0.5557	06	20	0.5706	07	40	0.5473	08	60	0.5722
09	80	0.5669	10	100	0.5684						

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.2772	02	1.0	0.3149	03	2.0	0.2785	04	5.0	0.2476
05	10	0.2401	06	20	0.2605	07	40	0.2512	08	60	0.261
09	80	0.2562	10	100	0.2436						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6862	02	1.0	0.6551	03	2.0	0.6066	04	5.0	0.5986
05	10	0.6136	06	20	0.5888	07	40	0.6112	08	60	0.6076

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Project: Portland Harbor Pre-Remedial Design Investigation

Service Request: K1803759
Calibration Date: 7/19/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800347
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	80	0.6306	10	100	0.5833						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.226	02	1.0	1.044	03	2.0	0.7161	04	5.0	0.8386
05	10	0.8629	06	20	0.7834	07	40	0.8419	08	60	0.8501
09	80	0.844	10	100	0.8195						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	1.0	1.188	03	2.0	1.413	04	5.0	1.151	05	10	1.212
06	20	0.9966	07	40	1.01	08	60	0.9988	09	80	1.008
10	100	0.9492									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.571	02	1.0	1.13	03	2.0	1.07	04	5.0	0.9555
05	10	0.9372	06	20	0.9268	07	40	0.8929	08	60	0.873
09	80	0.9291	10	100	0.8557						

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	4.426	02	5	4.402	03	5	4.466	04	5	4.605
05	5	4.466	06	5	4.856	07	5	4.539	08	5	4.701
09	5	4.671	10	5	5.424						

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	10.18	02	5	9.779	03	5	9.812	04	5	9.947
05	5	9.58	06	5	9.679	07	5	9.53	08	5	9.293
09	5	9.616	10	5	10.2						

S_Aldrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.3295	02	20	0.3085	03	20	0.3477	04	20	0.3413
05	20	0.3462	06	20	0.3158	07	20	0.2948	08	20	0.2912
09	20	0.3277	10	20	0.2758						

S_Endrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1428	02	20	0.1273	03	20	0.1415	04	20	0.1465
05	20	0.1319	06	20	0.1381	07	20	0.1374	08	20	0.1389
09	20	0.1449	10	20	0.1478						

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.8142	02	20	0.8162	03	20	0.7874	04	20	0.8385

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Service Request: K1803759
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Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800347
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	20	0.7901	06	20	0.8053	07	20	0.7487	08	20	0.7659
09	20	0.8278	10	20	0.7312						

S_Heptachlor-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.3652	02	20	0.3724	03	20	0.3887	04	20	0.3991
05	20	0.3667	06	20	0.4058	07	20	0.391	08	20	0.4225
09	20	0.4433	10	20	0.4411						

S_Heptachlrepox13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.2482	02	20	0.222	03	20	0.2446	04	20	0.2343
05	20	0.2381	06	20	0.2588	07	20	0.2204	08	20	0.2378
09	20	0.2744	10	20	0.2499						

S_Oxychlordan-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1026	02	20	0.1269	03	20	0.1244	04	20	0.1216
05	20	0.1218	06	20	0.1083	07	20	0.1084	08	20	0.1062
09	20	0.1203	10	20	0.1275						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	4.507	02	1.0	4.69	03	2.0	3.362	04	5.0	3.141
05	10	2.947	06	20	3.257	07	40	3.356	08	60	3.371
09	80	3.296	10	100	2.998						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	4.836	02	1.0	5.436	03	2.0	3.683	04	5.0	4.074
05	10	3.542	06	20	4.393	07	40	4.375	08	60	4.44
09	80	3.961	10	100	4.024						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5576	02	1.0	0.5868	03	2.0	0.5707	04	5.0	0.4741
05	10	0.5358	06	20	0.5132	07	40	0.5048	08	60	0.4966
09	80	0.5099	10	100	0.5168						

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	4.075	02	1.0	3.085	03	2.0	4.03	04	5.0	3.281
05	10	3.21	06	20	3.799	07	40	3.365	08	60	3.602
09	80	3.29	10	100	3.151						

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Service Request: K1803759
Calibration Date: 7/19/2018

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Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800347
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.146	02	1.0	2.565	03	2.0	3.125	04	5.0	2.321
05	10	2.343	06	20	2.461	07	40	2.307	08	60	2.403
09	80	2.2	10	100	2.09						

Client: AECOM
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Initial Calibration Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800347
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	7.1	≤20	0.3924	0.01
2,4'-DDE	TRG	Average RF	% RSD	6.4	≤20	0.2941	0.01
2,4'-DDT	TRG	Average RF	% RSD	5.1	≤20	0.452	0.01
4,4'-DDD	TRG	Average RF	% RSD	8.3	≤20	0.5924	0.01
4,4'-DDE	TRG	Average RF	% RSD	8.5	≤20	0.2631	0.01
4,4'-DDT	TRG	Average RF	% RSD	5.1	≤20	0.6182	0.01
Aldrin	TRG	Average RF	% RSD	16.5	≤20	0.8826	0.01
Dieldrin	TRG	Average RF	% RSD	13.6	≤20	1.103	0.01
Heptachlor	TRG	Quadratic	COD	0.9977	≥	1.014	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	6.6	≤	4.656	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	2.9	≤	9.762	0.01
S_Aldrin-13C12	SURR	Average RF	% RSD	7.8	≤	0.3179	0.01
S_Endrin-13C12	SURR	Average RF	% RSD	4.6	≤	0.1397	0.01
S_GBHCD6	SURR	Average RF	% RSD	4.4	≤	0.7925	0.01
S_Heptachlor-13C10	SURR	Average RF	% RSD	7.2	≤	0.3996	0.01
S_Heptachlrepox13C10	SURR	Average RF	% RSD	6.7	≤	0.2428	0.01
S_Oxychlordane-13C10	SURR	Average RF	% RSD	8.0	≤	0.1168	0.01
alpha-Chlordane	TRG	Quadratic	COD	0.9966	≥	3.493	0.01
cis-Nonachlor	TRG	Average RF	% RSD	13.1	≤20	4.277	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	6.7	≤20	0.5266	0.01
gamma-Chlordane	TRG	Average RF	% RSD	10.5	≤20	3.489	0.01
trans-Nonachlor	TRG	Average RF	% RSD	14.5	≤20	2.496	0.01

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Calibration Date: 6/14/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800293
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800293-01		J:\MS21\Data\061418\061418F004.D	06/14/2018 10:33
02	KC1800293-02		J:\MS21\Data\061418\061418F005.D	06/14/2018 11:00
03	KC1800293-03		J:\MS21\Data\061418\061418F006.D	06/14/2018 11:27
04	KC1800293-04		J:\MS21\Data\061418\061418F007.D	06/14/2018 11:55
05	KC1800293-05		J:\MS21\Data\061418\061418F008.D	06/14/2018 12:22
06	KC1800293-06		J:\MS21\Data\061418\061418F009.D	06/14/2018 12:49
07	KC1800293-07		J:\MS21\Data\061418\061418F010.D	06/14/2018 13:17
08	KC1800293-08		J:\MS21\Data\061418\061418F011.D	06/14/2018 13:44
09	KC1800293-09		J:\MS21\Data\061418\061418F012.D	06/14/2018 14:11
10	KC1800293-10		J:\MS21\Data\061418\061418F013.D	06/14/2018 14:39

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6846	02	1.0	0.5756	03	2.0	0.5148	04	5.0	0.5014
05	10	0.4975	06	20	0.4999	07	40	0.4802	08	60	0.4703
09	80	0.4876	10	100	0.5103						

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5607	02	1.0	0.4722	03	2.0	0.427	04	5.0	0.4026
05	10	0.3895	06	20	0.4154	07	40	0.3763	08	60	0.3857
09	80	0.413	10	100	0.4081						

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6557	02	1.0	0.6016	03	2.0	0.5724	04	5.0	0.549
05	10	0.5996	06	20	0.6189	07	40	0.539	08	60	0.5844
09	80	0.5717	10	100	0.588						

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8332	02	1.0	0.6685	03	2.0	0.617	04	5.0	0.5806
05	10	0.5815	06	20	0.596	07	40	0.598	08	60	0.6046
09	80	0.6378	10	100	0.6284						

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.4519	02	1.0	0.4104	03	2.0	0.3595	04	5.0	0.3478
05	10	0.3464	06	20	0.3498	07	40	0.3436	08	60	0.3408
09	80	0.351	10	100	0.3615						

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7844	02	1.0	0.7505	03	2.0	0.6359	04	5.0	0.6313
05	10	0.6584	06	20	0.6779	07	40	0.6265	08	60	0.6785

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Calibration Date: 6/14/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800293
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	80	0.6854	10	100	0.6914						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.586	02	1.0	1.225	03	2.0	0.9057	04	5.0	0.8314
05	10	0.7724	06	20	0.7663	07	40	0.8276	08	60	0.8454
09	80	0.857	10	100	0.8009						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	1.0	1.15	03	2.0	1.053	04	5.0	0.7957	05	10	1.058
06	20	0.8778	07	40	0.9558	08	60	0.9312	09	80	1.055
10	100	0.9313									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.419	02	1.0	1.291	03	2.0	1.066	04	5.0	0.9561
05	10	0.9303	06	20	0.953	07	40	0.8824	08	60	0.9281
09	80	0.9193	10	100	0.8845						

S_4,4'-DDT-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	3.55	02	5	3.635	03	5	3.6	04	5	3.829
05	5	3.933	06	5	3.83	07	5	4.098	08	5	4.093
09	5	4.149	10	5	4.054						

S_4,4'DDD-d4

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	5	6.696	02	5	6.588	03	5	6.608	04	5	6.789
05	5	6.882	06	5	6.667	07	5	6.426	08	5	6.878
09	5	6.631	10	5	6.498						

S_Aldrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.2361	02	20	0.2249	03	20	0.2235	04	20	0.2213
05	20	0.229	06	20	0.225	07	20	0.2208	08	20	0.2123
09	20	0.2099	10	20	0.2248						

S_Endrin-13C12

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1152	02	20	0.1111	03	20	0.1171	04	20	0.1182
05	20	0.1103	06	20	0.1128	07	20	0.1079	08	20	0.1124
09	20	0.1044	10	20	0.1177						

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.6754	02	20	0.6298	03	20	0.6359	04	20	0.6455

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QA/QC Report

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

Service Request: K1803759
Calibration Date: 6/14/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800293
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

S_GBHCD6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	20	0.6374	06	20	0.6317	07	20	0.6191	08	20	0.6349
09	20	0.6856	10	20	0.6793						

S_Heptachlor-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.3792	02	20	0.3632	03	20	0.383	04	20	0.3723
05	20	0.3818	06	20	0.3967	07	20	0.4103	08	20	0.4093
09	20	0.44	10	20	0.4489						

S_Heptachlrepox13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1666	02	20	0.163	03	20	0.1753	04	20	0.1747
05	20	0.1633	06	20	0.1562	07	20	0.1486	08	20	0.1689
09	20	0.165	10	20	0.1621						

S_Oxychlordane-13C10

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	20	0.1039	02	20	0.09224	03	20	0.1103	04	20	0.09972
05	20	0.1086	06	20	0.1036	07	20	0.09542	08	20	0.1025
09	20	0.117	10	20	0.1109						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.504	02	1.0	3.481	03	2.0	2.599	04	5.0	2.472
05	10	2.269	06	20	2.618	07	40	2.705	08	60	2.507
09	80	2.25	10	100	2.415						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.374	02	1.0	3.509	03	2.0	2.482	04	5.0	2.464
05	10	2.27	06	20	2.328	07	40	2.549	08	60	2.437
09	80	2.243	10	100	2.381						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.6793	02	1.0	0.6805	03	2.0	0.5457	04	5.0	0.522
05	10	0.5312	06	20	0.5037	07	40	0.5111	08	60	0.5013
09	80	0.4933	10	100	0.4996						

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	4.699	02	1.0	3.864	03	2.0	2.557	04	5.0	3.111
05	10	2.569	06	20	2.724	07	40	2.75	08	60	2.584
09	80	2.468	10	100	2.686						

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Calibration Date: 6/14/2018

Initial Calibration Summary
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800293
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.168	02	1.0	1.821	03	2.0	2.199	04	5.0	2.036
05	10	1.869	06	20	2.319	07	40	1.981	08	60	1.931
09	80	1.816	10	100	1.903						

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

Service Request: K1803759
Calibration Date: 6/14/2018

Initial Calibration Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800293
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4'-DDD	TRG	Average RF	% RSD	12.2	≤20	0.5222	0.01
2,4'-DDE	TRG	Average RF	% RSD	12.9	≤20	0.4251	0.01
2,4'-DDT	TRG	Average RF	% RSD	5.8	≤20	0.588	0.01
4,4'-DDD	TRG	Average RF	% RSD	11.8	≤20	0.6346	0.01
4,4'-DDE	TRG	Average RF	% RSD	9.9	≤20	0.3663	0.01
4,4'-DDT	TRG	Average RF	% RSD	7.5	≤20	0.682	0.01
Aldrin	TRG	Quadratic	COD	0.9972	≥	0.9418	0.01
Dieldrin	TRG	Average RF	% RSD	11.2	≤20	0.9786	0.01
Heptachlor	TRG	Average RF	% RSD	18.1	≤20	1.023	0.01
S_4,4'-DDT-d4	SURR	Average RF	% RSD	5.8	≤	3.877	0.01
S_4,4'DDD-d4	SURR	Average RF	% RSD	2.3	≤	6.666	0.01
S_Aldrin-13C12	SURR	Average RF	% RSD	3.4	≤	0.2228	0.01
S_Endrin-13C12	SURR	Average RF	% RSD	4.0	≤	0.1127	0.01
S_GBHCD6	SURR	Average RF	% RSD	3.6	≤	0.6475	0.01
S_Heptachlor-13C10	SURR	Average RF	% RSD	7.2	≤	0.3985	0.01
S_Heptachlrepox13C10	SURR	Average RF	% RSD	4.9	≤	0.1644	0.01
S_Oxychlordane-13C10	SURR	Average RF	% RSD	7.2	≤	0.1044	0.01
alpha-Chlordane	TRG	Average RF	% RSD	16.8	≤20	2.682	0.01
cis-Nonachlor	TRG	Quadratic	COD	0.9973	≥	2.604	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	13.2	≤20	0.5468	0.01
gamma-Chlordane	TRG	Quadratic	COD	0.9968	≥	3.001	0.01
trans-Nonachlor	TRG	Average RF	% RSD	8.6	≤20	2.004	0.01

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Calibration Date: 5/30/2018

Initial Calibration Verification Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800252
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800252-11		J:\MS21\Data\053018\053018F033.D	05/30/2018 23:10

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	18.3	4.914E-1	4.489E-1	-8.655	±25	Average RF
2,4'-DDE	20.0	19.5	3.554E-1	3.463E-1	-2.573	±25	Average RF
2,4'-DDT	20.0	17.9	5.816E-1	5.191E-1	-10.736	±25	Average RF
4,4'-DDD	20.0	19.0	8.11E-1	7.723E-1	-4.773	±25	Average RF
4,4'-DDE	20.0	18.7	3.226E-1	3.02E-1	-6.377	±25	Average RF
4,4'-DDT	20.0	20.1	6.91E-1	6.939E-1	0.423	±25	Average RF
Aldrin	20.0	20.4	1.005E0	9.307E-1	1.82	±25	Quadratic
alpha-Chlordane	20.0	20.0	2.69E0	2.689E0	-0.026	±25	Average RF
cis-Nonachlor	20.0	18.4	2.231E0	2.056E0	-7.861	±25	Average RF
Dieldrin	20.0	16.7	1.144E0	9.532E-1	-16.657	±25	Average RF
gamma-BHC (Lindane)	20.0	19.3	5.735E-1	5.532E-1	-3.543	±25	Average RF
gamma-Chlordane	20.0	20.9	2.981E0	3.116E0	4.53	±25	Average RF
Heptachlor	20.0	19.6	9.647E-1	9.44E-1	-2.148	±25	Average RF
trans-Nonachlor	20.0	18.8	2.113E0	1.987E0	-5.957	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.00	9.144E0	9.14E0	100	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.73	5.807E0	5.497E0	94.6	50-200	Average RF
S_Aldrin-13C12	20.0	18.9	2.894E-1	2.73E-1	94.5	50-200	Average RF
S_Endrin-13C12	20.0	18.5	1.293E-1	1.196E-1	92.5	50-200	Average RF
S_GBHCd6	20.0	18.5	7.555E-1	6.994E-1	92.5	50-200	Average RF
S_Heptachlor-13C10	20.0	18.9	6.27E-1	5.915E-1	94.5	50-200	Average RF
S_Heptachlrepox13C10	20.0	19.2	2.532E-1	2.428E-1	96.0	50-200	Average RF
S_Oxychlordane-13C10	20.0	17.5	1.493E-1	1.304E-1	87.5	50-200	Average RF

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Calibration Date: 7/19/2018

Initial Calibration Verification Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800347
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800347-11		J:\MS21\Data\071918\071918F015.D	07/19/2018 15:26

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	18.3	3.924E-1	3.598E-1	-8.305	±25	Average RF
2,4'-DDE	20.0	19.4	2.941E-1	2.852E-1	-3.030	±25	Average RF
2,4'-DDT	20.0	18.0	4.52E-1	4.06E-1	-10.178	±25	Average RF
4,4'-DDD	20.0	18.6	5.924E-1	5.496E-1	-7.234	±25	Average RF
4,4'-DDE	20.0	17.9	2.631E-1	2.36E-1	-10.300	±25	Average RF
4,4'-DDT	20.0	19.7	6.182E-1	6.091E-1	-1.465	±25	Average RF
Aldrin	20.0	18.3	8.826E-1	8.078E-1	-8.483	±25	Average RF
alpha-Chlordane	20.0	23.2	3.493E0	3.88E0	16.13	±25	Quadratic
cis-Nonachlor	20.0	21.8	4.277E0	4.668E0	9.15	±25	Average RF
Dieldrin	20.0	20.1	1.103E0	1.107E0	0.402	±25	Average RF
gamma-BHC (Lindane)	20.0	20.5	5.266E-1	5.393E-1	2.40	±25	Average RF
gamma-Chlordane	20.0	22.7	3.489E0	3.954E0	13.33	±25	Average RF
Heptachlor	20.0	19.2	1.014E0	8.842E-1	-3.911	±25	Quadratic
trans-Nonachlor	20.0	21.0	2.496E0	2.62E0	4.95	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.45	9.762E0	1.064E1	109	50-200	Average RF
S_4,4'-DDT-d4	5.00	5.32	4.656E0	4.949E0	106	50-200	Average RF
S_Aldrin-13C12	20.0	20.6	3.179E-1	3.271E-1	103	50-200	Average RF
S_Endrin-13C12	20.0	21.6	1.397E-1	1.507E-1	108	50-200	Average RF
S_GBHCd6	20.0	19.9	7.925E-1	7.901E-1	99.5	50-200	Average RF
S_Heptachlor-13C10	20.0	17.5	3.996E-1	3.496E-1	87.5	50-200	Average RF
S_Heptachlrepox13C10	20.0	23.0	2.428E-1	2.796E-1	115	50-200	Average RF
S_Oxychlordane-13C10	20.0	18.9	1.168E-1	1.101E-1	94.5	50-200	Average RF

ALS Group USA, Corp.
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QA/QC Report

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

Service Request: K1803759
Calibration Date: 6/14/2018

Initial Calibration Verification Summary Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800293
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800293-11		J:\MS21\Data\061418\061418F014.D	06/14/2018 15:06

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	18.4	5.222E-1	4.812E-1	-7.847	±25	Average RF
2,4'-DDE	20.0	19.1	4.251E-1	4.066E-1	-4.348	±25	Average RF
2,4'-DDT	20.0	18.8	5.88E-1	5.514E-1	-6.235	±25	Average RF
4,4'-DDD	20.0	18.9	6.346E-1	5.99E-1	-5.610	±25	Average RF
4,4'-DDE	20.0	19.0	3.663E-1	3.473E-1	-5.185	±25	Average RF
4,4'-DDT	20.0	18.7	6.82E-1	6.378E-1	-6.488	±25	Average RF
Aldrin	20.0	19.1	9.418E-1	7.803E-1	-4.440	±25	Quadratic
alpha-Chlordane	20.0	19.8	2.682E0	2.651E0	-1.155	±25	Average RF
cis-Nonachlor	20.0	19.3	2.604E0	2.335E0	-3.570	±25	Quadratic
Dieldrin	20.0	17.8	9.786E-1	8.689E-1	-11.213	±25	Average RF
gamma-BHC (Lindane)	20.0	17.6	5.468E-1	4.8E-1	-12.216	±25	Average RF
gamma-Chlordane	20.0	21.8	3.001E0	2.896E0	8.99	±25	Quadratic
Heptachlor	20.0	18.3	1.023E0	9.376E-1	-8.339	±25	Average RF
trans-Nonachlor	20.0	20.1	2.004E0	2.019E0	0.716	±25	Average RF

Analyte Name	Expected	Result	Average RF	SSV RF	Rec.	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	5.06	6.666E0	6.752E0	101	50-200	Average RF
S_4,4'-DDT-d4	5.00	5.20	3.877E0	4.03E0	104	50-200	Average RF
S_Aldrin-13C12	20.0	22.0	2.228E-1	2.456E-1	110	50-200	Average RF
S_Endrin-13C12	20.0	22.0	1.127E-1	1.242E-1	110	50-200	Average RF
S_GBHCD6	20.0	20.3	6.475E-1	6.578E-1	102	50-200	Average RF
S_Heptachlor-13C10	20.0	20.6	3.985E-1	4.105E-1	103	50-200	Average RF
S_Heptachlrepox13C10	20.0	21.2	1.644E-1	1.738E-1	106	50-200	Average RF
S_Oxychlordane-13C10	20.0	20.5	1.044E-1	1.073E-1	103	50-200	Average RF

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 08:44

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
File ID: J:\MS21\Data\060118\060118F051.D\
Signal ID: 1

Calibration Date: 5/30/2018
Calibration ID: KC1800252
Analysis Lot: 593201
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	21.8	0.4914	0.5353	8.9	NA	±25	Average RF
2,4'-DDE	20.0	26.3	0.3554	0.4678	31.6*	NA	±25	Average RF
2,4'-DDT	20.0	24.1	0.5816	0.7019	20.7	NA	±25	Average RF
4,4'-DDD	20.0	16.2	0.811	0.6588	-18.8	NA	±25	Average RF
4,4'-DDE	20.0	21.7	0.3226	0.3503	8.6	NA	±25	Average RF
4,4'-DDT	20.0	19.0	0.691	0.6548	-5.2	NA	±25	Average RF
Aldrin	20.0	19.2	1.0045	0.8799	NA	-3.9	±25	Quadratic
alpha-Chlordane	20.0	17.8	2.69	2.3971	-10.9	NA	±25	Average RF
cis-Nonachlor	20.0	19.4	2.2309	2.1657	-2.9	NA	±25	Average RF
Dieldrin	20.0	17.6	1.1437	1.0077	-11.9	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	19.2	0.5735	0.551	-3.9	NA	±25	Average RF
gamma-Chlordane	20.0	18.5	2.9809	2.7622	-7.3	NA	±25	Average RF
Heptachlor	20.0	19.0	0.9647	0.9181	-4.8	NA	±25	Average RF
trans-Nonachlor	20.0	18.8	2.1134	1.9911	-5.8	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.29	9.1441	7.8434	85.8	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.11	5.8071	4.7726	82.2	NA	50-200	Average RF
S_Aldrin-13C12	20.0	15.9	0.2894	0.2295	79.3	NA	50-200	Average RF
S_Endrin-13C12	20.0	17.3	0.1293	0.1119	86.5	NA	50-200	Average RF
S_GBHCd6	20.0	17.8	0.7555	0.6708	88.8	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	15.5	0.627	0.4851	77.4	NA	50-200	Average RF
S_Heptachlrepx13C10	20.0	14.8	0.2532	0.187	73.9	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	19.2	0.1493	0.1431	95.8	NA	50-200	Average RF

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/02/18 19:23

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
File ID: J:\MS21\Data\060218\060218F003.D\
Signal ID: 1

Calibration Date: 5/30/2018
Calibration ID: KC1800252
Analysis Lot: 593303
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	20.9	0.4914	0.5138	4.6	NA	±25	Average RF
2,4'-DDE	20.0	25.9	0.3554	0.4603	29.5*	NA	±25	Average RF
2,4'-DDT	20.0	24.4	0.5816	0.7088	21.9	NA	±25	Average RF
4,4'-DDD	20.0	17.6	0.811	0.7141	-12.0	NA	±25	Average RF
4,4'-DDE	20.0	20.1	0.3226	0.3237	0.4	NA	±25	Average RF
4,4'-DDT	20.0	18.9	0.691	0.6515	-5.7	NA	±25	Average RF
Aldrin	20.0	19.9	1.0045	0.91	NA	-0.5	±25	Quadratic
alpha-Chlordane	20.0	20.1	2.69	2.701	0.4	NA	±25	Average RF
cis-Nonachlor	20.0	22.4	2.2309	2.4935	11.8	NA	±25	Average RF
Dieldrin	20.0	16.5	1.1437	0.9411	-17.7	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	19.8	0.5735	0.569	-0.8	NA	±25	Average RF
gamma-Chlordane	20.0	20.0	2.9809	2.9781	-0.1	NA	±25	Average RF
Heptachlor	20.0	19.0	0.9647	0.9189	-4.8	NA	±25	Average RF
trans-Nonachlor	20.0	19.4	2.1134	2.0517	-2.9	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.80	9.1441	8.7728	95.9	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.20	5.8071	4.8826	84.1	NA	50-200	Average RF
S_Aldrin-13C12	20.0	13.6	0.2894	0.1967	68.0	NA	50-200	Average RF
S_Endrin-13C12	20.0	20.4	0.1293	0.1322	102	NA	50-200	Average RF
S_GBHCd6	20.0	16.9	0.7555	0.6374	84.4	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	16.3	0.627	0.5111	81.5	NA	50-200	Average RF
S_Heptachlrepox13C10	20.0	13.9	0.2532	0.1765	69.7	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	18.3	0.1493	0.1369	91.7	NA	50-200	Average RF

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 06/15/18 15:48

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
File ID: J:\MS21\Data\061418\061418F068.D\
Signal ID: 1

Calibration Date: 6/14/2018
Calibration ID: KC1800293
Analysis Lot: 594695
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	19.0	0.5222	0.495	-5.2	NA	±25	Average RF
2,4'-DDE	20.0	19.3	0.4251	0.4105	-3.4	NA	±25	Average RF
2,4'-DDT	20.0	19.5	0.588	0.5743	-2.3	NA	±25	Average RF
4,4'-DDD	20.0	21.7	0.6346	0.689	8.6	NA	±25	Average RF
4,4'-DDE	20.0	19.2	0.3663	0.3511	-4.1	NA	±25	Average RF
4,4'-DDT	20.0	19.6	0.682	0.6672	-2.2	NA	±25	Average RF
Aldrin	20.0	20.7	0.9418	0.845	NA	3.6	±25	Quadratic
alpha-Chlordane	20.0	19.5	2.6819	2.6157	-2.5	NA	±25	Average RF
cis-Nonachlor	20.0	19.4	2.6037	2.354	NA	-2.8	±25	Quadratic
Dieldrin	20.0	17.0	0.9786	0.8297	-15.2	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	19.4	0.5468	0.5293	-3.2	NA	±25	Average RF
gamma-Chlordane	20.0	20.5	3.0011	2.7258	NA	2.5	±25	Quadratic
Heptachlor	20.0	18.7	1.0229	0.9581	-6.3	NA	±25	Average RF
trans-Nonachlor	20.0	20.9	2.0043	2.0898	4.3	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.66	6.6663	6.2171	93.3	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.52	3.877	3.5057	90.4	NA	50-200	Average RF
S_Aldrin-13C12	20.0	18.1	0.2228	0.2016	90.5	NA	50-200	Average RF
S_Endrin-13C12	20.0	22.5	0.1127	0.1265	112	NA	50-200	Average RF
S_GBHCd6	20.0	19.7	0.6475	0.6369	98.4	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	18.3	0.3985	0.3653	91.7	NA	50-200	Average RF
S_Heptachlrepx13C10	20.0	20.5	0.1644	0.1682	102	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	19.2	0.1044	0.1002	96.0	NA	50-200	Average RF

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QA/QC Report

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

Service Request: K1803759
Date Analyzed: 07/20/18 18:06

Continuing Calibration Verification (CCV) Summary
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP
File ID: J:\MS21\Data\072018\072018F021.D\
Signal ID: 1

Calibration Date: 7/19/2018
Calibration ID: KC1800347
Analysis Lot: 599464
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	21.5	0.3924	0.4226	7.7	NA	±25	Average RF
2,4'-DDE	20.0	22.4	0.2941	0.3288	11.8	NA	±25	Average RF
2,4'-DDT	20.0	22.6	0.452	0.5098	12.8	NA	±25	Average RF
4,4'-DDD	20.0	19.8	0.5924	0.5869	-0.9	NA	±25	Average RF
4,4'-DDE	20.0	22.0	0.2631	0.29	10.2	NA	±25	Average RF
4,4'-DDT	20.0	19.9	0.6182	0.6141	-0.7	NA	±25	Average RF
Aldrin	20.0	17.9	0.8826	0.792	-10.3	NA	±25	Average RF
alpha-Chlordane	20.0	17.7	3.4925	2.9689	NA	-11.7	±25	Quadratic
cis-Nonachlor	20.0	15.5	4.2766	3.323	-22.3	NA	±25	Average RF
Dieldrin	20.0	20.7	1.1028	1.1434	3.7	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	20.3	0.5266	0.5332	1.3	NA	±25	Average RF
gamma-Chlordane	20.0	18.5	3.4888	3.2237	-7.6	NA	±25	Average RF
Heptachlor	20.0	20.4	1.0141	0.9365	NA	1.9	±25	Quadratic
trans-Nonachlor	20.0	17.3	2.4963	2.1576	-13.6	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.10	9.7616	8.0111	82.1	NA	50-200	Average RF
S_4,4'-DDT-d4	5.00	4.32	4.6555	4.0266	86.5	NA	50-200	Average RF
S_Aldrin-13C12	20.0	14.3	0.3179	0.2268	71.4	NA	50-200	Average RF
S_Endrin-13C12	20.0	15.7	0.1397	0.1098	78.6	NA	50-200	Average RF
S_GBHCd6	20.0	14.3	0.7925	0.5667	71.5	NA	50-200	Average RF
S_Heptachlor-13C10	20.0	15.0	0.3996	0.2993	74.9	NA	50-200	Average RF
S_Heptachlrepox13C10	20.0	15.3	0.2428	0.1857	76.5	NA	50-200	Average RF
S_Oxychlordane-13C10	20.0	15.8	0.1168	0.0925	79.2	NA	50-200	Average RF

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QA/QC Report

Client: AECOM

Service Request:K1803759

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP

Analysis Lot:593201

Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\060118\060118F051.D\	Continuing Calibration Verification	KQ1807317-01	6/2/2018	08:44:07	
J:\MS21\Data\060118\060118F052.D\	Method Blank	KQ1805400-03	6/2/2018	09:21:40	
J:\MS21\Data\060118\060118F053.D\	Lab Control Sample	KQ1805400-01	6/2/2018	09:59:59	
J:\MS21\Data\060118\060118F054.D\	Duplicate Lab Control Sample	KQ1805400-02	6/2/2018	10:27:34	
J:\MS21\Data\060118\060118F055.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	10:54:50	
J:\MS21\Data\060118\060118F056.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	11:22:05	
J:\MS21\Data\060118\060118F057.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	11:49:22	
J:\MS21\Data\060118\060118F058.D\	PDI-SG-RB-VV-180422	K1803759-032	6/2/2018	12:16:36	
J:\MS21\Data\060118\060118F059.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	12:43:52	
J:\MS21\Data\060118\060118F060.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	13:11:06	
J:\MS21\Data\060118\060118F061.D\	PDI-SG-B226-BL1	K1803759-001	6/2/2018	13:38:20	
J:\MS21\Data\060118\060118F062.D\	PDI-SG-B229-BL1	K1803759-002	6/2/2018	14:05:35	
J:\MS21\Data\060118\060118F063.D\	PDI-SG-B231-BL1	K1803759-003	6/2/2018	14:32:48	
J:\MS21\Data\060118\060118F064.D\	PDI-SG-B238-BL1	K1803759-004	6/2/2018	15:00:03	
J:\MS21\Data\060118\060118F065.D\	PDI-SG-B240-BL1	K1803759-005	6/2/2018	15:27:17	
J:\MS21\Data\060118\060118F066.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	15:54:30	
J:\MS21\Data\060118\060118F067.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	16:21:45	
J:\MS21\Data\060118\060118F068.D\	PDI-SG-B236-BL1	K1803759-008	6/2/2018	16:49:54	
J:\MS21\Data\060118\060118F069.D\	PDI-SG-B239-BL1	K1803759-009	6/2/2018	17:17:09	
J:\MS21\Data\060118\060118F070.D\	PDI-SG-B241-BL1	K1803759-010	6/2/2018	17:44:23	
J:\MS21\Data\060118\060118F071.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	18:11:40	

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QA/QC Report

Client: AECOM

Service Request:K1803759

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

**Analysis Run Log
Organochlorine Pesticides by GC/MS/MS**

Analysis Method: ALS SOP

Analysis Lot:593303

Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\060218\060218F003.D\	Continuing Calibration Verification	KQ1807365-01	6/2/2018	19:23:05	
J:\MS21\Data\060218\060218F004.D\	Method Blank	KQ1805336-04	6/2/2018	19:50:20	
J:\MS21\Data\060218\060218F005.D\	Lab Control Sample	KQ1805336-03	6/2/2018	20:17:34	
J:\MS21\Data\060218\060218F006.D\	PDI-SG-B239-BL1 MS	KQ1805336-01	6/2/2018	20:45:04	
J:\MS21\Data\060218\060218F007.D\	PDI-SG-B239-BL1 DMS	KQ1805336-02	6/2/2018	21:12:18	
J:\MS21\Data\060218\060218F008.D\	PDI-SG-B245-BL1	K1803759-011	6/2/2018	21:40:01	
J:\MS21\Data\060218\060218F009.D\	PDI-SG-B235-BL1	K1803759-012	6/2/2018	22:07:16	
J:\MS21\Data\060218\060218F010.D\	PDI-SG-B227-BL1	K1803759-013	6/2/2018	22:34:31	
J:\MS21\Data\060218\060218F011.D\	PDI-SG-B222-BL1	K1803759-014	6/2/2018	23:01:46	
J:\MS21\Data\060218\060218F012.D\	PDI-SG-B282-BL1	K1803759-015	6/2/2018	23:29:01	
J:\MS21\Data\060218\060218F013.D\	ZZZZZZZ	ZZZZZZZ	6/2/2018	23:56:16	
J:\MS21\Data\060218\060218F014.D\	PDI-SG-B248-BL1	K1803759-017	6/3/2018	00:23:30	
J:\MS21\Data\060218\060218F015.D\	PDI-SG-B249-BL1	K1803759-019	6/3/2018	00:50:47	
J:\MS21\Data\060218\060218F016.D\	PDI-SG-B252-BL1	K1803759-020	6/3/2018	01:18:03	
J:\MS21\Data\060218\060218F017.D\	PDI-SG-B254-BL1	K1803759-021	6/3/2018	01:45:18	
J:\MS21\Data\060218\060218F018.D\	ZZZZZZZ	ZZZZZZZ	6/3/2018	02:12:33	
J:\MS21\Data\060218\060218F019.D\	ZZZZZZZ	ZZZZZZZ	6/3/2018	02:39:48	
J:\MS21\Data\060218\060218F020.D\	ZZZZZZZ	ZZZZZZZ	6/3/2018	03:07:06	
J:\MS21\Data\060218\060218F021.D\	ZZZZZZZ	ZZZZZZZ	6/3/2018	03:34:21	
J:\MS21\Data\060218\060218F022.D\	ZZZZZZZ	ZZZZZZZ	6/3/2018	04:01:36	

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QA/QC Report

Client: AECOM

Service Request:K1803759

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

Analysis Run Log
Organochlorine Pesticides by GC/MS/MS

Analysis Method: ALS SOP

Analysis Lot:594695

Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\061418\061418F068.D\	Continuing Calibration Verification	KQ1807976-01	6/15/2018	15:48:16	
J:\MS21\Data\061418\061418F069.D\	Method Blank	KQ1805337-04	6/15/2018	16:17:22	*
J:\MS21\Data\061418\061418F070.D\	Lab Control Sample	KQ1805337-03	6/15/2018	16:46:45	*
J:\MS21\Data\061418\061418F071.D\	PDI-SG-B247-BL1 MS	KQ1805337-01	6/15/2018	17:16:09	*
J:\MS21\Data\061418\061418F072.D\	PDI-SG-B247-BL1 DMS	KQ1805337-02	6/15/2018	17:45:38	*
J:\MS21\Data\061418\061418F073.D\	ZZZZZZZ	ZZZZZZZ	6/15/2018	18:15:16	
J:\MS21\Data\061418\061418F074.D\	ZZZZZZZ	ZZZZZZZ	6/15/2018	18:44:31	
J:\MS21\Data\061418\061418F075.D\	PDI-SG-B247-BL1	K1803759-018	6/15/2018	19:13:52	*
J:\MS21\Data\061418\061418F076.D\	PDI-SG-B263-BL1	K1803759-022	6/15/2018	19:43:21	*
J:\MS21\Data\061418\061418F077.D\	PDI-SG-B300-BL1	K1803759-023	6/15/2018	20:12:55	*
J:\MS21\Data\061418\061418F078.D\	PDI-SG-B262-BL1	K1803759-024	6/15/2018	20:42:35	*
J:\MS21\Data\061418\061418F079.D\	PDI-SG-B262-BL1-D	K1803759-025	6/15/2018	21:12:18	*
J:\MS21\Data\061418\061418F080.D\	PDI-SG-B286-BL1	K1803759-026	6/15/2018	21:42:20	*
J:\MS21\Data\061418\061418F081.D\	PDI-SG-B283-BL1	K1803759-027	6/15/2018	22:12:43	*
J:\MS21\Data\061418\061418F082.D\	PDI-SG-B277-BL1	K1803759-028	6/15/2018	22:43:04	*
J:\MS21\Data\061418\061418F083.D\	PDI-SG-B268-BL1	K1803759-029	6/15/2018	23:13:38	*
J:\MS21\Data\061418\061418F084.D\	PDI-SG-B275-BL1	K1803759-030	6/15/2018	23:44:19	*
J:\MS21\Data\061418\061418F085.D\	PDI-SG-B269-BL1	K1803759-031	6/16/2018	00:15:06	*
J:\MS21\Data\061418\061418F086.D\	ZZZZZZZ	ZZZZZZZ	6/16/2018	00:45:59	
J:\MS21\Data\061418\061418F087.D\	ZZZZZZZ	ZZZZZZZ	6/16/2018	01:16:53	

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QA/QC Report

Client: AECOM

Service Request: K1803759

Project: Portland Harbor Pre-Remedial Design Investigation/60566335

**Analysis Run Log
Organochlorine Pesticides by GC/MS/MS**

Analysis Method: ALS SOP

Analysis Lot: 599464

Instrument ID: K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\072018\072018F021.D\	Continuing Calibration Verification	KQ1809858-01	7/20/2018	18:06:32	
J:\MS21\Data\072018\072018F022.D\	Method Blank	KQ1809004-04	7/20/2018	18:33:41	
J:\MS21\Data\072018\072018F023.D\	Lab Control Sample	KQ1809004-03	7/20/2018	19:00:53	
J:\MS21\Data\072018\072018F024.D\	Batch QC MS	KQ1809004-01	7/20/2018	19:28:02	
J:\MS21\Data\072018\072018F025.D\	Batch QC DMS	KQ1809004-02	7/20/2018	19:55:09	
J:\MS21\Data\072018\072018F026.D\	ZZZZZZZ	ZZZZZZZ	7/20/2018	20:22:21	
J:\MS21\Data\072018\072018F027.D\	ZZZZZZZ	ZZZZZZZ	7/20/2018	20:49:31	
J:\MS21\Data\072018\072018F028.D\	ZZZZZZZ	ZZZZZZZ	7/20/2018	21:16:44	
J:\MS21\Data\072018\072018F029.D\	ZZZZZZZ	ZZZZZZZ	7/20/2018	21:43:56	
J:\MS21\Data\072018\072018F030.D\	ZZZZZZZ	ZZZZZZZ	7/20/2018	22:11:12	
J:\MS21\Data\072018\072018F031.D\	PDI-SG-B230-BL1	K1803759-006	7/20/2018	22:38:22	
J:\MS21\Data\072018\072018F032.D\	PDI-SG-B232-BL1	K1803759-007	7/20/2018	23:05:56	
J:\MS21\Data\072018\072018F033.D\	PDI-SG-B244-BL1	K1803759-016	7/20/2018	23:33:08	
J:\MS21\Data\072018\072018F034.D\	Batch QC	K1803850-019	7/21/2018	00:01:05	
J:\MS21\Data\072018\072018F035.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	00:28:17	
J:\MS21\Data\072018\072018F036.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	00:55:28	
J:\MS21\Data\072018\072018F037.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	01:22:41	
J:\MS21\Data\072018\072018F038.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	01:49:53	
J:\MS21\Data\072018\072018F039.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	02:17:05	
J:\MS21\Data\072018\072018F040.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	02:44:17	
J:\MS21\Data\072018\072018F041.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	03:11:29	
J:\MS21\Data\072018\072018F042.D\	ZZZZZZZ	ZZZZZZZ	7/21/2018	03:38:41	

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Prep Summary Report

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

Service Request:K1803759

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541
Analytical Method: ALS SOP

Extraction Lot: 312623
Extraction Date: 04/27/18 11:03

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B226-BL1	K1803759-001	4/20/18	4/23/18	20.314 g	1 mL	43.5
PDI-SG-B229-BL1	K1803759-002	4/20/18	4/23/18	20.080 g	1 mL	52.1
PDI-SG-B231-BL1	K1803759-003	4/20/18	4/23/18	20.456 g	1 mL	50.8
PDI-SG-B238-BL1	K1803759-004	4/20/18	4/23/18	20.235 g	1 mL	48.2
PDI-SG-B240-BL1	K1803759-005	4/20/18	4/23/18	20.207 g	1 mL	59.0
PDI-SG-B236-BL1	K1803759-008	4/20/18	4/23/18	20.064 g	1 mL	42.4
PDI-SG-B239-BL1	K1803759-009	4/21/18	4/23/18	20.395 g	1 mL	39.9
PDI-SG-B241-BL1	K1803759-010	4/21/18	4/23/18	20.459 g	1 mL	42.3
PDI-SG-B245-BL1	K1803759-011	4/21/18	4/23/18	20.251 g	1 mL	69.4
PDI-SG-B235-BL1	K1803759-012	4/21/18	4/23/18	20.176 g	1 mL	45.1
PDI-SG-B227-BL1	K1803759-013	4/21/18	4/23/18	20.252 g	1 mL	46.6
PDI-SG-B222-BL1	K1803759-014	4/21/18	4/23/18	20.328 g	1 mL	41.2
PDI-SG-B282-BL1	K1803759-015	4/21/18	4/23/18	20.186 g	1 mL	37.7
PDI-SG-B248-BL1	K1803759-017	4/22/18	4/23/18	20.067 g	1 mL	43.7
PDI-SG-B249-BL1	K1803759-019	4/22/18	4/23/18	20.242 g	1 mL	51.8
PDI-SG-B252-BL1	K1803759-020	4/22/18	4/23/18	20.077 g	1 mL	64.2
PDI-SG-B254-BL1	K1803759-021	4/22/18	4/23/18	20.029 g	1 mL	36.2
Matrix Spike	KQ1805336-01MS	4/21/18	4/23/18	20.170 g	1 mL	39.9
Duplicate Matrix Spike	KQ1805336-02DMS	4/21/18	4/23/18	20.416 g	1 mL	39.9
Lab Control Sample	KQ1805336-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1805336-04MB	NA	NA	20.4590 g	1 mL	

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Prep Summary Report

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

Service Request:K1803759

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541
Analytical Method: ALS SOP

Extraction Lot: 317186
Extraction Date: 07/06/18 10:30

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B230-BL1	K1803759-006	4/20/18	4/23/18	1.067 g	1 mL	40.0
PDI-SG-B232-BL1	K1803759-007	4/20/18	4/23/18	1.036 g	1 mL	63.3
PDI-SG-B244-BL1	K1803759-016	4/22/18	4/23/18	1.016 g	1 mL	43.7
Batch QC	K1803850-019	NA	NA	5.081 g	1 mL	58.0
Matrix Spike	KQ1809004-01MS	NA	NA	5.059 g	1 mL	58.0
Duplicate Matrix Spike	KQ1809004-02DMS	NA	NA	5.079 g	1 mL	58.0
Lab Control Sample	KQ1809004-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1809004-04MB	NA	NA	10 g	1 mL	

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Prep Summary Report

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

Service Request: K1803759

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3541
Analytical Method: ALS SOP

Extraction Lot: 312624
Extraction Date: 05/02/18 15:20

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B247-BL1	K1803759-018	4/22/18	4/23/18	20.194 g	1 mL	39.5
PDI-SG-B263-BL1	K1803759-022	4/22/18	4/23/18	20.174 g	1 mL	38.9
PDI-SG-B300-BL1	K1803759-023	4/22/18	4/23/18	20.469 g	1 mL	36.5
PDI-SG-B262-BL1	K1803759-024	4/22/18	4/23/18	20.213 g	1 mL	40.3
PDI-SG-B262-BL1-D	K1803759-025	4/22/18	4/23/18	20.449 g	1 mL	40.2
PDI-SG-B286-BL1	K1803759-026	4/22/18	4/23/18	20.368 g	1 mL	43.3
PDI-SG-B283-BL1	K1803759-027	4/22/18	4/23/18	20.078 g	1 mL	44.9
PDI-SG-B277-BL1	K1803759-028	4/22/18	4/23/18	20.010 g	1 mL	49.6
PDI-SG-B268-BL1	K1803759-029	4/22/18	4/23/18	20.398 g	1 mL	43.7
PDI-SG-B275-BL1	K1803759-030	4/22/18	4/23/18	20.479 g	1 mL	52.9
PDI-SG-B269-BL1	K1803759-031	4/22/18	4/23/18	20.283 g	1 mL	43.5
Matrix Spike	KQ1805337-01MS	4/22/18	4/23/18	20.240 g	1 mL	39.5
Duplicate Matrix Spike	KQ1805337-02DMS	4/22/18	4/23/18	20.262 g	1 mL	39.5
Lab Control Sample	KQ1805337-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1805337-04MB	NA	NA	20.4790 g	1 mL	

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Prep Summary Report

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

Service Request:K1803759

Organochlorine Pesticides by GC/MS/MS

Prep Method: EPA 3535A
Analytical Method: ALS SOP

Extraction Lot: 312718
Extraction Date: 04/26/18 14:43

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-RB-VV-180422	K1803759-032	4/22/18	4/23/18	970.0000 mL	1 mL	
Lab Control Sample	KQ1805400-01LCS	NA	NA	1000 mL	1 mL	
Duplicate Lab Control Sample	KQ1805400-02DLCS	NA	NA	1000 mL	1 mL	
Method Blank	KQ1805400-03MB	NA	NA	1010.0000	1 mL	