

Tables

Table 2-1
Studies Used in Mapping of 1995 and 2010 Dataset Surface and Subsurface Concentrations

Study Name	Sample Years	Dataset	Centroid	RM Range	Layer*	2,3,7,8-TCDD	Tetra-CB	1,2,3,4,6,7,8-HPCDF	1,2,3,7,8-PeCDD	2,3,4,7,8-PeCDF	PCB 126	PCB 167	Total DDx	Mercury	Tetra-CB Source**
Tierra – 1995 Remedial Investigation Sampling Program	1995	1995	no	1.0 - 6.7	A,B,C,D,E,F	yes	yes	yes	yes	yes	yes	yes	yes	yes	Total PCB Aroclor
Tierra – 1995 Sediment Surface (Grab) Sampling Program	1995	1995	no	2.6 - 2.6	A	yes	no	yes	yes	yes	no	no	no	no	NA
PANYNJ – 1996 Newark Bay Reach A Sediment Sampling Program	1996	1995	no	-1.8 - -1.5	A,B,C,D	yes	yes	yes	yes	yes	yes	yes	yes	yes	Total PCB Aroclor
PANYNJ – 1997 Newark Bay Reach B,C,D Sediment Sampling Program	1997	1995	no	-4.2 - -2.6	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Total PCB Aroclor
PANYNJ – 1998 Newark Bay Elizabeth Channel Sampling Program	1998	1995	no	-2.9 - -2.6	A,B,C	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
USEPA – 1998 REMAP Sediment Investigation	1998	1995	no	-15.3 - 1.9	A	yes	no	yes	yes	yes	no	no	yes	yes	NA
Tierra – 1999 Late Summer/Early Fall RI-ESP Sampling Program	1999	1995	no	1.0 - 6.8	A	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Tierra – Newark Bay Reach ABCD Baseline Sampling Program	1999	1995	no	-4.2 - -1.6	B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Entrix – 1999 Preliminary Toxicity Identification Evaluation Study	1999	1995	no	-1.6 - 6.8	A	yes	yes	yes	yes	yes	yes	yes	yes	yes	Mixed
Tierra – 1999 Sediment Sampling Program	1999	1995	no	-7.6 - 6.2	B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Tierra – 1999/2000 Minish Park Monitoring Program	1999	1995	no	5.0 - 5.0	A	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Honeywell International Sampling Programs	1999, 2005, 2006	1995 and 2010	no	-3.3 - 0.9	A,B	yes	yes	yes	yes	yes	yes	yes	yes	yes	Mixed
PRG – 2006 Hackensack River Remedial Investigation	2006	2010	no	Hackensack River	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
USEPA/MPI – EMBM	2008	2010	no	8.4 - 14.5	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Mixed
USEPA/MPI – Sediment Sampling Program	2008	2010	no	-0.1 - 0.6	A	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Low-Resolution Coring Program	2008	2010	no	-0.1 - 17.1	A,B,C,D,E,F	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Benthic Program Surface Sediment Sampling (2009)	2009	2010	no	-0.0 - 17.3	A	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Benthic Program Surface Sediment Sampling (2010)	2010	2010	no	1.2 - 14.2	A	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
JDG – Sediment Sampling	2011	2010	no	3.1 - 3.1	B,C,D,E	yes	no	yes	yes	yes	no	no	yes	no	NA
River Mile 10.9 Characterization	2011	2010	yes	10.7 - 11.1	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Tierra – Focused Sediment Investigation (River Mile 10.9)	2012	2010	no	7.8 - 11.5	A,B,C,D,E	yes	no	yes	yes	yes	no	no	no	no	Tetra-CB
River Mile 10.9 Addendum A	2012	2010	yes	10.8 - 11.2	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Low-resolution Coring Program Supplemental Sampling Program 2	2013	2010	yes	7.2 - 14.6	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Low-resolution Coring Program Supplemental Sampling Program	2012	2010	yes	0.2 - 13.0	A,B,C,D,E,F	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
USEPA/MPI – High-Resolution Sediment Coring Program	2005, 2006	2010	no	1.4 - 12.6	A,B,C,D,E,F	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
USEPA/MPI – Low-Resolution Sediment Coring Program	2006	2010	yes	2.8 - 6.7	B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Mixed
Tierra – Newark Bay Phase I/Phase II	2005, 2007	2010	no	-9.3 - -0.0	A,B,C,D,E	yes	yes	yes	yes	yes	yes	yes	yes	yes	Tetra-CB
Phase I Sediment Assessment	2009	2010	no	3.1 - 3.2	B,C,D,E	yes	no	yes	yes	yes	yes	yes	yes	yes	NA

Notes:

*Key to depth intervals: A = 0 to 6 inches (0 to 0.5 foot); B = 6 to 18 inches (0.5 to 1.5 feet); C = 18 to 30 inches (1.5 to 2.5 feet); D = 30 to 42 inches (2.5 to 3.5 feet); E = 42 to 66 inches (3.5 to 5.5 feet); F = below 66 inches (5.5 feet)

**Describes if tetra-CB values were derived from reported measurement or derived from total PCB aroclor using a conversion factor of 0.34. Studies listed as "Mixed" had a mixture of samples that measured one or both tetra-CB and total PCB aroclor. Studies with NA did not measure useable PCBs.

Table includes data up to RM 17.40.

1,2,3,4,6,7,8-HPCDF: 1,2,3,4,6,7,8-heptachlorodibenzofuran

2,3,7,8-TCDD: 2,3,7,8-tetrachlorodibenzo-p-dioxin

NA: not applicable

PCB: polychlorinated biphenyl

PeCDD: Pentachlorodibenzo-p-dioxin

PeCDF: Pentachlorodibenzofuran

tetra-CB: tetrachlorobiphenyl

USEPA: U.S. Environmental Protection Agency

Table 2-2**Concentration-Dependent Constants Used to Estimate Tetra-CB Concentration from Total PCBs**

Slope	Intercept	Total PCB Concentration Range (mg/kg)		Tetra-CB Concentration Range (mg/kg)	
		Start	End	Start	End
4.0085	0	>= 0	< 0.2	>= 0	< 0.05
4.1927	-0.0092	>= 0.2	< 0.4	>= 0.05	< 0.1
3.1907	0.091	>= 0.4	< 3.3	>= 0.1	< 1
2.9122	0.3695	>= 3.3	< 292	>= 1	< 100

Notes:

mg/kg: milligrams per kilogram

PCB: polychlorinated biphenyl

Tetra-CB: tetrachlorobiphenyl

Table 2-3**List of Cores with Overlapping Subsurface Segments Used in 2,3,7,8-TCDD Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
Tierra – 1995 Remedial Investigation Sampling Program	1995	222	0.0–0.5; 0.5–3.2; 3.2–5.2; 5.2–8.8; 8.8–11.0; 11.0–13.5	7.0–9.9	22206A
		223	0.0–0.5; 0.5–3.1; 3.1–5.5; 5.5–6.7; 6.7–8.6	4.3–6.1	22306A
		225	0.0–0.5; 0.5–2.1; 2.1–4.6; 4.6–8.8; 8.8–11.1; 11.1–14.0	6.7–10.0	22505A
		226A	0.0–0.5; 0.5–2.3; 2.3–4.3; 4.3–6.4; 6.4–7.2; 7.3–9.1	5.3–6.8	22605A
		228	0.0–0.5; 0.5–1.9; 1.9–4.4; 4.4–7.4; 7.4–8.7; 8.7–10.9	5.9–8.0	22805B
		230	0.0–0.5; 0.5–1.4; 1.4–4.0; 4.0–5.6; 5.6–7.2	2.8–4.8	23005A
		231	0.0–0.5; 0.5–2.7; 2.7–5.0; 5.0–9.1; 9.1–11.0; 11.0–13.0	7.1–10.1	23105A
		234	0.0–0.5; 0.5–2.9; 2.9–4.5; 4.5–8.1; 8.1–9.8; 9.8–12.1	6.3–9.0	23405B
		235	0.0–0.5; 0.5–2.2; 2.2–3.3; 3.3–4.9; 4.9–5.7; 5.7–7.2	4.1–5.3	23505A
		239	0.0–0.5; 0.5–2.3; 2.3–4.0; 4.0–7.3; 7.3–9.2; 9.2–11.8	5.7–8.2	23905A
		241	0.0–0.5; 0.5–3.5; 3.5–5.4; 5.4–8.4; 8.4–10.0; 10.0–11.9	6.9–9.2	24105A
		242	0.0–0.5; 0.5–2.6; 2.6–4.6; 4.6–10.5; 10.5–14.0; 14.0–17.3	7.5–12.2	24205A
		245	0.0–0.5; 0.5–1.5; 1.5–3.7; 3.7–7.3; 7.3–9.4; 9.4–11.4	5.5–8.4	24505B
		248	0.0–0.5; 0.5–4.2; 4.2–6.1; 6.1–10.0; 10.1–12.3; 12.3–14.7	8.1–11.2	24805A
		249	0.0–0.5; 0.5–1.3; 1.3–2.8; 2.8–3.6; 3.6–4.8	2.0–3.2	24904B
		251	0.0–0.5; 0.5–4.2; 4.2–5.0; 5.0–6.5; 6.5–7.3; 7.3–8.5	5.7–6.9	25105B
		252	0.0–0.5; 0.5–2.2; 2.2–2.9; 2.9–5.7; 5.7–7.5; 7.5–9.4	4.3–6.6	25205C
		272	0.0–0.5; 0.5–2.4; 2.4–4.6; 4.6–7.3; 7.3–8.4; 8.4–10.4	6.0–7.8	27205A
		274	0.0–0.5; 0.5–0.9; 0.9–2.8; 2.8–4.0; 4.0–5.1	1.8–3.4	27404A
Tierra – Newark Bay Phase I/Phase II	2005	NB01SED005	0.0–0.5; 0.5–1.5; 1.5–3.5*	2.5–3.5	--
River Mile 10.9 Characterization	2011	11B-0321	0.0–0.5; 0.5–1.5; 1.5–2.5; 2.5–3.5; 3.5–5.5; 5.5–7.5; 7.5–9.1	3.5–4.5	11B-0321-C4ES
Low-Resolution Coring Program Supplemental Sampling Program 2	2013	13B-0515	0.0–0.5; 0.5–1.7	1.5–2.2**	--

Notes:

*The 1.5- to 3.5-foot segment (NB01SED005A-03) was adjusted to 1.5 to 2.5 feet to retain data. This was more conservative than adjusting the 2.5- to 3.5-foot segment judging by the TCDD profile.

**The 1.5- to 2.2-foot segment (13B-0515-C2CS) was adjusted to 1.7 to 2.2 feet to retain data and remove the overlap with the segment above.

TCDD: tetrachlorodibenzo-p-dioxin

Table 2-4**List of Cores with Overlapping Subsurface Segments Used in Tetra-CB Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
Tierra – 1995 Remedial Investigation Sampling Program*	1995	222	0.0–0.5; 0.5–3.2; 3.2–5.2; 5.2–8.8; 8.8–11.0; 11.0–13.5	7.0–9.9	22206A
		223	0.0–0.5; 0.5–3.1; 3.1–5.5; 5.5–6.7	4.3–6.1	22306A
		225	0.0–0.5; 0.5–2.1; 2.1–4.6; 4.6–8.8; 8.8–11.1; 11.1–14.0	6.7–10.0	22505A
		226A	0.0–0.5; 0.5–2.3; 2.3–4.3; 4.3–6.4; 6.4–7.2; 7.3–9.1	5.3–6.8	22605A
		228	0.0–0.5; 0.5–1.9; 1.9–4.4; 4.4–7.4; 7.4–8.7; 8.7–10.9	5.9–8.0	22805B
		230	0.0–0.5; 0.5–1.4; 1.4–4.0; 4.0–5.6; 5.6–7.2	2.8–4.8	23005A
		231	0.0–0.5; 0.5–2.7; 2.7–5.0; 5.0–9.1; 9.1–11.0; 11.0–13.0	7.1–10.1	23105A
		234	0.0–0.5; 0.5–2.9; 2.9–4.5; 4.5–8.1; 8.1–9.8; 9.8–12.1	6.3–9.0	23405B
		235	0.0–0.5; 0.5–2.2; 2.2–3.3; 3.3–4.9; 4.9–5.7; 5.7–7.2	4.1–5.3	23505A
		239	0.0–0.5; 0.5–2.3; 2.3–4.0; 4.0–7.3; 7.3–9.2; 9.2–11.8	5.7–8.2	23905A
		242	0.0–0.5; 0.5–2.6; 2.6–4.6; 4.6–10.5; 10.5–14.0; 14.0–17.3	7.5–12.2	24205A
		245	0.0–0.5; 0.5–1.5; 1.5–3.7; 3.7–7.3; 7.3–9.4; 9.4–11.4	5.5–8.4	24505B
		249	0.0–0.5; 0.5–1.3; 1.3–2.8; 2.8–3.6; 3.6–4.8	2.0–3.2	24904B
		251	0.5–4.2; 4.2–5.0; 5.0–6.5; 6.5–7.3; 7.3–8.5	5.7–6.9	25105B
		252	0.0–0.5; 0.5–2.2; 2.2–2.9; 2.9–5.7; 5.7–7.5; 7.5–9.4	4.3–6.6	25205C
		272	0.0–0.5; 0.5–2.4; 2.4–4.6; 4.6–7.3; 7.3–8.4; 8.4–10.4	6.0–7.8	27205A
Tierra – Newark Bay Phase I/Phase II	2005	NB01SED005	0.0–0.5; 0.5–1.5; 1.5–3.5**	2.5–3.5	
River Mile 10.9 Characterization	2011	11B-0321	0.0–0.5; 0.5–1.5; 1.5–2.5; 2.5–3.5; 3.5–5.5; 5.5–7.5; 7.5–9.1	3.5–4.5	11B-0321-C4ES
Low-Resolution Coring Program Supplemental Sampling Program 2	2013	13B-0515	0.0–0.5; 0.5–1.7	1.5–2.2***	--

Notes:

*Tetra-CB values were derived from total PCB Aroclors for this study.

**The 1.5- to 3.5-foot segment (NB01SED005A-03) was adjusted to 1.5 to 2.5 feet to retain data. This matches the treatment of 2,3,7,8-TCDD (see Table 2-3).

**The 1.5- to 2.2-foot segment (13B-0515-C2CS) was adjusted to 1.7 to 2.2 feet to retain data and remove the overlap with the segment above.

PCB: polychlorinated biphenyl

tetra-CB: tetrachlorobiphenyl

Table 2-5**List of Cores with Overlapping Subsurface Segments Used in 1,2,3,4,6,7,8-HPCDF Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
Tierra – 1995 Remedial Investigation Sampling Program	1995	222	0.0–0.5; 0.5–3.2; 3.2–5.2; 5.2–8.8; 8.8–11.0; 11.0–13.5	7.0–9.9	22206A
		223	0.0–0.5; 0.5–3.1; 3.1–5.5; 5.5–6.7; 6.7–8.6	4.3–6.1	22306A
		225	0.0–0.5; 0.5–2.1; 2.1–4.6; 4.6–8.8; 8.8–11.1; 11.1–14.0	6.7–10.0	22505A
		226A	0.0–0.5; 0.5–2.3; 2.3–4.3; 4.3–6.4; 6.4–7.2; 7.3–9.1	5.3–6.8	22605A
		228	0.0–0.5; 0.5–1.9; 1.9–4.4; 4.4–7.4; 7.4–8.7; 8.7–10.9	5.9–8.0	22805B
		230	0.0–0.5; 0.5–1.4; 1.4–4.0; 4.0–5.6; 5.6–7.2	2.8–4.8	23005A
		231	0.0–0.5; 0.5–2.7; 2.7–5.0; 5.0–9.1; 9.1–11.0; 11.0–13.0	7.1–10.1	23105A
		234	0.0–0.5; 0.5–2.9; 2.9–4.5; 4.5–8.1; 8.1–9.8; 9.8–12.1	6.3–9.0	23405B
		235	0.0–0.5; 0.5–2.2; 2.2–3.3; 3.3–4.9; 4.9–5.7; 5.7–7.2	4.1–5.3	23505A
		239	0.0–0.5; 0.5–2.3; 2.3–4.0; 4.0–7.3; 7.3–9.2; 9.2–11.8	5.7–8.2	23905A
		241	0.0–0.5; 0.5–3.5; 3.5–5.4; 5.4–8.4; 8.4–10.0; 10.0–11.9	6.9–9.2	24105A
		242	0.0–0.5; 0.5–2.6; 2.6–4.6; 4.6–10.5; 10.5–14.0; 14.0–17.3	7.5–12.2	24205A
		245	0.0–0.5; 0.5–1.5; 1.5–3.7; 3.7–7.3; 7.3–9.4; 9.4–11.4	5.5–8.4	24505B
		249	0.0–0.5; 0.5–1.3; 1.3–2.8; 2.8–3.6; 3.6–4.8	2.0–3.2	24904B
		251	0.0–0.5; 0.5–4.2; 4.2–5.0; 5.0–6.5; 6.5–7.3; 7.3–8.5	5.7–6.9	25105B
		252	0.0–0.5; 0.5–2.2; 2.2–2.9; 2.9–5.7; 5.7–7.5; 7.5–9.4	4.3–6.6	25205C
		272	0.0–0.5; 0.5–2.4; 2.4–4.6; 4.6–7.3; 7.3–8.4; 8.4–10.4	6.0–7.8	27205A
		274	0.0–0.5; 0.5–0.9; 0.9–2.8; 2.8–4.0; 4.0–5.1	1.8–3.4	27404A
Tierra – Newark Bay Phase I/Phase II	2005	NB01SED005	0.0–0.5; 0.5–1.5; 1.5–3.5*	2.5–3.5	--
River Mile 10.9 Characterization	2011	11B-0321	0.0–0.5; 0.5–1.5; 1.5–2.5; 2.5–3.5; 3.5–5.5; 5.5–7.5; 7.5–9.1	3.5–4.5	11B-0321-C4ES
Low-Resolution Coring Program Supplemental Sampling Program 2	2013	13B-0515	0.0–0.5; 0.5–1.7	1.5–2.2**	--

Notes:

*The 1.5- to 3.5-foot segment (NB01SED005A-03) was adjusted to 1.5 to 2.5 feet to retain data. This matches the treatment of 2,3,7,8-TCDD (see Table 2-3).

**The 1.5- to 2.2- foot segment (13B-0515-C2CS) was adjusted to 1.7 to 2.2 feet to retain data and remove the overlap with the segment above.

HPCDF: Heptachlorodibenzofuran

TCDD: tetrachlorodibenzo-p-dioxin

Table 2-6**List of Cores with Overlapping Subsurface Segments Used in 1,2,3,7,8-PECDD Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
2011 River Mile 10.9 Field Investigation	2011	11B-0321	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-4.5; 5.5-7.5; 7.5-9.1	3.5-5.5	11B-0321-C4ET
CPG Second Supplemental Sampling Program (SSP2)	2013	13B-0515	0.0-0.5; 0.5-1.7	1.5-2.2	13B-0515-C2CS
		13B-0547-C5	0.0-0.5; 0.5-0.8; 0.8-1.0; 1.0-1.3; 1.3-1.5; 1.5-1.8; 1.8-2.0; 2.0-2.3; 2.3-2.5; 2.5-2.8; 2.8-3.0	0.3-0.5	13B-0547-C5ABS
1995 RI Sampling Program	1995	222	0.0-0.5; 3.2-5.2; 5.2-8.8; 8.8-11.0; 11.0-13.5	7.0-9.9	22206A
		223	0.0-0.5; 0.5-3.1; 3.1-5.5; 5.5-6.7; 6.7-8.6	4.3-6.1	22306A
		225	0.0-0.5; 0.5-2.1; 2.1-4.6; 4.6-8.8; 8.8-11.1; 11.1-14.0	6.7-10.0	22505A
		226A	0.0-0.5; 0.5-2.3; 2.3-4.3; 4.3-6.4; 6.4-7.2; 7.3-9.1	5.3-6.8	22605A
		228	0.0-0.5; 0.5-1.9; 1.9-4.4; 4.4-7.4; 7.4-8.7; 8.7-10.9	5.9-8.0	22805B
		230	0.0-0.5; 0.5-1.4; 1.4-4.0; 4.0-5.6; 5.6-7.2	2.8-4.8	23005A
		231	0.0-0.5; 0.5-2.7; 2.7-5.0; 5.0-9.1; 9.1-11.0	7.1-10.1	23105A
		234	0.0-0.5; 0.5-2.9; 2.9-4.5; 4.5-8.1; 8.1-9.8; 9.8-12.1	6.3-9.0	23405B
		235	0.0-0.5; 0.5-2.2; 2.2-3.3; 3.3-4.9; 4.9-5.7; 5.7-7.2	4.1-5.3	23505A
		239	0.0-0.5; 0.5-2.3; 2.3-4.0; 4.0-7.3; 7.3-9.2; 9.2-11.8	5.7-8.2	23905A
		241	0.0-0.5; 0.5-3.5; 3.5-5.4; 5.4-8.4; 8.4-10.0; 10.0-11.9	6.9-9.2	24105A
		242	0.0-0.5; 0.5-2.6; 2.6-4.6; 4.6-10.5; 10.5-14.0; 14.0-17.3	7.5-12.2	24205A
		245	0.0-0.5; 0.5-1.5; 1.5-3.7; 3.7-7.3; 7.3-9.4; 9.4-11.4	5.5-8.4	24505B
		248	0.0-0.5; 0.5-4.2; 4.2-6.1; 6.1-10.0; 10.1-12.3; 12.3-14.7	8.1-11.2	24805A
		249	0.0-0.5; 0.5-1.3; 1.3-2.8; 2.8-3.6; 3.6-4.8	2.0-3.2	24904B
		251	0.0-0.5; 0.5-4.2; 4.2-5.0; 5.0-6.5; 6.5-7.3; 7.3-8.5	5.7-6.9	25105B
		252	0.0-0.5; 0.5-2.2; 2.2-2.9; 2.9-5.7; 5.7-7.5; 7.5-9.4	4.3-6.6	25205C
		272	0.0-0.5; 0.5-2.4; 2.4-4.6; 4.6-7.3; 7.3-8.4; 8.4-10.4	6.0-7.8	27205A
		274	0.0-0.5; 0.5-0.9; 0.9-2.8; 2.8-4.0; 4.0-5.1	1.8-3.4	27404A
High Res Core Sampling	2005	G0000005	0.0-0.6; 0.6-1.2; 1.2-1.8; 1.8-2.4; 2.4-3.6; 3.6-4.9; 4.9-6.1; 6.1-7.3; 7.3-8.6; 9.8-11.1; 11.1-12.3; 12.3-13.6; 13.6-14.8; 14.8-16.1; 16.1-17.3; 17.3-18.6; 18.6-19.8; 19.8-21.1; 21.1-22.3	8.6-9.2	LPRP-SCSH-PSR-001527
		G0000012	0.0-0.2; 0.2-0.4; 0.4-0.6; 0.6-0.8; 0.8-1.1; 1.3-1.6; 1.6-1.9; 1.9-2.3; 2.3-2.6; 2.6-2.9; 3.1-3.4; 3.4-3.7; 3.7-4.1; 4.1-4.4; 4.4-4.8; 4.8-5.3; 5.3-5.6; 5.6-5.9; 5.9-6.3; 6.3-6.6; 6.6-6.9; 6.9-7.3	2.9-3.1	LPRP-SCSH-PSR-001469

Notes:

CPG: Cooperating Parties Group

PECDD: Pentachlorodibenzo-p-dioxin

RI: remedial investigation

Table 2-7**List of Cores with Overlapping Subsurface Segments Used in 2,3,4,7,8-PECDF Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
2011 River Mile 10.9 Field Investigation	2011	11B-0321	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-4.5; 5.5-7.5; 7.5-9.1	3.5-5.5	11B-0321-C4ET
CPG Second Supplemental Sampling Program (SSP2)	2013	13B-0515	0.0-0.5; 0.5-1.7	1.5-2.2	13B-0515-C2CS
		13B-0547-C5	0.0-0.5; 0.5-0.8; 0.8-1.0; 1.0-1.3; 1.3-1.5; 1.5-1.8; 1.8-2.0; 2.0-2.3; 2.3-2.5; 2.5-2.8; 2.8-3.0	0.3-0.5	13B-0547-C5ABS
1995 RI Sampling Program 2,3,4,7,8- PeCDF_adj_SegmentOverlap	1995	222	0.0-0.5; 0.5-3.2; 3.2-5.2; 5.2-8.8; 8.8-11.0; 11.0-13.5	7.0-9.9	22206A
		223	0.0-0.5; 0.5-3.1; 3.1-5.5; 5.5-6.7; 6.7-8.6	4.3-6.1	22306A
		225	0.0-0.5; 0.5-2.1; 2.1-4.6; 4.6-8.8; 8.8-11.1; 11.1-14.0	6.7-10.0	22505A
		226A	0.0-0.5; 0.5-2.3; 2.3-4.3; 4.3-6.4; 6.4-7.2; 7.3-9.1	5.3-6.8	22605A
		228	0.0-0.5; 0.5-1.9; 1.9-4.4; 4.4-7.4; 7.4-8.7; 8.7-10.9	5.9-8.0	22805B
		230	0.0-0.5; 0.5-1.4; 1.4-4.0; 4.0-5.6; 5.6-7.2	2.8-4.8	23005A
		231	0.0-0.5; 0.5-2.7; 2.7-5.0; 5.0-9.1; 9.1-11.0; 11.0-13.0	7.1-10.1	23105A
		234	0.0-0.5; 0.5-2.9; 2.9-4.5; 4.5-8.1; 8.1-9.8; 9.8-12.1	6.3-9.0	23405B
		235	0.0-0.5; 0.5-2.2; 2.2-3.3; 3.3-4.9; 4.9-5.7; 5.7-7.2	4.1-5.3	23505A
		239	0.0-0.5; 0.5-2.3; 2.3-4.0; 4.0-7.3; 7.3-9.2; 9.2-11.8	5.7-8.2	23905A
		241	0.0-0.5; 0.5-3.5; 3.5-5.4; 5.4-8.4; 8.4-10.0; 10.0-11.9	6.9-9.2	24105A
		242	0.0-0.5; 0.5-2.6; 2.6-4.6; 4.6-10.5; 10.5-14.0; 14.0-17.3	7.5-12.2	24205A
		245	0.0-0.5; 0.5-1.5; 1.5-3.7; 3.7-7.3; 7.3-9.4; 9.4-11.4	5.5-8.4	24505B
		248	0.0-0.5; 0.5-4.2; 4.2-6.1; 6.1-10.0; 10.1-12.3; 12.3-14.7	8.1-11.2	24805A
		249	0.0-0.5; 0.5-1.3; 1.3-2.8; 2.8-3.6; 3.6-4.8	2.0-3.2	24904B
		251	0.0-0.5; 0.5-4.2; 4.2-5.0; 5.0-6.5; 6.5-7.3; 7.3-8.5	5.7-6.9	25105B
		252	0.0-0.5; 0.5-2.2; 2.2-2.9; 2.9-5.7; 5.7-7.5; 7.5-9.4	4.3-6.6	25205C
		272	0.0-0.5; 0.5-2.4; 2.4-4.6; 4.6-7.3; 7.3-8.4; 8.4-10.4	6.0-7.8	27205A
		274	0.0-0.5; 0.5-0.9; 0.9-2.8; 2.8-4.0; 4.0-5.1	1.8-3.4	27404A
High Res Core Sampling	2005	G0000005	0.0-0.6; 0.6-1.2; 1.2-1.8; 1.8-2.4; 2.4-3.6; 3.6-4.9; 4.9-6.1; 6.1-7.3; 7.3-8.6; 9.2-9.8; 11.1-12.3; 12.3-13.6; 13.6-14.8; 14.8-16.1; 16.1-17.3; 17.3-18.6; 18.6-19.8; 19.8-21.1; 21.1-22.3	8.6-9.2; 9.8-11.1	LPRP-SCSH-PSR-001527; LPRP-SCSH-PSR-001530
		G0000012	0.0-0.2; 0.2-0.4; 0.4-0.6; 0.6-0.8; 0.8-1.1; 1.3-1.6; 1.6-1.9; 1.9-2.3; 2.3-2.6; 2.6-2.9; 3.1-3.4; 3.4-3.7; 3.7-4.1; 4.1-4.4; 4.4-4.8; 4.8-5.3; 5.3-5.6; 5.6-5.9; 5.9-6.3; 6.3-6.6; 6.6-6.9; 6.9-7.3; 7.3-8.2	1.1-1.3; 2.9-3.1	LPRP-SCSH-PSR-001502; LPRP-SCSH-PSR-001469

Notes:

PECDF: Pentachlorodibenzofuran

RI: remedial investigation

Table 2-8**List of Cores with Overlapping Subsurface Segments Used in PCB 126 Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
2011 River Mile 10.9 Field Investigation	2011	11B-0321	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-4.5; 5.5-7.5; 7.5-9.1	3.5-5.5	11B-0321-C4ET
CPG Second Supplemental Sampling Program (SSP2)	2013	13B-0515	0.0-0.5; 0.5-1.7	1.5-2.2	13B-0515-C2CS
1995 RI Sampling Program	1995	222	0.0-0.5; 0.5-3.2; 3.2-5.2; 5.2-8.8; 8.8-11.0; 11.0-13.5	7.0-9.9	22206A
		223	0.0-0.5; 0.5-3.1; 3.1-5.5; 5.5-6.7; 6.7-8.6	4.3-6.1	22306A
		225	0.0-0.5; 2.1-4.6; 4.6-8.8; 8.8-11.1; 11.1-14.0	6.7-10.0	22505A
		226A	0.0-0.5; 0.5-2.3; 2.3-4.3; 4.3-6.4; 6.4-7.2; 7.3-9.1	5.3-6.8	22605A
		228	0.0-0.5; 0.5-1.9; 1.9-4.4; 4.4-7.4; 7.4-8.7; 8.7-10.9	5.9-8.0	22805B
		230	0.0-0.5; 0.5-1.4; 1.4-4.0; 4.0-5.6; 5.6-7.2	2.8-4.8	23005A
		231	0.0-0.5; 0.5-2.7; 2.7-5.0; 5.0-9.1; 9.1-11.0	7.1-10.1	23105A
		235	0.0-0.5; 0.5-2.2; 2.2-3.3; 3.3-4.9; 4.9-5.7; 5.7-7.2	4.1-5.3	23505A
		239	0.0-0.5; 0.5-2.3; 2.3-4.0; 4.0-7.3; 7.3-9.2; 9.2-11.8	5.7-8.2	23905A
		241	0.0-0.5; 3.5-5.4; 5.4-8.4; 8.4-10.0; 10.0-11.9	6.9-9.2	24105A
		242	0.0-0.5; 0.5-2.6; 2.6-4.6; 4.6-10.5; 10.5-14.0; 14.0-17.3	7.5-12.2	24205A
		245	0.0-0.5; 1.5-3.7; 3.7-7.3; 7.3-9.4; 9.4-11.4	5.5-8.4	24505B
		248	0.0-0.5; 0.5-4.2; 4.2-6.1; 6.1-10.0; 10.1-12.3; 12.3-14.7	8.1-11.2	24805A
		249	0.0-0.5; 0.5-1.3; 1.3-2.8; 2.8-3.6; 3.6-4.8	2.0-3.2	24904B
		251	0.0-0.5; 0.5-4.2; 4.2-5.0; 5.0-6.5; 6.5-7.3; 7.3-8.5	5.7-6.9	25105B
		252	0.0-0.5; 0.5-2.2; 2.2-2.9; 2.9-5.7; 5.7-7.5; 7.5-9.4	4.3-6.6	25205C
		272	0.0-0.5; 0.5-2.4; 2.4-4.6; 4.6-7.3; 7.3-8.4; 8.4-10.4	6.0-7.8	27205A
		274	0.0-0.5; 0.9-2.8; 2.8-4.0; 4.0-5.1	1.8-3.4	27404A
High Res Core Sampling	2005	G0000005	0.0-0.6; 0.6-1.2; 1.8-2.4; 2.4-3.6; 3.6-4.9; 6.1-7.3; 7.3-8.6; 14.8-16.1; 17.3-18.6	8.6-9.2	LPRP-SCSH-PSR-001527
		G0000012	0.0-0.2; 0.2-0.4; 0.4-0.6; 0.6-0.8; 0.8-1.1; 1.3-1.6; 1.6-1.9; 1.9-2.3; 2.3-2.6; 2.6-2.9; 3.1-3.4; 3.4-3.7; 3.7-4.1; 4.1-4.4; 4.4-4.8; 4.8-5.3; 5.3-5.6; 5.6-5.9; 5.9-6.3; 6.6-6.9	1.1-1.3; 2.9-3.1	LPRP-SCSH-PSR-001502; LPRP-SCSH-PSR-001469

Notes:

CPG: Cooperating Parties Group

PCB: polychlorinated biphenyl

RI: remedial investigation

Table 2-9

List of Cores with Overlapping Subsurface Segments Used in PCB 167 Mapping

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
2011 River Mile 10.9 Field Investigation	2011	11B-0321	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-4.5; 5.5-7.5; 7.5-9.1	3.5-5.5	11B-0321-C4ET
CPG Second Supplemental Sampling Program (SSP2)	2013	13B-0515	0.0-0.5; 0.5-1.7	1.5-2.2	13B-0515-C2CS
1995 RI Sampling Program	1995	222	0.0-0.5; 3.2-5.2; 5.2-8.8; 8.8-11.0; 11.0-13.5	7.0-9.9	22206A
		223	0.0-0.5; 0.5-3.1; 3.1-5.5; 5.5-6.7; 6.7-8.6	4.3-6.1	22306A
		225	0.0-0.5; 0.5-2.1; 2.1-4.6; 4.6-8.8; 8.8-11.1; 11.1-14.0	6.7-10.0	22505A
		226A	0.0-0.5; 0.5-2.3; 2.3-4.3; 4.3-6.4; 6.4-7.2; 7.3-9.1	5.3-6.8	22605A
		228	0.0-0.5; 0.5-1.9; 1.9-4.4; 4.4-7.4; 7.4-8.7; 8.7-10.9	5.9-8.0	22805B
		230	0.0-0.5; 0.5-1.4; 1.4-4.0; 4.0-5.6; 5.6-7.2	2.8-4.8	23005A
		231	0.0-0.5; 0.5-2.7; 2.7-5.0; 5.0-9.1; 9.1-11.0	7.1-10.1	23105A
		234	0.0-0.5; 0.5-2.9; 2.9-4.5; 4.5-8.1; 8.1-9.8; 9.8-12.1	6.3-9.0	23405B
		235	0.0-0.5; 0.5-2.2; 2.2-3.3; 3.3-4.9; 4.9-5.7; 5.7-7.2	4.1-5.3	23505A
		239	0.0-0.5; 0.5-2.3; 2.3-4.0; 4.0-7.3; 7.3-9.2; 9.2-11.8	5.7-8.2	23905A
		241	0.0-0.5; 0.5-3.5; 3.5-5.4; 5.4-8.4; 8.4-10.0; 10.0-11.9	6.9-9.2	24105A
		242	0.0-0.5; 0.5-2.6; 2.6-4.6; 4.6-10.5; 10.5-14.0; 14.0-17.3	7.5-12.2	24205A
		245	0.0-0.5; 1.5-3.7; 3.7-7.3; 7.3-9.4; 9.4-11.4	5.5-8.4	24505B
		248	0.0-0.5; 0.5-4.2; 4.2-6.1; 6.1-10.0; 10.1-12.3; 12.3-14.7	8.1-11.2	24805A
		249	0.0-0.5; 0.5-1.3; 1.3-2.8; 2.8-3.6; 3.6-4.8	2.0-3.2	24904B
		251	0.0-0.5; 0.5-4.2; 4.2-5.0; 5.0-6.5; 6.5-7.3; 7.3-8.5	5.7-6.9	25105B
		252	0.0-0.5; 0.5-2.2; 2.2-2.9; 2.9-5.7; 5.7-7.5; 7.5-9.4	4.3-6.6	25205C
		272	0.0-0.5; 0.5-2.4; 2.4-4.6; 4.6-7.3; 7.3-8.4; 8.4-10.4	6.0-7.8	27205A
		274	0.0-0.5; 0.5-0.9; 0.9-2.8; 2.8-4.0; 4.0-5.1	1.8-3.4	27404A
High Res Core Sampling	2005	G0000005	0.0-0.6; 0.6-1.2; 1.2-1.8; 1.8-2.4; 2.4-3.6; 3.6-4.9; 4.9-6.1; 6.1-7.3; 7.3-8.6; 9.2-9.8; 11.1-12.3; 12.3-13.6; 13.6-14.8; 14.8-16.1; 16.1-17.3; 17.3-18.6; 18.6-19.8; 19.8-21.1; 21.1-22.3	8.6-9.2; 9.8-11.1	LPRP-SCSH-PSR-001527; LPRP-SCSH-PSR-001530
		G0000012	0.0-0.2; 0.2-0.4; 0.4-0.6; 0.6-0.8; 0.8-1.1; 1.3-1.6; 1.6-1.9; 1.9-2.3; 2.3-2.6; 2.6-2.9; 3.1-3.4; 3.4-3.7; 3.7-4.1; 4.1-4.4; 4.4-4.8; 4.8-5.3; 5.3-5.6; 5.6-5.9; 5.9-6.3; 6.3-6.6; 6.6-6.9; 6.9-7.3; 7.3-8.2	1.1-1.3; 2.9-3.1	LPRP-SCSH-PSR-001502; LPRP-SCSH-PSR-001469

Notes:

PCB: polychlorinated biphenyl

RI: remedial investigation

Table 2-10**List of Cores with Overlapping Subsurface Segments Used in Total DDx Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
2011 River Mile 10.9 Field Investigation	2011	11B-0321	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-4.5; 5.5-7.5; 7.5-9.1	3.5-5.5	11B-0321-C4ET
CPG Second Supplemental Sampling Program (SSP2)	2013	13B-0515	0.0-0.5; 0.5-1.7	1.5-2.2	13B-0515-C2CS
		13B-0547-C5	0.0-0.5; 0.5-0.8; 0.8-1.0; 1.0-1.3; 1.3-1.5; 1.5-1.8; 1.8-2.0; 2.0-2.3; 2.3-2.5; 2.5-2.8; 2.8-3.0	0.3-0.5	13B-0547-C5ABS
1995 RI Sampling Program	1995	223	0.0-0.5; 0.5-3.1; 3.1-5.5; 5.5-6.7	4.3-6.1	22306A
		228	0.0-0.5; 0.5-1.9; 1.9-4.4; 4.4-7.4	5.9-8.0	22805B
		230	0.0-0.5; 0.5-1.4; 1.4-4.0	2.8-4.8	23005A
		235	0.0-0.5; 2.2-3.3; 3.3-4.9; 4.9-5.7; 5.7-7.2	4.1-5.3	23505A
		239	0.0-0.5; 0.5-2.3; 2.3-4.0; 4.0-7.3; 7.3-9.2; 9.2-11.8	5.7-8.2	23905A
		241	0.5-3.5; 3.5-5.4; 5.4-8.4; 8.4-10.0; 10.0-11.9	6.9-9.2	24105A
		242	0.5-2.6; 2.6-4.6; 4.6-10.5; 10.5-14.0	7.5-12.2	24205A
		245	0.0-0.5; 0.5-1.5; 1.5-3.7; 3.7-7.3; 7.3-9.4	5.5-8.4	24505B
		249	0.0-0.5; 0.5-1.3; 1.3-2.8; 2.8-3.6; 3.6-4.8	2.0-3.2	24904B
		251	0.0-0.5; 0.5-4.2; 4.2-5.0; 5.0-6.5	5.7-6.9	25105B
		272	0.0-0.5; 0.5-2.4; 2.4-4.6; 4.6-7.3; 7.3-8.4; 8.4-10.4	6.0-7.8	27205A
		274	0.0-0.5; 0.5-0.9; 0.9-2.8	1.8-3.4	27404A
2008 CPG Low-resolution Coring Program	2008	CLRC-060	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-5.5; 5.5-7.5	7.2-8.8	08A-0060-G

Notes:

CPG: Cooperating Parties Group

RI: remedial investigation

Table 2-11**List of Cores with Overlapping Subsurface Segments Used in Mercury Mapping**

Study Name	Sample Year	Core ID	Core Segments Used (feet)	Core Segment Overlap (feet)	Sample ID of Removed Segment
2011 River Mile 10.9 Field Investigation	2011	11B-0321	0.0-0.5; 0.5-1.5; 1.5-2.5; 2.5-3.5; 3.5-4.5; 5.5-7.5; 7.5-9.1	3.5-5.5	11B-0321-C4ET
CPG Second Supplemental Sampling Program (SSP2)	2013	13B-0515	0.0-0.5; 0.5-1.7	1.5-2.2	13B-0515-C2CS
1995 RI Sampling Program	1995	222	0.0-0.5; 0.5-3.2; 3.2-5.2; 5.2-8.8; 8.8-11.0; 11.0-13.5	7.0-9.9	22206A
		223	0.0-0.5; 0.5-3.1; 3.1-5.5; 5.5-6.7; 6.7-8.6	4.3-6.1	22306A
		225	0.0-0.5; 0.5-2.1; 4.6-8.8; 8.8-11.1; 11.1-14.0	6.7-10.0	22505A
		226A	0.0-0.5; 0.5-2.3; 2.3-4.3; 4.3-6.4; 6.4-7.2; 7.3-9.1	5.3-6.8	22605A
		228	0.0-0.5; 0.5-1.9; 1.9-4.4; 4.4-7.4; 7.4-8.7; 8.7-10.9	5.9-8.0	22805B
		230	0.0-0.5; 0.5-1.4; 1.4-4.0; 4.0-5.6; 5.6-7.2	2.8-4.8	23005A
		231	0.0-0.5; 0.5-2.7; 2.7-5.0; 5.0-9.1; 9.1-11.0; 11.0-13.0	7.1-10.1	23105A
		234	0.0-0.5; 0.5-2.9; 2.9-4.5; 4.5-8.1; 8.1-9.8	6.3-9.0	23405B
		235	0.0-0.5; 0.5-2.2; 2.2-3.3; 3.3-4.9; 4.9-5.7; 5.7-7.2	4.1-5.3	23505A
		239	0.0-0.5; 0.5-2.3; 2.3-4.0; 4.0-7.3; 7.3-9.2; 9.2-11.8	5.7-8.2	23905A
		241	0.0-0.5; 0.5-3.5; 3.5-5.4; 5.4-8.4; 8.4-10.0; 10.0-11.9	6.9-9.2	24105A
		242	0.0-0.5; 0.5-2.6; 2.6-4.6; 4.6-10.5; 10.5-14.0; 14.0-17.3	7.5-12.2	24205A
		245	0.0-0.5; 0.5-1.5; 3.7-7.3; 7.3-9.4; 9.4-11.4	5.5-8.4	24505B
		248	0.0-0.5; 0.5-4.2; 4.2-6.1; 6.1-10.0; 10.1-12.3; 12.3-14.7	8.1-11.2	24805A
		249	0.0-0.5; 0.5-1.3; 1.3-2.8; 2.8-3.6; 3.6-4.8	2.0-3.2	24904B
		251	0.0-0.5; 0.5-4.2; 4.2-5.0; 5.0-6.5; 6.5-7.3; 7.3-8.5	5.7-6.9	25105B
		252	0.0-0.5; 0.5-2.2; 2.2-2.9; 2.9-5.7; 5.7-7.5; 7.5-9.4	4.3-6.6	25205C
		272	0.0-0.5; 0.5-2.4; 2.4-4.6; 4.6-7.3; 7.3-8.4	6.0-7.8	27205A
		274	0.0-0.5; 0.5-0.9; 0.9-2.8; 2.8-4.0; 4.0-5.1	1.8-3.4	27404A
2008 CPG Low-resolution Coring Program	2008	CLRC-092	0.0-0.8	0.7-2.7	08A-0092-B

Notes:

CPG: Cooperating Parties Group

RI: remedial investigation

Table 2-12**2,3,7,8-TCDD Concentrations and Boring Log Descriptions for 13B-0563**

Sample ID	Upper Depth (ft)	Lower Depth (ft)	Length (ft)	2,3,7,8-TCDD Concentration (ng/kg)	Sediment Description
13B-0563-C2AS	0	0.5	0.5	2.4	Fine to medium sand, some silt, few organics (leaves), trace coarse sand, (10YR 2/2) very dark brown, loose, wet
13B-0563-C2BS	0.5	1.1	0.6	1.1	
13B-0563-C2CS	1.1	2.5	1.4	2,130.0	Silt, little to some clay, trace organics (leaves), (5Y 2.5/1) black, medium plasticity, soft to medium soft, wet, black staining and HC-like odor at 1.1 to 1.52 feet, becomes medium stiff with depth, organic layer (1/2 inch) at 2.5 feet
13B-0563-C2IS	7.5	8.28	0.78	3.9	Fine sand, some to little silt, (7.5YR 3/1) very dark gray, medium dense, moist, large piece of wood and slag fragments at 7.5 feet, silt layer at 7.95 to 8.1 feet

Notes:

Sediment descriptions are from boring logs reported in AECOM 2015, Appendix E.

ft: feet

HC: hydrocarbon

ng/kg: nanogram per kilogram

TCDD: tetrachlorodibenzo-p-dioxin

Y: Yellow hue on the Munsell Color System

YR: Yellow/Red intermediate hue on the Munsell Color System

Table 2-13

List of Cores with Nonstandard Layer B Segmentation Considered for Interval Adjustments in the Lower Passaic River

Study ID	Year	Location ID	River Mile	Interval (feet)		2,3,7,8-TCDD Concentration (ng/kg)		Decision	Within the Lower 8 Mile ROD Remedy Footprint?	Additional Support
				Segment 1	Segment 2	Segment 1	Segment 2			
Tierra – 1995 Remedial Investigation Sampling Program	1995	229	3.1	0.5 - 1.4	1.4 - 2.3	291	563	No adjustment	Yes	Concentration difference is within an order of magnitude.
		230	3.1	0.5 - 1.4	1.4 - 4.0	967	4330	No adjustment	Yes	Concentration difference is within an order of magnitude.
		240	4.0	0.5 - 1.2	1.2 - 1.9	8,970	12,100	No adjustment	Yes	Both segments are mostly within 0.5-1.5 interval.
		249	4.7	0.5 - 1.3	1.3 - 2.8	364	496	No adjustment	Yes	Concentration difference is less than an order of magnitude.
USEPA/MPI – Low-Resolution Sediment Coring Program	2006	G0000022	4.9	0.0 - 1.44	1.44 - 2.89	563	3,180	No adjustment	Yes	Core is lacking a Layer A segment. Therefore, the Layer B concentration will be resampled, and this core is not part of the data pool for resampling.
Tierra – 1995 Remedial Investigation Sampling Program	1995	258	5.3	0.5 - 1.4	1.4 - 2.3	414	668	No adjustment	Yes	Concentration difference is within an order of magnitude.
USEPA/MPI – Low-Resolution Sediment Coring Program	2006	G0000027	5.3	0.0 - 1.15	1.15 - 2.3	275	613	No adjustment	Yes	Core is lacking a Layer A segment. Therefore, the Layer B concentration will be resampled, and this core is not part of the data pool for resampling.
Tierra – 1999 Sediment Sampling Program	1999	PRP-99-04	6.2	0.0 - 1.0	1.0 - 3.0	810	4700	No adjustment	Yes	Core is lacking a Layer A segment. Therefore, the Layer B concentration will be resampled, and this core is not part of the data pool for resampling.
Tierra – 1995 Remedial Investigation Sampling Program	1995	270	6.3	0.5 - 1.0	1.0 - 1.8	628	2,350	No adjustment	Yes	Both segments are mostly within 0.5-1.5 interval.
		271	6.3	0.5 - 0.9	0.9 - 3.1	163	1,630	No adjustment	Yes	Concentration difference is within an order of magnitude.
		274	6.5	0.5 - 0.9	0.9 -2.8	3,740	26,500	No adjustment	Yes	Concentration difference is within an order of magnitude.
		278	6.7	0.5 - 1.2	1.2 - 1.9	4,990	27,000	No adjustment	Yes	Both segments are mostly within 0.5-1.5 interval.
Low-resolution Coring Program Supplemental Sampling Program 2	2013	13B-0563	14.5	0.5 - 1.1	1.1 - 2.5	1.1	2130	Use only the 0.5-1.1 foot segment for Layer B	No	See text: Section 2.3.1

Notes:
2,3,7,8-TCDD: 2,3,7,8-tetrachlorodibenzo-p-dioxin
ng/kg: nanogram per kilogram
ROD: Record of Decision
TCDD: tetrachlorodibenzo-p-dioxin
USEPA: U.S. Environmental Protection Agency

Table 3-1**Probing and Fine Sediment Content Data Used to Evaluate the Expansion of Silt Areas**

Study Name	Year	Probing	Fine Sediment Content
Aqua Survey, Inc. – Geophysical Survey for NJDOT	2005	Yes	No
USEPA/MPI - EMBM	2007, 2008	Yes	No
Low-Resolution Coring Program	2008	Yes	Yes
Benthic Program Surface Sediment Sampling (2009)	2009	No	Yes
River Mile 10.9 Characterization	2011	No	Yes
Low-Resolution Coring Program Supplemental Sampling Program	2012	No	Yes
Low-Resolution Coring Program Supplemental Sampling Program 2	2013	Yes	Yes

Notes:

EMBM: Empirical Mass Balance Model

MPI: Malcom Pirnie, Inc.

NJDOT: New Jersey Department of Transportation

USEPA: U.S. Environmental Protection Agency

Table 5-1**Variogram Gaussian Model Parameters Used in Kriging and the Conditional Simulation for 2,3,7,8-TCDD**

Name	Range	Nugget	Partial Sill*	Variance of Residuals	Type
RM 10.9 Silt Deposit	505	0.7	2.6	3.1	Base variogram
Downstream Channel and High Deposition since 1966	505	0.2	0.7	0.8	vgroup
No Deposition Since 1949 and Mixed Depositional Since 1966	505	0.8	3.2	3.7	vgroup
Left Shoal RM 0-6	505	0.1	0.2	0.3	vgroup
Left Shoal RM 6-11.3	505	1.1	4.1	4.8	vgroup
Left Shoal RM 11.3-14.4	505	0.1	0.4	0.4	vgroup
Upstream Channel	505	0.6	2.3	2.7	vgroup
Right Shoal RM 6.5-14.7	505	1.6	6.3	7.4	vgroup
Right Shoal RM 0-6.5	505	0.2	0.7	0.8**	vgroup
Silt	505	0.6	2.3	2.7	vgroup

Notes:

* The partial sill is equal to the sill minus the nugget.

** For *Right Shoal RM 0-6.5*, the variance of all the data is 2.8. The two locations with the lowest 2,3,7,8-TCDD concentrations, CLRC-002 (0.05 ng/kg) and 12A-0421 (0.77 ng/kg), were dropped prior to calculating the variance of 0.8 that was used to scale the variogram.

ng/kg: nanograms per kilogram

RM: river mile

TCDD: tetrachlorodibenzo-p-dioxin

Table 5-2**Variogram Gaussian Model Parameters Used in Kriging and the Conditional Simulation for Tetra-CB**

Name	Range	Nugget	Partial Sill*	Variance of Residuals	Type
RM 10.9 Silt Deposit	390	0.35	2.0	2.3	Base variogram
Downstream Channel and High Deposition Since 1966	390	0.10	0.6	0.6	vgroup
No Deposition Since 1949 and Mixed Depositional Since 1966	390	0.29	1.7	1.9**	vgroup
Left Shoal RM 0-6	390	0.03	0.2	0.2	vgroup
Left Shoal RM 6-11.3	390	0.38	2.2	2.5	vgroup
Left Shoal RM 11.3-14.4	390	0.19	1.1	1.2	vgroup
Upstream Channel	390	0.25	1.4	1.7	vgroup
Right Shoal RM 6.5-14.7	390	0.59	3.4	3.9	vgroup
Right Shoal RM 0-6.5	390	0.11	0.6	0.7***	vgroup
Silt	390	0.33	1.9	2.2	vgroup

Notes:

* The partial sill is equal to the sill minus the nugget.

** For No Deposition Since 1949 and Mixed Depositional Since 1966, the variance of all the data is 2.9. The location with the lowest tetra-CB concentration, 12A-04552 (0.0031 mg/kg), was dropped prior to calculating the variance of 1.9 that was used to scale the variogram.

*** For Right Shoal RM 0-6.5, the variance of all the data is 1.9. The two locations with the lowest tetra-CB concentrations, CLRC-002 (0.0036 mg/kg) and 12A-0421 (0.00026 mg/kg), were dropped prior to calculating the variance of 0.7 that was used to scale the variogram.

mg/kg: milligrams per kilogram

RM: river mile

tetra-CB: tetrachlorobiphenyl

Table 5-3
Summary of Capping and Bottoming-Out for the 2,3,7,8-TCDD Conditional Simulation

Vgroup	2,3,7,8-TCDD Concentration (ng/kg)					Simulation 37						Statistics for All 100 Simulations											
	Measured Data			Bottom-Out Value	Cap	2,3,7,8-TCDD Concentration (ng/kg)		Acres		Percent of Area		2,3,7,8-TCDD Concentration (ng/kg)				Acres				Percent of Area			
						Smallest Simulated Value	Largest Simulated Value	Bottomed-Out	Capped	Bottomed-Out	Capped	Smallest Simulated Value		Largest Simulated Value		Bottomed-Out		Capped		Bottomed-Out		Capped	
	Min	Max	Was Min Detected?									Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Channel_HD	16.3	2,660	Y	8.1	5,320	6.2	7,684	0.02	0.06	0.01	0.03	2.1	12	3,849	27,205	0	0.3	0	0.4	0	0.2	0	0.2
G_2_3	3.29	21,900	Y	1.6	43,800	0.27	1,036,831	0.2	0.9	0.3	1.3	0.0091	0.55	130,830	3,947,679	0.1	2.5	0.1	2.4	0.2	3.6	0.2	3.5
LS_RM_00_6	110	1,340	Y	55	2,680	42	2,300	0.04	NA	0.04	NA	19	66	1,311	5,056	0	1.7	0	0.2	0	1.9	0	0.2
LS_RM_06_11p3	10.3	28,200	Y	5.2	51,100	0.10	178,105	0.9	0.3	2.6	0.9	0.031	1.9	135,272	10,487,424	0.1	2.1	0.1	1.5	0.3	6.1	0.2	4.2
LS_RM_11p3_14p4	54	465	Y	27	930	19	1,526	0.04	0.1	0.2	0.7	6.5	34	628	2,098	0	0.7	0	0.3	0	4.4	0	2.2
NS_UP	0.53	7,590	Y	0.27	15,180	0.012	12,154	1.1	NA	0.8	NA	0.0031	0.090	7,488	597,878	0.5	3.5	0	0.7	0.4	2.5	0	0.5
RS_above_6p5	0.445	51,100	Y	0.22	51,100	0.0080	1,125,834	1.5	1.5	2.9	2.9	0.00012	0.041	379,306	236,410,333	0.1	2.6	0.6	5.4	0.1	4.9	1.1	10.2
RS_below_6p5	0.045	2,600	Y	0.023	5,200	0.081	10,412	NA	0.1	NA	0.05	0.052	0.39	3,718	16,504	0	0	0	0.3	0	0	0	0.1
Silt	0.416	21,600	Y	0.21	43,200	0.65	108,552	NA	0.3	NA	0.5	0.064	1.7	50,869	954,549	0	0.03	0.01	0.8	0	0.05	0.0	1.4

Notes:
NA: not applicable
ng/kg: nanogram per kilogram
TCDD: tetrachlorodibenzo-p-dioxin

Table 5-4
Summary of Capping and Bottoming-Out for the Tetra-CB Conditional Simulation

Vgroup	Tetra-CB Concentration (mg/kg)					Simulation 37						Statistics for All 100 Simulations											
	Measured Data			Bottom-Out Value	Cap	Tetra-CB (mg/kg)		Acres		Percent of Area		Tetra-CB (mg/kg)				Acres				Percent of Area			
	Min	Max	Was Min Detected?			Smallest Simulated Value	Largest Simulated Value	Bottomed-Out	Capped	Bottomed-Out	Capped	Smallest Simulated Value		Largest Simulated Value		Bottomed-Out		Capped		Bottomed-Out		Capped	
												Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Channel_HD	0.02	3.15	Y	0.01095	6.3	0.013	5.7	NA	NA	NA	NA	0.0062	0.021	3.4	16	0	0.1	0	0.2	0	0.04	0	0.1
G_2_3	0.003	10.8	Y	0.00155	10.8	0.0011	60.9	0.00001	16	0.00002	23	0.00008	0.0020	24	268	0	0.9	0.2	2.4	0	1.3	0.4	3.4
LS_RM_00_6	0.11	0.9985	Y	0.055	1.997	0.060	1.6	NA	NA	NA	NA	0.028	0.074	1.0	2.1	0	0.5	0	0.02	0	0.5	0	0.02
LS_RM_06_11p3	0.01	4.23	Y	0.0042	8.46	0.00066	35.5	0.0008	8.5	0.002	24	0.00020	0.0045	18	390	0	0.5	0.1	2.0	0	1.5	0.4	5.8
LS_RM_11p3_14p4	0.05	1.93	Y	0.026	3.86	0.011	8.5	0.009	0.9	0.05	5.7	0.0024	0.016	2.3	24	0.1	1.3	0	0.3	0.5	8.3	0	2.0
NS_UP	0.002	2.95	Y	0.00085	5.9	0.00025	5.4	0.0001	NA	0.0001	NA	0.00007	0.0013	3.3	66	0	0.8	0	0.5	0	0.6	0	0.4
RS_above_6p5	0.003	7.85	Y	0.00134	10.8	0.00010	85.1	0.0004	33	0.0008	62	0.00003	0.0011	41	2433	0.01	1.0	0.4	4.6	0.02	1.8	0.8	8.7
RS_below_6p5	0.0003	2.28	N	0.00013	4.56	0.00069	5.1	NA	0.09	NA	0.04	0.00017	0.0011	3.2	11	0	0	0	0.2	0	0	0	0.1
Silt	0.0004	10.3	Y	0.00019	10.8	0.00056	41.4	NA	7.7	NA	14	0.00005	0.0007	23	213	0	0.05	0.1	1.3	0	0.1	0.2	2.2

Notes:
mg/kg: milligram per kilogram
NA: not applicable
Tetra-CB: Tetrachlorobiphenyl

Table 6-1**Layer A Concentration Bins Used for Layer B Resampling**

Bins Breaks	2,3,7,8-TCDD (ng/kg)	Tetra-CB (mg/kg)	1,2,3,4,6,7,8- HPCDF (ng/kg)	1,2,3,7,8- PeCDD (ng/kg)	2,3,4,7,8- PeCDF (ng/kg)	PCB-126 (ng/kg)	PCB-167 (ng/kg)	Total 4,4'- DDx (mg/kg)	Mercury (mg/kg)
Break 1	10	0.01	10	0.3	0.3	3	10	0.003	0.1
Break 2	100	0.1	100	1	1.0	10	100	0.01	0.3
Break 3	300	0.3	300	3	10	100	300	0.03	1
Break 4	1,000	1	1000	10.0	20	1000	1,000	0.1	3
Break 5	10,000	NA	NA	NA	50	NA	10,000	0.3	10
Break 6	NA	NA	NA	NA	200	NA	NA	NA	NA

Notes:

HPCDF: Heptachlorodibenzofuran

mg/kg: miligram per kilogram

NA: not applicable

ng/kg: nanogram per kilogram

PCB: polychlorinated biphenyl

PeCDD: Pentachlorodibenzo-p-dioxin

PeCDF: Pentachlorodibenzofuran

TCDD: tetrachlorodibenzo-p-dioxin

tetra-CB: tetrachlorobiphenyl

Table 6-2**Datasets and Layer A Surfaces Used for Layer B Resampling**

River Miles	1995		2010	
	Dataset	Layer A Surface	Dataset	Layer A Surface
0-1	NA - Use 2010 thiessen resampling*		Pooled: 1995 dataset RM 1-7 2010 dataset RM 0-7.8	Resample: CS for 2,3,7,8-TCDD and tetra-CB Thiessens for other COPCs
1-7	Pooled: 1995 dataset RM 1-7 2010 dataset RM 1-7	Resample 1995 thiessens		
7-7.8	NA – Use 2010 thiessen resampling*			
7.8-14.7	NA – Use 2010 thiessen resampling*		2010 dataset RM 7.8-14.7	Resample: CS for 2,3,7,8-TCDD and tetra-CB Thiessens for other COPCs

Notes:

* Regarding the 1995 mapping outside of RM 1-7, for all COPCs with the exception of 2,3,7,8-TCDD and tetra-CB, the 2010 layer A mapping was based on thiessen polygons and the layer B resampling of these thiessens was also used to represent 1995. For 2,3,7,8-TCDD and tetra-CB, the 2010 layer A mapping was based on the conditional simulation. To represent 1995 layer A for these two COPCs, a separate thiessen polygon interpolation was performed based on the 2010 data. This layer A thiessen polygon surface was resampled to get a layer B surface.

NA: not applicable

COPC: chemical of potential concern

CS: conditional simulation

RM: river mile

TCDD: tetrachlorodibenzo-p-dioxin

tetra-CB: tetrachlorobiphenyl

Table 7-1**Comparison of Layer B vs. Layer A in Measured Data and Mapped Surfaces in the Lower Passaic River Between RM 0 to RM 14.7**

Description				Figure Number	
Interpolation Type	COPC	IC Year	RM	Data Comparison*	Mapped Surface Comparison**
Thiessen Polygon	2,3,7,8-TCDD	1995	1 - 7	Figure 6-4	Figure 7-13
		1995	Outside RM 1-7	Figure 6-3	Figure 7-14
Conditional Simulation		2010	0 - 14.7		Figure 7-12
Thiessen Polygon	Tetra-CB	1995	1 - 7	Attachment 2, Figure 9	Attachment 3, Figure 9
		1995	Outside RM 1-7	Attachment 2, Figure 1	Attachment 3, Figure 17
Conditional Simulation		2010	0 - 14.7		Attachment 3, Figure 1
Thiessen Polygon	1,2,3,4,6,7,8-HPCDF	1995	1 - 7	Attachment 2, Figure 10	Attachment 3, Figure 10
		1995	Outside RM 1-7	Attachment 2, Figure 2	Attachment 3, Figure 2
		2010	0 - 14.7		
	1,2,3,7,8-PeCDD	1995	1 - 7	Attachment 2, Figure 11	Attachment 3, Figure 11
		1995	Outside RM 1-7	Attachment 2, Figure 3	Attachment 3, Figure 3
		2010	0 - 14.7		
	2,3,4,7,8-PeCDF	1995	1 - 7	Attachment 2, Figure 12	Attachment 3, Figure 12
		1995	Outside RM 1-7	Attachment 2, Figure 4	Attachment 3, Figure 4
		2010	0 - 14.7		
	PCB-126	1995	1 - 7	Attachment 2, Figure 13	Attachment 3, Figure 13
		1995	Outside RM 1-7	Attachment 2, Figure 5	Attachment 3, Figure 5
		2010	0 - 14.7		
	PCB-167	1995	1 - 7	Attachment 2, Figure 14	Attachment 3, Figure 14
		1995	Outside RM 1-7	Attachment 2, Figure 6	Attachment 3, Figure 6
		2010	0 - 14.7		
	Total 4,4'-DDx	1995	1 - 7	Attachment 2, Figure 15	Attachment 3, Figure 15
		1995	Outside RM 1-7	Attachment 2, Figure 7	Attachment 3, Figure 7
		2010	0 - 14.7		
	Mercury	1995	1 - 7	Attachment 2, Figure 16	Attachment 3, Figure 16
		1995	Outside RM 1-7	Attachment 2, Figure 8	Attachment 3, Figure 8
		2010	0 - 14.7		

Notes:

*Note that the datasets used for resampling for 2010 RM 0 - 14.7 and 1995 outside RM 1 - 7 are the same.

**For COPCs other than 2,3,7,8-TCDD and tetra-CB, the mappings for 2010 RM 0 - 14.7 and 1995 outside RM 1 - 7 are the same.

1,2,3,4,6,7,8-HPCDF: 1,2,3,4,6,7,8-heptachlorodibenzofuran

2,3,7,8-TCDD: 2,3,7,8-tetrachlorodibenzo-p-dioxin

COPC: chemical of potential concern

IC: initial condition

PCB: polychlorinated biphenyl

PeCDD: Pentachlorodibenzo-p-dioxin

PeCDF: Pentachlorodibenzofuran

RM: river mile

tetra-CB: tetrachlorobiphenyl