Table 6. Method detection limits or minimum reporting levels and analytical techniques for nutrients, major ions, suspended sediment, radiochemicals, stable isotopes, and carbon analyzed in water samples, October 1996 through September 1998

[mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; g/kg, grams per kilogram; --, data not available; n/a, not applicable]

Constituent	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
Nutrients and organics, dissolved (mg/L)			
Ammonia as nitrogen, dissolved	7664–41–7	0.015	Fishman, 1993
Nitrite as nitrogen, dissolved	14797–65–0	0.01	do.
Ammonia plus organic nitrogen as nitrogen, dissolved	17778–88–0	0.2	do.
Nitrite plus nitrate as nitrogen, dissolved	--	0.05	do.
Ammonia plus organic nitrogen as nitrogen, total	17778–88–0	0.1	do.
Phosphorus, total	7723–14–0	0.01	do.
Orthophosphate, dissolved	14265–44–2	0.01	do.
Organic carbon, dissolved	--	0.1	Brenton and Arnett, 1993
Organic carbon, suspended	--	0.1	Wershaw and others, 1987
Major ions, dissolved (mg/l, except as indicated)			
Calcium	7440–70–2	0.02	Fishman, 1993
Magnesium	7439–95–4	0.01	do.
Sodium	7440–23–5	0.2	do.
Potassium	7440–09–7	0.1	do.
Chloride	16887–00–6	0.1	do.
Sulfate	14808–79–8	0.1	do.
Fluoride	16984–48–8	0.1	do.
Bromide	24959–67–9	0.01	do.
Silica	7631–86–9	0.01	do.
Iron (µg/L)	7439–89–6	3.0	do.
Manganese (µg/L)	7439–96–5	1.0	do.
Suspended sediment			
Suspended sediment			Guy, 1969
Radiochemical and stable isotopes			
Radon-222 (pCi/L)	14859–67–7	24	American Society for Testing Materials, 1996
Tritium (pCi/L)	10028–17–8	1.0	Ostlund and Dorsey, 1977
Oxygen-18/oxygen-16 (per mil)	n/a	n/a	Epstein and Mayeda, 1953
Deuterium/protium (per mil)	n/a	n/a	Coplen and others, 1991
Carbon			
Carbon, inorganic (g/kg)	n/a	0.1	Wershaw and others, 1987
Carbon, organic (g/kg)	n/a	0.1	do.
Carbon, total (g/kg)	n/a	0.1	do.

[1]MDL: Method detection limit—Minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero.

[2]MRL: Minimum reporting level—Smallest measured concentration of a constituent that may be reliably reported by using a given analytical method (Timme, 1995).

Table 7. Method detection limits or minimum reporting levels and analytical techniques for selected pesticides analyzed in water samples, October 1996 through September 1998

[μg/L, micrograms per liter; --, data not available; %, percent]

Constituent	Trade name	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
Pesticides, dissolved (μg/L, except as indicated)				
acetochlor	Harness, Surpass	34256–82–1	0.002	Zaugg and others, 1995
2,6-diethylaniline	--	579–66–8	.003	do.
alachlor	Lasso	15972–60–8	.002	do.
atrazine	Atrazine, AAtrex	1912–24–9	.001	do.
azinphos, methyl	Guthion	86–50–0	.001	do.
benfluralin	--	1861–40–1	.002	do.
butylate	Sutan, Genate	2008–41–5	.002	do.
carbaryl	Sevin, Savit	63–25–2	.003	do.
carbofuran	Furadan	1563–66–2	.003	do.
chlorpyrifos	Dursban, Lorsban	2921–88–2	.004	do.
cyanazine	Bladex	21725–46–2	.004	do.
DCPA	Dacthal	1861–32–1	.002	do.
deethylatrazine	--	6190–65–4	.002	do.
diazinon	several	333–41–5	.002	do.
dieldrin	--	60–57–1	.001	do.
disulfoton	Di-Syston	298–04–4	.017	do.
EPTC	Eradicane, Eptam	759–94–4	.002	do.
ethalfluralin	Sonalan, Curbit	55283–68–6	.004	do.
ethoprop	Mocap	13194–48–4	.003	do.
fonofos	Dyfonate	944–22–9	.003	do.
lindane	Gammasan	58–89–9	.004	do.
linuron	Lorox, Linex	330–55–2	.002	do.
malathion	several	121–75–5	.005	do.
metolachlor	Dual	51218–45–2	.002	do.
metribuzin	Sencor, Lexone	21087–64–9	.004	do.
molinate	--	2212–67–1	.004	do.
napropamide	Devrinol	15299–99–7	.003	do.
parathion	Parathion, 15% wettable	56–38–2	.004	do.
parathion, methyl	Penncap-M	298–00–0	.006	do.
pebulate	Tillam	1114–71–2	.004	do.
pendimethalin	Prowl	40487–42–1	.004	do.
phorate	Thimet	298–02–2	.002	do.
prometon	Pramitol	1610–18–0	.018	do.
propachlor	Ramrod	1918–16–7	.007	do.
propanil	--	709–98–8	.004	do.

Table 7. Method detection limits or minimum reporting levels and analytical techniques for selected pesticides analyzed in water samples, October 1996 through September 1998—Continued

Constituent	Trade name	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
		Pesticides, dissolved (μg/L, except as indicated)—Continued		
propargite	Omite, Comite	2312–35–8	0.013	Zaugg and others, 1995
propyzamide	Kerb	23950–58–5	.003	do.
simazine	Princep	122–34–9	.005	do.
tebuthiuron	Spike	34014–18–1	.010	do.
terbacil	Sinbar	5902–51–2	.007	do.
terbufos	Counter	13071–79–9	.013	do.
thiobencarb	--	28249–77–6	.002	do.
triallate	--	2303–17–5	.001	do.
trifluralin	Treflan, Trilin, Trific	1582–09–8	.002	do.
alpha-HCH	--	319–84–6	.002	do.
cis-permethrin	--	54774–45–7	.005	do.
p, p'-DDE	--	72–55–9	.006	do.
diazinon-d10 (surrogate) (%)	--	100155–47–3	.1	do.
terbuthylazine (surrogate) (%)	--	5915–41–3	.1	do.
alpha-HCH-d6 (surrogate) (%)	--	--	.1	do.
		Pesticides, dissolved (μg/L, except as indicated)		
2, 4, 5-T	--	93–76–5	.035	Werner and others, 1996
2, 4-D	Hedonal	94–75–7	.035	do.
2, 4-DB	Butyrac	94–82–6	.035	do.
Acifluorfen	Blazer	50594–66–6	.035	do.
Aldicarb	Temik	116–06–3	.016	do.
Aldicarb sulfone	Standak	1646–88–4	.016	do.
Aldicarb sulfoxide	--	1646–87–3	.021	do.
Bentazon	Basagran	25057–89–0	.014	do.
Bromacil	Hyvar X	314–40–9	.035	do.
Bromoxynil	Brominal	1689–84–5	.035	do.
3-hydroxycarbofuran	--	16655–82–6	.014	do.
Chloramben	Amiben	133–90–4	.011	do.
Chlorothalonil	Bravo	1897–45–6	.035	do.
Clopyralid	Lontrel	1702–17–6	.05	do.
Decthal monoacid	--	887–54–7	.017	do.
Dicamba	Banvel	1918–00–9	.035	do.
Dichlobenil	Casoron	1194–65–6	.02	do.
Dichlorprop	Hedonal	120–36–5	.032	do.
Dinoseb	Premerge	88–85–7	.035	do.
Diuron	Karmex	330–54–1	.02	do.
DNOC	--	534–52–1	.035	do.
Esfenvalerate	Pydrin	66230–04–4	.019	do.
Fenuron	Falisilvan	101–42–8	.013	do.

Table 7. Method detection limits or minimum reporting levels and analytical techniques for selected pesticides analyzed in water samples, October 1996 through September 1998—Continued

Constituent	Trade name	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
Pesticides, dissolved (µg/L, except as indicated)—Continued				
Fluometuron	Cotoran	2164–17–2	0.035	Werner and others, 1996
Linuron	Lorox	330–55–2	.018	do.
MCPA	Agroxone	94–74–6	.05	do.
MCPB	Tropotox	94–81–5	.035	do.
Methiocarb	Mesurol	2032–65–7	.026	do.
Methomyl	Lannate	16752–77–5	.017	do.
1-naphthol	--	90–15–3	.007	do.
Neburon	Kloben	555–37–3	.015	do.
Norflurazon	Zorial	27314–13–2	.024	do.
Oryzalin	Dirimal	19044–88–3	.019	do.
Oxamyl	Vydate	23135–22–0	.018	do.
Picloram	Tordan	1918–02–1	.05	do.
Propham	Triherbide-IPC	122–42–9	.035	do.
Propoxur	Baygon	114–26–1	.035	do.
Silvex	--	93–72–1	.021	do.
Triclopyr	Garlon	55335–06–3	.05	do.
BDMC (surrogate) (%)	--	–/–/–	.1	do.

[1]MDL: Method detection limit—Minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero.

[2]MRL: Minimum reporting level—Smallest measured concentration of a constituent that may be reliably reported by using a given analytical method (Timme, 1995).

Table 8. Method detection limits or minimum reporting levels and analytical techniques for volatile organic compounds analyzed in water samples, October 1996 through September 1998

[µg/L, micrograms per liter; --, data not available; %, percent]

Constituent	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
Volatile organic compounds, total (µg/L, except as indicated)			
1, 1, 1, 2, 2, 2-Hexachloroethane	67–72–1	0.362	Rose and Schroeder, 1995
1, 1, 1, 2-Tetrachloroethane	630–20–6	.044	do.
1, 1, 1-Trichloroethane	71–55–6	.032	do.
1, 1, 2, 2-Tetrachloroethane	79–34–5	.132	do.
1, 1, 2-Trichloroethane	79–00–5	.064	do.
1, 1, 2-Trichloro-1, 2, 2-trifluoroethane	76–13–1	.032	do.
1, 1-Dichloroethane	75–34–3	.066	do.
1, 1-Dichloroethene	75–35–4	.044	do.
1, 1-Dichloropropene	563–58–6	.026	do.
(1, 1-Dimethylethyl)benzene	98–06–6	.096	do.
1, 2, 3, 4-Tetramethylbenzene	488–23–3	.23	do.
1, 2, 3, 5-Tetramethylbenzene	527–53–7	.24	do.
1, 2, 3-Trichlorobenzene	87–61–6	.266	do.
1, 2, 3-Trichloropropane	96–18–4	.07	do.
1, 2, 3-Trimethylbenzene	526–73–8	.124	do.
1, 2, 4-Trichlorobenzene	120–82–1	.188	do.
1, 2, 4-Trimethylbenzene	95–63–6	.056	do.
1, 2-Dibromo-3-chloropropane	96–12–8	.214	do.
1, 2-Dibromoethane	106–93–4	.036	do.
1, 2-Dichlorobenzene	95–50–1	.048	do.
1, 2-Dichloroethane	107–06–2	.134	do.
1, 2-Dichloroethane-d4 (surrogate) (%)	17060–07–0	.1	do.
1, 2-Dichloropropane	78–87–5	.068	do.
1, 2-Dimethylbenzene	95–47–6	.064	do.
1, 3, 5-Trimethylbenzene	108–67–8	.044	do.
1, 3-Dichlorobenzene	541–73–1	.054	do.
1, 3-Dichloropropane	142–28–9	.116	do.
1, 3 & 1, 4-Dimethylbenzene	106–42–3:10	.064	do.
1, 4-Bromofluorobenzene (surrogate) (%)	460–00–4	.1	do.
1, 4-Dichlorobenzene	106–46–7	.05	do.
2, 2-Dichloropropane	594–20–7	.078	do.
1-Chloro-2-methylbenzene	95–49–8	.042	do.
1-Chloro-4-methylbenzene	106–43–4	.056	do.
1-Isopropyl-4-methylbenzene	99–87–6	.11	do.
(1-Methylethyl)benzene	98–82–8	.032	do.

Table 8. Method detection limits or minimum reporting levels and analytical techniques for volatile organic compounds analyzed in water samples, October 1996 through September 1998—Continued

Constituent	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
Volatile organic compounds, total (μg/L, except as indicated)—Continued			
(1-Methylpropyl)benzene	135–98–8	0.048	Rose and Schroeder, 1995
2-Butanone	78–93–3	1.65	do.
2-Ethyltoluene	611–14–3	.1	do.
2-Hexanone	591–78–6	.746	do.
2-Propenal	107–02–8	1.43	do.
2-Propenenitrile	107–13–1	1.23	do.
3-Chloro-1-propene	107–05–1	.196	do.
4-Methyl-2-pentanone	108–01–1	.374	do.
Acetone	67–64–1	4.9	do.
Benzene	71–43–2	.032	do.
Bromobenzene	108–86–1	.036	do.
Bromochloromethane	74–97–5	.044	do.
Bromodichloromethane	75–27–4	.048	do.
Bromoethene	593–60–2	.1	do.
Bromomethane	74–83–9	.148	do.
Carbon disulfide	75–15–0	.08	do.
Chlorobenzene	108–90–7	.028	do.
Chloroethane	75–00–3	.12	do.
Chloroethene	75–01–4	.112	do.
Chloromethane	74–87–3	.254	do.
cis-1, 2-Dichloroethene	156–59–2	.038	do.
cis-1, 3-Dichloropropene	10061–01–5	.092	do.
Dibromochloromethane	124–48–1	.182	do.
Dibromomethane	74–95–3	.05	do.
Dichlorodifluoromethane	75–71–8	.096	do.
Dichloromethane	75–09–2	.382	do.
Diethyl ether	60–29–7	.17	do.
Diisopropyl ether	108–20–3	.098	do.
Ethylbenzene	100–42–5	.042	do.
Ethyl methacrylate	97–63–2	.278	do.
Ethyl tert-butyl ether	637–92–3	.054	do.
Ethylbenzene	100–41–4	.03	do.
Hexachlorobutadiene	87–68–3	.142	do.
Iodomethane	74–88–4	.076	do.
Methyl acrylate	96–33–3	.612	do.
Methyl acrylonitrile	126–98–7	.57	do.
Methylbenzene	108–88–3	.041	do.

Table 8. Method detection limits or minimum reporting levels and analytical techniques for volatile organic compounds analyzed in water samples, October 1996 through September 1998—Continued

Constituent	Chemical Abstract Service (CAS) registry number	MDL[1] or MRL[2]	Reference for analytical technique
Volatile organic compounds, total (μg/L, except as indicated)—Continued			
Methyl methacrylate	80–62–6	0.35	Rose and Schroeder, 1995
Methyl-tert-butyl ether	1634–04–4	.112	do.
Naphthalene	91–20–3	.25	do.
n-Butylbenzene	104–51–8	.186	do.
n-Propylbenzene	103–65–1	.042	do.
tert- Amyl methyl ether	994–05–8	.112	do.
Tetrachloroethene	127–18–4	.038	do.
Tetrachloromethane	56–23–5	.088	do.
Tetrahydrofuran	109–99–9	1.15	do.
Toluene-d8 (surrogate) (%)	2037–26–5	.1	do.
trans-1, 2-Dichloroethene	156–60–5	.032	do.
trans-1, 3-Dichloropropene	10061–02–6	.134	do.
trans-1, 4,-Dichloro-2-butene	110–57–6	.692	do.
Tribromomethane	75–25–2	.104	do.
Trichloroethene	79–01–6	.038	do.
Trichlorofluoromethane	75–69–4	.09	do.
Trichloromethane	67–66–3	.052	do.

[1]MDL: Method detection limit—Minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero.

[2]MRL: Minimum reporting level—Smallest measured concentration of a constituent that may be reliably reported by using a given analytical method (Timme, 1995).

Table 9. Minimum reporting levels and analytical techniques for organochlorine pesticides and total polychlorinated biphenyls analyzed in fish-tissue samples, October 1996 through September 1998

[MRL, minimum reporting level; µg/kg, micrograms per kilogram; %, percent; --, data not available]

Constituent	Chemical Abstract Service (CAS) registry number	MRL (µg/kg, except as noted)	Reference for analytical technique
Organochlorine pesticides			
2,4,6-Trichlorobiphenyl (surrogate) (%)	35693–92–6	0.1	Leiker and others (1995)
3,5-Dichlorobiphenyl (surrogate) (%)	34883–41–5	.1	do.
Aldrin	309–00–2	5	do.
Dacthal	1861–32–1	5	do.
Dieldrin	60–57–1	5	do.
Endrin	72–20–8	5	do.
Heptachlor	76–44–8	5	do.
Heptachlor epoxide	1024–57–3	5	do.
Hexachlorobenzene	118–74–1	5	do.
Lindane	58–89–9	5	do.
Lipids	--	.5	do.
Mirex	2385–85–5	5	do.
Oxychlordane	27304–13–8	5	do.
Pentachloroanisole	1825–21–4	5	do.
Toxaphene	8001–35–2	200	do.
alpha-HCH	319–84–6	5	do.
alpha-HCH-d6 (surrogate) (%)	--	.1	do.
beta-HCH	319–85–7	5	do.
cis-Chlordane	5103–71–9	5	do.
cis-Nonachlor	5103–73–1	5	do.
delta-HCH	319–86–8	5	do.
o,p'-DDD	53–19–0	5	do.
o,p'-DDE	3424–82–6	5	do.
o,p'-DDT	789–02–6	5	do.
o,p'-Methoxychlor	30667–99–3	5	do.
p,p'-DDD	72–54–8	5	do.
p,p'-DDE	72–55–9	5	do.
p,p'-DDT	50–29–3	5	do.
p,p'-Methoxychlor	72–43–5	5	do.
trans-Chlordane	5103–74–2	5	do.
trans-Nonachlor	39765–80–5	5	do.
Polychlorinated biphenyls	1336–36–3	50	do.