Sampling Report and
Data Presentation

Richardson Hill Road LF
Superfund Site

Sidney and Masonville Towns
Delaware County, New York

Fish, Sediment and Surface Water
Sampling
October 17 - 20, 2016

Prepared by: _____

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1.0 INTRODUCTION

1.1 Site Description and History

The Site is located in the Towns of Sidney and Masonville, Delaware County, New York, approximately 3.3 miles south-southwest of Sidney Center. It is situated on the western side of Richardson Hill Road, adjacent to the Sidney Landfill site. The Site consists of two sections designated as the "North Area" and the "South Area".

The South Area is comprised of an 8-acre landfill (which contained a former waste oil disposal pit), South Pond, and a portion of Herrick Hollow Creek which runs down the valley. Surface water from the landfill drains into South Pond through a drainage ditch. Water from South Pond drains into Herrick Hollow Creek, which eventually flows into the Cannonsville Reservoir on the west branch of the Delaware River. South Pond is the headwater to Trout Creek which eventually flows into the Cannonsville Reservoir, which is part of the Delaware Watershed System, supplying drinking water to the New York City metropolitan area. There are numerous springs around the Site, some of which eventually discharge into wetlands.

The area surrounding the Site is rural and consists of a mixture of disturbed land, shrub land, wetland, and upland forest. Land use is mixed in the vicinity of the Site and zoned residential-agricultural. Approximately 50 property owners reside (part-time or permanently) within a one-mile radius of the Site. There are two residential buildings located on the eastern side of Richardson Hill Road between the entrances of both NPL sites.

In 1993, in response to a fish kill in South Pond attributable to the seep of contaminants from the oil disposal pit on the landfill, EPA entered into an AOC with Amphenol Corporation and Allied Signal, Inc., and issued them a Unilateral Administrative Order (UAO). The work performed pursuant to these orders included the excavation of approximately 2,200 cubic yards (cy) of contaminated sediments from South Pond, the installation of seep interceptor collection basins upgradient of South Pond, the installation of a sediment trap weir system at the outlet of South Pond to prevent the downstream migration of contaminated sediments, and the installation and maintenance of two whole-house supply water treatment systems for two affected properties.

The ROD called for the excavation and/or dredging of sediments exceeding 1 mg/kg PCB from South Pond and Herrick Hollow Creek downstream for approximately 2,400 ft (Segments 21 to 14). It also stated that the need for remediation in areas further downstream (i.e., Segments 13 to 9) would be evaluated based on an assessment of sediment, surface water, and biological receptors over the 5-year time period subsequent to the completion of upstream remediation activities. During the design investigation in 2002, in consideration of the possibility that the PCB-contaminated sediments in Segments 13 to 9 would still need to be removed in the future after years of monitoring and the cost savings associated with the elimination of the long-term sediment, surface water, and biological receptor monitoring related to these contaminated sediments once they are removed, as well as the willingness of the PRPs to undertake the additional sediment removal work at that time, a decision was made to remove the contaminated sediments in Segments 13 to 9 concurrently with the contaminated sediments in Segments 21 to 14.

All of the PCB-contaminated sediments (approximately 28,520 cy) from the Site were dry excavated in 2004 and consolidated on the landfill prior to capping. Sediment trap weir systems placed in the Herrick Hollow Creek in 1994 (downstream location of South Pond) and 1999 (at

Segment 9) were both removed in 2004 once all of the contaminated sediments upstream of the sediment trap weir system were removed.

One fish sampling event was conducted in 2008, one in 2011 by EPA-R2-DESA, and another during the second five year review (2012) by NYSDEC, in agreement with the stakeholders. Long-term monitoring will be conducted to confirm that upland remediation (landfill cap and groundwater collection and treatment) are functioning as designed and not re-contaminating South Pond and Herrick Hollow Creek.

The R2 Division of Environmental Science and Assessment (DESA), Hazardous Waste Support Branch (HWSB), Superfund Support Team (SST) has been requested by the Emergency and Remedial Response Division (ERRD) to collect fish, sediment and surface water samples from the Herrick Hollow Creek and South Pond to evaluate the PCBs levels as part of the remedial activities at the Richardson Hill Road Landfill site.

2.0 SAMPLING PROCEDURES

As per the Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP), fish, sediment and surface water samples were collected from six locations within the study area. The methods used to collect the fishes and sediment, and surface water samples were electro-fishing for fish, direct fill for the surface water, and the sediment samples were collected using dedicated scoops. All samples were collected from the same locations. All six sampling points were sampled for PCBs in water, sediment and fish tissue. The sampling procedures were in accordance with the USEPA-ERT Surface Water Sampling SOP No. 2013 dated February 2002, USEPA-ERT Sediment Sampling SOP No. 2016 dated November 2001, USEPA-Office of Water *Volume I: Fish Sampling and Analysis*, EPA 823-B-00-007 dated November 2000. Preparation of the fish for subsequent analysis was based on the New York State Department of Environmental Conservation Division of Fish, Wildlife & Marine Resources, Bureau of Habitat, *Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analysis*, dated October 2002.

3.0 DESCRIPTION OF EVENTS

On October 17, 2016, Michael A. Mercado, James Kurtenbach, Robert Morrell, Robert Finke, and Charren Cabaroy (the EPA DESA team) traveled to the site and met with personnel from the treatment plant and sign-in. We then conducted a reconnaissance of the South Pond (SP) and the Herrick Hollow Creek (HC). Flowing water was observed and the possibility of collecting fish samples existed. After the reconnaissance, the team went back to the plant to sign-out, but it was closed and thus,we were not able to sign-out.

On October 18, 2016, the team met with Ronald Chiarello from O'Brien & Gere (OBG) at the Plant. The sign-in sheet was taped to the door of the plant. We all signed-in and taped the sign-in sheet back onto the door. Mr. Chiarello, from OBG was assigned to assist us during the event. The team traveled to South Pond and, while gearing up to collect samples, we met representatives from NYSDEC and the EPA site RPM (Pam Tames). Both the RPM and the NYSDEC representatives observed the sampling procedures. NYSDEC requested that we collect additional fish samples for analysis. Even though the creek was very low, we were able collect the additional number of fish samples NYSDEC requested. We started collection at South Pond and collected 10 Creek Chub and 14 Pumpkin Seed Sunfish. These fish samples were divided into the number of sample groups requested by NYSDEC. The team also collected sediment and water samples from South Pond. Additionally at South Pond, the Quality Control sample requirement was fulfilled, that is, duplicate

(blind) sample as well as the MS/MSD sample were collected. In addition to samples collected at South Pond, sampling was conducted at the farthest downstream sampling location on Herrick Hollow Creek, identified as Herrick Hollow Creek-6 (HC-6). Sediment and water samples, along with Creek Chub and Brook Trout, were obtained. The size and number of the Trouts collected were small. The two largest Trout collected measured 181 mm and 158 mm; all others were under 150 mm in size. A total of 9 Trouts ranging in size from 125 to 181mm were collected despite spending considerable time in the HC-6 location looking for larger specimens. After processing all the samples, they were immediately placed in the sample cooler with ice, and secured.

On October 19, 2016, we met with Ronald Chiarello at the Plant, signed the sign-in sheet and proceeded to sampling location HC-5. At HC-5, the team collected 10 Creek Chub and after processing the fish, proceeded to sampling location HC-4. At HC-4, 9 Creek Chub were collected and after processing the fish, proceeded to sampling location HC-3. At HC-3, 13 Creek Chub were collected and after processing the fish, proceeded to the last sampling location, HC-2, on Herrick Hollow Creek. At HC-2, the team collected and processed 10 Creek Chub specimens. At all locations where fish were collected, the team also obtained sediment and water samples. After processing all the samples, they were place immediately in the sample cooler with ice, and secured.

On October 20, 2016, the team again met with Ronald Chiarello at the Plant, signed the sign-in sheet and placed the sign-in sheet as requested in the plant's mail box. Mr. Chiarello then guided us to the two sample locations TC1 and TC2. As we arrived at TC1, it started to downpour. Due to the heavy rain, it was not safe to use the electro-fishing gear. By 10:00 AM, it was still raining hard and thundering began. The weather conditions were not safe to conduct sampling and a safety call was made to end the event without collecting samples from TC1 and TC2 locations. We packed up and departed the area, returning to EPAs Edison facility with all samples secured and on ice.

At Edison, the sediment and water samples were packed in two coolers with ice and shipped to Shealy Environmental Services, the EPA CLP laboratory assigned for analysis. The fish samples were off-loaded and placed inside the EPA DESA laboratory sample freezer. The fish samples remained there, secured and frozen until the majority were shipped to Shealy Environmental Services laboratory on November 22, 2016 for analysis. As per direction from the RPM, fish sample group 2017-FS-HC1-GP-002-PS was sent to NYSDEC Laboratory. All samples were shipped overnight express via UPS and were received the next day, except for 2017-FS-HC3-GP-001-CC which was lost during transit.

4.0 RESULTS

There were no Polychorinated biphenyl (PCBs) detected during the laboratory analyses of any of the surface water samples for this sampling event. However, PCBs were detected both in the sediment samples and the fish tissue samples. The highest concentrations of PCBs in fish tissue and sediment were detected in the South Pond (HC-1) location. The HC-1 sediment sample reported 815 ug/kg while its duplicate contained 1153 ug/kg of total PCBs. The next highest concentration of PCBs in the sediment was reported at sample location HC-6 with 530 ug/kg total PCBs. The highest fish tissue sample concentration is reported in the South Pond (HC-1) location at 3095 ug/kg for Creek Chub. The next highest concentration reported for Creek Chub outside of the HC-1 South Pond was at location HC-2 with a result of 406J ug/kg total PCBs. Pumpkinseed was only collected in the South Pond location and reported a detection of 610 ug/kg total PCBs. Brook Trout was only collected at the HC-6 location and the highest concentration reported in any Brook Trout sample was 830 ug/kg total PCBs.

Regarding Duplicate QC Samples for fish: the CLP laboratory did not composite all fish identified by the field team to be the sample/sample duplicate as requested. (All fish specimens identified as the sample/sample duplicate were to be homogenized together and two individual tissue aliquots removed from the homogenate for subsequent extraction/analysis, indicating laboratory precision.) The laboratory personnel randomly segrated the fish specimens into two groups and homogenized each group separately. Unfortunately, the lab personnel did not document which fish specimens were segregated into each group prior to homogenization and thus cannot be correlated to the result reported. For example, sample/sample duplicate BD6R5/BD6S2 contained three fish within the group and the lab cannot say which fish comprised sample BD6R5 vs. which fish comprised BD6S2. The same holds true for sample/sample duplicate BD6Q8/BD6S0 & BD6R2/BD6S1.

A summary of the results of all analyses can be found in Tables 1 – 8 of this Report. Table 1 is the QA/QC Sample Data Table and contains the results of the (blind) Duplicate sample pairs and MS/MSD samples. Table 2 to 5 identifies the sample location and concentrations in ug/kg for this sampling event. Table 2 is a summary of the surface water samples. Table 3 contains the analytical results for the sediment samples. Table 4 provides the summary of the fish tissue data. Table 5 provides a comparison of the fish tissue, surface water and the sediment sample results from each location of collection. Tables 6 to 8 provide a summary of the % lipid and calculated Lipid PCB concentrations for all the fish samples. In addition, Annex B contains a Surface Water Map and Sediment Map illustrating each sample location and correlating result. The Fish Tissue Map illustrates the starting location point going downstream for HC-1, HC-2, HC-3, & HC-6, and the starting location point going upstream for HC-4 & HC-5 along with the individual sample results reported within each location.

5. CONCLUSION:

In terms of data usability, it is the position of this office that based on the agreeability of the relevant quality controls implemented during sampling and analysis, that the data be deemed usable for making environmental decisions. For the following reasons, the results for individual CLP sample numbers BD6Q8/BD6S0, BD6R2/BD6S1, and BD6R5/BD6S2 do not meet the quality objectives and cannot be relied upon:

1. Lost accountability of the following CLP sample number BD6Q8/BD6S0, BD6R2/BD6S1, and BD6R5/BD6S2. There is no documentation at the laboratory of which fish was used during the analysis for the above stated CLP sample numbers.
2. The specimens were not homogenized as one with removal of 2 tissue aliquots extracted/analyzed as a duplicate, as instructed.
3. The data from these paired sample results does not meet the batch precision criteria intended.

However, laboratory reanalysis of the paired sample extracts for BD6Q8/BD6S0 does exhibit analytical reproducibility (precision) over time since % Difference between the original and reanalyzed extract results obtained for BD6Q8 = 17.8% and for BD6S0 = 8.7%.

A summary of the results of the analyses for this sampling event is listed in Table 2 – 7.

TABLE 1
QA/QC SAMPLE DATA

TYPE OF SAMPLE			SAMPLE NUMBERS	Results (ug/kg) Aroclor	Conc.	SAMPLE LOCATION
BLIND DUPLICATE	Water		BD6M3	non-detect		HC1
			BD6M4	non-detect		
	Sediment		BD6S4	1248	550	HC1
				1254	220	
				1260	45	
			BD6S5	1248	790	
				1254	310	
				1260	53	
	Fish		None	None		None
MS/MSD	Water		BD6M3	(non-detect)		HC1
	Sediment		BD6S4	1248	550	HC1
				1254	220	
				1260	45	
	Fish	Creek Chub	BD6Q0	1248	61	HC1
				1254	80	
				1260	24J	
			BD6Q0MS	1016*	110J	
				1248	100	
				1254	84	
				1260*	87	
			BD6Q0MSD	1016*	85J	
				1248	76	
				1254	69	
				1260*	82	
		Brook Trout	BD6R3	1248	280	HC6
				1254	410	
				1260	140	
			BD6R3MS	1016*	340	
				1248	360	
				1254	440	
				1260*	350	
			BD6R3MSD	1016*	440	
				1248	410	
				1254	420	
				1260*	400	
		Pumpkinseed	BD6R0	1248	350	HC1
				1254	230	
				1260	30	
			BD6R0MS	1016*	190J	
				1248	250	
				1254	170	
				1260*	63	
			BD6R0MSD	1016*	200J	
				1248	290	
				1254	200	
				1260*	61	

Note: * These results are the spiked analytes.

TABLE 2
PCBs ANALYTICAL SURFACE WATER RESULTS
OCTOBER 2016

CLP#	LOCATION	AROCLOR	RESULTS(ug/kg)	QUAL	REMARKS
BD6M3	South Pond/HC1	Non-Detected	N/A		MS/MSD
BD6M4	South Pond/HC1	Non-Detected	N/A		Dupl of BD6M3
BD6M5	HC2	Non-Detected	N/A		
BD6M6	HC3	Non-Detected	N/A		
BD6M7	HC4	Non-Detected	N/A		
BD6M8	HC5	Non-Detected	N/A		
BD6M9	HC6	Non-Detected	N/A		

Note: Those sample location with ND under results were non-detect.

TABLE 3
PCBs ANALYTICAL SEDIMENT RESULTS
OCTOBER 2016

CLP#	LOCATION	AROCLOR	RESULTS(ug/kg)	Total	QUAL	REMARKS
BD6S4	South Pond/HC1	1248	550	815		MS/MSD
		1254	220			
		1260	45		J	
BD6S5	South Pond/HC1	1248	790	1153		Dupl of BD6S4
		1254	310			
		1260	53		J	
BD6S6	HC2	1248	110	205	J	
		1254	77		J	
		1260	18		J	
BD6S7	HC3	1248	66	145	J	
		1254	63		J	
		1260	16		J	
BD6S8	HC4	1248	ND	11		
		1254	11		J	
		1260	ND			
BD6S9	HC5	1248	ND	40.3		
		1254	32		J	
		1260	8.3		J	
BD6T0	HC6	1248	ND	530		
		1254	410			
		1260	120		J	

Note: Those sample location with ND under results were non-detect. J: is acceptable but value is an estimate

TABLE 4
PCBs ANALYTICAL FISH RESULTS
OCTOBER 2016

CLP#	Sample#	Length (mm)	Weight (g)	# and Total weight in each group	PCBs Results(ug/kg)			Notes
					Aroclor	Results	Total	
BD6N0	2017-FS-HC1-GP-001-SEC-1-CC	123	22	1/22	1248	390	681	Process whole fish
					1254	250		
					1260	41		
BD6N1	2017-FS-HC1-GP-002-SEC-1-CC	127	22	1/22	1248	170	385	Process whole fish
					1254	180		
					1260	35		
BD6N2	2017-FS-HC1-GP-003-SEC-1-CC	121	20	1/20	1248	1000	1723	Process whole fish
					1254	650		
					1260	73		
BD6N3	2017-FS-HC1-GP-004-SEC-1-CC	113	16	1/16	1248	600	1007	Process whole fish
					1254	350		
					1260	57		
BD6N4	2017-FS-HC1-GP-005-SEC-1-CC	76	6	5/24	1248	2000	3095	Process whole fish, composite.
	2017-FS-HC1-GP-005-SEC-2-CC	75	6					
	2017-FS-HC1-GP-005-SEC-3-CC	66	4		1254	1000		
	2017-FS-HC1-GP-005-SEC-4-CC	66	4		1260	95		
	2017-FS-HC1-GP-005-SEC-5-CC	70	4					
BD6N5	2017-FS-HC2-GP-001-SEC-1-CC	122	21	1/21	1248	220	406J	Process whole fish
					1254	160		
					1260	26J		
BD6N6	2017-FS-HC2-GP-002-SEC-1-CC	117	16	2/38	1248	75	150J	Process whole fish, composite.
	2017-FS-HC2-GP-002-SEC-2-CC	126	22		1254	61		
					1260	14J		
BD6N7	2017-FS-HC2-GP-003-SEC-1-CC	116	16	2/32	1248	54	114J	Process whole fish, composite.
	2017-FS-HC2-GP-003-SEC-2-CC	112	16		1254	50		
					1260	10J		
BD6N8	2017-FS-HC2-GP-004-SEC-1-CC	117	18	2/30	1248	160	299J	Process whole fish, composite.
	2017-FS-HC2-GP-004-SEC-2-CC	105	12		1254	120		
					1260	19J		
BD6N9	2017-FS-HC2-GP-005-SEC-1-CC	100	13	3/28	1248	98	203J	Process whole fish, composite.
	2017-FS-HC2-GP-005-SEC-2-CC	76	9		1254	84		
	2017-FS-HC2-GP-005-SEC-3-CC	80	6		1260	21J		

Note discribtion of Sample #: 2017-FS/FM/FD internal use. HC#(1,2,3,4,5,&6) is the sampling location. GP = the sample Group. SEC = the individual fish within the GP. CC = Creek Chub, PS = Pumpkin Seed, and BT = Brook Trout. Those sample location with ND under results were non-detect. J: is acceptable but value is an estimate.

TABLE 4
PCBs ANALYTICAL FISH RESULTS
OCTOBER 2016

CLP#	Sample#	Length (mm)	Weight (g)	# and Total weight in each group	PCBs Results(ug/kg)			Notes
					Aroclor	Results	Total	
BD6P0	2017-FS-HC3-GP-001-SEC-1-CC	129	18	2/29	1248	N/A	N/A	Lab states it did not received the sample
	2017-FS-HC3-GP-001-SEC-2-CC	109	11		1254	N/A		
					1260	N/A		
BD6P1	2017-FS-HC3-GP-002-SEC-1-CC	120	18	2/38	1248	24	51.8J	Process whole fish, composite.
	2017-FS-HC3-GP-002-SEC-2-CC	120	20		1254	22		
					1260	5.8J		
BD6P2	2017-FS-HC3-GP-003-SEC-1-CC	113	14	2/26	1248	130	247	Process whole fish, composite.
	2017-FS-HC3-GP-003-SEC-2-CC	100	12		1254	97		
					1260	20		
BD6P3	2017-FS-HC3-GP-004-SEC-1-CC	111	14	2/25	1248	140	261	Process whole fish, composite.
	2017-FS-HC3-GP-004-SEC-2-CC	99	11		1254	100		
					1260	21		
BD6P4	2017-FS-HC3-GP-005-SEC-1-CC	83	7	5/24	1248	170	365	Process whole fish, composite.
	2017-FS-HC3-GP-005-SEC-2-CC	74	5		1254	160		
	2017-FS-HC3-GP-005-SEC-3-CC	77	5					
	2017-FS-HC3-GP-005-SEC-4-CC	66	4		1260	35		
	2017-FS-HC3-GP-005-SEC-5-CC	59	3					
BD6P5	2017-FS-HC4-GP-001-SEC-1-CC	133	22	1/22	1248	71	162	Process whole fish
					1254	71		
					1260	20		
BD6P6	2017-FS-HC4-GP-002-SEC-1-CC	105	11	2/30	1248	66	141	Process whole fish, composite.
	2017-FS-HC4-GP-002-SEC-2-CC	123	19		1254	61		
					1260	14		
BD6P7	2017-FS-HC4-GP-003-SEC-1-CC	125	20	2/32	1248	28	66J	Process whole fish, composite.
	2017-FS-HC4-GP-003-SEC-2-CC	106	12		1254	30		
					1260	8J		
BD6P8	2017-FS-HC4-GP-004-SEC-1-CC	117	15	2/29	1248	22	61.3J	Process whole fish, composite.
	2017-FS-HC4-GP-004-SEC-2-CC	112	14		1254	30		
					1260	9.3J		
BD6P9	2017-FS-HC4-GP-005-SEC-1-CC	111	11	2/24	1248	65	151J	Process whole fish, composite.
	2017-FS-HC4-GP-005-SEC-2-CC	110	13		1254	68		
					1260	18J		

Note discribtion of Sample #: 2017-FS/FM/FD internal use. HC#(1,2,3,4,5,&6) is the sampling location. GP = the sample Group. SEC = the individual fish within the GP. CC = Creek Chub, PS = Pumpkin Seed, and BT = Brook Trout. Those sample location with ND under results were non-detect. J: is acceptable but value is an estimate.

TABLE 4
PCBs ANALYTICAL FISH RESULTS
OCTOBER 2016

CLP#	Sample#	Length (mm)	Weight (g)	# and Total weight in each group	PCBs Results(ug/kg)			Notes
					Aroclor	Results	Total	
BD6Q0	2017-FM-HC5-GP-001-SEC-1-CC	134	20	3/67	1248	61	165J	Process whole fish, composite. MS/MSD
	2017-FM-HC5-GP-001-SEC-2-CC	137	24		1254	80		
	2017-FM-HC5-GP-002-SEC-1-CC	136	23		1260	24J		
BD6Q2	2017-FS-HC5-GP-003-SEC-1-CC	120	17	2/30	1248	29	70J	Process whole fish, composite.
	2017-FS-HC5-GP-003-SEC-2-CC	108	13		1254	33		
					1260	8J		
BD6Q3	2017-FS-HC5-GP-004-SEC-1-CC	114	14	2/23	1248	120	319	Process whole fish, composite.
	2017-FS-HC5-GP-004-SEC-2-CC	94	9		1254	160		
					1260	39		
BD6Q4	2017-FS-HC5-GP-005-SEC-1-CC	95	9	3/23	1248	91J	240J	Process whole fish, composite.
	2017-FS-HC5-GP-005-SEC-2-CC	88	7		1254	120		
	2017-FS-HC5-GP-005-SEC-3-CC	89	7		1260	29J		
BD6Q5	2017-FS-HC6-GP-001-SEC-1-CC	157	38	1/38	1248	27	75J	Process whole fish
					1254	38		
					1260	10J		
BD6Q6	2017-FS-HC6-GP-002-SEC-1-CC	120	18	2/32	1248	18J	84J	Process whole fish, composite.
	2017-FS-HC6-GP-002-SEC-2-CC	107	14		1254	48		
					1260	18J		
BD6Q7	2017-FS-HC6-GP-003-SEC-1-CC	119	16	2/28	1248	98	308	Process whole fish, composite.
	2017-FS-HC6-GP-003-SEC-2-CC	105	12		1254	160		
					1260	50		
BD6Q8/ BD6S0	2017-FD-HC6-GP-004-SEC-1-CC	141	28	2/44	Not usable			Process whole fish, but did not composite. Fishes was ran as an individual sample and not a duplicate. Data not usable
	2017-FD-HC6-GP-004-SEC-2-CC	113	16					
BD6Q9	2017-FS-HC6-GP-005-SEC-1-CC	120	18	2/34	1248	50	149	Process whole fish, composite.
	2017-FS-HC6-GP-005-SEC-2-CC	116	16		1254	76		
					1260	23		

Note discribtion of Sample #: 2017-FS/FM/FD internal use. HC#(1,2,3,4,5,&6) is the sampling location. GP = the sample Group. SEC = the individual fish within the GP. CC = Creek Chub, PS = Pumpkin Seed, and BT = Brook Trout. Those sample location with ND under results were non-detect. J: is acceptable but value is an estimate.

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CLP#	Sample#	Length (mm)	Weight (g)	# and Total weight in each group	PCBs Results(ug/kg)			Notes
					Aroclor	Results	Total	
BD6R0	2017-FM-HC1-GP-001-SEC-1-PS	132	46	5/160	1248	350	610	Process whole fish, composite. MS/MSD
	2017-FM-HC1-GP-001-SEC-2-PS	125	38		1254	230		
	2017-FM-HC1-GP-001-SEC-3-PS	114	26					
	2017-FM-HC1-GP-001-SEC-4-PS	103	18		1260	30		
	2017-FM-HC1-GP-001-SEC-5-PS	117	32					
BD6R1	2017-FS-HC1-GP-002-SEC-1-PS	117	28	5/90	1248	N/A	N/A	Send to New York State Laboratory
	2017-FS-HC1-GP-002-SEC-2-PS	91	14					
	2017-FS-HC1-GP-002-SEC-3-PS	110	26		1254	N/A		
	2017-FS-HC1-GP-002-SEC-4-PS	83	12		1260	N/A		
	2017-FS-HC1-GP-002-SEC-5-PS	82	10					
BD6R2/ BD6S1	2017-FD-HC1-GP-003-SEC-1-PS	90	14	5/62	Not usable			Process whole fish, but did not composite. Fishes was ran as an individual sample and not a duplicate. Data not usable
	2017-FD-HC1-GP-003-SEC-2-PS	98	18					
	2017-FD-HC1-GP-003-SEC-3-PS	90	12					
	2017-FD-HC1-GP-003-SEC-4-PS	80	10					
	2017-FD-HC1-GP-003-SEC-5-PS	78	8					

Note discribtion of Sample #: 2017-FS/FM/FD internal use. HC#(1,2,3,4,5,&6) is the sampling location. GP = the sample Group. SEC = the individual fish within the GP. CC = Creek Chub, PS = Pumpkin Seed, and BT = Brook Trout. Those sample location with ND under results were non-detect. J: is acceptable but value is an estimate.

TABLE 4
PCBs ANALYTICAL FISH RESULTS
OCTOBER 2016

CLP#	Sample#	Length (mm)	Weight (g)	# and Total weight in each group	PCBs Results(ug/kg)			Notes
					Aroclor	Results	Total	
BD6R3	2017-PS-HC6-GP-001-SEC-1-BT	181	54	1/54	1248	280	830	*Fillet fish first using the NYSDEC 2002 standard fillet, MS/MSD
					1254	410		
					1260	140		
BD6R6	2017-PS-HC6-GP-001-SEC-2- BT	158	40	1/40	1248	150	590	*Fillet fish first using the NYSDEC 2002 standard fillet
					1254	320		
					1260	120		
BD6R7	2017-PS-HC6-GP-001-SEC-3- BT	148	30	1/30	1248	190	580	*Fillet fish first using the NYSDEC 2002 standard fillet
					1254	290		
					1260	100		
BD6R4	2017-PS-HC6-GP-002-SEC-1- BT	139	30	1/30	1248	180	590	*Fillet fish first using the NYSDEC 2002 standard fillet
					1254	300		
					1260	110		
BD6R8	2017-PS-HC6-GP-002-SEC-2- BT	137	28	1/28	1248	220	608	*Fillet fish first using the NYSDEC 2002 standard fillet
					1254	300		
					1260	88		
BD6R9	2017-PS-HC6-GP-002-SEC-3- BT	125	26	1/26	1248	210	604	*Fillet fish first using the NYSDEC 2002 standard fillet
					1254	300		
					1260	94		
BD6R5/ BD6S2	2017-PS-HC6-GP-003-SEC-1- BT	134	24	3/64	Not usable			Filleted fish first using the NYSDEC 2002 standard fillet, but did not composite. Fishes was ran as an individual sample and not a duplicate. Data not usable.
	2017-PS-HC6-GP-003-SEC-2- BT	129	20					
	2017-PS-HC6-GP-003-SEC-3- BT	126	20					

Note discribtion of Sample #: 2017-FS/FM/FD internal use. HC#(1,2,3,4,5,&6) is the sampling location. GP = the sample Group. SEC = the individual fish within the GP. CC = Creek Chub, PS = Pumpkin Seed, and BT = Brook Trout. Those sample location with ND under results were non-detect. J: is acceptable but value is an estimate.

TABLE 5
COMPARISON OF PCBs ANALYTICAL RESULTS BY LOCATIONS FOR FISH & SEDIMENT OCTOBER 2016

Location	Sample Location	Sample Number	Type of Sample	2017 Result (ug/kg)
South Pond	Site # HC-1	BD6NO	Creek Chub	681
		BD6N1	Creek Chub	385
		BD6N2	Creek Chub	1723
		BD6N3	Creek Chub	1007
		BD6N4	Creek Chub	3095
		BD6R0	Pumpkinseed Sunfish	610
		BD6R1	Pumpkinseed Sunfish	N/A
		BD6S4	Sediments	815
		BD6S5*	Sediments	1153
		BD6M3	Surface Water	Non-detected
		BD6M4*	Surface Water	Non-detected
Herrick Creek	Site # HC-2	BD6N5	Creek Chub	406J
		BD6N6	Creek Chub	150J
		BD6N7	Creek Chub	114J
		BD6N8	Creek Chub	299J
		BD6N9	Creek Chub	203J
		BD6S6	Sediments	205
		BD6M5	Surface Water	Non-detected
Herrick Creek	Site # HC-3	BD6P0	Creek Chub	N/A
		BD6P1	Creek Chub	51.8J
		BD6P2	Creek Chub	247
		BD6P3	Creek Chub	261
		BD6P4	Creek Chub	365
		BD6S7	Sediments	145
		BD6M6	Surface Water	Non-detected
Herrick Creek	Site # HC-4	BD6P5	Creek Chub	162
		BD6P6	Creek Chub	141
		BD6P7	Creek Chub	66J
		BD6P8	Creek Chub	61.3J
		BD6P9	Creek Chub	151J
		BD6S8	Sediments	11
		BD6M7	Surface Water	Non-detected
Herrick Creek	Site # HC-5	BD6Q0	Creek Chub	165J
		BD6Q2	Creek Chub	70J
		BD6Q3	Creek Chub	319
		BD6Q4	Creek Chub	240J
		BD6S9	Sediments	40.3
		BD6M8	Surface Water	Non-detected
Herrick Creek	Site # HC-6	BD6Q5	Creek Chub	75J
		BD6Q6	Creek Chub	84J
		BD6Q7	Creek Chub	308
		BD6Q9	Creek Chub	149
		BD6R3	Brook Trout	830
		BD6R4	Brook Trout	590
		BD6R6	Brook Trout	590
		BD6R7	Brook Trout	580
		BD6R8	Brook Trout	608
		BD6R9	Brook Trout	604
		BD6T0	Sediments	530

*= duplicate sample. BD6S5 is duplicate of BD6S4; BD6M4 is duplicate of BD6M3.

TABLE 6-A
Creek Chub Tissue Summary
South Pond/Herrick Hollow Creek-1 (HC-1)

Parameter	Frequency of Detection	BD6N0 South Pond HC1-GP001 creek chub 10/18/16	BD6N1 South Pond HC1-GP002 creek chub 10/18/16	BD6N2 South Pond HC1-GP003 creek chub 10/19/16	BD6N3 South Pond HC1-GP004 creek chub 10/19/16	BD6N4 South Pond HC1-GP005 creek chub 10/18-19/16
Total PCBs (mg/kg)	5 of 5	0.681	0.385	1.723	1.007	3.095
Lipid (%)	5 of 5	1.4	0.83	2.6	2.6	5.7
Lipid PCB (mg/kg)	5 of 5	48.64	46.39	66.27	38.73	54.30

TABLE 6-B
Creek Chub Tissue Summary
Herrick Hollow Creek-2 (HC-2)

Parameter	Frequency of Detection	BD6N5 Herrick Creek 2-GP001 creek chub 10/19/16	BD6N6 Herrick Creek 2-GP002 creek chub 10/18-19/16	BD6N7 Herrick Creek 2-GP003 creek chub 10/18-19/16	BD6N8 Herrick Creek 2-GP004 creek chub 10/18-19/16	BD6N9 Herrick Creek 2-GP005 creek chub 10/18-19/16
Total PCBs (mg/kg)	5 of 5	0.406J	0.150J	0.114J	0.299J	0.203J
Lipid (%)	5 of 5	1.4	0.95	0.28	0.66	1.5
Lipid PCB (mg/kg)	5 of 5	29.0	15.79	40.71	45.30	13.53

TABLE 6-C
Creek Chub Tissue Summary
Herrick Hollow Creek-3 (HC-3)

Parameter	Frequency of Detection	BD6P1 Herrick Creek 3-GP002 creek chub 10/18-19/16	BD6P2 Herrick Creek 3-GP003 creek chub 10/18-19/16	BD6P3 Herrick Creek 3-GP004 creek chub 10/18/16	BD6P4 Herrick Creek 3-GP005 creek chub 10/18-19/16
Total PCBs (mg/kg)	4 of 4	0.0518J	0.247	0.261	0.365
Lipid (%)	4 of 4	0.47	2.0	2.4	2.0
Lipid PCB (mg/kg)	4 of 4	11.02	12.35	10.88	18.25

Notes: Column headings include: CLP lab sample ID #, location-group #, species, and date of collection.

TABLE 6-D
Creek Chub Tissue Summary
Herrick Hollow Creek-4 (HC-4)

Parameter	Frequency of Detection	BD6P5 Herrick Creek 4-GP001 creek chub 10/19/16	BD6P6 Herrick Creek 4-GP002 creek chub 10/18/16	BD6P7 Herrick Creek 4-GP003 creek chub 10/18/16	BD6P8 Herrick Creek 4-GP004 creek chub 10/18-19/16	BD6P9 Herrick Creek 4-GP005 creek chub 10/18/16
Total PCBs (mg/kg)	5 of 5	0.162	0.141	0.066J	0.0613J	0.151J
Lipid (%)	5 of 5	0.74	1.1	0.56	0.48	1.5
Lipid PCB (mg/kg)	5 of 5	21.89	12.82	11.79	12.77	10.07

TABLE 6-E
Creek Chub Tissue Summary
Herrick Hollow Creek-5 (HC-5)

Parameter	Frequency of Detection	BD6Q0 Herrick Creek 5-GP001/002 creek chub 10/18/16	BD6Q2 Herrick Creek 5-GP003 creek chub 10/18/16	BD6Q3 Herrick Creek 5-GP004 creek chub 10/18/16	BD6Q4 Herrick Creek 5-GP005 creek chub 10/18/16
Total PCBs (mg/kg)	4 of 4	0.165J	0.070J	0.319	0.240J
Lipid (%)	4 of 4	0.80	0.547	1.53	1.71
Lipid PCB (mg/kg)	4 of 4	20.63	12.80	20.85	14.04

TABLE 6-F
Creek Chub Tissue Summary
Herrick Hollow Creek-6 (HC-6)

Parameter	Frequency of Detection	BD6Q5 Herrick Creek 6-GP001 creek chub 10/18/16	BD6Q6 Herrick Creek 6-GP002 creek chub 10/18/16	BD6Q7 Herrick Creek 6-GP003 creek chub 10/18/16	BD6Q9 Herrick Creek 6-GP005 creek chub 10/18/16
Total PCBs (mg/kg)	4 of 4	0.075J	0.084J	0.308	0.149
Lipid (%)	4 of 4	0.383	0.367	1.44	1.01
Lipid PCB (mg/kg)	4 of 5	19.58	22.89	21.39	14.75

Notes: Column headings include: CLP lab sample ID #, location-group #, species, and date of collection.

TABLE 7
Pumpkinseed Tissue Summary
South Pond/Herrick Hollow Creek-1 (HC-1)

Parameter	Frequency of Detection	BD6R0 South Pond HC1-GP001 pumpkin seed 10/18-19/16
Total PCBs (mg/kg)	**1 of 1**	**0.610**
Lipid (%)	**1 of 1**	**0.767**
Lipid PCB (mg/kg)	**1 of 1**	**79.53**

Notes: Column headings include: CLP lab sample ID #, location-group #, species, and date of collection.

TABLE 8
Brook Trout Tissue Summary
Herrick Hollow Creek-6 (HC-6)

Parameter	Frequency of Detection	BD6R3 Herrick Creek 6-GP001-SEC1 BT 10/18/16	BD6R4 Herrick Creek 6-GP002-SEC1-BT 10/18/16	BD6R6 Herrick Creek 6-GP001-SEC2-BT 10/18/16	BD6R7 Herrick Creek 6-GP001-SEC3-BT 10/18/16	BD6R8 Herrick Creek 6-GP002-SEC2-BT 10/18/16	BD6R9 Herrick Creek 6-GP002-SEC3-BT 10/18/16
Total PCBs (mg/kg)	**3 of 3**	**0.830**	**0.590**	**0.590**	**0.580**	**0.608**	**0.604**
Lipid (%)	**3 of 3**	**1.22**	**1.09**	**0.714**	**1.26**	**1.81**	**1.69**
Lipid PCB (mg/kg)	**3 of 3**	**68.03**	**54.13**	**82.63**	**46.03**	**33.59**	**35.74**

Notes: Column headings include: CLP lab sample ID #, location-group #, species, and date of collection. BT= Brook Trout