

Table B. Pesticide compounds analyzed in NAWQA bed-sediment or whole-fish samples.

[Pesticide compounds include pesticides, degradates, and manufacturing by-products. Pesticide compounds are grouped by pesticide class. Common synonyms are listed in parentheses in column 1. The cited references are listed by number at the end of Appendix 1. CAS, Chemical Abstracts Service; Parameter code, the number used to identify a pesticide in the U.S. Geological Survey National Water Information System and the U.S. Environmental Protection Agency Data Storage and Retrieval System; µg/kg dw, micrograms per kilogram dry weight; µg/kg ww, micrograms per kilogram wet weight; —, not analyzed.]

Pesticide compound (synonym)	Type of pesticide compound (parent pesticide, if degradate)	CAS number	Bed sediment		Whole fish	
			Parameter code	Reporting level (µg/kg dw)	Parameter code	Reporting level (µg/kg ww)
Chlorobenzoic acid esters						
Dacthal (DCPA) ¹	Herbicide	1861-32-1	49324	5	49378	5
Organochlorines						
Aldrin	Insecticide, Component of total dieldrin ²	309-00-2	49319	1	49353	5
<i>cis</i> -Chlordane	Insecticide, Component of total chlordane ³	5103-71-9	49320	1	49380	5
<i>trans</i> -Chlordane	Insecticide, Component of total chlordane ³	5103-74-2	49321	1	49379	5
Chloroneb	Insecticide	2675-77-6	49322	5	—	—
<i>o,p'</i> -DDD	Degradate (<i>o,p'</i> -DDT), Component of total DDT ⁴	53-19-0	49325	1	49374	5
<i>p,p'</i> -DDD (<i>p,p'</i> -TDE)	Insecticide, Degradate (<i>p,p'</i> -DDT), Component of total DDT ⁴	72-45-8	49326	1	49375	5
<i>o,p'</i> -DDE	Degradate (<i>o,p'</i> -DDT), Component of total DDT ⁴	3424-82-6	49327	1	49373	5
<i>p,p'</i> -DDE	Degradate (<i>p,p'</i> -DDT), Component of total DDT ⁴	72-55-9	49328	1	49372	5
<i>o,p'</i> -DDT	By-product in technical DDT, Component of total DDT ⁴	789-02-6	49329	2	49377	5
<i>p,p'</i> -DDT	Insecticide, Component of total DDT ⁴	50-29-3	49330	2	49376	5
Dieldrin	Insecticide, Degradate (Aldrin), Component of total dieldrin ²	60-57-1	49331	1	49371	5
Endosulfan I (<i>alpha</i> -Endosulfan)	Insecticide	959-98-8	49332	1	—	—
Endrin	Insecticide	72-20-8	49335	1	49370	5
<i>alpha</i> -HCH	Degradate (<i>gamma</i> -HCH), By-product in technical lindane, Component of total HCH ⁵	319-84-6	49338	1	49366	5
<i>beta</i> -HCH	By-product in technical lindane, Component of total HCH ⁵	319-85-7	49339	1	49365	5
<i>gamma</i> -HCH (Lindane)	Insecticide, Component of total HCH ⁵	58-89-9	49345	1	49363	5
<i>delta</i> -HCH	Degradate (<i>gamma</i> -HCH), By-product in technical lindane, Component of total HCH ⁵	319-86-8	—	—	49364	5
Heptachlor	Insecticide, Component of total heptachlor ⁶	76-44-8	49341	1	49369	5
Heptachlor epoxide	Degradate (Heptachlor), Component of total heptachlor ⁶	1024-57-3	49342	1	49368	5
Hexachlorobenzene	Insecticide	118-74-1	49343	1	49367	5
Isodrin	Insecticide	465-73-6	49344	1	—	—
<i>o,p'</i> -Methoxychlor	Insecticide, Component of total methoxychlor ⁷	30667-99-3	49347	5	49362	5
<i>p,p'</i> -Methoxychlor	Insecticide, Component of total methoxychlor ⁷	72-43-5	49346	5	49361	5
Mirex	Insecticide	2385-85-5	49348	1	49360	5
<i>cis</i> -Nonachlor	By-product in technical chlordane, Component of total chlordane ³	5103-73-1	49316	1	49359	5

Table B. Pesticide compounds analyzed in NAWQA bed-sediment or whole-fish samples.—Continued

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Pesticide compound (synonym)	Type of pesticide compound (parent pesticide, if degradate)	CAS number	Bed sediment		Whole fish	
			Parameter code	Reporting level ($\mu\text{g}/\text{kg}$ dw)	Parameter code	Reporting level ($\mu\text{g}/\text{kg}$ ww)
<i>trans</i> -Nonachlor	By-product in technical chlordane, Component of total chlordane ³	39765-80-5	49317	1	49358	5
Oxychlordane	Degradate (Chlordane), Component of total chlordane ³	27304-13-8	49318	1	49357	5
Pentachloroanisole	Degradate (Pentachlorophenol)	1825-21-4	49460	1	49356	5
Toxaphene	Insecticide, Technical mixture	8001-35-2	49351	200	49355	200
Pyrethroids						
<i>cis</i> -Permethrin ¹	Insecticide, Component of total permethrin ⁸	52774-45-7	49349	5	—	—
<i>trans</i> -Permethrin ¹	Insecticide, Component of total permethrin ⁸	51877-74-8	49350	5	—	—

¹ This pesticide also can be considered an organochlorine pesticide because it is an organic pesticide with multiple chlorine substituents.

² The pesticide group “total dieldrin” refers to the summed concentrations of aldrin and dieldrin.

³ The pesticide group “total chlordane” refers to the summed concentrations of *cis*-chlordane, *trans*-chlordane, *cis*-nonachlor, *trans*-nonachlor, and oxychlordane. Chlordane was applied as a technical-grade mixture of over 140 compounds, including nonachlor isomers and other manufacturing by-products.

⁴ The pesticide group “total DDT” refers to the summed concentrations of *o,p'*-DDT, *p,p'*-DDT, *o,p'*-DDD, *p,p'*-DDD, *o,p'*-DDE, and *p,p'*-DDE. Technical DDT contained *p,p'*-DDT (the active ingredient) and *o,p'*-DDT (a manufacturing by-product).

⁵ The pesticide group “total HCH” refers to the summed concentrations of *alpha*-HCH, *beta*-HCH, *gamma*-HCH, and *delta*-HCH. Technical lindane is a mixture of several isomers of hexachlorocyclohexane; *gamma*-HCH is the active ingredient, and the other isomers are manufacturing by-products. In 1977, USEPA cancelled inclusion of *alpha*- and *beta*-HCH in technical-grade lindane (reference 2).

⁶ The pesticide group “total heptachlor” refers to the summed concentrations of heptachlor and heptachlor epoxide.

⁷ The pesticide group “total methoxychlor” refers to the summed concentrations of *o,p'*-methoxychlor and *p,p'*-methoxychlor.

⁸ The pesticide group “total permethrin” refers to the summed concentrations of *cis*-permethrin and *trans*-permethrin.

References—Appendix 1

- Oblinger Childress, C.J., Foreman, W.T., Conner, B.F., and Maloney, T.J., 1999, New reporting procedures based on long-term method detection levels and some considerations of interpretations of water-quality data provided by the U.S. Geological Survey National Water Quality Laboratory: U.S. Geological Survey Open-File Report 99-193, 19 p.
- U.S. Environmental Protection Agency, 1992, National study of chemical residues in fish: U.S. Environmental Protection Agency, Office of Science and Technology, EPA-823-R-92-008b, v. 2, variously paged.