

1 **Supplementary material for the article:**

2 **Micrometeorological measurements of hexachlorobenzene**
3 **and polychlorinated biphenyl air-water gas exchange in**
4 **Lake Superior, and comparison to model predictions**

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11 Contents: **Tables S1** and **S2**

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1 **Table S1:** Contributions to the relative error (unitless) in the MBR flux measurements given
 2 by the terms in Eq. (16) of the manuscript.

	Fetch, km	$\overline{w\theta}$ bias	$\overline{w\theta}$ random	ΔC_{α}	$\Delta\theta$	Overall relative error
HCB	15	0.68	0.20	3.64	1.05	3.86
	30	0.19	0.20	2.72	0.09	2.74
	60	0.11	0.20	0.76	0.08	0.80
PCB 8	15	0.68	0.20	0.60	1.05	1.40
	30	0.19	0.20	0.28	0.09	0.41
	60	0.11	0.20	0.49	0.08	0.54
PCB 18	15	0.68	0.20	0.46	1.05	1.35
	30	0.19	0.20	0.51	0.09	0.59
	60	0.11	0.20	0.17	0.08	0.30
PCB 34	15	0.68	0.20	0.18	1.05	1.28
	30	0.19	0.20	0.18	0.09	0.34
	60	0.11	0.20	0.08	0.08	0.26
PCB 28	15	0.68	0.20	0.17	1.05	1.28
	30	0.19	0.20	0.14	0.09	0.32
	60	0.11	0.20	0.09	0.08	0.26
PCB 22	15	0.68	0.20	0.92	1.05	1.56
	30	0.19	0.20	0.77	0.09	0.83
	60	0.11	0.20	0.12	0.08	0.27
PCB 110	15	0.68	0.20	1.90	1.05	2.28
	30	0.19	0.20	0.24	0.09	0.38
	60	0.11	0.20	0.23	0.08	0.34

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 4 Symbols in column headings are defined as,

5 $\overline{w\theta}$ sensible heat flux measured by eddy covariance

6 ΔC_{α} upper – lower platform difference in atmospheric PBT concentration

7 $\Delta\theta$ upper – lower platform difference in potential temperature

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2 **Table S2:** Contributions to the relative error (unitless) in the W2F flux estimates given by the
3 terms in Eq. (17) of the manuscript.

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	Fetch, km	k_{ol}	H	C_a	C_w	Overall relative error
HCB	15	0.30	1.22	0.22	0.49	1.37
	30	0.30	0.86	0.15	0.24	0.95
	60	0.30	0.76	0.14	0.18	0.85
PCB 8	15	0.30	0.21	0.05	0.37	0.52
	30	0.30	0.44	0.11	0.49	0.73
	60	0.30	0.72	0.17	0.63	1.02
PCB 18	15	0.30	1.57	0.38	0.55	1.73
	30	0.30	3.65	0.89	1.64	4.11
	60	0.30	0.94	0.23	0.23	1.04
PCB 28	15	0.30	0.12	0.01	0.45	0.55
	30	0.30	0.12	0.01	0.44	0.55
	60	0.30	0.14	0.01	0.46	0.56
PCB 22	15	0.30	0.57	0.09	1.03	1.22
	30	0.30	0.69	0.11	1.14	1.37
	60	0.30	1.89	0.29	2.29	3.00
PCB 110	15	0.30	0.09	0.02	0.38	0.49
	30	0.30	0.13	0.02	0.40	0.52
	60	0.30	0.19	0.03	0.44	0.56

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6 Symbols in the column headings are defined as,

7 k_{ol} overall mass transfer velocity for air-water exchange

8 H temperature dependent Henry's law constant

9 C_a atmospheric PBT concentration

10 C_w aqueous PBT concentration