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2022 Lyons Creek East (Niagara River Area of Concern) Sediment Pore Water Survey

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Executive Summary

The 2022 survey shows the pore water concentrations generally follow the contamination trends that are known to exist at this site (highest near the canal and lower as you progress downstream). Apart from elevated PCB pore water concentrations at, and just before and after location T7B, the trends followed suite.

Pore water concentrations are above guideline values for all 2022 samples in relation to provincial *surface* water guidelines and above guideline values for all but one sample location (LCO1-MID) for *aquatic protection* values. Most samples, with the exception of location EC6, are below the final chronic value derived by Fuchsman et al. (2006) which is specific to toxicity.

Compared to the 2021 pore water survey, 2022 values show slightly higher PCB concentrations, which can likely be attributed to changing the analysis method from Aroclors in 2021, to analyzing based on congeners in 2022. Analysis through congeners is more accurate and this approach should be taken if future pore water surveys are conducted. 2021 results show an increase in pore water concentrations at the downstream end of Zone 2 (EC4B), whereas 2022 results show an increase in concentrations at the downstream end of Zone 3 (T7D). It is possible that an elevated spot of chemicals exists and that it is moving downstream, but further sampling should be conducted to confirm this.

2022 pore water results were compared alongside 2022 sediment chemistry and tissue samples for nearby sites. Sediment Chemistry samples were obtained for Zones 2 to 7, and results show a similar pattern to the 2022 pore water results: a decreasing trend in PCB concentrations, moving downstream away from the canal. Fewer tissue samples were collected compared to pore water and sediment chemistry samples, however some comparison between pore water and tissue samples was completed. Tissue samples show an increasing trend from Zones 3 to 4, which may align with the sudden increase in pore water concentrations around site T7D. Additional sampling would need to be completed to confirm this pattern.

Groundwater gradient measurements were also collected at Lyons Creek East. Observations of the area show the site has favourable conditions for groundwater discharge, however hydraulic gradient measurements show there isn't a strong gradient for groundwater flow into the creek. Due to geologic heterogeneity, there may be some areas with more focused groundwater discharge, but overall, measurements suggest minimal groundwater input.

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1. Background

Lyons Creek East (LCE) is a 17-km long tributary of the Welland River in Ontario. The original creek was bisected by the Welland Canal into West and East sections in 1971. Flow to the east section of the creek is now artificially provided by water pumped directly from the canal. LCE was historically included in the Niagara River Area of Concern (AOC) due to the presence of polychlorinated biphenyl (PCB) contamination in the sediment and resulting risks to creek biota and wildlife.

PCBs are classified by the United States Environmental Protection Agency (USEPA) as probable human carcinogens and have been shown to cause cancer and reproductive defects in animals. The chlorine substituents of PCBs mean that they are difficult to degrade under natural conditions, and therefore persist in the environment and bioaccumulate in the tissues of organisms. They then biomagnify as they move up the food chain. Sources of contamination to LCE include historical storm water overflow from the nearby city of Welland, several oil spills in the creek itself, and treated effluent from a steel mill pipe discharging into the creek. The mill was subsequently closed in 2003. The construction of the Welland Canal is assumed to have removed upstream sources of contamination to LCE.

According to a 2008 report by Golder Associates, risks to wildlife receptors in LCE are low but persistent and will remain so for 10–40 years. Additionally, most of LCE is identified as a Provincially Significant Wetland and minimal disturbance of the sensitive habitat was desirable. A Human Health Risk Assessment conducted by Dillon in 2007 identified no expected risks to human health from direct exposure to sediments. Therefore, Monitored Natural Recovery (MoNR) was selected in 2008 as the preferred remediation strategy for LCE. It should be noted that natural recovery for LCE relies upon the deposition of cleaner sediments slowly burying the contamination. The bisection of LCE in 1971 reduced the natural sedimentation rate in the areas of the creek close to the canal, which has since been estimated as between 1–10 mm/yr (Golder 2008, Golder 2011).

In order to assess the progress of MoNR, a long-term monitoring plan was established and the benthic conditions in the creek, surveys of sediment, benthic invertebrates and young of the year (YOY) fish in LCE were conducted by Environment and Climate Change Canada (ECCC) and the Ontario Ministry of Environment, Conservation, and Parks (MECP) in 2002-03, 2010, 2015, 2019, and 2021. Invertebrates serve as prey to many fish and other aquatic species and can be an important exposure pathway representative of local conditions.

The 2015 survey (Richman, 2018) data showed that total PCB concentrations in surficial sediment (defined as ≤10 cm) were elevated above the Probable Effect Level (PEL) of 0.277 µg/g in Zones 1–5 (out of seven Zones assessed, Figure 1). Zones 1–5 cover the area of the creek from the headwaters to 3.6

km downstream. Out of these, Zones 1 and 2, comprising the farthest upstream (1.3 km), had the highest concentrations of PCBs at the sediment surface and at depth. Concentrations of total PCB congeners ranged up to 340 µg/g at depth, and from 0.03–93 µg/g in surface sediments in 2015. For reference, the maximum surface concentration observed at reference sites was 0.04 µg/g and hazardous PCB waste is defined by the MECP as 50 µg/g. The reference sites identify background PCB levels for the region.

Figure 1. Assessment zones for Lyons Creek East benthic and sediment survey.

A similar spatial distribution was observed for benthic tissue concentrations of total PCBs, where concentrations were elevated above reference levels in Zones 1–5, ranging from 0.2–5.1 µg/g-dw (Milani and Grapentine, 2017). The maximum reference tissue concentration observed was 0.9 µg/g-dw. Remedial action targets to protect the mink and kingfisher were exceeded and contamination within these zones was higher than expected when compared to baseline (2005) data. Although PCB contamination in the surface sediment in the zones farther downstream was lower than in Zones 1 and 2, concentrations have not decreased through time, and remain above the target to protect the mink. Additionally, PCB concentrations in YOY fish are high (up to 3000 ng/g) and exceed targets for fish eating birds and mammals presented in the ERA. As a result of all this, a detailed sediment survey within Zones 1 and 2 was required in 2019 to better delineate the spatial extent of high PCB concentrations in the surface sediment and at depth. The results of this work were somewhat surprising in the general trends

lack of correlation between sediment and tissue and the location of the highest tissue concentration. Sediment PCB concentrations are highest closest to the canal with a decreased but varying trend as you move downstream. Sediment concentrations also showed a slight downstream increase around EC3 and EC2 in Zone 2. Tissue PCB concentrations, in contrast, were lower towards the canal, elevated at location EC5 and then stable downstream of EC5 but higher in these downstream samples than those located upstream of EC5. Generally, the situation is that elevated tissue concentrations do not match with the areas of elevated sediment concentrations. When accounting for lipids and organic carbon, this results in no statistically significant relationship between sediment and tissue concentrations for Zones 1 and 2 for 2019. Location EC5 (at the end of Zone 1), with the highest tissue concentrations is surprising as this location was the least vegetated and appeared more scoured. By observation, it did not appear to be as suitable a habitat for amphipods as other locations. This observation, as well as negative relationship trends between sediment and tissue, raise questions over the mobility and transport of the PCB contaminated sediment. In general, this 2019 work found that tissue concentrations in amphipods are elevated. In the limited areas where some loose comparison can be made, they are higher than those reported from previous years.

In 2019, forty sediment coring locations were selected by the MECP based on historical (2015) sampling stations and results (hotspots). To establish collocated sediment and tissue samples, a subset of 10 of the coring stations were selected by ECCC for amphipod sampling. The MECP sediment samples showed a sharp decrease in sediment concentration of total PCBs from the canal (upstream) to the other downstream sites. The ECCC amphipod tissue concentrations, however, generally increased downstream with a spike at the end of Zone 1 (EC5). Tissue results for dioxin-like PCBs were converted to Toxic Equivalents (TEQs) and all 2019 samples exceeded the avian and mammalian reference values. Biota-sediment accumulation factors (BSAFs) for total PCBs were calculated using the amphipod tissue concentrations (normalized to lipids) and the sediment concentrations provided by the MECP from the 0–3 cm and 0–10 cm layers of sediment. Both depths show a spike around the end of Zone 1 (EC5) and then an increasing / variable trend towards downstream (EC1).

The 2019 work generally confirmed that PCB concentrations remain high in these zones and the need to reassess the monitored natural recovery as the remedial option for the site. Prior to making any final decisions, additional data was required. One of the studies was the acquisition of sediment pore water concentrations in Zones 1–4. Pore water samples were collected from Zones 1 to 4 in 2021 using polyethylene passive samplers. Total PCBs were measured using the Aroclor method. This study generally found the pore water concentrations were of similar concentrations in the 0–5 cm increments as the 0–10 cm. The pore water concentration also generally follows the contamination trends that are known to exist at this site (highest near the canal and lower as you progress downstream). Apart from an elevated PCB pore water concentration at location EC4B, the trends followed suite. Pore water concentrations were also found to be elevated in relation to surface water guidelines however, well

below a final chronic value (0.54 µg/L) derived by Fuchsman et al. (2006) which was specific to toxicity from PCBs. Guidelines specific to pore water do not exist. The total PCB / Aroclor analysis approach was used for analyzing 2021 pore water samples mostly due to budgetary reasons but for the 2022 sampling the decision was made to use a congener-specific analysis method.

2. Objective

Natural recovery of the contaminated sediments at Lyons Creek East is progressing at a very slow rate and some form of active management, may be required to meet objectives in a reasonable timeframe. In order to further characterize the contamination as well as to prepare for potential active management, some key data gaps exist that should be filled. These gaps will specifically allow for better understanding how the contaminants are available to receptors as well as provide key site data that will facilitate any future modeling and other calculations used in assessing and designing active management options.

Contaminant concentrations in the pore water is the main driver of toxicity to benthos and is the main concern if any capping options are required in the future. It is important to obtain some actual pore water measurements from the site to understand the concentrations, general trend between Zones 1–4, and relate these to observed tissue concentrations. This data is helpful for understanding the current concentration levels in fish and invertebrates. As stated in the background section, a 2021 sampling round examined pore water using passive samplers at the 0 to 5 cm interval as well as the 5 to 10 cm interval for a few selected locations. The 2021 study generally found the pore water concentrations were of similar concentrations in the 0–5 cm increments as the 0–10 cm. The pore water concentration also generally follows the contamination trends that are known to exist at this site (highest near the canal and lower as you progress downstream). The 2022 sampling round targeted the same sample locations, however, samplers covered the 0 to 10 cm depth and the analysis measured all 209 congeners as this is a more accurate approach for sediments where PCBs have been present in the environment for a long time.

3. Scope of Work

1. Measure the freely dissolved concentrations of PCB congeners in the top 10 cm of sediment using in situ polyethylene-based passive samplers.

2. Make comparisons and observations to previous data (pore water) as well as new data (2022 sediment and tissue concentrations and groundwater gradient measurements) where possible.

4. Methods

4.1. Field Collection

Sampling consisted of deploying 17 SP3™ polyethylene-based passive samplers in 15 locations shown in Table 1 and Figure 2. Samplers consisted of regular (10 cm) polyethylene strips encased in a protective mesh. The samplers were deployed for 36 days (May 19 to June 24, 2022).

Table 1. Proposed sample locations and details.

Zone	Station	Northing	Easting	Position specifics
1	LC01-mid	4759470.72	645089.27	1 Passive sampler
1	EC 9	4759533.00	645140.00	1 Passive sampler
1	EC-6	4759614.00	645199.00	1 passive sampler, North bank
1	EC5 (Trans)	4759632.00	645214.00	3 Passive samplers in a transect
2	EC3	4759765.00	645386.00	1 Passive Sampler, near north bank
2	MECP71	4759765.47	645546.23	1 Passive Sampler between middle and N bank
2	MECP75	4759771.29	645638.21	1 Passive Sampler near south bank
2	EC1	4759774.00	645713.00	1 Passive Sampler, deploy near south bank
2	EC4b	4759887.15	645924.86	1 Passive Sampler between middle and N bank
3	T7A	4759862.00	646192.00	1 Passive Sampler deploy at will
3	T7C	4760063.00	646279.00	1 Passive Sampler deploy at will
3	T7D	4760160.00	646288.00	1 Passive Sampler deploy at will
4	T8	4760373.16	646501.596	1 Passive Sampler deploy at will
4	T8A	4760466.516	646587.382	1 Passive Sampler deploy at will
4	T8B	4760563.657	646664.337	1 Passive Sampler deploy at will

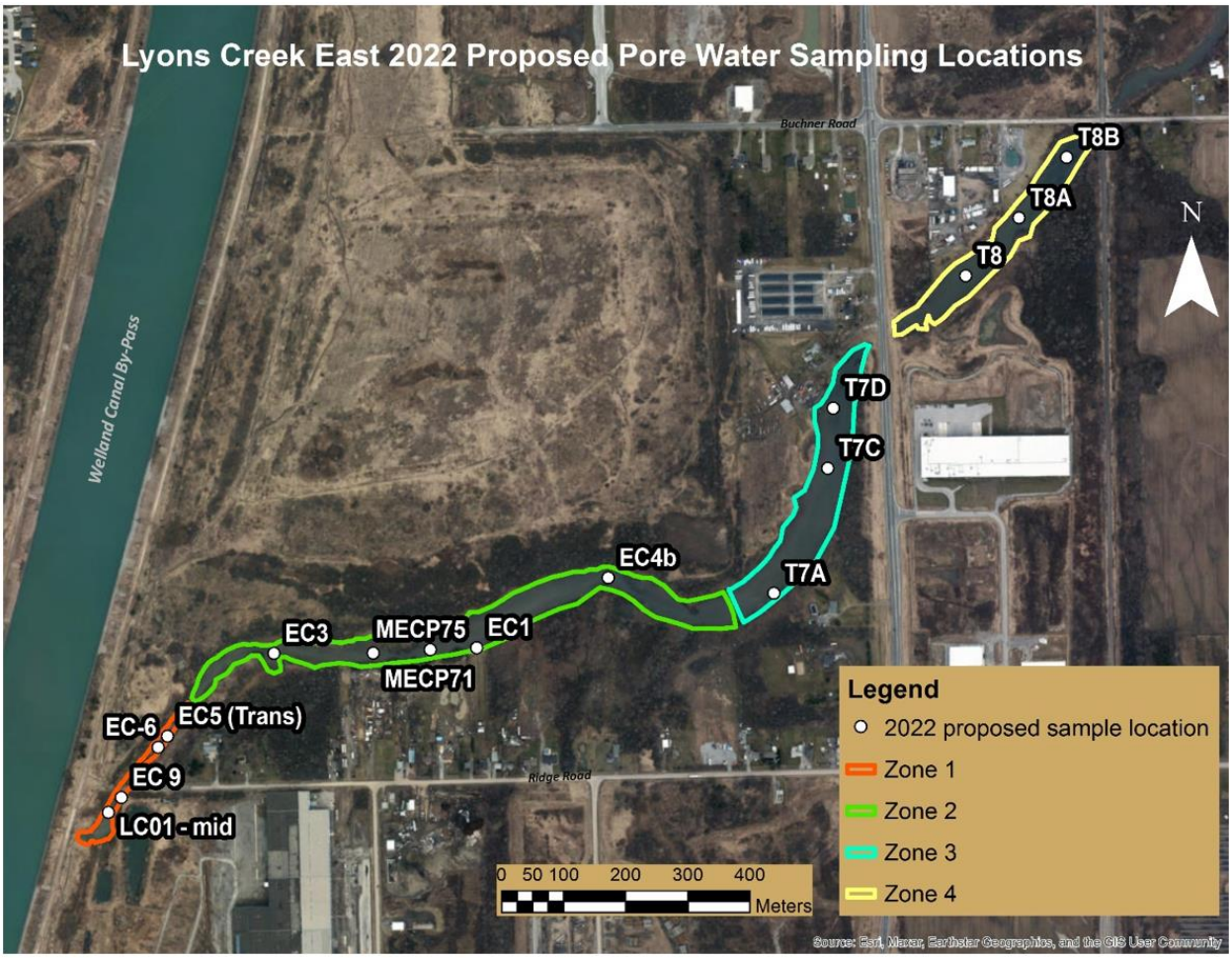

Figure 2. Proposed sample locations for 2022 pore water sampling from Zones 1 to 4 in Lyons Creek East (Niagara River Area of Concern).

4.2. Laboratory (Passive samplers)

The SP3™ is a comprehensive polyethylene-based passive sampler and interpretation service for the quantification of hydrophobic organic compounds including polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), and dioxins and furans in pore water. The SP3™ samplers for this application were used to quantify the freely dissolved concentrations (C_{free}) of PCB congeners in sediment pore water.

Each SP3™ sampler (Figure 3) contained 1 polyethylene strip spiked with performance reference compounds (PRCs) to be used for equilibrium calculations. The SP3™ sampler consists of a 4 cm x 10 cm polyethylene sheet housed in steel mesh envelope attached to a 8 cm × 18 cm × 0.1 cm stainless steel support plate. The sampler was pushed into the sediment, where it remained until retrieval. Upon

retrieval the protective mesh surrounding the sampler was wiped clean that the sampler and protective mesh wrapped in foil and then placed in a cooler for transport to the lab.

Figure 3. Passive sampler used at Lyons Creek East (May 19, 2022).

Samplers were deployed for 36 days (May 19 to June 24, 2021). The sampler uses a standard list of 10 PCB congeners rarely found in the environment as PRCs:

PCB-14, PCB-36, PCB-78, PCB-104, PCB-121, PCB-142, PCB-155, PCB-184, PCB-192, and PCB-204.

These 10 PCBs are rarely found in sediment and biological tissue and are used to evaluate the sampling kinetics of the sampler during the exposure period. These are not readily quantified by the standard EPA method for PCB Aroclors, therefore a separate sampler is required for PRC only determination and ultimate C_{free} calculation. PCB analysis on the passive samplers was conducted using EPA method 1668A by Eurofins Environmental Testing America.

Three PRC trip blanks were also utilized as part of the field QA/QC program to assess equilibrium condition of the samplers. The trip blanks were exposed to the site ambient conditions for approximately 5 minutes and then packaged for shipping in the same manner as the deployed samplers. As an example of the use, if 100 ng/g of a PRC is present in a trip blank and 50 ng/g of the same PRC is present in a deployed sampler upon retrieval, the PRC is at 50% of its equilibrium concentration. With several different PRC depletion values a predicative model can be assembled to estimate the primary target compound fractional equilibrium using an average polyethylene-water partition coefficient.

5. Results & Discussion

Figure 4 presents the locations of the pore water samples from 2022 as well the aerial extent of Zones 1 to 4. Figure 5 shows 2021 pore water sampling locations. Sampling locations from both 2021 and 2022 were mostly identical to enable comparison of data over these two sampling years.

Figure 4. Final sample locations for **2022** pore water sampling at Lyons Creek East.

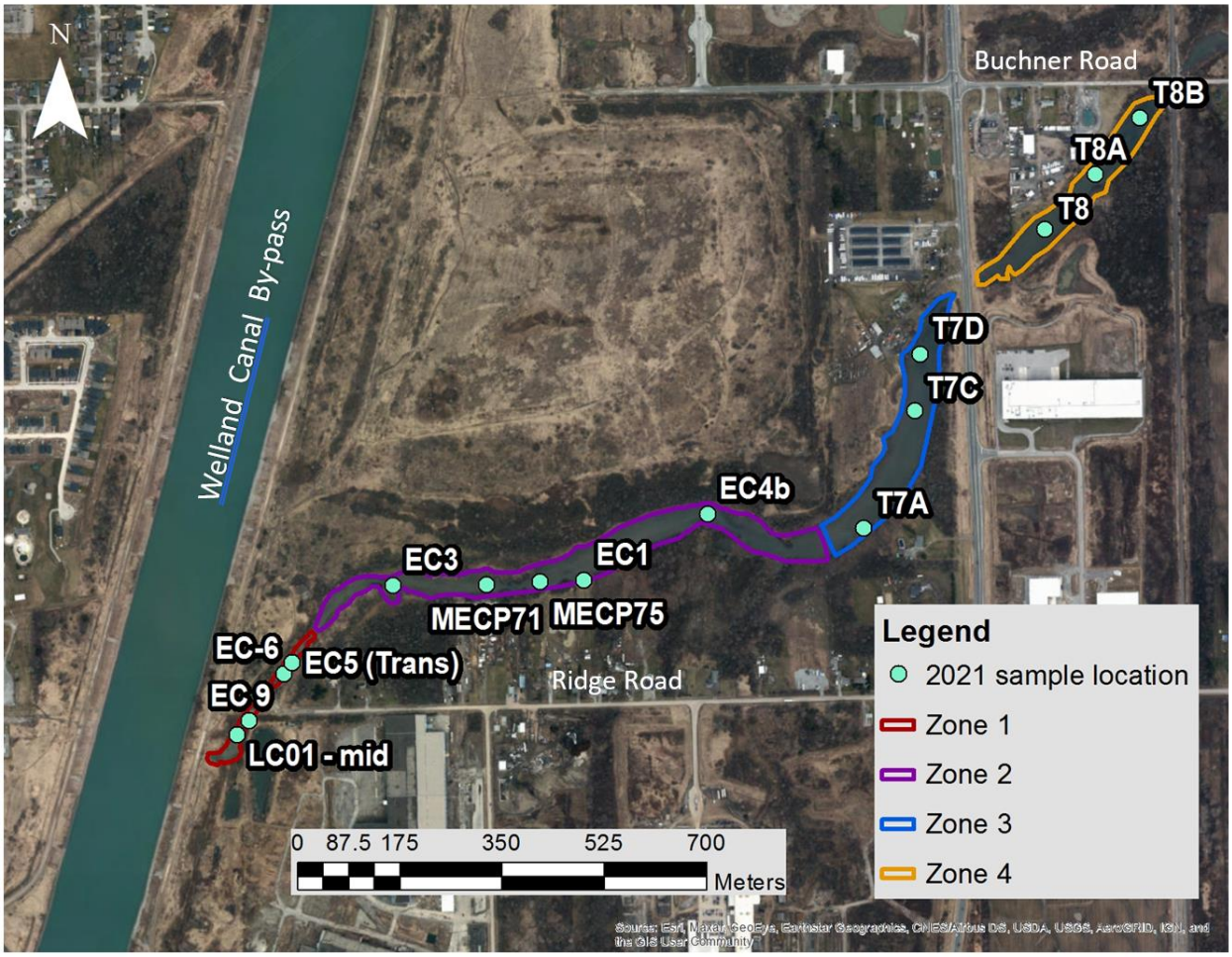

Figure 5. **2021** pore water sampling locations in Lyons Creek East. *Note: LC01-mid was re-located to 4759509 N, 645119 E*. Sample location labels are generally placed on the upper right, with the exception of overlapping labels.

Table 2 presents the total PCB concentrations of all the measured pore water samples. The sampler at location EC 9 was not recovered and assumed to have been removed or vandalized. A complete laboratory report on results can be found in the Appendix.

Table 2. Lyons Creek East 2022 pore water sampling results.

Sample ID	Total PCBs (µg/L)
LCO1-MID	0.010
EC6	0.134
EC5-S	0.062
EC5 Mid	0.064
EC5-N	0.030
EC3	0.034

MECP71	0.032
MECP75	0.037
EC1	0.030
EC4B	0.025
T7A	0.017
T7C	0.046
T7D	0.275
T8	0.054
T8A	0.028
T8B	0.031

While there is no specific guideline for pore water, the Provincial Water Quality Objectives (PWQO) for Ontario surface water for total PCBs is 0.001 µg/L. The province of Ontario also has aquatic protection values (APV) that are designed to be used for situations where contaminated groundwater discharges to surface water bodies. The APV is 0.014 µg/L. With respect to benthic toxicity, Fuchsman et al. (2006) addresses the toxicity between PCBs and benthic invertebrates. Using available data for Aroclors 1254 and 1242, with a greater availability of Aroclor 1254 data, it was found that they exhibit similar toxicity. This conclusion was based on comparisons of the most sensitive species and overall distributions of toxicity values. Lower (Aroclors 1221 and 1232) and higher (Aroclors 1260, 1262 and 1268) chlorine content (although more limited in data availability) suggests these formulations are less toxic than Aroclors 1242 and 1254. Therefore, a final chronic value (FCV) of 0.54 µg/L was presented as a reasonable estimate of toxicity for sensitive invertebrates (Fuchsman et al., 2006).

Table 3 presents the 2022 pore water data, along with "yes" and "no" indicators of how the pore water data compares to the PWQO, APV, and FCV values. The pore water data shows all values exceeded the PWQO guideline. Almost all values exceeded the APV guideline, except for the most upstream site (LCO1-MID). A reason for this one value being under the guideline value could be due to a potential error in analysis, or that the contaminated zone is migrating downstream. Further data would need to be collected to confirm this. Only one sample exceeded the FCV value (EC6), and this site is relatively close to the canal. An exceedance near the canal is not alarming since there are historically greater concentrations of contaminants near the canal.

Table 4 compares the measured pore water concentrations for 2022 and 2021. This comparison indicates pore water concentrations measured in 2022 are elevated compared to surface water guidelines but not in comparison to the FCV derived by Fuchsman et al., 2006). *It is important to note that direct comparison with 2021 pore water data is not entirely possible due to 2021 data using the Aroclor method and 2022 analysis involving all 209 congeners. Differences in concentrations can be attributed entirely or partially to the analysis method.*

Table 3. 2022 pore water survey results versus guideline values. *Note: "Y" indicates a guideline exceedance*.

	2022 Pore Water	PWQO	APVs (ON)	FCV
Sample ID	**tPCB (µg/L)**	**0.001 µg/L**	**0.014 µg/L**	**0.54 µg/L**
LCO1-MID	0.010	Y	N	N
EC6	0.134	Y	Y	Y
EC5-S	0.062	Y	Y	N
EC5 Mid	0.064	Y	Y	N
EC5-N	0.030	Y	Y	N
EC3	0.034	Y	Y	N
MECP71	0.032	Y	Y	N
MECP75	0.037	Y	Y	N
EC1	0.030	Y	Y	N
EC4B	0.025	Y	Y	N
T7A	0.017	Y	Y	N
T7C	0.046	Y	Y	N
T7D	0.275	Y	Y	N
T8	0.054	Y	Y	N
T8A	0.028	Y	Y	N
T8B	0.031	Y	y	N

Table 4. Comparison of 2022 and 2021 pore water concentration data. "+" denotes 2022 data reported a higher concentration of total pore water PCB compared to 2021 data.

	2022 Pore Water	2021 Pore water	Increase/decrease from 2021
Sample ID	**tPCB (µg/L)**	**tPCB (µg/L)**	
LCO1-MID	0.010	0.040	-
EC6	0.134	0.031	+
EC5-S	0.062	0.025	+
EC5 Mid	0.064	0.006	+
EC5-N	0.030	0.010	+
EC3	0.034	0.022	+
MECP71	0.032	0.023	+
MECP75	0.037	0.019	+
EC1	0.030	0.018	+
EC4B	0.025	0.059	-
T7A	0.017	0.023	-
T7C	0.046	0.019	+
T7D	0.275	0.012	+
T8	0.054	0.015	+

T8A	0.028	0.012	+
T8B	0.031	0.010	+

Note: *2021 analysis utilized the Aroclor method while 2022 analysis involved full congeners; differences between accuracies of each analysis method can affect final pore water concentrations. Great accuracy is to be expected from the 2022 congener analysis.*

The analysis approach taken in 2021 was the Aroclor method, whereas in 2022, samples were analyzed based on congeners. The variability in PCB concentrations between 2021 and 2022 sampling years may be attributed to the differing analysis approaches. Table 4 shows concentrations in general are greater in the 2022 sampling season, which may be an effect of changing the analysis approach to congener analysis. In general, the 2022 samples exceeded the aquatic protection values (APV) more than the 2021 data. Similarly, for the final chronic value (FCV), there was an exceedance of this guideline value of 0.54 µg/L in the 2022 pore water data since a more detailed analysis approach was taken. This information of greater exceedances allows for more stringent remediation approaches to be taken since the congener analysis approach is more accurate and allows for lower detection limits (Prignano et al., 2007).

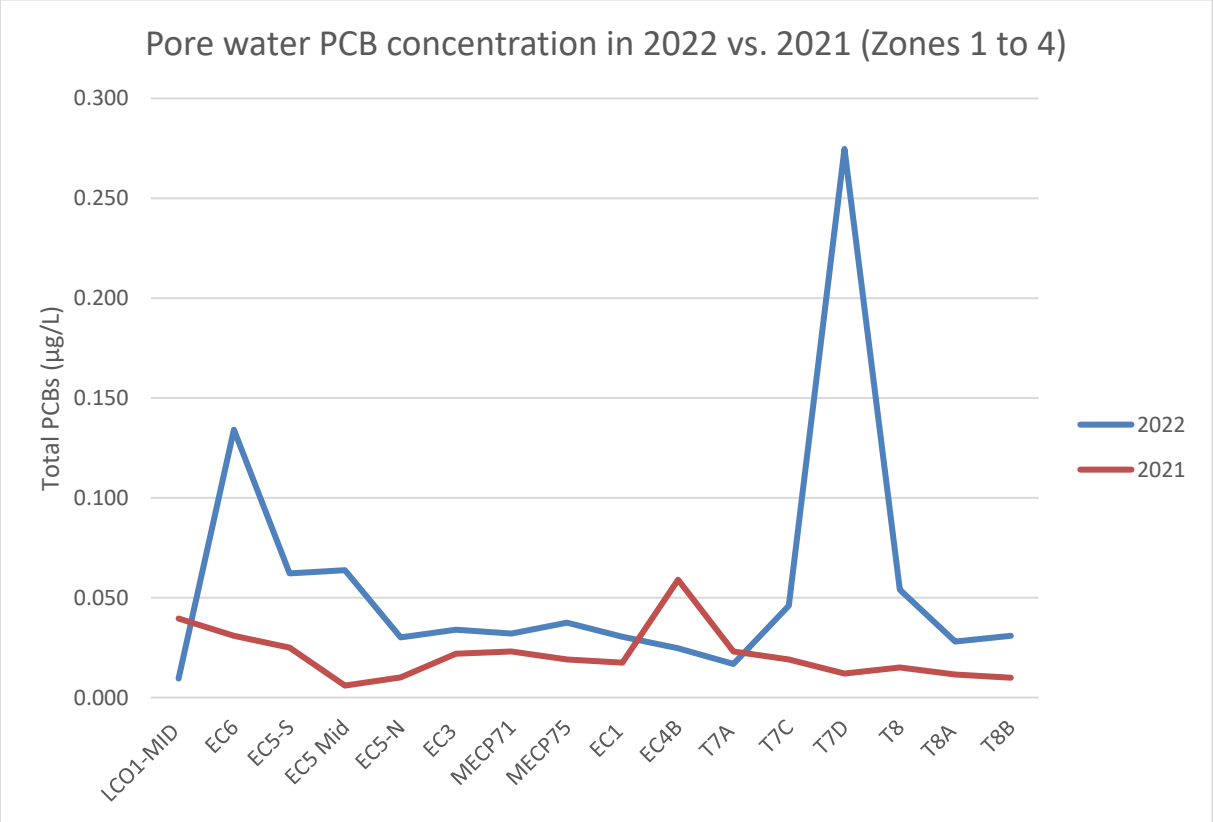

Figure 6. Comparison of 2022 and 2021 pore water total PCB concentrations at Lyons Creek East. Note: 2021 analysis utilized the Aroclor method while 2022 analysis was full congeners; differences between methods can affect final pore water concentrations.

Figure 6 compares total PCB concentrations from 2022 and 2021 samples. Although differing analysis approaches were used in each sampling year (Aroclors in 2021 versus congeners in 2022), there is an overall greater concentration of total PCBs reported in 2022. It is possible that the greater concentrations are due to changing the analysis method. Historical weather data for the Lyons Creek Area shows less rainfall for May and June in 2021, compared to 2022. Differing local weather patterns may also impact flow patterns in the creek or affect local fish behaviour, which in turn can impact how much sediment is upturned. 2021 pore water data show an increase around location EC4B, which is slightly upstream of the spike in concentrations around T7D from the 2022 pore water results. There is a chance that contaminants are migrating downstream. To test this theory, additional sampling seasons would be required to establish a pattern.

2021 and 2022 data are also compared through box plots, as shown in Figure 7. The distribution data (five number summaries and means) for plotting the box plots are shown in Table 5. The box plots show higher average concentration of pore water PCBs from 2022 sampling data, compared to 2021.

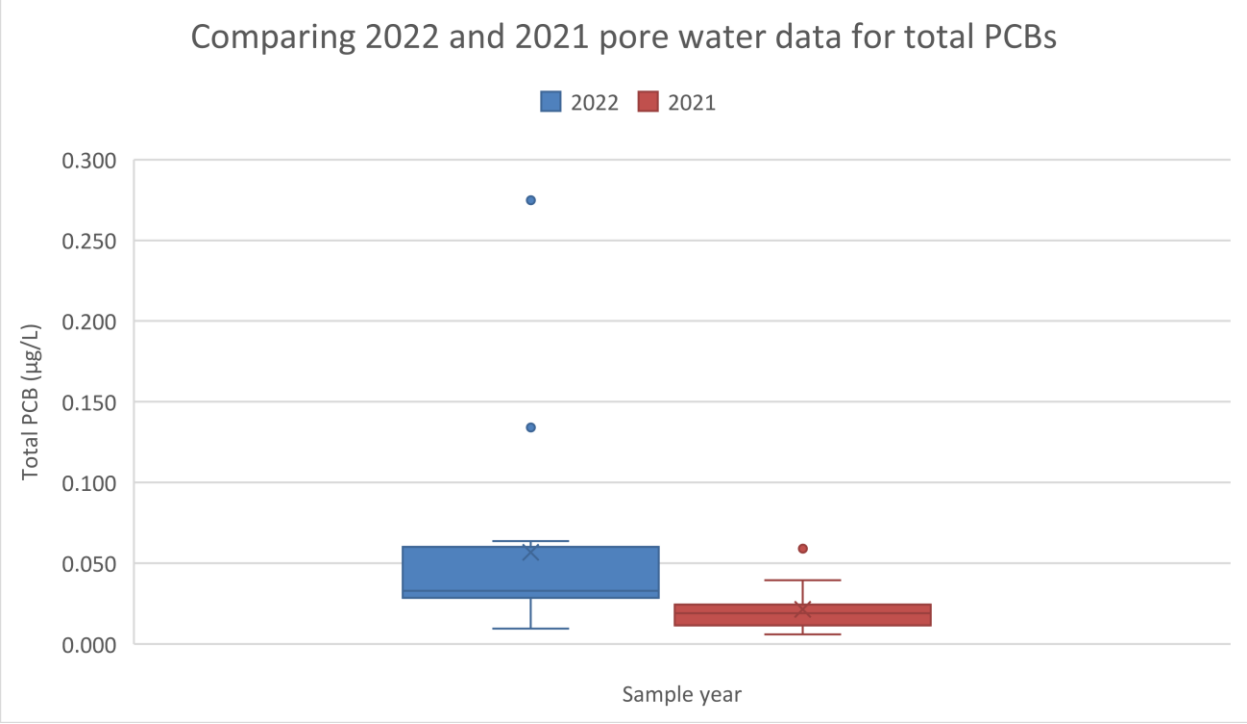

Figure 7. Box plots comparing 2022 and 2021 pore water total PCB data for Lyons Creek East. Mean is represented by "x", percentiles by lines, maximum and minimum by whiskers and potential outliers by circles.

Table 5. Five-number summary and mean for 2022 and 2021 pore water box plots.

	2022 PORE WATER	2021 PORE WATER
	tPCB (µg/L)	tPCB (µg/L)
MIN	0.010	0.006
Q1	0.029	0.012
MED	0.033	0.019
Q3	0.060	0.025
MAX	0.28	0.059
MEAN	0.057	0.021

Contamination is expected to be highest in Zones 1 and 2, based on historical use of the nearby Welland Canal By-pass. However, the highest reported concentration value from the 2022 pore water survey was 0.275 µg/L in Zone 3 at sampling site T7D. There is a potential this point is an outlier, or that analysis may have led to a false result. More data and sampling would need to be conducted to assess if this is an accurate value and/or if there is a pattern of higher concentrations in Zone 3.

Figure 8 presents a relative depiction of the PCB pore water concentrations for each zone and the general trends as pale-yellow bar symbols on a map. *Figure 6* and Figure 8 both show the general trend of 2022 pore water PCB concentration in Lyons Creek East is a decreasing pattern from the canal, with concentration decreasing toward downstream sites. The exception to this decreasing pattern is around sample site T7D, where values appear to suddenly increase in concentration at this location.

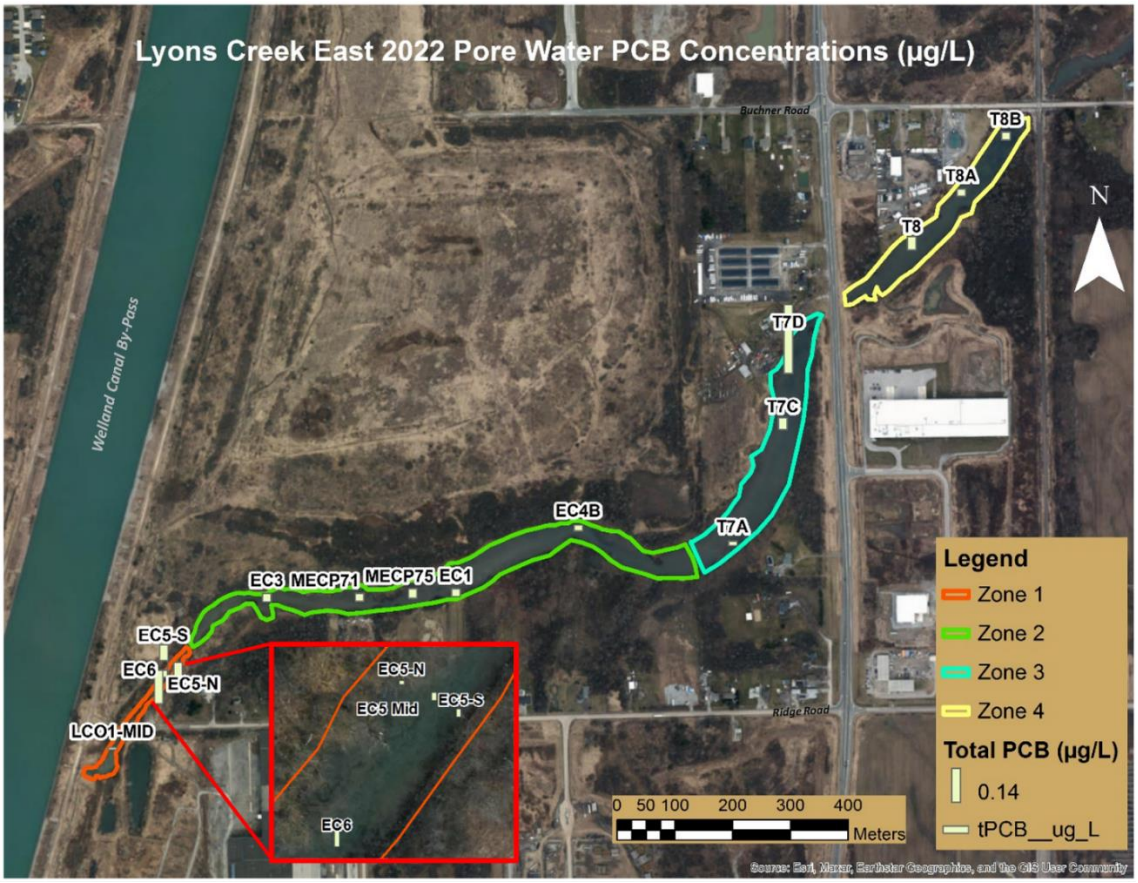

Figure 8. Distribution of pore water total PCB concentrations (µg/L) by zone.

5.1. Comparison to nearby 2022 Sediment Chemistry data

Field sampling for sediment chemistry samples in Lyons Creek East was also conducted in spring 2022. A summary of these sampling results and the general trends per zone are shown in Table 6. The Ontario Provincial Sediment Quality Guidelines for total PCBs are 0.07 ppm for lowest effect level (LEL) and 530 ppm for severe effect level (Ministry of the Environment, Conservation, and Parks, 2019). The average total PCB concentration per zone exceeded this LEL guideline value for all zones. Sediment sampling was not completed in Zone 1 due to time constraints, but sediment concentrations in Zone 1 would likely also exceed the Ontario LEL guideline value for contaminated sediment.

Table 6. Average, maximum, and minimum sediment chemistry trends for each zone. Sediment sampling was not completed in Zone 1.

Zone	Average total PCB (ppm)	Maximum total PCB (ppm)	Minimum total PCB (ppm)
1	N/A		
2	8.43	22.6	1.86
3	3.38	10.4	1.68
4	1.85	5.74	0.641
5	1.44	3.9	0.666
6	1.10	1.87	0.496
7	0.43	0.633	0.269

Figure 9 shows a visual comparison of average pore water concentration data and sediment chemistry PCB concentrations per zone. The values from Figure 9 are shown in Table 7. The average pore water sampling concentrations for Zones 2 and 3 appear to show an inverse relationship between Zones 2 and 3's average sediment chemistry values. The high pore water PCB value at T7B may also be skewing the average pore water PCB value for Zone 3. More data would need to be collected to better understand the average pore water and sediment chemistry patterns, and to conduct a more accurate comparison between pore water and sediment chemistry values.

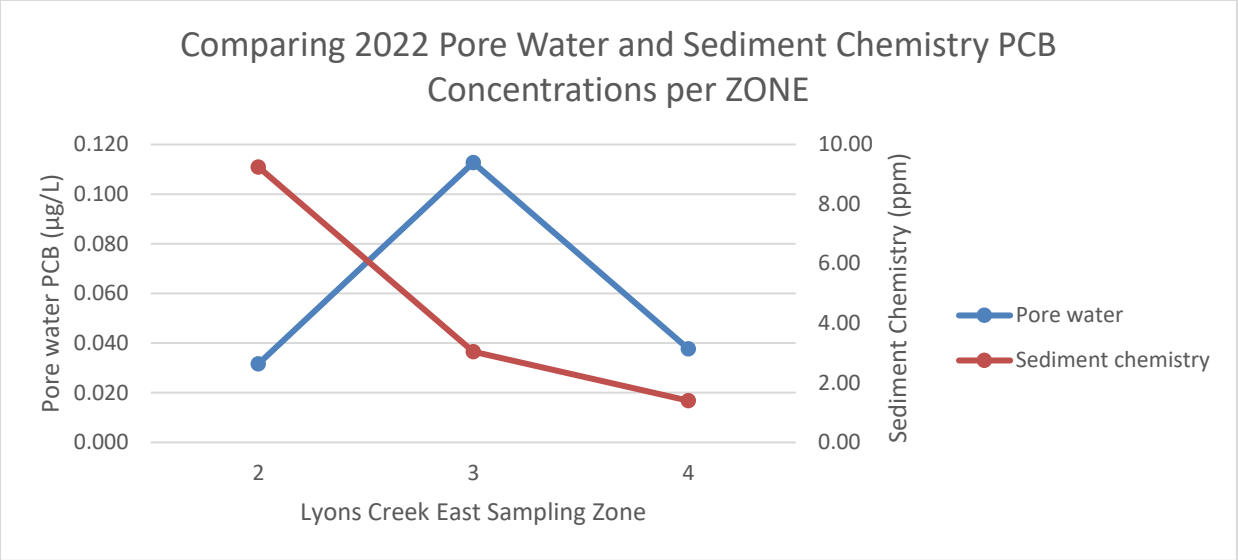

Figure 9. Comparison of general trends for PCB pore water concentrations and sediment PCB concentrations per zone, in Lyons Creek East, for samples collected in the 2022 field season.

Table 7. Average PCB concentrations in pore water and sediment chemistry from Zones 2 to 4.

Zone	Average pore water PCB (µg/L)	Average sediment chemistry (ppm)
2	0.032	9.25
3	0.113	3.04
4	0.038	1.40

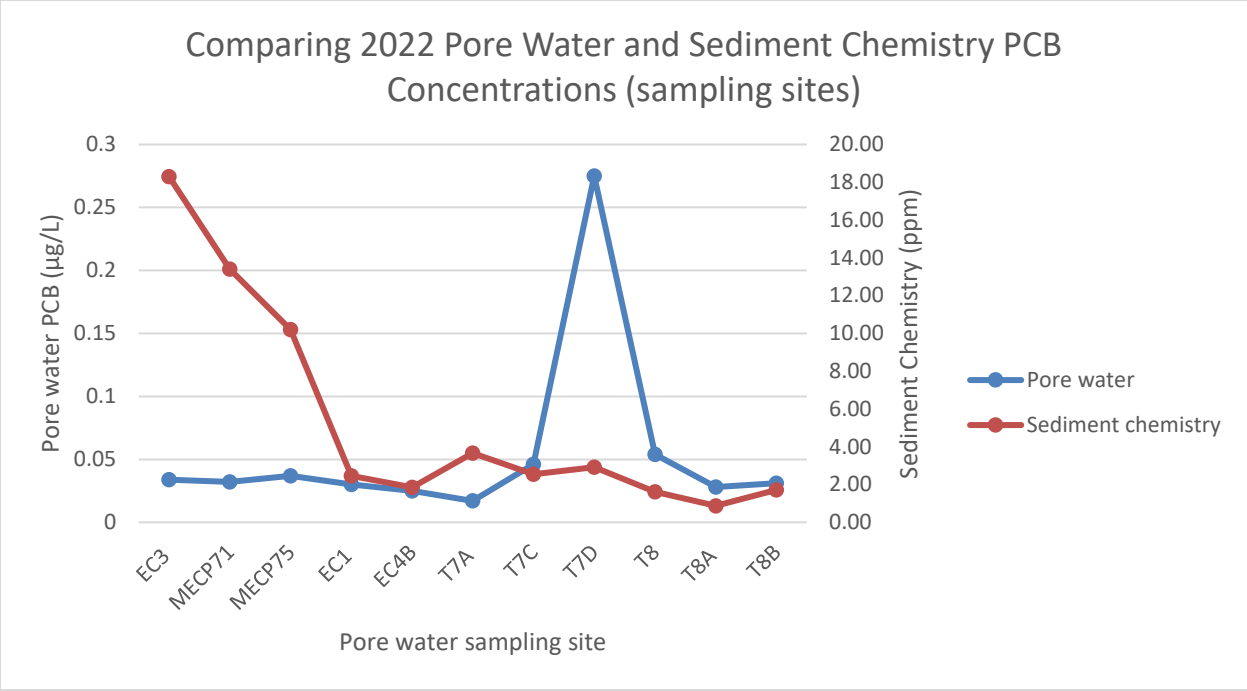

Figure 10. Comparison of general trends of PCB pore water concentrations and sediment PCB concentrations for nearby/identical sampling sites.

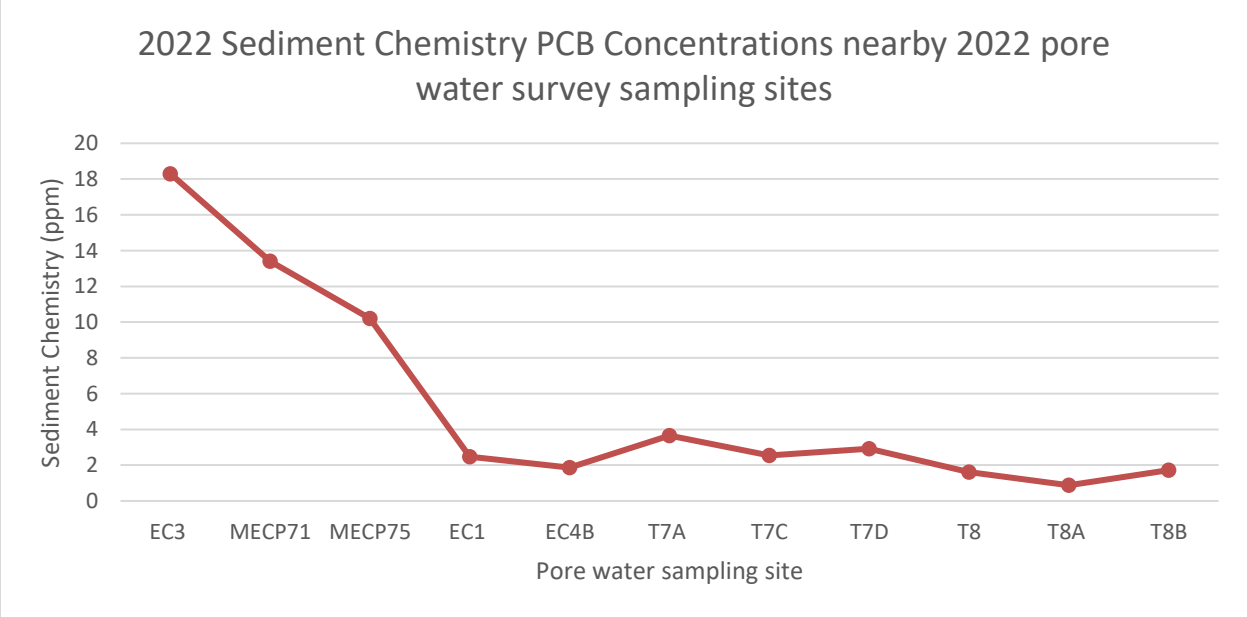

Figure 11. 2022 sediment chemistry PCB concentrations from Zones 2 to 4, based on nearby/identical 2022 pore water survey sites. *Note: sampling sites shown in the x-axis labels are from the pore water survey, to allow for an easier comparison between pore water and sediment chemistry sampling locations. Many sediment chemistry sites were identical in location to the pore water sites, but in cases where sites were in slightly different locations, sediment chemistry sites nearby pore water sites were used.*

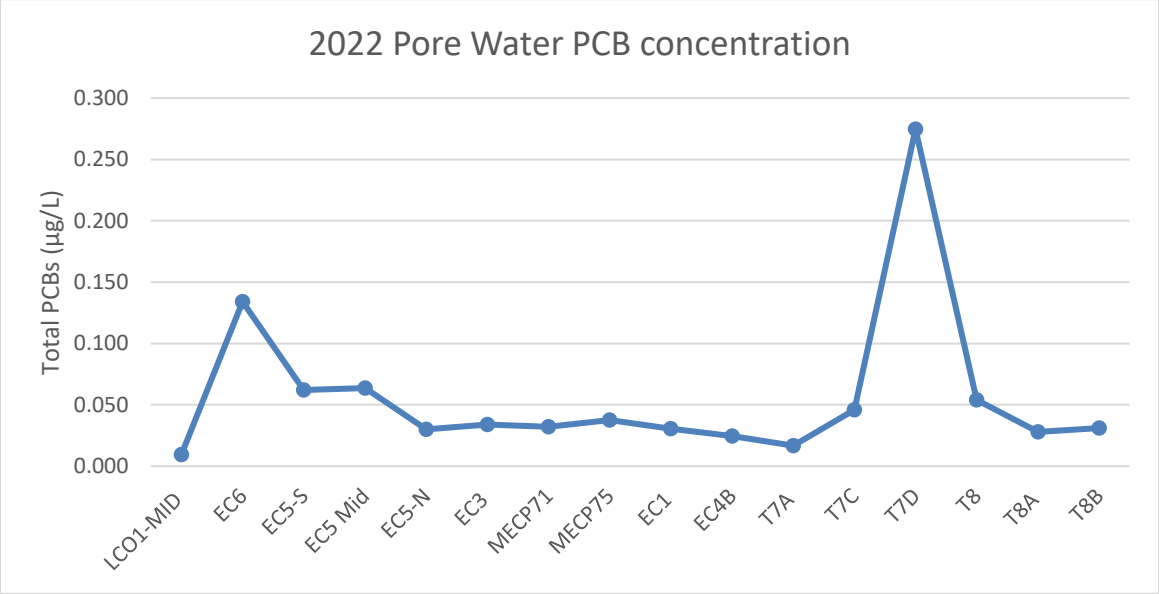

Figure 12. 2022 pore water PCB concentrations from Zones 1 to 4.

A comparison of pore water and sediment chemistry values for nearby sampling sites is shown in Figure 10. Sediment PCB concentrations were not collected for Zone 1. The sampling sites compared in Figure 10 were based on proximity of pore water and sediment chemistry sampling sites. The sampling values used to plot Figure 10 are shown in Table 8. Identical sampling sites were chosen for comparison where possible, otherwise pore water and sediment sampling sites in proximity were chosen for comparison. Sampling site maps were compared to determine which pore water sites were in proximity to sediment chemistry sites. The exact locations of all sediment sampling sites are shown in Figure 13. Sediment concentration values are shown as total PCBs in ppm, while pore water PCB concentrations are in µg/L. When multiple sediment chemistry sites were in proximity to a pore water sampling site, then an average value was used. Using average sediment chemistry values simplified comparison between pore water values to allow for a one-to-one comparison of site values. A one-to-one comparison also simplified the graphing process to create Figure 10. For instance, the pore water sampling site T7A was compared to three sediment chemistry sites and data values along the "T7A transect".

Figure 10 demonstrates a generally decreasing trend in PCB sediment concentrations from Zone 2 sampling sites (e.g., EC3), to Zone 4 (e.g., T8B) for both pore water and sediment chemistry samples. Due to differing unit values and scales, the sediment chemistry values exhibit a more dramatic decline in PCB concentrations, moving downstream. When pore water and sediment chemistry samples are

compared through separate graphs (Figure 11 and Figure 12), then a decreasing trend in concentrations from upstream (Zone 1) to downstream (Zone 4) can be seen. The distribution pattern of pore water samples are different than sediment chemistry samples in certain ways, such as the magnitude of the decreasing trend being smaller for pore water samples, and a spike in concentration values around location T7D. The T7D value may or may not be an outlier, but further data collection would be required to determine the general trends of pore water concentration along Lyons Creek East.

Table 8. 2022 Lyons Creek East pore water PCB concentration data alongside 2022 sediment PCB concentration data, based on proximal sampling sites.

Zone	2022 pore water site	2022 pore water PCB concentration (µg/L)	Comparable 2022 sediment chemistry site	Comparable 2022 sediment total PCB concentration (ppm)
1	LCO1-MID	0.01	Not sampled	
1	EC6	0.134		
1	EC5-S	0.062		
1	EC5 Mid	0.064		
1	EC5-N	0.03		
2	EC3	0.034	LC08_Mid	18.30
2	MECP71	0.032	Z2_2_Mid & STN_F_Mid	13.40
2	MECP75	0.037	T4B_Mid	10.20
2	EC1	0.03	STN_G_Mid	2.47
2	EC4B	0.025	LC12_Mid	1.86
3	T7A	0.017	T7A transect	3.66
3	T7C	0.046	LC15 transect	2.55
3	T7D	0.275	LC16 transect	2.92
4	T8	0.054	STN_I transect	1.61
4	T8A	0.028	T8A transect	0.88
4	T8B	0.031	LC18 transect	1.71

Figure 13. Zone 2 (purple outline), Zone 3 (blue outline) and Zone 4 (yellow outline) sediment chemistry sampling locations from 2022 sampling.

5.2. Comparison to nearby 2022 Amphipod tissue data

Amphipod tissue data was collected for Zones 3 and 4 in spring 2022. Tissue samples were not collected from Zones 1 and 2. Table 9 and Figure 14 show average PCB values for each zone. Note that the units are different for each set of data. Tissue data is reported in ng/g and pore water as µg/L. 2022 tissue was calculated and reported as ng/g units for total PCB toxic equivalent (TEQ), based on various PCB compounds. The sample locations for tissue and pore water locations were not identical, so data was compared by zone averages in this case.

Table 9. Comparison of average PCB tissue and pore water concentrations for Zones 3 and 4 in Lyons Creek East (Niagara River Area of Concern).

	2022 pore water PCB concentration (µg/L)	**2022 tissue PCB concentration (ng/g)**
Zone 3	0.11	0.016
Zone 4	0.038	0.021

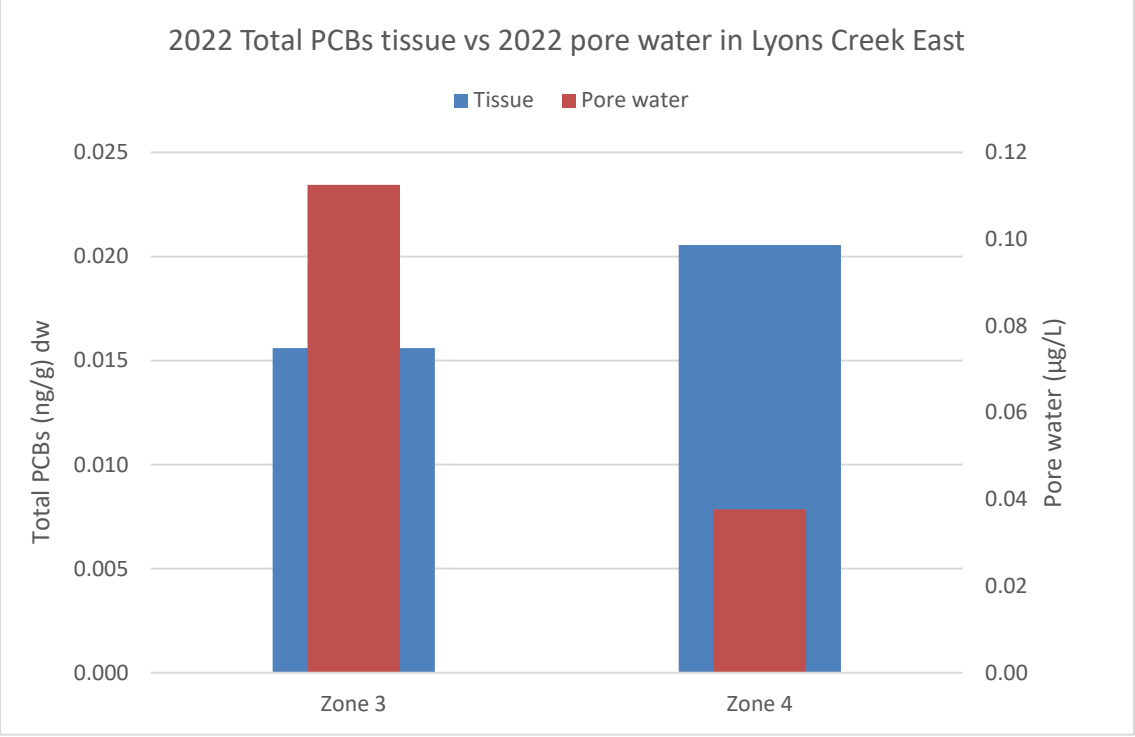

Figure 14. Comparison of average pore water PCB concentrations and PCB tissue concentrations.

2022 pore water PCB concentration data (µg/L) was also compared to the 2022 amphipod tissue data based on proximal sampling sites (Table 10). Tissue samples were obtained during the same field

season as when sediment chemistry samples were obtained. Figure 13 shows the locations of tissue sampling sites listed in Table 10. The comparison of pore water and tissue concentrations (Figure 15) shows tissue concentrations increasing and values appearing to plateau. In comparison, the pore water concentrations suddenly spike at T7A then appear to decrease toward further downstream sites. The increase in tissue concentrations from Zones 3 to 4, may align with the sudden increase in pore water concentration around site T7D. More sampling would need to be completed to confirm the concentration trends, as there is still insufficient data to confirm if the high pore water PCB concentration value at T7D is representative of the general trends at the site.

Table 10. Comparing 2022 PCB tissue and 2022 pore water concentrations for nearby sampling sites at Lyons Creek East.

Zone	Tissue sampling site	Tissue PCB concentration (ng/g)	Pore water sampling site	Pore water PCB concentration (µg/L)
3	T7A	0.0128	T7A	0.017
3	LC16	0.0184	T7D	0.275
4	LC17	0.0204	T8	0.054
4	LC18	0.0207	T8B	0.031

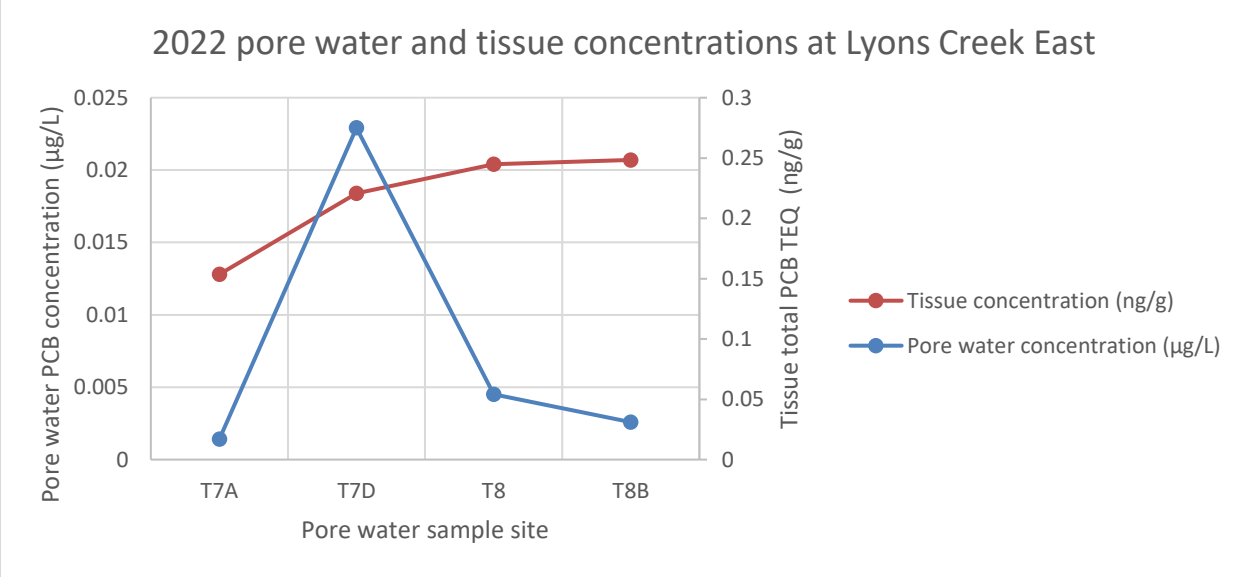

Figure 15. Comparison of PCB in sediment and tissue samples from Lyons Creek East 2022 sampling season.

5.3. Comparison to 2022 Groundwater gradient measurements

The vertical groundwater gradients below the creek were unknown up until the spring of 2022. Since the highest levels of contamination are often present below surface sediments, upwelling groundwater may be a minor transport mechanism. On June 27, 2022. ECCC investigated the likelihood of significant groundwater discharge to the creek in Zones 1 to 3. A summary report written by ECCC's Dr. Jim Roy is available and summarized below. The methods employed were:

1. Temperature probe – pushed into sediment to measure temperature at ~ 10 cm depth, in comparison to that of the overlying water, as groundwater temperatures are typically much lower than surface water in summer

2. Drive-point profiler connected to potentiomanometer – compares hydraulic head of the shallow groundwater below the creek to that of the overlying creek water to indicate the potential flow direction. The ability to withdraw water from the drive-point can also give an indication of the permeability of the sediment at the given depth. Ease of driving the profiler to depth can provide some insight into the type of sediment material (e.g., loose mud versus sand/till versus compact clay), as can inspection of material removed in the drive-point ports after pulling it out.

3. Direct observation of sediment materials at the surface and signs of groundwater seepage along the banks of the creek.

The observations made on-site suggest that the streambeds of these three zones of Lyons Creek East are dominated by thick, fine sediments (organic and fines – often soft). This is consistent with past measurements. Such surficial sediments will act to limit groundwater flux if and when the hydraulic gradient favours groundwater discharge conditions. At such times, any discharge would likely be focused in small areas of preferential flow zones – cracks, root holes, etc. and would be difficult to detect and monitor. Overall, the flux of groundwater through this type of sediment is expected to be very low.

There was evidence of groundwater seepage or discharge in some small areas along or very close to the banks of the creek (e.g., vegetation typical of seep areas; wet ground (though possibly due to higher creek water level earlier); mineral staining (red-orange – iron-oxide minerals); lower sediment temperature than overlying creek water). These observations are suggestive of shallow and local groundwater in the shallow soil zone (some visual indication of slightly courser material in the banks) discharging at the creek edge (minimal fine surficial sediments), potentially associated with restricted flow to greater depths by lower permeability material.

The fact that the hydraulic gradient measurement at GW2 despite being an area with indications of groundwater discharge and being in a location that would typically favour groundwater discharge and at higher fluxes (i.e., outside of meander bend, elevated land adjacent) suggests there isn't a strong gradient for groundwater flow into the creek, as from some deeper groundwater system in the area. These local groundwater seep areas likely see slightly higher flows when the water table is higher – after snowmelt, late autumn, and even at night compared to daytime.

The overall geologic conditions of the site combined with the few but consistent measurements made across the three zones are suggestive of minimal groundwater input. What is occurring seems restricted to minor shallow flow from courser soils seeping out at the banks. However, there could still be some area(s) with more focused groundwater discharge, which would likely be associated with some heterogeneity in the geologic conditions (e.g., an old buried stream channel with higher permeability materials).

5.4. Future Directions

Pore water sampling has been completed in 2021 and 2022 field seasons, however, different PCB analysis approaches were used. In 2021, the Aroclor approach was taken, and in 2022, congener analysis was completed. An additional round of sampling could be considered in the future, but the congener method of analysis would be recommended. The congener analysis is recommended so new data can more easily compared to 2022 data, and because the congener approach is more accurate and precise.

5.5. Sources of Error

Potential sources of error to this sampling may originate from not having sufficient repetitions of data collection, to confirm validity of the data. Due to financial and time constraints, multiple rounds of pore water sampling in a field season was not feasible. Uncertainty in PCB patterns in Lyons Creek East may also arise from comparisons of pore water data to different types of sampling data, such as tissue and sediment chemistry data, as well as 2021 pore water data. The pore water distribution patterns for 2022 were different than the other types of data to which it was compared, which may require further investigation to determine why this is the case. Another possible source of error was that comparison of pore water data to sediment chemistry and tissue was occasionally based on comparison between sites of slightly different locations. Greater accuracy when comparing sampling locations may be obtained from collecting samples from various media on the same day, and during a similar time frame.

6. Conclusions

1. 2022 pore water sampling data shows a generally decreasing trend in concentrations from Zones 1 to 4, with an exception around Zone 3, where there is a spike in concentrations around location T7D.
2. In terms of guideline value exceedances from the 2022 pore water data, there were exceedances for the Ontario Provincial Water Quality Objectives (0.001 µg/L) for all sites, there were exceedances for the provincial aquatic protection value (0.014 µg/L) at all sites except one location in Zone 1 (LCO1-MID), and only one exceedance in Zone 1 (EC6) for the final chronic value (0.54 µg/L).
3. Although a direct comparison between 2021 and 2022 cannot be completed accurately due to differing analysis approaches (2021 data were analyzed via Aroclors and 2022 analysis was based on congeners); in general, a greater concentration of values were observed from 2022 pore water data.
4. When comparing nearby sites from 2022 sediment chemistry and 2022 pore water data, similar distribution patterns were observed: a decreasing trend in concentrations from the canal toward downstream locations. An exception to this pattern is at location T7D in Zone 3 where there was a spike in pore water concentration.
5. Tissue sampling was completed for Zones 3 and 4 in 2022. Comparison of PCB tissue and pore water concentrations showed different distribution patterns. Pore water values spike at site T7D and concentrations decrease further downstream; whereas tissue concentrations show a gradual and increasing trend in concentration, where values appear to plateau in Zone 4.
6. Results of groundwater gradient testing does not suggest a strong gradient for groundwater flow into the creek is present, therefore Lyons Creek East is unlikely to receive a significant amount of groundwater input.
7. In general, additional sampling could be completed for more certainty in the results and to gain a better sense of the pore water trends at this site.

7. Acknowledgements

The Authors would like to thank Ryan Kitchen of the Niagara Peninsula Conservation Authority for assistance with the passive sampler deployment.

8. References

Fuchsman, P. C., Barber, T. R., Lawton, J. C., & Leigh, K. B. (2006). An evaluation of cause-effect relationships between polychlorinated biphenyl concentrations and sediment toxicity to benthic invertebrates. *Environmental Toxicology and Chemistry*, *25*(10), 2601-2612.

Golder Associates. (2008). Niagara River AOC Phase IV: Sediment Management Options for Lyon's Creek East and West. Welland: Niagara Peninsula Conservation Authority.

Golder Associates. (2011). Niagara River AOC: Lyons Creek East Sediment Transport Study. Welland: Niagara Peninsula Conservation Authority.

Milani, D. and L. Grapentine. 2017. Lyons Creek East (Niagara River, Ontario) Area of Concern: Benthic Conditions in 2015 and temporal trends from 2002 to 2015.

Ministry of the Environment, Conservation, and Parks. (2019). Guidelines for Identifying, Assessing and Managing Contaminated Sediments in Ontario. https://www.ontario.ca/document/guidelines-identifying-assessing-and-managing-contaminated-sediments-ontario/identification-and-assessment

Prignano, A.L., Narquis, C.T., & Hyatt, J.E. (2007). *Generating the right PCB data: determination of Aroclors versus PCB congeners*. https://clu-in.org/contaminantfocus/default.focus/sec/Polychlorinated_Biphenyls_(PCBs)/cat/Detection_and_Site_Characterization/

Pautler, Brent 2022. Laboratory Manager, SIREM. (supplier of the passive samplers)

Richman, L. (2018). Lyons Creek East Long Term Monitoring Plan to Assess Monitored Natural Recovery as an Effective Remediation Strategy: 2015 Survey. Ministry of Environment, Conservation and Parks, Technical Memorandum.

US EPA (Environmental Protection Agency). 2021. Update on the benefits of PCB congener-specific Analysis. Centre for Environmental Solutions and Emergency Response. Ecological Risk Assessment Support Centre. Cincinnati, OH. EPA/600/R-21/237.

Waid, R.S. (ed.) 1986. PCBs and Environment, Volume 1. CRC Press, Boca Rotan.

Whittemore, R.C (ed.) 2002. Handbook on Sediment Quality. Water Environment Federation, 2002.

Wischkaemper, H. K., Beliveau, A. F., & Henderson, R. W. (2013). *U.S. EPA region 4 technical services section issue paper for polychlorinated biphenyl characterization at region 4 superfund and RCRA sites*. https://www.epa.gov/risk/regional-issues-paper-pcb-characterization.

9. Appendix

This appendix includes an excerpt from the SiREM laboratory (Guelph, Ontario) Certificate of Analysis report. This report includes the original data presented in the body of the report. The full SiREM report is under a separate cover and can be obtained by contacting the author.

SiREM
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(519) 822-2265

Certificate of Analysis
Concentrations of Freely Dissolved Analytes Measured via SP3™ Passive Samplers

Customer: Environment & Climate Change Canada

SiREM Reference: Si-5444-020822

Site Sampling Date:

May 19, 2022 to June 24, 2022

Report Issued:

August 3, 2022

Introduction

This report represents the results from *in situ* deployment of SP3™ passive samplers for the Lyons Creek site in Welland ("The Site"). The data from passive samplers (16 sediment-deployed and 3 trip blanks) were analyzed to determine the freely dissolved concentrations (C_{free}) of polychlorinated biphenyl (PCB) congeners in sediment pore water. Each sampler consisted of a polyethylene (PE) sheet spiked with PCB Performance Reference Compounds (PRCs), which are used in the determination of C_{free}. The samplers were deployed on May 19, 2022 and retrieved on June 24, 2022. Details of the data analysis procedure are provided in Attachment A and the Eurofins Environment Testing America analytical reports are provided in Attachment B.

SP3™ Sample Summary

Client Sample ID	Sampler Deployment Date	Sampler Retrieval Date	Sample Type	Analysis
EC03	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
EC05 MID	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
EC05 NORTH	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
EC05 S	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
EC06	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
EC1	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
EC4B	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
LC01-MID	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
MECP71	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
MECP75	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
T7A	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
T7C	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
T7D	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
T8	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
T8A	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
T8B	5/19/2022	6/24/2022	Sample	PCB congeners & PRCs
TRIP BLANK 1	5/19/2022	6/24/2022	Trip Blank	PCB congeners & PRCs
TRIP BLANK 2	5/19/2022	6/24/2022	Trip Blank	PCB congeners & PRCs
TRIP BLANK 3	5/19/2022	6/24/2022	Trip Blank	PCB congeners & PRCs

Sampler Design, Deployment, and Chemical Analysis

This deployment used the standard SP3™ sampler design for PCB congeners and PRCs. The standard SP3™ double sampler consists of a 4 cm × 10 cm polyethylene sheet housed in a steel-

mesh envelope attached to a 8 cm × 18 cm × 0.1 cm stainless steel support plate. Sixteen (16) standard SP3™ samplers were prepared for 16 locations sampling the 0 – 10 cm depth interval. The SP3™ PE was spiked with PRCs that are not present in any aroclor mixture and are assumed to: 1) not be present in the media sampled or 2) present at concentrations so low as to be inconsequential, not affect calculations involving PRCs, and insignificant compared to the concentration of other freely-dissolved PCBs in the media sampled. The PRCs used for this project were: PCB-14, PCB-36, PCB-78, PCB-104, PCB-121, PCB-142, PCB-155, PCB-184, PCB-192, and PCB-204.[1]

The SP3™ samplers were deployed on May 19, 2022 and retrieved on June 24, 2022. The deployment time for the samplers was 36 days. Upon retrieval, the SP3™ samplers were wrapped in aluminum foil and placed in an opaque re-sealable bag. The samplers were then placed in an additional re-sealable plastic bag and packaged in a cooler with ice packs for overnight shipment to Eurofins Environment Testing America in Knoxville, TN.

During the deployment stage the 3 PRC trip blanks (labelled as TRIP BLANK 1, TRIP BLANK 2 and TRIP BLANK 3) remained in their original packaging under cold storage (approximately 4 degrees Celsius [°C]) with the exception of a period on May 19, 2022 in which they were removed from the packaging by field personnel, exposed to ambient field conditions for approximately 5 minutes, and packaged for shipment in the same manner as the deployed samplers. The trip blanks were sent to the laboratory and stored under cold storage conditions during the deployment stage. The trip blanks were processed by the laboratory along with the retrieved field samplers.

Processing of the samplers by Eurofins Environment Testing America included removal of the PE from the stainless-steel mesh envelope, wiping any visible sediment from the PE using a moist tissue, and determination of the concentrations of PCBs in PE by EPA 1668A method. The analytical report provided by Eurofins Environment Testing America is attached to this report (Attachment B).

Results

C_{free} values for PCB Congeners are reported in Table 1.

As detailed in Attachment B, concentrations of PRCs in the exposed samplers and trip blanks were used to estimate a compound-specific mass transport rate for each sampler. For example, if 100 ng/g of a PRC is present in a trip blank and 50 ng/g of the same PRC is present in a sampler following retrieval, the data indicate that the PRC is at 50% of its equilibrium concentration upon retrieval. With several different PRC depletion values, a predictive model can be constructed to estimate primary target compound fractional equilibrium, as described in greater detail in Attachment B.

The results from the *in-situ* tests deployment showed that both PCB-204, PCB-192 and PCB-121 had slightly higher detectable PRCs concentrations in 4 samplers, 2 samplers and 1 sampler, respectively, suggesting a negative PRC depletion rate, a highly unlikely phenomenon. These anomalies were likely the result of analytical chemistry error and were thus excluded from calculations for those respective samplers. Following exclusion of outliers as discussed above,

[1] PCB shorthand nomenclature used in this report follows the Chemical Abstract Service (CAS) nomenclature used by USEPA (2003): United States Environmental Protection Agency (USEPA). 2003. Table of PCB Species by Congener Number.

robust PRC correction curves were developed with the remaining PRC data points in each sampler. The overall R^2 and P value of the curves were robust, thus reducing the uncertainty involved in the PRC calculations.

TABLE 1

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-1	160	J	21	ND		17	93	J	30	300	J	21	1700		29	66	J	18
PCB-2	ND		2.7	ND		2.3	ND		4.1	ND		2.7	20	J q	4.4	11	J q	2.7
PCB-3	10	J q	2.7	ND		2.5	11	J q	4.6	16	J	2.9	110		4.7	19	J q	3.1
PCB-4	2400		39	1500		54	370		57	8200		46	12000		51	410		45
PCB-5	27	J q	11	ND		18	ND		18	57		14	210	q	18	ND		17
PCB-6	250		9.1	300		14	64		15	1000		12	2300		15	160		14
PCB-7	32	J	11	22	J q	17	ND		18	120	q	14	580		18	ND		17
PCB-8	1700		9.1	930		14	370		15	4500		11	11000		14	890		14
PCB-9	73		10	58		16	ND		16	250		13	820		16	ND		16
PCB-10	110	J q	33	82	J q	50	ND		54	520		42	960		47	ND		46
PCB-11	ND		3.4	4.3	J q	6.2	10	J q	6.3	16	J q	4.6	21	J	6.5	ND		6.4
PCB-12/13	22	J q C	3.8	26	J C q	6.9	ND	C	7.1	86	C	5.1	300	C	7.3	33	J q C	7.1
PCB-14																		
PCB-15	460		3.5	560		6.8	180		7	840		5	2600		7.1	230		7.4
PCB-16	1500		1.9	1600		3.3	380		3.4	2600		3.5	5500		5.6	550		4.2
PCB-17	1800		1.9	2500		3.2	620		3.4	3300		3.4	8100		5.6	860		4.2
PCB-18/30	3600	C	1.3	4400	C	2.2	1100	C	2.3	6400	C	2.3	13000	C	3.8	1700	C	2.8
PCB-19	930		3.5	820		5.6	480		5.9	1900		6	2300		9.4	320		7
PCB-20/28	2100	C	5.3	4800	C	11	1200	C	7.4	3600	C	7.9	11000	C	16	2200	C	9.1
PCB-21/33	900	C	5.3	1700	C	11	350	C	7.4	1300	C	7.3	4700	C	16	830	C	9.1
PCB-22	530		5	1200		10	230		6.8	910		7.3	3000		15	510		8.3
PCB-23	ND		5.8	ND		12	ND		8.1	ND		7.9	ND		18	ND		10
PCB-24	46		1.3	69	q	2.3	15	J q	2.4	120	q	2.3	290		3.9	20	J q	3
PCB-25	110		4.6	320		9.4	74		6.6	340		6.7	690		14	110		7.8
PCB-26/29	330	C	5.8	790	C	12	190	C	8.8	850	C	8.5	1900	C	18	290	C	10
PCB-27	370		1.4	490		2.3	180		2.4	610		2.4	1100		4	180		3
PCB-31	1900		4.9	3800		10	880		6.8	2900		6.7	8400		14	1500		8.2
PCB-32	1400		1.2	1900		2	650		2.2	2200		2.1	4800		3.5	650		2.7
PCB-34	6.3	J q	5.8	25		12	ND		8.1	22	q	8.5	62		18	16	J	10
PCB-35	7.8		2.7	17		7	7.9	J	4.8	14		4.3	51		9.6	8	J q	5.5
PCB-36																		
PCB-37	260		2.7	610		7	180		4.8	360		4.3	1300		9.6	350		5.5
PCB-38	ND		2.6	ND		6.6	ND		4.8	ND		4.3	ND		9.1	ND		5
PCB-39	8.2		2.6	32		7	13		4.8	15		4.3	42		9.1	7	q	5
PCB-40/41/71	1000	C	0.39	2400	C	0.53	1200	C	0.66	1200	C	0.91	2600	C	0.57	1100	C	0.94
PCB-42	540		0.42	1300		0.58	790		0.75	680		1	1500		0.62	660		1
PCB-43/73	68	C	0.32	170	C	0.44	78	C	0.58	84	C	0.78	180	C	0.47	83	C	0.8
PCB-44/47/65	1700	C	0.34	4000	C	0.49	2500	C	0.62	2200	C	0.84	4500	C	0.52	2100	C	0.85
PCB-45/51	820	C	0.7	1400	C	0.79	860	C	0.97	850	C	1.4	1600	C	0.91	560	C	1.4
PCB-46	290		0.82	450		0.92	260		1.2	280		1.7	530		1.1	190		1.8
PCB-48	420		0.39	930		0.53	290		0.66	440		0.95	1100		0.57	460		0.94
PCB-49/69	1200	C	0.32	2700	C	0.44	1400	C	0.58	1400	C	0.78	2700	C	0.47	1400	C	0.8
PCB-50/53	580	C	0.66	1000	C	0.73	630	C	0.91	600	C	1.3	1200	C	0.84	410	C	1.4
PCB-52	1800		0.34	4300		0.49	2300		0.58	2300		0.81	4000		0.52	2200		0.85
PCB-54	4.6	J q	0.27	13	J	0.38	7.4	J q	0.44	11	J	0.4	13	J q	0.92	3.6	J q	0.77
PCB-55	15		0.14	47	q	0.24	15	q	0.31	19		0.39	59		0.24	26	q	0.4
PCB-56	310		0.15	900		0.25	340		0.32	410		0.41	980		0.25	490		0.4
PCB-57	4.5		0.16	13		0.28	ND		0.35	8.7	q	0.46	15		0.27	8.6		0.46
PCB-58	1.2	J q	0.14	4.1	J q	0.24	6	J	0.3	2.7	J q	0.39	13		0.24	3	J q	0.4
PCB-59/62/75	180	C	0.29	440	C	0.4	230	C	0.5	230	C	0.71	450	C	0.44	230	C	0.71
PCB-60	210		0.16	510		0.29	170		0.38	220		0.48	530		0.29	290		0.46
PCB-61/70/74/76	1300	C	0.15	3700	C	0.27	1600	C	0.35	1400	C	0.43	3600	C	0.26	1900	C	0.43

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-63	34		0.16	100		0.29	38		0.38	46		0.46	120		0.29	60		0.46
PCB-64	730		0.29	2000		0.39	790		0.5	950		0.68	2100		0.43	1000		0.71
PCB-66	740		0.14	2100		0.25	920		0.32	940		0.41	2100		0.25	1300		0.4
PCB-67	21		0.13	57		0.23	22		0.29	29		0.39	73		0.23	32		0.36
PCB-68	2.7	J	0.16	7.6	q	0.27	7.7		0.35	8.9		0.43	8.8	q	0.27	7.8		0.43
PCB-72	5.8		0.15	16	q	0.26	17		0.35	12	q	0.43	18		0.26	13		0.43
PCB-77	31		0.11	130		0.22	76		0.32	73		0.33	130		0.19	72		0.32
PCB-78																		
PCB-79	2.9	q	0.073	11	q	0.16	12	q	0.21	7.8		0.24	10		0.15	7.7	q	0.23
PCB-80	ND		0.083	ND		0.18	ND		0.24	ND		0.28	ND		0.17	ND		0.28
PCB-81	1.5	J q	0.098	6.9	q	0.24	0.75		0.27	2.3	q	0.37	9.8		0.22	0.16	q	0.35
PCB-82	22		0.28	160		0.71	180		1	100		0.8	140		0.99	97		0.68
PCB-83/99	130	C	0.27	570	C	0.69	830	C	1	420	C	0.77	470	C	0.95	390	C	0.66
PCB-84	110		0.53	500		1.1	470		1.6	260		1.3	400		1.6	250		1.1
PCB-85/116/117	40	C	0.24	230	C	0.6	370	C	0.87	190	C	0.67	190	C	0.82	170	C	0.56
PCB-86/87/97/109/119/125	150	C	0.23	640	C	0.6	940	C	0.87	430	C	0.67	570	C	0.82	430	C	0.56
PCB-88/91	66	C	0.45	310	C	0.92	340	C	1.3	170	C	1.1	240	C	1.4	180	C	0.94
PCB-89	10	q	0.43	42	q	0.89	63		1.3	23		1	38	q	1.3	28		0.89
PCB-90/101/113	160	C	0.25	800	C	0.64	1100	C	0.94	550	C	0.71	660	C	0.87	480	C	0.6
PCB-92	34		0.31	160		0.78	240		1.1	120		0.88	130		1.1	100		0.74
PCB-93/100	5.2	q C	0.46	36	C	0.95	26	q C	1.4	26	C	1.1	28	q C	1.4	15	q C	0.97
PCB-94	3.8		0.52	10	q	1.1	17		1.5	8.9	q	1.2	11	q	1.6	11		1.1
PCB-95	200		0.46	1000		0.95	970		1.4	550		1.1	800		1.4	560		0.97
PCB-96	5.7		0.29	28		0.62	26		0.91	11	q	0.73	17	q	0.91	12		0.63
PCB-98/102	22	C	0.4	89	C	0.81	120	C	1.2	45	C q	0.95	73	C	1.2	43	q C	0.81
PCB-103	2.7		0.44	10	q	0.89	13	q	1.3	6.6	q	1	9.6		1.3	6.6	q	0.92
PCB-104																		
PCB-105	34		0.26	210		1.7	120		0.81	120		0.65	130		0.92	120		0.81
PCB-106	ND	J q	0.21	ND		1.5	ND		0.72	ND		0.59	ND		0.79	ND		0.72
PCB-107	4.4		0.2	29		1.4	20		0.7	18		0.57	19		0.78	19		0.71
PCB-108/124	3.5	C	0.23	17	C	1.6	18	C	0.77	12	C	0.63	12	C	0.85	12	C	0.78
PCB-110/115	120	C	0.18	760	C	0.46	1000	C	0.65	590	C	0.51	630	C	0.63	480	C	0.43
PCB-111	ND		0.13	ND		0.42	ND		0.62	ND		0.45	ND		0.52	ND		0.35
PCB-112	1.2	J q	0.17	5.5		0.44	8.1	q	0.63	2.5	J q	0.49	5.5	q	0.59	2.9	J q	0.41
PCB-114	2.7		0.26	14		1.5	9.2		0.77	8.4		0.68	11		0.85	8.6	q	0.74
PCB-118	68		0.27	380		1.6	310		0.77	250		0.65	260		0.88	240		0.8
PCB-120	ND		0.1	ND		0.34	ND		0.5	ND		0.36	ND		0.42	ND		0.3
PCB-121																		
PCB-122	1.4	q	0.27	12	q	1.8	11	q	0.9	8.8		0.75	7.5		1	8.4		0.92
PCB-123	2.4		0.26	11	q	1.6	14	q	0.77	8.6	q	0.71	7.8	q	0.92	8.7	q	0.84
PCB-126	ND		0.091	1.3	J	1.3	ND		0.62	0.72	J q	0.4	ND		0.54	ND		0.55
PCB-127	ND		0.14	ND		1.2	ND		0.61	ND		0.47	ND		0.59	ND		0.56
PCB-128/166	1.5	C	0.034	12	C	0.33	15	q C	0.21	14	C	0.18	7.2	C	0.16	8.5	C	0.14
PCB-129/138/160/163	9.7	C	0.038	74	C	0.36	110	C	0.22	77	C	0.19	47	C	0.17	50	C	0.16
PCB-130	0.72		0.052	5.2		0.49	7.1	q	0.32	6.1		0.27	3.6		0.24	4.5		0.21
PCB-131	0.11	J q	0.067	ND		0.52	1.3	J q	0.33	1.2	J q	0.29	ND		0.28	0.73	J q	0.25
PCB-132	3.3		0.067	41		0.51	58		0.32	32		0.29	26		0.27	28		0.24
PCB-133	0.07	J	0.042	2	J	0.4	2.4	J	0.25	ND		0.22	ND		0.19	0.95	J q	0.17
PCB-134/143	0.58	J C	0.067	8.5	C	0.52	9.3	q C	0.33	6.8	C q	0.3	5.4	C	0.28	4.5	J q C	0.25
PCB-135/151	3.6	C	0.0058	37	C	0.18	45	C	0.069	46	C	0.11	30	C	0.068	24	C	0.04
PCB-136	1.9		0.0039	17		0.13	21		0.05	16		0.077	12		0.048	7.7		0.028
PCB-137	0.72		0.044	3.5	q	0.41	9		0.26	3.4	q	0.23	2	q	0.2	2.8		0.18

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-139/140	0.19	J C	0.055	1.5	J C q	0.43	3.2	J C	0.27	1.7	J C q	0.25	1.2	J q C	0.23	1.4	J C	0.2
PCB-141	2		0.044	16		0.41	24		0.26	15		0.22	11		0.2	9.5	q	0.18
PCB-142																		
PCB-144	0.61	q	0.0061	5.7		0.18	8.1		0.069	7.1		0.11	3.9	q	0.068	3.9		0.041
PCB-145	0.018	J q	0.0036	ND		0.12	ND		0.046	ND		0.069	ND		0.042	ND		0.026
PCB-146	0.85		0.036	8.3		0.35	15		0.21	8.4		0.18	6.3		0.16	5.6	q	0.15
PCB-147/149	6.1	C	0.053	69	C	0.42	98	C	0.26	59	C	0.24	53	C	0.22	46	C	0.19
PCB-148	ND		0.0061	ND		0.18	ND		0.069	ND		0.11	ND		0.068	ND		0.04
PCB-150	ND		0.0039	ND		0.13	ND		0.049	ND		0.075	ND		0.046	ND		0.027
PCB-152	ND	J q	0.0034	ND		0.11	ND	J	0.043	ND		0.066	ND		0.04	ND		0.025
PCB-153/168	7.4	C	0.032	52	C	0.29	81	C	0.19	49	C	0.16	38	C	0.14	41	C	0.13
PCB-154	0.1	J q	0.0053	0.59	J q	0.15	0.89	J	0.062	0.94	J q	0.1	0.61	J	0.061	0.94	J q	0.036
PCB-155																		
PCB-156/157	0.78	q C	0.033	7.6	C	0.37	19	C	0.23	6.4	C	0.19	9.9	C	0.16	4	q C	0.15
PCB-158	1	q	0.03	8.4		0.28	13		0.17	9.2		0.15	6		0.13	5.3		0.12
PCB-159	0.025	J q	0.019	ND	J	0.21	ND	J q	0.14	ND	J	0.11	ND	J q	0.092	ND	J	0.084
PCB-161	ND	J q	0.03	ND		0.28	ND		0.17	ND		0.15	ND		0.13	ND		0.12
PCB-162	ND		0.021	ND		0.24	ND		0.16	ND		0.13	ND		0.11	ND		0.097
PCB-164	0.62		0.03	4.8		0.28	7		0.19	4.4	q	0.15	3.3		0.13	3		0.12
PCB-165	ND		0.034	ND		0.33	ND		0.21	ND		0.18	ND	J	0.16	ND		0.14
PCB-167	0.31		0.017	2.9		0.2	3.5		0.13	2.3		0.1	0.99	J q	0.092	1.5	q	0.084
PCB-169	ND		0.0096	ND	L	0.14	ND	L	0.093	ND		0.072	ND		0.053	ND		0.05
PCB-170	0.61		0.00051	6.7	L	0.0063	8.6	qL	0.079	6		0.0091	3.7		0.02	3.6		0.03
PCB-171/173	0.29	J q C	0.0009	2.7	J CL	0.0068	3.8	J CL	0.082	2.5	C	0.012	1.3	J C	0.025	1.4	J C	0.036
PCB-172	0.12	J q	0.00061	ND	L	0.0058	1.3	J qL	0.071	1.1		0.01	0.57	J q	0.02	ND		0.029
PCB-174	0.98		0.00077	7.2	L	0.0061	11	L	0.073	9.4		0.011	4.6		0.022	4.1		0.032
PCB-175	0.081	J	0.00082	ND	L	0.0067	ND	L	0.081	ND		0.012	ND		0.024	ND		0.035
PCB-176	0.15		0.00054	1.3	qL	0.0048	2	L	0.057	ND		0.0082	2		0.016	ND		0.024
PCB-177	0.57		0.0008	3.6	L	0.0063	7.1	L	0.076	4.8		0.011	2.6		0.023	2.5		0.033
PCB-178	0.2	q	0.0009	1.8	J qL	0.0069	2.9	qL	0.083	2.7		0.012	ND		0.025	0.83	J q	0.036
PCB-179	0.25		0.00046	3	qL	0.0041	5.4	L	0.049	3.5		0.0073	2		0.014	1.8		0.021
PCB-180/193	1.7	C	0.0005	13	CL	0.0047	26	CL	0.057	17	C	0.0082	6.1	C	0.016	7.8	C	0.023
PCB-181	ND		0.00073	ND	L	0.0058	ND	L	0.07	ND		0.01	ND		0.021	ND		0.03
PCB-182	ND		0.0007	ND	L	0.0055	ND	L	0.067	ND		0.0099	ND		0.02	ND		0.029
PCB-183/185	0.76	q C	0.00079	6.1	CL	0.0062	8.7	CL	0.075	6.9	C	0.011	4.1	C	0.022	3	C	0.033
PCB-184																		
PCB-186	ND		0.00044	ND	L	0.0038	ND	L	0.047	ND		0.0068	ND		0.013	ND		0.019
PCB-187	1.1		0.00067	7.7	L	0.0053	13	L	0.064	12		0.0094	4.5	q	0.019	4.4		0.028
PCB-188	ND		0.00064	ND	L	0.0044	ND	J qL	0.053	ND		0.0086	ND		0.016	ND		0.023
PCB-189	0.0087	J q	0.0028	0.072	JL	0.097	0.2	J qL	0.073	0.092	J q	0.038	0.13	J	0.038	0.13	J q	0.03
PCB-190	0.15		0.00044	1.6	JL	0.0042	2.1	qL	0.051	1.7		0.0073	0.72	J q	0.014	0.65	J q	0.02
PCB-191	ND		0.00046	ND	L	0.0042	ND	L	0.052	ND		0.0073	ND		0.014	ND		0.021
PCB-192																		
PCB-194	0.079		0.0019	1.3	L	0.064	1.7	L	0.054	2	L	0.033	0.32	J qL	0.016	0.38	J qL	0.034
PCB-195	0.043	J	0.0028	0.37	J qL	0.082	0.94	JL	0.063	0.65	L	0.042	0.2	J qL	0.021	0.28	JL	0.044
PCB-196	0.045	J	0.0058	0.88	J qL	0.12	0.94	J qL	0.21	1.2	L	0.054	0.4	JL	0.046	0.37	JL	0.1
PCB-197	ND		0.0035	ND	L	0.081	ND	L	0.15	ND	L	0.036	ND	qL	0.031	0.11	L	0.068
PCB-198/199	0.11	C	0.0045	2.5	CL	0.1	2.1	J q CL	0.18	3	CL	0.046	0.57	J CL	0.039	0.85	J CL	0.085
PCB-200	0.013	J q	0.0039	0.52	J qL	0.087	1	L	0.16	ND	L	0.039	ND	L	0.033	ND	L	0.072
PCB-201	0.01	J q	0.0048	0.35	J qL	0.1	0.38	JL	0.17	0.42	J qL	0.042	ND	L	0.038	ND	L	0.083
PCB-202	0.023	J	0.0037	0.21	J qL	0.087	0.54	J qL	0.15	0.85	L	0.039	ND	L	0.031	ND	L	0.07
PCB-203	0.068	q	0.0045	1.2	J qL	0.094	1.3	J qL	0.17	1.7	qL	0.042	0.34	J qL	0.038	0.44	JL	0.081

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-204																		
PCB-205	0.0043	J q	0.0016	0.12	J qL	0.053	0.11	J qL	0.044	0.053	J qL	0.028	ND	L	0.013	0.046	J qL	0.028
PCB-206	ND		0.0032	ND	L	0.22	ND	L	0.22	0.64	qL	0.15	ND	L	0.064	ND	L	0.051
PCB-207	0.0028	J	0.0019	ND	L	0.16	ND	L	0.18	0.2	L	0.098	ND	L	0.049	ND	qL	0.037
PCB-208	0.0037	J q	0.0017	ND	L	0.15	ND	L	0.18	0.21	J qL	0.091	ND	L	0.052	ND	L	0.037
PCB-209	0.00073	J	0.000093	0.078	L	0.013	0.2	L	0.012	0.061	L	0.0016	0.026	L	0.0029	0.044	qL	0.0018
Total	**34303.075**			**63725**			**30075**			**62125**			**134157**			**30486**		

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC4B			LC01-MID			MECP71			MECP75			T7A			T7C		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-1	110	J q	12	84	J	30	76	J	19	ND		17	80	J	9.2	48	J q	9.5
PCB-2	15	J	1.7	ND		5.5	ND		2.7	ND		2.3	5.2	J q	1.4	5.1	J	1.3
PCB-3	9.7	J q	1.9	ND		6.2	19	J q	2.8	ND		2.4	19	J q	1.6	29	J q	1.5
PCB-4	490		25	ND		70	750		35	270	J	45	350		28	760		20
PCB-5	ND		8.4	ND		27	ND		11	ND		16	ND		9.6	ND		6.4
PCB-6	110		6.9	ND		22	120		8.8	69		13	130		7.9	340		5.3
PCB-7	ND		8.4	ND		26	ND		11	ND		15	30	J q	9.4	73		6.4
PCB-8	620		6.7	220		22	830		8.8	340		13	790		7.6	2100		5.3
PCB-9	23	J q	7.6	ND		24	29	J	9.8	ND		14	ND		8.6	57		5.7
PCB-10	ND		24	ND		66	56	J	31	ND		47	ND		26	60	J	19
PCB-11	12	J	3	ND		11	ND	J	3.7	ND		4.9	2.3	J q	3.3	7.1	J	2.1
PCB-12/13	21	J C q	3.3	ND	C	12	30	J C	4.1	16	J C	5.4	32	J C	3.6	74	C	2.4
PCB-14																		
PCB-15	180		3.3	81		12	320	q	3.8	360		5.9	180		3.6	430		2.3
PCB-16	500		2.8	220		4	1100		2.7	720		3.3	320		2.1	1100		0.92
PCB-17	760		2.7	290	q	4	1400		2.7	1300		3.2	490		2	1800		0.91
PCB-18/30	1500	C	1.8	600	C q	2.7	3100	C	1.8	2500	C	2.2	1000	C	1.4	3100	C	0.61
PCB-19	240		4.6	170	q	6.1	430	q	4.8	310	q	5.9	270		3.4	460		1.6
PCB-20/28	1900	C	7.7	660	C	15	3000	C	9.1	3500	C	12	1400	C	7.1	4300	C	13
PCB-21/33	700	C	7.7	260	C	15	1100	C	9.1	950	C	12	710	C	7	2100	C	13
PCB-22	420		7	160		14	700		8.4	670		11	260		6.6	970		13
PCB-23	ND		8.4	ND		16	ND		9.8	ND	G	13	ND		7.8	ND	G	15
PCB-24	15	J	1.8	16	J	2.7	31	q	1.8	32	q	2.2	16	J q	1.4	46		0.62
PCB-25	110		6.8	36	q	12	120		7.7	180		11	68		6.1	220		11
PCB-26/29	270	C	8.4	99	C	16	380	C	9.8	450	C	13	140	C	7.8	490	C	15
PCB-27	130		1.9	81		2.7	240		1.9	250		2.3	140		1.5	290		0.64
PCB-31	1400		7	550		14	2400		8.4	2400		11	640		6.3	2700		12
PCB-32	590		1.7	290		2.4	1200		1.7	1100		2	420		1.2	1200		0.56
PCB-34	11	J	8.4	ND		16	14	J	9.8	15	G	13	13	J	7.8	31	G	15
PCB-35	5.1	J	4.7	ND		9.4	9.3		5	12		7.2	ND		4.1	ND	G	7.6
PCB-36																		
PCB-37	250		4.7	68	q	9.4	380		5	490		6.8	170		4.1	550	G	7.6
PCB-38	ND		4.7	ND		8.7	ND		4.6	ND		6.8	ND		4	ND		7.2
PCB-39	18		4.7	9.7		8.7	11		4.6	20		6.8	17		4	26		7.2
PCB-40/41/71	920	C	3.9	330	C	0.68	890	C	0.39	1200	C	0.27	590	C	3.8	1500	C	3.5
PCB-42	520		4.4	170		0.75	500		0.43	700		0.31	370		4.3	870		3.9
PCB-43/73	55	C q	3.3	21	J C	0.6	60	C	0.32	88	C	0.23	38	C	3.2	110	C	3
PCB-44/47/65	1700	C	3.5	550	C	0.63	1600	C	0.35	2100	C	0.25	1200	C	3.4	2800	C	3.1
PCB-45/51	510	C	5.8	310	C	1.1	560	C	0.67	640	C	0.44	400	C	5.9	830	C	5.9
PCB-46	150		7	110		1.2	190		0.79	200		0.55	120		7	260		6.9
PCB-48	370		3.9	120		0.68	350		0.39	520		0.28	210		3.8	670		3.5
PCB-49/69	1100	C	3.3	350	C	0.6	960	C	0.32	1400	C	0.23	790	C	3.2	1900	C	3
PCB-50/53	370	C	5.6	240	C	0.96	370	C	0.62	450	C	0.4	300	C	5.6	590	C	5.4
PCB-52	1700		3.5	610		0.63	1500		0.34	2100		0.25	1300		3.4	2900		3.1
PCB-54	3.3	J q	0.23	ND		0.78	6.2	J	0.35	7.4	J	0.41	2.8	J q	0.25	7.9	J	0.12
PCB-55	14		1.7	7.9	J	0.31	13	q	0.15	22	q	0.12	7.6		1.6	28		1.4
PCB-56	370		1.8	130		0.32	390		0.16	630		0.12	210		1.6	630		1.5
PCB-57	4	J	1.9	ND		0.35	4.2	J	0.17	9.2		0.14	2.3	J q	1.8	7	q	1.6
PCB-58	2.3	J q	1.6	ND		0.3	2.6	J	0.15	3.1	J q	0.12	ND		1.6	3.1	J q	1.4
PCB-59/62/75	160	C	2.9	65	C	0.53	150	C	0.29	230	C	0.21	120	C	2.9	290	C	2.6
PCB-60	230		2	74		0.37	260		0.18	350		0.14	120		1.9	370		1.7
PCB-61/70/74/76	1500	C	1.8	480	C	0.34	1600	C	0.17	2100	C	0.13	740	C	1.7	2400	C	1.6

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC4B			LC01-MID			MECP71			MECP75			T7A			T7C		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-63	43		2	12		0.36	30		0.18	63		0.14	22		1.9	70	q	1.7
PCB-64	800		2.9	240		0.52	710		0.28	1000		0.2	470		2.8	1400		2.6
PCB-66	890		1.7	270		0.31	930		0.15	1400		0.12	570		1.6	1500		1.5
PCB-67	23		1.6	4.4	J	0.29	18		0.14	37		0.11	11	q	1.5	37	q	1.4
PCB-68	3.7		1.9	0.48	q	0.35	1.8	J	0.17	9		0.13	4.6		1.8	9	q	1.6
PCB-72	9.2		1.8	ND		0.33	4.4	J	0.16	12		0.13	4.4	J q	1.7	11		1.6
PCB-77	49		1.4	18		0.27	60		0.12	110		0.11	21	q	1.3	71		1.2
PCB-78																		
PCB-79	5.6		1.1	ND		0.19	4.8		0.084	7.7		0.075	3.6	J	0.97	7.2		0.86
PCB-80	ND		1.2	ND		0.22	ND		0.096	ND		0.086	ND		1.1	ND		0.98
PCB-81	ND	J	1.5	ND		0.27	ND		0.12	5.2	q	0.11	ND		1.4	1.9		1.2
PCB-82	63		0.47	39	q	1.6	93		0.58	180		0.87	31		0.42	82		0.25
PCB-83/99	260	C	0.45	130	C	1.5	310	C	0.55	550	C	0.84	150	C	0.41	310	C	0.24
PCB-84	170		0.76	150		2.5	250		1	350		1.3	100		0.69	230		0.41
PCB-85/116/117	110	C	0.4	51	C q	1.3	140	C	0.48	250	C	0.72	57	C	0.35	140	C	0.21
PCB-86/87/97/109/119/125	280	C	0.4	150	C	1.3	370	C	0.48	610	C	0.72	150	C	0.35	350	C	0.21
PCB-88/91	110	C	0.65	81	C q	2.1	160	C	0.86	240	C	1.2	71	C	0.58	150	C	0.35
PCB-89	17		0.61	13	q	2	25		0.81	40		1.1	7.7	q	0.56	21		0.33
PCB-90/101/113	330	C	0.42	180	C	1.4	400	C	0.52	750	C	0.77	190	C	0.38	420	C	0.22
PCB-92	76		0.52	58		1.7	80		0.63	150		0.95	46		0.46	86		0.27
PCB-93/100	12	C q	0.67	ND	C	2.2	13	C	0.88	31	C	1.2	8.3	J C q	0.6	18	C	0.36
PCB-94	7		0.76	ND		2.5	ND		1	15	q	1.3	ND		0.69	8.4	q	0.41
PCB-95	380		0.65	230		2.2	390		0.88	850		1.2	230		0.6	480		0.36
PCB-96	9.8		0.43	ND		1.4	9		0.56	15		0.78	6.1	q	0.4	11		0.24
PCB-98/102	31	C	0.56	14	J C q	1.9	32	C	0.74	73	C	1	19	C	0.52	45	C	0.31
PCB-103	4.9	J	0.63	ND		2.1	ND		0.83	10	q	1.1	3.1	J q	0.56	6		0.33
PCB-104																		
PCB-105	77		0.56	26		1.1	77		0.47	180		1.3	38		0.69	110		0.48
PCB-106	1.4		0.51	ND		0.92	ND		0.35	ND		1.2	ND	q	0.62	2.1		0.43
PCB-107	13		0.49	6.1		0.89	11		0.34	25		1.2	6.3		0.61	18		0.42
PCB-108/124	7.9	C q	0.55	3.5	J C q	0.99	7.4	C	0.38	16	C	1.3	3.8	J C	0.67	10	C	0.47
PCB-110/115	330	C	0.3	200	C	0.99	430	C	0.36	910	C	0.55	170	C	0.27	400	C	0.16
PCB-111	ND		0.26	ND		0.85	ND		0.28	ND		0.49	ND		0.23	ND		0.13
PCB-112	1.1	J q	0.28	ND		0.93	3.2		0.35	6.5	q	0.52	1.6	J q	0.25	2.2	J q	0.15
PCB-114	5.6	q	0.52	ND		1.1	5.6		0.34	12	q	1.3	2.7	q	0.66	8.7		0.45
PCB-118	180		0.56	59		1	140		0.34	360		1.3	97		0.72	230		0.49
PCB-120	ND		0.2	ND		0.68	ND		0.23	ND		0.39	ND		0.18	ND		0.1
PCB-121																		
PCB-122	4.1	q	0.64	2.4	J q	1.2	5		0.45	11		1.6	3.3		0.79	6.9		0.55
PCB-123	6.1	q	0.59	2.6	J	0.99	5		0.37	15		1.6	4.4		0.69	7		0.49
PCB-126	0.69	J	0.4	ND		0.68	ND		0.29	ND		0.88	ND		0.48	0.66	J q	0.34
PCB-127	ND		0.4	ND		0.72	ND		0.25	ND		1	ND		0.48	ND		0.33
PCB-128/166	6.3	C q	0.27	2.7	J C q	0.11	3.3	C	0.18	15	C	0.25	3	C	0.2	7.1	C	0.13
PCB-129/138/160/163	47	C	0.29	21	C	0.12	22	C	0.19	85	C	0.28	20	C	0.22	43	C	0.14
PCB-130	4.3		0.4	2	J	0.17	1.3	q	0.27	7.2		0.38	1.7		0.3	3.6		0.2
PCB-131	ND		0.45	ND		0.19	0.46	J q	0.33	1.1	J q	0.41	ND		0.35	0.81	J	0.23
PCB-132	21	q	0.44	16		0.19	16		0.32	35		0.4	12		0.34	23		0.22
PCB-133	1.1	J q	0.33	ND		0.14	0.48	J	0.22	1.3	J	0.32	ND		0.25	1	J	0.16
PCB-134/143	3.2	J C q	0.45	2.1	J C q	0.19	3	C	0.33	6.2	C q	0.42	1.7	J C	0.35	3.8	q C	0.23
PCB-135/151	18	C	0.055	7.5	J C q	0.12	13	C	0.037	46	C	0.073	10	C	0.015	19	C	0.045
PCB-136	7.8		0.039	3.1	J q	0.085	4.7		0.025	16		0.053	3.6		0.01	8.1		0.032
PCB-137	2.8		0.34	1.6	J	0.14	1.4		0.23	5		0.32	1.2	J	0.26	2.4	q	0.17

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC4B			LC01-MID			MECP71			MECP75			T7A			T7C		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-139/140	1.2	J C q	0.37	ND	C	0.16	0.69	J q C	0.26	2	J C q	0.34	ND	C	0.28	1.3	J q C	0.19
PCB-141	8.2		0.34	4.6		0.14	4.8		0.22	18		0.32	4.2		0.26	8.7		0.16
PCB-142																		
PCB-144	2.6		0.055	1.5	J q	0.12	2.3		0.037	6.2	q	0.074	1.2	J q	0.015	3.1		0.046
PCB-145	ND		0.035	ND		0.076	ND		0.023	ND		0.048	ND		0.0087	ND		0.029
PCB-146	6.1		0.28	1.4	J q	0.12	2.4	q	0.18	11		0.27	3.3		0.21	6		0.14
PCB-147/149	41	C	0.36	23	C	0.15	28	C	0.26	66	C	0.33	21	C	0.28	41	C	0.18
PCB-148	ND		0.055	ND		0.12	ND		0.037	ND		0.074	ND		0.015	ND		0.046
PCB-150	0.15	J q	0.038	ND		0.082	ND		0.024	ND		0.051	0.11	J q	0.0095	ND		0.031
PCB-152	0.068	J	0.033	ND		0.072	ND		0.022	ND		0.045	ND	J q	0.0087	0.39	J	0.027
PCB-153/168	33	C	0.25	14	C	0.1	15	C	0.16	61	C	0.23	17	C	0.19	31	C	0.12
PCB-154	1.1	J	0.05	0.8	J	0.11	0.26	J q	0.033	1.5		0.066	0.48	J	0.013	0.72	J	0.041
PCB-155																		
PCB-156/157	4.3	C	0.23	9.8	C q	0.12	1.8	C	0.18	8	C	0.26	2	J C q	0.17	4.4	C	0.11
PCB-158	4.6		0.23	2	J q	0.094	2.4		0.15	11		0.22	2.4		0.17	4.6		0.11
PCB-159	0.062	J q	0.16	ND	J q	0.067	ND	J	0.1	0.2	J	0.16	0.19	J q	0.12	0.097	J q	0.079
PCB-161	0.039		0.22	ND		0.093	ND		0.15	ND		0.22	ND		0.17	0.053		0.11
PCB-162	ND		0.2	ND		0.079	ND		0.12	ND		0.19	ND		0.15	ND		0.093
PCB-164	3.5		0.23	1.1	J q	0.095	1.1	q	0.15	5	q	0.22	1.4	J	0.17	2.8	q	0.11
PCB-165	ND	J q	0.26	ND	J q	0.11	ND	J q	0.18	ND		0.25	0.076	J q	0.2	ND	J q	0.13
PCB-167	1.8		0.16	0.79	J	0.067	0.63	J	0.093	2.6	q	0.17	0.73	J q	0.12	1.3		0.079
PCB-169	ND		0.13	ND	L	0.039	ND		0.056	ND		0.12	ND		0.095	ND		0.061
PCB-170	3		0.0053	ND	L	0.049	1.3		0.0022	6.7	q	0.0076	1.4	q	0.0052	2.6		0.037
PCB-171/173	ND	C	0.0057	ND	CL	0.063	0.53	J C	0.0023	2.5	J C q	0.0091	ND	C	0.0059	1.3	J q C	0.041
PCB-172	ND		0.0048	ND	L	0.051	0.25	J q	0.0018	1.4		0.0076	ND		0.0046	0.39	J q	0.031
PCB-174	4.5		0.0052	ND	L	0.056	1.5		0.0021	8.5		0.008	2.3		0.0051	3.4		0.037
PCB-175	ND		0.0057	ND	L	0.062	ND		0.0023	ND		0.0091	ND		0.0059	0.17	J q	0.041
PCB-176	ND		0.0039	ND	L	0.042	ND		0.0015	0.94	q	0.0065	ND		0.0039	0.69		0.027
PCB-177	2.4		0.0052	ND	L	0.059	0.81		0.0021	4.1		0.0085	ND		0.0055	2		0.037
PCB-178	ND		0.0057	ND	L	0.064	0.21	J q	0.0023	2	q	0.0091	ND		0.0059	0.81		0.041
PCB-179	1.6		0.0033	ND	L	0.036	0.85		0.0013	3.2		0.0055	0.095	J	0.0034	1.3		0.023
PCB-180/193	6.6	C	0.0037	4.2	C qL	0.04	2.7	C	0.0014	17	C	0.0062	3.3	C q	0.0036	6	C	0.026
PCB-181	ND		0.0048	ND	L	0.053	ND		0.002	ND		0.0075	ND		0.0051	ND		0.034
PCB-182	ND		0.0046	ND	L	0.051	ND		0.0019	ND		0.0075	ND		0.0047	ND		0.031
PCB-183/185	2.7	C q	0.0052	ND	CL	0.058	0.97	C	0.0021	6.9	C	0.008	1.4	J C	0.0055	2.5	C	0.037
PCB-184																		
PCB-186	ND		0.0032	ND	L	0.035	ND		0.0012	ND		0.005	ND		0.0032	ND		0.022
PCB-187	4.1		0.0044	1.3	J qL	0.049	1.6		0.0018	11		0.0069	2.1		0.0047	3.7		0.031
PCB-188	0.02	J q	0.0035	ND	L	0.043	ND		0.0013	ND		0.006	ND		0.0035	ND		0.024
PCB-189	0.032	J q	0.037	ND	L	0.078	0.021	J q	0.015	0.22	J qL	0.043	ND		0.035	0.091	J	0.016
PCB-190	0.84	J	0.0034	ND	L	0.036	0.25	J	0.0013	1.4		0.0057	ND		0.0033	0.44	J q	0.023
PCB-191	ND		0.0034	ND	L	0.037	ND		0.0013	ND		0.0057	ND		0.0036	ND		0.024
PCB-192																		
PCB-194	0.59	L	0.0095	0.18	J qL	0.036	0.14	J q	0.0067	1.3	L	0.02	0.24	J qL	0.016	0.32	q	0.013
PCB-195	0.062	J qL	0.012	ND	L	0.046	0.055	J q	0.0098	0.44	JL	0.024	0.13	J	0.02	0.23	J	0.017
PCB-196	0.27	JL	0.035	ND	L	0.2	0.19		0.014	0.71	J qL	0.095	ND		0.033	0.24	J	0.026
PCB-197	ND	qL	0.024	1.1	L	0.13	ND	q	0.0091	ND	L	0.066	ND		0.023	ND		0.016
PCB-198/199	0.49	J CL	0.031	ND	CL	0.17	0.26	J q C	0.012	2.2	CL	0.082	ND	C	0.028	0.51	J C	0.021
PCB-200	ND	L	0.027	ND	L	0.14	ND		0.0097	0.56	qL	0.072	ND		0.025	0.11	J q	0.018
PCB-201	0.06	J qL	0.03	ND	L	0.17	0.023	J q	0.011	ND	L	0.078	0.039	J q	0.028	ND		0.021
PCB-202	0.037	J qL	0.024	ND	L	0.14	0.055	J q	0.0097	ND	L	0.069	0.058	J q	0.023	ND		0.018
PCB-203	0.35	J qL	0.03	ND	L	0.16	0.14	J q	0.011	1.1	qL	0.078	ND		0.028	0.23	J	0.02

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	EC4B			LC01-MID			MECP71			MECP75			T7A			T7C		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-204																		
PCB-205	0.029	J qL	0.0078	ND	L	0.03	0.019	J	0.0058	0.087	JL	0.016	0.027	J qL	0.013	0.028	J q	0.011
PCB-206	ND	L	0.049	ND	L	0.15	ND		0.032	0.17	J qL	0.11	ND	L	0.054	ND	L	0.027
PCB-207	0.022	L	0.034	ND	L	0.099	ND		0.027	ND	L	0.09	0.041	L	0.037	ND	L	0.019
PCB-208	ND	L	0.033	ND	L	0.094	ND		0.033	ND	L	0.096	ND	L	0.035	0.022	J qL	0.019
PCB-209	ND	J qL	0.0015	0.082	qL	0.0049	0.0043	q	0.00059	0.1	L	0.0072	ND	qL	0.00051	0.022	qL	0.00059
Total	**24646**			**9525**			**32103**			**37480**			**16835**			**46037**		

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	T7D			T8			T8A			T8B		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-1	740		21	480		17	ND		9.2	ND		16
PCB-2	ND		2.8	26	J	2.3	ND		1.3	9.2	J q	2.2
PCB-3	61		3	49	J q	2.6	8.9	J	1.5	14	J q	2.5
PCB-4	20000		26	2400		26	220	J	20	350		23
PCB-5	150	q	8.6	ND		9.1	ND		6.7	ND		7.9
PCB-6	3300		6.9	440		7.3	120		5.5	130		6.5
PCB-7	430		8.3	93		8.8	29	J q	6.4	ND		7.9
PCB-8	20000		6.9	2400		7.3	640		5.2	790		6.5
PCB-9	790		7.6	100		8.1	ND		5.9	24	J q	7.2
PCB-10	830		24	170		25	ND		19	ND		22
PCB-11	26	J q	3	22	J	3.1	13	J	2.3	12	J	2.7
PCB-12/13	360	C	3.2	97	C	3.6	31	J C q	2.5	34	J q C	3
PCB-14												
PCB-15	3300		3.1	510		3.5	260		2.5	260		3.1
PCB-16	13000		2.7	1400		2.7	500		2.4	640		2.3
PCB-17	17000		2.6	2000		2.7	850		2.2	1000		2.3
PCB-18/30	31000	C	1.8	3600	C	1.9	1500	C	1.5	1900	C	1.5
PCB-19	5000		4.6	540		4.5	200		3.9	240		4
PCB-20/28	24000	C G	33	4700	C	17	2700	C	17	3100	C	12
PCB-21/33	13000	C G	32	2000	C	17	990	C	16	1100	C	12
PCB-22	7300	G	30	1100		15	530		15	640		11
PCB-23	ND	G	35	ND	G	18	ND	G	18	ND		13
PCB-24	410		1.8	51		1.9	19	J q	1.5	30		1.5
PCB-25	1200	G	28	220		14	110		14	140		11
PCB-26/29	3800	C G	36	590	C	18	280	C	18	340	C	13
PCB-27	2200		1.9	320		1.9	150		1.7	190		1.5
PCB-31	22000	G	29	3200		15	1600		15	1900		11
PCB-32	9600		1.7	1200		1.6	510		1.4	640		1.4
PCB-34	110	q G	36	32	G	18	18	q G	18	23		13
PCB-35	93	G	19	14	G	9.9	ND		9.2	8.6		7.1
PCB-36		G										
PCB-37	2700	G	18	650	G	9.5	370		9.2	390		7.1
PCB-38	ND	G	18	ND	G	9.5	ND		8.8	ND		6.7
PCB-39	100	G	18	28	G	9.5	21		9.2	23		7.1
PCB-40/41/71	5800	C	6.1	1700	C	5.6	970	C	3.9	1000	C	5.5
PCB-42	2800		6.9	970		6.5	610		4.3	620		6.2
PCB-43/73	400	C	5.4	120	C	4.8	85	C	3.2	87	C	4.8
PCB-44/47/65	9400	C	5.8	3100	C	5.2	1900	C	3.4	2100	C	5.1
PCB-45/51	3800	C	10	890	C	9.5	500	C	5.9	550	C	8.8
PCB-46	1300	G	12	270		11	140		7.5	170		11
PCB-48	2700		6.5	770		6.1	460		3.9	480		5.5
PCB-49/69	5800	C	5.4	2100	C	4.8	1400	C	3.2	1400	C	4.8
PCB-50/53	2700	C	9.2	590	C	8.3	360	C	5.4	380	C	8.2
PCB-52	9400		5.8	3100		5.2	2000		3.4	2200		5.1
PCB-54	40		0.27	5.8	J q	0.31	3.3	J q	0.36	2.8	J q	0.31
PCB-55	100		2.5	43		2.5	11		1.5	22	q	2.3
PCB-56	2000		2.7	760		2.6	460		1.6	500		2.4
PCB-57	23	q	3	10		2.8	ND		1.8	ND		2.5
PCB-58	11	q	2.5	5.1	J	2.4	2.5	J q	1.5	3.5	J q	2.3
PCB-59/62/75	970	C	4.7	310	C	4.4	210	C	2.9	220	C	4.4
PCB-60	1300		3.2	480		2.8	270		1.9	280		2.8
PCB-61/70/74/76	7700	C	2.7	2800	C	2.7	1800	C	1.7	1800	C	2.5

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	T7D			T8			T8A			T8B		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-63	230		3	85		2.8	59		1.8	63		2.8
PCB-64	4700		4.7	1600		4.4	1000		2.8	1100		4
PCB-66	4000		2.7	1800		2.5	1200		1.6	1200		2.4
PCB-67	130		2.5	45		2.4	27		1.5	30		2.2
PCB-68	17		3	9.1		2.8	5.3		1.7	10		2.5
PCB-72	30		2.7	12	q	2.7	9.3		1.7	11		2.5
PCB-77	200		2	96		2	59		1.3	59		1.9
PCB-78												
PCB-79	19		1.6	8.4		1.5	7.1	q	0.94	6.3		1.4
PCB-80	ND		1.7	ND		1.7	ND		1.1	ND		1.6
PCB-81	11		2.2	2.3		2.2	1.3		1.3	9.7		2.1
PCB-82	170		0.34	97		0.57	67		0.45	66		0.42
PCB-83/99	560	C	0.34	370	C	0.55	280	C	0.42	270	C	0.4
PCB-84	540		0.56	240		0.92	160		0.72	160		0.69
PCB-85/116/117	240	C	0.28	160	C	0.47	110	C	0.36	110	C	0.35
PCB-86/87/97/109/119/125	690	C	0.28	400	C	0.47	280	C	0.36	270	C	0.35
PCB-88/91	300	C	0.49	170	C	0.79	120	C	0.63	120	C	0.59
PCB-89	51		0.47	26		0.74	16		0.59	16		0.56
PCB-90/101/113	760	C	0.31	470	C	0.5	360	C	0.39	350	C	0.37
PCB-92	150		0.38	100		0.62	74		0.49	71		0.46
PCB-93/100	34	C q	0.51	18	C q	0.81	16	C	0.63	15	C	0.61
PCB-94	19		0.56	12		0.92	5.9		0.72	6.5	q	0.69
PCB-95	1100		0.49	520		0.81	370		0.63	360		0.61
PCB-96	34		0.32	11	q	0.52	7.9	q	0.41	7.2	q	0.4
PCB-98/102	98	C	0.43	48	C	0.7	28	C q	0.54	29	q C	0.52
PCB-103	11	q	0.47	6.3	q	0.76	5.6		0.59	7.3		0.57
PCB-104												
PCB-105	220		0.62	140		0.76	94		0.56	91		0.66
PCB-106	2.1		0.56	1.9		0.69	1.2		0.52	3		0.6
PCB-107	31		0.55	21		0.67	16		0.5	16		0.58
PCB-108/124	17	C	0.6	12	C	0.73	8.2	C	0.56	8	C	0.65
PCB-110/115	780	C	0.21	450	C	0.35	320	C	0.28	330	C	0.26
PCB-111	ND		0.18	ND		0.31	ND		0.23	ND		0.22
PCB-112	ND		0.21	ND		0.33	ND		0.26	2	J q	0.26
PCB-114	18		0.57	10	q	0.72	8.4		0.54	8.4		0.61
PCB-118	430		0.6	280		0.76	210		0.58	200		0.67
PCB-120	ND		0.15	ND		0.24	ND		0.19	ND		0.19
PCB-121												
PCB-122	11	q	0.71	9.4		0.87	6.5		0.65	6.8		0.76
PCB-123	14		0.64	8.9	q	0.81	6.4		0.59	4.8	q	0.68
PCB-126	0.9	J q	0.42	1.1	J	0.51	0.6	J q	0.38	ND		0.45
PCB-127	ND		0.42	ND		0.53	ND		0.39	ND		0.45
PCB-128/166	9.8	C	0.17	7.5	C	0.29	6	C	0.21	5.8	C	0.18
PCB-129/138/160/163	62	C	0.18	51	C	0.31	39	C	0.22	39	C	0.19
PCB-130	5		0.25	4		0.44	3.3		0.3	3.7		0.26
PCB-131	ND		0.29	ND		0.5	0.71	J	0.35	ND		0.3
PCB-132	33		0.28	26		0.48	18		0.34	19		0.29
PCB-133	0.92	J q	0.21	1.1	J q	0.35	0.84	J q	0.25	0.7	J	0.22
PCB-134/143	6.3	C q	0.29	5.5	C	0.5	3.5	J C	0.35	3.6	C	0.31
PCB-135/151	30	C	0.026	22	C	0.1	17	C	0.098	16	C	0.019
PCB-136	13		0.018	8.6		0.07	4.9	q	0.068	6.1		0.013
PCB-137	3.2	q	0.22	3.8		0.37	2.2	q	0.26	2.8		0.22

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	T7D			T8			T8A			T8B		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-139/140	1.8	J C q	0.24	1.8	J C	0.4	1.1	J C q	0.29	1.1	J C	0.24
PCB-141	12		0.21	11		0.37	8.4		0.25	7.6		0.22
PCB-142												
PCB-144	4.6		0.026	4		0.1	2.7	q	0.098	3		0.019
PCB-145	ND		0.016	ND		0.063	ND		0.061	ND		0.012
PCB-146	8		0.18	7		0.3	4.9	q	0.21	5.6		0.18
PCB-147/149	62	C	0.23	47	C	0.39	39	C	0.28	35	C	0.24
PCB-148	ND		0.026	ND		0.1	ND		0.098	ND		0.019
PCB-150	ND		0.018	ND		0.068	0.07	J q	0.066	0.65	J	0.013
PCB-152	0.042	J q	0.015	ND	J q	0.061	0.033	J q	0.059	0.19	J	0.012
PCB-153/168	42	C	0.15	35	C	0.26	29	C	0.19	28	C	0.16
PCB-154	1.2		0.024	0.3	J q	0.089	0.23	J q	0.09	0.62	J q	0.017
PCB-155												
PCB-156/157	5.4	C q	0.14	6	C	0.25	4.2	C	0.17	3.8	C	0.15
PCB-158	6.8		0.14	5.4		0.24	4.2		0.17	4.4		0.15
PCB-159	0.089	J	0.099	0.2	J	0.17	0.14	J	0.12	ND	J q	0.1
PCB-161	ND		0.14	ND		0.24	ND		0.17	ND		0.15
PCB-162	ND		0.12	ND		0.21	0.34	J q	0.14	ND		0.12
PCB-164	4		0.14	3.1		0.24	2.7		0.17	2.6		0.15
PCB-165	ND	J q	0.17	ND	J	0.29	ND	J q	0.2	ND		0.17
PCB-167	1.8		0.099	1.5	q	0.17	1.1	J q	0.12	1.2		0.11
PCB-169	ND		0.076	ND		0.13	ND		0.094	ND		0.078
PCB-170	4		0.0018	3.1		0.021	2.8		0.037	2.7		0.0018
PCB-171/173	1.8	C	0.002	1.8	J C	0.024	1.8	C	0.041	ND	C	0.002
PCB-172	ND		0.0016	ND		0.019	0.48	J	0.034	ND		0.0016
PCB-174	4.2	q	0.0018	4.4		0.021	3.2		0.037	3.4		0.0018
PCB-175	ND		0.002	ND		0.024	ND		0.041	ND		0.002
PCB-176	0.55	q	0.0013	0.61	q	0.016	ND		0.028	0.34	J q	0.0013
PCB-177	2.5		0.0018	2.4		0.022	2		0.041	2		0.0019
PCB-178	0.87	q	0.002	ND		0.024	ND		0.044	ND		0.002
PCB-179	2		0.0011	1.4	q	0.014	1.1	q	0.024	1.1		0.0011
PCB-180/193	7.5	C	0.0013	7.1	C q	0.015	5.6	C	0.027	5.7	C	0.0013
PCB-181	ND		0.0017	ND		0.02	ND		0.034	ND		0.0017
PCB-182	ND		0.0016	ND		0.019	ND		0.034	ND		0.0016
PCB-183/185	3.1	C	0.0018	2.9	C	0.022	2.1	C q	0.037	2.1	C	0.0018
PCB-184												
PCB-186	ND		0.0011	ND		0.013	ND		0.023	ND		0.0011
PCB-187	4.9		0.0015	4.4		0.019	4.1		0.033	3.5		0.0015
PCB-188	ND	J q	0.0012	ND		0.015	0.016	J q	0.026	0.1	J	0.0012
PCB-189	0.1	J q	0.024	0.012	J q	0.026	0.067	J q	0.021	0.093	J q	0.017
PCB-190	0.87		0.0011	0.75	J q	0.014	0.65	J	0.024	ND		0.0011
PCB-191	ND		0.0012	ND		0.014	ND		0.025	ND		0.0012
PCB-192												
PCB-194	0.58		0.014	0.44	qL	0.021	0.44		0.011	0.46		0.0097
PCB-195	0.21	J q	0.018	0.22	J qL	0.026	0.19	J q	0.015	0.14	J q	0.012
PCB-196	0.35		0.056	0.39	JL	0.074	0.21	J q	0.022	0.21	J q	0.043
PCB-197	ND	q	0.038	0.31	L	0.051	0.0084	q	0.014	ND	q	0.029
PCB-198/199	0.7	C	0.046	0.72	J CL	0.064	0.52	J C	0.018	0.35	J q C	0.037
PCB-200	ND		0.041	ND	L	0.055	ND		0.016	ND		0.032
PCB-201	0.13	J	0.046	0.11	J qL	0.061	0.057	J q	0.018	0.08	J	0.036
PCB-202	0.1	J q	0.039	0.14	JL	0.053	0.11	J q	0.016	0.088	J q	0.03
PCB-203	0.33	J	0.046	0.26	J qL	0.061	0.26	J	0.018	0.21	J	0.036

Table 1. Concentration of Freely-Dissolved (Cfree) Analytes.

ECCC Lyon's Creek ON

Client ID	T7D			T8			T8A			T8B		
Analyte	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)	Result (pg/L)	Qualifier	MDL (pg/L)
PCB-204												
PCB-205	0.044	J	0.011	0.04	JL	0.017	0.026	J q	0.0092	0.037	J	0.008
PCB-206	ND	L	0.034	0.13	J qL	0.046	ND	L	0.044	ND	L	0.032
PCB-207	0.012	qL	0.023	ND	qL	0.03	ND	qL	0.03	ND	L	0.021
PCB-208	ND	L	0.023	ND	L	0.028	ND	L	0.028	ND	L	0.021
PCB-209	0.043	L	0.0007	ND	qL	0.0016	0.005	qL	0.00097	0.031	L	0.00088
Total	**274710**			**53980**			**28011**			**30973**		

Notes: ND: Non Detect
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ration does not meet qualitative identification criteria and indicates a possible interference.

C: The compound co-eluted with other compounds.
L: Percent to steady state less than 10%.
G: The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference

ATTACHMENT A:

DATA ANALYSIS METHODS

Attachment A:

Data Analysis Methods
Concentrations of Freely Dissolved Analytes
Measured via SP3™ Passive Samplers

The concentration of analyte aroclors (Table A1) in PE obtained from the information provided in the analytical report (Attachment B) are used in a multi-step data process to calculate C_{free} analytes as described below.

Step 1:

The concentrations of the PRCs in PE [PE_t] were used to calculate the elimination rate (k_e) values for the PRCs in each deployed sampler using the following equation (Lohmann, 2012):

$$PRC\ k_e = \ln\left(\frac{[PE_{t=0}]}{[PE_{t=final}]}\right) \div t_{final}$$

where:

$PE_{t=0}$	= the average concentration of the PRC present in the PE at the beginning of the deployment (obtained from an average measurement of the PRC control blanks)
$PE_{t=final}$	= the concentration of the PRC in the PE after the deployment (obtained from each deployed PE sampler)
t_{final}	= the deployment time (in days)
k_e	= the elimination rate (in days^{-1})

PRC k_e values for the PRCs in each sampler are shown in Table A2. The values are also expressed as a percentage of steady state (concentration at equilibrium). Several PRC k_e values were not calculated and were treated as outliers because $PE_{t=final}$ values were equal to or greater than $PE_{t=0}$ values.

Step 2:

The second step was to estimate k_e values for the non-PRC primary analytes (non-PRC PCB) in each of the deployed samplers. This was accomplished by developing a linear regression model using PRC k_e values (dependent variable, from Table A2) and PE-water partition coefficients (K_{PE}) for each PRC PCB (independent variable, Smedes et al., 2009). Note that regression models were specific to each sampler (i.e. not global to the whole deployment) as local geologic and hydrodynamic conditions can vary greatly within a site.

Values were $\log_{10}$-transformed per Tomaszewski and Luthy (2008). By entering the analyte-specific K_{PE} into the linear regression model developed for each sampler, k_e values for each of the primary analytes for each sampler were calculated.

Step 3:

Concentrations of some non-PRC PCBs (Table A1-a and A1-b) in PE were corrected for trace levels of non-PRC PCBs present in the PRC control blanks (due to trace levels present in the PRC spiking solutions). Using the sample specific k_e values, the expected amount of these trace primary analyte PCBs present in the sample at the end of deployment (*Trace PCB* $_{t = final}$) was calculated via the following equation:

$$[Trace\ PCB_{t=final}] = \frac{[Trace\ PCB_{t=0}]}{e^{k_e \times t_{final}}}$$

where:

Trace PCB$_{t = final}$	= the concentration of trace PCBs remaining in the sample at the end of the deployment
Trace PCB$_{t = 0}$	= the average concentration of the trace PCB in the PE at the beginning of the deployment (obtained from an average measurement of the trace PCBs in the PRC control blanks)
k_e	= the elimination rate value predicted by the sampler-specific regression model (in days^{-1})
t_{final}	= the deployment time (in days)

Concentrations of *Trace PCB* $_{t = final}$ values were then subtracted from the measured concentrations of non-PRC PCBs and pesticides in PE (Table A1).

Step 4:

This step describes the calculation of sampling rate correction factors (*CF*s) for each primary analyte in each sampler. The following equation is used, as adapted from Lohmann (2012):

$$CF = \frac{1}{1 - e^{-k_e \times t_{final}}}$$

where:

k_e = the elimination rate value predicted by the sampler-specific regression model (in days^{-1})

t_{final} = the deployment time (in days).

Step 5:

The concentration of primary analyte in the PE of each sampler (obtained from Table A1) were multiplied by the *CF* values to calculate the steady-state concentration of primary analytes.

Step 6:

In the final step, the steady-state concentrations are divided by K_{PE} values (Smedes et al. 2009) to obtain the concentrations of C_{free} for the primary analytes. These are reported in Table 1. C_{free} Method Detection Limits (MDLs) were calculated in the approach described above using the estimated MDL concentration in PE, as reported the analytical laboratory and shown in Table A1.

For samples in which the percentage of steady state was indicated to be less than 10% for a primary analyte, C_{free} was calculated and given an “L” qualifier in Table 1. Estimates associated with L-qualified values should be evaluated with caution due to the higher level of uncertainty associated with high CF values (i.e., higher than 10).

References Cited

Lohmann, R. 2012. Critical review of low-density polyethylene's partitioning and diffusion coefficients for trace organic contaminants and implications for its use as a passive sampler. Environ. Sci. Technol.: 46:606-618.

Smedes, P., Geerstma, R. W., van der Zande, T., and Booij, K. 2009. Polymer-water partition coefficients of hydrophobic compounds for passive sampling: Application of cosolvent models for validation. Environ. Sci. Technol. 43:7047-7054.

Tomaszewski, J.E., and Luthy, R.G. 2008. Field deployment of polyethylene devices to measure PCB concentrations in pore water of contaminated sediment. Environ. Sci. Technol. 42:6086-6091.

United States Environmental Protection Agency (USEPA). 2003. Table of PCB Species by Congener Number.

TABLE A1

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-1	Mono		0.83	J	0.11	ND		0.09	0.49	J	0.16	1.60	J	0.11	9.00		0.15	0.34	J	0.09
PCB-2	Mono		ND		0.11	ND		0.09	ND		0.17	ND		0.11	0.68	J q	0.15	0.39	J q	0.10
PCB-3	Mono		0.42	J q	0.11	ND		0.10	0.46	J q	0.19	0.68	J	0.12	3.80		0.16	0.68	J q	0.11
PCB-4	Di		38.00		0.61	24.00		0.85	5.80		0.90	130.00		0.73	170.00		0.75	6.10		0.67
PCB-5	Di		1.20	J q	0.50	ND		0.75	ND		0.80	2.50		0.63	7.80	q	0.65	ND		0.65
PCB-6	Di		11.00		0.40	13.00		0.61	2.80		0.66	45.00		0.51	82.00		0.53	6.00		0.53
PCB-7	Di		1.40	J	0.48	0.94	J q	0.73	ND		0.79	5.40	q	0.61	21.00		0.64	ND		0.63
PCB-8	Di		73.00		0.40	40.00		0.60	16.00		0.64	200.00		0.50	390.00		0.52	33.00		0.52
PCB-9	Di		3.20		0.44	2.50		0.67	ND		0.72	11.00		0.56	30.00		0.58	ND		0.58
PCB-10	Di		1.80	J q	0.52	1.30	J q	0.79	ND		0.85	8.20		0.66	14.00		0.69	ND		0.68
PCB-11	Di		ND		0.42	1.40	J q	0.63	1.80	J q	0.68	2.30	J q	0.53	3.40	J	0.55	ND		0.55
PCB-12/13	Di		2.70	J q C	0.47	2.90	J C q	0.70	ND	C	0.76	10.00	C	0.59	26.00	C	0.62	3.20	J q C	0.61
PCB-14	Di	PRC	31.00		0.47	150.00		0.71	300.00		0.76	130.00		0.59	300.00		0.62	350.00		0.61
PCB-15	Di		57.00		0.43	57.00		0.69	19.00		0.75	96.00		0.57	220.00		0.60	20.00		0.64
PCB-16	Tri		140.00		0.18	130.00		0.28	33.00		0.30	240.00		0.32	380.00		0.39	39.00		0.30
PCB-17	Tri		170.00		0.18	210.00		0.27	54.00		0.30	300.00		0.31	560.00		0.39	61.00		0.30
PCB-18/30	Tri		340.00	C	0.12	370.00	C	0.18	98.00	C	0.20	590.00	C	0.21	920.00	C	0.26	120.00	C	0.20
PCB-19	Tri		45.00		0.17	38.00		0.26	23.00		0.28	93.00		0.29	91.00		0.37	13.00		0.28
PCB-20/28	Tri		390.00	C	1.00	660.00	C	1.50	180.00	C	1.10	590.00	C	1.30	1300.00	C	1.90	270.00	C	1.10
PCB-21/33	Tri		170.00	C	1.00	230.00	C	1.50	52.00	C	1.10	220.00	C	1.20	560.00	C	1.90	100.00	C	1.10
PCB-22	Tri		100.00		0.94	160.00		1.40	34.00		1.00	150.00		1.20	350.00		1.80	61.00		1.00
PCB-23	Tri		ND		1.10	ND		1.60	ND		1.20	ND		1.30	ND		2.10	ND		1.20
PCB-24	Tri		4.40		0.12	5.80	q	0.19	1.30	J q	0.21	11.00	q	0.21	20.00		0.27	1.40	J q	0.21
PCB-25	Tri		20.00		0.87	44.00		1.30	11.00		0.97	56.00		1.10	82.00		1.60	13.00		0.94
PCB-26/29	Tri		63.00	C	1.10	110.00	C	1.70	28.00	C	1.30	140.00	C	1.40	220.00	C	2.10	35.00	C	1.20
PCB-27	Tri		35.00		0.13	41.00		0.19	16.00		0.21	56.00		0.22	79.00		0.28	13.00		0.21
PCB-31	Tri		350.00		0.92	520.00		1.40	130.00		1.00	480.00		1.10	1000.00		1.70	180.00		0.99
PCB-32	Tri		130.00		0.11	160.00		0.17	57.00		0.19	200.00		0.19	330.00		0.24	46.00		0.19
PCB-34	Tri		1.20	J q	1.10	3.50		1.70	ND		1.20	3.60	q	1.40	7.40		2.10	1.90	J	1.20
PCB-35	Tri		2.90		1.00	3.60		1.50	1.80	J	1.10	3.90		1.20	10.00		1.90	1.60	J q	1.10
PCB-36	Tri	PRC	36.00		0.88	390.00		1.30	340.00		0.97	260.00		1.10	340.00		1.60	360.00		0.94
PCB-37	Tri		96.00		0.99	130.00		1.50	42.00		1.10	100.00		1.20	250.00		1.90	69.00		1.10
PCB-38	Tri		ND		0.97	ND		1.40	ND		1.10	ND		1.20	ND		1.80	ND		1.00
PCB-39	Tri		3.30		0.98	9.40		1.50	5.30		1.10	5.70		1.20	11.00		1.80	4.10	q	1.00
PCB-40/41/71	Tetra		410.00	C	0.16	530.00	C	0.12	300.00	C	0.16	350.00	C	0.27	540.00	C	0.12	230.00	C	0.20
PCB-42	Tetra		220.00		0.17	300.00		0.13	190.00		0.18	200.00		0.30	310.00		0.13	140.00		0.22
PCB-43/73	Tetra		28.00	C	0.13	38.00	C	0.10	19.00	C	0.14	25.00	C	0.23	38.00	C	0.10	18.00	C	0.17
PCB-44/47/65	Tetra		700.00	C	0.14	900.00	C	0.11	600.00	C	0.15	670.00	C	0.25	950.00	C	0.11	450.00	C	0.18
PCB-45/51	Tetra		200.00	C	0.17	230.00	C	0.13	150.00	C	0.17	170.00	C	0.29	230.00	C	0.13	81.00	C	0.21
PCB-46	Tetra		70.00		0.20	74.00		0.15	46.00		0.21	57.00		0.35	76.00		0.16	27.00		0.26
PCB-48	Tetra		170.00		0.16	210.00		0.12	70.00		0.16	130.00		0.28	230.00		0.12	97.00		0.20
PCB-49/69	Tetra		470.00	C	0.13	600.00	C	0.10	350.00	C	0.14	400.00	C	0.23	560.00	C	0.10	300.00	C	0.17
PCB-50/53	Tetra		140.00	C	0.16	170.00	C	0.12	110.00	C	0.16	120.00	C	0.27	170.00	C	0.12	59.00	C	0.20
PCB-52	Tetra		740.00		0.14	960.00		0.11	550.00		0.14	670.00		0.24	850.00		0.11	460.00		0.18
PCB-54	Tetra		1.10	J q	0.06	2.10	J	0.06	1.30	J q	0.08	2.10	J	0.08	1.90	J q	0.13	0.54	J q	0.11
PCB-55	Tetra		10.00		0.09	14.00	q	0.07	4.70	q	0.10	8.00		0.16	18.00		0.07	7.80	q	0.12
PCB-56	Tetra		210.00		0.10	270.00		0.08	110.00		0.10	170.00		0.17	300.00		0.08	150.00		0.12
PCB-57	Tetra		3.00		0.11	3.70		0.08	ND		0.11	3.60	q	0.19	4.50		0.08	2.60		0.14
PCB-58	Tetra		0.82	J q	0.09	1.20	J q	0.07	1.90	J	0.10	1.10	J q	0.16	3.80		0.07	0.90	J q	0.12
PCB-59/62/75	Tetra		72.00	C	0.12	100.00	C	0.09	55.00	C	0.12	67.00	C	0.21	95.00	C	0.09	48.00	C	0.15
PCB-60	Tetra		140.00		0.11	150.00		0.09	54.00		0.12	90.00		0.20	160.00		0.09	89.00		0.14

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-61/70/74/76	Tetra		880.00	C	0.10	1100.00	C	0.08	490.00	C	0.11	600.00	C	0.18	1100.00	C	0.08	560.00	C	0.13
PCB-63	Tetra		23.00		0.11	30.00		0.09	12.00		0.12	19.00		0.19	36.00		0.09	18.00		0.14
PCB-64	Tetra		300.00		0.12	440.00		0.09	190.00		0.12	280.00		0.20	440.00		0.09	220.00		0.15
PCB-66	Tetra		500.00		0.10	610.00		0.07	290.00		0.10	390.00		0.17	630.00		0.08	380.00		0.12
PCB-67	Tetra		14.00		0.09	17.00		0.07	6.80		0.09	12.00		0.16	22.00		0.07	9.80		0.11
PCB-68	Tetra		2.00	J	0.11	4.20	q	0.08	4.30		0.11	5.10		0.18	4.60	q	0.08	4.30		0.13
PCB-72	Tetra		3.90		0.10	4.80	q	0.08	5.50		0.11	4.90	q	0.18	5.50		0.08	3.90		0.13
PCB-77	Tetra		35.00		0.12	51.00		0.08	31.00		0.13	42.00		0.19	57.00		0.09	31.00		0.14
PCB-78	Tetra	PRC	27.00		0.10	270.00		0.08	260.00		0.10	200.00		0.17	250.00		0.08	240.00		0.12
PCB-79	Tetra		3.30	q	0.08	4.10	q	0.06	4.70	q	0.09	4.50		0.14	4.40		0.06	3.30	q	0.10
PCB-80	Tetra		ND		0.09	ND		0.07	ND		0.10	ND		0.16	ND		0.07	ND		0.12
PCB-81	Tetra		1.90	J q	0.11	4.80	q	0.09	2.40		0.11	3.00	q	0.21	6.30		0.10	2.10	q	0.15
PCB-82	Penta		33.00		0.42	70.00		0.31	84.00		0.48	70.00		0.54	72.00		0.52	50.00		0.35
PCB-83/99	Penta		190.00	C	0.40	250.00	C	0.30	380.00	C	0.46	280.00	C	0.52	250.00	C	0.50	200.00	C	0.34
PCB-84	Penta		110.00		0.52	180.00		0.39	180.00		0.60	140.00		0.67	160.00		0.64	100.00		0.44
PCB-85/116/117	Penta		59.00	C	0.35	100.00	C	0.26	170.00	C	0.40	130.00	C	0.45	100.00	C	0.43	89.00	C	0.29
PCB-86/87/97/109/119/	Penta		220.00	C	0.34	280.00	C	0.26	430.00	C	0.40	290.00	C	0.45	300.00	C	0.43	220.00	C	0.29
PCB-88/91	Penta		65.00	C	0.44	110.00	C	0.33	130.00	C	0.51	90.00	C	0.57	97.00	C	0.55	72.00	C	0.37
PCB-89	Penta		10.00	q	0.42	15.00	q	0.32	24.00		0.48	12.00		0.54	15.00	q	0.52	11.00		0.35
PCB-90/101/113	Penta		240.00	C	0.37	350.00	C	0.28	490.00	C	0.43	370.00	C	0.48	350.00	C	0.46	250.00	C	0.31
PCB-92	Penta		50.00		0.45	69.00		0.34	110.00		0.52	82.00		0.59	70.00		0.57	54.00		0.38
PCB-93/100	Penta		5.10	q C	0.45	13.00	C	0.34	9.90	q C	0.52	14.00	C	0.59	11.00	q C	0.56	5.70	q C	0.38
PCB-94	Penta		3.70		0.51	3.60	q	0.38	6.60		0.59	4.70	q	0.66	4.40	q	0.64	4.30		0.43
PCB-95	Penta		200.00		0.45	360.00		0.34	370.00		0.52	290.00		0.58	320.00		0.56	220.00		0.38
PCB-96	Penta		6.10		0.31	12.00		0.23	12.00		0.36	7.20	q	0.40	8.70	q	0.38	6.40		0.26
PCB-98/102	Penta		22.00	C	0.39	32.00	C	0.29	44.00	C	0.45	24.00	C q	0.50	29.00	C	0.48	17.00	q C	0.32
PCB-103	Penta		2.70		0.43	3.60	q	0.32	4.80	q	0.49	3.50	q	0.55	3.80		0.53	2.60	q	0.36
PCB-104	Penta	PRC	35.00		0.35	430.00		0.27	390.00		0.41	310.00		0.46	380.00		0.44	380.00		0.30
PCB-105	Penta		76.00		0.58	110.00		0.88	68.00		0.44	100.00		0.55	93.00		0.64	81.00		0.55
PCB-106	Penta		1.40	J q	0.47	16.00		0.77	15.00		0.39	13.00		0.50	13.00		0.55	15.00		0.49
PCB-107	Penta		9.60		0.45	15.00		0.75	11.00		0.38	15.00		0.48	13.00		0.54	13.00		0.48
PCB-108/124	Penta		7.80	C	0.50	8.80	C	0.83	9.80	C	0.42	9.90	C	0.53	8.10	C	0.59	7.90	C	0.53
PCB-110/115	Penta		180.00	C	0.26	330.00	C	0.20	480.00	C	0.30	400.00	C	0.34	330.00	C	0.33	250.00	C	0.22
PCB-111	Penta		ND		0.29	ND		0.22	ND		0.34	ND		0.38	ND		0.36	ND		0.24
PCB-112	Penta		1.70	J q	0.25	2.40		0.19	3.70	q	0.29	1.70	J q	0.33	2.90	q	0.31	1.50	J q	0.21
PCB-114	Penta		6.00		0.57	7.50		0.79	5.00		0.42	7.10		0.57	7.60		0.59	5.80	q	0.50
PCB-118	Penta		150.00		0.59	200.00		0.82	170.00		0.42	210.00		0.55	180.00		0.61	160.00		0.54
PCB-120	Penta		ND		0.23	ND		0.18	ND		0.27	ND		0.30	ND		0.29	ND		0.20
PCB-121	Penta	PRC	45.00		0.28	380.00		0.21	460.00		0.32	310.00		0.36	380.00		0.34	370.00		0.23
PCB-122	Penta		3.10	q	0.59	6.30	q	0.97	6.10	q	0.49	7.40		0.63	5.20		0.70	5.70		0.62
PCB-123	Penta		5.30		0.58	5.90	q	0.86	7.80	q	0.42	7.30	q	0.60	5.40	q	0.64	5.90	q	0.57
PCB-126	Penta		ND		0.30	0.81	J	0.80	ND		0.40	0.75	J q	0.42	ND		0.49	ND		0.48
PCB-127	Penta		ND		0.46	ND		0.76	ND		0.39	ND		0.49	ND		0.54	ND		0.49
PCB-128/166	Hexa		7.60	C	0.17	9.10	C	0.25	11.00	q C	0.16	18.00	C	0.23	8.80	C	0.19	9.80	C	0.16
PCB-129/138/160/163	Hexa		49.00	C	0.19	55.00	C	0.27	84.00	C	0.17	100.00	C	0.25	57.00	C	0.21	58.00	C	0.18
PCB-130	Hexa		3.60		0.26	3.90		0.37	5.40	q	0.24	7.90		0.35	4.40		0.29	5.20		0.24
PCB-131	Hexa		0.40	J q	0.24	ND		0.34	0.88	J q	0.22	1.30	J q	0.32	ND		0.27	0.68	J q	0.23
PCB-132	Hexa		12.00		0.24	27.00		0.33	39.00		0.21	36.00		0.32	26.00		0.26	27.00		0.22
PCB-133	Hexa		0.35	J	0.21	1.50	J	0.30	1.80	J	0.19	ND		0.29	ND		0.23	1.10	J q	0.20
PCB-134/143	Hexa		2.10	J C	0.24	5.50	C	0.34	6.20	q C	0.22	7.50	C q	0.33	5.20	C	0.27	4.20	J q C	0.23
PCB-135/151	Hexa		13.00	C	0.02	24.00	C	0.12	30.00	C	0.05	50.00	C	0.12	29.00	C	0.07	22.00	C	0.04

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-136	Hexa		7.80		0.02	12.00		0.09	15.00		0.04	19.00		0.09	13.00		0.05	7.80		0.03
PCB-137	Hexa		3.60		0.22	2.60	q	0.31	6.80		0.20	4.50	q	0.30	2.40	q	0.24	3.30		0.21
PCB-139/140	Hexa		0.69	J C	0.20	0.97	J C q	0.28	2.10	J C	0.18	1.90	J C q	0.27	1.20	J q C	0.22	1.30	J C	0.19
PCB-141	Hexa		10.00		0.22	12.00		0.31	18.00		0.20	20.00		0.29	13.00		0.24	11.00	q	0.21
PCB-142	Hexa	PRC	27.00		0.25	410.00		0.35	410.00		0.22	290.00		0.33	370.00		0.27	380.00		0.23
PCB-144	Hexa		2.20	q	0.02	3.70		0.12	5.40		0.05	7.80		0.12	3.80	q	0.07	3.60		0.04
PCB-145	Hexa		0.08	J q	0.02	ND		0.08	ND		0.03	ND		0.08	ND		0.05	ND		0.03
PCB-146	Hexa		4.30		0.18	6.20		0.26	11.00		0.16	11.00		0.24	7.70		0.20	6.50	q	0.17
PCB-147/149	Hexa		22.00	C	0.19	45.00	C	0.27	65.00	C	0.17	65.00	C	0.26	51.00	C	0.21	43.00	C	0.18
PCB-148	Hexa		ND		0.02	ND		0.12	ND		0.05	ND		0.12	ND		0.07	ND		0.04
PCB-150	Hexa		ND		0.02	ND		0.09	ND		0.03	ND		0.09	ND		0.05	ND		0.03
PCB-152	Hexa		0.09	J q	0.01	ND		0.08	0.89	J	0.03	ND		0.08	ND		0.04	ND		0.03
PCB-153/168	Hexa		37.00	C	0.16	39.00	C	0.22	61.00	C	0.14	64.00	C	0.21	46.00	C	0.17	47.00	C	0.15
PCB-154	Hexa		0.50	J q	0.02	1.50	J q	0.10	1.70	J	0.04	2.00	J q	0.11	1.60	J	0.06	1.90	J q	0.03
PCB-155	Hexa	PRC	33.00		0.02	290.00		0.09	270.00		0.04	260.00		0.09	280.00		0.05	270.00		0.03
PCB-156/157	Hexa		5.50	q C	0.23	6.50	C	0.32	16.00	C	0.20	9.90	C	0.30	15.00	C	0.25	5.70	q C	0.21
PCB-158	Hexa		5.10	q	0.15	6.30		0.21	9.50		0.13	12.00		0.20	7.30		0.16	6.10		0.14
PCB-159	Hexa		0.32	J q	0.13	0.73	J	0.18	0.89	J q	0.12	0.89	J	0.17	0.64	J q	0.14	0.89	J	0.12
PCB-161	Hexa		0.56	J q	0.15	9.50		0.21	9.30		0.13	7.50		0.20	8.70		0.16	8.30		0.14
PCB-162	Hexa		ND		0.15	ND		0.21	ND		0.14	ND		0.20	ND		0.17	ND		0.14
PCB-164	Hexa		3.10		0.15	3.60		0.21	5.30		0.14	5.80	q	0.20	4.00		0.16	3.50		0.14
PCB-165	Hexa		ND		0.17	ND		0.25	ND		0.16	ND		0.23	0.92	J	0.19	ND		0.16
PCB-167	Hexa		2.20		0.12	2.50		0.17	3.00		0.11	3.50		0.16	1.50	J q	0.14	2.10	q	0.12
PCB-169	Hexa		ND		0.09	ND		0.14	ND		0.09	ND		0.13	ND		0.10	ND		0.09
PCB-170	Hepta		10.00		0.01	8.10		0.01	10.00	q	0.09	14.00		0.02	9.70		0.05	8.90		0.07
PCB-171/173	Hepta		3.50	J q C	0.01	2.90	J C	0.01	4.00	J C	0.09	5.00	C	0.02	2.80	J C	0.05	2.80	J C	0.07
PCB-172	Hepta		2.00	J q	0.01	ND		0.01	1.50	J q	0.08	2.50		0.02	1.50	J q	0.05	ND		0.07
PCB-174	Hepta		12.00		0.01	7.70		0.01	12.00		0.08	19.00		0.02	10.00		0.05	8.40		0.07
PCB-175	Hepta		0.99	J	0.01	ND		0.01	ND		0.09	ND		0.02	ND		0.05	ND		0.07
PCB-176	Hepta		2.30		0.01	2.50	q	0.01	3.20		0.06	ND		0.02	5.70		0.04	ND		0.05
PCB-177	Hepta		7.00		0.01	3.90		0.01	7.40		0.08	9.70		0.02	5.70		0.05	5.10		0.07
PCB-178	Hepta		2.50	q	0.01	1.90	J q	0.01	3.00	q	0.09	5.40		0.03	ND		0.06	1.70	J q	0.07
PCB-179	Hepta		3.60		0.01	3.40	q	0.00	6.00		0.06	7.70		0.02	5.00		0.03	4.10		0.05
PCB-180/193	Hepta		28.00	C	0.01	16.00	C	0.01	30.00	C	0.07	39.00	C	0.02	16.00	C	0.04	19.00	C	0.06
PCB-181	Hepta		ND		0.01	ND		0.01	ND		0.07	ND		0.02	ND		0.05	ND		0.06
PCB-182	Hepta		ND		0.01	ND		0.01	ND		0.07	ND		0.02	ND		0.04	ND		0.06
PCB-183/185	Hepta		9.30	q C	0.01	6.50	C	0.01	9.10	C	0.08	14.00	C	0.02	8.90	C	0.05	6.10	C	0.07
PCB-184	Hepta	PRC	100.00		0.01	820.00		0.01	830.00		0.06	750.00		0.02	800.00		0.04	750.00		0.05
PCB-186	Hepta		ND		0.01	ND		0.00	ND		0.05	ND		0.02	ND		0.03	ND		0.04
PCB-187	Hepta		14.00		0.01	8.30		0.01	14.00		0.07	25.00		0.02	9.90	q	0.04	9.00		0.06
PCB-188	Hepta		ND		0.01	ND		0.01	0.14	J q	0.06	ND		0.02	ND		0.04	ND		0.05
PCB-189	Hepta		0.21	J q	0.06	0.23	J	0.13	0.39	J q	0.09	0.37	J q	0.10	0.53	J	0.12	0.51	J q	0.09
PCB-190	Hepta		2.50		0.01	1.90	J	0.01	2.40	q	0.06	4.00		0.02	1.90	J q	0.04	1.60	J q	0.05
PCB-191	Hepta		ND		0.01	ND		0.01	ND		0.06	ND		0.02	ND		0.04	ND		0.05
PCB-192	Hepta	PRC	130.00		0.01	570.00		0.00	600.00		0.06	620.00		0.02	450.00		0.03	540.00		0.05
PCB-194	Octa		4.00		0.10	2.50		0.12	3.00		0.09	7.90		0.13	1.80	J q	0.09	1.90	J q	0.17
PCB-195	Octa		1.70	J	0.11	0.63	J q	0.14	1.50	J	0.10	2.30		0.15	0.94	J q	0.10	1.20	J	0.19
PCB-196	Octa		1.80	J	0.23	1.50	J q	0.20	1.50	J q	0.33	4.10		0.19	1.90	J	0.22	1.60	J	0.43
PCB-197	Octa		2.20		0.17	12.00		0.15	12.00		0.25	12.00		0.14	11.00	q	0.17	14.00		0.33
PCB-198/199	Octa		4.80	C	0.20	4.50	C	0.18	3.50	J q C	0.29	11.00	C	0.17	2.90	J C	0.20	3.90	J C	0.39
PCB-200	Octa		0.72	J q	0.19	1.50	J q	0.16	2.30		0.27	ND		0.15	ND		0.18	ND		0.35

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC03			EC05 MID			EC05 NORTH			EC05 S			EC06			EC1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-201	Octa		0.41	J q	0.19	0.60	J q	0.17	0.61	J	0.27	1.50	J q	0.15	ND		0.18	ND		0.36
PCB-202	Octa		1.10	J	0.18	0.39	J q	0.16	0.92	J q	0.26	3.30		0.15	ND		0.17	ND		0.34
PCB-203	Octa		2.70	q	0.18	2.00	J q	0.16	2.00	J q	0.27	6.00	q	0.15	1.60	J q	0.18	1.90	J	0.35
PCB-204	Octa	PRC	190.00		0.16	960.00		0.14	1000.00		0.23	940.00		0.13	900.00		0.16	1000.00		0.31
PCB-205	Octa		0.22	J q	0.08	0.23	J q	0.10	0.19	J q	0.08	0.21	J q	0.11	ND		0.07	0.23	J q	0.14
PCB-206	Nona		ND		0.40	ND		0.58	ND		0.52	3.80	q	0.91	ND		0.64	ND		0.45
PCB-207	Nona		2.00	J	0.30	5.90		0.45	6.10		0.45	7.50		0.65	5.80		0.57	6.00	q	0.38
PCB-208	Nona		0.58	J q	0.27	ND		0.43	ND		0.46	1.40	J q	0.60	ND		0.60	ND		0.38
PCB-209	Deca		1.20	J	0.05	3.10		0.06	3.50		0.05	3.40		0.02	3.30		0.07	3.60	q	0.04
Total PCBs			**10225**			**17384**			**13092**			**15561**			**21305**			**11361**		

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC4B			LC01-MID			MECP71			MECP75			T7A		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-1	Mono		0.56	J q	0.06	0.42	J	0.15	0.39	J	0.10	ND		0.09	0.42	J	0.05
PCB-2	Mono		0.57	J	0.07	ND		0.16	ND		0.10	ND		0.09	0.20	J q	0.05
PCB-3	Mono		0.38	J q	0.08	ND		0.18	0.69	J q	0.10	ND		0.10	0.71	J q	0.06
PCB-4	Di		7.70		0.39	ND		0.93	11.00		0.51	4.30	J	0.71	5.40		0.44
PCB-5	Di		ND		0.35	ND		0.83	ND		0.42	ND		0.71	ND		0.39
PCB-6	Di		4.80		0.29	ND		0.68	4.70		0.34	3.10		0.58	5.40		0.32
PCB-7	Di		ND		0.35	ND		0.81	ND		0.41	ND		0.69	1.20	J q	0.38
PCB-8	Di		26.00		0.28	6.90		0.67	32.00		0.34	15.00		0.57	32.00		0.31
PCB-9	Di		0.96	J q	0.32	ND		0.74	1.10	J	0.38	ND		0.63	ND		0.35
PCB-10	Di		ND		0.37	ND		0.88	0.82	J	0.45	ND		0.75	ND		0.41
PCB-11	Di		2.20	J	0.30	ND		0.70	0.88	J	0.36	ND		0.60	1.30	J q	0.33
PCB-12/13	Di		2.40	J C q	0.33	ND	C	0.78	3.20	J C	0.40	2.00	J C	0.66	3.40	J C	0.36
PCB-14	Di	PRC	310.00		0.34	590.00		0.79	190.00		0.40	62.00		0.67	250.00		0.37
PCB-15	Di		18.00		0.33	5.90		0.78	32.00	q	0.37	44.00		0.72	18.00		0.36
PCB-16	Tri		41.00		0.23	12.00		0.22	85.00		0.21	69.00		0.32	26.00		0.17
PCB-17	Tri		63.00		0.22	16.00	q	0.22	110.00		0.21	120.00		0.31	39.00		0.16
PCB-18/30	Tri		120.00	C	0.15	33.00	C q	0.15	240.00	C	0.14	240.00	C	0.21	80.00	C	0.11
PCB-19	Tri		11.00		0.21	5.70	q	0.20	18.00	q	0.20	15.00	q	0.29	12.00		0.15
PCB-20/28	Tri		270.00	C	1.10	58.00	C	1.30	430.00	C	1.30	620.00	C	2.20	190.00	C	1.00
PCB-21/33	Tri		99.00	C	1.10	23.00	C	1.30	160.00	C	1.30	170.00	C	2.20	100.00	C	0.98
PCB-22	Tri		59.00		1.00	14.00		1.20	100.00		1.20	120.00		2.00	36.00		0.92
PCB-23	Tri		ND		1.20	ND		1.40	ND		1.40	ND	G	2.40	ND		1.10
PCB-24	Tri		1.20	J	0.15	0.86	J	0.15	2.40	q	0.14	3.10	q	0.21	1.30	J q	0.11
PCB-25	Tri		15.00		0.96	3.20	q	1.10	17.00		1.10	33.00		1.90	9.50		0.85
PCB-26/29	Tri		38.00	C	1.20	8.70	C	1.40	54.00	C	1.40	80.00	C	2.40	19.00	C	1.10
PCB-27	Tri		11.00		0.16	4.40		0.15	19.00		0.15	24.00		0.22	11.00		0.12
PCB-31	Tri		200.00		1.00	48.00		1.20	340.00		1.20	430.00		2.00	90.00		0.89
PCB-32	Tri		49.00		0.14	16.00		0.13	95.00		0.13	110.00		0.19	34.00		0.10
PCB-34	Tri		1.60	J	1.20	ND		1.40	2.00	J	1.40	2.70	G	2.40	1.80	J	1.10
PCB-35	Tri		1.20	J	1.10	ND		1.30	2.40		1.30	3.60		2.20	ND		0.98
PCB-36	Tri	PRC	320.00		0.96	540.00		1.10	240.00		1.10	190.00		1.90	340.00		0.85
PCB-37	Tri		58.00		1.10	9.50	q	1.30	99.00		1.30	150.00		2.10	40.00		0.97
PCB-38	Tri		ND		1.10	ND		1.20	ND		1.20	ND		2.10	ND		0.94
PCB-39	Tri		6.30		1.10	4.90		1.20	4.70		1.20	7.40		2.10	6.30		0.95
PCB-40/41/71	Tetra		230.00	C	0.97	48.00	C	0.10	250.00	C	0.11	380.00	C	0.09	150.00	C	0.96
PCB-42	Tetra		130.00		1.10	25.00		0.11	140.00		0.12	230.00		0.10	94.00		1.10
PCB-43/73	Tetra		14.00	C q	0.82	3.50	J C	0.09	17.00	C	0.09	29.00	C	0.08	10.00	C	0.82
PCB-44/47/65	Tetra		420.00	C	0.88	90.00	C	0.09	440.00	C	0.10	700.00	C	0.08	310.00	C	0.87
PCB-45/51	Tetra		87.00	C	1.00	32.00	C	0.11	99.00	C	0.12	140.00	C	0.10	68.00	C	1.00
PCB-46	Tetra		26.00		1.20	11.00		0.13	33.00		0.14	43.00		0.12	21.00		1.20
PCB-48	Tetra		91.00		0.98	17.00		0.10	98.00		0.11	170.00		0.09	53.00		0.97
PCB-49/69	Tetra		270.00	C	0.82	52.00	C	0.09	270.00	C	0.09	470.00	C	0.08	200.00	C	0.82
PCB-50/53	Tetra		63.00	C	0.96	25.00	C	0.10	66.00	C	0.11	100.00	C	0.09	52.00	C	0.95
PCB-52	Tetra		430.00		0.87	90.00		0.09	430.00		0.10	700.00		0.08	340.00		0.86
PCB-54	Tetra		0.57	J q	0.04	ND		0.08	1.10	J	0.06	1.60	J	0.09	0.48	J q	0.04
PCB-55	Tetra		4.80		0.58	1.60	J	0.06	5.60	q	0.06	10.00	q	0.05	2.80		0.58
PCB-56	Tetra		130.00		0.61	29.00		0.06	170.00		0.07	290.00		0.06	78.00		0.60
PCB-57	Tetra		1.40	J	0.66	ND		0.07	1.80	J	0.07	4.20		0.06	0.83	J q	0.66
PCB-58	Tetra		0.79	J q	0.57	ND		0.06	1.10	J	0.06	1.40	J q	0.05	ND		0.57
PCB-59/62/75	Tetra		41.00	C	0.73	9.50	C	0.08	42.00	C	0.08	74.00	C	0.07	30.00	C	0.73
PCB-60	Tetra		81.00		0.70	15.00		0.07	110.00		0.08	160.00		0.07	44.00		0.69

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC4B			LC01-MID			MECP71			MECP75			T7A		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-61/70/74/76	Tetra		510.00	C	0.64	97.00	C	0.07	680.00	C	0.07	960.00	C	0.06	270.00	C	0.63
PCB-63	Tetra		15.00		0.69	2.50		0.07	13.00		0.08	29.00		0.06	8.00		0.69
PCB-64	Tetra		200.00		0.71	35.00		0.08	200.00		0.08	340.00		0.07	120.00		0.71
PCB-66	Tetra		310.00		0.60	55.00		0.06	400.00		0.07	620.00		0.06	210.00		0.59
PCB-67	Tetra		7.90		0.56	0.89	J	0.06	7.50		0.06	17.00		0.05	3.90	q	0.55
PCB-68	Tetra		3.00		0.66	2.50	q	0.07	2.10	J	0.07	5.30		0.06	3.30		0.65
PCB-72	Tetra		3.20		0.63	ND		0.07	1.90	J	0.07	5.70		0.06	1.60	J q	0.63
PCB-77	Tetra		24.00		0.68	5.00		0.08	40.00		0.08	66.00		0.07	11.00	q	0.69
PCB-78	Tetra	PRC	220.00		0.61	300.00		0.07	170.00		0.07	120.00		0.06	220.00		0.60
PCB-79	Tetra		2.70		0.51	ND		0.05	3.20		0.06	4.80		0.05	1.90	J	0.51
PCB-80	Tetra		ND		0.58	ND		0.06	ND		0.06	ND		0.05	ND		0.57
PCB-81	Tetra		1.80	J	0.75	ND		0.08	ND		0.08	4.80	q	0.07	ND		0.73
PCB-82	Penta		36.00		0.27	13.00	q	0.52	77.00		0.48	130.00		0.63	20.00		0.27
PCB-83/99	Penta		150.00	C	0.26	42.00	C	0.50	260.00	C	0.46	400.00	C	0.61	94.00	C	0.26
PCB-84	Penta		77.00		0.34	38.00		0.65	150.00		0.60	200.00		0.78	50.00		0.33
PCB-85/116/117	Penta		64.00	C	0.23	17.00	C q	0.43	120.00	C	0.40	180.00	C	0.52	36.00	C	0.22
PCB-86/87/97/109/119/	Penta		160.00	C	0.23	51.00	C	0.43	310.00	C	0.40	440.00	C	0.52	96.00	C	0.22
PCB-88/91	Penta		51.00	C	0.29	21.00	C q	0.55	92.00	C	0.51	140.00	C	0.67	34.00	C	0.28
PCB-89	Penta		7.80		0.27	3.30	q	0.52	15.00		0.48	23.00		0.63	3.70	q	0.27
PCB-90/101/113	Penta		190.00	C	0.24	60.00	C	0.47	330.00	C	0.43	540.00	C	0.56	120.00	C	0.24
PCB-92	Penta		44.00		0.30	20.00		0.57	67.00		0.52	110.00		0.69	30.00		0.29
PCB-93/100	Penta		5.50	C q	0.30	ND	C	0.57	7.70	C	0.52	18.00	C	0.69	4.00	J C q	0.29
PCB-94	Penta		3.10		0.34	ND		0.64	ND		0.59	8.40	q	0.77	ND		0.33
PCB-95	Penta		170.00		0.29	59.00		0.56	230.00		0.52	490.00		0.68	110.00		0.29
PCB-96	Penta		6.00		0.20	ND		0.39	6.70		0.35	10.00		0.47	4.40	q	0.20
PCB-98/102	Penta		14.00	C	0.25	3.50	J C q	0.48	19.00	C	0.44	42.00	C	0.58	8.90	C	0.25
PCB-103	Penta		2.20	J	0.28	ND		0.53	ND		0.49	6.00	q	0.65	1.50	J q	0.27
PCB-104	Penta	PRC	330.00		0.23	460.00		0.44	240.00		0.41	240.00		0.53	310.00		0.23
PCB-105	Penta		56.00		0.41	11.00		0.45	89.00		0.55	160.00		1.20	32.00		0.58
PCB-106	Penta		17.00		0.37	18.00		0.39	11.00		0.41	12.00		1.10	13.00	q	0.52
PCB-107	Penta		9.70		0.36	2.60		0.38	13.00		0.40	22.00		1.10	5.30		0.51
PCB-108/124	Penta		5.80	C q	0.40	1.50	J C q	0.42	8.60	C	0.44	14.00	C	1.20	3.20	J C	0.56
PCB-110/115	Penta		190.00	C	0.17	67.00	C	0.33	360.00	C	0.30	660.00	C	0.40	110.00	C	0.17
PCB-111	Penta		ND		0.19	ND		0.36	ND		0.33	ND		0.44	ND		0.19
PCB-112	Penta		0.65	J q	0.16	ND		0.31	2.70		0.29	4.70	q	0.38	1.00	J q	0.16
PCB-114	Penta		4.10	q	0.38	ND		0.46	6.50		0.39	11.00	q	1.20	2.30	q	0.55
PCB-118	Penta		130.00		0.41	25.00		0.43	160.00		0.40	320.00		1.20	81.00		0.60
PCB-120	Penta		ND		0.15	ND		0.29	ND		0.27	ND		0.35	ND		0.15
PCB-121	Penta	PRC	310.00		0.18	540.00		0.35	310.00		0.32	350.00		0.42	300.00		0.18
PCB-122	Penta		3.00	q	0.47	1.00	J q	0.50	5.80		0.52	10.00		1.40	2.80		0.66
PCB-123	Penta		4.50	q	0.43	1.10	J	0.42	5.80		0.43	13.00		1.40	3.70		0.58
PCB-126	Penta		0.64	J	0.37	ND		0.37	ND		0.47	ND		0.95	ND		0.52
PCB-127	Penta		ND		0.37	ND		0.39	ND		0.41	ND		1.10	ND		0.52
PCB-128/166	Hexa		7.40	C q	0.32	1.90	J C q	0.08	7.50	C	0.41	19.00	C	0.33	4.40	C	0.29
PCB-129/138/160/163	Hexa		56.00	C	0.34	15.00	C	0.08	51.00	C	0.44	110.00	C	0.36	29.00	C	0.32
PCB-130	Hexa		5.10		0.47	1.40	J	0.12	3.00	q	0.61	9.30		0.50	2.40		0.44
PCB-131	Hexa		ND		0.44	ND		0.11	0.80	J q	0.57	1.20	J q	0.46	ND		0.41
PCB-132	Hexa		21.00	q	0.43	10.00		0.11	29.00		0.55	40.00		0.45	14.00		0.40
PCB-133	Hexa		1.30	J q	0.39	ND		0.10	1.10	J	0.50	1.70	J	0.41	ND		0.36
PCB-134/143	Hexa		3.10	J C q	0.44	1.20	J C q	0.11	5.30	C	0.57	7.00	C q	0.47	2.00	J C	0.41
PCB-135/151	Hexa		18.00	C	0.05	4.30	J C q	0.07	23.00	C	0.06	52.00	C	0.08	12.00	C	0.02

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC4B			LC01-MID			MECP71			MECP75			T7A		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-136	Hexa		8.20		0.04	1.90	J q	0.05	9.10		0.05	19.00		0.06	4.60		0.01
PCB-137	Hexa		3.30		0.40	1.10	J	0.10	3.30		0.52	6.50		0.42	1.70	J	0.37
PCB-139/140	Hexa		1.20	J C q	0.36	ND	C	0.09	1.20	J q C	0.46	2.20	J C q	0.38	ND	C	0.33
PCB-141	Hexa		9.70		0.40	3.20		0.10	11.00		0.51	24.00		0.42	6.00		0.37
PCB-142	Hexa	PRC	380.00		0.45	470.00		0.11	350.00		0.58	300.00		0.47	360.00		0.41
PCB-144	Hexa		2.50		0.05	0.86	J q	0.07	4.00		0.06	6.90	q	0.08	1.40	J q	0.02
PCB-145	Hexa		ND		0.04	ND		0.05	ND		0.04	ND		0.06	ND		0.01
PCB-146	Hexa		7.20		0.33	1.00	J q	0.08	5.50	q	0.42	14.00		0.35	4.70		0.31
PCB-147/149	Hexa		40.00	C	0.35	13.00	C	0.09	48.00	C	0.45	74.00	C	0.37	24.00	C	0.32
PCB-148	Hexa		ND		0.05	ND		0.07	ND		0.06	ND		0.08	ND		0.02
PCB-150	Hexa		0.49	J q	0.04	ND		0.05	ND		0.05	ND		0.06	0.46	J q	0.01
PCB-152	Hexa		1.10	J	0.04	ND		0.05	ND		0.04	ND		0.05	0.94	J q	0.01
PCB-153/168	Hexa		39.00	C	0.29	10.00	C	0.07	35.00	C	0.37	79.00	C	0.30	24.00	C	0.27
PCB-154	Hexa		2.10	J	0.05	1.60	J	0.06	1.20	J q	0.06	2.60		0.07	1.50	J	0.02
PCB-155	Hexa	PRC	260.00		0.04	290.00		0.06	200.00		0.05	240.00		0.07	250.00		0.01
PCB-156/157	Hexa		6.10	C	0.33	8.40	C q	0.10	5.40	C	0.54	12.00	C	0.39	3.60	J C q	0.30
PCB-158	Hexa		5.40		0.27	1.40	J q	0.07	5.60		0.34	14.00		0.28	3.40		0.25
PCB-159	Hexa		1.10	J q	0.23	0.35	J q	0.06	0.53	J	0.30	1.30	J	0.24	1.30	J q	0.21
PCB-161	Hexa		14.00		0.26	8.70		0.07	5.70		0.34	7.10		0.28	13.00		0.25
PCB-162	Hexa		ND		0.28	ND		0.07	ND		0.36	ND		0.29	ND		0.26
PCB-164	Hexa		4.10		0.27	0.76	J q	0.07	2.60	q	0.35	6.50	q	0.29	2.00	J	0.25
PCB-165	Hexa		0.96	J q	0.31	1.00	J q	0.08	0.55	J q	0.41	ND		0.33	1.20	J q	0.29
PCB-167	Hexa		2.50		0.23	0.68	J	0.06	1.90	J	0.28	3.90	q	0.25	1.30	J q	0.22
PCB-169	Hexa		ND		0.22	ND		0.04	ND		0.22	ND		0.20	ND		0.21
PCB-170	Hepta		6.80		0.01	ND		0.07	7.60		0.01	14.00	q	0.02	4.30	q	0.02
PCB-171/173	Hepta		ND	C	0.01	ND	C	0.08	2.50	J C	0.01	4.60	J C q	0.02	ND	C	0.02
PCB-172	Hepta		ND		0.01	ND		0.07	1.50	J q	0.01	3.00		0.02	ND		0.01
PCB-174	Hepta		8.70		0.01	ND		0.07	7.00		0.01	16.00		0.02	5.90		0.01
PCB-175	Hepta		ND		0.01	ND		0.07	ND		0.01	ND		0.02	ND		0.02
PCB-176	Hepta		ND		0.01	ND		0.06	ND		0.01	2.80	q	0.01	ND		0.01
PCB-177	Hepta		4.60		0.01	ND		0.07	3.80		0.01	7.70		0.02	ND		0.01
PCB-178	Hepta		ND		0.01	ND		0.08	0.98	J q	0.01	3.70	q	0.02	ND		0.02
PCB-179	Hepta		3.40		0.01	ND		0.05	4.60		0.01	6.40		0.01	0.27	J	0.01
PCB-180/193	Hepta		15.00	C	0.01	5.90	C q	0.06	16.00	C	0.01	35.00	C	0.01	10.00	C q	0.01
PCB-181	Hepta		ND		0.01	ND		0.06	ND		0.01	ND		0.01	ND		0.01
PCB-182	Hepta		ND		0.01	ND		0.06	ND		0.01	ND		0.01	ND		0.01
PCB-183/185	Hepta		5.20	C q	0.01	ND	C	0.07	4.60	C	0.01	13.00	C	0.02	3.70	J C	0.01
PCB-184	Hepta	PRC	810.00		0.01	810.00		0.05	510.00		0.01	760.00		0.01	770.00		0.01
PCB-186	Hepta		ND		0.01	ND		0.05	ND		0.01	ND		0.01	ND		0.01
PCB-187	Hepta		7.90		0.01	1.60	J q	0.06	7.70		0.01	20.00		0.01	5.30		0.01
PCB-188	Hepta		0.29	J q	0.01	ND		0.06	ND		0.01	ND		0.01	ND		0.01
PCB-189	Hepta		0.21	J q	0.10	ND		0.13	0.26	J q	0.11	0.64	J q	0.10	ND		0.13
PCB-190	Hepta		1.90	J	0.01	ND		0.05	1.50	J	0.01	2.90		0.01	ND		0.01
PCB-191	Hepta		ND		0.01	ND		0.05	ND		0.01	ND		0.01	ND		0.01
PCB-192	Hepta	PRC	540.00		0.01	670.00		0.05	370.00		0.01	580.00		0.01	510.00		0.01
PCB-194	Octa		2.50		0.04	0.51	J q	0.10	2.10	J q	0.10	4.30		0.06	1.50	J q	0.10
PCB-195	Octa		0.23	J q	0.04	ND		0.11	0.68	J q	0.12	1.30	J	0.07	0.70	J	0.11
PCB-196	Octa		1.00	J	0.13	ND		0.48	2.30		0.17	2.10	J q	0.28	ND		0.18
PCB-197	Octa		11.00	q	0.10	17.00		0.36	7.40	q	0.13	13.00		0.21	13.00		0.14
PCB-198/199	Octa		1.90	J C	0.12	ND	C	0.43	3.40	J q C	0.16	6.60	C	0.25	ND	C	0.16
PCB-200	Octa		ND		0.11	ND		0.39	ND		0.14	2.30	q	0.23	ND		0.15

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			EC4B			LC01-MID			MECP71			MECP75			T7A		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-201	Octa		0.22	J q	0.11	ND		0.40	0.28	J q	0.14	ND		0.23	0.21	J q	0.15
PCB-202	Octa		0.15	J q	0.10	ND		0.38	0.79	J q	0.14	ND		0.22	0.35	J q	0.14
PCB-203	Octa		1.30	J q	0.11	ND		0.39	1.70	J q	0.14	3.30	q	0.23	ND		0.15
PCB-204	Octa	PRC	920.00		0.09	1100.00		0.34	770.00		0.12	1100.00		0.20	880.00		0.13
PCB-205	Octa		0.12	J q	0.03	ND		0.08	0.29	J	0.09	0.28	J	0.05	0.17	J q	0.08
PCB-206	Nona		ND		0.33	ND		0.71	ND		0.96	0.75	J q	0.49	ND		0.59
PCB-207	Nona		6.30		0.26	5.90		0.54	3.90		0.98	4.90		0.44	6.50		0.46
PCB-208	Nona		ND		0.25	ND		0.51	ND		1.20	ND		0.47	ND		0.44
PCB-209	Deca		2.10	J q	0.02	3.60	q	0.05	2.80	q	0.05	3.50		0.05	2.60	q	0.01
Total PCBs			**10350**			**7264**			**11429**			**16413**			**8118**		

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			T7C			T7D			T8			T8A			T8B			TRIP BLANK 1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-1	Mono		0.25	J q	0.05	3.90		0.11	2.50		0.09	ND		0.05	ND		0.08	ND		0.08
PCB-2	Mono		0.21	J	0.05	ND		0.11	1.00	J	0.09	ND		0.05	0.36	J q	0.09	ND		0.09
PCB-3	Mono		1.20	J q	0.06	2.40		0.12	1.90	J q	0.10	0.35	J	0.06	0.54	J q	0.10	ND		0.10
PCB-4	Di		12.00		0.32	310.00		0.41	38.00		0.41	3.40	J	0.31	5.50		0.36	ND		0.70
PCB-5	Di		ND		0.28	6.10	q	0.36	ND		0.37	ND		0.28	ND		0.33	ND		0.68
PCB-6	Di		15.00		0.23	140.00		0.29	18.00		0.30	4.90		0.23	5.60		0.27	ND		0.55
PCB-7	Di		3.20		0.28	18.00		0.35	3.80		0.36	1.20	J q	0.27	ND		0.33	ND		0.66
PCB-8	Di		92.00		0.23	820.00		0.29	100.00		0.30	27.00		0.22	33.00		0.27	ND		0.54
PCB-9	Di		2.50		0.25	33.00		0.32	4.20		0.33	ND		0.25	1.00	J q	0.30	ND		0.61
PCB-10	Di		0.95	J	0.30	13.00		0.38	2.60		0.39	ND		0.29	ND		0.35	ND		0.72
PCB-11	Di		1.30	J	0.24	3.60	J q	0.31	3.20	J	0.31	2.20	J	0.24	2.10	J	0.28	ND		0.57
PCB-12/13	Di		8.50	C	0.27	38.00	C	0.34	9.80	C	0.35	3.50	J C q	0.26	3.80	J q C	0.31	ND	C	0.64
PCB-14	Di	PRC	140.00		0.27	240.00		0.34	320.00		0.35	230.00		0.26	210.00		0.32	1200.00		0.64
PCB-15	Di		49.00		0.26	350.00		0.33	51.00		0.34	28.00		0.26	27.00		0.32	3.90		0.67
PCB-16	Tri		99.00		0.08	1100.00		0.23	110.00		0.22	42.00		0.20	54.00		0.19	ND		0.08
PCB-17	Tri		160.00		0.08	1400.00		0.22	160.00		0.22	72.00		0.19	88.00		0.19	ND		0.08
PCB-18/30	Tri		280.00	C	0.06	2600.00	C	0.15	290.00	C	0.15	130.00	C	0.13	160.00	C	0.13	0.09	J q C	0.05
PCB-19	Tri		22.00		0.08	230.00		0.21	24.00		0.20	9.20		0.18	11.00		0.18	ND		0.07
PCB-20/28	Tri		710.00	C	2.20	3600.00	C G	4.90	650.00	C	2.30	410.00	C	2.50	460.00	C	1.80	ND	C	1.20
PCB-21/33	Tri		340.00	C	2.20	1900.00	C G	4.80	280.00	C	2.30	150.00	C	2.40	170.00	C	1.80	ND	C	1.20
PCB-22	Tri		160.00		2.10	1100.00	G	4.50	150.00		2.10	80.00		2.30	96.00		1.70	ND		1.10
PCB-23	Tri		ND	G	2.40	ND	G	5.30	ND	G	2.50	ND	G	2.70	ND		2.00	ND		1.30
PCB-24	Tri		4.20		0.06	35.00		0.15	4.10		0.15	1.60	J q	0.13	2.50		0.13	ND		0.05
PCB-25	Tri		36.00		1.90	180.00	G	4.20	31.00		2.00	17.00		2.10	21.00		1.60	ND		1.00
PCB-26/29	Tri		81.00	C	2.50	570.00	C G	5.40	82.00	C	2.50	42.00	C	2.70	51.00	C	2.00	ND	C	1.30
PCB-27	Tri		26.00		0.06	190.00		0.16	26.00		0.15	13.00		0.14	16.00		0.13	ND		0.06
PCB-31	Tri		450.00		2.00	3300.00	G	4.40	450.00		2.10	240.00		2.20	280.00		1.70	ND		1.10
PCB-32	Tri		110.00		0.05	810.00		0.14	100.00		0.13	43.00		0.12	54.00		0.12	0.05	J q	0.05
PCB-34	Tri		5.20	G	2.50	16.00	q G	5.40	4.50	G	2.50	2.70	q G	2.70	3.40		2.00	ND		1.30
PCB-35	Tri		ND	G	2.20	24.00	G	4.80	3.30	G	2.30	ND		2.40	2.20		1.80	ND		1.20
PCB-36	Tri	PRC	220.00		1.90	290.00	G	4.20	340.00		2.00	290.00		2.10	290.00		1.60	880.00		1.00
PCB-37	Tri		160.00	G	2.20	690.00	G	4.70	150.00	G	2.20	96.00		2.40	100.00		1.80	ND		1.20
PCB-38	Tri		ND		2.10	ND	G	4.60	ND	G	2.20	ND		2.30	ND		1.70	ND		1.10
PCB-39	Tri		9.00		2.10	28.00	G	4.70	8.80	G	2.20	7.20		2.40	7.80		1.80	8.00	q	1.20
PCB-40/41/71	Tetra		470.00	C	1.10	1600.00	C	1.70	410.00	C	1.40	270.00	C	1.10	280.00	C	1.50	ND	C	1.50
PCB-42	Tetra		270.00		1.20	790.00		1.90	240.00		1.60	170.00		1.20	170.00		1.70	ND		1.60
PCB-43/73	Tetra		34.00	C	0.92	110.00	C	1.50	29.00	C	1.20	24.00	C	0.90	24.00	C	1.30	1.70	J q C	1.30
PCB-44/47/65	Tetra		870.00	C	0.98	2600.00	C	1.60	770.00	C	1.30	540.00	C	0.96	570.00	C	1.40	13.00	C	1.30
PCB-45/51	Tetra		170.00	C	1.20	700.00	C	1.90	150.00	C	1.60	92.00	C	1.10	100.00	C	1.60	ND	C	1.60
PCB-46	Tetra		53.00		1.40	240.00	G	2.20	45.00		1.90	26.00		1.40	31.00		2.00	ND		1.90
PCB-48	Tetra		210.00		1.10	740.00		1.80	190.00		1.50	130.00		1.10	130.00		1.50	ND		1.50
PCB-49/69	Tetra		590.00	C	0.92	1600.00	C	1.50	510.00	C	1.20	380.00	C	0.90	390.00	C	1.30	ND	C	1.30
PCB-50/53	Tetra		120.00	C	1.10	490.00	C	1.70	100.00	C	1.40	66.00	C	1.00	70.00	C	1.50	ND	C	1.50
PCB-52	Tetra		890.00		0.97	2600.00		1.60	770.00		1.30	560.00		0.95	590.00		1.40	ND		1.30
PCB-54	Tetra		1.60	J	0.03	7.20		0.05	0.98	J q	0.05	0.61	J q	0.07	0.52	J q	0.06	0.14	J q	0.08
PCB-55	Tetra		13.00		0.65	42.00		1.00	15.00		0.87	4.60		0.63	8.60	q	0.91	ND		0.89
PCB-56	Tetra		290.00		0.68	820.00		1.10	270.00		0.90	190.00		0.66	200.00		0.95	6.20		0.92
PCB-57	Tetra		3.20	q	0.74	9.40	q	1.20	3.70		0.99	ND		0.72	ND		1.00	ND		1.00
PCB-58	Tetra		1.40	J q	0.64	4.40	q	1.00	1.80	J	0.86	1.00	J q	0.62	1.40	J q	0.90	ND		0.87
PCB-59/62/75	Tetra		91.00	C	0.82	270.00	C	1.30	76.00	C	1.10	58.00	C	0.80	59.00	C	1.20	ND	C	1.10
PCB-60	Tetra		170.00		0.78	530.00		1.30	170.00		1.00	110.00		0.76	110.00		1.10	ND		1.10

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			T7C			T7D			T8			T8A			T8B			TRIP BLANK 1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-61/70/74/76	Tetra		1100.00	C	0.71	3100.00	C	1.10	1000.00	C	0.95	730.00	C	0.70	720.00	C	1.00	ND	C	0.97
PCB-63	Tetra		32.00	q	0.77	91.00		1.20	30.00		1.00	24.00		0.75	25.00		1.10	ND		1.10
PCB-64	Tetra		430.00		0.80	1300.00		1.30	390.00		1.10	280.00		0.78	290.00		1.10	ND		1.10
PCB-66	Tetra		680.00		0.67	1600.00		1.10	620.00		0.89	500.00		0.65	480.00		0.94	ND		0.91
PCB-67	Tetra		17.00	q	0.62	52.00		1.00	16.00		0.83	11.00		0.60	12.00		0.87	ND		0.84
PCB-68	Tetra		5.30	q	0.73	8.50		1.20	4.90		0.98	3.60		0.71	5.60		1.00	3.20		1.00
PCB-72	Tetra		4.90		0.71	12.00		1.10	4.10	q	0.95	3.80		0.69	4.40		0.99	ND		0.96
PCB-77	Tetra		47.00		0.77	120.00		1.20	48.00		1.00	35.00		0.76	34.00		1.10	ND		1.00
PCB-78	Tetra	PRC	170.00		0.68	200.00		1.10	220.00		0.91	190.00		0.66	200.00		0.95	430.00		0.93
PCB-79	Tetra		4.80		0.57	11.00		0.92	4.20		0.76	4.20	q	0.56	3.60		0.80	ND		0.78
PCB-80	Tetra		ND		0.65	ND		1.00	ND		0.86	ND		0.63	ND		0.91	ND		0.88
PCB-81	Tetra		2.70		0.83	7.80		1.30	3.00		1.10	2.40		0.80	7.20		1.20	5.80		1.10
PCB-82	Penta		66.00		0.20	120.00		0.24	58.00		0.34	48.00		0.32	46.00		0.29	ND		0.38
PCB-83/99	Penta		250.00	C	0.19	400.00	C	0.24	220.00	C	0.33	200.00	C	0.30	190.00	C	0.28	ND	C	0.36
PCB-84	Penta		140.00		0.25	290.00		0.30	110.00		0.42	88.00		0.39	86.00		0.36	ND		0.47
PCB-85/116/117	Penta		110.00	C	0.17	170.00	C	0.20	93.00	C	0.28	78.00	C	0.26	76.00	C	0.24	ND	C	0.31
PCB-86/87/97/109/119/	Penta		280.00	C	0.17	490.00	C	0.20	240.00	C	0.28	200.00	C	0.26	190.00	C	0.24	ND	C	0.31
PCB-88/91	Penta		92.00	C	0.21	160.00	C	0.26	77.00	C	0.36	63.00	C	0.34	63.00	C	0.31	ND	C	0.40
PCB-89	Penta		13.00		0.20	27.00		0.25	12.00		0.34	8.70		0.32	8.60		0.29	ND		0.38
PCB-90/101/113	Penta		340.00	C	0.18	540.00	C	0.22	280.00	C	0.30	260.00	C	0.28	240.00	C	0.26	ND	C	0.34
PCB-92	Penta		70.00		0.22	110.00		0.27	61.00		0.37	54.00		0.35	50.00		0.32	ND		0.41
PCB-93/100	Penta		11.00	C	0.22	18.00	C q	0.27	8.40	C q	0.37	8.70	C	0.34	8.00	C	0.32	ND	C	0.41
PCB-94	Penta		5.10	q	0.25	10.00		0.30	5.30		0.42	3.20		0.39	3.40	q	0.36	ND		0.46
PCB-95	Penta		290.00		0.22	580.00		0.26	240.00		0.37	200.00		0.34	190.00		0.32	ND		0.41
PCB-96	Penta		8.00		0.15	20.00		0.18	6.90	q	0.25	5.70	q	0.23	5.20	q	0.22	2.70		0.28
PCB-98/102	Penta		27.00	C	0.19	52.00	C	0.23	22.00	C	0.32	15.00	C q	0.29	15.00	q C	0.27	ND	C	0.35
PCB-103	Penta		3.60		0.20	6.00	q	0.25	2.90	q	0.35	3.00		0.32	3.80		0.30	ND		0.39
PCB-104	Penta	PRC	230.00		0.17	270.00		0.21	330.00		0.29	280.00		0.27	290.00		0.25	660.00		0.32
PCB-105	Penta		120.00		0.51	210.00		0.58	110.00		0.59	89.00		0.53	83.00		0.60	ND		0.46
PCB-106	Penta		15.00		0.46	16.00		0.52	17.00		0.54	15.00		0.49	17.00		0.55	24.00		0.43
PCB-107	Penta		19.00		0.45	29.00		0.51	16.00		0.52	15.00		0.48	15.00		0.53	ND		0.42
PCB-108/124	Penta		11.00	C	0.50	16.00	C	0.56	9.40	C	0.57	7.80	C	0.53	7.30	C	0.59	ND	C	0.46
PCB-110/115	Penta		320.00	C	0.13	550.00	C	0.15	270.00	C	0.21	230.00	C	0.20	230.00	C	0.18	ND	C	0.24
PCB-111	Penta		ND		0.14	ND		0.17	ND		0.24	ND		0.22	ND		0.20	ND		0.26
PCB-112	Penta		1.80	J q	0.12	ND		0.15	ND		0.20	ND		0.19	1.40	J q	0.18	ND		0.23
PCB-114	Penta		9.30		0.48	17.00		0.53	7.80	q	0.56	8.00		0.51	7.70		0.56	ND		0.45
PCB-118	Penta		250.00		0.52	400.00		0.56	220.00		0.59	200.00		0.55	180.00		0.61	ND		0.47
PCB-120	Penta		ND		0.11	ND		0.14	ND		0.19	ND		0.18	ND		0.17	ND		0.21
PCB-121	Penta	PRC	250.00		0.13	270.00		0.16	300.00		0.23	280.00		0.21	290.00		0.19	440.00		0.25
PCB-122	Penta		7.30		0.59	10.00	q	0.66	7.30		0.68	6.20		0.62	6.20		0.69	ND		0.54
PCB-123	Penta		7.40		0.52	13.00		0.60	6.90	q	0.63	6.10		0.56	4.40	q	0.62	ND		0.50
PCB-126	Penta		0.92	J q	0.47	1.10	J q	0.51	1.10	J	0.51	0.75	J q	0.48	ND		0.54	ND		0.42
PCB-127	Penta		ND		0.46	ND		0.51	ND		0.53	ND		0.49	ND		0.54	ND		0.42
PCB-128/166	Hexa		13.00	C	0.24	16.00	C	0.27	9.80	C	0.38	10.00	C	0.34	9.20	C	0.28	ND	C	0.26
PCB-129/138/160/163	Hexa		79.00	C	0.26	100.00	C	0.30	67.00	C	0.41	65.00	C	0.36	62.00	C	0.30	ND	C	0.28
PCB-130	Hexa		6.60		0.36	8.20		0.41	5.20		0.57	5.40		0.50	5.80		0.41	ND		0.39
PCB-131	Hexa		1.20	J	0.34	ND		0.38	ND		0.53	0.94	J	0.47	ND		0.38	ND		0.36
PCB-132	Hexa		34.00		0.33	43.00		0.37	28.00		0.51	25.00		0.45	25.00		0.37	ND		0.35
PCB-133	Hexa		1.90	J	0.30	1.50	J q	0.34	1.40	J q	0.46	1.40	J q	0.41	1.10	J	0.34	ND		0.32
PCB-134/143	Hexa		5.60	q C	0.34	8.20	C q	0.38	5.80	C	0.53	4.60	J C	0.47	4.60	C	0.39	ND	C	0.36
PCB-135/151	Hexa		28.00	C	0.07	39.00	C	0.03	23.00	C	0.11	22.00	C	0.13	20.00	C	0.02	ND	C	0.06

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			T7C			T7D			T8			T8A			T8B			TRIP BLANK 1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-136	Hexa		13.00		0.05	19.00		0.03	10.00		0.08	7.10	q	0.10	8.50		0.02	ND		0.05
PCB-137	Hexa		4.40	q	0.31	5.20	q	0.35	5.00		0.48	3.60	q	0.43	4.50		0.35	ND		0.33
PCB-139/140	Hexa		1.90	J q C	0.28	2.30	J C q	0.31	1.90	J C	0.43	1.40	J C q	0.38	1.40	J C	0.31	ND	C	0.30
PCB-141	Hexa		16.00		0.30	20.00		0.34	15.00		0.48	14.00		0.42	12.00		0.35	ND		0.33
PCB-142	Hexa	PRC	320.00		0.34	330.00		0.39	360.00		0.53	320.00		0.47	340.00		0.39	500.00		0.37
PCB-144	Hexa		4.60		0.07	6.00		0.03	4.30		0.11	3.60	q	0.13	3.80		0.02	ND		0.06
PCB-145	Hexa		ND		0.05	ND		0.02	ND		0.07	ND		0.09	ND		0.02	ND		0.04
PCB-146	Hexa		11.00		0.25	13.00		0.29	9.20		0.39	8.10	q	0.35	8.90		0.29	ND		0.27
PCB-147/149	Hexa		60.00	C	0.27	81.00	C	0.30	50.00	C	0.42	52.00	C	0.37	44.00	C	0.30	ND	C	0.29
PCB-148	Hexa		ND		0.07	ND		0.03	ND		0.11	ND		0.13	ND		0.02	ND		0.06
PCB-150	Hexa		ND		0.05	ND		0.03	ND		0.08	0.40	J q	0.10	1.20	J	0.02	0.44	J q	0.04
PCB-152	Hexa		1.50	J	0.04	0.98	J q	0.02	0.77	J q	0.07	0.96	J q	0.09	1.20	J	0.02	1.80	J	0.04
PCB-153/168	Hexa		57.00	C	0.22	69.00	C	0.25	46.00	C	0.34	48.00	C	0.31	44.00	C	0.25	ND	C	0.24
PCB-154	Hexa		1.90	J	0.06	2.40		0.03	1.30	J q	0.10	1.20	J q	0.12	1.70	J q	0.02	1.80	J	0.05
PCB-155	Hexa	PRC	220.00		0.05	240.00		0.03	250.00		0.08	230.00		0.10	240.00		0.02	330.00		0.05
PCB-156/157	Hexa		10.00	C	0.25	11.00	C q	0.29	9.60	C	0.40	8.60	C	0.35	7.50	C	0.29	ND	C	0.27
PCB-158	Hexa		8.50		0.20	11.00		0.23	7.10		0.32	7.00		0.28	7.00		0.23	ND		0.22
PCB-159	Hexa		1.10	J q	0.18	1.10	J	0.20	1.30	J	0.28	1.20	J	0.25	0.76	J q	0.20	1.50	J	0.19
PCB-161	Hexa		12.00		0.20	11.00		0.23	12.00		0.32	12.00		0.28	12.00		0.23	16.00		0.22
PCB-162	Hexa		ND		0.21	ND		0.24	ND		0.33	0.70	J q	0.29	ND		0.24	ND		0.23
PCB-164	Hexa		5.20	q	0.21	6.50		0.23	4.10		0.32	4.50		0.29	4.10		0.24	ND		0.22
PCB-165	Hexa		0.84	J q	0.24	1.00	J q	0.27	0.80	J	0.38	0.74	J q	0.33	ND		0.27	1.50	J q	0.26
PCB-167	Hexa		2.90		0.18	3.60		0.20	2.40	q	0.27	2.20	J q	0.24	2.40		0.21	ND		0.19
PCB-169	Hexa		ND		0.17	ND		0.19	ND		0.26	ND		0.24	ND		0.19	ND		0.18
PCB-170	Hepta		10.00		0.14	14.00		0.01	8.30		0.06	9.80		0.13	8.90		0.01	ND		0.15
PCB-171/173	Hepta		4.20	J q C	0.13	5.30	C	0.01	4.10	J C	0.05	5.20	C	0.12	ND	C	0.01	ND	C	0.14
PCB-172	Hepta		1.50	J q	0.12	ND		0.01	ND		0.05	1.70	J	0.12	ND		0.01	ND		0.14
PCB-174	Hepta		11.00		0.12	12.00	q	0.01	10.00		0.05	9.40		0.11	9.60		0.01	ND		0.13
PCB-175	Hepta		0.55	J q	0.13	ND		0.01	ND		0.05	ND		0.12	ND		0.01	ND		0.14
PCB-176	Hepta		3.30		0.10	2.60	q	0.00	2.40	q	0.04	ND		0.09	1.90	J q	0.00	3.10	q	0.11
PCB-177	Hepta		6.40		0.12	7.20		0.01	5.50		0.05	5.90		0.12	5.70		0.01	ND		0.13
PCB-178	Hepta		2.60		0.13	2.50	q	0.01	ND		0.06	ND		0.13	ND		0.01	ND		0.14
PCB-179	Hepta		4.50		0.08	6.30		0.00	3.60	q	0.03	3.60	q	0.08	3.50		0.00	ND		0.09
PCB-180/193	Hepta		23.00	C	0.10	26.00	C	0.00	19.00	C q	0.04	20.00	C	0.10	19.00	C	0.00	ND	C	0.11
PCB-181	Hepta		ND		0.11	ND		0.00	ND		0.05	ND		0.10	ND		0.00	ND		0.12
PCB-182	Hepta		ND		0.10	ND		0.00	ND		0.04	ND		0.10	ND		0.00	ND		0.11
PCB-183/185	Hepta		8.00	C	0.12	9.00	C	0.01	6.60	C	0.05	6.20	C q	0.11	5.90	C	0.01	ND	C	0.13
PCB-184	Hepta	PRC	730.00		0.09	720.00		0.00	800.00		0.04	730.00		0.09	750.00		0.00	940.00		0.10
PCB-186	Hepta		ND		0.08	ND		0.00	ND		0.03	ND		0.08	ND		0.00	ND		0.09
PCB-187	Hepta		12.00		0.10	14.00		0.00	10.00		0.04	12.00		0.10	9.80		0.00	ND		0.11
PCB-188	Hepta		ND		0.09	0.05	J q	0.00	ND		0.04	0.28	J q	0.09	0.55	J	0.00	0.37	J q	0.10
PCB-189	Hepta		0.53	J	0.07	0.53	J q	0.10	0.16	J q	0.08	0.40	J q	0.09	0.49	J q	0.07	ND		0.15
PCB-190	Hepta		1.70	J q	0.09	3.00		0.00	2.00	J q	0.04	2.30	J	0.09	ND		0.00	ND		0.10
PCB-191	Hepta		ND		0.09	ND		0.00	ND		0.04	ND		0.09	ND		0.00	ND		0.10
PCB-192	Hepta	PRC	480.00		0.08	510.00		0.00	530.00		0.03	500.00		0.08	510.00		0.00	610.00		0.09
PCB-194	Octa		2.40	q	0.10	4.10		0.10	2.30	q	0.11	3.20		0.08	3.10		0.07	ND		0.08
PCB-195	Octa		1.50	J	0.11	1.30	J q	0.11	1.00	J q	0.12	1.20	J q	0.09	0.82	J q	0.07	ND		0.09
PCB-196	Octa		1.60	J	0.17	2.10		0.34	1.80	J	0.34	1.30	J q	0.14	1.20	J q	0.25	ND		0.50
PCB-197	Octa		12.00		0.12	12.00	q	0.26	15.00		0.26	13.00	q	0.10	13.00	q	0.19	12.00	q	0.38
PCB-198/199	Octa		3.60	J C	0.15	4.50	C	0.30	3.50	J C	0.31	3.50	J C	0.12	2.20	J q C	0.23	ND	C	0.45
PCB-200	Octa		1.30	J q	0.13	ND		0.28	ND		0.28	ND		0.11	ND		0.21	ND		0.41

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			T7C			T7D			T8			T8A			T8B			TRIP BLANK 1		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-201	Octa		ND		0.14	0.81	J	0.28	0.51	J q	0.28	0.36	J q	0.11	0.47	J	0.21	ND		0.41
PCB-202	Octa		ND		0.13	0.69	J q	0.27	0.73	J	0.27	0.81	J q	0.11	0.58	J q	0.20	ND		0.39
PCB-203	Octa		1.50	J	0.13	2.00	J	0.28	1.20	J q	0.28	1.60	J	0.11	1.20	J	0.21	ND		0.41
PCB-204	Octa	PRC	870.00		0.12	880.00		0.24	900.00		0.24	880.00		0.10	870.00		0.18	990.00		0.35
PCB-205	Octa		0.21	J q	0.08	0.31	J	0.08	0.21	J	0.09	0.19	J q	0.07	0.25	J	0.05	ND		0.07
PCB-206	Nona		ND		0.35	ND		0.42	1.20	J q	0.41	ND		0.56	ND		0.38	ND		1.10
PCB-207	Nona		5.80		0.28	6.10	q	0.33	5.70	q	0.31	5.20	q	0.44	5.30		0.29	6.80		0.81
PCB-208	Nona		0.32	J q	0.28	ND		0.32	ND		0.29	ND		0.41	ND		0.28	ND		0.77
PCB-209	Deca		3.30	q	0.02	3.90		0.02	2.50	q	0.03	2.80	q	0.03	3.50		0.02	2.60	q	0.07
Total PCBs			**16011**			**47792**			**15512**			**11807**			**12079**			**7097**		

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			TRIP BLANK 2			TRIP BLANK 3		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-1	Mono		ND		0.10	ND		0.07
PCB-2	Mono		ND		0.11	ND		0.07
PCB-3	Mono		ND		0.13	ND		0.08
PCB-4	Di		ND		0.65	ND		0.59
PCB-5	Di		ND		0.61	ND		0.56
PCB-6	Di		ND		0.49	ND		0.46
PCB-7	Di		ND		0.59	ND		0.55
PCB-8	Di		ND		0.49	ND		0.45
PCB-9	Di		ND		0.54	ND		0.50
PCB-10	Di		ND		0.64	ND		0.59
PCB-11	Di		9.20		0.51	5.70	q	0.48
PCB-12/13	Di		ND	C	0.57	3.70	J C	0.53
PCB-14	Di	PRC	1100.00		0.58	1200.00		0.53
PCB-15	Di		ND		0.58	ND		0.55
PCB-16	Tri		ND		0.09	ND		0.05
PCB-17	Tri		ND		0.09	ND		0.05
PCB-18/30	Tri		ND	C	0.06	ND	C	0.04
PCB-19	Tri		ND		0.08	ND		0.05
PCB-20/28	Tri		ND	C	1.50	ND	C	1.00
PCB-21/33	Tri		ND	C	1.50	ND	C	1.00
PCB-22	Tri		ND		1.40	ND		0.96
PCB-23	Tri		ND		1.60	ND		1.10
PCB-24	Tri		ND		0.06	ND		0.04
PCB-25	Tri		ND		1.30	ND		0.89
PCB-26/29	Tri		ND	C	1.60	ND	C	1.20
PCB-27	Tri		ND		0.06	ND		0.04
PCB-31	Tri		ND		1.30	ND		0.94
PCB-32	Tri		0.12	J q	0.05	0.11	J	0.03
PCB-34	Tri		ND		1.60	ND		1.10
PCB-35	Tri		ND		1.40	ND		1.00
PCB-36	Tri	PRC	930.00		1.30	890.00		0.89
PCB-37	Tri		ND		1.40	ND		1.00
PCB-38	Tri		ND		1.40	ND		0.98
PCB-39	Tri		8.60		1.40	ND		1.00
PCB-40/41/71	Tetra		ND	C	1.70	ND	C	1.10
PCB-42	Tetra		ND		1.90	ND		1.20
PCB-43/73	Tetra		ND	C	1.40	ND	C	0.90
PCB-44/47/65	Tetra		14.00	C	1.50	14.00	C	0.95
PCB-45/51	Tetra		ND	C	1.80	ND	C	1.10
PCB-46	Tetra		ND		2.20	ND		1.40
PCB-48	Tetra		ND		1.70	ND		1.10
PCB-49/69	Tetra		ND	C	1.40	ND	C	0.90
PCB-50/53	Tetra		ND	C	1.70	ND	C	1.00
PCB-52	Tetra		1.80	J q	1.50	ND		0.94
PCB-54	Tetra		ND		0.08	ND		0.04
PCB-55	Tetra		ND		1.00	ND		0.63
PCB-56	Tetra		7.20		1.10	ND		0.66
PCB-57	Tetra		ND		1.20	ND		0.72
PCB-58	Tetra		ND		1.00	ND		0.62
PCB-59/62/75	Tetra		ND	C	1.30	ND	C	0.80
PCB-60	Tetra		ND		1.20	ND		0.76

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			TRIP BLANK 2			TRIP BLANK 3		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-61/70/74/76	Tetra		ND	C	1.10	ND	C	0.69
PCB-63	Tetra		ND		1.20	ND		0.75
PCB-64	Tetra		ND		1.20	ND		0.78
PCB-66	Tetra		ND		1.00	ND		0.65
PCB-67	Tetra		ND		0.97	ND		0.60
PCB-68	Tetra		3.70		1.10	3.20		0.71
PCB-72	Tetra		ND		1.10	ND		0.69
PCB-77	Tetra		ND		1.10	ND		0.74
PCB-78	Tetra	PRC	430.00		1.10	410.00		0.66
PCB-79	Tetra		ND		0.89	ND		0.55
PCB-80	Tetra		ND		1.00	ND		0.63
PCB-81	Tetra		ND		1.40	3.70	q	0.82
PCB-82	Penta		ND		0.33	ND		0.33
PCB-83/99	Penta		ND	C	0.31	ND	C	0.32
PCB-84	Penta		ND		0.41	ND		0.41
PCB-85/116/117	Penta		ND	C	0.27	ND	C	0.28
PCB-86/87/97/109/119/	Penta		ND	C	0.27	ND	C	0.27
PCB-88/91	Penta		ND	C	0.35	ND	C	0.35
PCB-89	Penta		ND		0.33	ND		0.33
PCB-90/101/113	Penta		ND	C	0.29	ND	C	0.30
PCB-92	Penta		3.10	q	0.36	ND		0.36
PCB-93/100	Penta		ND	C	0.36	ND	C	0.36
PCB-94	Penta		ND		0.40	ND		0.41
PCB-95	Penta		2.30	J q	0.35	ND		0.36
PCB-96	Penta		2.70	q	0.24	1.90	J q	0.25
PCB-98/102	Penta		ND	C	0.30	ND	C	0.31
PCB-103	Penta		ND		0.33	ND		0.34
PCB-104	Penta	PRC	680.00		0.28	630.00		0.28
PCB-105	Penta		ND		0.60	ND		0.32
PCB-106	Penta		22.00	q	0.56	23.00		0.31
PCB-107	Penta		ND		0.55	ND		0.30
PCB-108/124	Penta		ND	C	0.60	ND	C	0.33
PCB-110/115	Penta		ND	C	0.21	ND	C	0.21
PCB-111	Penta		ND		0.23	ND		0.23
PCB-112	Penta		ND		0.20	ND		0.20
PCB-114	Penta		ND		0.58	ND		0.32
PCB-118	Penta		ND		0.63	ND		0.35
PCB-120	Penta		ND		0.18	ND		0.19
PCB-121	Penta	PRC	450.00		0.22	430.00		0.22
PCB-122	Penta		ND		0.71	ND		0.39
PCB-123	Penta		ND		0.65	ND		0.35
PCB-126	Penta		ND		0.56	ND		0.30
PCB-127	Penta		ND		0.56	ND		0.30
PCB-128/166	Hexa		ND	C	0.28	ND	C	0.48
PCB-129/138/160/163	Hexa		ND	C	0.30	ND	C	0.52
PCB-130	Hexa		ND		0.41	ND		0.72
PCB-131	Hexa		ND		0.38	ND		0.67
PCB-132	Hexa		ND		0.37	2.00	J	0.65
PCB-133	Hexa		ND		0.34	ND		0.59
PCB-134/143	Hexa		ND	C	0.39	ND	C	0.67
PCB-135/151	Hexa		ND	C	0.03	ND	C	0.06

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			TRIP BLANK 2			TRIP BLANK 3		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-136	Hexa		ND		0.02	ND		0.05
PCB-137	Hexa		ND		0.35	ND		0.61
PCB-139/140	Hexa		ND	C	0.31	ND	C	0.55
PCB-141	Hexa		ND		0.35	ND		0.60
PCB-142	Hexa	PRC	510.00		0.39	490.00		0.68
PCB-144	Hexa		ND		0.03	ND		0.06
PCB-145	Hexa		ND		0.02	ND		0.04
PCB-146	Hexa		ND		0.29	ND		0.50
PCB-147/149	Hexa		ND	C	0.30	ND	C	0.53
PCB-148	Hexa		ND		0.03	ND		0.06
PCB-150	Hexa		0.87	J q	0.02	ND		0.04
PCB-152	Hexa		1.80	J	0.02	0.41	J q	0.04
PCB-153/168	Hexa		ND	C	0.25	ND	C	0.44
PCB-154	Hexa		1.00	J q	0.02	1.20	J	0.05
PCB-155	Hexa	PRC	330.00		0.02	320.00		0.05
PCB-156/157	Hexa		ND	C	0.30	ND	C	0.51
PCB-158	Hexa		ND		0.23	ND		0.40
PCB-159	Hexa		1.00	J q	0.20	1.20	J	0.35
PCB-161	Hexa		18.00	q	0.23	19.00		0.40
PCB-162	Hexa		ND		0.24	ND		0.42
PCB-164	Hexa		ND		0.24	ND		0.41
PCB-165	Hexa		1.20	J q	0.27	1.70	J q	0.48
PCB-167	Hexa		ND		0.19	ND		0.34
PCB-169	Hexa		ND		0.19	ND		0.33
PCB-170	Hepta		ND		0.05	ND		0.00
PCB-171/173	Hepta		ND	C	0.05	ND	C	0.00
PCB-172	Hepta		ND		0.05	ND		0.00
PCB-174	Hepta		ND		0.05	ND		0.00
PCB-175	Hepta		ND		0.05	ND		0.00
PCB-176	Hepta		ND		0.04	ND		0.00
PCB-177	Hepta		ND		0.05	ND		0.00
PCB-178	Hepta		ND		0.05	ND		0.00
PCB-179	Hepta		ND		0.03	ND		0.00
PCB-180/193	Hepta		ND	C	0.04	ND	C	0.00
PCB-181	Hepta		ND		0.04	ND		0.00
PCB-182	Hepta		ND		0.04	ND		0.00
PCB-183/185	Hepta		ND	C	0.05	ND	C	0.00
PCB-184	Hepta	PRC	940.00		0.04	910.00		0.00
PCB-186	Hepta		ND		0.03	ND		0.00
PCB-187	Hepta		ND		0.04	ND		0.00
PCB-188	Hepta		0.48	J q	0.04	ND		0.00
PCB-189	Hepta		0.42	J q	0.15	ND		0.10
PCB-190	Hepta		ND		0.04	ND		0.00
PCB-191	Hepta		ND		0.04	ND		0.00
PCB-192	Hepta	PRC	640.00		0.03	600.00		0.00
PCB-194	Octa		ND		0.12	ND		0.07
PCB-195	Octa		ND		0.14	ND		0.08
PCB-196	Octa		ND		0.20	ND		0.23
PCB-197	Octa		17.00		0.15	15.00		0.17
PCB-198/199	Octa		ND	C	0.17	ND	C	0.20
PCB-200	Octa		ND		0.16	1.70	J q	0.19

Table A1. Concentration of analytes in polyethylene.

ECCC Lyon's Creek ON

Client ID			TRIP BLANK 2			TRIP BLANK 3		
Analyte	Homolog Group	PRC	Result (ng/g)	Qualifier	MDL (ng/g)	Result (ng/g)	Qualifier	MDL (ng/g)
PCB-201	Octa		ND		0.16	ND		0.19
PCB-202	Octa		ND		0.15	ND		0.18
PCB-203	Octa		ND		0.16	ND		0.19
PCB-204	Octa	PRC	980.00		0.14	980.00		0.16
PCB-205	Octa		ND		0.10	ND		0.06
PCB-206	Nona		ND		2.10	ND		0.44
PCB-207	Nona		6.90	q	1.80	5.40	q	0.35
PCB-208	Nona		ND		1.80	ND		0.33
PCB-209	Deca		2.60		0.10	3.10		0.03
Total PCBs			**7116**			**6966**		

Notes: ND: Non Detect

J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

q: The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ration does not meet qualitative identification criteria and indicates a possible interference.

C: The compound co-eluted with other compounds.

G: The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference

TABLE A2

Table A2. Elimination Rates (ke) and Percentage to Steady State Reached by Performance Reference Compounds (PRCs) During Deployment.

ECCC Lyon's Creek ON

Client ID		EC03		EC05 MID		EC05 NORTH		EC05 S		EC06		EC1		EC4B	
PRC	Homolog Group	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State
		(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%
PCB-14	Di	0.1008	97%	0.0570	87%	0.0377	74%	0.0610	89%	0.0377	74%	0.0334	70%	0.0368	73%
PCB-36	Tri	0.0894	96%	0.0232	57%	0.0270	62%	0.0345	71%	0.0270	62%	0.0255	60%	0.0287	64%
PCB-78	Tetra	0.0765	94%	0.0125	36%	0.0135	39%	0.0208	53%	0.0146	41%	0.0158	43%	0.0182	48%
PCB-104	Penta	0.0814	95%	0.0118	35%	0.0145	41%	0.0209	53%	0.0152	42%	0.0152	42%	0.0191	50%
PCB-121	Penta	0.0633	90%	0.0041	14%	OUTLIER	OUTLIER	0.0097	30%	0.0041	14%	0.0048	16%	0.0097	30%
PCB-142	Hexa	0.0811	95%	0.0055	18%	0.0055	18%	0.0151	42%	0.0084	26%	0.0076	24%	0.0076	24%
PCB-155	Hexa	0.0637	90%	0.0033	11%	0.0053	17%	0.0063	20%	0.0043	14%	0.0053	17%	0.0063	20%
PCB-184	Hepta	0.0619	89%	0.0035	12%	0.0032	11%	0.0060	19%	0.0042	14%	0.0060	19%	0.0038	13%
PCB-192	Hepta	0.0432	79%	0.0022	8%	0.0008	3%	OUTLIER	OUTLIER	0.0088	27%	0.0037	12%	0.0037	12%
PCB-204	Octa	0.0457	81%	0.0007	2%	OUTLIER	OUTLIER	0.0013	4%	0.0025	8%	OUTLIER	OUTLIER	0.0018	6%

Table A2. Elimination Rates (ke) and Percentage to Steady State Reached by Performance Reference Compounds (PRCs) During Deployment.

ECCC Lyon's Creek ON

Client ID		LC01-MID		MECP71		MECP75		T7A		T7C		T7D		T8	
PRC	Homolog Group	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State	k_e	Steady State
		(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%	(d^{-1})	%
PCB-14	Di	0.0189	49%	0.0504	84%	0.0815	95%	0.0428	79%	0.0589	88%	0.0439	79%	0.0359	73%
PCB-36	Tri	0.0142	40%	0.0367	73%	0.0432	79%	0.0270	62%	0.0391	76%	0.0315	68%	0.0270	62%
PCB-78	Tetra	0.0096	29%	0.0253	60%	0.0350	72%	0.0182	48%	0.0253	60%	0.0208	53%	0.0182	48%
PCB-104	Penta	0.0099	30%	0.0280	63%	0.0280	63%	0.0209	53%	0.0291	65%	0.0247	59%	0.0191	50%
PCB-121	Penta	OUTLIER	OUTLIER	0.0097	30%	0.0064	20%	0.0106	32%	0.0157	43%	0.0136	39%	0.0106	32%
PCB-142	Hexa	0.0017	6%	0.0099	30%	0.0142	40%	0.0091	28%	0.0124	36%	0.0115	34%	0.0091	28%
PCB-155	Hexa	0.0033	11%	0.0136	39%	0.0086	27%	0.0074	23%	0.0110	33%	0.0086	27%	0.0074	23%
PCB-184	Hepta	0.0038	13%	0.0167	45%	0.0056	18%	0.0052	17%	0.0067	22%	0.0071	23%	0.0042	14%
PCB-192	Hepta	OUTLIER	OUTLIER	0.0142	40%	0.0017	6%	0.0053	17%	0.0070	22%	0.0053	17%	0.0042	14%
PCB-204	Octa	OUTLIER	OUTLIER	0.0068	22%	OUTLIER	OUTLIER	0.0031	11%	0.0034	12%	0.0031	11%	0.0025	8%

Table A2. Elimination Rates (ke) and Percentage to Steady State Reached by Performance Reference Compounds (PRCs) During Deployment.

ECCC Lyon's Creek ON

Client ID		T8A		T8B	
PRC	Homolog Group	k_e	Steady State	k_e	Steady State
		(d^{-1})	%	(d^{-1})	%
PCB-14	Di	0.0451	80%	0.0476	82%
PCB-36	Tri	0.0315	68%	0.0315	68%
PCB-78	Tetra	0.0223	55%	0.0208	53%
PCB-104	Penta	0.0237	57%	0.0227	56%
PCB-121	Penta	0.0126	36%	0.0116	34%
PCB-142	Hexa	0.0124	36%	0.0107	32%
PCB-155	Hexa	0.0097	30%	0.0086	27%
PCB-184	Hepta	0.0067	22%	0.0060	19%
PCB-192	Hepta	0.0058	19%	0.0053	17%
PCB-204	Octa	0.0031	11%	0.0034	12%

Notes

d: day
PCB: Polychlorinated biphenyl
%: percent
PRC: Performance Reference Compound