

Data Validation Report

Project: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
 Portland Harbor Superfund Site
 Subsurface Sediment – Deep/Nearshore Cores

Laboratory: ALS Environmental, Burlington, Ontario, Canada

Laboratory Group: L2144849

Analyses/Method: Chlorinated Pesticides and Total Solids

Validation Level: Stage 2/(Stage 4 – PDI-SC-S117-4TO6)

AECOM Project

Number: 60566335 Task #2.12

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File Name: L2144849 DVR

SUMMARY

The data quality review of 63 subsurface sediment samples, 4 field duplicates, and 4 rinsate blanks collected between August 6 and August 9, 2018, has been completed. Samples were analyzed for chlorinated pesticides by EPA Method 1699-modified (GC/HRMS) and/or total solids by American Society for Testing and Materials (ASTM) Method D-2974 at ALS Environmental (ALS) located in Burlington, Ontario, Canada. The analyses were performed in general accordance with the methods specified in *Method 1699: Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS*, December 2007 (modified by ALS SOP BU-TM-1103 v07 OCP), and *Annual Book of ASTM Standards*, American Society for Testing & Materials (ASTM), Philadelphia, Pennsylvania. The laboratory provided level 2 and level 4 data packages containing sample results and associated quality assurance (QA) and quality control (QC) data, preparation logs, and raw instrument outputs (where applicable). The following samples are associated with laboratory group L2144849:

Sample ID	Laboratory ID
PDI-SC-S222-5TO7.2D (Duplicate of PDI-SC-S222-5TO7.2)	L2144849-01
PDI-SC-S222-7.2TO9.2	L2144849-02
PDI-SC-S222-9.2TO11.2	L2144849-03
PDI-SC-S222-11.2TO13.2	L2144849-04
PDI-SC-S222-13.2TO15.2	L2144849-05
PDI-SC-S248-0TO2	L2144849-06
PDI-SC-S248-2TO4	L2144849-07
PDI-SC-S248-4TO6.2	L2144849-08
PDI-SC-S139-0TO2	L2144849-09
PDI-SC-S139-2TO4.1	L2144849-10
PDI-SC-S139-4.1TO5.9	L2144849-11
PDI-SC-S139-4.1TO5.9D (Duplicate of PDI-SC-S139-4.1TO5.9)	L2144849-12
PDI-SC-S176-0TO2	L2144849-13
PDI-SC-S176-2TO4	L2144849-14
PDI-SC-S176-4TO5.5	L2144849-15
PDI-SC-S176-5.5TO7.5	L2144849-16



Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Subsurface Sediment – Deep/Nearshore Cores
ALS Lab Group: L2144849

Sample ID	Laboratory ID
PDI-SC-S176-7.5TO9.6	L2144849-17
PDI-SC-S188-0TO1.5	L2144849-18
PDI-SC-S213-0TO2	L2144849-19
PDI-SC-S213-2TO4	L2144849-20
PDI-SC-S213-4TO6	L2144849-21
PDI-SC-S213-6TO8	L2144849-22
PDI-SC-S213-8TO10	L2144849-23
PDI-SC-S213-10TO11.8	L2144849-24
PDI-SC-S213-11.8TO12.8	L2144849-25
PDI-SC-S098-0TO1.3	L2144849-26
PDI-SC-S098-1.3TO3.3	L2144849-27
PDI-SC-S098-3.3TO5.3	L2144849-28
PDI-SC-S098-3.3TO5.3D (Duplicate of PDI-SC-S098-3.3TO5.3)	L2144849-29
PDI-SC-S098-5.3TO7.2	L2144849-30
PDI-SC-S098-7.2TO8.2	L2144849-31
PDI-RB-SS-180807 (rinsate blank)	L2144849-32
PDI-RB-SS-180808 (rinsate blank)	L2144849-33
PDI-RB-SS-180809 (rinsate blank)	L2144849-34
PDI-RB-SS-180806 (rinsate blank)	L2144849-35
PDI-SC-S191-4TO6	L2144849-36
PDI-SC-S191-6TO8.1	L2144849-37
PDI-SC-S192-0TO1.5	L2144849-38
PDI-SC-S192-1.5TO3	L2144849-39
PDI-SC-S192-3TO4.2	L2144849-40
PDI-SC-S198-0TO2	L2144849-41
PDI-SC-S198-2TO4	L2144849-42
PDI-SC-S198-2TO4D (Duplicate of PDI-SC-S198-2TO4)	L2144849-43
PDI-SC-S198-4TO6	L2144849-44
PDI-SC-S198-6TO8	L2144849-45
PDI-SC-S198-8TO10	L2144849-46
PDI-SC-S198-10TO11.8	L2144849-47
PDI-SC-S226-6TO8	L2144849-48
PDI-SC-S226-10TO12	L2144849-49
PDI-SC-S226-8TO10	L2144849-50
PDI-SC-S226-0TO2	L2144849-51
PDI-SC-S226-2TO4	L2144849-52
PDI-SC-S226-12TO14	L2144849-53
PDI-SC-S226-4TO6	L2144849-54
PDI-SC-S226-14TO15.8	L2144849-55
PDI-SC-S222-0TO2	L2144849-56



Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Subsurface Sediment – Deep/Nearshore Cores
ALS Lab Group: L2144849

Sample ID	Laboratory ID
PDI-SC-S222-2TO4	L2144849-57
PDI-SC-S222-4TO5	L2144849-58
PDI-SC-S222-5TO7.2	L2144849-59
PDI-SC-S117-0TO2	L2144849-60
PDI-SC-S117-2TO4	L2144849-61
PDI-SC-S117-4TO6	L2144849-62
PDI-SC-S219-0TO2	L2144849-63
PDI-SC-S219-2TO4	L2144849-64
PDI-SC-S219-4TO5.2	L2144849-65
PDI-SC-S105-0TO2	L2144849-66
PDI-SC-S105-2TO4	L2144849-67
PDI-SC-S105-4TO5.6	L2144849-68
PDI-SC-S105-5.6TO6.6	L2144849-69
PDI-SC-S191-0TO2	L2144849-70
PDI-SC-S191-2TO4	L2144849-71

Data validation is based on method performance criteria and QC criteria documented in the *Quality Assurance Project Plan (QAPP)*, dated March 23, 2018, as amended. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA documents *USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review*, April 2016, *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017, and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017. Data qualifiers assigned to this sample set are included in Table 1.

SAMPLE RECEIPT

Upon receipt by ALS, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperature was recorded. The cooler was received at a temperature greater than the EPA-recommended limits of greater than 0°C and less than or equal to 6°C at 6.8°C. Data qualifiers were not assigned based on the elevated cooler temperature. Per AECOM request, the depths on PDI-SC-S222-11TO13.2 and PDI-SC-S222-13TO15.2 were corrected to PDI-SC-S222-11.2TO13.2 and PDI-SC-S222-13.2TO15.2, respectively.

ORGANIC ANALYSIS

Samples were analyzed for chlorinated pesticides by EPA Method 1699.

1. Holding Times – Acceptable
2. Initial and Continuing Calibration Verifications – Acceptable except as noted below:

The percent recoveries for the following analytes and labeled compounds were outside the control limits of 75-125% and 70-130%, respectively.

Analysis Date and Time	Analyte	% Recovery
8/28/18 12:36	4,4'-DDD-13C12	135%

Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Subsurface Sediment – Deep/Nearshore Cores

ALS Lab Group: L2144849

Analysis Date and Time	Analyte	% Recovery
8/29/18 12:22	4,4'-DDT-13C12	135%
8/31/18 5:07	4,4'-DDD-13C12	64%
	4,4'-DDT-13C12	56%
8/31/18 15:10	4,4'-DDT-13C12	63%

QC samples were associated with the continuing calibration verification (CCV) analyzed on August 28, 2018; therefore, data were not qualified based on these CCV results.

The results for 2,4'-DDD and 4,4'-DDD in PDI-SC-S213-0TO2, PDI-SC-S213-2TO4, PDI-SC-S213-4TO6, PDI-SC-S213-6TO8, PDI-SC-S213-8TO10, PDI-SC-S213-10TO11.8, PDI-SC-S213-11.8TO12.8, PDI-SC-S098-0TO1.3, PDI-SC-S098-1.3TO3.3, PDI-SC-S098-3.3TO5.3, PDI-SC-S098-3.3TO5.3D, PDI-SC-S098-5.3TO7.2, PDI-SC-S098-7.2TO8.2, PDI-SC-S191-4TO6, PDI-SC-S191-6TO8.1, PDI-SC-S192-0TO1.5, PDI-SC-S192-1.5TO3, PDI-SC-S192-3TO4.2, PDI-SC-S198-0TO2, PDI-SC-S198-2TO4, PDI-SC-S198-2TO4D, PDI-SC-S198-4TO6, PDI-SC-S198-6TO8, PDI-SC-S198-8TO10, PDI-SC-S198-10TO11.8, PDI-SC-S222-0TO2, PDI-SC-S222-2TO4, PDI-SC-S222-4TO5, PDI-SC-S117-0TO2, PDI-SC-S117-2TO4, PDI-SC-S117-4TO6, PDI-SC-S105-0TO2, PDI-SC-S105-2TO4, PDI-SC-S105-4TO5.6, PDI-SC-S105-5.6TO6.6, PDI-SC-S191-0TO2, and PDI-SC-S191-2TO4 were qualified as estimated and flagged 'J' or 'UJ' based on the associated CCV results.

The results for 2,4'-DDT and 4,4'-DDT in PDI-SC-S222-9.2TO11.2, PDI-SC-S139-0TO2, PDI-SC-S139-2TO4.1, PDI-SC-S139-4.1TO5.9, SC-S139-4.1TO5.9D, SC-S176-0TO2, SC-S176-2TO4, SC-S176-4TO5.5, SC-S176-5.5TO7.5, SC-S176-7.5TO9.6, SC-S188-0TO1.5, PDI-SC-S213-0TO2, PDI-SC-S213-2TO4, PDI-SC-S213-4TO6, PDI-SC-S213-6TO8, PDI-SC-S213-8TO10, PDI-SC-S213-10TO11.8, PDI-SC-S213-11.8TO12.8, PDI-SC-S098-0TO1.3, PDI-SC-S098-1.3TO3.3, PDI-SC-S098-3.3TO5.3, PDI-SC-S098-3.3TO5.3D, PDI-SC-S098-5.3TO7.2, PDI-SC-S098-7.2TO8.2, PDI-SC-S191-4TO6, PDI-SC-S191-6TO8.1, PDI-SC-S192-0TO1.5, PDI-SC-S192-1.5TO3, PDI-SC-S192-3TO4.2, PDI-SC-S198-0TO2, PDI-SC-S198-2TO4, PDI-SC-S198-2TO4D, PDI-SC-S198-4TO6, PDI-SC-S198-6TO8, PDI-SC-S198-8TO10, PDI-SC-S198-10TO11.8, PDI-SC-S222-0TO2, PDI-SC-S222-2TO4, PDI-SC-S222-4TO5, PDI-SC-S222-5TO7.2, PDI-SC-S117-0TO2, PDI-SC-S117-2TO4, PDI-SC-S117-4TO6, PDI-SC-S219-0TO2, PDI-SC-S219-2TO4, PDI-SC-S219-4TO5.2, PDI-SC-S105-0TO2, PDI-SC-S105-2TO4, PDI-SC-S105-4TO5.6, PDI-SC-S105-5.6TO6.6, PDI-SC-S191-0TO2, and PDI-SC-S191-2TO4 were qualified as estimated and flagged 'J' or 'UJ' based on the associated CCV results.

3. Blanks – Acceptable except as noted below:

The following analytes were detected in the method blanks.

Extraction Date	Analyte	Result
August 13, 2018	2,4'-DDE	0.0969 ng/L
	4,4'-DDE	0.185 ng/L
	2,4'-DDD	0.13 ng/L
	4,4'-DDD	0.132 ng/L
	2,4'-DDT	0.16 ng/L
	4,4'-DDT	0.391 ng/L

Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Subsurface Sediment – Deep/Nearshore Cores
ALS Lab Group: L2144849

Extraction Date	Analyte	Result
August 20, 2018	2,4'-DDE	0.0020 ng/g
	4,4'-DDE	0.00572 ng/g
	2,4'-DDD	0.00505 ng/g
	4,4'-DDD	0.00696 ng/g
	2,4'-DDT	0.0076 ng/g
	4,4'-DDT	0.0213 ng/g
August 21, 2018	2,4'-DDE	0.0246 ng/g
	4,4'-DDE	0.0481 ng/g
	2,4'-DDD	0.0099 ng/g
	4,4'-DDD	0.0137 ng/g
	4,4'-DDT	0.0347 ng/g
August 22, 2018	2,4'-DDE	0.046 ng/g
	4,4'-DDE	0.0789 ng/g
	4,4'-DDD	0.068 ng/g
	4,4'-DDT	0.291 ng/g
August 23, 2018	2,4'-DDE	0.0337 ng/g
	4,4'-DDE	0.0742 ng/g
	2,4'-DDD	0.078 ng/g
	4,4'-DDD	0.115 ng/g
	4,4'-DDT	0.299 ng/g
	2,4'-DDE	0.0020 ng/g
	4,4'-DDE	0.00572 ng/g

The NFG guidance stipulates that a conservative approach should be taken with regards to qualification of analytes based on blank contamination and the reporting of false negative results should be avoided.

Therefore, in order to avoid the reporting of false negative results, professional judgment was used to qualify the data in the following manner. As allowed in the NFG, a blank action limit (BAL) was determined as 5 times the blank result:

- When the sample results were < the blank result, the sample result was qualified as not detected 'U' at the sample result or reported detection limit (RDL).
- When the sample result was \geq the blank result and \leq the BAL, the sample result was qualified as estimated and potentially biased high 'J'.
- When the sample result was > the BAL, sample result was not qualified.

The following results were reported at concentrations less than the blank concentration; therefore, these results were qualified as not detected and flagged 'U' at the sample results.

- 2,4'-DDE in PDI-SC-S098-5.3TO7.2, PDI-RB-SS-180808, PDI-RB-SS-180809, PDI-RB-SS-180806, PDI-SC-S198-8TO10, and PDI-SC-S198-10TO11.8.

Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Subsurface Sediment – Deep/Nearshore Cores

ALS Lab Group: L2144849

- 4,4'-DDE in PDI-SC-S098-3.3TO5.3, PDI-SC-S098-3.3TO5.3D, PDI-SC-S098-5.3TO7.2, PDI-SC-S098-7.2TO8.2, PDI-RB-SS-180808, PDI-RB-SS-180809, PDI-SC-S198-8TO10, and PDI-SC-S198-10TO11.8.
- 2,4'-DDD in PDI-SC-S098-5.3TO7.2, PDI-SC-S098-7.2TO8.2, and PDI-RB-SS-180809.
- 4,4'-DDD in PDI-SC-S098-3.3TO5.3D, PDI-SC-S098-5.3TO7.2, PDI-SC-S098-7.2TO8.2, PDI-RB-SS-180809, PDI-RB-SS-180806, PDI-SC-S198-8TO10, and PDI-SC-S198-10TO11.8.
- 2,4'-DDT in PDI-RB-SS-180809 and PDI-RB-SS-180806.
- 4,4'-DDT in PDI-SC-S213-11.8TO12.8, PDI-SC-S098-1.3TO3.3, PDI-SC-S098-3.3TO5.3, PDI-SC-S098-3.3TO5.3D, PDI-SC-S098-5.3TO7.2, PDI-SC-S098-7.2TO8.2, PDI-RB-SS-180809, PDI-SC-S198-6TO8, PDI-SC-S198-8TO10, and PDI-SC-S198-10TO11.8.

The following results were reported at concentrations greater than the blank concentration but less than the BAL; therefore, these results were qualified as estimated and flagged 'J' at the sample results.

- 2,4'-DDE in PDI-SC-S139-4.1TO5.9, PDI-SC-S139-4.1TO5.9D, PDI-SC-S176-4TO5.5, PDI-SC-S176-5.5TO7.5, PDI-SC-S192-3TO4.2, PDI-SC-S198-6TO8, PDI-SC-S219-4TO5.2, PDI-SC-S105-2TO4, and PDI-SC-S105-4TO5.6.
- 4,4'-DDE in PDI-SC-S139-4.1TO5.9, PDI-SC-S139-4.1TO5.9D, PDI-SC-S176-5.5TO7.5, PDI-SC-S176-7.5TO9.6, PDI-RB-SS-180806, PDI-SC-S198-6TO8, PDI-SC-S219-2TO4, PDI-SC-S105-2TO4, and PDI-SC-S105-4TO5.6.
- 2,4'-DDD in PDI-RB-SS-180808 and PDI-RB-SS-180806.
- 4,4'-DDD in PDI-RB-SS-180807, PDI-RB-SS-180808, and PDI-SC-S219-2TO4.
- 2,4'-DDT in PDI-RB-SS-180808.
- 4,4'-DDT in PDI-SC-222-5.7TO7.2D, PDI-SC-222-13.2TO15.2, PDI-RB-SS-180807, PDI-RB-SS-180808, and PDI-RB-SS-180806.

The result for 4,4'-DDT in PDI-SC-S176-0TO2, PDI-SC-S176-4TO5.5, PDI-SC-S176-5.5TO7.5, PDI-SC-S213-0TO2, PDI-SC-S213-2TO4, PDI-SC-S213-4TO6, PDI-SC-S213-6TO8, PDI-SC-S213-8TO10, PDI-SC-S213-10TO11.8, PDI-SC-S098-0TO1.3, PDI-SC-S191-6TO8.1, PDI-SC-S192-3TO4.2, PDI-SC-S198-2TO4, PDI-SC-S198-2TO4D, PDI-SC-S198-4TO6, PDI-SC-S219-2TO4, PDI-SC-S105-0TO2, PDI-SC-S105-2TO4, PDI-SC-S105-4TO5.6, and PDI-SC-S105-5.6TO6.6 were qualified as estimated based on CCV results as described in Section 2; therefore, no further qualification was necessary based method blank results.

The result for 4,4'-DDD in PDI-SC-S198-6TO8 was qualified as estimated based on CCV results as described in Section 2; therefore, no further qualification was necessary based method blank results.

Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Subsurface Sediment – Deep/Nearshore Cores
ALS Lab Group: L2144849

Four rinsate blanks were submitted with this laboratory group. The following analytes were detected in the rinsate blanks after laboratory method blank actions were applied.

Blank Identification	Analyte	Result (ng/L)
PDI-RB-SS-180807	2,4-DDE	0.729
	4,4'-DDE	1.04
	4,4'-DDD	0.433
	4,4'-DDT	1.78
PDI-RB-SS-180808	2,4-DDD	0.17
	4,4'-DDD	0.265
	2,4-DDT	0.166
	4,4'-DDT	0.608
PDI-RB-SS-180806	4,4'-DDE	0.219
	2,4-DDD	0.141
	4,4'-DDT	0.427

Sediment data were not qualified based on rinse blank detections.

4. Labeled compounds – Acceptable except as noted below:

The percent recoveries for 4,4'-DDE-13C12 were outside the control limits of 21-125%.

Sample Identification	Labeled Compound	Percent Recovery
PDI-SC-S139-2TO4.1	4,4'-DDE-13C12	8%
PDI-SC-S139-4.1TO5.9	4,4'-DDE-13C12	16%
PDI-SC-S139-4.1TO5.9D	4,4'-DDE-13C12	14%
PDI-SC-S176-2TO4	4,4'-DDE-13C12	9%
PDI-RB-SS-180807	4,4'-DDE-13C12	7%
PDI-SC-S222-2TO4	4,4'-DDE-13C12	12%
PDI-SC-S222-5TO7.2	4,4'-DDE-13C12	15%
PDI-SC-SC-S117-2TO4	4,4'-DDE-13C12	15%
PDI-SC-S219-4TO5.2	4,4'-DDE-13C12	13%
PDI-SC-S139-2TO4.1	4,4'-DDE-13C12	8%

Data were not qualified based on labeled compound exceedances in the QC (method blank, laboratory control sample, and laboratory duplicates) samples.

The results for 2,4'-DDE in PDI-SC-S139-4.1TO5.9, PDI-SC-S139-4.1TO5.9D, and PDI-SC-S219-4TO5.2; and 4,4'-DDE in PDI-SC-S139-4.1TO5.9 and PDI-SC-S139-4.1TO5.9D were qualified as estimated based on method blank results as described in Section 3; therefore, no further qualification based on label compound results was required.

The results for 2,4'-DDE and 4,4'-DDE in PDI-SC-S139-2TO4.1, PDI-SC-S176-2TO4, PDI-RB-SS-180807, PDI-SC-S222-2TO4, PDI-SC-S222-5TO7.2, PDI-SC-S117-2TO4, PDI-SC-S219-4TO5.2 (4,4'-DDE only) were qualified as estimated and flagged 'J' based on these labeled compound recoveries.

Data Validation Report
Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Subsurface Sediment – Deep/Nearshore Cores
ALS Lab Group: L2144849

5. Internal Standards – Acceptable
6. Laboratory Control Sample (LCS) – Acceptable except as noted below:

The percent recovery for 2,4'-DDD (123%) exceeded the control limits of 42-120% in the LCS extracted on August 20, 2018. The results for 2,4'-DDD in PDI-SC-S222-5TO7.2D, PDI-SC-S222-9.2TO11.2, PDI-SC-S222-11.2TO13.2, PDI-SC-S222-13.2TO15.2, PDI-SC-S248-0TO2, PDI-SC-S248-2TO4, PDI-SC-S248-4TO6.2, PDI-SC-S226-6TO8, PDI-SC-S226-10TO12, PDI-SC-S226-8TO10, PDI-SC-S226-0TO2, PDI-SC-S226-2TO4, PDI-SC-S226-12TO14, PDI-SC-S226-4TO6, and PDI-SC-S226-14TO15.8 were qualified as estimated and flagged 'J' based on this LCS recovery. 2,4'-DDD in all other samples associated with this LCS were either flagged based on labeled compounds, method blanks, or were not detected; therefore, no further qualification was necessary based on this LCS recovery.

The percent recovery for 2,4'-DDE (129%) exceeded the control limits of 50-120% in the LCS extracted on August 21, 2018. The results for 2,4'-DDE in PDI-SC-S176-0TO2, PDI-SC-S188-0TO1.5, PDI-SC-S222-0TO2, PDI-SC-S222-4TO5, PDI-SC-S117-0TO2, PDI-SC-S117-4TO6, and PDI-SC-S219-0TO2 were qualified as estimated and flagged 'J' based on this LCS recovery. 2,4'-DDE in all other samples associated with this LCS were either flagged based on labeled compounds, method blanks, or were not detected; therefore, no further qualification was necessary based on this LCS recovery.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

An MS/MSD was not performed in association with the rinsate blanks. Accuracy was assessed using the LCS results. Precision was not assessed.

An MS/MSD was not performed in association with the rinsate blanks. Accuracy was assessed using the LCS results. Precision was assessed using the laboratory and field duplicates.

8. Laboratory Duplicate – Acceptable except as noted below:

Laboratory duplicates were performed using PDI-SC-S222-5TO7.2D, PDI-SC-S139-0TO2, and PDI-SC-S213-0TO2. Results greater than five times the reporting limits (RLs) were evaluated. Results were comparable with the following exception.

The relative percent difference (RPD) for 4,4'-DDE (78%) in PDI-SC-S222-5TO7.2D exceeded the control limit of $\pm 25\%$. The result for 4,4'-DDE in PDI-SC-S222-5TO7.2D was qualified as estimated and flagged 'J' based on this elevated duplicate result.

The RPDs for 2,4'-DDD (78%), 4,4'-DDD (71%), and 4,4'-DDT (141%) in PDI-SC-S139-0TO2 exceeded the control limit of $\pm 25\%$. The result for 4,4'-DDT in PDI-SC-S139-0TO2 was qualified as estimated based on CCV results as described in Section 2; therefore, no further qualification was necessary based on lab duplicate results. The results for 2,4'-DDD and 4,4'-DDD were qualified as estimated and flagged 'J' based on these elevated duplicate results.

9. Field Duplicate – Acceptable except as noted below:

Field duplicates were submitted for PDI-SC-S222-5TO7.2, PDI-SC-S139-4.1TO5.9, PDI-SC-S098-3.3TO5.3, and PDI-SC-S198-2TO4 and identified as PDI-SC-S222-5TO7.2D, PDI-SC-

Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Subsurface Sediment – Deep/Nearshore Cores

ALS Lab Group: L2144849

S139-4.1TO5.9D, PDI-SC-S098-3.3TO5.3D, and PDI-SC-S198-2TO4D, respectively. Results greater than five times the RL were evaluated. Results were comparable with the following exception.

The RPD for 4,4-DDE was greater than 50% for the PDI-SC-S222-5TO7.2/PDI-SC-S222-5TO7.2D field duplicate pair. The result for 4,4-DDE in PDI-SC-S222-5TO7.2 and PDI-SC-S222-5TO7.2D were qualified based on labeled compound and laboratory duplicate results; therefore, no further qualification was necessary based on field duplicate RPD.

10. Calculation Checks – Acceptable

A stage 4 validation was required for PDI-SC-S117-4TO6. A calculation check was performed on PDI-SC-S117-4TO6. The review confirmed the final results were correct as reported.

11. Reporting Limits and Chromatographic Review – Acceptable except as noted below:

Chromatograms/spectra were reviewed for PDI-SC-S117-4TO6 to confirm target analytes were properly identified. The review confirmed target analytes were properly identified and reported by the laboratory.

One or more results were flagged 'J' by the laboratory to indicate the reported concentrations were above the estimated detection limits (EDLs) but below the reporting limits. Laboratory 'J'-flagged results are considered estimated. As the result is between the EDL and the reporting limit, there is a greater level of uncertainty associated with the numerical result.

The reporting limits for one or more pesticides reported as not detected in multiple samples were elevated due to the moisture content and/or dilution due to matrix interference. The reporting limits do not exceed the cleanup level.

Analytes with an ion abundance ratio outside the control limits of 1.56 +/- 25% were flagged 'R' by the laboratory indicating an EMPC (estimated maximum possible concentration). Results that were not flagged 'U' based on method blank results were qualified as tentatively identified and flagged 'JN' based on this laboratory flag as identified in Table 1.

12. Other Items:

Samples PDI-SC-S222-7.2TO9.2, PDI-SC-S248-4TO6.2, PDI-SC-S191-4TO6, and PDI-SC-S105-2TO4 were re-analyzed due to potential instrument carryover. Results from the re-analysis were reported.

Samples PDI-SC-S139-4.1TO5.9 and PDI-SC-S176-4TO5.5 were re-analyzed due to potential instrument carryover. Results were comparable and were reported from the initial analysis.

CONVENTIONAL ANALYSIS

Sediment samples were analyzed for total solids by ASTM D-2974.

1. Holding Times – Acceptable except as noted below:



Data Validation Report

Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Subsurface Sediment – Deep/Nearshore Cores

ALS Lab Group: L2144849

The sediment samples exceeded the 7-day holding time as indicated in the QAPP. No data qualifiers were assigned based on the holding time exceedance.

2. Laboratory Duplicate – Acceptable

Laboratory duplicates were performed using PDI-SC-S222-5TO7.2D, PDI-SC-S139-0TO2, and PDI-SC-S213-0TO2. Results were comparable.

3. Field Duplicate – Acceptable

Field duplicates were submitted for PDI-SC-S222-5TO7.2, PDI-SC-S139-4.1TO5.9, PDI-SC-S098-3.3TO5.3, and PDI-SC-S198-2TO4 and identified as PDI-SC-S222-5TO7.2D, PDI-SC-S139-4.1TO5.9D, PDI-SC-S098-3.3TO5.3D, and PDI-SC-S198-2TO4D, respectively. Results were comparable.

4. Calculation Checks – Acceptable

A calculation check was performed on PDI-SC-S117-4TO6. The review confirmed the final results were correct as reported.

5. Reporting Limits – Acceptable

OVERALL ASSESSMENT OF DATA

The data reported in this laboratory group is considered usable for meeting project objectives. The completeness for laboratory group L2144849 is 100%.

Table 1
QA/QC Data Summary Review
Portland Harbor
Subsurface Sediment
ALS Burlington Laboratory Group: L2144849

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-SC-S222-5TO7.2D	L2144849-1	E1699M	2,4-DDD	1.46	ng/g	1.46 J	l
PDI-SC-S222-5TO7.2D	L2144849-1	E1699M	2,4-DDT	0.040 M,J,R	ng/g	0.040 JN	k
PDI-SC-S222-5TO7.2D	L2144849-1	E1699M	4,4'-DDE	23.8	ng/g	23.8 J	ld
PDI-SC-S222-5TO7.2D	L2144849-1	E1699M	4,4'-DDT	0.102 J,B	ng/g	0.102 J	bl
PDI-SC-S222-9.2TO11.2	L2144849-3	E1699M	2,4-DDD	0.057 J,R	ng/g	0.057 JN	l,k
PDI-SC-S222-9.2TO11.2	L2144849-3	E1699M	2,4-DDT	0.020 U	ng/g	0.020 UJ	c
PDI-SC-S222-9.2TO11.2	L2144849-3	E1699M	4,4'-DDT	0.141 M,J,B	ng/g	0.141 J	c
PDI-SC-S222-11.2TO13.2	L2144849-4	E1699M	2,4-DDD	0.0375 M,J,B	ng/g	0.0375 J	l
PDI-SC-S222-13.2TO15.2	L2144849-5	E1699M	2,4-DDD	0.0449 M,J,B	ng/g	0.0449 J	l
PDI-SC-S222-13.2TO15.2	L2144849-5	E1699M	2,4-DDE	0.023 M,J,R	ng/g	0.023 JN	k
PDI-SC-S222-13.2TO15.2	L2144849-5	E1699M	4,4'-DDT	0.075 M,J,R	ng/g	0.075 JN	bl,k
PDI-SC-S248-0TO2	L2144849-6	E1699M	2,4-DDD	0.300 M,J	ng/g	0.300 J	l
PDI-SC-S248-2TO4	L2144849-7	E1699M	2,4-DDD	3.27	ng/g	3.27 J	l
PDI-SC-S248-4TO6.2	L2144849-8	E1699M	2,4-DDD	0.353 M,J	ng/g	0.353 J	l
PDI-SC-S248-4TO6.2	L2144849-8	E1699M	4,4'-DDT	0.25 M,J,R	ng/g	0.25 JN	k
PDI-SC-S139-0TO2	L2144849-9	E1699M	2,4-DDD	103 M	ng/g	103 J	ld
PDI-SC-S139-0TO2	L2144849-9	E1699M	2,4-DDT	3.22 M	ng/g	3.22 J	c
PDI-SC-S139-0TO2	L2144849-9	E1699M	4,4'-DDD	198 M	ng/g	198 J	ld
PDI-SC-S139-0TO2	L2144849-9	E1699M	4,4'-DDT	16.5 M	ng/g	16.5 J	c
PDI-SC-S139-2TO4.1	L2144849-10	E1699M	2,4-DDE	0.504 M,J	ng/g	0.504 J	lc
PDI-SC-S139-2TO4.1	L2144849-10	E1699M	2,4-DDT	0.85 M,J,R	ng/g	0.85 JN	c,k
PDI-SC-S139-2TO4.1	L2144849-10	E1699M	4,4'-DDE	2.43 M	ng/g	2.43 J	lc
PDI-SC-S139-2TO4.1	L2144849-10	E1699M	4,4'-DDT	37.4 M	ng/g	37.4 J	c
PDI-SC-S139-4.1TO5.9	L2144849-11	E1699M	2,4-DDE	0.044 M,J,R	ng/g	0.044 JN	bl,k
PDI-SC-S139-4.1TO5.9	L2144849-11	E1699M	2,4-DDT	0.037 U	ng/g	0.037 UJ	c
PDI-SC-S139-4.1TO5.9	L2144849-11	E1699M	4,4'-DDE	0.115 M,J,B	ng/g	0.115 J	bl
PDI-SC-S139-4.1TO5.9	L2144849-11	E1699M	4,4'-DDT	0.474 M,J	ng/g	0.474 J	c
PDI-SC-S139-4.1TO5.9D	L2144849-12	E1699M	2,4-DDE	0.061 M,J,R	ng/g	0.061 JN	bl,k
PDI-SC-S139-4.1TO5.9D	L2144849-12	E1699M	2,4-DDT	0.052 U	ng/g	0.052 UJ	c
PDI-SC-S139-4.1TO5.9D	L2144849-12	E1699M	4,4'-DDE	0.15 M,J,R	ng/g	0.15 JN	bl,k
PDI-SC-S139-4.1TO5.9D	L2144849-12	E1699M	4,4'-DDT	0.49 M,J,R	ng/g	0.49 JN	c,k
PDI-SC-S176-0TO2	L2144849-13	E1699M	2,4-DDE	0.575 J	ng/g	0.575 J	l
PDI-SC-S176-0TO2	L2144849-13	E1699M	2,4-DDT	0.025 U	ng/g	0.025 UJ	c
PDI-SC-S176-0TO2	L2144849-13	E1699M	4,4'-DDT	0.138 M,J,B	ng/g	0.138 J	c
PDI-SC-S176-2TO4	L2144849-14	E1699M	2,4-DDE	0.762 M,J	ng/g	0.762 J	lc
PDI-SC-S176-2TO4	L2144849-14	E1699M	2,4-DDT	0.081 U	ng/g	0.081 UJ	c
PDI-SC-S176-2TO4	L2144849-14	E1699M	4,4'-DDE	4.28	ng/g	4.28 J	lc
PDI-SC-S176-2TO4	L2144849-14	E1699M	4,4'-DDT	0.510 M,J	ng/g	0.510 J	c
PDI-SC-S176-4TO5.5	L2144849-15	E1699M	2,4-DDE	0.0374 M,J,B	ng/g	0.0374 J	bl
PDI-SC-S176-4TO5.5	L2144849-15	E1699M	2,4-DDT	0.020 U	ng/g	0.020 UJ	c
PDI-SC-S176-4TO5.5	L2144849-15	E1699M	4,4'-DDT	0.11 M,J,R	ng/g	0.11 JN	c,k
PDI-SC-S176-5.5TO7.5	L2144849-16	E1699M	2,4-DDE	0.0312 M,J,B	ng/g	0.0312 J	bl
PDI-SC-S176-5.5TO7.5	L2144849-16	E1699M	2,4-DDT	0.021 U	ng/g	0.021 UJ	c
PDI-SC-S176-5.5TO7.5	L2144849-16	E1699M	4,4'-DDE	0.0984 M,J,B	ng/g	0.0984 J	bl
PDI-SC-S176-5.5TO7.5	L2144849-16	E1699M	4,4'-DDT	0.084 M,J,R	ng/g	0.084 JN	c,k
PDI-SC-S176-7.5TO9.6	L2144849-17	E1699M	2,4-DDT	0.026 U	ng/g	0.026 UJ	c
PDI-SC-S176-7.5TO9.6	L2144849-17	E1699M	4,4'-DDE	0.0873 M,J,B	ng/g	0.0873 J	bl
PDI-SC-S176-7.5TO9.6	L2144849-17	E1699M	4,4'-DDT	0.259 M,J,B	ng/g	0.259 J	c
PDI-SC-S188-0TO1.5	L2144849-18	E1699M	2,4-DDE	0.266 J	ng/g	0.266 J	l
PDI-SC-S188-0TO1.5	L2144849-18	E1699M	2,4-DDT	0.623 M,J	ng/g	0.623 J	c
PDI-SC-S188-0TO1.5	L2144849-18	E1699M	4,4'-DDT	1.41 M,J	ng/g	1.41 J	c
PDI-SC-S213-0TO2	L2144849-19	E1699M	2,4-DDD	0.518 M,J	ng/g	0.518 J	c
PDI-SC-S213-0TO2	L2144849-19	E1699M	2,4-DDT	0.29 M,J,R	ng/g	0.29 JN	c,k
PDI-SC-S213-0TO2	L2144849-19	E1699M	4,4'-DDD	1.32 M,J	ng/g	1.32 J	c
PDI-SC-S213-0TO2	L2144849-19	E1699M	4,4'-DDT	0.690 M,J,B	ng/g	0.690 J	c
PDI-SC-S213-2TO4	L2144849-20	E1699M	2,4-DDD	0.513 J	ng/g	0.513 J	c
PDI-SC-S213-2TO4	L2144849-20	E1699M	2,4-DDT	0.32 M,J,R	ng/g	0.32 JN	c,k
PDI-SC-S213-2TO4	L2144849-20	E1699M	4,4'-DDD	1.05 M,J	ng/g	1.05 J	c
PDI-SC-S213-2TO4	L2144849-20	E1699M	4,4'-DDT	1.20 M,J,B	ng/g	1.20 J	c
PDI-SC-S213-4TO6	L2144849-21	E1699M	2,4-DDD	0.783 M,J	ng/g	0.783 J	c
PDI-SC-S213-4TO6	L2144849-21	E1699M	2,4-DDT	0.229 M,J	ng/g	0.229 J	c
PDI-SC-S213-4TO6	L2144849-21	E1699M	4,4'-DDD	2.05 M,J	ng/g	2.05 J	c
PDI-SC-S213-4TO6	L2144849-21	E1699M	4,4'-DDT	0.771 M,J,B	ng/g	0.771 J	c

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QA/QC Data Summary Review
Portland Harbor
Subsurface Sediment
ALS Burlington Laboratory Group: L2144849

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-SC-S213-6TO8	L2144849-22	E1699M	2,4-DDD	1.54 J	ng/g	1.54 J	c
PDI-SC-S213-6TO8	L2144849-22	E1699M	2,4-DDT	0.185 M,J	ng/g	0.185 J	c
PDI-SC-S213-6TO8	L2144849-22	E1699M	4,4'-DDD	4.80 M	ng/g	4.80 J	c
PDI-SC-S213-6TO8	L2144849-22	E1699M	4,4'-DDT	0.949 M,J,B	ng/g	0.949 J	c
PDI-SC-S213-8TO10	L2144849-23	E1699M	2,4-DDD	1.66 M,J	ng/g	1.66 J	c
PDI-SC-S213-8TO10	L2144849-23	E1699M	2,4-DDT	0.11 M,J	ng/g	0.11 J	c
PDI-SC-S213-8TO10	L2144849-23	E1699M	4,4'-DDD	6.35 M	ng/g	6.35 J	c
PDI-SC-S213-8TO10	L2144849-23	E1699M	4,4'-DDT	0.510 M,J,B	ng/g	0.510 J	c
PDI-SC-S213-10TO11.8	L2144849-24	E1699M	2,4-DDD	2.49 M	ng/g	2.49 J	c
PDI-SC-S213-10TO11.8	L2144849-24	E1699M	2,4-DDT	0.186 M,J	ng/g	0.186 J	c
PDI-SC-S213-10TO11.8	L2144849-24	E1699M	4,4'-DDD	6.83 M	ng/g	6.83 J	c
PDI-SC-S213-10TO11.8	L2144849-24	E1699M	4,4'-DDT	0.402 M,J,B	ng/g	0.402 J	c
PDI-SC-S213-11.8TO12.8	L2144849-25	E1699M	2,4-DDD	2.30 M	ng/g	2.30 J	c
PDI-SC-S213-11.8TO12.8	L2144849-25	E1699M	2,4-DDT	0.041 U	ng/g	0.041 UJ	c
PDI-SC-S213-11.8TO12.8	L2144849-25	E1699M	4,4'-DDD	4.57 M	ng/g	4.57 J	c
PDI-SC-S213-11.8TO12.8	L2144849-25	E1699M	4,4'-DDT	0.258 M,J,B	ng/g	0.258 UJ	bl,c
PDI-SC-S098-0TO1.3	L2144849-26	E1699M	2,4-DDD	2.90	ng/g	2.90 J	c
PDI-SC-S098-0TO1.3	L2144849-26	E1699M	2,4-DDT	0.251 M,J	ng/g	0.251 J	c
PDI-SC-S098-0TO1.3	L2144849-26	E1699M	4,4'-DDD	8.65 M	ng/g	8.65 J	c
PDI-SC-S098-0TO1.3	L2144849-26	E1699M	4,4'-DDT	0.649 M,J,B	ng/g	0.649 J	c
PDI-SC-S098-1.3TO3.3	L2144849-27	E1699M	2,4-DDD	1.13 M,J	ng/g	1.13 J	c
PDI-SC-S098-1.3TO3.3	L2144849-27	E1699M	2,4-DDT	0.021 U	ng/g	0.021 UJ	c
PDI-SC-S098-1.3TO3.3	L2144849-27	E1699M	4,4'-DDD	2.49 M	ng/g	2.49 J	c
PDI-SC-S098-1.3TO3.3	L2144849-27	E1699M	4,4'-DDT	0.112 M,J,B	ng/g	0.112 UJ	bl,c
PDI-SC-S098-3.3TO5.3	L2144849-28	E1699M	2,4-DDD	0.017 U	ng/g	0.017 UJ	c
PDI-SC-S098-3.3TO5.3	L2144849-28	E1699M	2,4-DDT	0.031 U	ng/g	0.031 UJ	c
PDI-SC-S098-3.3TO5.3	L2144849-28	E1699M	4,4'-DDD	0.031 U	ng/g	0.031 UJ	c
PDI-SC-S098-3.3TO5.3	L2144849-28	E1699M	4,4'-DDE	0.026 M,J,R	ng/g	0.026 U	bl
PDI-SC-S098-3.3TO5.3	L2144849-28	E1699M	4,4'-DDT	0.096 M,J,R	ng/g	0.096 UJ	bl,c
PDI-SC-S098-3.3TO5.3D	L2144849-29	E1699M	2,4-DDD	0.014 U	ng/g	0.014 UJ	c
PDI-SC-S098-3.3TO5.3D	L2144849-29	E1699M	2,4-DDT	0.025 U	ng/g	0.025 UJ	c
PDI-SC-S098-3.3TO5.3D	L2144849-29	E1699M	4,4'-DDD	0.0424 M,J,B	ng/g	0.0424 UJ	bl,c
PDI-SC-S098-3.3TO5.3D	L2144849-29	E1699M	4,4'-DDE	0.0263 M,J,B	ng/g	0.0263 U	bl
PDI-SC-S098-3.3TO5.3D	L2144849-29	E1699M	4,4'-DDT	0.130 M,J,B	ng/g	0.130 UJ	bl,c
PDI-SC-S098-5.3TO7.2	L2144849-30	E1699M	2,4-DDD	0.0631 M,J	ng/g	0.0631 UJ	bl,c
PDI-SC-S098-5.3TO7.2	L2144849-30	E1699M	2,4-DDE	0.0276 M,J,B	ng/g	0.0276 U	bl
PDI-SC-S098-5.3TO7.2	L2144849-30	E1699M	2,4-DDT	0.077 M,J,R	ng/g	0.077 JN	c,k
PDI-SC-S098-5.3TO7.2	L2144849-30	E1699M	4,4'-DDD	0.0783 M,J,B	ng/g	0.0783 UJ	bl,c
PDI-SC-S098-5.3TO7.2	L2144849-30	E1699M	4,4'-DDE	0.046 M,J,R	ng/g	0.046 U	bl
PDI-SC-S098-5.3TO7.2	L2144849-30	E1699M	4,4'-DDT	0.274 M,J,B	ng/g	0.274 UJ	bl,c
PDI-SC-S098-7.2TO8.2	L2144849-31	E1699M	2,4-DDD	0.0458 M,J	ng/g	0.0458 UJ	bl,c
PDI-SC-S098-7.2TO8.2	L2144849-31	E1699M	2,4-DDT	0.033 U	ng/g	0.033 UJ	c
PDI-SC-S098-7.2TO8.2	L2144849-31	E1699M	4,4'-DDD	0.0597 M,J,B	ng/g	0.0597 UJ	bl,c
PDI-SC-S098-7.2TO8.2	L2144849-31	E1699M	4,4'-DDE	0.022 M,J,R	ng/g	0.022 U	bl
PDI-SC-S098-7.2TO8.2	L2144849-31	E1699M	4,4'-DDT	0.14 M,J,R	ng/g	0.14 UJ	bl,c
PDI-RB-SS-180807	L2144849-32	E1699M	2,4-DDE	0.729 M,J,B	ng/L	0.729 J	lc
PDI-RB-SS-180807	L2144849-32	E1699M	4,4'-DDD	0.433 M,J,B	ng/L	0.433 J	bl
PDI-RB-SS-180807	L2144849-32	E1699M	4,4'-DDE	1.04 M,J,B	ng/L	1.04 J	lc
PDI-RB-SS-180807	L2144849-32	E1699M	4,4'-DDT	1.78 M,J,B	ng/L	1.78 J	bl
PDI-RB-SS-180808	L2144849-33	E1699M	2,4-DDD	0.17 M,J,R	ng/L	0.17 JN	bl,k
PDI-RB-SS-180808	L2144849-33	E1699M	2,4-DDE	0.0968 M,J,B	ng/L	0.0968 U	bl
PDI-RB-SS-180808	L2144849-33	E1699M	2,4-DDT	0.166 J	ng/L	0.166 J	bl
PDI-RB-SS-180808	L2144849-33	E1699M	4,4'-DDD	0.265 J,B	ng/L	0.265 J	bl
PDI-RB-SS-180808	L2144849-33	E1699M	4,4'-DDE	0.184 M,J,B	ng/L	0.184 U	bl
PDI-RB-SS-180808	L2144849-33	E1699M	4,4'-DDT	0.608 J,B	ng/L	0.608 J	bl
PDI-RB-SS-180809	L2144849-34	E1699M	2,4-DDD	0.102 M,J	ng/L	0.102 U	bl
PDI-RB-SS-180809	L2144849-34	E1699M	2,4-DDE	0.0714 M,J,B	ng/L	0.0714 U	bl
PDI-RB-SS-180809	L2144849-34	E1699M	2,4-DDT	0.091 M,J,R	ng/L	0.091 U	bl
PDI-RB-SS-180809	L2144849-34	E1699M	4,4'-DDD	0.11 M,J,R	ng/L	0.11 U	bl
PDI-RB-SS-180809	L2144849-34	E1699M	4,4'-DDE	0.131 M,J,B	ng/L	0.131 U	bl
PDI-RB-SS-180809	L2144849-34	E1699M	4,4'-DDT	0.326 M,J,B	ng/L	0.326 U	bl

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Portland Harbor
Subsurface Sediment
ALS Burlington Laboratory Group: L2144849

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-RB-SS-180806	L2144849-35	E1699M	2,4-DDD	0.141 M,J	ng/L	0.141 J	bl
PDI-RB-SS-180806	L2144849-35	E1699M	2,4-DDE	0.0943 M,J,B	ng/L	0.0943 U	bl
PDI-RB-SS-180806	L2144849-35	E1699M	2,4-DDT	0.12 M,J,R	ng/L	0.12 U	bl
PDI-RB-SS-180806	L2144849-35	E1699M	4,4'-DDD	0.132 M,J,B	ng/L	0.132 U	bl
PDI-RB-SS-180806	L2144849-35	E1699M	4,4'-DDE	0.219 M,J,B	ng/L	0.219 J	bl
PDI-RB-SS-180806	L2144849-35	E1699M	4,4'-DDT	0.427 M,J,B	ng/L	0.427 J	bl
PDI-SC-S191-4TO6	L2144849-36	E1699M	2,4-DDD	4.73	ng/g	4.73 J	c
PDI-SC-S191-4TO6	L2144849-36	E1699M	2,4-DDT	3.09	ng/g	3.09 J	c
PDI-SC-S191-4TO6	L2144849-36	E1699M	4,4'-DDD	11.4	ng/g	11.4 J	c
PDI-SC-S191-4TO6	L2144849-36	E1699M	4,4'-DDT	10.9	ng/g	10.9 J	c
PDI-SC-S191-6TO8.1	L2144849-37	E1699M	2,4-DDD	4.55	ng/g	4.55 J	c
PDI-SC-S191-6TO8.1	L2144849-37	E1699M	2,4-DDT	0.297 M,J	ng/g	0.297 J	c
PDI-SC-S191-6TO8.1	L2144849-37	E1699M	4,4'-DDD	11.2 M	ng/g	11.2 J	c
PDI-SC-S191-6TO8.1	L2144849-37	E1699M	4,4'-DDT	0.803 J,B	ng/g	0.803 J	c
PDI-SC-S192-0TO1.5	L2144849-38	E1699M	2,4-DDD	4.28 M	ng/g	4.28 J	c
PDI-SC-S192-0TO1.5	L2144849-38	E1699M	2,4-DDT	2.73 M,J	ng/g	2.73 J	c
PDI-SC-S192-0TO1.5	L2144849-38	E1699M	4,4'-DDD	8.72 M	ng/g	8.72 J	c
PDI-SC-S192-0TO1.5	L2144849-38	E1699M	4,4'-DDT	6.15 M	ng/g	6.15 J	c
PDI-SC-S192-1.5TO3	L2144849-39	E1699M	2,4-DDD	2.06 J	ng/g	2.06 J	c
PDI-SC-S192-1.5TO3	L2144849-39	E1699M	2,4-DDT	1.87 J	ng/g	1.87 J	c
PDI-SC-S192-1.5TO3	L2144849-39	E1699M	4,4'-DDD	4.37	ng/g	4.37 J	c
PDI-SC-S192-1.5TO3	L2144849-39	E1699M	4,4'-DDT	6.28 M	ng/g	6.28 J	c
PDI-SC-S192-3TO4.2	L2144849-40	E1699M	2,4-DDD	0.506 M,J	ng/g	0.506 J	c
PDI-SC-S192-3TO4.2	L2144849-40	E1699M	2,4-DDE	0.0966 M,J	ng/g	0.0966 J	bl
PDI-SC-S192-3TO4.2	L2144849-40	E1699M	2,4-DDT	0.251 M,J	ng/g	0.251 J	c
PDI-SC-S192-3TO4.2	L2144849-40	E1699M	4,4'-DDD	1.05 M,J	ng/g	1.05 J	c
PDI-SC-S192-3TO4.2	L2144849-40	E1699M	4,4'-DDT	0.852 M,J,B	ng/g	0.852 J	c
PDI-SC-S198-0TO2	L2144849-41	E1699M	2,4-DDD	0.841 M,J	ng/g	0.841 J	c
PDI-SC-S198-0TO2	L2144849-41	E1699M	2,4-DDT	0.73 M,J,R	ng/g	0.73 JN	c,k
PDI-SC-S198-0TO2	L2144849-41	E1699M	4,4'-DDD	2.17 M	ng/g	2.17 J	c
PDI-SC-S198-0TO2	L2144849-41	E1699M	4,4'-DDT	2.60 M,B	ng/g	2.60 J	c
PDI-SC-S198-2TO4	L2144849-42	E1699M	2,4-DDD	0.762 M,J	ng/g	0.762 J	c
PDI-SC-S198-2TO4	L2144849-42	E1699M	2,4-DDT	0.144 M,J	ng/g	0.144 J	c
PDI-SC-S198-2TO4	L2144849-42	E1699M	4,4'-DDD	2.01 M	ng/g	2.01 J	c
PDI-SC-S198-2TO4	L2144849-42	E1699M	4,4'-DDT	0.425 M,J,B	ng/g	0.425 J	c
PDI-SC-S198-2TO4D	L2144849-43	E1699M	2,4-DDD	0.785 M,J	ng/g	0.785 J	c
PDI-SC-S198-2TO4D	L2144849-43	E1699M	2,4-DDT	0.17 M,J,R	ng/g	0.17 JN	c,k
PDI-SC-S198-2TO4D	L2144849-43	E1699M	4,4'-DDD	2.05	ng/g	2.05 J	c
PDI-SC-S198-2TO4D	L2144849-43	E1699M	4,4'-DDT	0.41 M,J,R	ng/g	0.41 JN	c,k
PDI-SC-S198-4TO6	L2144849-44	E1699M	2,4-DDD	0.346 M,J	ng/g	0.346 J	c
PDI-SC-S198-4TO6	L2144849-44	E1699M	2,4-DDT	0.269 M,J	ng/g	0.269 J	c
PDI-SC-S198-4TO6	L2144849-44	E1699M	4,4'-DDD	0.854 M,J	ng/g	0.854 J	c
PDI-SC-S198-4TO6	L2144849-44	E1699M	4,4'-DDT	0.914 M,J,B	ng/g	0.914 J	c
PDI-SC-S198-6TO8	L2144849-45	E1699M	2,4-DDD	0.082 M,J,R	ng/g	0.082 JN	c,k
PDI-SC-S198-6TO8	L2144849-45	E1699M	2,4-DDE	0.0488 M,J	ng/g	0.0488 J	bl
PDI-SC-S198-6TO8	L2144849-45	E1699M	2,4-DDT	0.029 U	ng/g	0.029 UJ	c
PDI-SC-S198-6TO8	L2144849-45	E1699M	4,4'-DDD	0.152 M,J	ng/g	0.152 J	c
PDI-SC-S198-6TO8	L2144849-45	E1699M	4,4'-DDE	0.305 J,B	ng/g	0.305 J	bl
PDI-SC-S198-6TO8	L2144849-45	E1699M	4,4'-DDT	0.284 M,J,B	ng/g	0.284 UJ	bl,c
PDI-SC-S198-8TO10	L2144849-46	E1699M	2,4-DDD	0.031 M,J,R	ng/g	0.031 JN	c,k
PDI-SC-S198-8TO10	L2144849-46	E1699M	2,4-DDE	0.017 M,J,R	ng/g	0.017 U	bl
PDI-SC-S198-8TO10	L2144849-46	E1699M	2,4-DDT	0.026 U	ng/g	0.026 UJ	c
PDI-SC-S198-8TO10	L2144849-46	E1699M	4,4'-DDD	0.0458 M,J	ng/g	0.0458 UJ	bl,c
PDI-SC-S198-8TO10	L2144849-46	E1699M	4,4'-DDE	0.0576 M,J,B	ng/g	0.0576 U	bl
PDI-SC-S198-8TO10	L2144849-46	E1699M	4,4'-DDT	0.12 M,J,R	ng/g	0.12 UJ	bl,c
PDI-SC-S198-10TO11.8	L2144849-47	E1699M	2,4-DDD	0.0427 M,J	ng/g	0.0427 J	c
PDI-SC-S198-10TO11.8	L2144849-47	E1699M	2,4-DDE	0.025 M,J,R	ng/g	0.025 U	bl
PDI-SC-S198-10TO11.8	L2144849-47	E1699M	2,4-DDT	0.039 M,J,R	ng/g	0.039 JN	c,k
PDI-SC-S198-10TO11.8	L2144849-47	E1699M	4,4'-DDD	0.041 M,J,R	ng/g	0.041 UJ	bl,c
PDI-SC-S198-10TO11.8	L2144849-47	E1699M	4,4'-DDE	0.0582 M,J,B	ng/g	0.0582 U	bl
PDI-SC-S198-10TO11.8	L2144849-47	E1699M	4,4'-DDT	0.16 M,J,R	ng/g	0.16 UJ	bl,c

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QA/QC Data Summary Review
Portland Harbor
Subsurface Sediment
ALS Burlington Laboratory Group: L2144849

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-SC-S226-6TO8	L2144849-48	E1699M	2,4-DDD	1.45 M,J	ng/g	1.45 J	l
PDI-SC-S226-6TO8	L2144849-48	E1699M	2,4-DDT	0.10 M,J,R	ng/g	0.10 JN	k
PDI-SC-S226-10TO12	L2144849-49	E1699M	2,4-DDD	0.351 J	ng/g	0.351 J	l
PDI-SC-S226-8TO10	L2144849-50	E1699M	2,4-DDD	0.430 M,J	ng/g	0.430 J	l
PDI-SC-S226-0TO2	L2144849-51	E1699M	2,4-DDD	0.399 J	ng/g	0.399 J	l
PDI-SC-S226-2TO4	L2144849-52	E1699M	2,4-DDD	0.505 M,J	ng/g	0.505 J	l
PDI-SC-S226-12TO14	L2144849-53	E1699M	2,4-DDD	0.567 M,J	ng/g	0.567 J	l
PDI-SC-S226-4TO6	L2144849-54	E1699M	2,4-DDD	0.677 J	ng/g	0.677 J	l
PDI-SC-S226-14TO15.8	L2144849-55	E1699M	2,4-DDD	0.659 M,J	ng/g	0.659 J	l
PDI-SC-S222-0TO2	L2144849-56	E1699M	2,4-DDD	350	ng/g	350 J	c
PDI-SC-S222-0TO2	L2144849-56	E1699M	2,4-DDE	185 M	ng/g	185 J	l
PDI-SC-S222-0TO2	L2144849-56	E1699M	2,4-DDT	6.28 M,J	ng/g	6.28 J	c
PDI-SC-S222-0TO2	L2144849-56	E1699M	4,4'-DDD	293 M	ng/g	293 J	c
PDI-SC-S222-0TO2	L2144849-56	E1699M	4,4'-DDT	9.76 J	ng/g	9.76 J	c
PDI-SC-S222-2TO4	L2144849-57	E1699M	2,4-DDD	70.0	ng/g	70.0 J	c
PDI-SC-S222-2TO4	L2144849-57	E1699M	2,4-DDE	25.8 M	ng/g	25.8 J	lc
PDI-SC-S222-2TO4	L2144849-57	E1699M	2,4-DDT	1.8 M,J,R	ng/g	1.8 JN	c,k
PDI-SC-S222-2TO4	L2144849-57	E1699M	4,4'-DDD	99.2 M	ng/g	99.2 J	c
PDI-SC-S222-2TO4	L2144849-57	E1699M	4,4'-DDE	514 M	ng/g	514 J	lc
PDI-SC-S222-2TO4	L2144849-57	E1699M	4,4'-DDT	4.5 U	ng/g	4.5 UJ	c
PDI-SC-S222-4TO5	L2144849-58	E1699M	2,4-DDD	106	ng/g	106 J	c
PDI-SC-S222-4TO5	L2144849-58	E1699M	2,4-DDE	37.6	ng/g	37.6 J	l
PDI-SC-S222-4TO5	L2144849-58	E1699M	2,4-DDT	2.4 M,J,R	ng/g	2.4 JN	c,k
PDI-SC-S222-4TO5	L2144849-58	E1699M	4,4'-DDD	286 M	ng/g	286 J	c
PDI-SC-S222-4TO5	L2144849-58	E1699M	4,4'-DDT	7.08 J	ng/g	7.08 J	c
PDI-SC-S222-5TO7.2	L2144849-59	E1699M	2,4-DDE	0.418 M,J	ng/g	0.418 J	lc
PDI-SC-S222-5TO7.2	L2144849-59	E1699M	2,4-DDT	0.038 U	ng/g	0.038 UJ	c
PDI-SC-S222-5TO7.2	L2144849-59	E1699M	4,4'-DDE	10.8 M	ng/g	10.8 J	lc
PDI-SC-S222-5TO7.2	L2144849-59	E1699M	4,4'-DDT	0.069 U	ng/g	0.069 UJ	c
PDI-SC-S117-0TO2	L2144849-60	E1699M	2,4-DDD	61.0	ng/g	61.0 J	c
PDI-SC-S117-0TO2	L2144849-60	E1699M	2,4-DDE	4.74 M,J	ng/g	4.74 J	l
PDI-SC-S117-0TO2	L2144849-60	E1699M	2,4-DDT	1.82 M,J	ng/g	1.82 J	c
PDI-SC-S117-0TO2	L2144849-60	E1699M	4,4'-DDD	148 M	ng/g	148 J	c
PDI-SC-S117-0TO2	L2144849-60	E1699M	4,4'-DDT	3.43 J	ng/g	3.43 J	c
PDI-SC-S117-2TO4	L2144849-61	E1699M	2,4-DDD	85.8	ng/g	85.8 J	c
PDI-SC-S117-2TO4	L2144849-61	E1699M	2,4-DDE	14.7 M	ng/g	14.7 J	lc
PDI-SC-S117-2TO4	L2144849-61	E1699M	2,4-DDT	3.42 M,J	ng/g	3.42 J	c
PDI-SC-S117-2TO4	L2144849-61	E1699M	4,4'-DDD	241 M	ng/g	241 J	c
PDI-SC-S117-2TO4	L2144849-61	E1699M	4,4'-DDE	54.4 M	ng/g	54.4 J	lc
PDI-SC-S117-2TO4	L2144849-61	E1699M	4,4'-DDT	87.8	ng/g	87.8 J	c
PDI-SC-S117-4TO6	L2144849-62	E1699M	2,4-DDD	68.2 M	ng/g	68.2 J	c
PDI-SC-S117-4TO6	L2144849-62	E1699M	2,4-DDE	17.6	ng/g	17.6 J	l
PDI-SC-S117-4TO6	L2144849-62	E1699M	2,4-DDT	2.41 M,J	ng/g	2.41 J	c
PDI-SC-S117-4TO6	L2144849-62	E1699M	4,4'-DDD	167 M	ng/g	167 J	c
PDI-SC-S117-4TO6	L2144849-62	E1699M	4,4'-DDT	5.38 M,J	ng/g	5.38 J	c
PDI-SC-S219-0TO2	L2144849-63	E1699M	2,4-DDE	0.623 J	ng/g	0.623 J	l
PDI-SC-S219-0TO2	L2144849-63	E1699M	2,4-DDT	0.141 J	ng/g	0.141 J	c
PDI-SC-S219-0TO2	L2144849-63	E1699M	4,4'-DDT	0.466 J	ng/g	0.466 J	c
PDI-SC-S219-2TO4	L2144849-64	E1699M	2,4-DDT	0.029 U	ng/g	0.029 UJ	c
PDI-SC-S219-2TO4	L2144849-64	E1699M	4,4'-DDD	0.057 M,J,R	ng/g	0.057 JN	bl,k
PDI-SC-S219-2TO4	L2144849-64	E1699M	4,4'-DDE	0.0614 M,J,B	ng/g	0.0614 J	bl
PDI-SC-S219-2TO4	L2144849-64	E1699M	4,4'-DDT	0.162 M,J,B	ng/g	0.162 J	c
PDI-SC-S219-4TO5.2	L2144849-65	E1699M	2,4-DDE	0.0984 M,J,B	ng/g	0.0984 J	bl
PDI-SC-S219-4TO5.2	L2144849-65	E1699M	2,4-DDT	0.041 U	ng/g	0.041 UJ	c
PDI-SC-S219-4TO5.2	L2144849-65	E1699M	4,4'-DDE	3.61 M	ng/g	3.61 J	lc
PDI-SC-S219-4TO5.2	L2144849-65	E1699M	4,4'-DDT	0.190 M,J,B	ng/g	0.190 J	c
PDI-SC-S105-0TO2	L2144849-66	E1699M	2,4-DDD	5.86	ng/g	5.86 J	c
PDI-SC-S105-0TO2	L2144849-66	E1699M	2,4-DDT	0.380 M,J	ng/g	0.380 J	c
PDI-SC-S105-0TO2	L2144849-66	E1699M	4,4'-DDD	15.3 M	ng/g	15.3 J	c
PDI-SC-S105-0TO2	L2144849-66	E1699M	4,4'-DDT	0.775 J,B	ng/g	0.775 J	c

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Portland Harbor
Subsurface Sediment
ALS Burlington Laboratory Group: L2144849

Sample ID	Laboratory ID	Method	Analyte	Laboratory Result	Units	Final Result	Reason Code
PDI-SC-S105-2TO4	L2144849-67	E1699M	2,4-DDD	0.842 J	ng/g	0.842 J	c
PDI-SC-S105-2TO4	L2144849-67	E1699M	2,4-DDE	0.0855 M,J	ng/g	0.0855 J	bl
PDI-SC-S105-2TO4	L2144849-67	E1699M	2,4-DDT	0.11 U	ng/g	0.11 UJ	c
PDI-SC-S105-2TO4	L2144849-67	E1699M	4,4'-DDD	2.34 M	ng/g	2.34 J	c
PDI-SC-S105-2TO4	L2144849-67	E1699M	4,4'-DDE	0.24 M,J,R	ng/g	0.24 JN	bl,k
PDI-SC-S105-2TO4	L2144849-67	E1699M	4,4'-DDT	0.451 M,J,B	ng/g	0.451 J	c
PDI-SC-S105-4TO5.6	L2144849-68	E1699M	2,4-DDD	1.34 M,J	ng/g	1.34 J	c
PDI-SC-S105-4TO5.6	L2144849-68	E1699M	2,4-DDE	0.0675 M,J	ng/g	0.0675 J	bl
PDI-SC-S105-4TO5.6	L2144849-68	E1699M	2,4-DDT	0.11 M,J,R	ng/g	0.11 JN	c,k
PDI-SC-S105-4TO5.6	L2144849-68	E1699M	4,4'-DDD	3.05 M	ng/g	3.05 J	c
PDI-SC-S105-4TO5.6	L2144849-68	E1699M	4,4'-DDE	0.258 M,J,B	ng/g	0.258 J	bl
PDI-SC-S105-4TO5.6	L2144849-68	E1699M	4,4'-DDT	0.325 M,J,B	ng/g	0.325 J	c
PDI-SC-S105-5.6TO6.6	L2144849-69	E1699M	2,4-DDD	30.1 M	ng/g	30.1 J	c
PDI-SC-S105-5.6TO6.6	L2144849-69	E1699M	2,4-DDT	0.52 M,J,R	ng/g	0.52 JN	c,k
PDI-SC-S105-5.6TO6.6	L2144849-69	E1699M	4,4'-DDD	71.4 M	ng/g	71.4 J	c
PDI-SC-S105-5.6TO6.6	L2144849-69	E1699M	4,4'-DDT	1.28 M,J,B	ng/g	1.28 J	c
PDI-SC-S191-0TO2	L2144849-70	E1699M	2,4-DDD	1.54 M,J	ng/g	1.54 J	c
PDI-SC-S191-0TO2	L2144849-70	E1699M	2,4-DDT	1.31 M,J	ng/g	1.31 J	c
PDI-SC-S191-0TO2	L2144849-70	E1699M	4,4'-DDD	3.87 M	ng/g	3.87 J	c
PDI-SC-S191-0TO2	L2144849-70	E1699M	4,4'-DDT	4.20 M	ng/g	4.20 J	c
PDI-SC-S191-2TO4	L2144849-71	E1699M	2,4-DDD	6.68 M	ng/g	6.68 J	c
PDI-SC-S191-2TO4	L2144849-71	E1699M	2,4-DDT	11.8 M	ng/g	11.8 J	c
PDI-SC-S191-2TO4	L2144849-71	E1699M	4,4'-DDD	18.2 M	ng/g	18.2 J	c
PDI-SC-S191-2TO4	L2144849-71	E1699M	4,4'-DDT	43.4 M	ng/g	43.4 J	c

Notes:

- B - detected in blank at >10% of sample concentration
- bl - laboratory blank contamination
- c - calibration issue
- J - estimated value
- JN - tentatively identified analyte
- k - Estimated Maximum Possible Concentration (EMPC)
- l - LCS recovery
- lc - labeled compound recovery
- ld - laboratory duplicate RPD
- M - manual intergration by laboratory
- ng/g - nanogram per gram
- ng/L - nanogram per liter
- R - Ion abundance outside acceptance criterion
- RPD - relative percent difference
- U - Compound was analyzed for, but not detected above the value shown.

Note: Line items where the laboratory result contains a "J" and the final result contains a "U" with a data validation reason code "bl" indicate that the final result is reported as not detected ("U" flag) at the sample result.