

Table 10. Statistical summaries of analytical results for laboratory surrogate-spike compounds.

[Analytical method number: 1, Cahill and others (2004); 3, Lee and others (2004); 4, Zaugg and others (2002); 5, Burkhardt and others (2005). RSD, relative standard deviation]

Compound	Analytical method number	Footnote	Number of samples spiked with surrogate compounds	Minimum surrogate percent recovery	Median surrogate percent recovery	Maximum surrogate percent recovery	Acceptable range for median surrogate percent recovery	Surrogate percent recovery RSD
Bisphenol-A-d3 (surrogate), dissolved	4	2	12	118	148	164	50–120	9
Bisphenol-A-d3 (surrogate), whole water (b)	3	2	15	3	173	218	50–120	43
Bisphenol-A-d8 (surrogate), whole water	3	1	13	51	81	111	50–120	24
Bisphenol-A-d8 (surrogate), bottom sediment	5	1	3	21	27	27	18–44	14
Caffeine-c13 (surrogate), dissolved	1	1	4	62	72	82	50–120	12
Caffeine-c13 (surrogate), dissolved	4	2	12	114	125	136	50–120	5
Caffeine-c13 (surrogate), whole water	3	1	15	58	82	141	50–120	27
Caffeine-d8 (surrogate), whole water	3	1	12	50	72	89	50–120	16
Decafluorobiphenyl (surrogate), dissolved	4	1	12	73	89	96	50–120	9
Decafluorobiphenyl (surrogate), whole water	3	1	27	22	55	73	50–120	24
Decafluorobiphenyl (surrogate), bottom sediment	5	3	3	19	31	48	30–60	45
Ethyl-nicotinate-d4 (surrogate), dissolved	1	1	27	42	85	117	50–120	20
Fluoranthene-d10 (surrogate), dissolved	4	4	12	114	123	132	50–120	4
Fluoranthene-d10 (surrogate), whole water	3	1	27	41	59	118	50–120	33
Fluoranthene-d10 (surrogate), bottom sediment	5	1	3	50	79	80	70–85	24

¹Median percent recovery for surrogate-spike compounds near or within acceptable range, and percent recovery RSD acceptable (less than 40 percent).

²Median percent recovery for surrogate-spike compounds outside of acceptable range and/or percent recovery RSD unacceptable (greater than 40 percent); compound excluded from analyses and discussion related to occurrence of organic wastewater compounds in drinking water, wastewater effluents, and the Big Sioux River.

³Median percent recovery for surrogate-spike compounds within acceptable range, but percent recovery RSD higher than acceptable range; discussions with analytical chemist indicated that large RSD for this compound is not unusual and not indicative of poor analytical results for compounds reported for environmental bottom-sediment samples (Mark Burkhardt, U.S. Geological Survey National Water Quality Laboratory, oral commun., February 17, 2006); laboratory surrogate-spike results for bottom-sediment samples judged to be acceptable.

⁴Median percent recovery for the fluoranthene-d10 surrogate slightly exceeded the acceptable range. Other quality-assurance/quality-control results for study target compounds physically and chemically similar to the fluoranthene-d10 surrogate were reviewed in detail for acceptability. Because the median percent recovery for fluoranthene-d10 only slightly exceeded the acceptable range, no study target compounds were excluded solely on the basis of the fluoranthene-d10 recovery results.