Human Health Criteria References: Methyl Mercury

Following are the references available to the Agency for developing or revising human health criteria for **Methyl Mercury.** In addition to the references cited below, please refer the *Toxicological Effects of Methylmercury* report, issued in July 11, 2000 by the National Academy of Sciences. These references were discussed in the *Federal Register* notice entitled, *Notice of Intent to Develop Ambient Water Quality Criteria for Protection of Human Health - Arsenic, Methyl mercury, and Carbofuran; Notice of Data Availability; Request for Data and Information*.

Addresses:
Send an original and three copies of any additional data, references, or information to W-00-19 Comment Clerk for arsenic; to W-00-20 Comment Clerk for methylmercury; or to W-00-21 Comment Clerk for carbofuran at the Water Docket, MC 4101, US EPA, 1200 Pennsylvania Ave. NW, Washington, D.C. 20460. Material may also be hand delivered to Room EB 57, 401 M Street SW, Washington, DC 20460 between 9:00 am and 3:30 pm EST. When using a private delivery company, send to Room EB 57, 401 M Street SW, Washington, DC 20460 or to Charles O. Abernathy, US EPA (MC-4304), 401 M Street SW, Room 543 West Tower, Washington, DC 20460. Information may also be submitted electronically to OW-Docket@epa.gov. Information should be submitted as a WP5.1, 6.1 and/or 8.0 or an ASCII file with no form of encryption.

Dates:
Submission of information would be most useful if submitted within 60 days. Information submitted after that time or near the end of the document preparation process may not receive the degree of consideration as information received earlier.

For Further Information Contact:
Mary Manibusan, Health and Ecological Criteria Division (4304), US EPA, Ariel Rios Building, 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460; (202) 260-3688; manibusan.mary@epa.gov.

REFERENCES FOR THE HEALTH ASSESSMENT SECTION:

Aaseth, J., A. Wannag, and T. Norseth. 1976. The effect of N-acetylated DL-penicillamine and DL-homocysteine thiolactone on the mercury distribution in adult rats, rat fetuses and Macaca monkeys after exposure to methyl mercuric chloride. Acta Pharmacol. Toxicol. 39:302-311. (As cited in Luecke et al. 1997).

Aberg, B., L. Ekman, R. Falk, U. Greitz, G. Persson, and J. Snihs. 1969. Metabolism of methyl mercury (Hg) compounds in man: Excretion and distribution. Arch. Environ. Health 19:478-484.

Altmann, L., K. Sveinsson, U. Kramer, et al. 1998. Visual functions in 6-year-old children in relation to lead and mercury levels. Neurotoxicol. Teratol. 20(1):9-17.

ATSDR. 1999. Agency for Toxic Substances Disease Registry. Toxicological profile for mercury. Update. Atlanta, GA: ATSDR.

Al-Shahristani, H. and K.M. Shihab. 1974. Variation of biological half-life of methyl mercury in man. Arch. Environ. Health 28:342-344.

Amin-Zaki, L., M. Majeed, M. Greendow, et al. 1981. Methylmercury poisoning in the Iraqi suckling infant: A longitudinal study over five years. J. Appl. Toxicol. 1:210-214.

Amin-Zaki, L., M. Majeed, S. Elhassani, T. Clarkson, M. Greenwood, and R. Doherty. 1979. Prenatal methylmercury poisoning. Am. J. Dis. Child 133:172-177.

Amin-Zaki, L., S. Elhassani, M. Majeed, T. Clarkson, R. Doherty, and M. Greenwood. 1976. Perinatal methylmercury poisoning in Iraq. Am. J. Dis. Child 130:1070-1076.

Amin-Zaki, L., S. Elhassani, M.A. Majeed, T.W. Clarkson, R.A. Doherty, and M. Greenwood. 1974. Intra-uterine methylmercury poisoning in Iraq. Pediatrics 54:587-595.

Andersen, M.E., H.J. Clewell, and K. Krishnan. 1995. Tissue dosimetry, pharmacokinetic modeling, and interspecies scaling factors. Risk Anal. 15:533-537.

Arito, H. and M. Takahashi. 1991. Effect of methyl mercury on sleep patterns in the rat. In: Suzuki, T., N. Imura, and T.W. Clarkson, eds. Advances in mercury toxicology. New York: Plenum Press, 381-394.

Aschner, M. and J.L. Aschner. 1990. Mercury neurotoxicity: Mechanisms of blood-brain barrier transport. Neurosci. Biobehav. Rev. 14(2):169-176.

Bahnick, D., C. Sauer, B. Butterworth, and D. Kuehl. 1994. A national study of mercury contamination of fish. Chemosphere 29:537-546.

Bakir, F., S. Damluji, L. Amin-Zaki, et al. 1973. Methylmercury poisoning in Iraq. Science 181:230-241.

Ballatori, N. and T. Clarkson. 1982. Developmental changes in the biliary excretion of methyl mercury and glutathione. Science 216(2):61-63.

Bidone, E. D., Z. C. Castilhos, T. M. Cid de Souza, et al. 1997. Fish contamination and human exposure to mercury in the Tapajos River Basin, Para State, Amazon, Brazil: a screening approach. Bull. Environ. Contam Toxicol 59(2):194-201.

Birke, G., G. Johnels, L-O Plantin, B. Sjostrand, S. Skerfving and T. Westermark. 1972. Studies on humans exposed to methyl mercury through fish consumption. Arch. Environ. Health 25:77.

Blakley, B. R., C. S. Sisodia, and T. K. Mukkur. 1980. The effect of methyl mercury, tetraethyl lead, and sodium arsenate on the humoral immune response in mice. Toxicol. Appl. Pharmacol. 52:245-254.

Bloom, N. S. 1992. On the Chemical Form of Mercury in Edible Fish and Marine Invertebrate Tissue. *Can. J. Fisher. Aq. Sci.* 49:1010-1017.

Bloom, N. S. and E. Kuhn. 1994. Mercury speciation in meat products, personal communication. October 1, 1994.

Bloom, N. S., C. J. Watras, and J. P. Hurley. 1991. Impact of acidification on the methylmercury cycle of remote seepage lakes. Water, Air, and Soil Poll. 56: 477-491.

Bloom, N. S. and S. W. Effler. 1990. Seasonal variability in the mercury speciation of Onondaga Lake (New York). Water Air Soil Pollut. 56:477-491.

Bloom, N. S. and C. J. Watras. 1989. Observations of methylmercury in precipitation. Sci. Tot. Environ. 87/88: 199-207.

Bloom, N. and W. F. Fitzgerald. 1988. Determination of Volatile Mercury Species at the Picogram level by Low-Temperature Gas Chromatography with Cold-Vapor Atomic Fluorescence Detection. Analytica Chimica Acta, 208:151-161.

Bornhausen, M., M. R. Musch, and H. Greim. 1980. Operant behavior performance changes in rats after prenatal methyl mercury exposure. Toxicol. Appl. Pharmacol. 56:305-316.

Budtz-Jorgensen, E., P. Grandjean, N. Keiding, et al. 2000. Benchmark dose calculations of methylmercury-associated neurobehavioral deficits. Toxicol. Lett. 112-113 :193-199.

Budtz-Jorgensen, E., N. Keiding, and P. Grandjean. 1999. Benchmark modeling of the Faroese methylmercury data. Final Report to U. S. EPA

Burbacher, T. M., M. K. Mohamed, and N. K. Mottett. 1988. Methyl mercury effects on reproduction and offspring size at birth. Reprod. Toxicol. 1:267-278.

Byrne, A. R. and L. Kosta. 1974. Simultaneous neutron-activation determination of selenium and mercury in biological samples by volatilization. Talanta. 21:1083-1090.

Campbell, D., M. Gonzales, and J. B. Sullivan. 1992. Mercury. In: Hazardous Materials Toxicology, Clinical Principles of Environmental Health, J. B. Sullivan and G. R. Krieger, eds.

Williams and Wilkins, Baltimore, MD. p. 824-833.

Cappon, C. J. 1987. Uptake and speciation of mercury and selenium in vegetable crops grown on compost-treated soil. Water, Air and Soil Poll. 34:353-361.

Cappon, C.J. 1981. Mercury and selenium content and chemical form in vegetable crops grown on sludge-amended soil. Arch. Environ. Contam. Toxicol. 10: 673-689.

Cernichiari, E., R. Brewer, G. J. Myers, D. O. Marsh, L. W. Lapham, C. Cox, C. F. Shamlaye, M. Berlin, P. W. Davidson, and T. W. Clarkson. 1995. Monitoring methylmercury during pregnancy: Maternal hair predicts fetal brain exposure. NeuroToxicology 16:705-710.

Chang, L.W., S. Yamaguchi and J. A. W. Dudley. 1974. Neurological changes in cats following long-term diet of mercury contaminated tuna. Acta. Neuropathol. (Berlin) 27:171-176.

Charbonneau, S. M., I. Munro, and E. Nera. 1976. Chronic toxicity of methyl mercury in the adult cat. Toxicology 5:337-340.

Charleston, J. S., R. P. Bolender, R. L. Body, T. M. Burbacher, M. E. Vahter, and N. K. Mottet. 1994. Methylmercury induced cell population changes at specific brain sites of the monkey *Macaca fascicularis*. Toxicologist 14:259.

Clarkson, T.W. 1972. The pharmacology of mercury compounds. Ann. Rev. Pharmacol. 12:375-406.

Clarkson, T. W., J. B. Hursh, P. R. Sager, et al. 1988. Biological Monitoring of Toxic Metals. Plenum Press, New York, NY. p. 199-246.

Clarkson, T. W., L. Amin-Zaki, and S. Al-Tikriti. 1976. An outbreak of methyl mercury poisoning due to consumption of contaminated grain. Fed. Proc. 35: 2395-2399.

Cleckner, L. B., E. S. Esseks, P. G. Meier, and G. J. Keeler. 1995. Mercury concentrations in two great waters. Water, Air, and Soil Pollution. In press. [Note: as listed in MSRC]

Clewell, H. J. and M. E. Andersen. 1985. Risk assessment extrapolations and physiological modeling. Toxicol. Ind. Health 1(4):111-131.

Clewell, H. J. and M. E. Andersen. 1989. Biologically motivated models for chemical risk assessment. Health Phys. 57(Suppl 1):129-137.

Clewell, H. J. 1995. The application of physiologically based pharmacokinetic modeling in human health risk assessment of hazardous substances. Toxicol. Lett. 79:207-217.

Clewell, H. J., J. M. Gearhart, P. R. Gentry, T. R. Covington, C. B. Van Landingham, K. S. Crump, and A. M. Shipp. 1999. Evaluation of the uncertainty in an oral reference dose for methylmercury due to interindividual variability in pharmacokinetics. Risk Anal. 19:547-558.

Coccini, T, G. Randine, S. Candura, R. Nappi, L. Prockop, and L. Manzo. 2000. Low-level exposure to methylmercury modifies muscarinic cholinergic receptor binding characteristics in rat brain and lymphocytes: Physiological implications and new opportunities in biologic monitoring. Environmental Health Perspectives. 108(1): 29-33.

Cramer, G. M. 1994. Exposure of U. S. Consumers to Methylmercury from Fish. Presented at the DOE/FDA/EPA Workshop on Methylmercury and Human Health, Bethesda, MD. March 22-23 1994.

Crump, K. C. Landingham, C. Shamlaye, C. Cox, P. Davidson, G. Myers, and T. Clarkson. 2000. Benchmark concentrations for methylmercury obtained from the Seychelles child development study. Environmental Health Perspectives. 108: 257-263.

Crump, K., T. Kjellstrom, A. Shipp, A. Silvers, and A. Stewart. 1998. Influence of prenatal mercury exposure upon scholastic and psychological test performance: statistical analysis of a New Zealand cohort. Risk Anal. 18:701-713.

Crump, K., J. Viren, A. Silvers, H. Clewell, J. Gearhart, and A. Shipp. 1995. Reanalysis of dose-response data from the Iraqi methylmercury poisoning episode. Risk Anal. 15:523-532.

Dahl, R., White, R.F., Weihe, P., Sorensen, N., Letz, R., Hudnell, H.K., Otto, D.A., and Grandjean, P. 1996. Feasibility and validity of three computer-assisted neurobehavioral tests in 7-year ol children. Neurotoxicology and Teratology.

Davidson, P.W., G. J. Myers, C. Cox, C. Axtell, C. Shamlaye, J. Sloane-Reeves, E. Cernichiari, L. Needham, A. Choi, Y. Yang, M. Berlin, and T.W. Clarkson. 1998. Effects of prenatal and postnatal methylmercury exposure from fish consumption on neurodevelopment: Outcomes at 66 months of age in the Seychelles child development study. JAMA 280:701-707.

Davidson, P., G. Myers, C. Cox, C. Shamlaye, D. Marsh, M. Tanner, M. Berlin, J. Sloane-Reeves, E. Cernichiari, O. Choisy, A. Choi, and T. Clarkson. 1995. Longitudinal neurodevelopmental study of Seychellois children following in utero exposure to methylmercury from maternal fish ingestion: Outcomes at 19 and 29 months. NeuroToxicology 16:677-688.

Davis, A., N. S. Bloom, and S. S. Que Hee. 1997. The environmental geochemistry and bioaccessibility of mercury in soils and sediments: a review. Risk Anal. 17:557-569.

Dolbec, J., D. Mergler, C. J. Sousa Passos, S. Sousa de Morais, and J. Lebel. 1998. Methylmercury exposure and neurotoxic effects in the Brazilian Amazon. Methylmercury

Workshop. Raleigh, North Carolina. Nov. 18-20, 1998.

Dooley, J. H. 1992. Natural Sources of Mercury in the Kirkwood-Cohansey Aquifer System of the New Jersey Coastal Plain. New Jersey Geological Survey, Report 27.

Driscoll, C.T., V. Blette, C. Yan, C.L. Schofield, R. Munson, and J. Holsapple. 1995. The role of dissolved organic carbon in the chemistry and bioavailability of mercury in remote Adirondack lakes. Water Air Soil Pollut. 80:499-508.

Driscoll, C.T., C. Yan, C.L. Schofield, R. Munson, and J. Holsapple. 1994. The mercury cycle and fish in the Adirondack lakes. Environ. Sci. Technol. 28:136A-143A.

Fang, S.C. 1980. Comparative study of uptake and tissue distribution of methyl mercury in female rats by inhalation and oral routes of administration. Bull. Environ. Contam. Toxicol. 24:65-72.

Farris, F. F., R. L. Dedrick, P. V. Allen, and J. C. Smith. 1993. Physiological model for the pharmacokinetics of methyl mercury in the growing rat. Toxicol. Appl. Pharmacol. 119:74-90.

Fitzgerald, W. F. 1994. Global Biogeochemical Cycling of Mercury. Presented at the DOE/FDA/EPA Workshop on Methylmercury and Human Health, Bethesda, MD March 22-23 1994.

Fitzgerald, W. F., R. P. Mason, and G. M. Vandal. 1991. Atmospheric cycling and air-water exchange of mercury over mid-continental lacustrine regions. Water, Air, and Soil Pollution 56:745-767.

Ganther, H. E. 1978. Modification of methyl mercury toxicity and metabolism by selenium and vitamin E: Possible mechanisms. Environ. Health Perspect. 25:71-76.

Gearhart, J., H. Clewell, K. Crump, A. Shipp and A. Silvers. 1995. Pharmacokinetic dose estimates of mercury in children and dose-response curves of performance tests in a large epidemiological study. In: Porcella, D.B., J.W. Huckabee and B. Wheatley, eds. Mercury as a global pollutant. Boston: Kluwer Academic Publishers, pp. 49-58.

Grandjean, P., R. F. White, A. Nielsen, D. Cleary, and E. de Oliveira Santos. 1999. Methylmercury neurotoxicity in Amazonian children downstream from gold mining. Environ. Health Perspect. 107:587-591.

Grandjean, P., P. Weihe, R. White, F. Debes, S. Arak, K. Yokoyama, K. Murata, N. Sorensen, R. Dahl and P. Jorgensen. 1997. Cognitive deficit in 7-year-old children with prenatal exposure to methylmercury. Neurotoxicol. Teratol. 20:1-12.

Grandjean, P., P. Weihe, and R. White. 1995. Milestone development in infants exposed to methylmercury from human milk. NeuroToxicology 16:27-34.

Grandjean, P., P. J. Jorgensen, and P. Weihe. 1994. Human milk as a source of methylmercury exposure in infants. Environ. Health Perspect. 102:74-77.

Grandjean, P., P. Weihe, P. J. Jorgensen, T. Clarkson, E. Cernichiari, and T. Videro. 1992. Impact of maternal seafood diet on fetal exposure to mercury, selenium, and lead. Arch. Environ. Health 47:185-195.

Gray, D. G. 1995. A physiologically based pharmacokinetic model for methylmercury in the pregnant rat and fetus. Toxicol. Appl. Pharmacol. 132:91-103.

Greenwood, M. R., T. W. Clarkson, R. A. Doherty, et al. 1978. Blood clearance half-times in lactating and nonlactating members of a population exposed to methyl mercury. Environ. Res. 16:48-54.

Gunderson, V., K. Grant, T. Burbacher, J. Fagan, and N. Mottet. 1986. The effect of low-level prenatal methylmercury exposure on visual recognition memory in infant crab-eating macaques. Child Dev. 57:1076-1083.

Hall, R. A., E. G. Zook, and G. M. Meaburn. 1978. National Marine Fisheries Survey of Trace Elements in the Fishery Resource, NOAA Technical Report NMFS SSRF-721, U.S. Department of Commerce, Washington, DC.

Hansen, J. 1988. Blood mercury concentrations in birth giving Greenlandic women. Arctic. Med. Res. 47(1):175-178.

Hansen, J., E. Reske-Nielsen, O. Thorlacius-Ussing, et al. 1989. Distribution of dietary mercury in a dog. Quantitation and localization of total mercury in organs and central nervous system. Sci. Total Environ. 78:23-43.

Harada, M., J. Nakanishi, S. Konuma, K. Ohno, T. Kimura, H. Yamaguchi, K. Tsuruta, T. Kizaki, T. Ookawara, and H. Ohno. 1998. The present mercury contents of scalp hair and clinical symptoms in inhabitants of the Minamata area. Environmental Research, Section A 77:160-164.

Hatch, W. R. and W. L. Ott. 1968. Determination of sub-microgram quantities of mercury by atomic absorption spectrophotometry. Anal. Chem. 40(14):2085-2087.

Henry, E. A., L. J. Dodge-Murphy, G. N. Bigham, and S. M. Klein. 1995. Modeling the transport and fate of mercury in an urban lake (Onondaga Lake, NY). Water Air Soil Pollu. 80: 489-498.

Hislop, J., T. Collier, G. White, et al. 1983. The use of keratinized tissues to monitor the detailed exposure of man to methyl mercury from fish. Chemical Toxicology and Clinical Chemistry of Metals. Published by IUPAC. pp. 145-148.

Hollins, J., R. Willes, F. Bryce, et al. 1975. The whole body retention and tissue distribution of [203Hg]methyl mercury in adult cats. Toxicol. Appl. Pharmacol. 33:438-449.

Höök, O., K-D. Lundgren, and A. Swensson. 1954. On alkyl mercury poisoning. Acta. Med. Scand. 150:131-137.

Hultman, P. and H. Hansson-Georgiadis. 1999. Methyl mercury-induced autoimmunity in mice. Toxicology and Applied Pharmacology. 154: 203-211.

Hytten, F.E. and I. Leitch. 1971. The physiology of human pregnancy. 2nd ed. Oxford: Blackwell Scientific Publications.

Ilback, N. G. 1991. Effects of methyl mercury exposure on spleen and blood natural-killer (NK) cell-activity in the mouse. Toxicology. 67(1):117-124.

Inouye, M. and U. Murakami. 1975. Teratogenic effect of orally administered methylmercuric chloride in rats and mice. Congenital Anom. 15:1-9.

Jacobson, J. L., S. W. Jacobson, and H. E. B. Humphrey. 1990. Effect of in utero exposure to polychlorinated biphenyls and related contaminants on cognitive functioning in young children. J. Pediatr. 116:38-45.

Kaufman, H.C. 1969. Handbook of organometallic compounds. Princeton: Van Nostrand Co., Inc.

Kawasaki, Y., Y. Ikeda, T. Yamamoto, and K. Ikeda. 1986. Long-term toxicity study of methylmercury chloride in monkeys. J. Food Hyg. Soc. Jpn. 27:528-552.

Kerper, L. E., N. Ballatori, and T. W. Clarkson. 1992. Methyl mercury transport across the blood-brain barrier by an amino acid carrier. Am. J. Physiol. 262(5):R761-R765.

Kershaw, T. G., T. W. Clarkson, and P. H. Dhahir. 1980. The relationship between blood levels and dose of methyl mercury in man. Arch. Environ. Health 35:28-36.

Kjellstrom, T., P. Kennedy, S. Wallis, A. Stewart, L. Friberg, B. Lind, T. Wutherspoon, and C. Mantell. 1989. Physical and mental development of children with prenatal exposure to mercury from fish. Stage 2: Interviews and psychological tests at age 6. Report 3642. Solna, Sweeden: National Swedish Environmental Board, pp. 112 .

Kjellstrom, T., P. Kennedy, S. Wallis, and C. Mantell. 1986a. Physical and mental development of children with prenatal exposure to mercury from fish. Stage 1: Preliminary tests at age 4. Report 3080. Solna, Sweeden: National Swedish Environmental Protection Board.

Kjellstrom, T., P. Kennedy, S. Wallis, et al. 1986b. Physical and mental development of children with prenatal exposure to mercury from fish. Stage 2: Interviews and psychological tests at age 6. National Swedish Environmental Protection Board, Report 3642 (Solna, Sweden).

Koller, L. D., J. H. Exon and B. Arbogast. 1977. Methyl mercury: Effect on serum enzymes and humoral antibody. J. Toxicol. Environ. Health 2:1115-1123.

Krabbenhoft, D. P., J. G. Wiener, W. G. Brumbaugh, M. L. Olson, J. F. DeWild, and T. J. Sabin. 1999. A national pilot study of mercury contamination of aquatic ecosystems along multiple gradients. U. S. Geological Survey Toxic Substances Hydrology Program: Proceedings of the Technical Meeting. Charleston, South Carolina, March 8-12, 1999. Volume 2 of 3: Contamination of hydrologic systems and related ecosystems, water-resources investigation report 99-4018B.
http://toxics.usgs.gov./pubs/wri99-4018/Volume2/sectionB/2301_Krabbenhoft/index.html

Krabbenhoft, D. P. and C. L. Babiarz. 1992. The role of groundwater transport in aquatic mercury cycling. Water Resour. Res. 28:3119-3128. (As cited in ATSDR, 1999).

Kudo, A., H. Nagase, and Y. Ose. 1982. Proportion of methylmercury to the total mercury in river waters of Canada and Japan. Water Res. 16:1011-1015.

Lebel, J., D. Mergler, F. Branches, M. Lucotte, M. Amorim, F. Larribe, and J. Dolbec. 1998. Neurotoxic effects of low-level methylmercury contamination in the Amazonian Basin. Environ. Res. 79(1): 20-32.

Lebel, J., D. Mergler, M. Mucotte, et al. 1996. Evidence of early nervous system dysfunction in Amazonian populations exposed to low-levels of methylmercury. NeuroToxicology 17:157-168.

Lee, Y. and A. Iverfeldt. 1991. Measurement of methylmercury and mercury in run-off, lake and rain waters. Water, Air and Soil Poll. 56:309-321.

Lee, Y. H. and H. Hultberg. 1990. Methylmercury in some Swedish surface waters. Environ. Sci. Technol. 9:833-841.

Leyshon, K. and A. J. Morgan. 1991. An integrated study of the morphological and gross-elemental consequences of methyl mercury intoxication in rats, with particular attention on the cerebellum. Scanning Microsc. 5:895-904.

Lind, B., L. Friberg, and M. Nylander. 1988. Preliminary studies on methylmercury

biotransformation and clearance in the brain of primates: II. Demethylation of mercury in brain. J. Trace Elem. Exp. Med. 1:49-56.

Lindquist, O. 1991. Mercury in the Swedish environment. Recent research on causes, consequences and corrective measures. Water Air Soil Pollut. 55:1-261.

Lindquist, O. and H. Rodhe. 1985. Atmospheric mercury: A review. Tellus 37B: 136-159.

Lok, E. 1983. The effect of weaning on blood, hair, fecal and urinary mercury after chronic ingestion of methylmercuric chloride by infant monkeys. Toxicol. Lett. 15:147-152.

Lowe, T. P., T. W. May, W. G. Brumbaugh, and D. A. Kane. 1985. National contaminant biomonitoring program: Concentrations of seven elements in fresh-water fish, 1978-1981. Arch. Environ. Contamin. Toxicol. 14:363-388.

Luecke, R. H., W. D. Wosilait, B. A. Pearce, and J. F. Young. 1997. A computer model and program for xenobiotic disposition during pregnancy. Comp. Meth. Prog. Biomed. 53:201-224.

Luecke, R. H., W. D. Wosilait, B. A. Pearce, and J. F. Young. 1994. A physiologically based pharmacokinetic computer model for human pregnancy. Teratology 49:90-103.

Lutz, R. J., R. L. Dedrick, H. B. Matthews, T. E. Eling, and M. W. Anderson. 1977. A preliminary pharmacokinetic model for several chlorinated biphenyls in the rat. Drug Metab. Dispos. 5:386-396 (As cited in Farris et al. 1993).

MacDonald, J. S. and R. D. Harbison. 1977. Methyl mercury-induced encephalopathy in mice. Toxicol. Appl. Pharmacol. 39:195-205.

Madson, M. and R. Thompson. 1998, Determination of methylmercury in food commodities by gas-liquid chromatography with atomic emission detection. Journal of AOAC International 81(4): 808-816.

Magos, L. 1987. The absorption, distribution, and excretion of methyl mercury. In: Eccles, C. U. and Z. Annau, eds. The toxicity of methyl mercury. Baltimore, MD: Johns Hopkins, pp. 24-44.

Magos, L., A.W. Brown, S. Sparrow, et al. 1985. The comparative toxicology of ethyl and methylmercury. Arch. Toxicol. 57:260-267.

Magos, L. and T.W. Clarkson. 1972. Atomic absorption and determination of total, inorganic, and organic mercury in blood. J. AOAC 55(5):966-971.

Mahaffey, K. R. 1998. Methylmercury exposure and neurotoxicity. JAMA 280:737-738.

Malm, O., W. C. Pfeiffer, C. M. M. Souza, and R. Reuther. 1990. Mercury pollution due to gold-mining in the Madera River Basin, Brazil. Ambio. 19:11-15.

Marsh, D., T. Clarkson, G. Myers, P. Davidson, C. Cox, E. Cernichiari, M. Tanner, W. Lednar, C. Shamlaye, O. Choisy, C. Horareau, and M. Berlin. 1995a. The Seychelles study of fetal methylmercury exposure and child development: Introduction. NeuroToxicology 16:583-596.

Marsh, D., T. Clarkson, C. Cox, G. Myers, L. Amin-Zaki, and S. Al-Tikriti. 1987. Fetal methylmercury poisoning. Relationship between concentration in single strands of maternal hair and child effects. Arch. Neurol. 44:1017-1022.

Marsh, D., G. Myers, T. Clarkson, et al. 1981. Dose-response relationship for human fetal exposure to methylmercury. Clin. Toxicol. 18:1311-1318.

Marsh, D., G. Myers, T. Clarkson, L. Amin-Zaki, S. Al-Tikriti, and M. Majeff. 1980. Fetal methylmercury poisoning: Clinical and toxicological data on 29 cases. Ann. Neurol. 7:348-353.

Mason, R. P. and K. A. Sullivan. 1997. Mercury in Lake Michigan. Environ. Sci. Technol. 31:942-947.

McKeown-Eyssen, G. and J. Ruedy. 1983a. Prevalence of neurologic abnormality in Cree Indians exposed to methylmercury in Northern Quebec. Clin. Invest Med. 6:161-169.

McKeown-Eyssen, G. and J. Ruedy. 1983b. Methyl mercury exposure in northern Quebec. I. Neurologic findings in adults. Am. J. Epidemiol. 118:461-469.

McKeown-Eyssen, G., J. Ruedy and A. Neims. 1983c. Methyl mercury exposure in northern Quebec. II. Neurologic findings in children. Am. J. Epidemiol. 118:470-479.

Mergler, D. and J. Dolbec. 1998. Neurotoxic effects of low-level methylmercury contamination in the Amazonian Basin. Environ. Res. 79(1): 20-32.

Miettinen, J. K., T. Rahola, T. Hattula, K. Rissanen, and M. Tillander. 1971. Estimation of ^{203}Hg-methylmercury in man. Ann. Clin. Res. 3:110-122 (As cited in Clewell et al. 1999).

Mitsumori, K., M. Hirano, H. Ueda, K. Maita, and Y. Shirasu. 1990. Chronic toxicity and carcinogenicity of methylmercury chloride in B6C3F1 mice. Fund. Appl. Toxicol. 14:179-190.

Morgan, J.N., M.R. Berry, Jr., and R.L. Graves. 1994. Effects of Native American cooking practices on total mercury concentrations in walleye. Presented at ISEE/ISEA Joint Conference September 18-21, 1994.

Mottet, N. K., R. L. Body, V. Wilkens, and T. M. Burbacher. 1987. Biologic variables in the hair uptake of methylmercury from blood in the Macaque monkey. Environ. Res. 42:509-523.

Munro, I., E. Nera, S. Charbonneau, B. Junkins, and Z. Zawidzka. 1980. Chronic toxicity of methylmercury in the rat. J. Environ. Pathol. Toxicol. 3:437-447.

Murata, K., P. Weihe, S. Araki, E. Budtz-Jorgensen, and P. Grandjean. 1999a. Evoked potentials in Faroese children prenatally exposed to methylmercury. Neurotoxicol Teratol. 21:471-472.

Murata, K., P. Weihe, A. Renzoni, F. Debes, R. Vasconcelos, F. Zino, S. Araki, P. Jorgensen, R. White, and P. Grandjean. 1999b. Delayed evoked potentials in children exposed to methylmercury from seafood. Neurotoxicol. Teratol. 21:343-348.

Myers, G., D. Marsh, P. Davidson, C. Cox, C. Shamlaye, M. Tanner, A. Choi, E. Cernichiari, O. Choisy, and T. Clarkson. 1995a. Main neurodevelopmental study of Seychellois children following *in utero* exposure to methylmercury from a maternal fish diet: outcome at six months. NeuroToxicology 16:653-664.

Myers, G.J., P.W. Davidson, C. Cox, C.F. Shamlaye, M.A. Tanner, O. Choisy, J. Sloane-Reeves, D.O. Marsh, E. Cernichiari, A. Choi, M. Berlin, and T.W. Clarkson. 1995b. Neurodevelopmental outcomes of Seychellois children sixty-six months after *in utero* exposure to methylmercury from a maternal fish diet: pilot study. NeuroToxicology 16:639-652.

Nakamura, I., K. Hosokawa, H. Tamra, et al. 1977. Reduced mercury excretion with feces in germfree mice after oral administration of methyl mercury chloride. Bull. Environ. Contam. Toxicol. 17:528-533.

NAS. 2000. Toxicological Effects of Methylmercury. Committee on the Toxicological Effects of Methylmercury, National Academy Press, Washington, D.C.

NAS. 1991. Methyl mercury: FDA Risk Assessment and Current Regulations. In: Seafood Safety. Committee on Evaluation of the Safety of Fishery Products, National Academy Press, Washington, DC. p. 196–221.

National Institute for Occupational Safety and Health (NIOSH). 1977. A Recommended Standard for Occupational Exposure to Inorganic Mercury.

Nielsen, J. B. and O. Andersen. 1992. Transplacental passage and fetal deposition of mercury after low-level exposure to methylmercury--effect of seleno-L-methionine. J. Trace Elem. Electrolytes Health Dis. 6: 227-32.

NJDEPE. 1993. New Jersey Department of Environmental Protection and Energy. Final Report

on Municipal Solid Waste Incineration. Volume II: Environmental and Health Issues.

NMFS 1995. National Marine Fisheries Service. The current publically-available National Marine Fisheries Service Data base was supplied to U.S. EPA via fax from Malcolm Meaburn (Charleston Laboratory/Southeast Fisheries Science Center/National Marine Fisheries Service/National Oceanic and Atmospheric Administration/U.S. Dept. Of Commerce) to Kathryn Mahaffey (Environmental Criteria and Assessment Office-Cincinnati,OH/Office of Health and Environmental Assessment/Office of Research and Development/ U.S. Environmental Protection Agency). February 23, 1995. [Note: cited as NMFS 1978 in text of MSRC].

Nordberg, G. F. and P. Strangert. 1976. Estimations of a dose-response curve for long-term exposure to methylmercuric compounds in human being taking into account availability of critical organ concentration and biological half-time: A preliminary communication. In: Effects and Dose-Response Relationships of Toxic Metals, G.F. Nordberg, Ed. Elsevier, Amsterdam. p. 273-282.

Nordenhäll, K., L. Dock, and M. Vahter. 1988. Cross-fostering study of methyl mercury retention, demethylation and excretion in the neonatal hamster. Pharmacology and Toxicology 81:132-136.

Norseth, T. and T.W. Clarkson. 1971. Intestinal transport of ^{203}Hg-labeled methyl mercury chloride. Arch. Environ. Health 22:568-577 (As cited in Gray 1995).

Norseth, T. and T.W. Clarkson. 1970. Studies on the biotransformation of ^{203}Hg-labeled methyl mercury chloride in rats. Arch. Environ. Health 21:717-727. (As cited in Gray 1995).

Nriagu, J. O. 1979. The Biogeochemistry of Mercury in the Environment. Elsevier/North Holland. Biomedical Press: New York.

O'Conner, T. P. and B. Beliaeff. 1995. Recent Trends in Coastal Environmental Quality: Results from the Mussel Watch Project. 1986 to 1993. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Office of Ocean Resources Conservation and Assessment, Silver Spring, MD.

Ohi, G., M. Fukuda, H. Seto, et al. 1976. Effect of methyl mercury on humoral immune responses in mice under conditions simulated to practical situations. Bull. Environ. Contam. Toxicol. 15:175-180.

Olson, M.L. and J. F. DeWild. 1999. Low-level collection techniques and species-specific analytical methods for mercury in water, sediment, and biota. In: Morgenwalp, D.W. and T.H. Buxton, eds. U.S. Geological Survey Toxic Substances Hydrology program – Proceedings of the Technical meeting, Charleston, Sout Carolina, March 8-12, 1999. Volume 2. Contamination of Hydrologic Systems and Related Ecosystems: U.S. Geological Survey Water Resources

Investigations Report 99-4018B.

OSHA. 1975. Occupational Safety and Health Administration, Job Health Hazards Series. Mercury. OSHA report 2234.

Parks, J. W., A. Lutz, and J. A. Sutton. 1989. Water column methylmercury in the Wabigoon/English River-Lake system: Factors controlling concentrations, speciation, and net production. Can. J. Fish. Aquat. Sci. 46:2184-2202.

Pedersen, G. A., G. K. Mortensen, and E. H. Larsen. 1994. Beverages as a source of toxic trace element intake. Food Addit. Contam 11: 351-63.

Pfeiffer, W. C., L. D. Lacerda, O. Malm, C. M. M. Souza, E. J. Silviera, and W. R. Bastos. 1989. Mercury concentration in inland waters of gold-mining areas in Rondonia, Brazil. Sci. Tot. Environ. 87:233-240.

Phelps, R., T. Clarkson, T. Kershaw, et al. 1980. Interrelationships of blood and hair mercury concentrations in a North American population exposed to methylmercury. Arch. Environ. Health 35:161-168.

Porcella, D. B., C. J. Watras, and N. S. Bloom. 1991. Mercury species in lake water. In: Verry, S. and S. J. Vermette. The deposition and fate of trace metals in our environment. Gen. Tech. Rep. NC-150. St. Paul, MN: U.S. Dept. Agric., Forest Service, North Central Forest Exp. Station, pp. 127-138.

Post, E. M., M. G. Yang,, J. A. King, et al. 1973. Behavioral changes of young rats force-fed methyl mercury chloride (37480). Proc. Soc. Exp. Biol. Med. 143:1113-1116.

Prager, J. C. 1997. Environmental Contaminant Reference Databook, Vol. III. New York: Van Nostrand Reinhold, Inc.

Rada, R., J. Wiener, M. Winfrey, and D. Powell. 1989. Recent increases in atmospheric deposition of mercury to north-central Wisconsin Lakes inferred from sediment analysis. Arch. Environ. Contam. Toxicol. 18:175-181.

Rask, M. and M. Verta. 1995. Concentrations and amounts of methylmercury in water and fish in the limed and acid basins of a small lake. Water Air Soil Pollu. 80: 577-580.

Revis, N. W., T. R. Osborne, G. Holdsworth, and C. Hadden. 1990. Mercury in Soil: A method for assessing acceptable limits. Arch. Environ. Contam. Toxicol. 19:221-226.

Rice, D. C. 1989a. Delayed neurotoxicity in monkeys exposed developmentally to methylmercury. Neurotox. 10: 645-650.

Rice, D. C. 1989b. Brain and tissue levels of mercury after chronic methyl mercury exposure in the monkey. J. Toxicol. Environ. Health 27:189-198.

Rice, D.C. 1989c. Blood mercury concentrations following methyl mercury exposure in adult and infant monkeys. Environ. Res. 49:115-126.

Rice, D. C. and S.G. Gilbert. 1982. Early chronic low-level methyl mercury poisoning in monkeys impairs spatial vision. Science 216:759-761.

Rice, D. C. and S.G. Gilbert. 1990. Effects of developmental exposure to methyl mercury on spatial and temporal function in monkeys. Toxicol. Appl. Pharmacol. 102:152-163.

Rice, D. C., D. Krewski, B.T. Collins, and R.F. Willes. 1989. Pharmacokinetics of methylmercury in the blood of monkeys (*Macaca fascicularis*). Fund. Appl. Toxicol. 12:23-33.

Rowland, I., M. Davies, and J. Evans. 1980. Tissue content of mercury in rats given methyl mercury chloride orally: Influence of intestinal flora. Arch. Environ. Health. 35:155-160.

Rowland, I., M. Davies, and P. Grasso. 1977. Biosynthesis of methylmercury compounds by the intestinal flora of the rat. Arch. Environ. Health. 32(1):24-28.

Rustam, H. and T. Hamdi. 1974. Methyl mercury poisoning in Iraq: A neurological study. Brain 97:499-510.

Sato, T. and F. Ikuta. 1975. Long-term studies on the neurotoxicity of small amounts of methyl mercury in monkeys (first report). In: Tsubaki, T., ed. Studies on the health effects of alkylmercury in Japan. Japan: Environmental Agency, pp. 63-70.

Seafood Safety. 1991. Committee on evaluation of the safety of fishery products, Chapter on methylmercury: FDA Risk Assessment and Current Regulations. Washington, D.C.: National Academy Press, pp. 196-221.

Seppanen, K., R. Laatikainen, J. T. Salonen, M. Kantola, S. Lotjonen, M. Harri, L. Nurminen, J. Kaikkonen, and K. Nyyssonen. 1998. Mercury-binding capacity of organic and inorganic selenium in rat blood and liver. Biological Trace Element Research. 65: 197-210.

Shacklette, H. T. and J. G. Boerngen. 1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. U.S. Geological Survey Paper 1270. Washington, DC: United States Government Printing Office.

Shamlaye, C., D. Marsh, G. Myers, et al. 1995. The Seychelles child development study on neurodevelopmental outcomes in children following *in utero* exposure to methylmercury from a

maternal fish diet: Background and demographics. NeuroToxicology 16:597-612.

Sherlock, J. C. and M. J. Quinn. 1988. Underestimation of dose-response relationship with particular reference to the relationship between the dietary intake of mercury and its concentration in blood. Hum. Toxicol. 7(2):129-132.

Sherlock, J., J. Hislop, D. Newton, G. Topping and K. Whittle. 1984. Elevation of mercury in human blood from controlled chronic ingestion of methylmercury in fish. Hum. Toxicol. 3:117-131.

Sherlock, J. C., D. G. Lindsay, J. Hislop, W.H. Evans, and T. R. Collier. 1982. Duplication diet study on mercury intake by fish consumers in the United Kingdom. Arch. Environ. Health. 37(5): 271-278.

Skerfving, S. 1988. Mercury in women exposed to methylmercury through fish consumption, and in their newborn babies and breast milk. Bull. Environ. Contam. Toxicol. 41(4):475-482.

Skerfving, S. 1974. Methylmercury exposure, mercury levels in blood and hair, and health status in Swedes consuming contaminated fish. Toxicology 2:3-23.

Skog, E. and J. Wahlberg. 1964. A comparative investigation of the percutaneous absorption of metal compounds in the guinea pig by means of the radioactive isotopes: Cr, Co, Zn, Ag, Cd, Hg. J. Invest Dermatol. 43:187-192.

Smith, J. C., P. V. Allen, M. D. Turner, B. Most, H. L. Fisher, and L. L. Hall. 1994. The kinetics of intravenously administered methylmercury in man. Toxicol. Appl. Pharmacol. 128:251-256.

Sorensen, J., G. Glass, K. Schmidt, J. Huber and G. Rapp. 1990. Airborne Mercury Deposition and Watershed Characteristics in Relation to Mercury Concentrations in Water, Sediments, Plankton and Fish of Eighty Northern Minnesota Lakes. *Environ. Sci. Technol.* 24:1716-1727.

Sorensen, N., K. Murata, E. Budtz-Jorgensen, P. Weihe, and P. Grandjean. 1999. Prenatal methylmercury exposure as a cardiovascular risk factor at seven years of age. Epidemiology 10:370-375.

Soria, M. L., P. Sanz, D. Martinez, et al. 1992. Total mercury and methyl mercury in hair, maternal and umbilical blood, and placenta from women in the Seville area. Bull. Environ. Contam. Toxicol. 48(4):494-501.

Stern, A. H. 1997. Estimation of the interindividual variability in the one-compartment pharmacokinetic model for methylmercury: implications for the derivation of a reference dose. Reg. Toxicol. Pharmacol. 25:277-288. (As cited in Clewell et al. 1999).

Stern, A. H. 1993. Re-evaluation of the reference dose for methyl mercury and assessment of current exposure levels. Risk Anal. 13:355-364.

Stern, A. H., Korn, L. R., and Ruppel, B. F. 1996. Estimation of fish consumption and methylmercury intake in the New Jersey population. J. Euro. Anal. Env. Epi. 6:503-525.

Steurwald, U., P. Weibe, P. Jorgensen, K. Bjerve, J. Brock, B. Heinzow, E. Budtz-Jorgensen, and P. Grandjean. 2000. Maternal seafood diet, methylmercury exposure, and neonatal neurologic function. The Journal of Pediatrics. 136 (5): 599-605.

Suchanek, T. H., P. J. Richerson, L. A. Woodward, D. G. Slotton, L. J. Holts, and C. E. E. Woodmansee. 1993. A survey and evaluation of mercury. In: Sediment, water, plankton, periphyton, benthic invertebrates and fishes within the aquatic ecosystem of Clear Lake, California. Preliminary lake study report prepared for the U.S. Environmental Protection Agency, Region 9, Superfund Program.

Suda, I. and K. Hirayama. 1992. Degradation of methyl- and ethylmercury into inorganic mercury by hydroxyl radical produced from rat liver microsomes. Arch. Toxicol. 66(6):398-402.

Suda, I. and H. Takahashi. 1986. Enhanced and inhibited biotransformation of methyl mercury in the rat spleen. Toxicol. Appl. Pharmacol. 82:45-52.

Sundberg, J. and A. Oskarsson. 1992. Placental and lactational transfer of mercury from rats exposed to methyl mercury in their diet: Speciation of mercury in the offspring. J. Trace Elem. Exp. Med. 5 (1):47-56.

Suzuki, T. 1988. Hair and nails: Advantages and pitfalls when used in biological monitoring. In: Clarkson, T.W., L. Friberg, G. F. Nordberg and P. R. Sager, eds. Biological monitoring of toxic metals. New York: Plenum, pp. 623-640.

Suzuki, T., J. Yonemoto, H. Satoh, et al. 1984. Normal organic and inorganic mercury levels in the human feto-placental system. J. Appl. Toxicol. 4(5):249-252.

Swedish EPA. 1991. Mercury in the environment: Problems and remedial measures in Sweden. ISBN 91-620-1105-7.

Swensson, A. and U. Ulfvarson. 1968. Distribution and excretion of mercury compounds in rats over a long period after a single injection. Acta Pharmacol. Toxicol. 26:273-283.

Szymczak, J. and H. Grajeta. 1992. Mercury concentrations in soil and plant material. Pol. J. Food Nutr. Sci. 1/42(2):31-39.

Tanaka, T., A. Naganuma, N. Miura et al. 1992. Role of testosterone in gamma-glutamyl

transpeptidase-dependent renal methyl mercury uptake in mice. Toxicol. Appl. Pharmacol. 112:58-63.

Tanaka, T., A. Naganuma, K. Kobayashi et al. 1991. An explanation for strain and sex differences in renal uptake of methyl mercury in mice. Toxicology. 69:317-329.

Temple, P. J. and S. N. Linzon. 1977. Contamination of vegetation, soil, snow and garden crops by atmospheric deposition of mercury from a chlor-alkali plant. In: Hemphill, D.D. ed. Trace substances in environmental health - XI. Columbia: Univ Missouri, pp. 389-398.

Thomas, D., H. Fisher, M. Sumler, et al. 1986. Sexual differences in the distribution and retention of organic and inorganic mercury in methylmercury-treated rats. Environ. Res. 41:219-234.

Thomas, D., H. Fisher, M. R. Sumler, et al. 1987. Sexual differences in the excretion of organic and inorganic mercury by methyl mercury-treated rats. Environ. Res. 43:203-216.

Thomas, D. J., H. L. Fisher, M. R. Sumler, et al. 1988. Distribution and retention of organic and inorganic mercury in methyl mercury-treated neonatal rats. Environ. Res. 47:59-71.

Thomas, D. J. and J. C. Smith. 1982. Effects of coadministered low-molecular-weight thiol compounds on short- term distribution of methyl mercury in the rat. Toxicol. Appl. Pharmacol. 62:104-10.

Tsubaki, T. K. and K. Irukayama. 1977. Minamata Disease: methyl mercury poisoning in Minamata and Niigata, Japan. Elsevier Scientific Publ. Co., New York. 143-253.

Turner, M., D. March, J. Smith, J. Inglis, et al. 1980. Methylmercury in populations eating large quantities of marine fish. Arch. Environ. Health 35:367-378.

Urano, T., N. Imura, and A. Naganuma. 1997. Inhibitoru effect of selenium on biliary secretion of methyl mercury in rats. Biochem. Biphys. Res. Comm. 239:862-867.

U.S. EPA. 1980. United States Environmental Protection Agency. Ambient Water Quality Criteria Document for Mercury. Prepared by the Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, Cincinnati, OH for the Office of Water Regulation and Standards, Washington, DC. EPA 440/5-80-058. NTIS PB 81-117699.

U.S. EPA. 1992a. United States Environmental Protection Agency. Assessment and Remediation of Contaminated Sediments (ARCS) Program. EPA 905-R92-008.

U.S. EPA. 1992b. United States Environmental Protection Agency. A National Study of Chemical Residues in Fish. (EPA823-R-92-008a and b.) Office of Water Regulations and

Standards. Vols. 1 and 2. September 1992.

U.S. EPA. 1997a. United States Environmental Protection Agency. The National Survey of Mercury Concentrations in Fish. Database Summary. 1990-1995. September 29, 1997.

U.S. EPA. 1997b. United States Environmental Protection Agency. Mercury Study Report to Congress. Vol. I. Executive Summary. U.S. Environmental Protection Agency. December, 1997.

U.S. EPA. 1997c. United States Environmental Protection Agency. Mercury Study Report to Congress. Vol. III. An Assessment of Exposure to Mercury in the United States. U.S. Environmental Protection Agency. December, 1997.

U.S. EPA. 1997d. United States Environmental Protection Agency. Mercury Study Report to Congress. Vol. IV. An Assessment of Exposure to Mercury in the United States. U.S. Environmental Protection Agency. December, 1997.

U.S. EPA. 1997e. United States Environmental Protection Agency. Mercury Study Report to Congress. Vol. V. Health Effects of Mercury and Mercury Compounds. U.S. Environmental Protection Agency. December, 1997.

U.S. EPA. 1997f. United States Environmental Protection Agency. Mercury Study Report to Congress. Vol. VI. An Ecological Assessment for Anthropogenic Mercury Emissions in the United States. U.S. Environmental Protection Agency. December, 1997.

U.S. EPA. 1997g. United States Environmental Protection Agency. Mercury Study Report to Congress. Vol. VII. Characterization of Human Health and Wildlife Risks from Mercury Exposure in the United States. U.S. Environmental Protection Agency. December, 1997.

U.S. EPA. 1997h. United States Environmental Protection Agency. Exposure Factors Handbook. Vols. I, II, and III. August. EPA/600/P-95/002Fa. August, 1997.

U.S. EPA. 1998a. United States Environmental Protection Agency. Federal Register Notice: Draft Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. EPA 822-Z-98-001. August, 1998.

U.S. EPA. 1998b. United States Environmental Protection Agency. Ambient Water Quality Criteria Derivation Methodology: Human Health. Technical Support Document. April. EPA-822-B-98-005. July, 1998.

U.S. EPA. 2000. Per capita fish consumption estimates in the U.S. March 2000.

U.S. FDA. 1978. As cited in text *Mercury Study Report to Congress*. Vol. IV. Reference

information not listed in bibliography.

U.S. FDA. 1999. United States Food and Drug Administration. Total Diet Study Statistics on Element Results, 1991-1996. Revision 0. June 15, 1999.

Von Burg, R. and H. Rustam. 1974a.. Electrophysiological investigations of methyl mercury intoxication in humans: Evaluation of peripheral nerve by conduction velocity and electromyography. Electroenceph. Clin. Neurophysiol. 37:381-392.

Von Burg, R. and H. Rustam. 1974b. Conduction velocities in methyl mercury poisoned patients. Bull. Environ. Contam. Toxicol. 12:81-85.

Vreman, K., N. J. van der Veen, E. J. van der Molen, and W.G. de Ruig. 1986. Transfer of cadmium, lead, mercury and arsenic from feed into milk and various tissues of dairy cows: Chemical and pathological data. Netherlands J. Agric. Sci. 34:129-144.

Wakita, Y. 1987. Hypertension induced by methyl mercury in rats. Toxicol. Appl. Pharmacol. 89:144-147.

Wannag, A. 1976. The importance of organ blood mercury when comparing foetal and maternal rat organ distribution of mercury after methylmercury exposure. Acta Pharmacol. Toxicol. 38:289-298.

Watras, C. J., K. A. Morrison, J. Host and N. S. Bloom. 1995a. Concentration of mercury species in relationship to other site-specific factors in the surface waters of northern Wisconsin lakes. Limnol. Oceanogr. 40:556-565.

Watras, C. J., K. A. Morrison, and N. S. Bloom. 1995b. Mercury in remote Rocky Mountain lakes of Glacier National Park, Montana, in comparison with other temperate North American regions. Can. J. Fish. Aquat. Sci. 52:1220-1228.

Watras, C. J. and N. S. Bloom. 1992. Mercury and methylmercury in individual zooplankton: Implications for bioaccumulation. Limnol. Oceanogr. 37:1313-1318.

WHO. 1976. World Health Organization. Environmental Health Criteria: Mercury. World Health Organization, Geneva, Switzerland, 121.

WHO. 1990. World Health Organization. Environmental Health Criteria 101. Methylmercury. Geneve, Switzerland: World Health Organization.

Wiener, J., W. Fitzgerald, C. Watras and R. Rada. 1990. Partitioning and bioavailability of mercury in an experimentally acidified Wisconsin lake. Environ. Toxicol. Chem. 9:909-918.

Wiersma, D., B. J. van Goor, and N. G. van der Veen. 1986. Cadmium, lead, mercury and arsenic concentrations in crops and corresponding soils in the Netherlands. J. Agric. Food Chem. 34:1067-1074.

Wild, L., H. Ortega, M. Lopez, and J. Salvaggio. 1997. Immune system alteration in the rat after indirect exposure to methyl mercury chloride or methyl mercury sulfide. Environmental Research. 74: 34-42.

Willett, W. 1990. Nature of Variation in Diet. In: Nutritional Epidemiology. Willett, W., ed. Nutritional Epidemiology. Monographs in Epidemiology and Biostatistics, Vol. 15. Oxford University Press. New York/Oxford. 34-51.

Wren, C. 1992. Relationship of mercury levels in sportfish with lake sediment and water quality variables. Toronto: Ontario Environmental Research Program. Govt Reports Announcements and Index (GRA&I) Issue 08.

Yip, R. K. and L. W. Chang. 1981. Vulnerability of dorsal root neurons and fibers toward methyl mercury toxicity: A morphological evaluation. Environ. Res. 26:152-167.

REFERENCES FOR THE BIOACCUMULATION SECTION

Akagi, H., O. Malm, Y. Kinje, M. Harada, F.J.P. Branches, W.C. Pfeiffer and H. Kato (1995). Methyl mercury pollution in the Amazon, Brazil. Sci. Total Environ.175:85-95.

Al-Madfa, H., O.A. Dahab and H. Holail (1994). Mercury pollution in DoHa (QATAR) coastal environment. Environ. Toxicol. Chem. 13:725-733.

Allen-Gil, S.M., D.J. Gilroy and L.R. Curtis (1995). An ecoregion approach to mercury bioaccumulation by fish in reservoirs. Arch. Environ. Contam. Toxicol. 28:61-68.

Back, R.C. and C.J. Watras (1995). Mercury in zooplankton of northern Wisconsin Lakes: Taxonomic and site specific trends. Water Air Soil Pollut. 80:931-938.

Balogh, S.J., M.L. Meyer and D.K. Johnson (1997). Transport of mercury in three contrasting river basins. Env. Sci. Technol. 31:198-202.

Balogh, S.J., M.L. Meyer and D.K. Johnson (1998). Transport of mercury in three contrasting river basins. Environ. Sci. Technol. 32:456-462.

Becker, D.S. and G.N. Bigham (1995). Distribution of mercury in the aquatic food web of Onondaga Lake, New York. Water Air Soil Pollut. 80:563-571.

Benoit, J.M., C.C. Gilmour, R.P. Mason, G.S. Riedel and G.F. Riedel (1998). Behavior of mercury in the Patuxent River estuary. Biogeochem. 40(2-3):249-265.

Bidone, E.D., Z.C. Castilhos, T.M. Souza and L. D. Lacerda (1997). Fish contamination and human exposure to mercury in the Tapajos River basin, Para State, Amazon, Brazil: A screening approach. Bull. Environ. Contam. Toxicol. 59:194-201.

Bidwell, J.R. and A.G. Heath (1993). An *in situ* study of rock bass (*Ambloplites rupestris*) physiology: Effect of season and mercury contamination. Hydrobiol. 264:137-152.

Bloom, N.S. (1992). On the chemical form of mercury in edible fish and marine invertebrate tissue. Can. J. Fish. Aquat. Sci. 49:1010-1017.

Bloom, N.S., C.J. Watras and J.P. Hurley (1991). Impact of acidification on the methyl mercury cycle of remote seepage lakes. Water Air Soil Pollut. 56:477-491.

Bodaly, R.A., J.W.M. Rudd, R.J.P. Fudge and C.A. Kelly (1993). Mercury concentrations in fish related to size of remote Canadian Shield lakes. Can. J. Fish. Aquat. Sci. 50:980-987.

Bonzongo, J.C., K.J. Heim, Y. Chen, W.B. Lyons, J.J. Warwick, G.C. Miller and P.J. Lechler (1996a). Mercury pathways in the Carson River-Lahontan Reservoir system, Nevada, USA. Environ. Toxicol. Chem. 15:677-683.

Bonzongo, J.C., K.J. Heim, J.J. Warwick and W.B. Lyons (1996b). Mercury levels in surface waters of the Carson River-Lahontoan reservoir system, Nevada: Influence of historic mining acitvities. Environ. Pollut. 92:193-201.

Cleckner, L.B., P.J. Garrison, J.P. Hurley, M.L. Olson and D.P. Krabbenhoft (1998). Trophic transfer of methyl mercury in the northern Florida Everglades. Biogeochem. 40:347-361.

Cope, W.G., J.G. Wiener and R.G. Rada (1990). Mercury accumulation in yellow perch in Wisconsin seepage lakes: Relation to lake characteristics. Environ. Toxicol. Chem. 9:931-940.

Coquery, M. and D. Cossa (1995). Mercury speciation in surface waters of the North Sea. Neth. J. Sea Res. 34:245-257.

Coquery, M., D. Cossa and J.M. Martin (1995). The distribution of dissolved and particulate mercury in three Siberian estuaries and adjacent arctic coastal waters. Water Air Soil Pollut. 80:653-664.

Coquery, M., D. Cossa and J. Sanjuan (1997). Speciation and sorption of mercury in two macro-tidal extuaries. Mar. Chem. 58:213-227.

Cossa, D. and J. Martin (1991). Mercury in the Rhine delta and adjacent marine areas. Mar.

Chem. 36:291-302.

Department of Energy (DOE) (1997). Mercury abatement report for the U.S. Department of Energy Oak Ridge Y-12 Plant for fiscal year 1997. Y/ER-297. Oak Ridge,Tennessee.

Driscoll, C.T., V. Blette, C. Yan, C.L. Schofield, R. Munson and J. Holsapple (1995). The role of dissolved organic carbon in the chemistry and bioavailablility of mercury in remote Adirondack Lakes. Water Air Soil Pollut. 80: 499-508.

Falter, R.F. and H.F. Scholer (1994). Determination of methyl-, ethyl-, phenyl and total mercury in Neckar river fish. Chemosphere 29:1333-1338.

Francis, D.R., D.J. Jude and J.A. Barres (1998). Mercury distribution in the biota of a Great Lake estuary: Old Woman Creek, Ohio. J. Great Lakes Res. 24(3):595-607.

Gill, G.A. and K.W. Bruland (1990). Mercury speciation in surface freshwater systems in California and other areas. Environ. Sci. Technol. 24:1392-1400.

Gilmour, C.C., G.S. Riedel, M.C. Ederington, J.T.Bell, J.M. Benoit, G.A. Gill and M.C. Stordal (1998). Methylmercury concentrations and production rates across a trophic gradient in the northern Everglades. Biogeochem. 40:327-345.

Glass, G., J.A. Sorenson, K.W. Schmidt and G.R. Rapp, Jr. (1990). New source identification of mercury contamination in the Great Lakes. Environ. Sci Technol. 24:1059-1068.

Glass, G.E., J.A. Sorensen, K.W. Schmidt, J.K. Huber and G.R. Rapp, Jr. (1992). Mercury sources and distribution in Minnesota's aquatic resources: Surface water, sediments, plants, plankton, and fish. In: Mercury in the St. Louis River, Mississippi River, Crane Lake, and Sand Point Lake: Cycling, distribution, and sources. Final Report to Minn. Pollut. Control Agency, Water Qual. Div. St. Paul, MN. Pp. 3.1-3.48.

Glass, G., J.A. Sorenson, and G.R. Rapp, Jr. (1999). Mercury deposition and lake quality trends. Final report Project: I-11/I-15, Legislative Commission on Minnesota Resources, St Paul, MN.

Grieb, T.M., C.T. Driscoll, S.P. Gloss, C.L. Schofield, G.L. Bowie and D.B. Porcella (1990). Factors affecting mercury accumulation in fish in the upper Michigan peninsula. Environ. Toxicol. Chem. 9:919-930.

Hendricks, A.C., C. Snyder and L. Willis (1991). The production of a hydropsychid caddisfly in a fourth order mountain stream contaminated with mercury. Verh. Internat. Verein Limnol. 24:1694-1697.

Henry, E.A., L.J. Dodge-Murphy, G.N. Bigham and S.M. Klein (1995). Modeling the transport and fate of mercury in an urban lake (Onondaga Lake, NY). Water Air Soil Pollut. 80:489-498.

Hill, W.R., A.J. Stewart and G.E. Napolitano (1996). Mercury speciation and bioaccumulation in lotic primary producers and primary consumers. Can. J. Fish. Aquat. Sci. 53:812-819.

Hurley, J.P., J.M. Benoit, C.L. Babiarz, M.M. Shafer, A.W. Andren, J.R. Sullivan, R. Hammond and D.A. Webb (1995). Influences of watershed characteristics on mercury levels in Wisconsin rivers. Environ. Sci. Technol. 29:1867-1875.

Hurley, J.P., M.M. Shaffer, S.E. Cowell, J.T. Overdriver, P.E. Hughes and D.E. Armstrong (1996). Trace metal assessment of Lake Michigan tributaries using low level techniques. Environ. Sci Technol. 30:2093-2098.

Hurley, J.P., S.E. Cowell, M.M. Shaffer and P.E. Hughes (1998). Partitioning and transport of total and methyl mercury in the lower Fox River, Wisconsin. Environ. Sci. Technol. 32:1424-1432.

Jackson, T.A. (1991). Biological and environmental control of mercury accumulation by fish in lakes and reservoirs of northern Manitoba, Canada. Can. J. Fish. Aquat. Sci. 48:2449-2470.

Kelly, C.A., J.W.M. Rudd, R.A. Bodaly, N.P. Roulet, V.L. St.Louis, A. Heyes, T.R. Moore, S. Schiff, R. Aravena, K.J. Scott, B. Dyck, R. Harris, B. Warner and G. Edwards (1997). Increases in fluxes of greenhouse gases and methyl mercury following flooding of an experimental reservoir. Environ. Sci. Technol. 31:1334-1344.

Konhauser. K.O. and W.S. Fyfe (1993). Biogeochemical cycling of metals in freshwater algae from Manaus and Carajas, Brazil. Energy Sources 15:595-608.

Lange, T.R., H.E. Royals and L.L. Connor (1994). Mercury accumulation in largemouth bass (Micropterus salmoides) in a Florida lake. Arch. Environ. Contam. Toxicol. 27:466-471.

Lasorsa, B. and S. Allen-Gil (1995). The methylmercury to total mercury ratio in selected marine, freshwater, and terrestrial organisms. Water Air Soil Pollut. 80:905-913.

Lindqvist, O. (1991). Mercury in forest lake ecosystems - Bioavailability, bioaccumulation and biomagnification. Water Air Soil Pollut. 55:131-157.

Locarnini, S.J.P. and B.J. Presley (1996). Mercury concentration in benthic organisms from a contaminated estuary. Mar. Environ. Res. 41:225-239.

Lores, E.M., J. Macauley, L.R. Goodman, R.G. Smith and D.M. Wells (1998). Factors affecting bioavailability of methylmercury in Florida Bay. Soc. Environ. Toxicol. Chem. 19th Annual Meeting. Charlotte, NC. Abstr. No. 468. p. 101.

Malm, O., F.J.P. Branches, H. Akagi, M.B. Castro, W.C. Pfeiffer, M. Harada and W.R. Bastos (1995). Mercury and methylmercury in fish and human hair from the Tapajos River Basin,

Brazi. Sci. Total Environ. 175:141-150.

MacCrimmon, H.R., C.D. Wren and B.L. Gots (1983). Mercury uptake by lake trout, *Salvelinus namaycush*, relative to age, growth, and diet in Tadenac Lake with comparative data from other precambrian shield lakes. Can. J. Fish. Aquat. Sci. 40:114-120.

Marcovecchio, J.E. and V.J. Moreno (1993). Cadmium, zinc, and total mercury levels in the tissues of several fish species from La Plata River estuary, Argentina. Environ. Monit. Assess. 25:119-130.

Mason, R.P. and K.A. Sullivan (1997). Mercury in Lake Michigan. Environ Sci. Technol. 31:942-947.

Mason, R.P. and K.A. Sullivan (1998). Mercury and methyl mercury transport through an urban water shed. Water Res. 32: 321-330.

Mathers, R.A. and P.H. Johansen (1985). The effects of feeding ecology on mercury accumulation in walleye (*Stizostedion vitreum*) and pike (*Esox lucius*) in Lake Simcoe. Can. J. Zool. 63:2006-2012.

Meili, M., A. Iverfeldt and L. Hakanson (1991). Mercury in the surface water of Swedish forest lakes - Concentrations, speciation, and controlling factors. Water Air Soil Pollut. 56:439-453.

Mikac, W. and Z. Kwokal (1997). Distribution of mercury in species in the water column of the stratified Krka River estuary. Croatica Chemica Acta 70:271-288.

Mikac, N., Z. Kwokal, D. Martincic and M. Branica (1996). Uptake of mercury species by transplanted mussels *Mytilus galloprovincialis* under estuarine conditions (Krka river estuary). Sci. Total Environ.184:173-182.

Miles, C.J. and L.E. Fink (1998). Monitoring and mass budget for mercury in the Everglades mutrient removal project. Arch. Environ. Contam. Toxicol. 35:549-557.

Monson, B.A. and P.L. Brezonick (1998). Seasonal patterns of mercury species in water and plankton from softwater lakes in Northeastern Minnesota. Biogeochem. 40:147-162.

Mucci, A., M. Lucotte, S. Montgomery, Y. Plourde, P. Pichet and H. Van Tra (1995). Mercury remobilization from flooded soils in a hydrolectric reservoir of northern Quebec, La Grande-2. Can. J. Fish. Aquat. Sci. 52:2507-2517.

Olivero, J. and B. Solano (1998). Mercury in environmental samples from a waterbody contaminated by gold mining in Columbia, South America. Sci. Total Environ. 217:83-89.

Padovani, C.R., B.R. Forsberg and T.P. Pimentel (1995). Contaminacao mercurial em peixes do

Rio Madiera: Resultados e recomendacoes para consumo humano. Acta Amazonica 25:127-136.

Palheta, D. and A. Taylor (1995). Mercury in environmental and biological samples from a gold mining area in the Amazon region of Brazil. Sci. Total Environ.168:63-69.

Papina, T.S., S.S. Eyrikh and S.V. Temerev (1995). Mercury in the basin of the River Tom' (West Siberia). Chem. Sustain. Devel. 3:131-136.

Park, J.-G. and L.R. Curtis (1997). Mercury distribution in sediments and bioaccumulation by fish in two Oregon reservoirs: Point-source and nonpoint-source impacted systems. Arch. Environ. Contam. Toxicol. 33:423-429.

Paterson, M.J., J.W.M. Rudd and V. St. Louis (1998). Increases in total and methylmercury in zooplankton following flooding of a peatland reservoir. Environ. Sci. Technol. 32:3868-3874.

Pfeiffer, W.C., L.D. de Lacerda, O. Malm, C.M.M. Souza, E.G. da Silveira and W.R. Bastos (1989). Mercury concentrations in inland waters of gold mining areas in Rondonia, Brazil. Sci. Total Environ. 87/88:233-240.

Pieters, H. and V. Geuke (1994). Methyl mercury in the Dutch Rhine delta. Water Sci. Tech. 30:213-219.

Plourde, Y., M. Lucotte and P. Prichet (1997). Contribution of suspended particulate matter and zooplankton to MeHg contamination of the food chain in midnorthern Quebec (Canada). Can. J. Fish. Aquat. Sci. 54:821-831.

Porcella, D.B. 1994. Mercury in the environment, in Mercury Pollution: Integration and Synthesis, C.J. Watras and J.W. Huckabee Eds. Lewis Publishers, NY, NY, 727 pp..

Porvari, P. (1995). Mercury levels of fish in Tucurui hydroelectric reservoir and in River Moju in Amazonia, in the state of Para, Brazil. Sci. Total Environ. 175:109-117.

Rao, V.R., S.V. Mitz, C.T. Hadden and B.W. Cornaby (1996). Distribution of contaminants in aquatic organisms from East Fork Poplar Creek. Ecotoxicol. Environ. Saf. 33:44-54.

Rask, M. and M. Verta (1995). Concentrations and amounts of methylmercury in water and fish in the limed and acid basins of a small lake. Water Air Soil Pollut. 80:577-580.

San Francisco Estuary Institute (SFEI) (1999). Regional monitoring program for trace substances. Bell, D., J. Gold and P. Salop (Eds.). www.sfei.org/rmp.

Schultz T., P. Kohanen and M. Virtanen (1995). A mercury model used for assessment of dredging impacts. Water Air Soil Pollut. 80:1171-1180.

Skurdal, J., T. Qvenild and O.K. Skogheim (1985). Mercury accumulation in five species of freshwater fish in Lake Tyrifjorden, southeast Norway, with emphasis on their suitability as test organisms. Environ. Biol. Fish. 14:233-237.

Srebocan, E., J. Pompe-Gotal, V. Srebocan and A. Prevendar-Crnic (1993). Monitoring of mercury, lead and cadmium concentrations in animals in the Republic of Croatia. 1. Sources and magnitude of mercury contamination in freshwater fish. Veterinarski Arhiv 63:217-225.

Stober, Q.J., R.D. Jones and D.J. Scheidt (1995). Ultra trace level mercury in the Everglades ecosystem, a multimedia canal pilot study. Water Air Soil Pollut. 80:991-1001.

Stordal, M.C., G.A. Gill, L.S. Wen and P.H. Santchi (1996). Mercury phase speciation in the surface waters of three Texas estuaries: Importance of colloidal forms. Limnol. Oceanogr. 41:52-61.

Suchanek, T.H., P.J. Richerson, L.A. Woodward, D.G. Slotton, L.J. Holts and C.E.E. Woodmansee (1993). A survey and evaluation of mercury. In: Sediment, water, plankton, periphyton, benthic invertebrates and fishes within the aquatic ecosystem of Clear Lake, California. Preliminary lake study report prepared for the U.S. Environmental Protection Agency, Region 9, Superfund Program.

Svobodova, Z., V. Piacka, B. Vykusova, J. Machova, M. Hejtmanek, M. Hrbkova and J. Bastl (1995). Residues of pollutants in siluriformes from various localities of the Czech Republic. Acta Vet. Brno 64:195-208.

TexaSoft, 1999. WINKS 4.6: Windows Version of KWIKSTAT Statistical Data Analysis Program. Cedar Hill, TX.

U.S. Environmental Protection Agency (1993). Water Quality Guidance for the Great Lakes System and Correction: Proposed Rules. Fed. Regist. 58(72):20802-21047 (April 16, 1993).

U.S. Environmental Protection Agency (1995). Trophic level and exposure analyses for selected piscivorous birds and mammals. Volume II: Analyses of species in the conterminous United States. July 1995. Washington D.C.

U.S. Environmental Protection Agency (1997). Mercury study report to congress. Volume VI: An ecological assessment for anthropogenic mercury emissions in the United States. December 1997. Washington D.C.

Vasconcelos, M.T.S.D. and M.F.C. Leal (1997). Speciation of Cu, Pb, Cd and Hg in waters of the Oporto coast in Portugal, using preconcentration in a chelamine resin column. Anal. Chem. Acta 353:189-198.

Verta, M. and T. Matlainen (1995). Methyl mercury distribution and partitioning in stratified

Finnish forest lakes. Water Air Soil Pollut. 80:585-588.

Watras, C.J. and N.S. Bloom (1992). Mercury and methylmercury in individual zooplankton: Implications for bioaccumulation. Limnol. Oceanogr. 37:1313-1318.

Watras, C.J., N.S. Bloom, R.J.M. Hudson, S. Gherini, R. Munson, S.A. Claas, K.A. Morrison, J. Hurley, J.G. Wiener, W.F. Fitzgerals, R. Mason, G. Vandal, D. Powell, R. Rada, L. Rislov, M. Winfrey, J. Elder, D. Krabbenhoft, A.W. Andren, C. Babiarz, D.B. Porcella and J.W. Huckabee (1994). Sources and fates of mercury and methyl mercury in Wisconsin Lakes. In: Mercury pollution: Integration and synthesis. Watras, C.J. and J.W. Huckabee. (Eds.). Lewis Publishers, New York, NY. pp.153-176.

Watras, C.J., N.S. Bloom, S.A. Claas, K.A. Morrison, C.C. Gilmour and S.R. Craig (1995a). Methyl mercury production in the anoxic hypoliminion of a dimictic seepage lake. Water Air Soil Pollut. 80:735-745.

Watras, C.J., K.A. Morrison and N.S. Bloom (1995b). Chemical correlates of Hg and Methyl-Hg in northern Wisconsin lake waters under ice cover. Water Air Soil Pollut. 84:253-267.

Watras, C.J., K.A. Morrison and N.S. Bloom (1995c). Mercury in remote Rocky Mountain lakes of Glacier National Park, Montana, in comparison with other temperate North American regions. Can. J. Fish. Aquat. Sci. 52:1220-1228.

Watras, C.J., K.A. Morrison, J.S. Host and W.S. Bloom (1995d). Concentration of mercury species in relationship to other site-specific factors in the surface waters of northern Wisconsin lakes. Limnol. Oceanogr. 40:556-565.

Watras, C.J., R.C. Back, S. Halvorsen. R.J.M. Hudson, K.A. Morrison and S.P. Wente (1998). Bioaccumulation of mercury in pelagic freshwater food webs. Sci. Total Environ. 219:183-208.

Wren, C.D., H.R. MacCrimmon and B.R. Loescher (1983). Examination of bioaccumulation and biomagnification of metals in a precambrian shield lake. Water Air Soil Pollut. 19:277-291.

Zarski, T.P. and H. Zarska (1996). The level of mercury contamination of various species of fishes caught in the middle course of the Vistula River. Ann. Warsaw Agr. Univ. 32:65-69.

REFERENCES FOR THE CHEMICAL TRANSLATORS

Al-Madfa, H., O.A. Dahab and H. Holail. 1994. Mercury pollution in DoHA (QATAR) coastal environment. Environ. Toxicol. Chem. 13:725-735.

Babiarz, C.L., J.P. Hurley, J.M. Benoit, M.M. Shafer, A.W. Andren and D.A. Webb. 1998. Seasonal influences on partitioning and transport of total and methylmercury in rivers from

contrasting watersheds. Biogeochem. 41:237-257.

Back, R.C. and C.J. Watras. 1995. Mercury in zooplankton of Northern Wisconsin Lakes: Taxonomic and site-specific trends. Water Air Soil Pollut. 80:931-938.

Balogh, S.J., M.L. Meyer and D.K. Johnson. 1998. Transport of mercury in three contrasting river basins. Environ. Sci. Technol. 32:456-462.

Benoit, J.M., C.C. Gilmour, R.P. Mason, G.S. Riedel and G.F. Riedel. 1998. Behavior of mercury in the Patuxent River estuary. Biogeochem. 40(2-3):249-265.

Bloom, N.S., C.J. Watras and J.P. Hurley. 1991. Impact of acidification on the methylmercury cycle of remote seepage lakes. Water Air Soil Pollut. 56:477-491.

Bonzongo, J.C., K.J. Heim, J.J. Warwick and W.B. Lyons. 1996. Mercury levels in surface waters of the Carson River-Lahontan Reservoir System, Nevada: Influence of historic mining activities. Environ. Pollut. 92:193-201.

Bonzongo, J.C.J., K.J. Heim, Y. Chen, W.B. Lyons, J.J. Warwick, G.C. Miller and P.J. Lchler. 1996. Mercury pathways in the Carson River- Lahontan Reservoir System, Nevada, USA. Environ. Toxicol. Chem. 15:677-683.

Campbell, K.R., C.J. Ford and D.A. Levine. 1998. Mercury distribution in Poplar Creek, Oak Ridge, Tennessee, USA. Environ. Toxicol. Chem. 17:1191-1198.

Coquery, M. and D. Cossa. 1995. Mercury speciation in surface waters of the North Sea. Neth J. Sea Res. 34:245-257.

Coquery, M., D. Cossa and J.M. Martin. 1995. The distribution of dissolved and particulate mercury in three Siberian estuaries and adjacent arctic coastal waters. Water Air Soil Pollut. 80:653-654.

Coquery, M., D. Cossa and J. Sanjuan. 1997. Speciation and sorption of mercury in two macro-tidal estuaries. Mar. Chem. 58:213-227.

Cossa, D. and J. Martin. 1991. Mercury in the Rhone delta and adjacent marine areas. Mar. Chem. 36:291-302.

Cossa, D., R.P. Mason and W.F. Fitzgerald. 1994. Chemical speciation of mercury in a meromictic lake. In: Mercury pollution: integration and synthesis. Watras, C.J. and J.W. Huckabee (Eds.). Lewis Publishers, New York, NY. pp. 57-67.

Department of Energy (DOE). 1997. Mercury abatement report for the U.S. Department of Energy Oak Ridge Y-12 Plant for fiscal year 1997. Y/ER-297. Oak Ridge, TN.

Driscoll, C.T., V. Blette, C. Yan, C.L. Schofield, R. Munson and J. Holsapple. 1995. The role of dissolved organic carbon in the chemistry and bioavailability of mercury in remote Adirondack Lakes. Water Air Soil Pollut. 80:499-508.

Gill, G.A. and K.W. Bruland. 1990. Mercury speciation in surface freshwater systems in California and other areas. Environ. Sci. Technol. 24:1392-1400.

Glass, G.E., J.A. Sorensen, K.W. Schmidt and G.R. Rapp, Jr. 1990. New source indentification of mercury contamination in the Great Lakes. Environ. Sci. Technol. 24:1059-1068.

Henry, E.A., L.J. Dodge-Murphy, G.N. Bigham and S.M. Klein. 1995. Modeling the transport and fate of mercury in an urban lake (Onondaga Lake, NY). Water Air Soil Pollut. 80:489-498.

Hurley, J.P., C.J. Watras and N.S. Bloom. 1994. Distribution and flux of particulate mercury in four stratified seepage lakes. In: Mercury pollution: integration and synthesis. Watras, C.J. and J.W. Huckabee (Eds.). Lewis Publishers, New York, NY. pp. 69-82.

Hurley, J.P., M.M. Shafer, S.E. Cowell, J.T. Overdier, P.E. Hughes and D.E. Armstrong. 1995. Influences of watershed characteristics on mercury levels in Wisconsin rivers. Environ. Sci. Technol. 29:1867-1875.

Hurley, J.P. J.M. Benoit, C.L. Babiarz, M.M. Shafer, A.W. Ardren, J.R. Sullivan, R. Hammond and D.A. Webb. 1996. Trace metal assessment of Lake Michigan tributaries using low level techniques. Environ. Sci. Technol. 30:2093-2098.

Hurley, J.P., S.E. Cowell, M.M. Shafer and P.E. Hughs. 1998. Partitioning and transport of total and methyl mercury in the lower Fox River, Wisconsin. Environ. Sci. Technol. 32:1424-1432.

Lores, E.M., J. Macauley, L.R. Goodman, R.G. Smith and D.M. Wells. 1998. Factors affecting bioavailability of methylmercury in Florida Bay. Soc. Environ. Toxicol. Chem. 19th Annual Meeting. Charlotte, NC. Abstr. No. 468. p. 101.

Mason, R.P. and K.A. Sullivan. 1997. Mercury in Lake Michigan. Environ Sci. Technol. 31:942-947.

Mason, R.P. and K.A. Sullivan. 1998. Mercury and methylmercury transport through an urban water shed. Water Res. 32:321-330.

Michigan Department of Environmental Quality (MDEQ). 1996. Michigan default metals translators. Staff Report June, 1996. MI/DEQ/SWQ-95/085. Ann Arbor, MI.

Mikac, W. and Z. Kwokal. 1997. Distribution of mercury in species in the water column of the stratified Krka River Estuary. Croat. Chem. Acta. 70:271-88.

Mucci, A., M. Lucotte, S. Montgomery, Y. Plourde, P. Pichet and H. Van Tra. 1995. Mercury remobilization from flooded soils in a hydroelectric reservoir of northern Quebec, La Grande - 2: result of a soil resuspension experiment. Can. J. Fish. Aquat. Sci. 52:2507-2517.

Pankow, J.F. and S.W. McKenzie. 1991. Parameterizing the equilibrium distribution of chemicals between the dissolved, solid particulate matter, and colloidal matter compartments in aqueous systems. Environ. Sci. Technol. 25:2046-2053.

San Francisco Estuary Institute (SFEI) (1999). Regional monitoring program for trace substances. Bell, D., J. Gold and P. Salop (Eds.). www.sfei.org/rmp.

Scherbatskoy, T., J.B. Shanley and G.J. Keeler. 1998. Factors controlling mercury transport in an upland forested catchment. Water Air Soil Pollut. 105:427-438.

Stordal, M.C., G.A. Gill, L.S. Wen and P.H. Santschi. 1996. Mercury phase speciation inch the surface waters of three Texas estuaries: importance of colloidal forms. Limnol. Oceanogr. 41:52-61.

Suchanek, T.H., P.J. Richerson, L.A. Woodward, D.G. Slotton, L.J. Holts and C.E.E. Woodmansee. 1993. A survey and evaluation of mercury. In: Sediment, water, plankton, periphyton, benthic invertebrates and fishes within the aquatic ecosystem of Clear Lake, California. Preliminary lake study report prepared for the U.S. Environmental Protection Agency, Region 9, Superfund Program.

Suchanek, T.H., L.H. Mullen, B.A. Lamphere, P.J. Richerson, C.E. Woodmansee, D.G. Slotton, E.J. Harner and L.A. Woodward. 1998. Redistribution of mercury from contaminated lake sediments of Clear Lake, California. Water Air Soil Pollut. 104:77-102.

Sung, W. 1995. Some observations on surface partitioning of Cd, Cu, and Zn in estuaries. Environ. Sci. Technol. 29:1303-1312.

U.S. Environmental Protection Agency. 1993. Memo from Martha G. Prothro, Acting Assistant Administrator for Water, to Water Management Division Directors and Environmental Services Division Directors, titled “Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.” October 1, 1993, Washington, DC.

U.S. Environmental Protection Agency. 1996. The metals translator: Guidance for calculating a total recoverable permit limit from a dissolved criteria. June 1996. Washington, D.C.

Vasconselos, M.T.S.D. and M.F.C Leal. 1997. Speciation of Cu, Pb, Cd and Hg in waters of the Oporto coast in Portugal, using preconcentration in a chelamine resin column. Anal. Chim. Acta. 353:189-198.

Verta, M. and T. Matilainen. 1995. Methylmercury distribution and partitioning in stratified

Finnish forest lakes. Water Air Soil Pollut. 80:585-588.

Watras, C.J., N.S. Bloom, R.J.M. Hudson, S. Gherini, R. Munson, S.A. Claas, K.A. Morrison, J. Hurley, J.G. Wiener, W.F. Fitzgerald, R. Mason, G. Vandal, D. Powell, R. Rada, L. Rislov, M. Winfrey, J. Elder, D.Krabbenhoft, A.W. Andren, C.Babiarz, D.B. Porcella and J.W. Huckabee. 1994. Sources and fates of mercury and methylmercury in Wisconsin Lakes. In: Mercury pollution: integration and synthesis. Watras, C.J. and J.W. Huckabee. (Eds.). Lewis Publishers, New York, NY. pp.153-176.

Watras, C.J., K.A. Morrison and N.S. Bloom. 1995. Chemical correlates of Hg and methyl-Hg in northern Wisconsin lake waters under ice cover. Water Air Soil Pollut. 84:253-267.

Watras, C.J., K.A. Morrison, J.S. Host and W.S. Bloom. 1995. Concentration of mercury species in relationship to other site-specific factors in the surface waters of Northern Wisconsin Lakes. Limnol. Oceanogr. 40:556-565.

Watras, C.J., R.C. Back, S. Halvorsen, R.J.M. Hudson, K.A. Morrison and S.P. Wente. 1998. Bioaccumulation of mercury in pelagic freshwater food webs. Sci. Total Environ. 219:183-208.

Wayne, D.M., J.J. Warwick, P.J. Lechler, G.A. Gill and W.B. Lyons. 1996. Mercury contamination in the Carson River, Nevada: A preliminary study of the impact of mining wastes. Water Air Soil Pollut. 92:391-408.