

56 Organic Wastewater Compounds in Drinking Water, Wastewater Effluent, and the Big Sioux River, 2001–2004

Table 8. Statistical summaries of analytical results for detected compounds in laboratory method-blank samples.

[Bold text indicates suspected endocrine-disrupting compound (EDC). Analytical method number: 1, Cahill and others (2004); 2, U.S. Geological Survey Organic Geochemistry Research Laboratory; 3, Lee and others (2004); 4, Zaugg and others (2002). µg/L, micrograms per liter; ND, not determined; e, estimated; --, not applicable]

Compound	Analytical method number	Footnote	Number of laboratory blanks	Number of detections	Minimum detected concentration (µg/L)	Median detected concentration (µg/L)	Maximum detected concentration (µg/L)	Study reporting level for data summary and analysis (µg/L)
Human pharmaceutical compounds (HPCs)								
Acetaminophen, dissolved	1	5	16	2	e0.0007	0.10	e0.20	ND
Caffeine, dissolved	1	1	16	4	e.0012	.0032	e.0045	0.022
Caffeine, dissolved	4	5	3	3	e.030	e.050	e.070	ND
Carbamazepine, dissolved	1	5	16	2	e.0032	.0034	e.0036	ND
Codeine, dissolved	1	5	16	2	e.0076	.0080	e.0084	ND
Cotinine, dissolved	1	2	16	1	e.0042	e.0042	e.0042	.0008
Cotinine, whole water	3	5	9	1	e.18	e.18	e.18	ND
Dehydronifedipine, dissolved	1	1	16	2	e.0004	.0013	e.0021	.0042
Diltiazem, dissolved	1	5	16	2	e.0017	.0018	e.0019	ND
Diphenhydramine, dissolved	1	5	16	2	e.0018	.0022	e.0026	ND
Fluoxetine , dissolved	1	5	16	2	e.0011	.0032	e.0052	ND
Thiabendazole, dissolved	1	5	16	2	e.0029	.0036	e.0043	ND
Human and veterinary antibiotic compounds (HVACs)								
Amoxicillin, dissolved	2	3	24	1	0.034	0.034	0.034	0.01
Anhd-Cl-tetracycline, dissolved	2	3	25	2	.18	.21	.24	.3
Anhydrotetracycline, dissolved	2	3	25	6	.056	.078	.15	.15
Chlorotetracycline, dissolved	2	1	25	5	.019	.024	.048	.056
Ciprofloxacin, dissolved	2	2	22	5	.0050	.018	.11	.033
Clinafloxacin, dissolved	2	3	22	2	.027	.049	.071	.005
Demeclocycline, dissolved	2	3	25	8	.017	.024	.098	.02
Doxycycline, dissolved	2	3	25	10	.011	.019	.11	.05
Erythromycin, dissolved	2	1	24	2	.0050	.0055	.0060	.025
Erythromycin-H ₂ O, dissolved	2	1	24	9	.013	.023	.027	.046
Lomafloxacin, dissolved	2	3	22	2	.018	.026	.033	.005
Minocycline, dissolved	2	3	25	4	.076	.11	.24	.02
Norfloxacin, dissolved	2	3	22	4	.0070	.025	.098	.01
Ofloxacin, dissolved	2	1	22	6	.0070	.017	.087	.15
Oxytetracycline, dissolved	2	3	25	2	.060	.076	.092	.05
Sarafloxacin, dissolved	2	3	22	3	.017	.033	.081	.01
Tetracycline, dissolved	2	1	25	8	.015	.022	.084	1.6
Trimethoprim, dissolved	1	5	16	1	e.0022	e.0022	e.0022	ND
Trimethoprim, dissolved	2	1	24	2	.0050	.0055	.0060	.02

Table 8. Statistical summaries of analytical results for detected compounds in laboratory method-blank samples.—Continued

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Major agricultural herbicides (MAHs)								
Atrazine , whole water	3	1	7	1	e0.0001	e0.0001	e0.0001	0.0002
Metolachlor, whole water	3	2	9	1	e.012	e.012	e.012	.004
Prometon , whole water	3	2	9	1	e.018	e.018	e.018	.02
Household, industrial, and minor agricultural use compounds (HIACs)								
1,4-Dichlorobenzene, dissolved	4	1	3	3	e0.010	0.020	0.040	0.08
4-tert-Octylphenol , dissolved	4	3	3	2	e.020	.060	e.10	1
4-tert-Octylphenol , whole water	3	1	9	2	e.028	.048	e.068	.26
Acetophenone, dissolved	4	3	3	3	e.12	e.18	e.19	.5
Acetophenone, whole water	3	1	9	2	e.038	.039	e.040	.08
Benzophenone , whole water	3	5	9	2	e.072	.19	e.31	ND
Bis(2-ethylhexyl) phthalate, whole water	3	5	7	5	e.11	e.71	e3.4	ND
Bisphenol-A , dissolved	4	5	3	1	e.20	e.20	e.20	ND
Camphor, whole water	3	3	9	2	e.0047	.0056	e.0064	.5
Diethyl phthalate , whole water	3	5	9	2	e.018	.025	e.031	ND
D-Limonene, dissolved	4	5	3	3	e.060	e.070	e.080	ND
Isophorone, whole water	3	5	9	1	e.12	e.12	e.12	ND
Isopropylbenzene (cumene), dissolved	4	5	3	3	e.010	e.020	e.030	ND
Methyl salicylate, whole water	3	3	9	2	e.0073	.0079	e.0084	.017
Nonylphenol diethoxylate (NP2EO) , dissolved	4	1	3	2	e2.4	2.6	e2.7	3.5
Nonylphenol diethoxylate (NP2EO) , whole water	3	2	9	1	e2.7	e2.7	e2.7	.66
Octylphenol diethoxylate (OP2EO) , dissolved	4	1	3	2	e.080	.090	e.10	.19
Octylphenol monoethoxylate (OP1EO) , dissolved	4	1	3	2	e.20	.25	e.30	.39
Octylphenol monoethoxylate (OP1EO) , whole water	3	3	9	6	e.14	.16	e2.6	5.2
para-Nonylphenol (NP) , dissolved	4	4	3	3	e.40	e.70	e1.5	.83

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Household, industrial, and minor agricultural use compounds (HIACs)—Continued								
para-Nonylphenol (NP) , whole water	3	2	9	1	e2.1	e2.1	e2.1	0.64
Phenol, dissolved	4	1	3	2	e.11	.14	e.17	.34
Phenol, whole water	3	1	9	2	e.034	.048	e.062	.94
Tetrachloroethylene, dissolved	4	5	3	1	e.030	e.030	e.030	ND
Tributyl phosphate, whole water	3	2	9	1	e.12	e.12	e.12	.059
Triphenyl phosphate, whole water	3	2	9	1	e.052	e.052	e.052	.033
Tri(2-butoxyethyl) phosphate, whole water	3	2	9	1	e.12	e.12	e.12	.13
Tri(dichloroisopropyl) phosphate, whole water	3	2	9	1	e.089	e.089	e.089	.071
Polyaromatic hydrocarbons (PAHs)								
1-Methylnaphthalene, dissolved	4	1	3	2	e0.006	0.013	e0.020	0.04
1-Methylnaphthalene, whole water	3	5	9	2	e.0063	.0065	e.0067	ND
2-Methylnaphthalene, dissolved	4	1	3	3	e.010	e.030	e.030	.06
2-Methylnaphthalene, whole water	3	5	9	2	e.0064	.0066	e.0068	ND
Anthracene , whole water	3	2	9	1	e.096	e.096	e.096	.06
Benzo[a]pyrene , whole water	3	2	9	1	e.096	e.096	e.096	.03
Carbazole, whole water	3	3	9	1	e.11	e.11	e.11	.11
Fluoranthene, whole water	3	2	9	1	e.13	e.13	e.13	.15
Naphthalene, dissolved	4	1	3	3	e.0070	e.020	e.030	.049
Naphthalene, whole water	3	5	9	3	e.0086	e.011	e.057	ND
Phenanthrene, dissolved	4	1	3	2	e.0050	.0075	e.010	.02
Phenanthrene, whole water	3	2	9	2	e.0041	.057	e.11	.019
Pyrene , whole water	3	2	9	1	e.12	e.12	e.12	.04

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Sterol compounds (SCs)								
<i>3-beta</i> -Coprostanol, dissolved	4	1	3	2	e0.50	0.55	e0.60	0.77
<i>beta</i> -Sitosterol, dissolved	4	1	3	2	e.70	.80	e.90	1.2
<i>beta</i> -Stigmastanol, dissolved	4	1	3	2	e.70	.80	e.90	1.8
Cholesterol, dissolved	4	1	3	3	e.50	e.60	e.80	.94

¹Compound detected in one or more method-blank samples but at concentrations generally substantially less than study reporting level; for environmental samples associated with method-blank samples with detections, a screening level of five times the detected concentration in the method-blank sample was used.

²Compound generally detected infrequently in method-blank samples (generally less than about 10 percent of method-blank samples); compound was not detected in environmental samples associated with method-blank samples with detections, or compound was detected in method-blank samples at concentrations substantially less than detected concentrations in environmental samples associated with the method-blank samples with detections.

³Compound detected in method-blank samples but not detected in any environmental samples at concentrations greater than study reporting level.

⁴Compound detected in method-blank samples but at concentrations substantially less than detected concentrations in environmental samples associated with the method-blank samples with detections.

⁵Compound detected in method-blank samples; however, compound was excluded from analyses and discussion related to occurrence of organic wastewater compounds in drinking water, wastewater effluents based on results for laboratory reagen-spike or environmental matrix-spike samples.