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[www.alsglobal.com](http://www.alsglobal.com)

August 20, 2018

**Analytical Report for Service Request No: K1806864**

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 July 23, 2018  
For your reference, these analyses have been assigned our service request number **K1806864**.

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](http://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](mailto: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**

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

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

**Service Request:** K1806864  
**Date Received:** 07/23/2018

### 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:

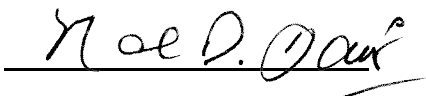
Three sediment samples were received for analysis at ALS Environmental on 07/23/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

#### Semivolatiles by GC/MS:

Method ALS SOP, 08/09/2018: The upper control criterion was exceeded for cis-Nonachlor in Laboratory Control Sample (LCS) KQ1809987-03 and Matrix Spike (MS) KQ1809987-01 and Matrix Spike Duplicate (MSD) KQ1809987-02. The analytes in question was not detected 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, 08/09/2018: The spike recovery of 2,4'-DDT for Laboratory Control Sample (LCS) KQ1809987-03 was outside the lower control criterion. The analytes in question was not detected in samples PDI-SG-B172-BL1 and PDI-SG-B266-BL1, it was detected in sample PDI-SG-B174-BL1. The error associated with reduced recovery indicated a potential low bias. The data was flagged to indicate the problem.

Approved by



Date

08/20/2018



## Chain of Custody

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PC H2

### Cooler Receipt and Preservation Form

Client AECOM Service Request K18 06864  
 Received: 7/23/18 Opened: 7/23/18 By: [Signature] Unloaded: 7/23/18 By: [Signature]

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

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
<u>3.4</u>	<u>3.3</u>	<u>4.6</u>	<u>4.5</u>	<u>-0.1</u>	<u>308</u>	<u>NA</u>		<input checked="" type="checkbox"/> NA

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

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**COLUMBIA ANALYTICAL SERVICES, INC.**

Now part of the ALS Group

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:** K1806864  
**Date Collected:** 07/20/18  
**Date Received:** 07/23/18  
**Units:** Percent  
**Basis:** As Received

**Solids, Total**

<b>Sample Name</b>	<b>Lab Code</b>	<b>Result</b>	<b>MRL</b>	<b>MDL</b>	<b>Dil.</b>	<b>Date Analyzed</b>	<b>Q</b>
PDI-SG-B172-BL1	K1806864-001	<b>37.9</b>	-	-	1	07/25/18 12:22	
PDI-SG-B174-BL1	K1806864-002	<b>38.0</b>	-	-	1	07/25/18 12:22	
PDI-SG-B266-BL1	K1806864-003	<b>58.3</b>	-	-	1	07/25/18 12:22	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

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

**Service Request:** K1806864  
**Date Collected:** 07/20/18  
**Date Received:** 07/23/18  
**Date Analyzed:** 07/25/18

**Replicate Sample Summary**  
**Inorganic Parameters**

**Sample Name:** PDI-SG-B172-BL1  
**Lab Code:** K1806864-001

**Units:** Percent  
**Basis:** As Received

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1806864-001DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Solids, Total	160.3 Modified	-	37.9	37.8	37.9	<1	20

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 By GC/ MS/MS

**ALS Environmental—Kelso Laboratory**  
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**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AECOM  
**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335  
**Sample Matrix:** Sediment  
**Sample Name:** PDI-SG-B172-BL1  
**Lab Code:** K1806864-001

**Service Request:** K1806864  
**Date Collected:** 07/20/18 11:45  
**Date Received:** 07/23/18 14:05

**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	<b>1.2</b>	0.49	0.31	1	08/09/18 19:22	7/25/18	
2,4'-DDE	ND U	0.49	0.39	1	08/09/18 19:22	7/25/18	
2,4'-DDT	ND U	0.49	0.46	1	08/09/18 19:22	7/25/18	*
4,4'-DDD	<b>3.6</b>	0.49	0.18	1	08/09/18 19:22	7/25/18	
4,4'-DDE	<b>3.6</b>	0.49	0.35	1	08/09/18 19:22	7/25/18	
4,4'-DDT	<b>0.46 J</b>	0.49	0.23	1	08/09/18 19:22	7/25/18	
Aldrin	ND U	0.49	0.39	1	08/09/18 19:22	7/25/18	
alpha-Chlordane	ND U	0.98	0.31	1	08/09/18 19:22	7/25/18	
cis-Nonachlor	ND U	0.49	0.48	1	08/09/18 19:22	7/25/18	*
Dieldrin	ND U	0.98	0.38	1	08/09/18 19:22	7/25/18	
gamma-BHC (Lindane)	ND U	0.49	0.16	1	08/09/18 19:22	7/25/18	
gamma-Chlordane	ND U	0.98	0.32	1	08/09/18 19:22	7/25/18	
Heptachlor	ND U	0.49	0.20	1	08/09/18 19:22	7/25/18	
trans-Nonachlor	<b>0.36 J</b>	0.98	0.29	1	08/09/18 19:22	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	94	5 - 120	08/09/18 19:22	
S_4,4'-DDT-d4	102	13 - 200	08/09/18 19:22	
S_Aldrin-13C12	25	10 - 143	08/09/18 19:22	
S_Endrin-13C12	84	20 - 157	08/09/18 19:22	
S_GBHCD6	23	5 - 124	08/09/18 19:22	
S_Heptachlor-13C10	18	10 - 177	08/09/18 19:22	
S_Heptachlrepox13C10	44	8 - 146	08/09/18 19:22	
S_Oxychlordane-13C10	51	5 - 144	08/09/18 19:22	

**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AECOM  
**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335  
**Sample Matrix:** Sediment  
**Sample Name:** PDI-SG-B174-BL1  
**Lab Code:** K1806864-002

**Service Request:** K1806864  
**Date Collected:** 07/20/18 13:15  
**Date Received:** 07/23/18 14:05

**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	<b>2.0</b>	0.50	0.32	1	08/09/18 19:49	7/25/18	
2,4'-DDE	ND U	0.50	0.40	1	08/09/18 19:49	7/25/18	
2,4'-DDT	<b>0.96</b>	0.50	0.47	1	08/09/18 19:49	7/25/18	*
4,4'-DDD	<b>7.2</b>	0.50	0.18	1	08/09/18 19:49	7/25/18	
4,4'-DDE	<b>4.1</b>	0.50	0.35	1	08/09/18 19:49	7/25/18	
4,4'-DDT	<b>2.0</b>	0.50	0.24	1	08/09/18 19:49	7/25/18	
Aldrin	ND U	0.50	0.40	1	08/09/18 19:49	7/25/18	
alpha-Chlordane	<b>0.36 J</b>	1.0	0.31	1	08/09/18 19:49	7/25/18	
cis-Nonachlor	ND U	0.50	0.49	1	08/09/18 19:49	7/25/18	*
Dieldrin	ND U	1.0	0.39	1	08/09/18 19:49	7/25/18	
gamma-BHC (Lindane)	ND U	0.50	0.16	1	08/09/18 19:49	7/25/18	
gamma-Chlordane	<b>0.38 J</b>	1.0	0.32	1	08/09/18 19:49	7/25/18	
Heptachlor	ND U	0.50	0.20	1	08/09/18 19:49	7/25/18	
trans-Nonachlor	<b>0.39 J</b>	1.0	0.29	1	08/09/18 19:49	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	90	5 - 120	08/09/18 19:49	
S_4,4'-DDT-d4	97	13 - 200	08/09/18 19:49	
S_Aldrin-13C12	21	10 - 143	08/09/18 19:49	
S_Endrin-13C12	69	20 - 157	08/09/18 19:49	
S_GBHCD6	21	5 - 124	08/09/18 19:49	
S_Heptachlor-13C10	17	10 - 177	08/09/18 19:49	
S_Heptachlrepox13C10	39	8 - 146	08/09/18 19:49	
S_Oxychlordane-13C10	46	5 - 144	08/09/18 19:49	



**ALS Group USA, Corp.**  
dba ALS Environmental

Analytical Report

**Client:** AECOM  
**Project:** Portland Harbor Pre-Remedial Design Investigation/60566335  
**Sample Matrix:** Sediment  
**Sample Name:** PDI-SG-B266-BL1  
**Lab Code:** K1806864-003

**Service Request:** K1806864  
**Date Collected:** 07/20/18 15:15  
**Date Received:** 07/23/18 14:05

**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	0.31	0.20	1	08/09/18 20:16	7/25/18	
2,4'-DDE	ND U	0.31	0.25	1	08/09/18 20:16	7/25/18	
2,4'-DDT	ND U	0.31	0.30	1	08/09/18 20:16	7/25/18	*
4,4'-DDD	<b>0.52</b>	0.31	0.11	1	08/09/18 20:16	7/25/18	
4,4'-DDE	<b>1.1</b>	0.31	0.22	1	08/09/18 20:16	7/25/18	
4,4'-DDT	ND U	0.31	0.15	1	08/09/18 20:16	7/25/18	
Aldrin	ND U	0.31	0.25	1	08/09/18 20:16	7/25/18	
alpha-Chlordane	ND U	0.63	0.20	1	08/09/18 20:16	7/25/18	
cis-Nonachlor	ND U	0.31	0.31	1	08/09/18 20:16	7/25/18	*
Dieldrin	ND U	0.63	0.25	1	08/09/18 20:16	7/25/18	
gamma-BHC (Lindane)	ND U	0.31	0.098	1	08/09/18 20:16	7/25/18	
gamma-Chlordane	ND U	0.63	0.21	1	08/09/18 20:16	7/25/18	
Heptachlor	ND U	0.31	0.13	1	08/09/18 20:16	7/25/18	
trans-Nonachlor	ND U	0.63	0.19	1	08/09/18 20:16	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	108	5 - 120	08/09/18 20:16	
S_4,4'-DDT-d4	109	13 - 200	08/09/18 20:16	
S_Aldrin-13C12	25	10 - 143	08/09/18 20:16	
S_Endrin-13C12	88	20 - 157	08/09/18 20:16	
S_GBHCD6	24	5 - 124	08/09/18 20:16	
S_Heptachlor-13C10	17	10 - 177	08/09/18 20:16	
S_Heptachlrepox13C10	35	8 - 146	08/09/18 20:16	
S_Oxychlordane-13C10	52	5 - 144	08/09/18 20:16	

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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:** KQ1809987-04

**Service Request:** K1806864  
**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	08/09/18 09:52	7/25/18	
2,4'-DDE	ND U	0.10	0.079	1	08/09/18 09:52	7/25/18	
2,4'-DDT	ND U	0.10	0.094	1	08/09/18 09:52	7/25/18	
4,4'-DDD	ND U	0.10	0.035	1	08/09/18 09:52	7/25/18	
4,4'-DDE	ND U	0.10	0.070	1	08/09/18 09:52	7/25/18	
4,4'-DDT	ND U	0.10	0.047	1	08/09/18 09:52	7/25/18	
Aldrin	ND U	0.10	0.079	1	08/09/18 09:52	7/25/18	
alpha-Chlordane	ND U	0.20	0.062	1	08/09/18 09:52	7/25/18	
cis-Nonachlor	ND U	0.10	0.097	1	08/09/18 09:52	7/25/18	
Dieldrin	ND U	0.20	0.077	1	08/09/18 09:52	7/25/18	
gamma-BHC (Lindane)	ND U	0.10	0.031	1	08/09/18 09:52	7/25/18	
gamma-Chlordane	ND U	0.20	0.064	1	08/09/18 09:52	7/25/18	
Heptachlor	ND U	0.10	0.039	1	08/09/18 09:52	7/25/18	
trans-Nonachlor	ND U	0.20	0.058	1	08/09/18 09:52	7/25/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
S_4,4'DDD-d4	84	5 - 120	08/09/18 09:52	
S_4,4'-DDT-d4	90	13 - 200	08/09/18 09:52	
S_Aldrin-13C12	24	10 - 143	08/09/18 09:52	
S_Endrin-13C12	65	20 - 157	08/09/18 09:52	
S_GBHCD6	29	5 - 124	08/09/18 09:52	
S_Heptachlor-13C10	25	10 - 177	08/09/18 09:52	
S_Heptachlrepox13C10	33	8 - 146	08/09/18 09:52	
S_Oxychlordane-13C10	36	5 - 144	08/09/18 09:52	

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

**Service Request:** K1806864

**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
Batch QC	K1804798-010	60	47	52
PDI-SG-B172-BL1	K1806864-001	94	102	25
PDI-SG-B174-BL1	K1806864-002	90	97	21
PDI-SG-B266-BL1	K1806864-003	108	109	25
Method Blank	KQ1809987-04	84	90	24
Lab Control Sample	KQ1809987-03	83	96	27
Batch QC	KQ1809987-01	74	81	24
Batch QC	KQ1809987-02	89	98	25

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

**Service Request:** K1806864

**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
Batch QC	K1804798-010	60	39	47
PDI-SG-B172-BL1	K1806864-001	84	23	18
PDI-SG-B174-BL1	K1806864-002	69	21	17
PDI-SG-B266-BL1	K1806864-003	88	24	17
Method Blank	KQ1809987-04	65	29	25
Lab Control Sample	KQ1809987-03	61	32	28
Batch QC	KQ1809987-01	60	27	26
Batch QC	KQ1809987-02	66	29	27

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QA/QC Report

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

**Service Request:** K1806864

**SURROGATE RECOVERY SUMMARY**  
**Organochlorine Pesticides by GC/MS/MS**

**Analysis Method:** ALS SOP  
**Extraction Method:** EPA 3541

Sample Name	Lab Code	S_Heptachlrepx13C10	S_Oxychlorane-13C10
		8-146	5-144
Batch QC	K1804798-010	42	70
PDI-SG-B172-BL1	K1806864-001	44	51
PDI-SG-B174-BL1	K1806864-002	39	46
PDI-SG-B266-BL1	K1806864-003	35	52
Method Blank	KQ1809987-04	33	36
Lab Control Sample	KQ1809987-03	33	36
Batch QC	KQ1809987-01	30	35
Batch QC	KQ1809987-02	34	33

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QA/QC Report

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

**Service Request:** K1806864  
**Date Analyzed:** 08/09/18 09:16

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

**File ID:** J:\MS21\Data\080918\080918F003.D\  
**Instrument ID:** K-MSMS-01  
**Analysis Method:** ALS SOP

**Lab Code:** KQ1810804-01  
**Analysis Lot:** 601816  
**Signal ID:** 1

	Pyrene-d10	
	Area	RT
<b>ICAL Result ==&gt;</b>	46,754	14.366
<b>Upper Limit ==&gt;</b>	93,508	14.87
<b>Lower Limit ==&gt;</b>	23,377	13.87

**Associated Analyses**

Continuing Calibration Verification	KQ1810804-01	67640.8	14.366
Method Blank	KQ1809987-04	54456.7	14.366
Lab Control Sample	KQ1809987-03	48744	14.366
Batch QCMS	KQ1809987-01	55801	14.3661
Batch QCDMS	KQ1809987-02	52391.8	14.366
PDI-SG-B172-BL1	K1806864-001	68644.4	14.3917
PDI-SG-B174-BL1	K1806864-002	64161.2	14.3917
PDI-SG-B266-BL1	K1806864-003	67779.9	14.3917

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QA/QC Report

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

**Service Request:** K1806864  
**Date Collected:** N/A  
**Date Received:** N/A  
**Date Analyzed:** 08/9/18  
**Date Extracted:** 07/25/18

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

**Sample Name:** Batch QC  
**Lab Code:** K1804798-010  
**Analysis Method:** ALS SOP  
**Prep Method:** EPA 3541

**Units:** ug/Kg  
**Basis:** Dry

Analyte Name	Sample Result	Result	Matrix Spike KQ1809987-01		Duplicate Matrix Spike KQ1809987-02		% Rec Limits	RPD	RPD Limit	
			Spike Amount	% Rec	Result	Spike Amount				% Rec
2,4'-DDD	ND U	31.0	36.5	85	33.6	37.9	89	32-169	8	40
2,4'-DDE	ND U	25.1	36.5	69	25.9	37.9	68	43-155	3	40
2,4'-DDT	ND U	28.9	36.5	79	30.8	37.9	81	55-161	7	40
4,4'-DDD	0.67 BJ	32.1	36.5	86	34.5	37.9	89	10-190	7	40
4,4'-DDE	1.4 B	29.0	36.5	76	31.1	37.9	78	35-162	7	40
4,4'-DDT	ND U	35.0	36.5	96	38.4	37.9	101	24-183	9	40
Aldrin	ND U	30.8	36.5	84	37.5	37.9	99	52-151	20	40
alpha-Chlordane	ND U	38.4	36.5	105	49.9	37.9	132	31-156	26	40
cis-Nonachlor	ND U	56.3	36.5	154 *	72.6	37.9	192 *	27-144	25	40
Dieldrin	ND U	24.0	36.5	66	25.4	37.9	67	28-150	5	40
gamma-BHC (Lindane)	ND U	32.9	36.5	90	38.8	37.9	102	64-135	16	40
gamma-Chlordane	ND U	34.8	36.5	95	45.5	37.9	120	31-158	27	40
Heptachlor	ND U	30.2	36.5	83	34.1	37.9	90	76-117	12	40
trans-Nonachlor	ND U	34.5	36.5	95	53.6	37.9	142	35-153	44*	40

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

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

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

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QA/QC Report

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

**Service Request:** K1806864  
**Date Analyzed:** 08/09/18  
**Date Extracted:** 07/25/18

**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:** 601816

**Lab Control Sample**  
**KQ1809987-03**

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4'-DDD	1.71	2.00	86	73-122
2,4'-DDE	1.41	2.00	71	54-145
2,4'-DDT	1.53	2.00	76 *	77-118
4,4'-DDD	1.76	2.00	88	74-117
4,4'-DDE	1.51	2.00	75	66-132
4,4'-DDT	1.88	2.00	94	78-116
Aldrin	1.73	2.00	87	74-122
alpha-Chlordane	2.26	2.00	113	74-130
cis-Nonachlor	3.37	2.00	169 *	69-134
Dieldrin	1.42	2.00	71	62-131
gamma-BHC (Lindane)	1.93	2.00	96	79-116
gamma-Chlordane	2.10	2.00	105	76-128
Heptachlor	1.64	2.00	82	81-114
trans-Nonachlor	2.25	2.00	113	76-124



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QA/QC Report

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

**Service Request:** K1806864  
**Date Analyzed:** 08/09/18 09:52  
**Date Extracted:** 07/25/18

**Method Blank Summary**  
**Organochlorine Pesticides by GC/MS/MS**

**Sample Name:** Method Blank  
**Lab Code:** KQ1809987-04  
**Analysis Method:** ALS SOP  
**Prep Method:** EPA 3541

**Instrument ID:** K-MSMS-01  
**File ID:** J:\MS21\Data\080918\080918F004.D\  
**Analysis Lot:** 601816  
**Extraction Lot:** 318364

This Method Blank applies to the following analyses.

<b>Sample Name</b>	<b>Lab Code</b>	<b>File ID</b>	<b>Date Analyzed</b>
Lab Control Sample	KQ1809987-03	J:\MS21\Data\080918\080918F005.D\	08/09/18 10:16
MS	KQ1809987-01	J:\MS21\Data\080918\080918F006.D\	08/09/18 10:43
DMS	KQ1809987-02	J:\MS21\Data\080918\080918F007.D\	08/09/18 11:10
PDI-SG-B172-BL1	K1806864-001	J:\MS21\Data\080918\080918F025.D\	08/09/18 19:22
PDI-SG-B174-BL1	K1806864-002	J:\MS21\Data\080918\080918F026.D\	08/09/18 19:49
PDI-SG-B266-BL1	K1806864-003	J:\MS21\Data\080918\080918F027.D\	08/09/18 20:16

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QA/QC Report

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

**Service Request:** K1806864  
**Date Analyzed:** 08/09/18 10:16  
**Date Extracted:** 07/25/18

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

**Sample Name:** Lab Control Sample      **Instrument ID:** K-MSMS-01  
**Lab Code:** KQ1809987-03      **File ID:** J:\MS21\Data\080918\080918F005.D\  
**Analysis Method:** ALS SOP      **Analysis Lot:** 601816  
**Prep Method:** EPA 3541      **Extraction Lot:** 318364

This Lab Control Sample applies to the following analyses.

<b>Sample Name</b>	<b>Lab Code</b>	<b>File ID</b>	<b>Date Analyzed</b>
Method Blank	KQ1809987-04	J:\MS21\Data\080918\080918F004.D\	08/09/18 09:52
MS	KQ1809987-01	J:\MS21\Data\080918\080918F006.D\	08/09/18 10:43
DMS	KQ1809987-02	J:\MS21\Data\080918\080918F007.D\	08/09/18 11:10
PDI-SG-B172-BL1	K1806864-001	J:\MS21\Data\080918\080918F025.D\	08/09/18 19:22
PDI-SG-B174-BL1	K1806864-002	J:\MS21\Data\080918\080918F026.D\	08/09/18 19:49
PDI-SG-B266-BL1	K1806864-003	J:\MS21\Data\080918\080918F027.D\	08/09/18 20:16

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QC/QC Report

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

**Service Request:** K1806864  
**Date Analyzed:** 07/09/18 18:02

**Tune Summary**  
**Organochlorine Pesticides by GC/MS/MS**

**File ID:** J:\MS21\Data\070918\070918F023.D\  
**Instrument ID:** K-MSMS-01

**Analytical Method:** ALS SOP  
**Analysis Lot:** 597920

<b>Sample Name</b>	<b>Lab Code</b>	<b>File ID:</b>	<b>Date Analyzed:</b>	<b>Q</b>
Batch QC	K1804798-010	J:\MS21\Data\070918\070918F023.D\	07/09/18 18:02	

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QC/QC Report

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

**Service Request:** K1806864  
**Date Analyzed:** 08/09/18 09:16

**Tune Summary**  
**Organochlorine Pesticides by GC/MS/MS**

**File ID:** J:\MS21\Data\080918\080918F003.D\  
**Instrument ID:** K-MSMS-01

**Analytical Method:** ALS SOP  
**Analysis Lot:** 601816

<b>Sample Name</b>	<b>Lab Code</b>	<b>File ID:</b>	<b>Date Analyzed:</b>	<b>Q</b>
Continuing Calibration Verification	KQ1810804-01	J:\MS21\Data\080918\080918F003.D\	08/09/18 09:16	
Method Blank	KQ1809987-04	J:\MS21\Data\080918\080918F004.D\	08/09/18 09:52	
Lab Control Sample	KQ1809987-03	J:\MS21\Data\080918\080918F005.D\	08/09/18 10:16	
Batch QC	KQ1809987-01	J:\MS21\Data\080918\080918F006.D\	08/09/18 10:43	
Batch QC	KQ1809987-02	J:\MS21\Data\080918\080918F007.D\	08/09/18 11:10	
PDI-SG-B172-BL1	K1806864-001	J:\MS21\Data\080918\080918F025.D\	08/09/18 19:22	
PDI-SG-B174-BL1	K1806864-002	J:\MS21\Data\080918\080918F026.D\	08/09/18 19:49	
PDI-SG-B266-BL1	K1806864-003	J:\MS21\Data\080918\080918F027.D\	08/09/18 20:16	

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QA/QC Report

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

Service Request: K1806864  
Calibration Date: 7/6/2018

Initial Calibration Summary  
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800329  
Instrument ID: K-MSMS-01

Signal ID: 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800329-11		J:\MS21\Data\070618\070618F015.D	07/06/2018 14:05
01	KC1800329-01		J:\MS21\Data\070618\070618F015.D	07/06/2018 14:05
12	KC1800329-12		J:\MS21\Data\070618\070618F016.D	07/06/2018 14:32
02	KC1800329-02		J:\MS21\Data\070618\070618F016.D	07/06/2018 14:32
03	KC1800329-03		J:\MS21\Data\070618\070618F017.D	07/06/2018 14:59
13	KC1800329-13		J:\MS21\Data\070618\070618F017.D	07/06/2018 14:59
04	KC1800329-04		J:\MS21\Data\070618\070618F018.D	07/06/2018 15:26
14	KC1800329-14		J:\MS21\Data\070618\070618F018.D	07/06/2018 15:26
15	KC1800329-15		J:\MS21\Data\070618\070618F019.D	07/06/2018 15:54
05	KC1800329-05		J:\MS21\Data\070618\070618F019.D	07/06/2018 15:54
06	KC1800329-06		J:\MS21\Data\070618\070618F020.D	07/06/2018 16:21
16	KC1800329-16		J:\MS21\Data\070618\070618F020.D	07/06/2018 16:21
07	KC1800329-07		J:\MS21\Data\070618\070618F021.D	07/06/2018 16:48
17	KC1800329-17		J:\MS21\Data\070618\070618F021.D	07/06/2018 16:48
18	KC1800329-18		J:\MS21\Data\070618\070618F022.D	07/06/2018 17:16
08	KC1800329-08		J:\MS21\Data\070618\070618F022.D	07/06/2018 17:16
09	KC1800329-09		J:\MS21\Data\070618\070618F023.D	07/06/2018 17:43
19	KC1800329-19		J:\MS21\Data\070618\070618F023.D	07/06/2018 17:43

Analyte

2,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.7967	12	1.0	0.6984	13	2.0	0.7144	14	5.0	0.6857
15	10	0.6844	16	20	0.6629	17	40	0.6422	18	60	0.6535
19	80	0.6363									

2,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.4749	12	1.0	0.5193	13	2.0	0.4574	14	5.0	0.473
15	10	0.4654	16	20	0.4594	17	40	0.4391	18	60	0.4652
19	80	0.4425									

2,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.8919	12	1.0	0.8214	13	2.0	0.821	14	5.0	0.7055
15	10	0.726	16	20	0.756	17	40	0.7159	18	60	0.6633
19	80	0.7054									

4,4'-DDD

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.7558	12	1.0	0.6863	13	2.0	0.6942	14	5.0	0.654
15	10	0.6733	16	20	0.6517	17	40	0.6502	18	60	0.6795
19	80	0.657									

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QA/QC Report

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

Service Request: K1806864  
Calibration Date: 7/6/2018

Initial Calibration Summary  
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800329  
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

4,4'-DDE

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.5393	12	1.0	0.4805	13	2.0	0.4621	14	5.0	0.4606
15	10	0.4924	16	20	0.4582	17	40	0.4594	18	60	0.4511
19	80	0.4453									

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.8218	12	1.0	0.6889	13	2.0	0.6574	14	5.0	0.5953
15	10	0.6533	16	20	0.6514	17	40	0.643	18	60	0.6562
19	80	0.6721									

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	1.003	12	1.0	0.8297	13	2.0	1.11	14	5.0	0.8863
15	10	0.8942	16	20	0.7651	17	40	0.7389	18	60	0.7889
19	80	0.8144									

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	1.439	12	1.0	1.37	13	2.0	1.36	14	5.0	1.291
15	10	1.352	16	20	1.109	17	40	1.108	18	60	1.161
19	80	1.223									

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	1.327	12	1.0	1.254	13	2.0	1.103	14	5.0	0.9748
15	10	0.9709	16	20	0.9394	17	40	0.9129	18	60	0.8961
19	80	0.903									

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	4.382	12	1.0	3.009	13	2.0	3.114	14	5.0	3.417
15	10	2.85	16	20	3.343	17	40	3.406	18	60	3.298
19	80	3.449									

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	3.451	12	1.0	3.363	13	2.0	2.761	14	5.0	2.914
15	10	2.457	16	20	2.816	17	40	2.729	18	60	2.813
19	80	2.935									

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	0.578	12	1.0	0.7009	13	2.0	0.5742	14	5.0	0.5433
15	10	0.5773	16	20	0.5573	17	40	0.5702	18	60	0.5901
19	80	0.5689									

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

Service Request: K1806864  
Calibration Date: 7/6/2018

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

Calibration ID: KC1800329  
Instrument ID: K-MSMS-01

Signal ID: 1

**Analyte**

**gamma-Chlordane**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	3.399	12	1.0	4.62	13	2.0	3.278	14	5.0	3.149
15	10	3.089	16	20	3.193	17	40	3.191	18	60	3.147
19	80	3.469									

**trans-Nonachlor**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
11	0.5	2.549	12	1.0	2.715	13	2.0	2.816	14	5.0	2.227
15	10	2.277	16	20	2.492	17	40	2.46	18	60	2.395
19	80	2.62									

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

Service Request: K1806864  
Calibration Date: 7/6/2018

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

Calibration ID: KC1800329  
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	0.686	0.01
2,4'-DDE	TRG	Average RF	% RSD	5.0	20	0.4662	0.01
2,4'-DDT	TRG	Average RF	% RSD	9.7	20	0.7563	0.01
4,4'-DDD	TRG	Average RF	% RSD	4.9	20	0.678	0.01
4,4'-DDE	TRG	Average RF	% RSD	6.1	20	0.4721	0.01
4,4'-DDT	TRG	Average RF	% RSD	9.2	20	0.671	0.01
Aldrin	TRG	Average RF	% RSD	13.8	20	0.8701	0.01
Dieldrin	TRG	Average RF	% RSD	9.7	20	1.268	0.01
Heptachlor	TRG	Average RF	% RSD	15.6	20	1.031	0.01
alpha-Chlordane	TRG	Average RF	% RSD	12.9	20	3.363	0.01
cis-Nonachlor	TRG	Average RF	% RSD	10.7	20	2.915	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	7.8	20	0.5845	0.01
gamma-Chlordane	TRG	Quadratic	COD	0.9983		3.393	0.01
trans-Nonachlor	TRG	Average RF	% RSD	7.7	20	2.506	0.01



**ALS Group USA, Corp.**  
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QA/QC Report

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

**Service Request:** K1806864  
**Calibration Date:** 8/8/2018

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

**Calibration ID:** KC1800383  
**Instrument ID:** K-MSMS-01

**Signal ID:** 1

#	Lab Code	Sample Name	File Location	Acquisition Date
01	KC1800383-01		J:\MS21\Data\080818\080818F007.D	08/08/2018 09:40
02	KC1800383-02		J:\MS21\Data\080818\080818F008.D	08/08/2018 10:07
03	KC1800383-03		J:\MS21\Data\080818\080818F009.D	08/08/2018 10:34
04	KC1800383-04		J:\MS21\Data\080818\080818F010.D	08/08/2018 11:01
05	KC1800383-05		J:\MS21\Data\080818\080818F011.D	08/08/2018 11:29
06	KC1800383-06		J:\MS21\Data\080818\080818F012.D	08/08/2018 11:56
07	KC1800383-07		J:\MS21\Data\080818\080818F013.D	08/08/2018 12:24
08	KC1800383-08		J:\MS21\Data\080818\080818F014.D	08/08/2018 12:51
09	KC1800383-09		J:\MS21\Data\080818\080818F015.D	08/08/2018 13:18
10	KC1800383-10		J:\MS21\Data\080818\080818F017.D	08/08/2018 13:55

**Analyte**

**2,4'-DDD**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5477	02	1.0	0.5496	03	2.0	0.5262	04	5.0	0.4703
05	10	0.4637	06	20	0.4781	07	40	0.4704	08	60	0.4754
09	80	0.4787	10	100	0.5019						

**2,4'-DDE**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.4932	02	1.0	0.4756	03	2.0	0.4244	04	5.0	0.3937
05	10	0.3865	06	20	0.4	07	40	0.4142	08	60	0.4024
09	80	0.4056	10	100	0.4321						

**2,4'-DDT**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8213	02	1.0	0.7949	03	2.0	0.8055	04	5.0	0.7268
05	10	0.6951	06	20	0.7234	07	40	0.7269	08	60	0.722
09	80	0.6962	10	100	0.754						

**4,4'-DDD**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.5588	02	1.0	0.5829	03	2.0	0.5159	04	5.0	0.4659
05	10	0.4382	06	20	0.4684	07	40	0.4609	08	60	0.4862
09	80	0.4835	10	100	0.5075						

**4,4'-DDE**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.3817	02	1.0	0.3376	03	2.0	0.3532	04	5.0	0.296
05	10	0.3056	06	20	0.3178	07	40	0.3125	08	60	0.3218
09	80	0.3163	10	100	0.3435						

**4,4'-DDT**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7602	02	1.0	0.7698	03	2.0	0.7411	04	5.0	0.6687
05	10	0.6714	06	20	0.6892	07	40	0.6891	08	60	0.6963

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QA/QC Report

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

Service Request: K1806864  
Calibration Date: 8/8/2018

Initial Calibration Summary  
Organochlorine Pesticides by GC/MS/MS

Calibration ID: KC1800383  
Instrument ID: K-MSMS-01

Signal ID: 1

Analyte

4,4'-DDT

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
09	80	0.6815	10	100	0.7118						

Aldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.9343	02	1.0	1.201	03	2.0	1.209	04	5.0	0.9343
05	10	0.9082	06	20	0.8937	07	40	0.8465	08	60	0.8802
09	80	0.874	10	100	0.8685						

Dieldrin

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.253	02	1.0	1.499	03	2.0	1.305	04	5.0	1.086
05	10	1.041	06	20	1.128	07	40	1.102	08	60	1.145
09	80	1.11	10	100	1.086						

Heptachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.8296	02	1.0	1.085	03	2.0	0.945	04	5.0	0.9513
05	10	0.9422	06	20	0.9044	07	40	0.9338	08	60	0.9405
09	80	0.8842	10	100	1.017						

alpha-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.93	02	1.0	2.749	03	2.0	2.442	04	5.0	2.512
05	10	2.393	06	20	2.712	07	40	2.423	08	60	2.595
09	80	2.684	10	100	2.333						

cis-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	2.399	02	1.0	2.254	03	2.0	2.1	04	5.0	2.012
05	10	2.121	06	20	2.292	07	40	1.949	08	60	2.103
09	80	2.21	10	100	1.939						

gamma-BHC (Lindane)

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	0.7904	02	1.0	0.7526	03	2.0	0.6278	04	5.0	0.5925
05	10	0.5801	06	20	0.5771	07	40	0.562	08	60	0.5689
09	80	0.5759	10	100	0.5959						

gamma-Chlordane

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	3.243	02	1.0	3.899	03	2.0	3.356	04	5.0	2.789
05	10	2.748	06	20	2.996	07	40	2.679	08	60	2.774
09	80	3.067	10	100	2.591						

trans-Nonachlor

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.5	1.643	02	1.0	2.483	03	2.0	2.027	04	5.0	1.876

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

**Service Request:** K1806864  
**Calibration Date:** 8/8/2018

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

**Calibration ID:** KC1800383  
**Instrument ID:** K-MSMS-01

**Signal ID:** 1

**Analyte**

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**trans-Nonachlor**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	10	1.992	06	20	1.966	07	40	1.856	08	60	1.95
09	80	2.041	10	100	1.825						

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

Service Request: K1806864  
Calibration Date: 8/8/2018

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

Calibration ID: KC1800383  
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	6.7	20	0.4962	0.01
2,4'-DDE	TRG	Average RF	% RSD	8.4	20	0.4228	0.01
2,4'-DDT	TRG	Average RF	% RSD	6.1	20	0.7466	0.01
4,4'-DDD	TRG	Average RF	% RSD	9.1	20	0.4968	0.01
4,4'-DDE	TRG	Average RF	% RSD	7.8	20	0.3286	0.01
4,4'-DDT	TRG	Average RF	% RSD	5.2	20	0.7079	0.01
Aldrin	TRG	Average RF	% RSD	14.1	20	0.955	0.01
Dieldrin	TRG	Average RF	% RSD	11.8	20	1.175	0.01
Heptachlor	TRG	Average RF	% RSD	7.4	20	0.9433	0.01
alpha-Chlordane	TRG	Average RF	% RSD	7.4	20	2.577	0.01
cis-Nonachlor	TRG	Average RF	% RSD	7.1	20	2.138	0.01
gamma-BHC (Lindane)	TRG	Average RF	% RSD	13.0	20	0.6223	0.01
gamma-Chlordane	TRG	Average RF	% RSD	13.2	20	3.014	0.01
trans-Nonachlor	TRG	Average RF	% RSD	11.0	20	1.966	0.01

**ALS Group USA, Corp.**  
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QA/QC Report

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

**Service Request:** K1806864  
**Calibration Date:** 7/6/2018

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

**Calibration ID:** KC1800329  
**Instrument ID:** K-MSMS-01

**Signal ID:** 1

#	Lab Code	Sample Name	File Location	Acquisition Date
20	KC1800329-20		J:\MS21\Data\070618\070618F024.D	07/06/2018 18:10
10	KC1800329-10		J:\MS21\Data\070618\070618F024.D	07/06/2018 18:10

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	17.9	6.86E-1	6.127E-1	-10.695	±25	Average RF
2,4'-DDE	20.0	19.6	4.662E-1	4.577E-1	-1.832	±25	Average RF
2,4'-DDT	20.0	16.8	7.563E-1	6.34E-1	-16.161	±25	Average RF
4,4'-DDD	20.0	19.4	6.78E-1	6.567E-1	-3.144	±25	Average RF
4,4'-DDE	20.0	18.9	4.721E-1	4.468E-1	-5.367	±25	Average RF
4,4'-DDT	20.0	18.1	6.71E-1	6.057E-1	-9.735	±25	Average RF
Aldrin	20.0	18.8	8.701E-1	8.194E-1	-5.827	±25	Average RF
alpha-Chlordane	20.0	21.0	3.363E0	3.534E0	5.09	±25	Average RF
cis-Nonachlor	20.0	19.0	2.915E0	2.767E0	-5.097	±25	Average RF
Dieldrin	20.0	18.2	1.268E0	1.156E0	-8.844	±25	Average RF
gamma-BHC (Lindane)	20.0	19.0	5.845E-1	5.56E-1	-4.865	±25	Average RF
gamma-Chlordane	20.0	21.7	3.393E0	3.368E0	8.56	±25	Quadratic
Heptachlor	20.0	18.7	1.031E0	9.619E-1	-6.722	±25	Average RF
trans-Nonachlor	20.0	20.6	2.506E0	2.577E0	2.83	±25	Average RF

**ALS Group USA, Corp.**  
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QA/QC Report

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

**Service Request:** K1806864  
**Calibration Date:** 8/8/2018

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

**Calibration ID:** KC1800383  
**Instrument ID:** K-MSMS-01

**Signal ID:** 1

#	Lab Code	Sample Name	File Location	Acquisition Date
11	KC1800383-11		J:\MS21\Data\080818\080818F018.D	08/08/2018 14:19

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4'-DDD	20.0	18.2	4.962E-1	4.504E-1	-9.239	±25	Average RF
2,4'-DDE	20.0	18.9	4.228E-1	3.998E-1	-5.445	±25	Average RF
2,4'-DDT	20.0	18.2	7.466E-1	6.791E-1	-9.043	±25	Average RF
4,4'-DDD	20.0	19.2	4.968E-1	4.781E-1	-3.771	±25	Average RF
4,4'-DDE	20.0	18.9	3.286E-1	3.112E-1	-5.300	±25	Average RF
4,4'-DDT	20.0	19.5	7.079E-1	6.892E-1	-2.635	±25	Average RF
Aldrin	20.0	19.8	9.55E-1	9.467E-1	-0.872	±25	Average RF
alpha-Chlordane	20.0	24.0	2.577E0	3.09E0	19.88	±25	Average RF
cis-Nonachlor	20.0	20.0	2.138E0	2.143E0	0.226	±25	Average RF
Dieldrin	20.0	19.7	1.175E0	1.158E0	-1.531	±25	Average RF
gamma-BHC (Lindane)	20.0	18.4	6.223E-1	5.718E-1	-8.119	±25	Average RF
gamma-Chlordane	20.0	21.4	3.014E0	3.224E0	6.96	±25	Average RF
Heptachlor	20.0	19.5	9.433E-1	9.21E-1	-2.363	±25	Average RF
trans-Nonachlor	20.0	21.4	1.966E0	2.1E0	6.83	±25	Average RF

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

**Service Request:** K1806864  
**Date Analyzed:** 08/09/18 09:16

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

**Analysis Method:** ALS SOP  
**File ID:** J:\MS21\Data\080918\080918F003.D\  
**Signal ID:** 1

**Calibration Date:** 8/8/2018  
**Calibration ID:** KC1800383  
**Analysis Lot:** 601816  
**Units:** ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4'-DDD	20.0	19.4	0.4962	0.4817	-2.9	NA	±25	Average RF
2,4'-DDE	20.0	19.9	0.4228	0.4207	-0.5	NA	±25	Average RF
2,4'-DDT	20.0	19.3	0.7466	0.7206	-3.5	NA	±25	Average RF
4,4'-DDD	20.0	17.3	0.4968	0.4295	-13.6	NA	±25	Average RF
4,4'-DDE	20.0	18.2	0.3286	0.2998	-8.8	NA	±25	Average RF
4,4'-DDT	20.0	19.5	0.7079	0.6916	-2.3	NA	±25	Average RF
Aldrin	20.0	21.3	0.955	1.0186	6.7	NA	±25	Average RF
alpha-Chlordane	20.0	18.3	2.5772	2.353	-8.7	NA	±25	Average RF
cis-Nonachlor	20.0	17.6	2.138	1.8835	-11.9	NA	±25	Average RF
Dieldrin	20.0	17.4	1.1755	1.0215	-13.1	NA	±25	Average RF
gamma-BHC (Lindane)	20.0	19.7	0.6223	0.6128	-1.5	NA	±25	Average RF
gamma-Chlordane	20.0	16.7	3.0141	2.5182	-16.5	NA	±25	Average RF
Heptachlor	20.0	18.3	0.9433	0.8609	-8.7	NA	±25	Average RF
trans-Nonachlor	20.0	17.2	1.9658	1.6881	-14.1	NA	±25	Average RF

Analyte Name	Expected	Result	Average RF	CCV RF	Rec.	% Drift	Criteria	Curve Fit
S_4,4'DDD-d4	5.00	4.63	NA	NA	92.6	NA	50-200	
S_4,4'-DDT-d4	5.00	4.85	NA	NA	97.0	NA	50-200	
S_Aldrin-13C12	20.0	16.3	NA	NA	81.4	NA	50-200	
S_Endrin-13C12	20.0	17.8	NA	NA	88.8	NA	50-200	
S_GBHCD6	20.0	17.9	NA	NA	89.5	NA	50-200	
S_Heptachlor-13C10	20.0	20.0	NA	NA	100	NA	50-200	
S_Heptachlrepx13C10	20.0	17.3	NA	NA	86.4	NA	50-200	
S_Oxychlordane-13C10	20.0	17.5	NA	NA	87.5	NA	50-200	

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QA/QC Report

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

Service Request:K1806864

Analysis Run Log  
Organochlorine Pesticides by GC/MS/MS

Analysis Method:

Analysis Lot:597920  
Instrument ID:K-MSMS-01

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS21\Data\070918\070918F010.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	11:57:58	
J:\MS21\Data\070918\070918F011.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	12:36:11	
J:\MS21\Data\070918\070918F012.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	12:59:40	
J:\MS21\Data\070918\070918F013.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	13:27:09	
J:\MS21\Data\070918\070918F014.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	13:54:50	
J:\MS21\Data\070918\070918F015.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	14:22:07	
J:\MS21\Data\070918\070918F016.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	14:49:51	
J:\MS21\Data\070918\070918F017.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	15:18:04	
J:\MS21\Data\070918\070918F018.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	15:45:27	
J:\MS21\Data\070918\070918F019.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	16:12:44	
J:\MS21\Data\070918\070918F020.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	16:40:11	
J:\MS21\Data\070918\070918F021.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	17:07:33	
J:\MS21\Data\070918\070918F022.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	17:34:55	
J:\MS21\Data\070918\070918F023.D\	Batch QC	K1804798-010	7/9/2018	18:02:17	
J:\MS21\Data\070918\070918F024.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	18:29:50	
J:\MS21\Data\070918\070918F025.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	18:57:18	
J:\MS21\Data\070918\070918F026.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	19:24:27	
J:\MS21\Data\070918\070918F027.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	19:51:56	
J:\MS21\Data\070918\070918F028.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	20:19:16	
J:\MS21\Data\070918\070918F029.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	20:47:10	
J:\MS21\Data\070918\070918F030.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	21:14:37	
J:\MS21\Data\070918\070918F031.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	21:42:27	
J:\MS21\Data\070918\070918F032.D\	ZZZZZZZ	ZZZZZZZ	7/9/2018	22:09:46	



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QA/QC Report

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

**Service Request:**K1806864

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

**Analysis Method:** ALS SOP

**Analysis Lot:**601816  
**Instrument ID:**K-MSMS-01

<b>Raw Data File</b>	<b>Sample Name</b>	<b>Lab Code</b>	<b>Date Analyzed</b>	<b>Time Analyzed</b>	<b>Q</b>
J:\MS21\Data\080918\080918F003.D\	Continuing Calibration Verification	KQ1810804-01	8/9/2018	09:16:43	
J:\MS21\Data\080918\080918F004.D\	Method Blank	KQ1809987-04	8/9/2018	09:52:53	
J:\MS21\Data\080918\080918F005.D\	Lab Control Sample	KQ1809987-03	8/9/2018	10:16:25	
J:\MS21\Data\080918\080918F006.D\	Batch QC MS	KQ1809987-01	8/9/2018	10:43:42	
J:\MS21\Data\080918\080918F007.D\	Batch QC DMS	KQ1809987-02	8/9/2018	11:10:53	
J:\MS21\Data\080918\080918F025.D\	PDI-SG-B172-BL1	K1806864-001	8/9/2018	19:22:11	
J:\MS21\Data\080918\080918F026.D\	PDI-SG-B174-BL1	K1806864-002	8/9/2018	19:49:29	
J:\MS21\Data\080918\080918F027.D\	PDI-SG-B266-BL1	K1806864-003	8/9/2018	20:16:46	

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Prep Summary Report

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

**Service Request:**K1806864

Organochlorine Pesticides by GC/MS/MS

**Prep Method:** EPA 3541  
**Analytical Method:** ALS SOP

**Extraction Lot:** 314551  
**Extraction Date:** 05/30/18 09:46

<b>Sample Name</b>	<b>Lab Code</b>	<b>Date Collected</b>	<b>Date Received</b>	<b>Sample Amount</b>	<b>Final Amount</b>	<b>Percent Solids</b>
Batch QC	K1804798-010	NA	NA	20.045 g	1 mL	

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dba ALS Environmental

Prep Summary Report

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

**Service Request:** K1806864

Organochlorine Pesticides by GC/MS/MS

**Prep Method:** EPA 3541  
**Analytical Method:** ALS SOP

**Extraction Lot:** 318364  
**Extraction Date:** 07/25/18 13:11

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
PDI-SG-B172-BL1	K1806864-001	7/20/18	7/23/18	5.402 g	1 mL	37.9
PDI-SG-B174-BL1	K1806864-002	7/20/18	7/23/18	5.284 g	1 mL	38.0
PDI-SG-B266-BL1	K1806864-003	7/20/18	7/23/18	5.478 g	1 mL	58.3
Matrix Spike	KQ1809987-01MS	NA	NA	1.145 g	1 mL	
Duplicate Matrix Spike	KQ1809987-02DMS	NA	NA	1.102 g	1 mL	
Lab Control Sample	KQ1809987-03LCS	NA	NA	10 g	1 mL	
Method Blank	KQ1809987-04MB	NA	NA	10 g	1 mL	