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Data Validation Report

Project:	Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Laboratory:	SGS-AXYS, Sydney, British Columbia, Canada
Service Request:	WG66477-PCB
Analyses/Method:	Chlorinated Biphenyls by HRGC/HRMS / E1668A
Validation Level:	Stage 2A
AECOM Project Number:	60566335.2.12
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Completed on:	02/27/2019
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File Name:	WG66477-PCB DVR

SUMMARY

The samples listed below were collected by AECOM in Portland Harbor in Portland, OR on November 27-30, 2018 and December 1, 2018.

Sample ID	Matrix/Sample Type
PDI-RB-XD-181129	Equipment blank
PDI-WS-T01-1811	Surface Water
PDI-WS-T02-1811	Surface Water
PDI-WS-T03-1811	Surface Water
PDI-WS-T04-1812	Surface Water
PDI-WS-T05-1811	Surface Water
PDI-WS-T06-1811	Surface Water
PDI-WS-T07-1811	Surface Water

Data validation activities were conducted with reference to:

- *EPA Method 1668A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS* (USEPA, August 2003),
- *EPA Method 1668B: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS* (USEPA, November 2008),
- *EPA Method 1668C: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS* (USEPA, April 2010),
- *USEPA Contract Laboratory Program National Functional Guidelines for High Resolution Superfund Methods Data Review* (April 2016),
- *Quality Assurance Project Plan, Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling, Portland Harbor Superfund Site (March 2018),* and the
- laboratory quality control (QC) limits.

The National Functional Guidelines were modified to accommodate the non-CLP methodologies. In the absence of method-specific information, laboratory QC limits, project-specific requirements and/or AECOM professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓	Data completeness (chain-of-custody (COC)/sample integrity
✓	Holding times and sample preservation
✗	Laboratory blanks/equipment blanks
NA	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Ongoing precision and recovery results
NA	Field duplicate results
✗	Labeled compounds and labeled clean-up standard recoveries
✗	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. An NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as qualified and may be used for decision making purposes. Select data points were qualified as estimated and/or negated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness (COC)/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times and Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with method criteria. All method QC acceptance criteria were met.

Laboratory Blanks/Equipment Blanks

Laboratory method blanks and equipment blank results are evaluated as to whether there are contaminants detected above the estimated detection limit (EDL).

Target compounds were detected in the laboratory method blank and equipment blank associated with the samples in this data set.

Detected compounds are summarized in Attachment A in Table A-1 and Table A-2. The results for the equipment blank PDI-RB-XD-181129 are provided for informational purposes only.

The NFG guidance stipulates that a conservative approach should be taken with regards to qualification of PCB congeners due to the toxicity of these compounds 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 on the basis of laboratory method blank contamination. As allowed in the NFG, a blank action limit (BAL) was determined as five times the blank result:

- When the sample results were < the blank result, the sample result was qualified as nondetect (U) at the sample result.
- When the sample result was ≥ the blank result and ≤ the BAL, the sample result was qualified as estimated and potentially biased high (J+).
- When the sample result was > the BAL, the sample result was not qualified.

Qualified sample results are summarized in Table 1.

MS/MSD Results

MS/MSD analyses were not performed on a sample in this data set. No data validation actions were taken on this basis.

Ongoing Precision and Recovery

The OPR %Rs were reviewed for conformance with the method QC acceptance criteria. All method QC acceptance criteria were met.

Field Duplicate Results

A field duplicate pair was not submitted with this data set. No data validation actions were taken on this basis.

Labeled Compounds and Labeled Clean-up Standard Recoveries

The labeled compounds and labeled clean-up standard %Rs were reviewed for conformance with the QC acceptance criteria.

Nonconformances are summarized in Attachment A in Table A-3. Samples were qualified as follows:

Actions: (Based on NFG 2016)

Criteria	Actions	
	Detected	Nondetected

Criteria		Actions	
		Detected	Nondetected
%R > Upper Acceptance Limit		J	UJ
%R >10% but < Lower Acceptance Limit		J	UJ
%R <10%		See below	
<10% and S/N >10:1		J	R
<10% and S/N <10:1		R	R
Ion abundance ratio criteria not met	Calibration compliant	J	UJ
	Calibration non-compliant	J	R
Clean-up Standard Recovery < Lower Acceptance Limit		J	UJ

See Table 6 of method for method QC acceptance criteria[1]

[2]The PCB congener method is performed using isotope dilution technique; therefore, professional judgment was applied and bias codes were not included in data qualification.

Qualified sample results are summarized in Table 1.

The laboratory spikes the XAD resin with the following labeled compounds prior to deployment to the field: PCB-31L, PCB-95L and PCB-153L. Specific QC acceptance limits have not been established for these compounds. However, the recoveries of these labeled compounds in all samples were found to range between 76 to 127%. Consequently, it was determined that the XAD resin performance was acceptable for this sample event and data were not qualified on this basis.

Sample Results/Reporting Issues

All sample results detected at concentrations less than the lowest calibration standard but greater than the EDL are qualified by the laboratory as estimated (J). This “J” qualifier is retained during data validation.

It should be noted that the sample reported detection limit is the sample specific estimated detection limit (EDL) with the following exceptions. In cases when the EDL is less than the nominal concentration of 0.5 pg/sample, the EDL is raised to the nominal concentration and adjusted to include the appropriate preparation factors.

Lock Mass Interferences

The laboratory identified the presence of interferences of the mass ion as indicated by the monitored lock mass by qualifying the affected sample result with a G laboratory qualifier. These interferences may impact compound quantitation; therefore, the positive and nondetect results for affected samples were qualified as estimated (J/UJ).

Estimated Maximum Possible Concentrations (EMPCs)

The data were reviewed to identify sample results that were indicated by the laboratory to be estimated maximum possible concentrations (EMPCs) because of identification criteria not being met.

The laboratory identified the presence of EMPCs for the samples in this data set by qualifying affected results with a K laboratory qualifier. Samples were qualified as follows:

Actions: (Based on AECOM professional judgment)

Criteria	Actions
A native target compound was reported by the laboratory as an EMPC.	Report result as an EMPC and qualify as estimated and presumptively present (JN).
A labeled compound was flagged by the laboratory indicating all identification criteria were not met.	Qualify associated positive and nondetect results as estimated (J/UJ).

It should be noted that in instances of multiple nonconformances, the bias is considered indeterminate where there is a conflicting low and high bias or when a result does not exhibit a consistent bias. These results have an overall qualification of estimated (J) with the exception noted below.

When applicable, the "JN" qualifier was retained rather than replacement with the conventional overall "J" qualifier in instances where EMPC results were qualified for multiple quality control nonconformances.

Qualified sample results are summarized in Table 1.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-RB-XD-181129	WS	PCB-105		5.58	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-110/115		16.2	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-118		9.49	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-12/13		36.9	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-128/166		1.71	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-129/138/160/163		10.1	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-130		0.975	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-132	4.62	0.848	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-135/151/154		5.66	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-136	2.02	0.848	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-137	1.41	0.848	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-141		2.51	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-146		2.13	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-147/149		12.7	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-15	35.6	24.7	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-153/168		8.42	pg/sample	UJ	bl,q
PDI-RB-XD-181129	WS	PCB-156/157		1.66	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-158	1.29	0.848	pg/sample	JN	k
PDI-RB-XD-181129	WS	PCB-16	24.4	3.03	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-164	0.983	0.848	pg/sample	JN	k
PDI-RB-XD-181129	WS	PCB-170		2.94	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-171/173	1.45	0.848	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-174	3.60	0.848	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-177		1.73	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-179	1.90	0.848	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-18/30	47.4	2.02	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-180/193		10.4	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-182		0.848	pg/sample	UJ	q
PDI-RB-XD-181129	WS	PCB-183/185		1.80	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-187		3.98	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-19	9.96	2.77	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-194		4.16	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-195		1.13	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-196	2.57	0.848	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-197/200		0.848	pg/sample	UJ	q
PDI-RB-XD-181129	WS	PCB-198/199		3.98	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-20/28	69.6	3.85	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-202	1.23	0.848	pg/sample	JN	bl,k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-RB-XD-181129	WS	PCB-203		2.74	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-209 (decachlorobiphenyl)		2.77	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-22	27.7	4.28	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-24	1.88	1.72	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-26/29	10.2	3.94	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-27	3.26	1.70	pg/sample	JN	bl,k,q
PDI-RB-XD-181129	WS	PCB-31	42.1	3.68	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-32	17.7	3.78	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-37		7.48	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-39	5.63	3.87	pg/sample	JN	k
PDI-RB-XD-181129	WS	PCB-40/41/71	13.0	1.01	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-42	8.51	1.10	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-43	1.44	1.30	pg/sample	JN	k
PDI-RB-XD-181129	WS	PCB-46	2.37	1.27	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-48	5.47	1.07	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-49/69		20.9	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-50/53		4.54	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-52		30.7	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-56	6.77	1.84	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-59/62/75	2.59	0.848	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-6	68.3	22.9	pg/sample	JN	k
PDI-RB-XD-181129	WS	PCB-60	3.88	1.79	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-61/70/74/76		21.5	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-64		9.00	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-66		14.2	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-82	2.94	0.848	pg/sample	JN	k
PDI-RB-XD-181129	WS	PCB-83/99		8.57	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-84	4.65	0.848	pg/sample	J+	bl
PDI-RB-XD-181129	WS	PCB-85/116/117		3.98	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-86/87/97/108/119/125	13.5	0.848	pg/sample	J	bl,q
PDI-RB-XD-181129	WS	PCB-88/91	6.27	0.848	pg/sample	JN	bl,k
PDI-RB-XD-181129	WS	PCB-90/101/113		20.1	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-92		2.29	pg/sample	U	bl
PDI-RB-XD-181129	WS	PCB-93/95/98/100/102	18.5	0.848	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-10	29.4	4.31	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-103	17.4	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-12/13		39.4	pg/sample	U	bl
PDI-WS-T01-1811	WS	PCB-120	3.63	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-122	2.49	1.50	pg/sample	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T01-1811	WS	PCB-123	6.15	1.36	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-131	3.36	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-133	5.39	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-137	7.58	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-144	16.0	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-148	1.54	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-162	0.874	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-164	15.0	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-167	5.30	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-170	21.2	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-172	4.54	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-174	27.5	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-175	1.14	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-176	3.37	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-178	7.75	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-179	14.3	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-180/193	68.5	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-182		0.851	pg/sample	UJ	q
PDI-WS-T01-1811	WS	PCB-183/185	19.6	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-187	41.8	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-190	4.49	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-194	8.71	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-195	3.76	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-196	3.99	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-197/200	2.16	0.851	pg/sample	J	q
PDI-WS-T01-1811	WS	PCB-198/199	11.2	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-201	1.30	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-202	3.70	0.851	pg/sample	J+	bl
PDI-WS-T01-1811	WS	PCB-203	6.59	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-206	5.14	2.83	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-208	3.55	1.83	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-209 (decachlorobiphenyl)	4.45	0.851	pg/sample	JN	bl,k
PDI-WS-T01-1811	WS	PCB-32	169	1.25	pg/sample	J	q
PDI-WS-T01-1811	WS	PCB-34	3.33	1.33	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-5	9.05	4.60	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-59/62/75	30.8	0.851	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-72	9.19	3.29	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-73	4.75	0.866	pg/sample	JN	k
PDI-WS-T01-1811	WS	PCB-86/87/97/108/119/125	246	0.851	pg/sample	J	q

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T01-1811	WS	PCB-94	7.89	0.851	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-10	13.7	7.29	pg/sample	J	lc
PDI-WS-T02-1811	WS	PCB-103	9.93	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-104	2.21	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-11	1030	7.27	pg/sample	J	lc
PDI-WS-T02-1811	WS	PCB-12/13		25.2	pg/sample	UJ	bl,lc
PDI-WS-T02-1811	WS	PCB-120	3.41	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-122	2.84	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-123	4.03	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-128/166	19.1	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-133	3.70	0.853	pg/sample	J+	bl
PDI-WS-T02-1811	WS	PCB-139/140	2.87	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-14		7.12	pg/sample	UJ	lc
PDI-WS-T02-1811	WS	PCB-148	1.55	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-155	0.982	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-156/157	12.6	0.853	pg/sample	J+	bl
PDI-WS-T02-1811	WS	PCB-159	1.81	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-167	3.72	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-170	13.4	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-172	2.87	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-174	18.9	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-175	0.951	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-176	2.62	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-177	12.8	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-178	6.02	0.853	pg/sample	J+	bl
PDI-WS-T02-1811	WS	PCB-179	10.5	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-180/193	52.3	0.853	pg/sample	J+	bl
PDI-WS-T02-1811	WS	PCB-183/185	14.3	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-187	29.2	0.853	pg/sample	J+	bl
PDI-WS-T02-1811	WS	PCB-190	3.90	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-194	6.65	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-195	2.65	0.853	pg/sample	J+	bl
PDI-WS-T02-1811	WS	PCB-196	2.28	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-197/200	1.40	0.853	pg/sample	JN	k,q
PDI-WS-T02-1811	WS	PCB-198/199	8.74	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-201	0.962	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-202	1.30	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-203	5.16	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-206	6.35	3.47	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-209	4.20	0.853	pg/sample	JN	bl,k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
		(decachlorobiphenyl)					
PDI-WS-T02-1811	WS	PCB-24	4.55	1.69	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-32	118	1.69	pg/sample	J	q
PDI-WS-T02-1811	WS	PCB-38	2.60	1.49	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-39	3.54	1.54	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-4	310	9.04	pg/sample	J	lc
PDI-WS-T02-1811	WS	PCB-46	22.7	1.63	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-5		7.79	pg/sample	UJ	lc
PDI-WS-T02-1811	WS	PCB-54	17.0	1.23	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-55	3.88	3.49	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-6	60.7	7.16	pg/sample	JN	lc,k
PDI-WS-T02-1811	WS	PCB-67	4.19	3.00	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-7	13.8	7.36	pg/sample	J	lc
PDI-WS-T02-1811	WS	PCB-72	7.52	3.24	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-8	269	6.58	pg/sample	J	lc
PDI-WS-T02-1811	WS	PCB-86/87/97/108/119/125	179	0.853	pg/sample	J	q
PDI-WS-T02-1811	WS	PCB-89	3.50	0.853	pg/sample	JN	k
PDI-WS-T02-1811	WS	PCB-9	21.9	6.84	pg/sample	J	bl,lc
PDI-WS-T02-1811	WS	PCB-94	4.44	0.853	pg/sample	JN	bl,k
PDI-WS-T02-1811	WS	PCB-96	6.05	0.853	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-10	21.1	19.7	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-107/124	7.47	1.22	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-11	1040	20.9	pg/sample	J	q
PDI-WS-T03-1811	WS	PCB-12/13	54.4	21.1	pg/sample	JN	bl,k,q
PDI-WS-T03-1811	WS	PCB-120	2.54	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-121	1.22	0.932	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-123	4.68	1.10	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-130	13.9	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-131	2.99	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-133	4.74	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-134/143	16.5	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-135/151/154	131	0.849	pg/sample	J	q
PDI-WS-T03-1811	WS	PCB-137	6.60	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-148	1.44	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-156/157	14.1	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-159	2.98	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-16	157	2.49	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-167	6.03	0.849	pg/sample	JN	bl,k
PDI-WS-T03-1811	WS	PCB-170	19.4	0.849	pg/sample	JN	bl,k
PDI-WS-T03-1811	WS	PCB-172	4.74	0.849	pg/sample	J+	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T03-1811	WS	PCB-177	16.3	0.849	pg/sample	J	q
PDI-WS-T03-1811	WS	PCB-178	7.65	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-180/193	67.6	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-187	47.5	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-190	5.01	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-194	16.9	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-195	4.60	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-198/199	21.7	0.849	pg/sample	JN	bl,k
PDI-WS-T03-1811	WS	PCB-201	1.58	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-202	4.99	0.849	pg/sample	JN	k,q
PDI-WS-T03-1811	WS	PCB-203	15.7	0.849	pg/sample	J+	bl
PDI-WS-T03-1811	WS	PCB-205	1.11	0.849	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-207	4.99	2.41	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-209 (decachlorobiphenyl)	6.85	0.849	pg/sample	JN	bl,k
PDI-WS-T03-1811	WS	PCB-22	164	4.82	pg/sample	J	q
PDI-WS-T03-1811	WS	PCB-24	5.77	1.41	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-27	16.8	1.39	pg/sample	JN	k,q
PDI-WS-T03-1811	WS	PCB-35	14.3	4.73	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-54	23.6	1.15	pg/sample	J	q
PDI-WS-T03-1811	WS	PCB-7	35.4	20.7	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-73	5.75	1.34	pg/sample	JN	k
PDI-WS-T03-1811	WS	PCB-9	22.8	19.0	pg/sample	JN	bl,k
PDI-WS-T03-1811	WS	PCB-96	7.18	0.849	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-104	1.12	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-107/124	6.37	0.993	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-109	9.73	0.890	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-11	565	18.9	pg/sample	J	q
PDI-WS-T04-1812	WS	PCB-114	2.54	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-12/13	47.9	19.1	pg/sample	JN	bl,k,q
PDI-WS-T04-1812	WS	PCB-123	4.22	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-130	8.54	0.847	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-133	2.48	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-135/151/154	69.7	0.847	pg/sample	J	q
PDI-WS-T04-1812	WS	PCB-136	21.0	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-137	6.10	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-139/140	1.80	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-146	29.3	0.847	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-148	1.16	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-15	58.6	8.41	pg/sample	J+	bl

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T04-1812	WS	PCB-155	1.22	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-156/157	9.60	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-167	3.07	0.847	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-170	11.9	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-171/173	4.99	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-172	3.12	0.847	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-174	18.8	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-176	1.87	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-177	8.48	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-180/193	35.8	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-184	1.09	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-187	28.7	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-190	2.62	0.847	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-194	14.9	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-195	3.83	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-197/200	3.58	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-20/28	214	3.73	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-201	1.43	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-202	3.54	0.847	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-209 (decachlorobiphenyl)	6.27	0.847	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-24	3.26	1.51	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-26/29	38.6	3.82	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-27	12.0	1.49	pg/sample	J	q
PDI-WS-T04-1812	WS	PCB-36	4.04	3.75	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-37	31.8	3.65	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-43	3.82	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-54	7.94	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-56	48.8	2.11	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-59/62/75	14.1	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-6	34.1	9.00	pg/sample	J+	bl
PDI-WS-T04-1812	WS	PCB-66	116	1.98	pg/sample	J	q
PDI-WS-T04-1812	WS	PCB-67	2.75	1.70	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-7	11.5	9.29	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-73	1.48	0.847	pg/sample	JN	k
PDI-WS-T04-1812	WS	PCB-8	116	8.21	pg/sample	J	bl,q
PDI-WS-T04-1812	WS	PCB-86/87/97/108/119/125	129	0.847	pg/sample	J	q
PDI-WS-T04-1812	WS	PCB-9	13.5	8.59	pg/sample	JN	bl,k
PDI-WS-T04-1812	WS	PCB-94	3.22	0.847	pg/sample	JN	bl,k
PDI-WS-T05-1811	WS	PCB-10	24.6	18.2	pg/sample	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T05-1811	WS	PCB-104	0.961	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-11	1720	19.3	pg/sample	J	q
PDI-WS-T05-1811	WS	PCB-114	8.69	1.22	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-12/13	60.0	19.5	pg/sample	JN	bl,k,q
PDI-WS-T05-1811	WS	PCB-120	2.40	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-122	4.27	1.41	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-123	10.4	1.14	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-130	17.9	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-131	4.62	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-133	6.45	0.848	pg/sample	JN	bl,k
PDI-WS-T05-1811	WS	PCB-135/151/154	140	0.848	pg/sample	J	q
PDI-WS-T05-1811	WS	PCB-136	40.6	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-144	17.5	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-148	2.27	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-155	1.37	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-159	2.83	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-164	15.8	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-167	8.63	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-171/173	10.6	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-174	30.9	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-175	1.49	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-176	4.34	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-177	18.9	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-178	9.90	0.848	pg/sample	JN	bl,k
PDI-WS-T05-1811	WS	PCB-180/193	91.4	0.848	pg/sample	J+	bl
PDI-WS-T05-1811	WS	PCB-183/185	22.8	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-184	1.04	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-189	0.986	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-190	7.48	0.848	pg/sample	JN	bl,k
PDI-WS-T05-1811	WS	PCB-191	1.74	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-197/200	6.04	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-201	3.46	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-203	33.9	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-205	0.981	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-209 (decachlorobiphenyl)	7.77	0.848	pg/sample	JN	bl,k
PDI-WS-T05-1811	WS	PCB-24	4.15	1.90	pg/sample	J+	bl
PDI-WS-T05-1811	WS	PCB-27	34.5	1.88	pg/sample	J	q
PDI-WS-T05-1811	WS	PCB-34	4.22	3.90	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-35	15.5	4.05	pg/sample	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T05-1811	WS	PCB-54	16.3	0.848	pg/sample	JN	k,q
PDI-WS-T05-1811	WS	PCB-73	2.67	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-89	5.52	0.848	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-9	24.1	17.5	pg/sample	JN	k
PDI-WS-T05-1811	WS	PCB-94	5.38	0.848	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-103	1.06	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-107/124	4.15	0.899	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-11	706	9.32	pg/sample	J	q
PDI-WS-T06-1811	WS	PCB-114	2.22	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-12/13		17.7	pg/sample	U	bl
PDI-WS-T06-1811	WS	PCB-120	1.03	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-123	2.76	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-128/166	12.6	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-129/138/160/163	78.5	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-130	4.89	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-133	1.65	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-135/151/154	39.4	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-136	10.0	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-137	4.37	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-139/140	1.58	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-141	12.4	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-144	4.10	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-146	20.3	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-15	49.1	8.15	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-153/168	72.6	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-156/157	7.72	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-158	6.41	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-164	5.59	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-167	3.18	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-170	10.2	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-171/173	3.89	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-172	2.74	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-174	9.20	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-177	6.35	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-178	5.64	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-179	4.55	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-180/193	30.5	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-183/185	7.83	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-187	24.8	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-19	28.0	1.56	pg/sample	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T06-1811	WS	PCB-190	2.41	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-194	8.78	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-195	2.87	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-196	4.49	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-198/199	12.3	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-20/28	161	1.44	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-202	1.98	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-203	5.69	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-206	7.55	3.35	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-209 (decachlorobiphenyl)	4.70	0.850	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-22	70.3	1.66	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-24	1.98	0.899	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-26/29	28.8	1.51	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-31	122	1.37	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-32	34.3	1.43	pg/sample	J	q
PDI-WS-T06-1811	WS	PCB-35	5.79	1.66	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-37	24.4	1.22	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-42	30.4	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-46	11.1	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-49/69	92.3	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-50/53	24.7	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-54	1.65	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-55	2.98	2.59	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-59/62/75	10.3	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-6	30.7	8.63	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-63	3.16	2.25	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-64	53.4	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-66	75.6	2.30	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-67	2.81	1.97	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-77	6.45	2.05	pg/sample	JN	bl,k
PDI-WS-T06-1811	WS	PCB-8	133	7.88	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-85/116/117	21.3	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-86/87/97/108/119/125	80.3	0.850	pg/sample	J	q
PDI-WS-T06-1811	WS	PCB-88/91	18.7	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-89	1.95	0.850	pg/sample	JN	k
PDI-WS-T06-1811	WS	PCB-9	13.4	8.24	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-92	29.3	0.850	pg/sample	J+	bl
PDI-WS-T06-1811	WS	PCB-96	1.08	0.850	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-103	2.16	0.851	pg/sample	JN	k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T07-1811	WS	PCB-109	6.47	0.881	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-12/13	42.9	22.9	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-123	3.67	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-128/166	10.4	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-129/138/160/163	81.9	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-130	5.29	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-133		0.984	pg/sample	U	bl
PDI-WS-T07-1811	WS	PCB-134/143	5.85	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-137	4.74	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-139/140	1.62	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-141	13.3	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-146	20.2	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-15	61.7	5.49	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-156/157	7.31	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-164	5.76	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-167	2.99	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-170	10.6	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-171/173	3.15	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-172	1.99	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-174	11.3	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-177	6.74	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-178	2.87	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-180/193	34.1	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-182		0.851	pg/sample	UJ	q
PDI-WS-T07-1811	WS	PCB-183/185	8.19	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-187	18.0	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-19	34.8	2.28	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-190		1.61	pg/sample	U	bl
PDI-WS-T07-1811	WS	PCB-194	6.36	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-195	1.96	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-196	3.66	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-197/200	2.21	0.851	pg/sample	JN	k,q
PDI-WS-T07-1811	WS	PCB-198/199	7.05	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-20/28	188	3.53	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-202	3.35	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-203	4.97	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-208	3.01	2.23	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-209 (decachlorobiphenyl)	3.79	0.851	pg/sample	JN	bl,k
PDI-WS-T07-1811	WS	PCB-24	3.56	1.46	pg/sample	JN	bl,k

Sample ID	Matrix	Compound	Result	EDL	Units	Validation Qualifiers	Validation Reason
PDI-WS-T07-1811	WS	PCB-26/29	31.7	3.61	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-27	16.7	1.44	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-32	56.8	3.47	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-37	26.7	3.51	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-40/41/71	55.6	0.936	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-42	28.4	1.02	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-43	4.62	1.21	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-48	21.6	0.997	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-49/69	103	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-5	6.58	6.18	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-59/62/75	11.9	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-60	15.4	2.69	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-64	49.1	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-66	69.7	2.64	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-67	2.94	2.46	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-7	17.2	5.84	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-73	0.926	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-77	9.45	2.62	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-79	2.23	2.04	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-8	158	5.22	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-82	14.0	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-85/116/117	22.0	0.851	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-86/87/97/108/119/125	91.2	0.851	pg/sample	J	q
PDI-WS-T07-1811	WS	PCB-89	1.61	0.851	pg/sample	JN	k
PDI-WS-T07-1811	WS	PCB-9	15.3	5.43	pg/sample	J+	bl
PDI-WS-T07-1811	WS	PCB-94		0.902	pg/sample	U	bl
PDI-WS-T07-1811	WS	PCB-96	1.43	0.851	pg/sample	JN	k

Attachment A

Nonconformance Summary Tables

Table A-1 - Laboratory Blanks

Blank ID	Compound	Result	EDL	BAL	Units	Associated Samples
WG66477-101	PCB-1	6.11	0.947	30.6	pg/sample	PDI-RB-XD-181129 PDI-WS-T01-1811 PDI-WS-T02-1811 PDI-WS-T03-1811 PDI-WS-T04-1812 PDI-WS-T05-1811 PDI-WS-T06-1811 PDI-WS-T07-1811
	PCB-105	5.79	0.847	29	pg/sample	
	PCB-109	1.12	0.847	5.60	pg/sample	
	PCB-11	30.2	23.3	151	pg/sample	
	PCB-110/115	18.7	0.847	93.5	pg/sample	
	PCB-118	13.4	0.847	67.0	pg/sample	
	PCB-12/13	42.2	23.5	211	pg/sample	
	PCB-128/166	2.64	0.847	13.2	pg/sample	
	PCB-129/138/160/163	16.9	0.847	84.5	pg/sample	
	PCB-130	1.88	0.847	9.40	pg/sample	
	PCB-132	3.35	0.847	16.8	pg/sample	
	PCB-133	1.58	0.847	7.90	pg/sample	
	PCB-135/151/154	8.23	0.847	41.2	pg/sample	
	PCB-136	1.43	0.847	7.15	pg/sample	
	PCB-137	1.01	0.847	5.05	pg/sample	
	PCB-141	2.74	0.847	13.7	pg/sample	
	PCB-146	7.16	0.847	35.8	pg/sample	
	PCB-147/149	12.9	0.847	64.5	pg/sample	
	PCB-15	12.9	4.21	64.5	pg/sample	
	PCB-153/168	17.6	0.847	88.0	pg/sample	
	PCB-156/157	2.52	0.847	12.6	pg/sample	
	PCB-16	8.78	1.35	43.9	pg/sample	
	PCB-167	1.48	0.847	7.40	pg/sample	
	PCB-17	10.7	1.17	53.5	pg/sample	
	PCB-170	5.29	0.847	26.4	pg/sample	
	PCB-171/173	0.952	0.847	4.76	pg/sample	
	PCB-172	0.953	0.847	4.77	pg/sample	
	PCB-174	3.01	0.847	15.1	pg/sample	
	PCB-177	3.13	0.847	15.6	pg/sample	
	PCB-178	2.18	0.847	10.9	pg/sample	
	PCB-179	1.09	0.847	5.45	pg/sample	
	PCB-18/30	19.8	0.974	99.0	pg/sample	
	PCB-180/193	20.3	0.847	102	pg/sample	
	PCB-183/185	2.26	0.847	11.3	pg/sample	
	PCB-187	9.85	0.847	49.2	pg/sample	
	PCB-19	2.69	1.37	13.4	pg/sample	

Blank ID	Compound	Result	EDL	BAL	Units	Associated Samples
	PCB-190	1.69	0.847	8.45	pg/sample	
	PCB-194	4.43	0.847	22.2	pg/sample	
	PCB-195	1.68	0.847	8.40	pg/sample	
	PCB-196	1.81	0.847	9.05	pg/sample	
	PCB-198/199	4.65	0.847	23.2	pg/sample	
	PCB-2	4.56	1.14	22.8	pg/sample	
	PCB-20/28	50.4	1.21	252	pg/sample	
	PCB-202	0.995	0.847	4.98	pg/sample	
	PCB-203	3.38	0.847	16.9	pg/sample	
	PCB-209 (decachlorobiphenyl)	3.23	0.847	16.2	pg/sample	
	PCB-21/33	9.95	1.21	49.8	pg/sample	
	PCB-22	14.1	1.35	70.5	pg/sample	
	PCB-24	0.885	0.884	4.42	pg/sample	
	PCB-25	3.90	1.14	19.5	pg/sample	
	PCB-26/29	7.08	1.30	35.4	pg/sample	
	PCB-27	1.33	0.847	6.65	pg/sample	
	PCB-3	5.74	0.972	28.7	pg/sample	
	PCB-31	25.8	1.16	129	pg/sample	
	PCB-32	5.22	1.30	26.1	pg/sample	
	PCB-37	7.63	1.09	38.2	pg/sample	
	PCB-4	8.46	4.86	42.3	pg/sample	
	PCB-40/41/71	11.5	1.07	57.5	pg/sample	
	PCB-42	6.56	1.17	32.8	pg/sample	
	PCB-44/47/65	29.9	0.981	150	pg/sample	
	PCB-45/51	4.71	1.16	23.6	pg/sample	
	PCB-46	1.37	1.35	6.85	pg/sample	
	PCB-48	2.67	1.14	13.4	pg/sample	
	PCB-49/69	25.6	0.952	128	pg/sample	
	PCB-50/53	4.91	1.15	24.6	pg/sample	
	PCB-52	33.6	1.00	168	pg/sample	
	PCB-56	3.09	1.38	15.4	pg/sample	
	PCB-59/62/75	2.39	0.847	12.0	pg/sample	
	PCB-6	6.82	4.20	34.1	pg/sample	
	PCB-60	3.18	1.34	15.9	pg/sample	
	PCB-61/70/74/76	23.6	1.30	118	pg/sample	
	PCB-64	11.6	0.847	58.0	pg/sample	
	PCB-66	19.7	1.32	98.5	pg/sample	
	PCB-68	2.05	1.32	10.2	pg/sample	
	PCB-77	1.78	1.39	8.9	pg/sample	
	PCB-8	32.8	3.86	164	pg/sample	

Blank ID	Compound	Result	EDL	BAL	Units	Associated Samples
	PCB-83/99	10.3	0.847	51.5	pg/sample	
	PCB-84	3.62	0.847	18.1	pg/sample	
	PCB-85/116/117	5.25	0.847	26.2	pg/sample	
	PCB-86/87/97/108/119/125	12.6	0.847	63.0	pg/sample	
	PCB-88/91	4.60	0.847	23.0	pg/sample	
	PCB-9	4.67	4.02	23.4	pg/sample	
	PCB-90/101/113	21.1	0.847	106	pg/sample	
	PCB-92	6.56	0.847	32.8	pg/sample	
	PCB-93/95/98/100/102	16.0	0.847	80.0	pg/sample	
	PCB-94	0.906	0.847	4.53	pg/sample	

Table A-2 - Field Blanks

Blank ID	Compound	Result	EDL	Units	Associated Samples
PDI-RB-XD-181129	PCB-1	647	1.75	pg/sample	PDI-WS-T01-1811 PDI-WS-T02-1811 PDI-WS-T03-1811 PDI-WS-T04-1812 PDI-WS-T05-1811 PDI-WS-T06-1811 PDI-WS-T07-1811
	PCB-11	240	24.1	pg/sample	
	PCB-132	4.62	0.848	pg/sample	
	PCB-136	2.02	0.848	pg/sample	
	PCB-137	1.41	0.848	pg/sample	
	PCB-15	35.6	24.7	pg/sample	
	PCB-158	1.29	0.848	pg/sample	
	PCB-16	24.4	3.03	pg/sample	
	PCB-164	0.983	0.848	pg/sample	
	PCB-17	64.9	2.45	pg/sample	
	PCB-171/173	1.45	0.848	pg/sample	
	PCB-174	3.60	0.848	pg/sample	
	PCB-179	1.90	0.848	pg/sample	
	PCB-18/30	47.4	2.02	pg/sample	
	PCB-19	9.96	2.77	pg/sample	
	PCB-196	2.57	0.848	pg/sample	
	PCB-2	86.9	1.82	pg/sample	
	PCB-20/28	69.6	3.85	pg/sample	
	PCB-202	1.23	0.848	pg/sample	
	PCB-206	3.84	2.88	pg/sample	
	PCB-21/33	70.4	3.84	pg/sample	
	PCB-22	27.7	4.28	pg/sample	
	PCB-24	1.88	1.72	pg/sample	
	PCB-25	120	3.44	pg/sample	
	PCB-26/29	10.2	3.94	pg/sample	
	PCB-27	3.26	1.70	pg/sample	
	PCB-3	231	1.37	pg/sample	

Blank ID	Compound	Result	EDL	Units	Associated Samples
	PCB-31	42.1	3.68	pg/sample	
	PCB-32	17.7	3.78	pg/sample	
	PCB-39	5.63	3.87	pg/sample	
	PCB-4	158	31.5	pg/sample	
	PCB-40/41/71	13.0	1.01	pg/sample	
	PCB-42	8.51	1.10	pg/sample	
	PCB-43	1.44	1.30	pg/sample	
	PCB-44/47/65	725	0.921	pg/sample	
	PCB-45/51	1070	1.09	pg/sample	
	PCB-46	2.37	1.27	pg/sample	
	PCB-48	5.47	1.07	pg/sample	
	PCB-56	6.77	1.84	pg/sample	
	PCB-59/62/75	2.59	0.848	pg/sample	
	PCB-6	68.3	22.9	pg/sample	
	PCB-60	3.88	1.79	pg/sample	
	PCB-68	678	1.76	pg/sample	
	PCB-8	224	21.4	pg/sample	
	PCB-82	2.94	0.848	pg/sample	
	PCB-84	4.65	0.848	pg/sample	
	PCB-86/87/97/108/119/125	13.5	0.848	pg/sample	
	PCB-88/91	6.27	0.848	pg/sample	
	PCB-93/95/98/100/102	18.5	0.848	pg/sample	

Table A-3 - Labeled Compound and Labeled Clean-Up Standard Recoveries

Sample ID	Labeled Toxics/LOC/window-defining and labeled clean-up recoveries	% Recovery	Lower Limit	Upper Limit
PDI-WS-T02-1811	PCB-4L	21.7	25	150

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J-	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a potential low bias.
J+	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a potential high bias.
JN	The analyte was tentatively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
cl	Clean-up standard recovery
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results