FIGURE 3

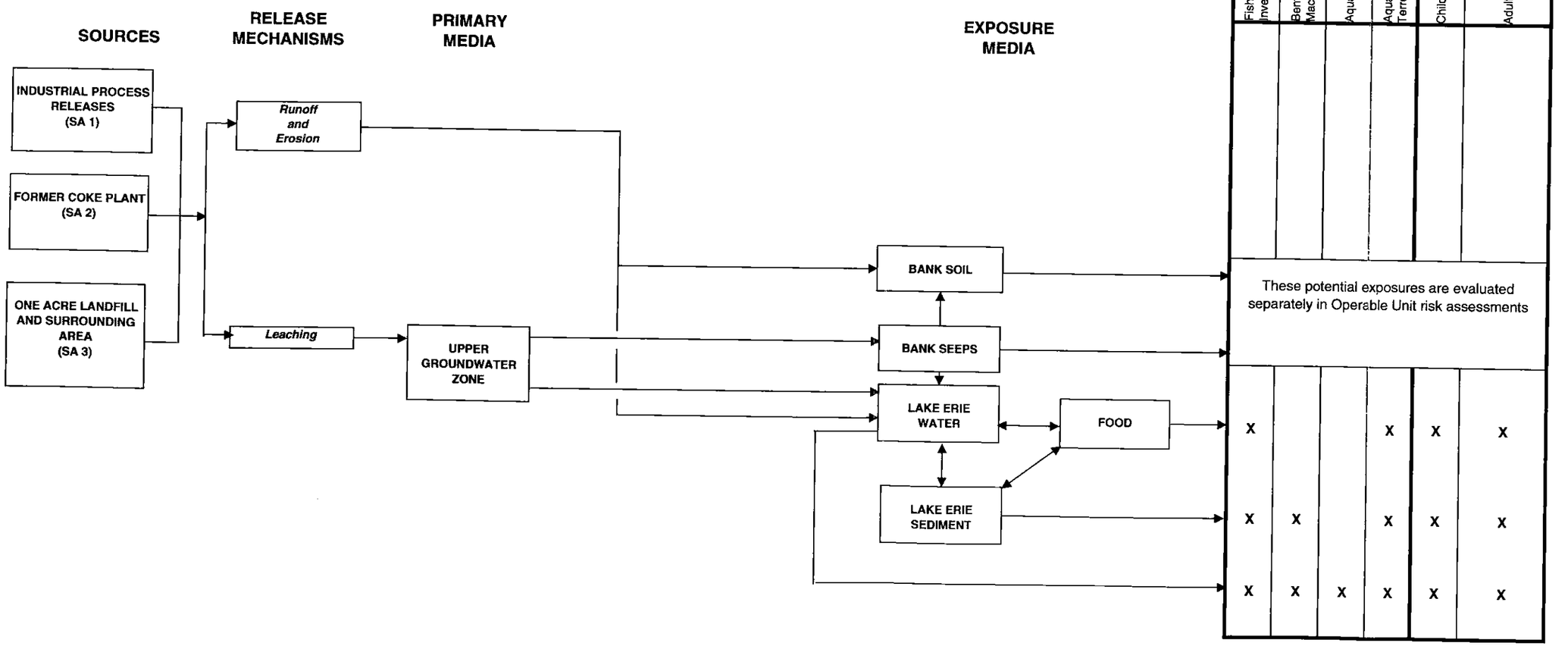
HULL & ASSOCIATES,INC.
SOLON, OHIO

SITE CONCEPTUAL MODEL
SITEWIDE RISKS - LAKE ERIE

DATE:

JUNE 2003

CLH002.600.0058.XLS



X = Potentially complete exposure pathway
Note: Future Adult and Child Recreators may also be included as residents inhabiting Operable Units in proximity to the Grand River.

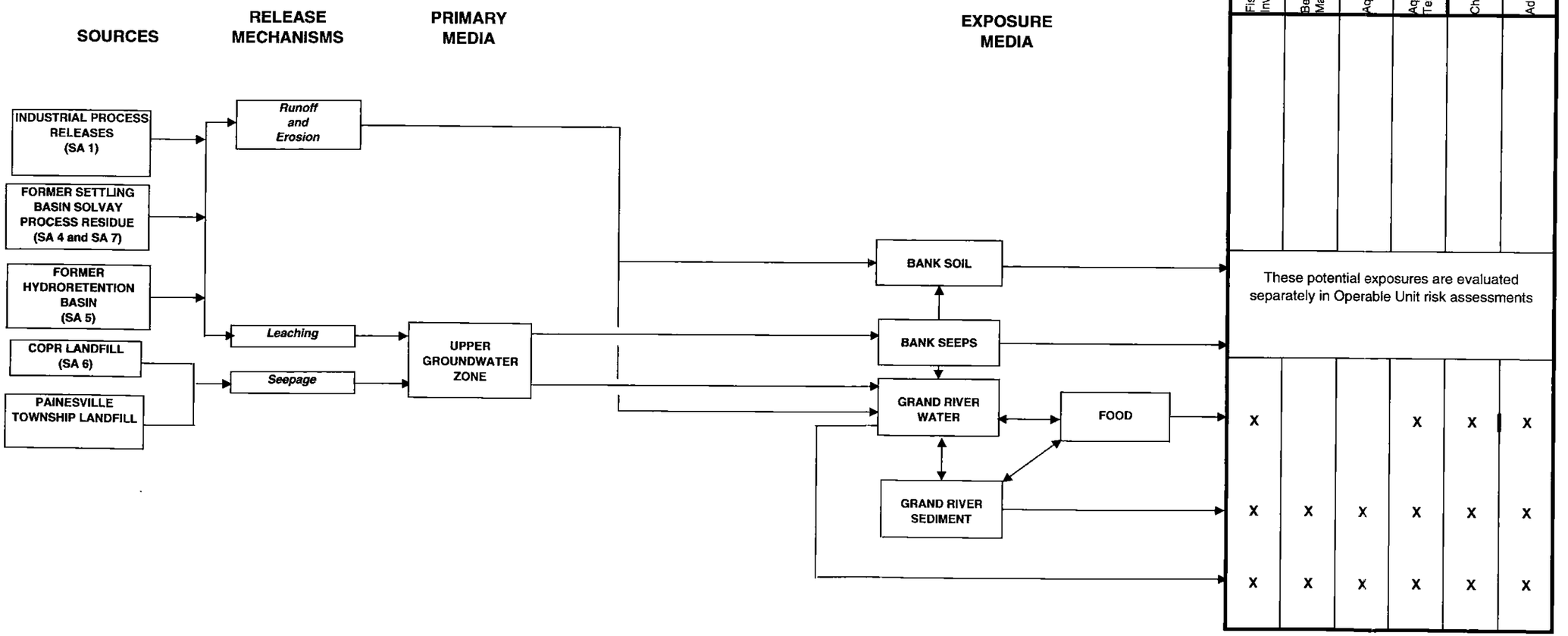
FIGURE 4

HULL & ASSOCIATES,INC.
SOLON, OHIO

SITE CONCEPTUAL MODEL
SITEWIDE RISKS - GRAND RIVER

DATE:

JUNE 2003 CLH002.600.0058.XLS



X = Potentially complete pathway
Note: Future Adult and Child Recreators may also be included as residents inhabiting Operable Units in proximity to the Grand River.

ATTACHMENT A

CONCENTRATIONS OF CHEMICALS IN FISH AND BIVALVE TISSUE

ATTACHMENT A - FISH TISSUE

Data on fish tissue concentrations of various chemical constituents have been reported for the Grand River reach within the Painesville site from three sources:

- Ohio EPA, 1995. This Technical Support Document contains the results of analyses conducted on fish fillets from four species collected between RM 3.2 and 4.6 in 1994. Parameters included SVOCs.
- Ohio EPA (Quanterra), 1998. This analytical report presents the results of analyses conducted on fish fillets from six species collected by Ohio EPA between RM 2.2 and RM 6.0 in September 1997. Parameters included semivolatile organic compounds (SVOCs) and metals.
- Ohio EPA, 1998. These unpublished results contain analyses conducted on whole body samples of three fish species collected by Ohio EPA between RM 3.5 and RM 4.6. Parameters measured were whole body concentrations (WBCs) of SVOCs.

Fish samples collected by the OEPA (1995) were described in the *Biological and Sediment Quality Study of the Grand River in the Vicinity of the Diamond Shamrock Waste Lagoons Area.* Data collected from the Grand River within the boundaries of the Site were used in the SLHRA to characterize chemical concentrations in fish tissue. These samples included a channel catfish fillet (skin off) composite, two largemouth bass fillet (skin on) composite, all of which were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals.

It is difficult to identify sources of chemicals in fish tissue, particularly for migrating species such as bass, trout and walleye, which are the primary sport fish caught from the river. Uncertainty exists as to whether any constituents measured in fish tissue from migratory species of fish collected in the Grand River (which included bass) are Site-related. The 1998 Ohio EPA sampling event was designed to eliminate this concern through the collection of non-migratory fish species.

None of the sampling events listed above were performed under the existing Director's Final Findings and Orders (DFFO) for the Site, therefore data quality objectives for the sampling events may have been different than those specified in the RI Work Plan. Quality Control information was not available to validate a number of the sample results and, in addition, hexavalent chromium results from the Ohio EPA (Quanterra) 1998 sampling event are considered suspect due to the reported detection of this metal in fish tissue; hexavalent chromium is not expected to be found in the reducing conditions nearly universal in animal tissues (Barnhart, 1997).

Although the sample results cannot be used to quantitatively evaluate site-related risk through the fish ingestion pathway, they can be used in a qualitative discussion of potential risk for both hexavalent chromium and PCBs.

PCBs in fish tissue – PCBs were detected in: 1) fillets of smallmouth buffalo, channel catfish, smallmouth bass and largemouth bass collected between RM 3.2 and 4.6 in 1994; 2) fillets of common carp collected between RM 2.2 and 4.6 in 1997; and 3) in whole body samples of black redhorse, rockbass and common carp collected between RM 3.5 and 4.6 in 1998 (data in this Appendix). PCBs were not detected in fillets of common carp, walleye or smallmouth bass collected upstream of the Painesville site at RM 6.0 in 1997.

The Painesville site was not used at any time in its history for the production or storage of PCBs. Transformers containing PCBs have been found on the site, but the transformers were not leaking.

Certain soil sample locations where PCBs were detected are in proximity to the Grand River, suggesting a possible PCB source from the Painesville site via surface runoff. PCBs have not been detected in groundwater south of the hydrogeologic divide at Fairport Nursery Rd., and have never been detected in Grand River sediments.

Phase II soil analyses resulted in detections of PCBs in soils 0 to 4 feet in Study Areas 1, 4, 5 and 7. (Appendix E).

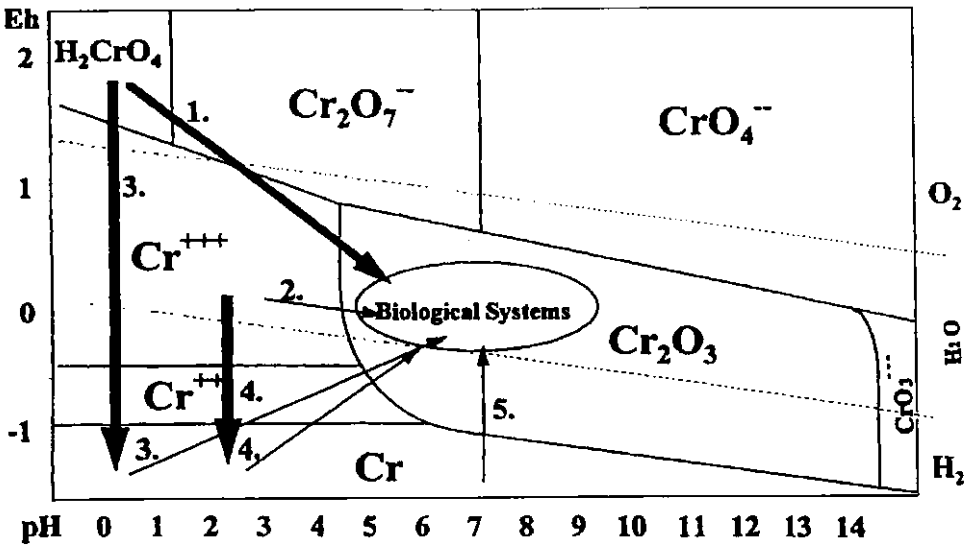
Most surface soil samples (from 0-4') containing detectable PCBs were located in areas removed from the Grand River, with no likely surface water route for movement of suspended PCB-contaminated soils. Parcels unlikely to contribute PCBs to the Grand River via surface erosion include parcels 1A2, 1A3, 1A4, 1A5, 1A6, 1A7, 1A8, 1A9, 1B1, 1C1, 1C2, and 1C5, all of which are located on the north side of Fairport Nursery Rd., a long distance from the Grand River. Similarly, parcel 4A1 is located a long distance from the Grand River. In addition, Parcels 7C3 and 7C4 are located behind the Study Area 7 berm and so a surface transport route for PCBs is unlikely.

A subset of surface soil samples containing detectable PCBs were located in areas immediately adjacent to the Grand River. These areas are parcels 4B3, 5B1, 7B1, and 7C2. The possibility of these areas serving as a source for PCB-contaminated soils to the Grand River is higher than for all of the other parcels where PCB-contaminated soils were identified.

Despite the proximity of these parcels containing PCB-contaminated soils to the Grand River, PCBs have never been detected in Grand River sediments (Appendix C).

Taken together, these data suggest that while some parcels within the Painesville site may be contributing sources for PCBs found in fish tissues in the Grand River: 1) PCBs are not site-related compounds and 2) a complete pathway to fish from Painesville site soils (e.g., surface water to sediment to benthic macroinvertebrates to fish) cannot be established.

Hexavalent chromium in fish tissue - A single detection of hexavalent chromium in fish tissue was made by Quanterra (1998). A fillet concentration of 35.3 mg/kg is reported for common carp collected at RM 2.2 by Ohio EPA. Hexavalent chromium is not known to exist in the reducing conditions nearly universal in animal tissues (Barnhart, 1997; Dr. Mark Harris, personal communication). In reducing environments, hexavalent chromium quickly reduces to Cr(III). A phase diagram depicting the oxidation states of chromium as determined by oxidation-reduction potential and pH is shown in the accompanying Figure. The diagram illustrates the rather narrow range of Eh and pH found within biological systems, and that the very high Eh necessary for existence of the Cr(VI) ion does not occur in biological systems. Thus it appears that this single detection of Cr(VI) in fish tissue is a laboratory error.



Phase diagram of chromium speciation from Fendorf et al., 1996.

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,2,4-Trichlorobenzene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,2-Dichlorobenzene	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,3-Dichlorobenzene	0.85	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,3-Dichlorobenzene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4,5-Trichlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4,6-Trichlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4,6-Trichlorophenol	0.0165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dichlorophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dimethylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dinitrophenol	4.15	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrophenol	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dinitrophenol	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dinitrotoluene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,6-Dinitrotoluene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Chloronaphthalene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Chlorophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Methylnaphthalene	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Methylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Nitroaniline	4.15	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Nitroaniline	0.8	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitroaniline	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Nitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	3,3'-Dichlorobenzidine	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	3,3'-Dichlorobenzidine	0.335	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	3,4-Methylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	3-Nitroaniline	4.15	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	3-Nitroaniline	0.8	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	3-Nitroaniline	0.8	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,4'-DDD	0.02	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,4'-DDD	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDD	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,4'-DDD	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDD	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,4'-DDD	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,4'-DDD	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,4'-DDE	0.0455	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDE	0.0056	MG/KG	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDE	0.0055	MG/KG	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,4'-DDE	0.0019	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,4'-DDE	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,4'-DDE	0.00165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,4'-DDE	0.0016	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,4'-DDT	0.00655	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDT	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,4'-DDT	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,4'-DDT	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDT	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,4'-DDT	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,4'-DDT	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,6-Dinitro-2-methylphenol	4.15	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,6-Dinitro-2-methylphenol	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,6-Dinitro-2-methylphenol	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Bromophenyl-phenylethe	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Chloro-3-methylphenol	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloro-3-methylphenol	0.335	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Chloroaniline	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloroaniline	0.335	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Chlorophenyl-phenylethe	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Nitrophenol	4.15	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitrophenol	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Nitrophenol	0.8	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Acenaphthene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Acenaphthylene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Aldrin	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Aldrin	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Aldrin	0.00041	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	alpha-BHC	0.00085	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	alpha-BHC	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	alpha-BHC	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Anthracene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Anthracene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(a)anthracene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(a)pyrene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(b)fluoranthene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(g,h,i)perylene	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(k)fluoranthene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzoic Acid	4.15	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzoic Acid	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzoic Acid	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzyl Alcohol	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzyl Alcohol	0.335	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	beta-BHC	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	beta-BHC	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	beta-BHC	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-chloroethoxy)methan	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-chloroethyl)ether	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-chloroisopropyl)ether	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-ethylhexyl)phthalate	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-ethylhexyl)phthalate	0.75	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-ethylhexyl)phthalate	0.39	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-ethylhexyl)phthalate	0.3175	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-ethylhexyl)phthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-ethylhexyl)phthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-ethylhexyl)phthalate	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Butylbenzylphthalate	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Cadmium	0.19	mg/kg	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Cadmium	0.11	mg/kg	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Cadmium	0.012	mg/kg	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Cadmium	0.004	mg/kg	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Cadmium	0.002	mg/kg	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Cadmium	0.002	mg/kg	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Cadmium	0.002	mg/kg	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Chlordane	0.0415	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Chlordane	0.041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Chlordane	0.041	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Chlordane	0.041	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Chlordane	0.0405	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chlordane	0.0205	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chlordane	0.0205	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chromium, Hexavalent	2	mg/kg	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chromium, Hexavalent	2	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Chromium, Total	1.65	mg/kg	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Chromium, Total	0.625	mg/kg	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chromium, Total	0.31	mg/kg	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Chromium, Total	0.3	mg/kg	TRUE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chromium, Total	0.21	mg/kg	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Chromium, Total	0.02	mg/kg	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Chromium, Total	0.02	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Chrysene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chrysene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chrysene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	delta-BHC	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	delta-BHC	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	delta-BHC	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Di-n-butylphthalate	0.85	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Di-n-butylphthalate	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dibenzo(a,h)anthracene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dibenzofuran	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dieldrin	0.0155	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dieldrin	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dieldrin	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dieldrin	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dieldrin	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dieldrin	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dieldrin	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Diethylphthalate	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dimethylphthalate	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dimethylphthalate	0.165	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan I	0.00085	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endosulfan I	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endosulfan I	0.00041	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan II	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endosulfan II	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endosulfan II	0.00165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endosulfan II	0.001625	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan II	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endosulfan II	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endosulfan II	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endosulfan Sulfate	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan Sulfate	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endosulfan Sulfate	0.00165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endosulfan Sulfate	0.001625	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan Sulfate	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endosulfan Sulfate	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endosulfan Sulfate	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endrin	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endrin	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin	0.00165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endrin	0.001625	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endrin	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endrin	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endrin Aldehyde	0.003425	MG/KG	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin Aldehyde	0.0032	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endrin Aldehyde	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endrin Aldehyde	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin Aldehyde	0.00165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endrin Aldehyde	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endrin Aldehyde	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Fluoranthene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Fluorene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Fluorene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Fluorene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Gamma-BHC (Lindane)	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Gamma-BHC (Lindane)	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Gamma-BHC (Lindane)	0.00041	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor	0.00085	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Heptachlor	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Heptachlor	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Heptachlor Epoxide	0.0048	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Heptachlor Epoxide	0.00395	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor Epoxide	0.00085	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Heptachlor Epoxide	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor Epoxide	0.0008	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Heptachlor Epoxide	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Heptachlor Epoxide	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachlorobenzene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachlorobutadiene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachlorocyclopentadiene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachloroethane	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Indeno(1,2,3-cd)pyrene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Isophorone	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Isophorone	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Isophorone	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Lead	0.13	mg/kg	TRUE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Lead	0.08	mg/kg	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Lead	0.05	mg/kg	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Lipids	12	%	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Lipids	1.7	%	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Lipids	1.4	%	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Lipids	1.11	%	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Lipids	1.08	%	TRUE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Lipids	1	%	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Lipids	0.67	%	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Mercury	0.26	mg/kg	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Mercury	0.225	mg/kg	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Mercury	0.12	mg/kg	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Mercury	0.075	mg/kg	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Mercury	0.04	mg/kg	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Mercury	0.04	mg/kg	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Mercury	0.04	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Methoxychlor	0.014	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Methoxychlor	0.0085	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Methoxychlor	0.008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Methoxychlor	0.008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Methoxychlor	0.008	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Methoxychlor	0.00415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Methoxychlor	0.0041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	N-Nitroso-di-n-propylamine	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	N-nitrosodiphenylamine	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Naphthalene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Naphthalene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Naphthalene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Nitrobenzene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1016	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1016	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1016	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1016	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1016	0.023	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1016	0.0085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1016	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1221	0.049	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1221	0.04875	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1221	0.0475	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1221	0.0475	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1221	0.0455	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1221	0.0165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1221	0.0165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1232	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1232	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1232	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1232	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1232	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1232	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1232	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1242	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1242	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1242	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1242	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1242	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1242	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1242	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1248	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1248	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1248	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1248	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1248	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1248	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1248	0.0085	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1254	0.645	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1254	0.2	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1254	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1254	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1254	0.023	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1254	0.0085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1254	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1260	0.23	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1260	0.165	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1260	0.065	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1260	0.055	MG/KG	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1260	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1260	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1260	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Pentachlorophenol	4.15	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Pentachlorophenol	1.6	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Pentachlorophenol	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Phenanthrene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Phenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Phenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Pyrene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Pyrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Toxaphene	0.0415	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Toxaphene	0.041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Toxaphene	0.041	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Toxaphene	0.041	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Toxaphene	0.0405	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Toxaphene	0.0205	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Toxaphene	0.0205	MG/KG	FALSE
478-97	9/30/1997	GR 3.2	common carp	SOFC	Arochlor 1260	0.21	MG/KG	TRUE
490-97	9/30/1997	GR 2.2	common carp	SOFC	Arochlor 1260	1.9	MG/KG	TRUE
491-97	9/30/1997	GR 4.5	common carp	SOFC	Arochlor 1260	0.11	MG/KG	
18100	9/16/1998	GR 3.5	black redhorse	WBC	Arochlor 1254	0.129	MG/KG	
18100	9/16/1998	GR 3.5	black redhorse	WBC	Arochlor 1260	0.111	MG/KG	
18101	9/16/1998	GR 4.6	rockbass	WBC	Arochlor 1254	0.0783	MG/KG	
18101	9/16/1998	GR 4.6	rockbass	WBC	Arochlor 1260	0.123	MG/KG	
18102	9/16/1998	GR 4.6	common carp	WBC	Arochlor 1254	0.317	MG/KG	
18102	9/16/1998	GR 4.6	common carp	WBC	Arochlor 1260	0.315	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	4,4'-DDD	0.0141	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	4,4'-DDE	0.0656	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	4,4'-DDT	0.0163	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	Dieldrin	0.013	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	Gamma-Chlordane	0.0065	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	trans-Nonachlor	0.00669	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	PCB-1254	0.129	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	PCB-1260	0.111	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	4,4'-DDD	0.00619	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	4,4'-DDE	0.038	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	Dieldrin	0.00566	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	trans-Nonachlor	0.005	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	PCB-1254	0.0783	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	PCB-1260	0.123	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	4,4'-DDD	0.0188	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	4,4'-DDE	0.0845	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	Dieldrin	0.00753	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	Gamma-Chlordane	0.0108	MG/KG	

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
18102	9/16/1998	Grand River	common carp	WBC	trans-Nonachlor	0.00854	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	PCB-1254	0.317	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	PCB-1260	0.315	MG/KG	
478-97	9/30/1997	Grand River	common carp	SOFC	4,4'-DDE	0.025	MG/KG	
478-97	9/30/1997	Grand River	common carp	SOFC	Aroclor 1260	0.21	MG/KG	
478-97	9/30/1997	Grand River	common carp	SOFC	Mercury	0.26	MG/KG	
479-97	9/30/1997	Grand River	common carp	SOF	4,4'-DDE	0.03	MG/KG	
478-97	12/19/1997	Grand River	common carp	SOFC	Percent Lipids	1.3	MG/KG	
479-97	12/19/1997	Grand River	common carp	SOF	Percent Lipids	0.67	MG/KG	
180-97	12/19/1997	Grand River	common carp	SOFC	Percent Lipids	0.66	MG/KG	
480-97	9/30/2007	Grand River	common carp	SOFC	Mercury	0.11	MG/KG	
480-97	9/30/1997	Grand River	common carp	SOFC	Hexavalent Chromium	35.3	MG/KG	
482-97	9/30/1997	Grand River	smallmouth bass	SOFC	Percent Lipids	0.33	MG/KG	
482-97	9/30/1997	Grand River	smallmouth bass	SOFC	Mercury	0.16	MG/KG	
483-97	9/30/1997	Grand River	smallmouth bass	SOFC	Mercury	0.19	MG/KG	
484-97	9/30/1997	Grand River	largemouth bass	SOF	Mercury	0.19	MG/KG	
485-97	9/30/1997	Grand River	smallmouth bass	SOF	Percent Lipids	0.33	MG/KG	
485-97	9/30/1997	Grand River	smallmouth bass	SOF	Mercury	0.37	MG/KG	
486-97	9/30/1997	Grand River	walleye	SOF	Mercury	0.11	MG/KG	
487-97	9/30/1997	Grand River	largemouth bass	SOFC	Percent Lipids	0.33	MG/KG	
487-97	9/30/1997	Grand River	largemouth bass	SOFC	Mercury	0.27	MG/KG	
488-97	9/30/2007	Grand River	largemouth bass	SOFC	Mercury	0.19	MG/KG	
489-97	9/30/1997	Grand River	freshwater drum	SOFC	Mercury	0.26	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	4,4'-DDE	0.3	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	4,4'-DDD	0.16	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	Aroclor 1260	1.9	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	Percent Lipids	13	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	Mercury	0.17	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	4,4'-DDE	0.17	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	Aroclor 1260	0.11	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	Percent Lipids	0.66	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	Mercury	0.19	MG/KG	

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,2,4-Trichlorobenzene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,2,4-Trichlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,2-Dichlorobenzene	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,2-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,3-Dichlorobenzene	0.85	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	1,3-Dichlorobenzene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	1,3-Dichlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4,5-Trichlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,5-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4,6-Trichlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4,6-Trichlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4,6-Trichlorophenol	0.0165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dichlorophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dichlorophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dimethylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dimethylphenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dinitrophenol	4.15	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dinitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrophenol	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dinitrophenol	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,4-Dinitrotoluene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,4-Dinitrotoluene	0.165	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2,6-Dinitrotoluene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2,6-Dinitrotoluene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Chloronaphthalene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Chloronaphthalene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Chlorophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Chlorophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Methylnaphthalene	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Methylnaphthalene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Methylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Methylphenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Nitroaniline	4.15	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Nitroaniline	0.8	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitroaniline	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	2-Nitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	2-Nitrophenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	3,3'-Dichlorobenzidine	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	3,3'-Dichlorobenzidine	0.335	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	3,3'-Dichlorobenzidine	0.33	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	3,4-Methylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	3,4-Methylphenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	3-Nitroaniline	4.15	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	3-Nitroaniline	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	3-Nitroaniline	0.8	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	3-Nitroaniline	0.8	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,4'-DDD	0.02	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,4'-DDD	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDD	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,4'-DDD	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDD	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,4'-DDD	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,4'-DDD	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,4'-DDE	0.0455	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDE	0.0056	MG/KG	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDE	0.0055	MG/KG	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,4'-DDE	0.0019	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,4'-DDE	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,4'-DDE	0.00165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,4'-DDE	0.0016	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,4'-DDT	0.00655	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDT	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,4'-DDT	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,4'-DDT	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,4'-DDT	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,4'-DDT	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,4'-DDT	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4,6-Dinitro-2-methylphenol	4.15	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4,6-Dinitro-2-methylphenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4,6-Dinitro-2-methylphenol	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4,6-Dinitro-2-methylphenol	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Bromophenyl-phenylethe	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Bromophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Chloro-3-methylphenol	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloro-3-methylphenol	0.335	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Chloro-3-methylphenol	0.33	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Chloroaniline	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloroaniline	0.335	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Chloroaniline	0.33	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Chlorophenyl-phenylethe	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Chlorophenyl-phenylethe	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Nitroaniline	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Nitroaniline	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	4-Nitrophenol	4.15	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	4-Nitrophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	4-Nitrophenol	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	4-Nitrophenol	0.8	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Acenaphthene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Acenaphthene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Acenaphthylene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Acenaphthylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Aldrin	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Aldrin	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Aldrin	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Aldrin	0.00041	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	alpha-BHC	0.00085	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	alpha-BHC	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	alpha-BHC	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	alpha-BHC	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Anthracene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Anthracene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Anthracene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(a)anthracene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)anthracene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(a)pyrene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(a)pyrene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(b)fluoranthene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(b)fluoranthene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(g,h,i)perylene	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(g,h,i)perylene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzo(k)fluoranthene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzo(k)fluoranthene	0.165	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzoic Acid	4.15	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzoic Acid	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzoic Acid	0.8	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzoic Acid	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Benzyl Alcohol	1.65	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Benzyl Alcohol	0.335	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Benzyl Alcohol	0.33	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	beta-BHC	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	beta-BHC	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	beta-BHC	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	beta-BHC	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-chloroethoxy)methan	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-chloroethoxy)methan	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-chloroethyl)ether	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-chloroethyl)ether	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-chloroisopropyl)ether	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-chloroisopropyl)ether	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Bis(2-ethylhexyl)phthalate	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-ethylhexyl)phthalate	0.75	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Bis(2-ethylhexyl)phthalate	0.39	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Bis(2-ethylhexyl)phthalate	0.3175	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Bis(2-ethylhexyl)phthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Bis(2-ethylhexyl)phthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Bis(2-ethylhexyl)phthalate	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Butylbenzylphthalate	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Butylbenzylphthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Cadmium	0.19	mg/kg	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Cadmium	0.11	mg/kg	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Cadmium	0.012	mg/kg	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Cadmium	0.004	mg/kg	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Cadmium	0.002	mg/kg	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Cadmium	0.002	mg/kg	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Cadmium	0.002	mg/kg	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Chlordane	0.0415	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Chlordane	0.041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Chlordane	0.041	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Chlordane	0.041	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Chlordane	0.0405	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chlordane	0.0205	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chlordane	0.0205	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chromium, Hexavalent	2	mg/kg	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chromium, Hexavalent	2	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Chromium, Total	1.65	mg/kg	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Chromium, Total	0.625	mg/kg	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chromium, Total	0.31	mg/kg	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Chromium, Total	0.3	mg/kg	TRUE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chromium, Total	0.21	mg/kg	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Chromium, Total	0.02	mg/kg	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Chromium, Total	0.02	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Chrysene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Chrysene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Chrysene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Chrysene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	delta-BHC	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	delta-BHC	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	delta-BHC	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	delta-BHC	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Di-n-butylphthalate	0.85	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Di-n-butylphthalate	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Di-n-butylphthalate	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dibenzo(a,h)anthracene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzo(a,h)anthracene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dibenzofuran	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dibenzofuran	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dieldrin	0.0155	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dieldrin	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dieldrin	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dieldrin	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dieldrin	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dieldrin	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dieldrin	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Diethylphthalate	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Diethylphthalate	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Dimethylphthalate	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Dimethylphthalate	0.165	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Dimethylphthalate	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan I	0.00085	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan I	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endosulfan I	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endosulfan I	0.00041	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan II	0.00165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endosulfan II	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endosulfan II	0.00165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endosulfan II	0.001625	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan II	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endosulfan II	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endosulfan II	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endosulfan Sulfate	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan Sulfate	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endosulfan Sulfate	0.00165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endosulfan Sulfate	0.001625	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endosulfan Sulfate	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endosulfan Sulfate	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endosulfan Sulfate	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endrin	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endrin	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin	0.00165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endrin	0.001625	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin	0.0016	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endrin	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endrin	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Endrin Aldehyde	0.003425	MG/KG	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin Aldehyde	0.0032	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Endrin Aldehyde	0.00165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Endrin Aldehyde	0.00165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Endrin Aldehyde	0.00165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Endrin Aldehyde	0.00085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Endrin Aldehyde	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Fluoranthene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Fluoranthene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Fluorene	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Fluorene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Fluorene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Fluorene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Gamma-BHC (Lindane)	0.00085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Gamma-BHC (Lindane)	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Gamma-BHC (Lindane)	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Gamma-BHC (Lindane)	0.00041	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor	0.00085	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor	0.0008	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Heptachlor	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Heptachlor	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Heptachlor Epoxide	0.0048	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Heptachlor Epoxide	0.00395	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor Epoxide	0.00085	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Heptachlor Epoxide	0.0008	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Heptachlor Epoxide	0.0008	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Heptachlor Epoxide	0.000415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Heptachlor Epoxide	0.00041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachlorobenzene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachlorobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachlorobutadiene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachlorobutadiene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachlorocyclopentadiene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachlorocyclopentadiene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Hexachloroethane	0.85	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Hexachloroethane	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Indeno(1,2,3-cd)pyrene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Indeno(1,2,3-cd)pyrene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Isophorone	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Isophorone	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Isophorone	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Isophorone	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Lead	0.13	mg/kg	TRUE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Lead	0.08	mg/kg	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Lead	0.05	mg/kg	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Lead	0.05	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Lipids	12	%	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Lipids	1.7	%	TRUE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Lipids	1.4	%	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Lipids	1.11	%	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Lipids	1.08	%	TRUE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Lipids	1	%	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Lipids	0.67	%	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Mercury	0.26	mg/kg	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Mercury	0.225	mg/kg	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Mercury	0.12	mg/kg	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Mercury	0.075	mg/kg	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Mercury	0.04	mg/kg	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Mercury	0.04	mg/kg	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Mercury	0.04	mg/kg	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Methoxychlor	0.014	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Methoxychlor	0.0085	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Methoxychlor	0.008	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Methoxychlor	0.008	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Methoxychlor	0.008	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Methoxychlor	0.00415	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Methoxychlor	0.0041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	N-Nitroso-di-n-propylamine	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	N-Nitroso-di-n-propylamine	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	N-nitrosodiphenylamine	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	N-nitrosodiphenylamine	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Naphthalene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Naphthalene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Naphthalene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Naphthalene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Nitrobenzene	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Nitrobenzene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1016	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1016	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1016	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1016	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1016	0.023	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1016	0.0085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1016	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1221	0.049	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1221	0.04875	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1221	0.0475	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1221	0.0475	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1221	0.0455	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1221	0.0165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1221	0.0165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1232	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1232	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1232	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1232	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1232	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1232	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1232	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1242	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1242	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1242	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1242	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1242	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1242	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1242	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1248	0.0245	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1248	0.02425	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1248	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1248	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1248	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1248	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1248	0.0085	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1254	0.645	MG/KG	TRUE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1254	0.2	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1254	0.024	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1254	0.0235	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1254	0.023	MG/KG	FALSE

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1254	0.0085	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1254	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	PCB-1260	0.23	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	PCB-1260	0.165	MG/KG	TRUE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	PCB-1260	0.065	MG/KG	TRUE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1260	0.055	MG/KG	TRUE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	PCB-1260	0.023	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	PCB-1260	0.0085	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	PCB-1260	0.0085	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Pentachlorophenol	4.15	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Pentachlorophenol	1.6	MG/KG	TRUE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Pentachlorophenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Pentachlorophenol	0.8	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Phenanthrene	0.85	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Phenanthrene	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Phenol	0.85	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Phenol	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Phenol	0.165	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Pyrene	0.85	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Pyrene	0.165	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Pyrene	0.165	MG/KG	FALSE
O-GR-LMB-SOFC-3.2	9/1/1994	Grand River	Largemouth bass	SOFC	Toxaphene	0.0415	MG/KG	FALSE
O-GR-LMB-SOFC-4.6	9/1/1994	Grand River	Largemouth bass	SOFC	Toxaphene	0.041	MG/KG	FALSE
O-GR-CHC-SFFC-4.2	9/1/1994	Grand River	Channel catfish	SFFC	Toxaphene	0.041	MG/KG	FALSE
O-GR-SMB-SOFC-4.6	9/1/1994	Grand River	Smallmouth bass	SOFC	Toxaphene	0.041	MG/KG	FALSE
O-GR-SMBU-SOFC-3.2	9/1/1994	Grand River	Smallmouth buffalo	SOFC	Toxaphene	0.0405	MG/KG	FALSE
O-GR-UNL-STC-4	9/1/1994	Grand River	Unionid - *L. fragilis*	STC	Toxaphene	0.0205	MG/KG	FALSE
O-GR-UNP-STC-4	9/1/1994	Grand River	Unionid - *P. alatus*	STC	Toxaphene	0.0205	MG/KG	FALSE
478-97	9/30/1997	GR 3.2	common carp	SOFC	Arochlor 1260	0.21	MG/KG	TRUE
490-97	9/30/1997	GR 2.2	common carp	SOFC	Arochlor 1260	1.9	MG/KG	TRUE
491-97	9/30/1997	GR 4.5	common carp	SOFC	Arochlor 1260	0.11	MG/KG	
18100	9/16/1998	GR 3.5	black redhorse	WBC	Arochlor 1254	0.129	MG/KG	
18100	9/16/1998	GR 3.5	black redhorse	WBC	Arochlor 1260	0.111	MG/KG	
18101	9/16/1998	GR 4.6	rockbass	WBC	Arochlor 1254	0.0783	MG/KG	
18101	9/16/1998	GR 4.6	rockbass	WBC	Arochlor 1260	0.123	MG/KG	
18102	9/16/1998	GR 4.6	common carp	WBC	Arochlor 1254	0.317	MG/KG	
18102	9/16/1998	GR 4.6	common carp	WBC	Arochlor 1260	0.315	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	4,4'-DDD	0.0141	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	4,4'-DDE	0.0656	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	4,4'-DDT	0.0163	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	Dieldrin	0.013	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	Gamma-Chlordane	0.0065	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	trans-Nonachlor	0.00669	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	PCB-1254	0.129	MG/KG	
18100	9/16/1998	Grand River	black redhorse	WBC	PCB-1260	0.111	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	4,4'-DDD	0.00619	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	4,4'-DDE	0.038	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	Dieldrin	0.00566	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	trans-Nonachlor	0.005	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	PCB-1254	0.0783	MG/KG	
18101	9/16/1998	Grand River	rockbass	WBC	PCB-1260	0.123	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	4,4'-DDD	0.0188	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	4,4'-DDE	0.0845	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	Dieldrin	0.00753	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	Gamma-Chlordane	0.0108	MG/KG	

Concentrations of Chemicals in Fish Tissue
Grand River Study Area

Location	Sampling Date	Study Area	Species	Sample Type	Parameter	Adjusted Result	Unit of Measure	Detect ?
18102	9/16/1998	Grand River	common carp	WBC	trans-Nonachlor	0.00854	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	PCB-1254	0.317	MG/KG	
18102	9/16/1998	Grand River	common carp	WBC	PCB-1260	0.315	MG/KG	
478-97	9/30/1997	Grand River	common carp	SOFC	4,4'-DDE	0.025	MG/KG	
478-97	9/30/1997	Grand River	common carp	SOFC	Aroclor 1260	0.21	MG/KG	
478-97	9/30/1997	Grand River	common carp	SOFC	Mercury	0.26	MG/KG	
479-97	9/30/1997	Grand River	common carp	SOF	4,4'-DDE	0.03	MG/KG	
478-97	12/19/1997	Grand River	common carp	SOFC	Percent Lipids	1.3	MG/KG	
479-97	12/19/1997	Grand River	common carp	SOF	Percent Lipids	0.67	MG/KG	
180-97	12/19/1997	Grand River	common carp	SOFC	Percent Lipids	0.66	MG/KG	
480-97	9/30/2007	Grand River	common carp	SOFC	Mercury	0.11	MG/KG	
480-97	9/30/1997	Grand River	common carp	SOFC	Hexavalent Chromium	35.3	MG/KG	
482-97	9/30/1997	Grand River	smallmouth bass	SOFC	Percent Lipids	0.33	MG/KG	
482-97	9/30/1997	Grand River	smallmouth bass	SOFC	Mercury	0.16	MG/KG	
483-97	9/30/1997	Grand River	smallmouth bass	SOFC	Mercury	0.19	MG/KG	
484-97	9/30/1997	Grand River	largemouth bass	SOF	Mercury	0.19	MG/KG	
485-97	9/30/1997	Grand River	smallmouth bass	SOF	Percent Lipids	0.33	MG/KG	
485-97	9/30/1997	Grand River	smallmouth bass	SOF	Mercury	0.37	MG/KG	
486-97	9/30/1997	Grand River	walleye	SOF	Mercury	0.11	MG/KG	
487-97	9/30/1997	Grand River	largemouth bass	SOFC	Percent Lipids	0.33	MG/KG	
487-97	9/30/1997	Grand River	largemouth bass	SOFC	Mercury	0.27	MG/KG	
488-97	9/30/2007	Grand River	largemouth bass	SOFC	Mercury	0.19	MG/KG	
489-97	9/30/1997	Grand River	freshwater drum	SOFC	Mercury	0.26	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	4,4'-DDE	0.3	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	4,4'-DDD	0.16	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	Aroclor 1260	1.9	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	Percent Lipids	13	MG/KG	
490-97	9/30/1997	Grand River	common carp	SOF	Mercury	0.17	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	4,4'-DDE	0.17	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	Aroclor 1260	0.11	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	Percent Lipids	0.66	MG/KG	
491-97	9/30/1997	Grand River	common carp	SOFC	Mercury	0.19	MG/KG	

ATTACHMENT B

OHIO SPORT FISH CONSUMPTION ADVISORY-2002

Ohio Sport Fish Consumption Advisory

Ohio Department of Health Year 2002 Season

What Health Benefits do I get From Eating Sport Fish?

Fish are nutritious and good to eat. Many doctors suggest that eating one half-pound of fish each week helps to prevent heart disease. Almost any kind of fish may have real health benefits when it replaces a high-fat source of protein in the diet. Fish, eaten often, provide valuable vitamins and minerals, high-quality protein, and beneficial oils that are low in saturated fat.

Why is a Fish Consumption Advisory Needed?

While most Ohio sport fish are of high quality, low levels of chemicals like polychlorinated biphenyls (PCBs), mercury, and lead have been found in some fish from certain waters. To ensure the continued good health of Ohioans, the Ohio Department of Health offers an advisory for how often these fish can be safely eaten. An advisory is advice, and should not be viewed as law or regulation. It is intended to help anglers and their families make educated choices about: Where you fish, what types of fish you eat, how to limit the amount and frequency of fish you consume, and how you prepare fish for cooking.

By following these advisories, you can get the health benefits of fish and reduce unwanted contaminants.

What Groups are Most Sensitive to Contaminants?

Contaminants in fish can be harmful to people of all ages, but the fetus and young children are especially sensitive to contaminants because their organs and systems are not yet fully developed. They are less able than an adult is to deal with toxic substances. Contaminants in fish can affect your baby more than they affect you and can be hard to detect. It is best to prevent childhood exposure to fish contaminants in the first place. In summary, the most sensitive groups are unborn children, and children age six and under. This also includes women who plan to become pregnant, women who are pregnant, and nursing mothers.

Health Effects From Eating Contaminated Fish

What Contaminants are in Fish?

Contaminants that are found in some Ohio fish include PCBs, pesticides, and heavy metals such as lead and methyl mercury. The contaminants responsible for most advisories are methyl mercury and PCBs.

What is Methyl Mercury?

Mercury is a metal that occurs in nature. It does not break down, but recycles between land, air, and water. Mercury may be released to the atmosphere by active volcanoes, coal-burning power plants, and burning of industrial or household wastes. Bacteria in sediments convert mercury to methyl mercury, an organic compound. Methyl mercury builds up in fish through the food chain. Nearly all of the mercury found in fish is methyl mercury.

What are Polychlorinated Biphenyls (PCBs)?

Polychlorinated biphenyls (PCBs) are man-made oils that were once used in carbonless copying paper and in electrical equipment such as capacitors, transformers, and fluorescent light ballasts. PCBs break down very slowly in the environment. PCBs tend to stay in sediments and build up in fish through the food chain.

Statewide Advisory for Sensitive Populations!

Mercury – This statewide advisory, issued in 1997, is primarily for women of child bearing age and young children (age 6 and under). They are advised to eat not more than one meal per week of fish (any species) from any Ohio body of water or not more than one meal a month of any species specified in the following table. Although this advisory applies mainly to these sensitive populations, anyone else should follow the consumption advice per species and per body of water.

The United States Environmental Protection Agency in 2001 issued a national mercury-based advisory that states "If you are pregnant or could become pregnant, are nursing a baby, or if you are feeding a young child, limit consumption of freshwater fish caught by family and friends to one meal a week. For adults one meal is six ounces of cooked fish or eight ounces of uncooked fish; for a young child one meal is two ounces cooked fish or three ounces uncooked fish."

Also, in 2001, the Food and Drug Administration (FDA) issued a mercury- related advisory for certain ocean fish. "FDA advises that women who are pregnant or could become pregnant, nursing mothers and young children not eat shark, swordfish, king mackerel, or tilefish. FDA also advises that women of childbearing age and pregnant women may eat an average of 12 ounces of fish purchased in stores and restaurants each week."

Meal Advice
ODH Consumption Advisory

Body of Water	Area Under Advisory	Species	One meal per
Lake Erie	All Waters	Chinook Salmon under 19", Freshwater Drum, Smallmouth Bass, Walleye under 25"	Week
		Chinook Salmon 19"and over, Coho Salmon, Common Carp, Steelhead Trout, Walleye 25" and over, White Bass, Whitefish, White Perch	Month
		Channel Catfish under 16", Lake Trout	2 Months
Adams Lake, Adams County	All Waters	Bluegill Sunfish, Largemouth Bass	Month
Berlin Lake	All Waters	Channel Catfish	Month
Eastwood Lake	All Waters	Common Carp	Month
Findley Lake, Lorain County	All Waters	Largemouth Bass	Month
Highlandtown Lake	All Waters	Largemouth Bass	Month
Jefferson Lake,Jefferson County	All Waters	Largemouth Bass	Month
New Lyme Lake	All Waters	Largemouth Bass	Month
Walborn Reservoir	All Waters	Largemouth Bass	Month
Conneaut Creek	All Waters	Smallmouth Bass	Month
Greenville Creek	All Waters	Smallmouth Bass	Month
Little Beaver Creek	All Waters	Common Carp, Sauger	Month
		Channel Catfish	2 Months
Mill Creek, Cincinnati	From I-275 to the Ohio River	All Species	Month
Nimishillen Creek	All Waters	Common Carp	Month
Paint Creek	All Waters	Largemouth Bass	Month
Salt Creek	Laurelville to Queer Creek Confluence	Smallmouth Bass	Month
Sandy Creek	All Waters	Common Carp	Month
Scippo Creek	Kingston Pike to Scioto River	All Species	Month
Symmes Creek	SR 141, Waterloo to Ohio River	Freshwater Drum, Sauger	Month
Twin Creek	All Waters	Channel Catfish	Week
Walnut Creek, Scioto R. Trib.	All Waters	Channel Catfish	Month

How do Methyl Mercury and PCBs Affect Human Health?

The levels of these compounds found in Ohio fish are not known to cause immediate severe sickness. Long-lasting contaminants such as polychlorinated biphenyls (PCBs) and mercury can build up in your body over time. It may take months or years of regularly eating contaminated fish to build up amounts that are a health concern. Health problems that may result from the contaminants in fish range from small, hard to detect health changes to birth defects, as well as mental and physical retardation in newborns. Mothers who eat highly contaminated fish for many years before becoming pregnant may have children who are slower to develop and learn. Therefore, women who plan to become pregnant should follow the fish consumption advice given to pregnant and nursing women for several years before becoming pregnant. It takes up to six years or more for the body to get rid of PCBs, and up to one year to get rid of mercury.

The advisories that protect sensitive populations also protect all other members of the general public.

Should I Stop Eating Fish?

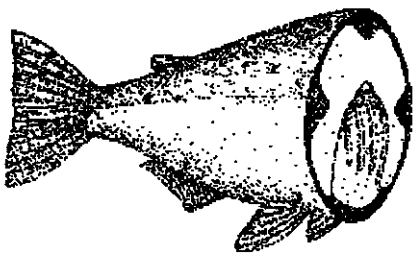
We are NOT recommending that you stop eating sport fish, except where "Do not eat" is shown in the advisory. As stated earlier in this fact sheet, eating fish regularly offers several health benefits. If you follow this fish advisory booklet carefully to: choose safer places to fish, pick safer species to eat, trim and cook your catch correctly, and follow the recommended meal frequency, you will gain those benefits. At the same time you will reduce your exposure to possible contaminants.

How Can I Reduce my Health Risk?

Choose smaller fish (within the legal size limit) - smaller fish within a species tend to have fewer contaminants than older, larger fish, and are sometimes tastier and more tender.

Choose leaner fish. Fish that are higher in fat - Channel Catfish and Carp, for example, will likely have more fat and may have higher levels of PCBs and similar chemicals in their bodies. Yellow Perch, Sunfish, and Crappies are examples of lean fish.

Trim and cook your fish properly to reduce risk. This is important because all meal advice given in the advisory assumes that this has been done. Proper preparation reduces your exposure to organic chemicals like PCBs and certain pesticides. More than 50 percent of these contaminants can be eliminated by trimming fatty areas before cooking and by cooking fish in ways that allow fat to drip away. Mercury levels cannot be reduced by trimming because mercury binds to protein (the meat portion) of the fish.



Trimming and Cooking Fish

Fillet the fish.

Remove all skin from fillets or steaks. This allows fat to drain away from the fish during cooking.

Trim off the fatty areas that are shown in black on the drawing. These include the fatty areas found along the belly, back, and both sides of the fillet.

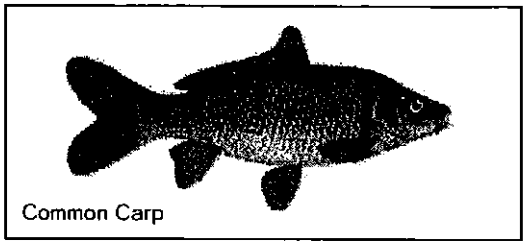
Cook so that the fat drips away. Broil, bake, or grill on a rack, or poach and discard the liquid.

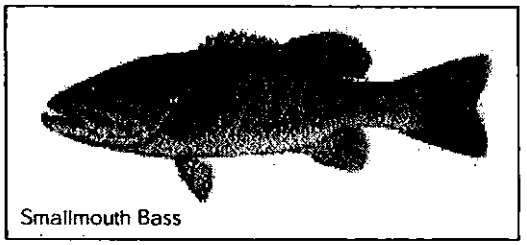
If you deep-fry your catch, discard the oil. Pan frying removes few, if any contaminants.

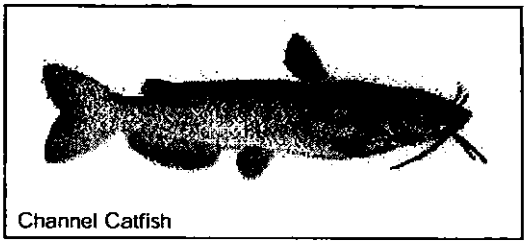
If you prepare soups or chowders from fish, be aware that this cooking method holds in juices that contain fat (and contaminants) from the fish.

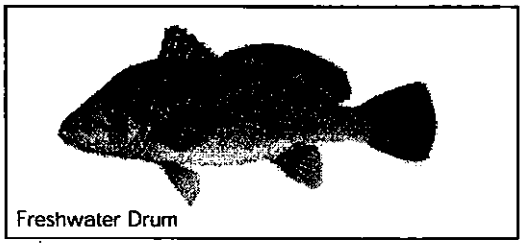
Ohio Sport Fish Most Often Under Advisory

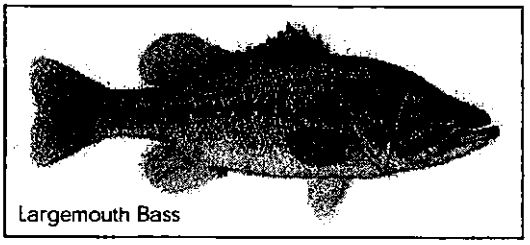
Illustrations © Joseph R. Tomelleri — Courtesy of ODNR/Division of Wildlife

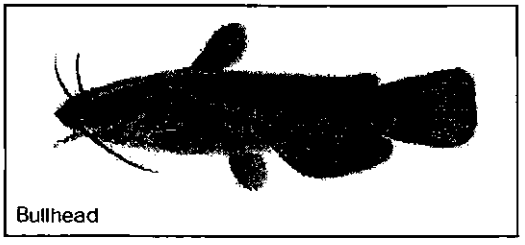

Common Carp


Smallmouth Bass


Channel Catfish


Freshwater Drum


Largemouth Bass


Bullhead

Types of Advisories

There are three types of fish consumption advisories:

1. Do Not Eat - Check here first to find out if your catch is listed. These fish have higher levels of contaminants, and should not be eaten.

2. Meal Advice - These fish have low levels of contaminants, but are safe to eat - provided the trimming, cooking, and meal frequency advice is followed.

3. Statewide/Nationwide advisory for sensitive populations.

4. Another advisory is issued that cautions against dermal (skin) contact: The waters and/or sediments in these areas have high levels of contaminants. It is recommended that a person not swim or wade in these water body sections.

How to use this Advisory

Three Easy Steps!

Column 1		Column 2	Column 3
Body of Water	Area Under Advisory	Species	One meal per
Nemo River	U.S. 71 to Xeno River	Halibut under 20"	Week
		Halibut 20" and over	Month

*One meal is assumed to be 8 ounces (weighed before cooking).

1. In column 1, find the body of water and location in which you are fishing.
2. In column 2, find the kind of fish you have caught. If a length is noted, measure the fish from the tip of the nose to the end of the tail fin.
3. The maximum recommended meal frequency for the size and type of fish is found in column 3.

Do not eat! Ohio Department of Health Consumption Advisory

Body of Water	Area Under Advisory	Species
Dicks Creek	Oxford St, Middletown to the Great Miami River	All
Great Miami River	Lowhead Dam at Monument Ave, Dayton to the Ohio River	All Suckers
Lake Erie	All Waters	Channel Catfish 16" and over
Lake Nesmith (Summit County)	All Waters	Channel Catfish, Common Carp
Little Scioto River	SR 739, near Marion to Holland Rd, near Marion	All
Mahoning River	NW Bridge Rd, Warren to Pennsylvania Border	Channel Catfish, Common Carp
Maumee River	Mouth to Waterville	Channel Catfish
Middle Fork Little Beaver Creek	SR alt 14 at Allen Rd to Little Beaver Creek	All
Ohio River	All Waters	Channel Catfish 17" and over, Common Carp
Ottawa River (Toledo)	I-475 N of Wildwood Preserve, Toledo to Maumee Bay, Lake Erie	All
Portage Canal (a.k.a.) Ohio Canal (Summit County)	All Waters	Channel Catfish, Common Carp
Summit Lake (Summit County)	All Waters	Channel Catfish, Common Carp

Body of Water	Area Under Advisory	Species	One meal per
Ashtabula River	24th St Bridge to Lake Erie	Smallmouth Bass	Week
		Largemouth Bass, Walleye	Month
		Channel Catfish, Common Carp	2 Months
Auglaize River	U. S. 33, Wapakoneta to Maumee River, Defiance	Channel Catfish, Common Carp	Week
		Freshwater Drum, Smallmouth Bass	Month
Black River	31st Street Bridge, Sheffield to Lake Erie	Brown Bullhead, Freshwater Drum	Week
		Common Carp	Month
Black River, East Branch	All Waters	Rock Bass, Smallmouth Bass, Yellow Bullhead	Month
Chagrin River	All Waters	Rock Bass, Smallmouth Bass	Month
Cuyahoga River	Ohio Edison Dam Pool to Lake Erie	White Sucker under 11"	Week
		Common Carp, Largemouth Bass White Sucker 11" and over	Month
		Brown Bullhead, Yellow Bullhead	2 Months
Ford (a.k.a.) Hamilton Hydraulic Canal	All Waters	Channel Catfish, Common Carp	Month
Grand River	All Waters	Common Carp under 22"	Week
		Common Carp 22" & over, Freshwater Drum, Largemouth Bass, Silver Redhorse, Smallmouth Bass, Yellow Bullhead	Month
	Upstream Tote St., Austinburg	Walleye	Month
Great Miami River	All Waters	Saugeye	Week
		Largemouth Bass, Rock Bass, Smallmouth Bass, White Bass	Month
	North of SR 73, near Middletown to Indian Lake	Channel Catfish	Week
		Common Carp	Month
	S of SR 73 near Middletown to the Ohio River	Channel Catfish, Freshwater Drum, Smallmouth Buffalo	Month
		Common Carp, Flathead Catfish Striped Bass Hybrid	2 Months
Hocking River	All Waters	Common Carp	Month
Huron River	All Waters	Freshwater Drum	Month
Little Miami River	All Waters	Channel Catfish, Smallmouth Bass	Week
		Sauger	Month

Body of Water	Area Under Advisory	Species	One meal per
Little Miami River, E. Fork	All Waters	Channel Catfish, Flathead Catfish, Rock Bass, Smallmouth Bass, Spotted Bass	Month
Little MuskingumRiver	Hill's Covered Bridge to the Ohio River	Spotted Bass	Month
Little Scioto River, SE Ohio R. Trib.	All Waters	Rock Bass, Spotted Bass	Month
Mad River	U. S. 36 Urbana to Dayton	White Sucker	Week
		Common Carp, Largemouth Bass	Month
Mahoning River	Berlin Dam to PA Border	Smallmouth Bass	Month
	NW Bridge Rd, Warren to the PA Border	White Crappie	Week
		Walleye	Month
Maumee River	All Waters	Common Carp, Smallmouth Bass	Month
	Waterville to the Indiana Border	Channel Catfish	Week
	Mouth to Waterville	Freshwater Drum, Largemouth Bass	Week
Muskingum River	All Waters	Channel Catfish, Flathead Catfish, Saugeye, Spotted Bass	Week
		White Bass	Month
Ohio River	All Waters	Largemouth Bass, Smallmouth Bass, Spotted Bass, Sauger, Walleye under 17"	Week
		Freshwater Drum, White Bass, Hybrid Striped Bass, Walleye 17" & over	Month
		Flathead Catfish, Channel Catfish under 17"	2 Months
Ottawa River, Lima	All Waters	Channel Catfish	Week
Portage River	Ohio Turnpike to Lake Erie	Largemouth Bass, Smallmouth Bass	Week
		Channel Catfish, Common Carp	Month
Portage River, North Branch	All Waters	Common Carp	2 Months
Rocky River, West Branch	All Waters	Rock Bass, Smallmouth Bass	Month
Sandusky River	All Waters	Common Carp	Week
		Channel Catfish, Largemouth Bass	Month
Scioto River	All Waters	Flathead Catfish under 21", Largemouth Bass, Sauger, Saugeye	Week
		Channel Catfish, Common Carp under 20", Flathead Catfish 21" & over, Freshwater Drum	Month
		Common Carp 20" & over	2 Months
	Green Camp to Warrensburg	Rock Bass	Month
Stillwater River	All Waters	Channel Catfish, Smallmouth Bass	Month
St. Joseph River	All Waters	Channel Catfish	Month
St. Joseph River, West Branch	All Waters	All Species	Week
St. Mary's River	All Waters	Freshwater Drum, Northern Pike, Saugeye	Month
Tiffin River	All Waters	Northern Pike, Smallmouth Bass	Month
Tuscarawas River	Turkeyfoot Rd (SR 619), Barberton to South Broadway Street (SR 416), New Philadelphia (Tuscarawas County)	Largemouth Bass, Rock Bass	Week
		Channel Catfish, Smallmouth Bass, Yellow Bullhead	Month
		Common Carp	2 Months
Vermilion River	All Waters	Smallmouth Bass	Month
Walhonding River	All Waters	Saugeye, Smallmouth Bass	Week
		Channel Catfish	Month

ODH Dermal Contact Advisory !
Avoid Swimming or Wading in these Stream Sections

Body of Water	Area Under Advisory
Black River	31st St Bridge, Lorain to Lake Erie
Little Scioto River	SR 739, near Marion to Holland Rd, near Marion
Mahoning River	NW Bridge Rd, Warren to Pennsylvania Border
Middle Fork Little Beaver Creek	SR alt 14 at Allen Rd, to SR 11, south of Lisbon
Ottawa River, Toledo	I-475 N of Wildwood Preserve, Toledo to Maumee Bay, Lake Erie

Ohio Snapping Turtle Consumption Advisory

Reason For Advisory: Our monitoring of snapping turtle tissues indicates that low levels of methyl mercury and lead were found in turtle meat samples taken from certain water bodies. PCBs and methyl mercury were present at extremely high concentrations in the fat bodies and livers of these same samples.

Meal Preparation: If you decide to eat the turtle that you have caught, we recommend the following precautions to reduce your exposure to contaminants that may be present:

1) Lay the turtle on its back shell (carapace).
2) Remove the shell that faces you (plastron) by carefully cutting through the two bony ridges (on both sides of the turtle) between the fore and hind limbs.
3) Carefully remove and discard the fat body, any eggs present, and all organs such as the liver and kidneys. Save only the muscle (meat) for eating.
4) Remove claws from the fore and hind limbs.
5) Remove skin from the neck, tail, and fore and hind limbs.
6) Combine all meat portions you wish to save.

Ohio Snapping Turtle Advisory – Unlimited Consumption

Eat all the turtle meat you want from these water bodies.

Lake Rockwell	All Waters
Ottawa River, Toledo	All Waters

Ohio Snapping Turtle Consumption Advisory

Body of Water	Area Under Advisory	One Meal Per	Contaminant
Ashtabula River	All Waters	Week	Mercury
Black River	All Waters	Week	Mercury
Maumee River	All Waters	Week	Mercury
Ottawa National Wildlife Refuge	All Waters	Week	Lead

Meal size = 4 ounces before cooking

For more information contact:
Ohio Department of Health
Health Assessment Section
246 North High Street
Columbus, Ohio 43216-0118

Phone:1-800-755-GROW (4769)
Fax: 614-564-2410
www.odh.state.oh.us

ATTACHMENT C

PAINESVILLE TOWNSHIP LANDFILL LEACHATE DATA

OhioEPA
State of Ohio Environmental Protection Agency
Northeast District Office

2110 E. Aurora Road
Twinsburg, Ohio 44087-1969

TELE (330) 425-9171 FAX (330) 487-0769

Bob Taft, Governor
Christopher Jones, Director

October 22, 2002

RE: DIAMOND SHAMROCK
PAINESVILLE WORKS
LAKE COUNTY
OHIO EPA ID # 243-0230

Mr. Paul J. Dugas
Painesville PRP Group
P.O. Box 188
Painesville, Ohio 44077-0188

CERTIFIED MAIL

Dear Mr. Dugas:

As requested, I have enclosed a copy of the data from leachate samples collected at the Painesville Township Landfill on March 20, 1996. Ohio EPA is still working to retrieve quality assurance/quality control data for fish tissue samples collected from the Grand River in 1998. As soon as they become available, I will forward them to you.

If you have any questions or require any additional data, please feel free to contact me at (330) 963-1168.

Sincerely,

Teri R. Phillips
Site Coordinator
Division of Emergency and Remedial Response

TRP/kss

enclosure

cc: Connie Hawkins, Maxus

ec: Steve Love, Ohio EPA, DERR, NEDO

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Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway • Strongsville, Ohio 44136
(216) 572-3200 • Fax (216) 572-7620 • 1-800-325-7737

CERTIFICATE OF ANALYSIS

Client:

Ohio EPA/DERR
2110 East Aurora Rd.
Twinsburg, OH 44087

Attn: Nancy Zikmanis

Work Order #: 96-05-118
Client Code: OEPA_NE_DIS
Report Date: 06/19/96
Work ID: Waters for multiple tests
Date Received: 05/20/96

Purchase Order: 34-1654055 RNE960520-1R

SAMPLE IDENTIFICATION

Lab Number	Sample Description	Lab Number	Sample Description
01	Water PTL-1	02	Water PTL-2
03	Water PTL-4	04	Water Trip Blank

Enclosed are the analytical results for the samples listed above. Analyses were performed by the methods referenced in the Test Methodologies section, while any special circumstances are described in the Report Comments section. Unless otherwise noted, sample results are not moisture-corrected. Most analytes are reported relative to an Estimated Quantitation Limit (EQL), which is the lowest concentration that can be reliably measured under routine laboratory conditions. Questions or comments concerning the enclosed results should be directed to your Client Services Representative.

Certificate approved by
Carol L. Turner

RECEIVED
JUN 20 1996
OHIO EPA NEDO

REPORT COMMENTS

The semivolatiles surrogate terphenyl-d4 did not recover within QC control limits for sample PTL-1 (Lab No. 01). Since there was not enough sample of the semivolatiles fraction for reextraction, an aliquot was taken from the wet test fraction bottle and reextracted for semivolatiles. However, the reextraction was performed past the 7-day holding time for semivolatiles analysis. Per client request, both sets for data are reported. The out of holding analysis is indicated as PTL-1, Reextraction.

The pesticides surrogate decachlorobiphenyl did not recover within QC control limits for sample PTL-1 (Lab No. 01). Matrix interference is suspected. Method 8080 requires that one surrogate be within limits and the surrogate tetrachloro-m-xylene satisfies criteria.

TEST METHODOLOGIES

Biochemical oxygen demand was determined by multiple dilution oxygen depletion as in EPA Method 405.1. The bottles were seeded with Polyseed brand BOD seed.

Chemical oxygen demand was determined by acid digestion followed by colorimetric analysis as in EPA Method 410.4.

Ammonia was determined by distillation from alkali followed by manual titration as in EPA Method 350.2.

Filterable residue ("dissolved solids") was determined gravimetrically as in EPA Method 160.1.

Total cyanide was determined by distillation followed by manual colorimetry as in EPA Methods 335.2 and 9010A.

Nitrate was determined by brucine colorimetry as in EPA Methods 352.1 and 9200.

Organochlorine pesticides and PCB's were determined using gas chromatography with electron capture detection as in EPA Method 8080A.

Metals were determined in aqueous samples and leachates by digestion with nitric and hydrochloric acids as in EPA Method 3010A, followed by Inductively Coupled Plasma Emission Spectroscopy as in EPA Method 6010A unless noted otherwise.

Mercury was determined in aqueous samples and leachates by cold vapor atomic absorption after acid/permanganate digestion as in EPA Methods 245.1 and 7470A. A single analysis was performed unless otherwise noted.

Volatile organics were determined by gas chromatography/mass spectrometry as in EPA Method 8240B using a capillary column.

Semivolatile organics (base/neutral/acid) were determined by gas chromatography/mass spectrometry as in EPA Method 8270B.

Aqueous samples and leachates were extracted for semivolatile organics in a continuous extractor using methylene chloride as in EPA Method 3520B.

Aqueous samples and leachates were extracted for organochlorine pesticides and PCB's in a continuous extractor using methylene chloride as in EPA Method 3520B.

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description: Water PTL-1 Lab No.: 01

Analyte Description	Result	Units	EQL
Diss. solids by EPA 160.1	3483	mg/L	10
BOD by EPA 405.1	87.9	mg/L	6
Ammonia by EPA 350.2	40.7	mg/L N	3.0
Nitrate N by EPA352.1/9200	1.23	mg/L N	0.10
COD by EPA 410.4	383	mg/L	5.0
Total_CN by EPA 335.2/9010	<EQL	mg/L	0.010
Aluminum by ICP	2.75	mg/L	0.10
Antimony by ICP	<EQL	mg/L	0.10
Arsenic by ICP	<EQL	mg/L	0.10
Barium by ICP	2.44	mg/L	0.0040
Beryllium by ICP	<EQL	mg/L	0.0020
Cadmium by ICP	<EQL	mg/L	0.0050
Calcium by ICP	152	mg/L	0.20
Chromium by ICP	<EQL	mg/L	0.010
Cobalt by ICP	<EQL	mg/L	0.010
Copper by ICP	<EQL	mg/L	0.020
Iron by ICP	30.1	mg/L	0.10
Lead by ICP	<EQL	mg/L	0.050
Magnesium by ICP	100	mg/L	0.10
anganese by ICP	0.875	mg/L	0.0050
ckel by ICP	0.061	mg/L	0.020
Potassium by ICP	85.1	mg/L	0.20
Selenium by ICP	<EQL	mg/L	0.10
Silver by ICP	<EQL	mg/L	0.010
Sodium by ICP	825	mg/L	0.50
Thallium by ICP	<EQL	mg/L	0.20
Vanadium by ICP	<EQL	mg/L	0.010
Zinc by ICP	0.041	mg/L	0.020
Mercury by CVAA	<EQL	mg/L	0.0002

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-1 Lab No. 01
Description Pesticides and PCB's Test Code 8080

EXTRACTED 05/21/96 DATE RUN 06/14/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS No.	COMPOUND	RESULT	EQL
319-84-6	alpha-BHC	<EQL	0.050	50-29-3	4,4'-DDT	<EQL	0.10
58-89-9	gamma-BHC (Lindane)	<EQL	0.050	7421-93-4	Endrin aldehyde	<EQL	0.10
319-85-7	beta-BHC	<EQL	0.050	1031-07-8	Endosulfan sulfate	<EQL	0.10
76-44-8	Heptachlor	<EQL	0.050	72-43-5	Methoxychlor	<EQL	0.50
319-86-8	delta-BHC	<EQL	0.050	57-74-9	Chlordane (technical)	<EQL	2.5
309-00-2	Aldrin	<EQL	0.050	8001-35-2	Toxaphene	<EQL	2.5
1024-57-3	Heptachlor epoxide	0.062	0.050	12674-11-2	PCB-1016	<EQL	1.0
959-98-8	Endosulfan I	<EQL	0.050	11104-28-2	PCB-1221	<EQL	2.0
[illegible]-55-9	4,4'-DDE	<EQL	0.10	11141-16-5	PCB-1232	<EQL	1.0
60-57-1	Dieldrin	<EQL	0.10	53469-21-9	PCB-1242	<EQL	1.0
72-20-8	Endrin	<EQL	0.10	12672-29-6	PCB-1248	<EQL	1.0
72-54-8	4,4'-DDD	<EQL	0.10	11097-69-1	PCB-1254	<EQL	1.0
33213-65-9	Endosulfan II	<EQL	0.10	11096-82-5	PCB-1260	<EQL	1.0

SURROGATE	%RECOVERY	LIMITS
Tetrachloro-m-xylene	74	10 - 176
Decachlorobiphenyl	0 Q	10 - 128

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-1 Lab No. 01
Description Semivolatiles by GC/MS Test Code 8270

DATE EXTRACTED 05/21/96 DATE ANALYZED 06/17/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
108-95-2	Phenol	<EQL	10	83-32-9	Acenaphthene	<EQL	10
111-44-4	bis(2-Chloroethyl) ether	<EQL	10	51-28-5	2,4-Dinitrophenol	<EQL	50
95-57-8	2-Chlorophenol	<EQL	10	100-02-7	4-Nitrophenol	<EQL	50
541-73-1	1,3-Dichlorobenzene	<EQL	10	132-64-9	Dibenzofuran	<EQL	10
106-46-7	1,4-Dichlorobenzene	<EQL	10	121-14-2	2,4-Dinitrotoluene	<EQL	10
100-51-6	Benzyl alcohol	<EQL	20	606-20-2	2,6-Dinitrotoluene	<EQL	10
95-50-1	1,2-Dichlorobenzene	<EQL	10	84-66-2	Diethylphthalate	<EQL	10
95-48-7	2-Methylphenol	<EQL	10	7005-72-3	4-Chlorophenyl phenyl ether	<EQL	10
39638-32-9	bis(2-Chloroisopropyl) ether	<EQL	10	86-73-7	Fluorene	<EQL	10
106-44-5	3+4-Methylphenol	51	10	100-01-06	4-Nitroaniline	<EQL	10
621-64-7	N-Nitroso-di-n-propylamine	<EQL	10	534-52-1	4,6-Dinitro-2-methylphenol	<EQL	50
67-72-1	Hexachloroethane	<EQL	10	86-30-6	N-Nitrosodiphenylamine *	<EQL	10
98-95-3	Nitrobenzene	<EQL	10	101-55-3	4-Bromophenyl phenyl ether	<EQL	10
78-59-1	Isophorone	<EQL	10	118-74-1	Hexachlorobenzene	<EQL	10
88-75-5	2-Nitrophenol	<EQL	10	87-86-5	Pentachlorophenol	<EQL	50
105-67-9	2,4-Dimethylphenol	<EQL	10	85-01-8	Phenanthrene	<EQL	10
[illegible]-85-0	Benzoic acid	42	50	120-12-7	Anthracene	<EQL	10
[illegible]-91-1	bis(2-Chloroethoxy) methane	<EQL	10	84-74-2	Di-n-butylphthalate	<EQL	10
120-83-2	2,4-Dichlorophenol	<EQL	10	206-44-0	Fluoranthene	<EQL	10
120-82-1	1,2,4-Trichlorobenzene	<EQL	10	129-00-0	Pyrene	<EQL	10
91-20-3	Naphthalene	<EQL	10	85-68-7	Butyl benzyl phthalate	<EQL	10
106-47-8	4-Chloroaniline	<EQL	20	91-94-1	3,3'-Dichlorobenzidine	<EQL	20
87-68-3	Hexachlorobutadiene	<EQL	10	56-55-3	Benzo(a)anthracene	<EQL	10
59-50-7	4-Chloro-3-methylphenol	<EQL	20	117-81-7	bis(2-Ethylhexyl)phthalate	<EQL	10
91-57-6	2-Methylnaphthalene	<EQL	10	218-01-9	Chrysene	<EQL	10
77-47-4	Hexachlorocyclopentadiene	<EQL	10	117-84-0	di-n-Octyl phthalate	<EQL	10
88-06-2	2,4,6-Trichlorophenol	<EQL	10	205-99-2	Benzo(b)fluoranthene	<EQL	10
95-95-4	2,4,5-Trichlorophenol	<EQL	10	207-08-9	Benzo(k)fluoranthene	<EQL	10
91-58-7	2-Chloronaphthalene	<EQL	10	50-32-8	Benzo(a)pyrene	<EQL	10
88-74-4	2-Nitroaniline	<EQL	50	193-39-5	Indeno(1,2,3-cd)pyrene	<EQL	10
131-11-3	Dimethyl phthalate	<EQL	10	53-70-3	Dibenz(a,h)anthracene	<EQL	10
208-96-8	Acenaphthylene	<EQL	10	191-24-2	Benzo(g,h,i)perylene	<EQL	10
99-09-2	3-Nitroaniline	<EQL	50				

* Cannot be distinguished from Diphenylamine.

SURROGATE	% RECOVERY	LIMITS	SURROGATE	% RECOVERY	LIMITS
Nitrobenzene-d5	97	35 - 114	Phenol-d5	105	10 - 110
2-Fluorobiphenyl	85	43 - 116	2-Fluorophenol	95	21 - 110
Terphenyl-d14	21 Q	33 - 141	2,4,6-Tribromophenol	78	10 - 123

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-1, Reextraction Lab No. 01
Test Description Semivolatiles by GC/MS Test Code 8270

DATE EXTRACTED 06/04/96 DATE ANALYZED 06/10/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
108-95-2	Phenol	<EQL	11	83-32-9	Acenaphthene	<EQL	11
111-44-4	bis(2-Chloroethyl) ether	<EQL	11	51-28-5	2,4-Dinitrophenol	<EQL	53
95-57-8	2-Chlorophenol	<EQL	11	100-02-7	4-Nitrophenol	<EQL	53
541-73-1	1,3-Dichlorobenzene	<EQL	11	132-64-9	Dibenzofuran	<EQL	11
106-46-7	1,4-Dichlorobenzene	<EQL	11	121-14-2	2,4-Dinitrotoluene	<EQL	11
100-51-6	Benzyl alcohol	<EQL	21	606-20-2	2,6-Dinitrotoluene	<EQL	11
95-50-1	1,2-Dichlorobenzene	<EQL	11	84-66-2	Diethylphthalate	<EQL	11
95-48-7	2-Methylphenol	<EQL	11	7005-72-3	4-Chlorophenyl phenyl ether	<EQL	11
39638-32-9	bis(2-Chloroisopropyl) ether	<EQL	11	86-73-7	Fluorene	<EQL	11
106-44-5	3+4-Methylphenol	<EQL	11	100-01-06	4-Nitroaniline	<EQL	11
621-64-7	N-Nitroso-di-n-propylamine	<EQL	11	534-52-1	4,6-Dinitro-2-methylphenol	<EQL	53
67-72-1	Hexachloroethane	<EQL	11	86-30-6	N-Nitrosodiphenylamine *	<EQL	11
98-95-3	Nitrobenzene	<EQL	11	101-55-3	4-Bromophenyl phenyl ether	<EQL	11
78-59-1	Isophorone	<EQL	11	118-74-1	Hexachlorobenzene	<EQL	11
88-75-5	2-Nitrophenol	<EQL	11	87-86-5	Pentachlorophenol	<EQL	53
105-67-9	2,4-Dimethylphenol	<EQL	11	85-01-8	Phenanthrene	<EQL	11
5-85-0	Benzoic acid	<EQL	53	120-12-7	Anthracene	<EQL	11
111-91-1	bis(2-Chloroethoxy) methane	<EQL	11	84-74-2	Di-n-butylphthalate	<EQL	11
120-83-2	2,4-Dichlorophenol	<EQL	11	206-44-0	Fluoranthene	<EQL	11
120-82-1	1,2,4-Trichlorobenzene	<EQL	11	129-00-0	Pyrene	<EQL	11
91-20-3	Naphthalene	<EQL	11	85-68-7	Butyl benzyl phthalate	<EQL	11
106-47-8	4-Chloroaniline	<EQL	21	91-94-1	3,3'-Dichlorobenzidine	<EQL	21
87-68-3	Hexachlorobutadiene	<EQL	11	56-55-3	Benzo(a)anthracene	<EQL	11
59-50-7	4-Chloro-3-methylphenol	<EQL	21	117-81-7	bis(2-Ethylhexyl)phthalate	<EQL	11
91-57-6	2-Methylnaphthalene	<EQL	11	218-01-9	Chrysene	<EQL	11
77-47-4	Hexachlorocyclopentadiene	<EQL	11	117-84-0	di-n-Octyl phthalate	<EQL	11
88-06-2	2,4,6-Trichlorophenol	<EQL	11	205-99-2	Benzo(b)fluoranthene	<EQL	11
95-95-4	2,4,5-Trichlorophenol	<EQL	11	207-08-9	Benzo(k)fluoranthene	<EQL	11
91-58-7	2-Chloronaphthalene	<EQL	11	50-32-8	Benzo(a)pyrene	<EQL	11
88-74-4	2-Nitroaniline	<EQL	53	193-39-5	Indeno(1,2,3-cd)pyrene	<EQL	11
131-11-3	Dimethyl phthalate	<EQL	11	53-70-3	Dibenz(a,h)anthracene	<EQL	11
208-96-8	Acenaphthylene	<EQL	11	191-24-2	Benzo(g,h,i)perylene	<EQL	11
99-09-2	3-Nitroaniline	<EQL	53				

* Cannot be distinguished from Diphenylamine.

SURROGATE	% RECOVERY	LIMITS	SURROGATE	% RECOVERY	LIMITS
Nitrobenzene-d5	96	35 - 114	Phenol-d5	98	10 - 110
2-Fluorobiphenyl	94	43 - 116	2-Fluorophenol	85	21 - 110
Terphenyl-d14	43	33 - 141	2,4,6-Tribromophenol	95	10 - 123

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description: Water PTL-2 Lab No.: 02

Analyte Description	Result	Units	EQL
Diss. solids by EPA 160.1	2518	mg/L	10
BOD by EPA 405.1	34.2	mg/L	6
Ammonia by EPA 350.2	43.7	mg/L N	3.0
Nitrate N by EPA352.1/9200	1.16	mg/L N	0.10
COD by EPA 410.4	169	mg/L	5.0
Total_CN by EPA 335.2/9010	<EQL	mg/L	0.010
Aluminum by ICP	0.37	mg/L	0.10
Antimony by ICP	<EQL	mg/L	0.10
Arsenic by ICP	<EQL	mg/L	0.10
Barium by ICP	1.56	mg/L	0.0040
Beryllium by ICP	<EQL	mg/L	0.0020
Cadmium by ICP	0.005	mg/L	0.0050
Calcium by ICP	209	mg/L	0.20
Chromium by ICP	<EQL	mg/L	0.010
Cobalt by ICP	<EQL	mg/L	0.010
Copper by ICP	<EQL	mg/L	0.020
Iron by ICP	144	mg/L	0.10
Lead by ICP	<EQL	mg/L	0.050
Magnesium by ICP	70.8	mg/L	0.10
Manganese by ICP	0.775	mg/L	0.0050
Nickel by ICP	<EQL	mg/L	0.020
Potassium by ICP	59.3	mg/L	0.20
Selenium by ICP	<EQL	mg/L	0.10
Silver by ICP	<EQL	mg/L	0.010
Sodium by ICP	532	mg/L	0.50
Thallium by ICP	<EQL	mg/L	0.20
Vanadium by ICP	0.01	mg/L	0.010
Zinc by ICP	0.048	mg/L	0.020
Mercury by CVAA	<EQL	mg/L	0.0002

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-2 Lab No. 02
Description Volatiles by GC/MS Test Code 8240

DATE ANALYZED 05/21/96 DILUTION FACTOR 1 UNITS ug/L

CAS NO.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
74-87-3	Chloromethane	<EQL	10	78-87-5	1,2-Dichloropropane	<EQL	5.0
74-83-9	Bromomethane	<EQL	10	10061-02-6	trans-1,3-Dichloropropene	<EQL	5.0
75-01-4	Vinyl chloride	<EQL	10	79-01-6	Trichloroethene	<EQL	5.0
75-00-3	Chloroethane	<EQL	10	124-48-1	Dibromochloromethane	<EQL	5.0
75-09-2	Methylene chloride	<EQL	5.0	79-00-5	1,1,2-Trichloroethane	<EQL	5.0
67-64-1	Acetone	<EQL	10	71-43-2	Benzene	<EQL	5.0
75-15-0	Carbon disulfide	<EQL	5.0	10061-01-5	cis-1,3-Dichloropropene	<EQL	5.0
75-35-4	1,1-DichloroetHene	<EQL	5.0	75-25-2	Bromoform	<EQL	5.0
-34-3	1,1-Dichloroethane	<EQL	5.0	591-78-6	2-Hexanone	<EQL	10
156-60-5	1,2-Dichloroethene (total)	<EQL	5.0	108-10-1	4-Methyl-2-pentanone	<EQL	10
67-66-3	Chloroform	<EQL	5.0	127-18-4	Tetrachloroethene	<EQL	5.0
107-06-2	1,2-Dichloroethane	<EQL	5.0	108-88-3	Toluene	<EQL	5.0
78-93-3	2-Butanone	<EQL	10	108-90-7	Chlorobenzene	<EQL	5.0
71-55-6	1,1,1-Trichloroethane	<EQL	5.0	100-41-4	Ethyl benzene	<EQL	5.0
56-23-5	Carbon tetrachloride	<EQL	5.0	100-42-5	Styrene	<EQL	5.0
108-05-4	Vinyl acetate	<EQL	10		Xylenes	<EQL	5.0
75-27-4	Bromodichloromethane	<EQL	5.0				
79-34-5	1,1,2,2-Tetrachloroethane	<EQL	5.0				

SURROGATE	% RECOVERY	LIMITS
1,2-Dichloroethane-d4	106	76 - 114
Toluene-d8	104	88 - 110
4-Bromofluorobenzene	106	86 - 115

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-2 Lab No. 02
Description Pesticides and PCB's Test Code 8080

EXTRACTED 05/21/96 DATE RUN 06/14/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS No.	COMPOUND	RESULT	EQL
319-84-6	alpha-BHC	0.076	0.050	50-29-3	4,4'-DDT	<EQL	0.10
58-89-9	gamma-BHC (Lindane)	<EQL	0.050	7421-93-4	Endrin aldehyde	<EQL	0.10
319-85-7	beta-BHC	<EQL	0.050	1031-07-8	Endosulfan sulfate	<EQL	0.10
76-44-8	Heptachlor	<EQL	0.050	72-43-5	Methoxychlor	<EQL	0.50
319-86-8	delta-BHC	<EQL	0.050	57-74-9	Chlordane (technical)	<EQL	2.5
309-00-2	Aldrin	<EQL	0.050	8001-35-2	Toxaphene	<EQL	2.5
1024-57-3	Heptachlor epoxide	<EQL	0.050	12674-11-2	PCB-1016	<EQL	1.0
959-98-8	Endosulfan I	<EQL	0.050	11104-28-2	PCB-1221	<EQL	2.0
-55-9	4,4'-DDE	<EQL	0.10	11141-16-5	PCB-1232	<EQL	1.0
60-57-1	Dieldrin	<EQL	0.10	53469-21-9	PCB-1242	<EQL	1.0
72-20-8	Endrin	<EQL	0.10	12672-29-6	PCB-1248	<EQL	1.0
72-54-8	4,4'-DDD	<EQL	0.10	11097-69-1	PCB-1254	<EQL	1.0
33213-65-9	Endosulfan II	<EQL	0.10	11096-82-5	PCB-1260	<EQL	1.0

SURROGATE	%RECOVERY	LIMITS
Tetrachloro-m-xylene	76	10 - 176
Decachlorobiphenyl	36	10 - 128

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-2 Lab No. 02
Description Semivolatiles by GC/MS Test Code 8270

DATE EXTRACTED 05/21/96 DATE ANALYZED 06/17/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
108-95-2	Phenol	<EQL	10	83-32-9	Acenaphthene	<EQL	10
111-44-4	bis(2-Chloroethyl) ether	<EQL	10	51-28-5	2,4-Dinitrophenol	<EQL	50
95-57-8	2-Chlorophenol	<EQL	10	100-02-7	4-Nitrophenol	<EQL	50
541-73-1	1,3-Dichlorobenzene	<EQL	10	132-64-9	Dibenzofuran	<EQL	10
106-46-7	1,4-Dichlorobenzene	<EQL	10	121-14-2	2,4-Dinitrotoluene	<EQL	10
100-51-6	Benzyl alcohol	<EQL	20	606-20-2	2,6-Dinitrotoluene	<EQL	10
95-50-1	1,2-Dichlorobenzene	<EQL	10	84-66-2	Diethylphthalate	<EQL	10
95-48-7	2-Methylphenol	<EQL	10	7005-72-3	4-Chlorophenyl phenyl ether	<EQL	10
39638-32-9	bis(2-Chloroisopropyl) ether	<EQL	10	86-73-7	Fluorene	<EQL	10
106-44-5	3+4-Methylphenol	<EQL	10	100-01-06	4-Nitroaniline	<EQL	10
621-64-7	N-Nitroso-di-n-propylamine	<EQL	10	534-52-1	4,6-Dinitro-2-methylphenol	<EQL	50
67-72-1	Hexachloroethane	<EQL	10	86-30-6	N-Nitrosodiphenylamine *	<EQL	10
98-95-3	Nitrobenzene	<EQL	10	101-55-3	4-Bromophenyl phenyl ether	<EQL	10
78-59-1	Isophorone	<EQL	10	118-74-1	Hexachlorobenzene	<EQL	10
88-75-5	2-Nitrophenol	<EQL	10	87-86-5	Pentachlorophenol	<EQL	50
105-67-9	2,4-Dimethylphenol	<EQL	10	85-01-8	Phenanthrene	<EQL	10
5-85-0	Benzoic acid	<EQL	50	120-12-7	Anthracene	<EQL	10
111-91-1	bis(2-Chloroethoxy) methane	<EQL	10	84-74-2	Di-n-butylphthalate	<EQL	10
120-83-2	2,4-Dichlorophenol	<EQL	10	206-44-0	Fluoranthene	<EQL	10
120-82-1	1,2,4-Trichlorobenzene	<EQL	10	129-00-0	Pyrene	<EQL	10
91-20-3	Naphthalene	<EQL	10	85-68-7	Butyl benzyl phthalate	<EQL	10
106-47-8	4-Chloroaniline	<EQL	20	91-94-1	3,3'-Dichlorobenzidine	<EQL	20
87-68-3	Hexachlorobutadiene	<EQL	10	56-55-3	Benzo(a)anthracene	<EQL	10
59-50-7	4-Chloro-3-methylphenol	<EQL	20	117-81-7	bis(2-Ethylhexyl)phthalate	<EQL	10
91-57-6	2-Methylnaphthalene	<EQL	10	218-01-9	Chrysene	<EQL	10
77-47-4	Hexachlorocyclopentadiene	<EQL	10	117-84-0	di-n-Octyl phthalate	<EQL	10
88-06-2	2,4,6-Trichlorophenol	<EQL	10	205-99-2	Benzo(b)fluoranthene	<EQL	10
95-95-4	2,4,5-Trichlorophenol	<EQL	10	207-08-9	Benzo(k)fluoranthene	<EQL	10
91-58-7	2-Chloronaphthalene	<EQL	10	50-32-8	Benzo(a)pyrene	<EQL	10
88-74-4	2-Nitroaniline	<EQL	50	193-39-5	Indeno(1,2,3-cd)pyrene	<EQL	10
131-11-3	Dimethyl phthalate	<EQL	10	53-70-3	Dibenz(a,h)anthracene	<EQL	10
208-96-8	Acenaphthylene	<EQL	10	191-24-2	Benzo(g,h,i)perylene	<EQL	10
99-09-2	3-Nitroaniline	<EQL	50				

* Cannot be distinguished from Diphenylamine.

SURROGATE	% RECOVERY	LIMITS	SURROGATE	% RECOVERY	LIMITS
Nitrobenzene-d5	94	35 - 114	Phenol-d5	87	10 - 110
2-Fluorobiphenyl	87	43 - 116	2-Fluorophenol	76	21 - 110
Terphenyl-d14	49	33 - 141	2,4,6-Tribromophenol	78	10 - 123

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water PTL-4 Lab No. 03
Description Volatiles by GC/MS Test Code 8240

DATE ANALYZED 05/21/96 DILUTION FACTOR 1 UNITS ug/L

CAS NO.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
74-87-3	Chloromethane	<EQL	10	78-87-5	1,2-Dichloropropane	<EQL	5.0
74-83-9	Bromomethane	<EQL	10	10061-02-6	trans-1,3-Dichloropropene	<EQL	5.0
75-01-4	Vinyl chloride	<EQL	10	79-01-6	Trichloroethene	<EQL	5.0
75-00-3	Chloroethane	<EQL	10	124-48-1	Dibromochloromethane	<EQL	5.0
75-09-2	Methylene chloride	<EQL	5.0	79-00-5	1,1,2-Trichloroethane	<EQL	5.0
67-64-1	Acetone	79	10	71-43-2	Benzene	<EQL	5.0
75-15-0	Carbon disulfide	<EQL	5.0	10061-01-5	cis-1,3-Dichloropropene	<EQL	5.0
75-35-4	1,1-Dichloroethene	<EQL	5.0	75-25-2	Bromoform	<EQL	5.0
-34-3	1,1-Dichloroethane	<EQL	5.0	591-78-6	2-Hexanone	<EQL	10
156-60-5	1,2-Dichloroethene (total)	<EQL	5.0	108-10-1	4-Methyl-2-pentanone	<EQL	10
67-66-3	Chloroform	<EQL	5.0	127-18-4	Tetrachloroethene	<EQL	5.0
107-06-2	1,2-Dichloroethane	<EQL	5.0	108-88-3	Toluene	<EQL	5.0
78-93-3	2-Butanone	<EQL	10	108-90-7	Chlorobenzene	<EQL	5.0
71-55-6	1,1,1-Trichloroethane	<EQL	5.0	100-41-4	Ethyl benzene	<EQL	5.0
56-23-5	Carbon tetrachloride	<EQL	5.0	100-42-5	Styrene	<EQL	5.0
108-05-4	Vinyl acetate	<EQL	10		Xylenes	<EQL	5.0
75-27-4	Bromodichloromethane	<EQL	5.0				
79-34-5	1,1,2,2-Tetrachloroethane	<EQL	5.0				

SURROGATE	% RECOVERY	LIMITS
1,2-Dichloroethane-d4	107	76 - 114
Toluene-d8	104	88 - 110
4-Bromofluorobenzene	106	86 - 115

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Water Trip Blank Lab No. 04
t Description Volatiles by GC/MS Test Code 8240

DATE ANALYZED 05/21/96 DILUTION FACTOR 1 UNITS ug/L

CAS NO.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
74-87-3	Chloromethane	<EQL	10	78-87-5	1,2-Dichloropropane	<EQL	5.0
74-83-9	Bromomethane	<EQL	10	10061-02-6	trans-1,3-Dichloropropene	<EQL	5.0
75-01-4	Vinyl chloride	<EQL	10	79-01-6	Trichloroethene	<EQL	5.0
75-00-3	Chloroethane	<EQL	10	124-48-1	Dibromochloromethane	<EQL	5.0
75-09-2	Methylene chloride	<EQL	5.0	79-00-5	1,1,2-Trichloroethane	<EQL	5.0
67-64-1	Acetone	<EQL	10	71-43-2	Benzene	<EQL	5.0
75-15-0	Carbon disulfide	<EQL	5.0	10061-01-5	cis-1,3-Dichloropropene	<EQL	5.0
75-35-4	1,1-Dichloroethene	<EQL	5.0	75-25-2	Bromoform	<EQL	5.0
75-34-3	1,1-Dichloroethane	<EQL	5.0	591-78-6	2-Hexanone	<EQL	10
156-60-5	1,2-Dichloroethene (total)	<EQL	5.0	108-10-1	4-Methyl-2-pentanone	<EQL	10
67-66-3	Chloroform	<EQL	5.0	127-18-4	Tetrachloroethene	<EQL	5.0
107-06-2	1,2-Dichloroethane	<EQL	5.0	108-88-3	Toluene	<EQL	5.0
78-93-3	2-Butanone	<EQL	10	108-90-7	Chlorobenzene	<EQL	5.0
71-55-6	1,1,1-Trichloroethane	<EQL	5.0	100-41-4	Ethyl benzene	<EQL	5.0
56-23-5	Carbon tetrachloride	<EQL	5.0	100-42-5	Styrene	<EQL	5.0
108-05-4	Vinyl acetate	<EQL	10		Xylenes	<EQL	5.0
75-27-4	Bromodichloromethane	<EQL	5.0				
79-34-5	1,1,2,2-Tetrachloroethane	<EQL	5.0				

SURROGATE	% RECOVERY	LIMITS
1,2-Dichloroethane-d4	104	76 - 114
Toluene-d8	104	88 - 110
4-Bromofluorobenzene	105	86 - 115

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QUALITY CONTROL
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INORGANIC QUALITY CONTROL SUMMARY
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Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

INORGANIC QC SUMMARY

Laboratory Control Sample

Metal	% Recovery
Aluminum	104
Antimony	99
Arsenic	98
Barium	103
Beryllium	101
Cadmium	99
Calcium	104
Chromium	101
Cobalt	100
Copper	102
Iron	106
Lead	100
Magnesium	105
Manganese	100
Mercury	101
Nickel	100
assium	104
Selenium	104
Silver	99
Sodium	104
Thallium	103
Vanadium	102
Zinc	99

Analyte	% Recovery
Ammonia	98
Biochemical Oxygen Demand (BOD)	70
Carbon Oxygen Demand (COD)	93
Cyanide	104
Nitrate	107
Total Dissolved Solids	92

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

INORGANIC QC SUMMARY, con't

Matrix Spike/Matrix Spike Duplicate Pair
Performed on sample PTL-1 (Lab No. 01)

Analyte	MS % Recovery	MSD % Recovery	RPD
Aluminum	109	106	3
Antimony	94	94	0
Arsenic	102	102	0
Barium	102	100	2
Beryllium	96	96	0
Cadmium	92	91	1
Calcium	109	101	7
Chromium	95	94	1
Cobalt	93	93	0
Copper	101	100	1
Iron	102	99	3
Lead	98	98	0
Magnesium	109	101	7
Manganese	94	92	2
Nickel	92	92	0
Potassium	111	104	6
lenium	101	98	3
lver	95	95	0
Sodium	101	65	43
Thallium	101	101	0
Vanadium	98	97	1
Zinc	95	96	1

The poor recovery of the MSD for sodium is due to the spike value being negligible compared to the sodium concentration in the sample.

Matrix Spike/Matrix Spike Duplicate Pair
Performed on sample PTL-2 (Lab No. 02)

Analyte	MS % Recovery	MSD % Recovery	RPD
Mercury	100	99	1

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

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ORGANIC LABORATORY CONTROL SAMPLES
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FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ROSS ANALYTICAL SERVICES Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.: PTL2

Matrix Spike - Sample No.: VLCSA3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	% REC #	QC. LIMITS REC.
1,1-Dichloroethene	50.0	42.6	85	66-122
Benzene	50.0	46.2	92	68-126
Trichloroethene	50.0	46.5	93	63-117
Toluene	50.0	48.2	96	71-133
Chlorobenzene	50.0	45.9	92	69-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER S IVOLATILE METHOD SPIKE RECOVERY

Lab Name: ROSS ANALYTICAL SERVICES Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.:

Matrix Spike - OEPA NE DIS Sample No.: CS7274

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	% REC #	QC. LIMITS REC.
Phenol	75.0	54.3	72	5-112
2-Chlorophenol	75.0	56.4	75	12-134
1,4-Dichlorobenzene	50.0	29.5	59	20-124
N-Nitrosodi-n-propyl am	50.0	36.7	73	0-230
1,2,4-Trichlorobenzene	50.0	31.9	64	44-142
4-Chloro-3-methylphenol	75.0	55.7	74	22-147
Acenaphthene	50.0	43.8	88	47-145
4-Nitrophenol	75.0	51.9	69	0-132
2,4-Dinitrotoluene	50.0	42.8	86	39-139
Pentachlorophenol	75.0	63.6	85	14-176
Pyrene	50.0	36.0	72	52-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER S IVOLATILE METHOD SPIKE RECOV..Y

000021

Lab Name: ROSS ANALYTICAL SERVICES Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.: ~~TCJUN07~~B

Matrix Spike - RISI SAFETY Sample No.: CS7314 [illegible]

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	% REC #	QC. LIMITS REC.
Phenol	75.0	67.5	90	5-112
2-Chlorophenol	75.0	69.8	93	12-134
1,4-Dichlorobenzene	50.0	36.6	73	20-124
N-Nitrosodi-n-propyl am	50.0	43.8	88	0-230
1,2,4-Trichlorobenzene	50.0	39.7	79	44-142
4-Chloro-3-methylphenol	75.0	67.5	90	22-147
Acenaphthene	50.0	43.5	87	47-145
4-Nitrophenol	75.0	63.4	84	0-132
2,4-Dinitrotoluene	50.0	47.8	96	39-139
Pentachlorophenol	75.0	72.7	97	14-176
Pyrene	50.0	41.6	83	52-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
WATL PESTICIDE LAB CONTROL SAMPLE

Lab Name: ROSS ANALYTICAL Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.: 9605118

Matrix Spike - Sample No.: CS7275

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	0.50		0.52	104	56-123
Heptachlor	0.50		0.52	104	40-131
Aldrin	0.50		0.51	102	40-120
Dieldrin	1.0		1.1	110	52-126
Endrin	1.0		1.1	110	56-121
4,4'-DDT	1.0		1.1	110	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 6 outside limits

COMMENTS:

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ORGANIC BLANKS
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4A

VOLAT. METHOD BLANK SUMMARY

EPA SAMPLE NO.

000024

VBLKA3

Lab Name: ROSS ANALYTICAL SERVICES Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.: PTL2

Lab File ID: VBLK521H Lab Sample ID: VBK0521H

Date Analyzed: 05/21/96 Time Analyzed: 0941

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: hpmsh.i

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSA3	CS0521H	CS0521H	1019
02	TRIP BLANK	960511804A	0511804A	1346
03	PTL2	960511802E	11802ERE	1454
04	PTL4	960511803A	11803ARE	1712
05				
06				
07				
08				
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COMMENTS:

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

ple Description Method 8240 blank, VBLKA3
Test Description Volatiles by GC/MS Test Code 8240

DATE ANALYZED 05/21/96 DILUTION FACTOR 1 UNITS ug/L

CAS NO.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
74-87-3	Chloromethane	<EQL	10	78-87-5	1,2-Dichloropropane	<EQL	5.0
74-83-9	Bromomethane	<EQL	10	10061-02-6	trans-1,3-Dichloropropene	<EQL	5.0
75-01-4	Vinyl chloride	<EQL	10	79-01-6	Trichloroethene	<EQL	5.0
75-00-3	Chloroethane	<EQL	10	124-48-1	Dibromochloromethane	<EQL	5.0
75-09-2	Methylene chloride	<EQL	5.0	79-00-5	1,1,2-Trichloroethane	<EQL	5.0
67-64-1	Acetone	<EQL	10	71-43-2	Benzene	<EQL	5.0
75-15-0	Carbon disulfide	<EQL	5.0	10061-01-5	cis-1,3-Dichloropropene	<EQL	5.0
75-35-4	1,1-Dichloroethene	<EQL	5.0	75-25-2	Bromoform	<EQL	5.0
75-34-3	1,1-Dichloroethane	<EQL	5.0	591-78-6	2-Hexanone	<EQL	10
156-60-5	1,2-Dichloroethene (total)	<EQL	5.0	108-10-1	4-Methyl-2-pentanone	<EQL	10
67-66-3	Chloroform	<EQL	5.0	127-18-4	Tetrachloroethene	<EQL	5.0
107-06-2	1,2-Dichloroethane	<EQL	5.0	108-88-3	Toluene	<EQL	5.0
78-93-3	2-Butanone	<EQL	10	108-90-7	Chlorobenzene	<EQL	5.0
71-55-6	1,1,1-Trichloroethane	<EQL	5.0	100-41-4	Ethyl benzene	<EQL	5.0
56-23-5	Carbon tetrachloride	<EQL	5.0	100-42-5	Styrene	<EQL	5.0
108-05-4	Vinyl acetate	<EQL	10		Xylenes	<EQL	5.0
75-27-4	Bromodichloromethane	<EQL	5.0				
79-34-5	1,1,2,2-Tetrachloroethane	<EQL	5.0				

SURROGATE	% RECOVERY	LIMITS
1,2-Dichloroethane-d4	107	76 - 114
Toluene-d8	104	88 - 110
4-Bromofluorobenzene	106	86 - 115

FORM 4
PESTI DE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.
000026

PEST1595

Lab Name: ROSS ANALYTICAL Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.: 9605118

Lab Sample ID: PEST1595 Lab File ID: L960614-13R

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) CONT

Sulfur Cleanup (Y/N) N Date Extracted: 05/21/96

Date Analyzed (1): 06/14/96 Date Analyzed (2): 06/14/96

Time Analyzed (1): 2037 Time Analyzed (2): 2037

Instrument ID (1): v3400l.i Instrument ID (2): v3400m.i

GC Column (1): RTX-1701 ID: 0.32(mm) GC Column (2): RTX-5 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	CS7275	CS7275	06/14/96	06/14/96
02	PTL1	960511801	06/14/96	06/14/96
03	PTL2	960511802	06/14/96	06/14/96
04	MW2	960512201	06/15/96	06/15/96
05	MW2MS	960512202 MS	06/15/96	06/15/96
06	MW2MSD	960512203 MSD	06/15/96	06/15/96
07				
08				
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COMMENTS:

FORM IV PEST

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Method 8080 blank, PEST-1595
Test Description Pesticides and PCB's Test Code 8080

EXTRACTED 05/21/96 DATE RUN 06/14/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS No.	COMPOUND	RESULT	EQL
319-84-6	alpha-BHC	<EQL	0.050	50-29-3	4,4'-DDT	<EQL	0.10
58-89-9	gamma-BHC (Lindane)	<EQL	0.050	7421-93-4	Endrin aldehyde	<EQL	0.10
319-85-7	beta-BHC	<EQL	0.050	1031-07-8	Endosulfan sulfate	<EQL	0.10
76-44-8	Heptachlor	<EQL	0.050	72-43-5	Methoxychlor	<EQL	0.50
319-86-8	delta-BHC	<EQL	0.050	57-74-9	Chlordane (technical)	<EQL	2.5
309-00-2	Aldrin	<EQL	0.050	8001-35-2	Toxaphene	<EQL	2.5
1024-57-3	Heptachlor epoxide	<EQL	0.050	12674-11-2	PCB-1016	<EQL	1.0
959-98-8	Endosulfan I	<EQL	0.050	11104-28-2	PCB-1221	<EQL	2.0
72-55-9	4,4'-DDE	<EQL	0.10	11141-16-5	PCB-1232	<EQL	1.0
60-57-1	Dieldrin	<EQL	0.10	53469-21-9	PCB-1242	<EQL	1.0
72-20-8	Endrin	<EQL	0.10	12672-29-6	PCB-1248	<EQL	1.0
72-54-8	4,4'-DDD	<EQL	0.10	11097-69-1	PCB-1254	<EQL	1.0
33213-65-9	Endosulfan II	<EQL	0.10	11096-82-5	PCB-1260	<EQL	1.0

SURROGATE	%RECOVERY	LIMITS
Tetrachloro-m-xylene	115	10 - 176
Decachlorobiphenyl	102	10 - 128

4B

SEMI\ ATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

000028

SBLK1549B

Lab Name: ROSS ANALYTICAL SERVICES Contract:

Lab Code: ROSS Case No.: SAS No.: SDG No.:

Lab File ID: BLK1594B Lab Sample ID: SBLK1549B

Instrument ID: hpmsg.i Date Extracted: 05/21/96

Matrix: (soil/water) WATER Date Analyzed: 05/31/96

Level: (low/med) LOW Time Analyzed: 1818

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	CS7274	CS7274	CS7274	05/31/96
02	PTL1	96-05-118-01E	11801ERE	06/17/96
03	PTL2	96-05-118-02F	11802FRE	06/17/96
04				
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COMMENTS:

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

Sample Description Method 8270 blank, SBLK1549B
Test Description Semivolatiles by GC/MS Test Code 8270

DATE EXTRACTED 05/21/96 DATE ANALYZED 05/31/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
108-95-2	Phenol	<EQL	10	83-32-9	Acenaphthene	<EQL	10
111-44-4	bis(2-Chloroethyl) ether	<EQL	10	51-28-5	2,4-Dinitrophenol	<EQL	50
95-57-8	2-Chlorophenol	<EQL	10	100-02-7	4-Nitrophenol	<EQL	50
541-73-1	1,3-Dichlorobenzene	<EQL	10	132-64-9	Dibenzofuran	<EQL	10
106-46-7	1,4-Dichlorobenzene	<EQL	10	121-14-2	2,4-Dinitrotoluene	<EQL	10
100-51-6	Benzyl alcohol	<EQL	20	606-20-2	2,6-Dinitrotoluene	<EQL	10
95-50-1	1,2-Dichlorobenzene	<EQL	10	84-66-2	Diethylphthalate	<EQL	10
95-48-7	2-Methylphenol	<EQL	10	7005-72-3	4-Chlorophenyl phenyl ether	<EQL	10
39638-32-9	bis(2-Chloroisopropyl) ether	<EQL	10	86-73-7	Fluorene	<EQL	10
106-44-5	3+4-Methylphenol	<EQL	10	100-01-06	4-Nitroaniline	<EQL	10
621-64-7	N-Nitroso-di-n-propylamine	<EQL	10	534-52-1	4,6-Dinitro-2-methylphenol	<EQL	50
67-72-1	Hexachloroethane	<EQL	10	86-30-6	N-Nitrosodiphenylamine *	<EQL	10
98-95-3	Nitrobenzene	<EQL	10	101-55-3	4-Bromophenyl phenyl ether	<EQL	10
78-59-1	Isophorone	<EQL	10	118-74-1	Hexachlorobenzene	<EQL	10
88-75-5	2-Nitrophenol	<EQL	10	87-86-5	Pentachlorophenol	<EQL	50
105-67-9	2,4-Dimethylphenol	<EQL	10	85-01-8	Phenanthrene	<EQL	10
65-85-0	Benzoic acid	<EQL	50	120-12-7	Anthracene	<EQL	10
111-91-1	bis(2-Chloroethoxy) methane	<EQL	10	84-74-2	Di-n-butylphthalate	<EQL	10
120-83-2	2,4-Dichlorophenol	<EQL	10	206-44-0	Fluoranthene	<EQL	10
120-82-1	1,2,4-Trichlorobenzene	<EQL	10	129-00-0	Pyrene	<EQL	10
91-20-3	Naphthalene	<EQL	10	85-68-7	Butyl benzyl phthalate	<EQL	10
106-47-8	4-Chloroaniline	<EQL	20	91-94-1	3,3'-Dichlorobenzidine	<EQL	20
87-68-3	Hexachlorobutadiene	<EQL	10	56-55-3	Benzo(a)anthracene	<EQL	10
59-50-7	4-Chloro-3-methylphenol	<EQL	20	117-81-7	bis(2-Ethylhexyl)phthalate	<EQL	10
91-57-6	2-Methylnaphthalene	<EQL	10	218-01-9	Chrysene	<EQL	10
77-47-4	Hexachlorocyclopentadiene	<EQL	10	117-84-0	di-n-Octyl phthalate	<EQL	10
88-06-2	2,4,6-Trichlorophenol	<EQL	10	205-99-2	Benzo(b)fluoranthene	<EQL	10
95-95-4	2,4,5-Trichlorophenol	<EQL	10	207-08-9	Benzo(k)fluoranthene	<EQL	10
91-58-7	2-Chloronaphthalene	<EQL	10	50-32-8	Benzo(a)pyrene	<EQL	10
88-74-4	2-Nitroaniline	<EQL	50	193-39-5	Indeno(1,2,3-cd)pyrene	<EQL	10
131-11-3	Dimethyl phthalate	<EQL	10	53-70-3	Dibenz(a,h)anthracene	<EQL	10
208-96-8	Acenaphthylene	<EQL	10	191-24-2	Benzo(g,h,i)perylene	<EQL	10
99-09-2	3-Nitroaniline	<EQL	50				

* Cannot be distinguished from Diphenylamine.

SURROGATE	% RECOVERY	LIMITS	SURROGATE	% RECOVERY	LIMITS
Nitrobenzene-d5	88	35 - 114	Phenol-d5	78	10 - 110
2-Fluorobiphenyl	101	43 - 116	2-Fluorophenol	73	21 - 110
Terphenyl-d14	101	33 - 141	2,4,6-Tribromophenol	99	10 - 123

4B

SEMIV. .TILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

000030

SBLK1637

Lab Name: ROSS ANALYTICAL SERVICES Contract:

ab Code: ROSS Case No.: SAS No.: SDG No.:

Lab File ID: SBLK1637B

Lab Sample ID: SBLK1637

Instrument ID: F500B:i

Date Extracted: 06/04/96

Matrix: (soil/water) WATER

Date Analyzed: 06/07/96

Level: (low/med) LOW

Time Analyzed: 1356

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	CS7314	CS7314	CS7314B	06/07/96
02	PTL1RC	96-05-118-01A	11801ARX	06/10/96
03				
04				
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6/18/96

COMMENTS:

FORM IV SV

OLM03.0

Work Order # 96-05-118 Ross Analytical Services, Inc Reported: 06/19/96

le Description Method 8270 blank, SBLK1637
Test Description Semivolatiles by GC/MS Test Code 8270

DATE EXTRACTED 06/04/96 DATE ANALYZED 06/07/96 DILUTION FACTOR 1 UNITS ug/L

CAS No.	COMPOUND	RESULT	EQL	CAS NO.	PARAMETER	RESULT	EQL
108-95-2	Phenol	<EQL	10	83-32-9	Acenaphthene	<EQL	10
111-44-4	bis(2-Chloroethyl) ether	<EQL	10	51-28-5	2,4-Dinitrophenol	<EQL	50
95-57-8	2-Chlorophenol	<EQL	10	100-02-7	4-Nitrophenol	<EQL	50
541-73-1	1,3-Dichlorobenzene	<EQL	10	132-64-9	Dibenzofuran	<EQL	10
106-46-7	1,4-Dichlorobenzene	<EQL	10	121-14-2	2,4-Dinitrotoluene	<EQL	10
100-51-6	Benzyl alcohol*	<EQL	20	606-20-2	2,6-Dinitrotoluene	<EQL	10
95-50-1	1,2-Dichlorobenzene	<EQL	10	84-66-2	Diethylphthalate	<EQL	10
95-48-7	2-Methylphenol	<EQL	10	7005-72-3	4-Chlorophenyl phenyl ether	<EQL	10
39638-32-9	bis(2-Chloroisopropyl) ether	<EQL	10	86-73-7	Fluorene	<EQL	10
106-44-5	3+4-Methylphenol	<EQL	10	100-01-06	4-Nitroaniline	<EQL	10
621-64-7	N-Nitroso-di-n-propylamine	<EQL	10	534-52-1	4,6-Dinitro-2-methylphenol	<EQL	50
67-72-1	Hexachloroethane	<EQL	10	86-30-6	N-Nitrosodiphenylamine *	<EQL	10
98-95-3	Nitrobenzene	<EQL	10	101-55-3	4-Bromophenyl phenyl ether	<EQL	10
78-59-1	Isophorone	<EQL	10	118-74-1	Hexachlorobenzene	<EQL	10
88-75-5	2-Nitrophenol	<EQL	10	87-86-5	Pentachlorophenol	<EQL	50
15-67-9	2,4-Dimethylphenol	<EQL	10	85-01-8	Phenanthrene	<EQL	10
65-85-0	Benzoic acid	<EQL	50	120-12-7	Anthracene	<EQL	10
111-91-1	bis(2-Chloroethoxy) methane	<EQL	10	84-74-2	Di-n-butylphthalate	<EQL	10
120-83-2	2,4-Dichlorophenol	<EQL	10	206-44-0	Fluoranthene	<EQL	10
120-82-1	1,2,4-Trichlorobenzene	<EQL	10	129-00-0	Pyrene	<EQL	10
91-20-3	Naphthalene	<EQL	10	85-68-7	Butyl benzyl phthalate	<EQL	10
106-47-8	4-Chloroaniline	<EQL	20	91-94-1	3,3'-Dichlorobenzidine	<EQL	20
87-68-3	Hexachlorobutadiene	<EQL	10	56-55-3	Benzo(a)anthracene	<EQL	10
59-50-7	4-Chloro-3-methylphenol	<EQL	20	117-81-7	bis(2-Ethylhexyl)phthalate	<EQL	10
91-57-6	2-Methylnaphthalene	<EQL	10	218-01-9	Chrysene	<EQL	10
77-47-4	Hexachlorocyclopentadiene	<EQL	10	117-84-0	di-n-Octyl phthalate	<EQL	10
88-06-2	2,4,6-Trichlorophenol	<EQL	10	205-99-2	Benzo(b)fluoranthene	<EQL	10
95-95-4	2,4,5-Trichlorophenol	<EQL	10	207-08-9	Benzo(k)fluoranthene	<EQL	10
91-58-7	2-Chloronaphthalene	<EQL	10	50-32-8	Benzo(a)pyrene	<EQL	10
88-74-4	2-Nitroaniline	<EQL	50	193-39-5	Indeno(1,2,3-cd)pyrene	<EQL	10
131-11-3	Dimethyl phthalate	<EQL	10	53-70-3	Dibenz(a,h)anthracene	<EQL	10
208-96-8	Acenaphthylene	<EQL	10	191-24-2	Benzo(g,h,i)perylene	<EQL	10
99-09-2	3-Nitroaniline	<EQL	50				

* Cannot be distinguished from Diphenylamine.

SURROGATE	% RECOVERY	LIMITS	SURROGATE	% RECOVERY	LIMITS
Nitrobenzene-d5	97	35 - 114	Phenol-d5	101	10 - 110
2-Fluorobiphenyl	95	43 - 116	2-Fluorophenol	92	21 - 110
Terphenyl-d14	96	33 - 141	2,4,6-Tribromophenol	93	10 - 123

ROSS® Ross Analytical Services, Inc.
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(216) 572-3. ax (216) 572-7620 • 1-800-325-7737

temp 6°C

Page 1 of 1

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Report to: Teri Phillips / Nancy Zikmanis
Ohio EPA
2110 E. Aurora Rd
Twinsburg, OH 44087
Telephone: 216-963-1168

Lab Contact: Lisa Alexander
Purchase Order No.: RNE960520-1R
Project Reference: Painesville Twp. Ldfl.

Bill to: Darlene Stanley
OEPA - DERR
1800 Watermark Dr.
Columbus, OH

ONE CONTAINER PER LINE

Sample Number	Sample Type/Description	Date Collected	Container Type	Pre-servative	Required Tests	Condition on Receipt (Lab)
PTL-1 (todd)	Leachate	5/20/96	~~2-VOA~~ 2-gal amber - none		no VOCs TAL/TCL, COD, BOD, Nitrates, Ammonia, TDS, Cyanide	[signature]
PTL-2 (teri)	Leachate	5/20/96	2-VOA - HCL 3-gal amber - none		TAL/TCL, Cyanide, COD, BOD, Nitrates, Ammonia, TDS	
~~[illegible]~~	~~Leachate~~	~~5/20/96~~	~~[illegible]~~		~~[illegible]~~	
PTL-4	Leachate	5/20/96	2-VOA	HCL	TCL Vols	
5/21/96 TAL/TCL = VOC's, SVOC's, pest/PCB's, metals + cyanide LMA						
Trip Blank = VOC's per LMA 5/21/96 per Teri Phillips, divide samples in lab						
* preserve appropriately LMA * preserved by KN 5/21/96						

Possible Hazard Identification: Non-hazard Flammable Skin Irritant Other (leachate)

Turnaround Time Required: (Normal) 30 day Rush Report Required By 6/20/96

1. Relinquished by Signature/Affiliation: Teri R. Phillips Date: 5/20/96
2. Relinquished by Signature/Affiliation Date

Sample Disposal: Return to Client (Disposal by Lab) Archive (mos)

QA Requirements: to be phoned into L. Alexander

1. Received by Signature/Affiliation: Dale L. [illegible] (RUSI) Date: 5/20/96
2. Received by Signature/Affiliation Date

Special Instructional Comments:
Separate all but VOCs + preserve at lab. VOCs preserved already.
* Samples high in SedS + iron (will need filtered)

000032

ROSS ANALYTICAL SERVICES, INC.

SAMPLE RECEIPT REPORT

'ORKORDER # 96-05-118

DATE/TIME RECEIVED: 5/20/96 after 5PM LOGIN DATE: 5/21/96

SAMPLES ARRIVED BY(Circle One) Fed–Ex UPS Other(specify)

SHIPPING DOCUMENTATION PRESENT? YES/NO
TRACKING NUMBER

SHIPPING CONTAINER INTACT? YES/NO (If no, explain below)

CUSTODY SEALS PRESENT? YES/NO
CUSTODY SEALS INTACT? YES/NO
Where? Cooler/Bottles
Seal Nos.

SAMPLE TEMPERATURE 6°C

AQUEOUS SAMPLES FOR METALS, pH < 2? YES/NO/NA

AQUEOUS SAMPLES FOR WET TESTS, pH < 2? YES/NO/NA

AQUEOUS SAMPLES FOR CYANIDE, pH > 12? YES/NO/NA

AQUEOUS SAMPLES FOR VOA'S PRESERVED WITH HCl? YES/NO/NA (From COC, Do not take pH)

OTHER PRESERVATION REQUIREMENTS MET? YES/NO/NA SPECIFY: COD, NH_3, NO_3 → H_2SO_4

SAMPLES INTACT? YES/NO/NA (If no, explain below)

SHIPPING CONTAINER: (Circle) Ross Client
Date Returned

COMMENTS:

ROSS® Ross Analytical Services, Inc.
16433 Foltz Industrial Parkway • Strongsville, Ohio 44136
(216) 572-3200 • Fax (216) 572-7620 • 1-800-325-7737

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Report to: Tom Phillips / Nancy Zikowski
Ohio EPA
2110 E. Aurora Rd
Twinsburg, OH 44087
Telephone: 216-963-1168

Lab Contact: Lisa Alexander
Purchase Order No.: 2NE-9LC520-1R
Project Reference: Riverside Twp LDH.

Bill to: Darlene Stanley
OEPA - DERR
1800 Watermark Dr.
Columbus, OH

ONE CONTAINER PER LINE

Sample Number	Sample Type/Description	Date Collected	Container Type	Pre-servative	Required Tests	Condition on Receipt (Lab)
					VOCs	
PTL-1 (top)	Leachate	5/20/96	2-VOA, 3-amber-1 pint		TAL/TCL, COD, BOD, Nitrates, Ammonia, TDS, Cyanide	
PTL-2 (bot)	Leachate	5/20/96	2-VOA, 3-amber-1 pint	HCL	TAL/TCL, Cyanide, COD, BOD, Nitrates, Ammonia, TDS	
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	
PTL-4	Leachate	5/20/96	2-VOA	HCL	TCL VOCs	

Possible Hazard Identification: Non-hazard / Flammable / Skin Irritant / Other (unknown)

Sample Disposal: Return to Client / Disposal by Lab / Archive (mos)

Turnaround Time Required: Normal 30 days / Rush — Report Required By 6/20/96

QA Requirements: (to be moved into L. Alexander)

1. Relinquished by Signature/Affiliation: Nancy A. Zikowski — Date 5/21/96
2. Relinquished by Signature/Affiliation — Date

1. Received by Signature/Affiliation: [illegible] — Date
2. Received by Signature/Affiliation — Date

Special Instructional Comments:
Separate out VOCs + preserve at lab. VOCs preserved already.
* Sample is high in TDS + I.D. (will need filtered)

ATTACHMENT D

EVALUATION OF CALCIUM, IRON, MAGNESIUM, POTASSIUM AND SODIUM AS ESSENTIAL HUMAN NUTRIENTS

ATTACHMENT D
TABLE 1: EXPOSURE FACTOR VALUES FOR CALCULATION OF SEDIMENT ORAL INTAKE

Parameter	Units	Recreator Adult	Recreator Child	Source
Sediment Ingestion Rate (IR)	mg/day	100	200	OEPA, 1996
Conversion Factor (CF)	kg/mg	1.00E-06	1.00E-06	
Exposure Frequency (EF) - ingestion	days/yr	90	90	OEPA recommended site-specific value
Exposure Duration (ED)	yr	24	6	OEPA, 1996
Averaging Time (AT)	days/yr	8760	2190	ED x 365 days/year
Body Weight (BW)	kg	70	15	OEPA, 1996

$$\text{Intake Factor (IF)} = \frac{IR \times EF \times ED \times CF}{BW \times AT}$$

IF_{adult} = 3.52E-07 day-1
IF_{child} = 3.29E-06 day-1

ATTACHMENT D
TABLE 2: EXPOSURE FACTOR VALUES FOR CALCULATION OF SURFACE WATER ORAL

Parameter	Units	Recreator Adult	Recreator Child	Source
Surface Water Ingestion Rate (IR)	L/event	0.05	0.05	OEPA, 1996
Exposure Frequency (EF) - ingestion	events/yr	90	90	OEPA recommended site-specific value
Exposure Duration (ED)	yr	24	6	OEPA, 1996
Averaging Time (AT)	days/yr	8760	2190	ED x 365 days/year
Body Weight (BW)	kg	70	15	OEPA, 1996

$$\text{Intake Factor (IF)} = \frac{\text{IR X EF X ED}}{\text{BW X AT}}$$

IF_{adult} = 1.76E-04 day-1
IF_{child} = 8.22E-04 day-1

ATTACHMENT D
TABLE 3: COHORT-SPECIFIC NORMALIZED DAILY INTAKE BASED ON RECOMMENDED DIETARY ALLOWANCES FOR CALCIUM

Age (yrs)	Recommended Dietary Allowance (mg/day)	Body Weight (kg)	Normalized Daily Intake (mg/kg)[b]
Infants			
0-0.5	400	6	66.7
0.5-1	600	9	66.7
Children			
1-3	800	13	61.5
4-6	800	20	**40.0**
7-10	800	28	28.6
Males			
11-14	1200	45	26.7
15-18	1200	66	18.2
19-24	1200	72	16.7
25-50	800	79	**10.1**
51+	800	77	10.4
Females			
11-14	1200	46	26.1
15-18	1200	55	21.8
19-24	1200	58	20.7
25-50	800	63	12.7
51+	800	65	12.3
Pregnant	1200	63[a]	19
Lactating (1st 6 months)	1200	63[a]	19
Lactating (2nd 6 months)	1200	63[a]	19

a Body weight assumed to be that of 25-50 female cohort
b Lowest cohort-specific normalized daily intake for child (NDI_{child}; ages 0-6 years) and lowest cohort-specific normalized daily intake for adult (NDI_{adult}; ages 7 years and over) are indicated in boldface type.

Source: *Recommended Dietary Allowances*. 10th Edition. (1989). Food and Nutrition Board, Commission on Life Sciences, National Research Council. National Academy Press: Washington, D.C.

ATTACHMENT D
TABLE 4: COHORT-SPECIFIC NORMALIZED DAILY INTAKES BASED ON RECOMMENDED DIETARY ALLOWANCES FOR IRON

Age (yrs)	Recommended Dietary Allowance (mg/day)	Body Weight (kg)	Normalized Daily Intake (mg/kg)[b]
Infants			
0-0.5	6	6	1.0
0.5-1	10	9	1.1
Children			
1-3	10	13	0.77
4-6	10	20	**0.50**
7-10	10	28	0.36
Males			
11-14	12	45	0.27
15-18	12	66	0.18
19-24	10	72	0.14
25-50	10	79	**0.13**
51+	10	77	0.13
Females			
11-14	15	46	0.33
15-18	15	55	0.27
19-24	15	58	0.26
25-50	15	63	0.24
51+	10	65	0.15
Pregnant	30	63[a]	0.48
Lactating (1st 6 months)	15	63[a]	0.24
Lactating (2nd 6 months)	15	63[a]	0.24

a Body weight assumed to be that of 25-50 female cohort
b Lowest cohort-specific normalized daily intake for child (NDI_{child}; ages 0-6 years) and lowest cohort-specific normalized daily intake for adult (NDI_{adult}; ages 7 years and over) are indicated in boldface type.

Source: *Recommended Dietary Allowances*. 10th Edition. (1989). Food and Nutrition Board, Commission on Life Sciences, National Research Council. National Academy Press: Washington, D.C.

ATTACHMENT D
TABLE 5: COHORT-SPECIFIC NORMALIZED DAILY INTAKES BASED ON RECOMMENDED DIETARY ALLOWANCES FOR MAGNESIUM

Age (yrs)	Recommended Dietary Allowance (mg/day)	Body Weight (kg)	Normalized Daily Intake (mg/kg)[b]
Infants			
0-0.5	40	6	6.7
0.5-1	60	9	6.7
Children			
1-3	80	13	6.2
4-6	120	20	**6.0**
7-10	170	28	6.0
Males			
11-14	270	45	6.0
15-18	400	66	6.0
19-24	350	72	4.9
25-50	350	79	**4.4**
51+	350	77	4.5
Females			
11-14	280	46	6.1
15-18	300	55	5.5
19-24	280	58	4.8
25-50	280	63	4.4
51+	280	65	4.3
Pregnant	320	63[a]	5.1
Lactating (1st 6 months)	355	63[a]	5.6
Lactating (2nd 6 months)	340	63[a]	5.4

a Body weight assumed to be that of 25-50 female cohort
b Lowest cohort-specific normalized daily intake for child (NDI_{child}; ages 0-6 years) and lowest cohort-specific normalized daily intake for adult (NDI_{adult}; ages 7 years and over) are indicated in boldface type.

Source: *Recommended Dietary Allowances*. 10th Edition. (1989). Food and Nutrition Board, Commission on Life Sciences, National Research Council. National Academy Press: Washington, D.C.

ATTACHMENT D
TABLE 6: COHORT-SPECIFIC NORMALIZED DAILY INTAKES BASED ON MINIMUM REQUIREMENTS OF HEALTHY PERSONS FOR POTASSIUM

Age (yrs)	Recommended Dietary Allowance (mg/day)	Body Weight (kg)	Normalized Daily Intake (mg/kg)[a]
0-5 months	500	4.5	111
6-11 months	700	8.9	**78.7**
1	1,000	11	90.9
2.0-5.0	1,400	16	87.5
6.0-9.0	1,600	25	64.0
10.0-18.0	2,000	50	40.0
18+	2,000	70	**28.6**

a Lowest cohort-specific normalized daily intake for child (NDI_{child}; ages 0-6 years) and lowest cohort-specific normalized daily intake for adult (NDI_{adult}; ages 7 years and over) are indicated in boldface type.

Source: Recommended Dietary Allowances. 10th Edition. (1989). Food and Nutrition Board, Commission on Life Sciences, National Research Council. National Academy Press: Washington, D.C.

ATTACHMENT D
TABLE 7: COHORT-SPECIFIC NORMALIZED DAILY INTAKES BASED ON RECOMMEND DIETARY ALLOWANCES FOR SODIUM

Age (yrs)	Recommended Dietary Allowance DA (mg/day)	Body Weight (kg)	Normalized Daily Intake (mg/kg)[a]
0-5 months	120	4.5	26.7
6-11 months	200	8.9	22.5
1	225	11	20.5
2.0-5.0	300	16	**18.8**
6.0-9.0	400	25	16.0
10.0-18.0	500	50	10.0
18+	500	70	**7.14**

a Lowest cohort-specific normalized daily intake for child (NDI_{child}; ages 0-6 years) and lowest cohort-specific normalized daily intake for adult (NDI_{adult}; ages 7 years and over) are indicated in boldface type.

Source: *Recommended Dietary Allowances*. 10th Edition. (1989). Food and Nutrition Board, Commission on Life Sciences, National Research Council. National Academy Press: Washington, D.C.

ATTACHMENT D
TABLE 8: TARGET SEDIMENT CONCENTRATIONS BASED ON LOWEST COHORT-SPECIFIC NORMALIZED DAILY INTAKE FOR RECREATOR ADULT AND CHILD SEDIMENT INGESTION EXPOSURES

ESSENTIAL NUTRIENT	TARGET SEDIMENT CONCENTRATION (mg/kg)	
	ADULT	CHILD
CALCIUM	28,672,778	12,166,667
IRON	369,056	152,083
MAGNESIUM	12,491,111	1,825,000
POTASSIUM	81,192,222	23,937,917
SODIUM	20,269,667	5,718,333

ATTACHMENT D
TABLE 9: TARGET SURFACE WATER CONCENTRATIONS BASED ON LOWEST COHORT-SPECIFIC NORMALIZED DAILY INTAKE FOR RECREATOR ADULT AND CHILD SURFACE WATER INGESTION EXPOSURES

ESSENTIAL NUTRIENT	TARGET SURFACE WATER CONCENTRATION (mg/L)	
	ADULT	CHILD
CALCIUM	57,346	48,667
IRON	738	608
MAGNESIUM	24,982	7,300
POTASSIUM	162,384	95,752
SODIUM	40,539	22,873

ATTACHMENT E

BIOSCREEN Groundwater Model Inputs, Assumptions, and Results

Painesville Work Site
Summary of BIOSCREEN Input and Assumptions

Table 1

Data Type	Parameter	Value	Reference/Source
Hydrogeology	▪ Hydraulic Conductivity	See Tables 3-18	▪ Estimated average hydraulic conductivity based on predominant geologic material along the flow path. Slug tests data were used to support parameter estimation.
	▪ Hydraulic Gradient	See Tables 3-18	▪ Static water levels collected during 1st quarter of 2003 (Site-specific values)
	▪ Effective Porosity	0.35	Ohio EPA suggested value
Dispersion	▪ Longitudinal Dispersivity	α_x is a function of the distance to receptor (i.e. River and/or Lake)	▪ Based on Xu & Eckstein equation with L_p set equal to the distance to receptor.
	▪ Transverse Dispersivity	0.1 α_x	▪ Based on high reliability points from Gelhar et al., 1992
	▪ Vertical Dispersivity	0 ft	▪ Vertical dispersion is ignored (conservative assumption)
lodeled length	▪ Plume length	See Tables 3-18	▪ Shortest distance from the monitoring wells with OMZA exceedance(s) to the River and/or the Lake. (Site-specific values)
Retardation	▪ Soil Bulk Density	1.7 L/kg	▪ Default value from BIOSCREEN User's Manual
	▪ Distribution Coefficient (K_d), for metals and cyanide.	See Tables 3-18	▪ Published values from K_d table supplied by Ohio EPA (Strenge & Peterson, 1989)
	▪ Organic Carbon Partition Coefficient (K_{oc}), for organics.	See Tables 3-18	▪ Published K_{oc} values from Ohio VAP
	Fraction Organic Carbon (f_{oc}), used with K_{oc} for organics.	See Tables 3-18	▪ Based on TOC results from soil samples (Site-specific values)
Biodegradation	▪ First-order Decay Rate	0 day^{-1}	▪ Biodegradation is ignored (conservative assumption)
General	▪ Simulation Time	100 years	Conservatively long duration assuming continuous source
Source Data	▪ Source Concentration (assumed infinite soluble mass during the entire simulation time of 100 year)	See Tables 3-18	▪ Reported maximum concentrations from individual monitoring wells with OMZA exceedance(s).
	▪ Source Dimension (Vertical planar source)	1000 ft X 10 ft	▪ BIOSCREEN suggested maximum source width of 1000 ft was used. Also, a groundwater mixing zone height of 10 ft was assumed.

PAINESVILLE WORKS SITE
Summary of Site-specific Hydrogeologic Parameters
Table 2

Monitoring Well	Groundwater Elevations, ft - 1st Quarter 2003[1]	Distance to River , ft	Distance to Lake, ft	Estimated River Elevation, ft	Estimated Lake Elevation, ft	Hydraulic Gradient to River, ft/ft	Hydraulic Gradient to Lake, ft/ft	Geologic Unit Represented in Slug Test [2,3]	Slug Test Results, cm/s	Predominant Geologic Unit along Flowpath to River [3]	Estimated Average Hydraulic Conducivity to River, cm/s	Predominant Geologic Unit along Flowpath to Lake [3]	Estimated Average Hydraulic Conducivity to Lake, cm/s	Estimated f_{oc} along the Flowpath to River [4]	Estimated f_{oc} along the Flowpath to Lake [4]
ASR-MW1	613.95	1800	1170	575	572.7	0.0216	0.0353	Glacial (1)	2.00E-06	Alluvial (6)	1.60E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
ASR-MW3	618.27	1750	1550	575	572.7	0.0247	0.0294	--	--	Alluvial (6)	1.60E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
ASR-MW4	619.27	1730	1290	575	572.7	0.0256	0.0361	--	--	Alluvial (6)	1.60E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
ASR-MW5	617.44	2340	900	575	572.7	0.0181	0.0497	--	--	Alluvial (6)	1.60E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
ASR-MW8	614.86	2620	930	575	572.7	0.0152	0.0453	--	--	Alluvial (6)	1.60E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
CL1-1/MW-7	613.74	1510	1680	575	572.7	0.0257	0.0244	--	--	Alluvial (6)	1.60E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
CL3-1	617.51	--	490	--	572.7	--	0.0914	--	--	--	--	Glacial (3)	6.63E-04	--	0.0046
CL3-2	614.01	--	450	--	572.7	--	0.0918	--	--	--	--	Glacial (3)	6.63E-04	--	0.0046
CL3-3	597.08	--	140	--	572.7	--	0.1741	Glacial (3)	1.00E-04	--	--	Glacial (3)	6.63E-04	--	0.0046
CL3-4	604.02	--	150	--	572.7	--	0.2088	--	--	--	--	Glacial (3)	6.63E-04	--	0.0046
CL3-5	601.03	--	120	--	572.7	--	0.2361	--	--	--	--	Glacial (3)	6.63E-04	--	0.0046
CL3-6	614.63	--	270	--	572.7	--	0.1553	--	--	--	--	Glacial (3)	6.63E-04	--	0.0046
CL5-1/MW-5	582.47	1020	--	574	--	0.0083	--	Alluvial/Fill (5)	2.00E-02	Fill (5)	1.00E-03	--	--	0.0034	--
CL5-2/MW-13	575.27	30	--	574	--	0.0423	--	--	--	Fill (5)	1.00E-03	--	--	0.0034	--
CL6-1/MW-1	581.06	40		575	--	0.1515	--	Alluvial (6)	1.00E-06	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-1A/MW-1A	581.74	40	--	575	--	0.1685	--	Alluvial (6)	3.00E-05	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-3/MW-3	576.30	170	--	575	--	0.0076	--	--	--	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-4/MW-4	582.57	450	--	575	--	0.0168	--	Alluvial (6)	6.00E-04	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-5/MW-6	601.55	1930	--	574	--	0.0143	--	Glacial (6)	3.00E-07	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-6/MW-8	576.22	10	--	575	--	0.1220	--	--	--	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-7/MW-9	576.81	10	--	575	--	0.1810	--	Alluvial (6)	7.00E-06	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-8/MW-10	577.13	10	--	575	--	0.2130	--	Alluvial (6)	3.00E-03	Alluvial (6)	1.60E-04	--	--	0.0060	--
CL6-9/MW-12	575.21	10	--	574	--	0.1210	--	--	--	Alluvial (6)	1.60E-04	--	--	0.0060	--
MW-1B1-02	612.63	2750	950	575	572.7	0.0137	0.0420	--	--	Fill (6)	1.50E-04	Glacial (1,2)	6.63E-04	0.0060	0.0076
MW-1B1-03	611.40	2740	830	575	572.7	0.0133	0.0466	--	--	Fill (6)	1.50E-04	Glacial (1)	6.63E-04	0.0060	0.0080
MW-1B1-04	612.28	2680	840	574	572.7	0.0143	0.0471	--	--	Fill (5)	1.00E-03	Glacial (1)	6.63E-04	0.0034	0.0080
MW-2C1-02	593.23	--	140	--	572.7	--	0.1466	--	--	--	--	Glacial (2)	6.63E-04	--	0.0072
MW-2C1-03	596.38	--	160	--	572.7	--	0.1480	--	--	--	--	Glacial (2)	6.63E-04	--	0.0072
MW-2C1-04	594.62	--	160	--	572.7	--	0.1370	--	--	--	--	Glacial (2)	6.63E-04	--	0.0072
MW-2C1-05	597.02	--	160	--	572.7	--	0.1520	--	--	--	--	Glacial (2)	6.63E-04	--	0.0072
MW-2C1-06	596.91	--	150	--	572.7	--	0.1614	--	--	--	--	Glacial (2)	6.63E-04	--	0.0072
MW-40	620.00	1720	1130	575	572.7	0.0262	0.0419	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MW-47	616.03	1670	1390	575	572.7	0.0246	0.0312	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MW-49	615.33	1230	1510	575	572.7	0.0328	0.0282	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MWB-1*	619	1220	1550	575	572.7	0.0361	0.0299	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MWB-2	615.99	1350	1470	575	572.7	0.0304	0.0294	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MWB-4	618.87	1240	1680	575	572.7	0.0354	0.0275	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MWB-5	617.12	1380	1470	575	572.7	0.0305	0.0302	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
MWB-6	620.36	1320	1720	575	572.7	0.0344	0.0277	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
SW1-1	614.11	3258	1320	574	572.7	0.0123	0.0314	--	--	Fill (4) upper	5.00E-05	Glacial(1)	6.63E-04	0.0060	0.0080
SW1-10	620.81	1720	1420	575	572.7	0.0266	0.0339	--	--	Fill (4) upper	5.00E-05	Glacial(1)	6.63E-04	0.0060	0.0080
SW1-12	607.07	1200	1840	575	572.7	0.0267	0.0187	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
SW1-14*	575	--	180	--	572.7	--	0.0128	Glacial (1)	5.00E-03	--	--	Glacial(1,3)	6.63E-04	--	0.0063

PAINESVILLE WORKS SITE
Summary of Site-specific Hydrogeologic Parameters
Table 2

Monitoring Well	Groundwater Elevations, ft - 1st Quarter 2003[1]	Distance to River, ft	Distance to Lake, ft	Estimated River Elevation, ft	Estimated Lake Elevation, ft	Hydraulic Gradient to River, ft/ft	Hydraulic Gradient to Lake, ft/ft	Geologic Unit Represented in Slug Test [2,3]	Slug Test Results, cm/s	Predominant Geologic Unit along Flowpath to River [3]	Estimated Average Hydraulic Conducivity to River, cm/s	Predominant Geologic Unit along Flowpath to Lake [3]	Estimated Average Hydraulic Conducivity to Lake, cm/s	Estimated f_{oc} along the Flowpath to River [4]	Estimated f_{oc} along the Flowpath to Lake [4]
SW1-16	593.54	--	160	--	572.7	--	0.1302	Glacial (1)	1.00E-07	--	--	Glacial(1)	6.63E-04	--	0.0080
SW1-5	615.60	2070	880	575	572.7	0.0196	0.0488	--	--	Alluvial (6)	1.60E-04	Glacial(3)	6.63E-04	0.0060	0.0046
SW1-6	611.39	1200	1640	575	572.7	0.0303	0.0236	--	--	Alluvial (6)	1.60E-04	Glacial(1,3)	6.63E-04	0.0060	0.0063
SW1-8	620.60	1670	1250	575	572.7	0.0273	0.0383	--	--	Alluvial (6)	1.60E-04	Glacial(3)	6.63E-04	0.0060	0.0046
SW2-1	599.34	--	180	--	572.7	--	0.1480	--	--	--	--	Glacial (2)	6.63E-04	--	0.0072
SW4-1	575.04	650	--	573	--	0.0031	--	Fill (4) lower	1.00E-04	Fill (4) lower	1.50E-04	--	--	0.0060	--
SW4-10	586.89	60	--	573	--	0.2315	--	Glacial (4)	8.00E-07	Fill (4) lower	1.50E-04	--	--	0.0060	--
SW4-11	585.45	358	--	573	--	0.0348	--	--	--	Fill (4) lower	1.50E-04	--	--	0.0060	--
SW4-4	594.80	890	--	573	--	0.0245	--	Alluvial (4)	2.00E-04	Fill (4) lower	1.50E-04	--	--	0.0060	--
SW4-6	581.28	790	--	574	--	0.0092	--	Fill (4) upper	5.00E-05	Fill (4) upper	5.00E-05	--	--	0.0060	--
SW4-8*	573.50	350	--	573	--	0.0014	--	--	--	Fill (4) lower	1.50E-04	--	--	0.0060	--
SW4-9	575.36	90	--	574	--	0.0151	--	--	--	Fill (4) lower	1.50E-04	--	--	0.0060	--
SW7-12	576.79	10	--	574	--	0.2790	--	Alluvial (7)	5.00E-04	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-2	579.11	20	--	574	--	0.2555	--	Alluvial (7)	2.00E-05	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-4	607.22	680	--	574	--	0.0489	--	Fill (7)	5.00E-04	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-5	582.53	140	--	576	--	0.0466	--	--	--	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-6	578.36	140	--	576	--	0.0169	--	--	--	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-7	577.33	30	--	575	--	0.0777	--	--	--	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-8	575.58	60	--	575	--	0.0097	--	Alluvial (7)	6.00E-08	Alluvial (7)	3.62E-03	--	--	0.0060	--
SW7-9	582.04	150	--	574	--	0.0536	--	Alluvial (7)	1.00E-02	Alluvial (7)	3.62E-03	--	--	0.0060	--
LC1-1**	573.80	--	50	--	572.7	--	0.0220	--	--	--	--	Glacial (1)	6.63E-04	--	0.0080
LC1-2**	573.16	--	90	--	572.7	--	0.0051	--	--	--	--	Glacial (1)	6.63E-04	--	0.0080
LC1-3**	574.86	--	80	--	572.7	--	0.0270	--	--	--	--	Glacial (1)	6.63E-04	--	0.0080

Note:

1. Groundwater elevations represent water levels measured during the 1st quarter of 2003, unless otherwise noted.
   (*) denotes groundwater elevations that were obtained based on interpolation from potentiometric surface map. (**) denotes groundwater elevations collected from the 1997 event.
2. Slug tests results are shown in the Phase II RI Report.
3. The geologic unit describes the geologic material and the Study Area where the material was identified. For example, Alluvial (6) denotes alluvial material identified in Study Area 6.
4. The f_{oc} values were average value from site-specific TOC values categorized by Study Areas. Outliers or extremely high values (> 25,000 mg/kg) were excluded from consideration.

Painesville Works Site
BIOSCREEN Summary for Benzene

Table 3

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
4B1	SW4-6	380	1000	5.00E-05	--	0.0092	--	0.0060	--	6.17E+01	790	--	0	--	160	310

Painesville Works Site
BIOSCREEN Summary for Benzo(a)pyrene

Table 4

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
1B1	MW-1B1-04	6	1000	1.00E-03	6.63E-04	0.0143	0.0471	0.0034	0.008	9.69E+05	2680	840	0	0	0.06	0.00002
1C5	MW-40	2	1000	1.60E-04	6.63E-04	0.0262	0.0419	0.006	0.0063	9.69E+05	1720	1130	0	0	0.06	0.00002

Painesville Works Site
BIOSCREEN Summary for Carbon Tetrachloride

Table 5

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
1B3	SW1-8	34000	1000	1.60E-04	6.63E-04	0.0273	0.0383	0.0060	0.0046	1.52E+02	1670	1250	0	31775	240	19

Painesville Works Site
BIOSCREEN Summary for Chloroform

Table 6

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
1B3	SW1-8	33000	1000	1.60E-04	6.63E-04	0.0273	0.0383	0.0060	0.0046	5.25E+01	1670	1250	0	32998	140	1700

Painesville Works Site
BIOSCREEN Summary for DDT

Table 7

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)		
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water	Wildlife
6B1	CL6-1A	0.06	1000	1.60E-04	--	0.1685	--	0.0060	--	6.78E+05	40	--	0	--	--	0.00015	0.00001
2C1	MW-2C1-02	0.0098	1000	--	6.63E-04	--	0.1466	--	0.0072	6.78E+05	--	140	--	0	--	0.00015	0.00001
2C1	MW-2C1-03	0.1	1000	--	6.63E-04	--	0.1480	--	0.0072	6.78E+05	--	160	--	0	--	0.00015	0.00001
2C1	MW-2C1-04	0.042	1000	--	6.63E-04	--	0.1370	--	0.0072	6.78E+05	--	160	--	0	--	0.00015	0.00001
2C1	MW-2C1-05	0.046	1000	--	6.63E-04	--	0.1520	--	0.0072	6.78E+05	--	160	--	0	--	0.00015	0.00001
2C1	MW-2C1-06	0.016	1000	--	6.63E-04	--	0.1614	--	0.0072	6.78E+05	--	150	--	0	--	0.00015	0.00001
1C5	MW-47	0.05	1000	1.60E-04	6.63E-04	0.0246	0.0312	0.0060	0.0063	6.78E+05	1670	1390	0	0	--	0.00015	0.00001
1C4	SW1-5	0.01	1000	1.60E-04	6.63E-04	0.0196	0.0488	0.0060	0.0046	6.78E+05	2070	880	0	0	--	0.00015	0.00001
4A3	SW4-4	0.06	1000	1.50E-04	--	0.0245	--	0.0060	--	6.78E+05	890	--	0	--	--	0.00015	0.00001

Painesville Works Site
BIOSCREEN Summary for PCBs

Table 8

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)		
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water	Wildlife
1B1	MW-1B1-03	0.26	1000	1.50E-04	6.63E-04	0.0133	0.0466	0.006	0.0076	3.09E+05	2740	830	0	0	--	0.000026	0.00012
1B1	MW-1B1-04	1.4	1000	1.00E-03	6.63E-04	0.0143	0.0471	0.0034	0.008	3.09E+05	2680	840	0	0	--	0.000026	0.00012
2C1	MW-2C1-02	0.34	1000	--	6.63E-04	--	0.1466	--	0.0072	3.09E+05	--	140	--	0	--	0.000026	0.00012
2C1	MW-2C1-03	3.9	1000	--	6.63E-04	--	0.1480	--	0.0072	3.09E+05	--	160	--	0	--	0.000026	0.00012
2C1	MW-2C1-04	1.5	1000	--	6.63E-04	--	0.1370	--	0.0072	3.09E+05	--	160	--	0	--	0.000026	0.00012
2C1	MW-2C1-05	1.7	1000	--	6.63E-04	--	0.1520	--	0.0072	3.09E+05	--	160	--	0	--	0.000026	0.00012
2C1	MW-2C1-06	0.54	1000	--	6.63E-04	--	0.1614	--	0.0072	3.09E+05	--	150	--	0	--	0.000026	0.00012
1C5	MWB-4	1.4	1000	1.60E-04	6.63E-04	0.0354	0.0275	0.006	0.0063	3.09E+05	1240	1680	0	0	--	0.000026	0.00012

Painesville Works Site
BIOSCREEN Summary for Pentachlorophenol

Table 9

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
1C4	ASR-MW5	73	1000	1.60E-04	6.63E-04	0.0181	0.0497	0.0060	0.0076	5.92E+02	2340	900	0	0.029	4	1.6

Painesville Works Site
BIOSCREEN Summary for Phenanthrene

Table 10

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
1B1	MW-1B1-04	61	1000	1.00E-03	6.63E-04	0.0143	0.0471	0.0034	0.008	1.41E+04	2680	840	0	0	2.3	--

Painesv... Works Site
BIOSCREEN Summary for Naphthalene

Table 11

				Hydraulic Conductivity, cm/s		Hydraulic Gradient, ft/ft		f_{oc}			Distance to Receptor, ft		BIOSCREEN Centerline Concentration, ug/L		Outside Mixing Zone Average (ug/l)	
Parcel	Source Location Well ID	Source Concentration, ug/L	Source Width, ft	Source to River	Source to Lake	Source to River	Source to Lake	Source to River	Source to Lake	K_{oc}, L/kg	Grand River	Lake Erie	Grand River	Lake Erie	Aquatic Life	Human Health Nondrinking Water
4B1	SW4-1	25	1000	1.50E-04	--	0.0031	--	0.0060	--	1.19E+03	650	--	0	--	21	1200