Toxicity of Sediment Cores Collected from the Ashtabula River in Northeastern Ohio, USA, to the Amphipod *Hyaella azteca*

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In the online and printed version of this article, a few values in Table 3 are incorrect. These corrections are made on the following page (i.e., thresholds or maximum concentrations of dieldrin, p,p' -DDD, p,p' -DDE; percentage of samples above maximum phenanthrene or p,p' -DDD concentrations).

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Table 3 Spearman rank correlations for toxicity data and the physical or chemical data presented by Ingersoll et al. (2008a, Appendixes 3–8)

Variable	Toxicity endpoint		Threshold	Percentage of samples above threshold
	Survival	Length		
Total ammonia	−0.16	−0.51*	>32 mg N/l ^a	92
Unionized ammonia	−0.13	−0.032	>1.5 mg N/l ^a	36
Sand	−0.048	−0.083	NA	NA
Total organic carbon	−0.28	−0.40	NA	NA
Cd	−0.41	−0.76*	4.98 µg/g ^b	0 (max: 3.9 µg/g) ^c
Cu	−0.18	−0.20	149 µg/g ^b	0 (max: 22 µg/g)
Ni	−0.15	−0.51*	48.6 µg/g ^b	0 (max: 11 µg/g)
Pb	−0.46*	−0.72*	128 µg/g ^b	0 (max: 98 µg/g)
Zn	−0.54*	−0.56*	459 µg/g ^b	2
Average metal PEC-Q	−0.49	−0.75*	1.0 ^b	0 (max: 0.65)
Average metal PEC-Q (oc normalized)	−0.27	−0.69*	1.0 ^d	0 (max: 0.33)
ΣSEM – AVS	−0.066	−0.20	>0 ^e	4
ΣSEM – AVS/foc	−0.082	−0.20	>130 ^e	0 (max: 60)
Biphenyl	−0.34	−0.75*	1.22 µg/g ^f	0 (max: 0.030 µg/g)
Fluorene	−0.11	−0.67*	0.536 µg/g ^b	0 (max: 0.29 µg/g)
Naphthalene	−0.35	−0.71*	0.561 µg/g ^b	0 (max: 0.14 µg/g)
Phenanthrene	−0.21	−0.56*	1.17 µg/g ^b	8
Total PAH PEC-Q	−0.25	−0.31	4.56 µg/g ^g	69
Total PAH PEC-Q (oc normalized)	−0.044	−0.20	4.56 µg/g ^d	33
ΣESBTU for PAHs	−0.066	−0.198	1.0 ^h	84
Hexachlorobiphenyl	−0.26	−0.60*	0.24 µg/g ⁱ	0 (max: 0.22 µg/g)
α-Chlordane	−0.25	−0.55*	0.176 µg/g (total) ^b	0 (max: 0.015 µg/g)
Dieldrin	−0.36	−0.63*	0.0618 µg/g ^b	2
<i>p,p'</i> -DDD	−0.23	−0.61*	0.028 µg/g (sum) ^b	20
<i>p,p'</i> -DDD	−0.23	−0.61*	1.600 µg/g (sum) ^j	0 (max: 0.053 µg/g)
<i>p,p'</i> -DDE	−0.29	−0.63*	0.0313 µg/g (sum) ^b	0 (max: 0.017 µg/g)
Total PCB PEC-Q	−0.27	−0.64*	0.676 µg/g ^b	68
Total PCBs	−0.27	−0.64*	3.5 µg/g ^k	16
Total PCB PEC-Q (oc normalized)	−0.25	−0.68*	0.676 µg/g ^d	49
Mean PEC-Q	−0.28	−0.66*	1.0 ^b	36
Mean PEC-Q (oc normalized)	−0.25	−0.70*	1.0 ^d	24

Note: NA not applicable, max maximum. * Significant correlation, at $p < 0.005$ (only select variables that were not significant are included)

^a Nile Kemble (unpublished data). *Hyalella azteca* 28-day IC20 (nonionized ammonia calculated for pH 8)

^b From MacDonald et al. (2000). Probable effect concentration

^c If no samples exceeded the threshold, the maximum concentration for all samples is included in the parentheses

^d From this study

^e From USEPA (2005)

^f From Region III BTAG Freshwater Screening Benchmarks, 2004. Available at: <http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fw/screenbench.htm>

^g From Ingersoll et al. (2001)

^h From USEPA (2003) and Dave Mount, USEPA, Duluth MN (personal communication). An ΣESBTU threshold of 1.0 was established based on an estimated critical body burden of about 2 µmol total PAHs/g lipid for 28-day growth of *Hyalella azteca* in water-only exposures and a final chronic value of about 2.2 µmol total PAHs/goc in sediment

ⁱ From Persaud et al. (1993). Severe effect level at 1% TOC

^j From Ingersoll et al. (2005). *Hyalella azteca* 28-day IC25 for length in spiked sediment at 1% TOC

^k From Fuchsman et al. (2006). Threshold calculated as the average of the benchmark for Aroclor 1242 and 1248 at 1% TOC