An Assessment of Sediment Injury in the Grand Calumet River, Indiana Harbor Canal, Indiana Harbor, and the Nearshore Areas of Lake Michigan

Volume IV - Appendices

Prepared for:

U.S. Fish and Wildlife Service
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List of Acronyms

%	percent
10-d	10 days
12-d	12 days
14-d	14 days
15-min	15 minutes
20-d	20 days
2,3,7,8-TCDD	tetrachlorodibenzo-*p*-dioxin
28-d	28 days
30-min	30 minutes
48-h	48 hours
7-d	7 days
8-d	8 days
96-h	96 hours
AOC	Area of Concern
ARCS Program	Assessment and Remediation of Contaminated Sediments in the Great Lakes Program
ASTM	American Society for Testing and Materials
AVS	acid volatile sulfides
BSAF	biota-sediment bioaccumulation factor
CCBP	Central Corn Belt Plain
CCME	Canadian Council of Ministers of the Environment
CCREM	Canadian Council of Resource and Environment Ministers
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601 et seq.
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CI	confidence interval
CSO	combined sewer overflow
DDTs	*p,p*'-DDT, *o,p*'-DDT, *p,p*'-DDE, *o,p*'-DDE, *p,p*'-DDD, *o,p*'-DDD, and any metabolite or degradation product
DELT	deformities, fin erosion, lesions, and tumors
DL	detection limit
DO	dissolved oxygen
DQO	data quality objective
DuPont	E.I. du Pont de Nemours
DW	dry weight
EB	east branch
EBGCR	East Branch of the Grand Calumet River
EBGCR-I	East Branch of the Grand Calumet River I

EBGCR-II	East Branch of the Grand Calumet River II
EC	Environment Canada
EC_{50}	median effective concentration
ECBP	Eastern Corn Belt Plain
EPT	Ephemeroptera, Plecoptera, Trichoptera
FIELDS	Fully Integrated Environmental Location Decision Support
gamma-BHC	gamma-hexachlorocyclohexane (lindane)
GCRL	Grand Calumet River Lagoons
GIS	geographic information system
HC	Health Canada
HNTB	Howard, Needles, Tammen and Bergendoff Architects, Engineers, and Planners
IBI	Index of biotic integrity
ID	insufficient data
IDEM	Indiana Department of Environmental Management
IEC	Industrial Economics, Inc.
IH	Indiana Harbor
IHC	Indiana Harbor Canal
IJC	International Joint Commission
IL	Illinois
IN	Indiana
LC_{50}	median lethal concentration
LEP	Little East Pond
LGB	Lake George Branch
LM	Lake Michigan
LTI	Limno-Tech, Inc.
LWP	Little West Pond
mean PEC-Q	mean probable effect concentration quotient
MESL	MacDonald Environmental Sciences Ltd.
mg	milligrams
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mIBI	macroinvertebrate index of biotic integrity
mm	millimeters
MS	Microsoft
n	number of samples
NA	not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)
NA'	not applicable (i.e., toxicity test or chemical analyses not performed).
ND	not determined; compounds were measured as less than the detection limit, but the detection limit is unknown
ND'	not determined; toxicity not determined because mortality was > 40%
ND"	not determined; the lab considered sample to be a hazard to personnel

NE	northeast
NG	no guideline available
NH_3	unionized ammonia
NH_4^+	ionized ammonia
NIPSCO	Northern Indiana Public Service Company
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge and Elimination System
NR	not reported
NRDA	Natural Resource Damage Assessment
NT	not toxic
NW	northwest
NYSDEC	New York State Department of Environmental Conservation
OC	organic carbon
OEPA	Ohio Environmental Protection Agency
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PEC	probable effect concentration (consensus-based)
PEC-Q	probable effect concentration quotient
QA/QC	quality assurance/quality control
QHEI	qualitative habitat evaluation index
RCRA	Resource Conservation and Recovery Act
RETEC	Remediation Technologies, Inc.
S.U.	standard unit
SAB	Science Advisory Board
SE	southeast
SEC	sediment effect concentration (consensus-based)
SEM	simultaneously extracted metals
SEM-AVS	simultaneously extracted metal minus acid volatile sulfides
SETAC	Society of Environmental Toxicology and Chemistry
SOD	sediment oxygen demand
SQG	sediment quality guideline
STP	sewage treatment plant
sum DDD	*p,p*'-DDD + *o,p*'-DDD
sum DDE	*p,p*'-DDE + *o,p*'-DDE
sum DDT	*p,p*'-DDT + *o,p*'-DDT
SVOC	semi-volatile organic chemical
SW	southwest
T	toxic
TEC	threshold effect concentration (consensus-based)
ThermoRetec	ThermoRetec Consulting Corporation
TOC	total organic carbon
Total DDT	*p,p*'-DDT, *o,p*'-DDT, *p,p*'-DDE, *o,p*'-DDE, *p,p*'-DDD, and *o,p*'-DDD
TRG	tissue residue guideline

U.S. Steel	United States Steel (Division of USX Corporation)
USACE	United States Army Corps of Engineers
USC	United States Canal
USDOI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USS Lead	USS Lead Refinery, Inc.
VOC	volatile organic compound
WB	west branch
WBGCR	West Branch of the Grand Calumet River
WBGCR-I	West Branch of the Grand Calumet River I
WBGCR-II	West Branch of the Grand Calumet River II
WW	wet weight
WWTP	wastewater treatment plant
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µmol/g	micromoles per gram

Appendix I

Criteria for Evaluating Candidate Data Sets

Appendix I. Criteria for Evaluating Candidate Data Sets

AI.1 Introduction

A project database was developed to support the assessment of sediment injury in the Grand Calumet River Lagoons, Grand Calumet River, Indiana Harbor Canal, Lake George Branch, US Canal, Indiana Harbor, and the waters of nearshore Lake Michigan. The database is comprised of sediment chemistry and/or biological effects data from the study area. These data were used to evaluate the severity and extent of sediment injury in the study area. To assure that the data used in the assessment met project data quality objectives, all of the candidate data sets were critically evaluated prior to inclusion in the database. However, the screening process was also designed to be flexible to assure that professional judgement could also be used when necessary in the evaluation process. In this way, it was possible to include as many data sets as possible and, subsequently, use them to the extent that the data quality and quantity dictate. In total, more than 125 data sets were evaluated to obtain the information needed to accomplish these objectives.

AI.2 Criteria for Evaluating Whole Sediment, Pore Water, and Tissue Chemistry

The whole sediment, pore water, and tissue chemistry data from the study area were used to evaluate the severity and extent of sediment injury in the Assessment Area and to identify contaminants of concern. Data from individual studies were considered to be acceptable for use in this report if:

- Samples were collected within the study area (see Natural Resources Trustees 1997 for a complete description of the study area);

- Samples were collected from any sediment horizon (samples representing surficial sediments were used to assess injury to sediments and biological resources; samples of sub-surface sediments were used to assess sediment injury);
- Appropriate procedures were used for collecting, handling, and storing sediments (e.g., ASTM 2000d) and other samples;
- The concentrations of chemicals of concern were measured in samples (see Natural Resources Trustees 1997 for a list of hazardous substances);
- Appropriate analytical methods were used to generate chemistry data. The methods that were considered to be appropriate included USEPA approved methods, other standardized methods (e.g., ASTM methods, SW-846 methods), or methods that have been demonstrated to be equivalent or superior to standard methods; and,
- Data quality objectives (DQOs) were met. The criteria that were used to evaluate data quality included;
    - i) the investigator indicated that DQOs had been met,
    - ii) analytical detection limits were reported and lower than the PECs (measurements with detection limits above the PECs were included in the project database, but not used in data analyses; accuracy and precision of the chemistry data were reported and within acceptable ranges for the method; sample contamination was not noted (i.e., analytes were not detected in method blanks),
    - iii) in the absence of complete QA/QC information, chemistry data were considered to be acceptable if they were generated post-1985 for use in a regulatory context (i.e., it was assumed that the USEPA QA/QC guidelines were likely met for such data),
    - iv) the results of a detailed third party review indicated that the data were acceptable, and/or,
    - v) professional judgement indicated that the data set was likely to be of sufficient quality to be used in the assessment (i.e., in conjunction with author communications and/or other investigations); and,

- Incomplete information was available to conduct a full evaluation or certain data quality objectives were not met, but best professional judgement indicated that the data set was likely to be of sufficient quality to be used in the assessment.

AI.3 Criteria for Evaluating Biological Effects Data

Information on the effects of contaminated sediments on sediment-dwelling organisms and other aquatic species were used to evaluate the severity and extent of injury to sediments and biological resources in the Assessment Area. Data from individual studies were considered to be acceptable for this purpose if:

- Sediment samples were collected within the study area (see Natural Resources Trustees 1997 for a complete description of the study area);
- Appropriate procedures were used for collecting, handling, and storing sediments (e.g., ASTM 2000d);
- Sediments were not frozen before toxicity tests were initiated (ASTM 2000a; 2000b);
- The responses in the negative control and/or reference groups were within accepted limits (i.e., ASTM 2000a; 2000b; 2000e; 2000f; 2000g);
- Adequate environmental conditions were maintained in the test chambers during toxicity testing (i.e., ASTM 2000a; 2000b);
- The endpoint(s) measured were ecologically-relevant (i.e., likely to influence the organism's viability in the field) or indicative of ecologically-relevant endpoints (see Table 2 for a list of acceptable test organisms and associated endpoints); and,
- Data on the status of benthic invertebrate communities were not evaluated prior to use.

Appendix II

Sediment Chemistry Data

Appendix 2.1. Sediment chemistry data for the Assessment Area, IN (November 1979; USACE 1980a).

Substance	Units	Station Number												
		2-1-4	**2-5-8**	**2-9-12**	**3-11-14**	**3-15-18**	**3-3-6**	**3-7-10**	**1-1-4**	**1-5-8**	**1-9-12**	**1-13-16**	**1-17-21**	**4-5-8**
Depth	feet	0 - 3	3 - 6	6 - 10	6 - 9	9 - 12	0 - 3	3 - 6	0 - 3	3 - 6	6 - 9	9 - 12	12 - 15.5	0 - 3
Conventionals														
Ammonia-nitrogen	mg/kg	370	390	250	1000	980	1900	1700	3000	3900	2900	2300	1800	700
Chemical oxygen demand	mg/kg	257000	234500	57300	194800	207000	311700	224200	265700	269200	189100	208300	160700	224700
Nitrogen, total Kjeldahl	mg/kg	2500	2500	880	4300	3300	9100	7500	10500	10800	8200	6200	4100	4300
Oil and grease	mg/kg	175100	119100	15800	87700	98500	96600	86500	65400	54700	66600	51300	44600	97500
Phosphorus, total	mg/kg	2700	2200	1500	6800	4200	7900	7200	7600	8600	7400	7600	5200	3300
Volatile solids	%	22.1	21.1	4.9	21.5	18.9	28.1	23.2	28.5	28.7	22.1	19.7	15.2	19.8
Metals														
Arsenic	mg/kg	54	62	13	56	62	39	41	42	64	50	78	40	91
Cadmium	mg/kg	37	30	3	15	4	12	11	13	15	13	16	17	20
Chromium	mg/kg	460	400	24	1330	710	850	940	790	890	1380	1680	980	290
Copper	mg/kg	310	270	36	270	250	380	250	350	360	260	220	190	300
Lead	mg/kg	3720	4700	480	980	1360	1040	1090	1040	1170	1250	1420	1200	1600
Mercury	mg/kg	1.4	0.8	<0.2	1.3	0.7	2.2	1.9	2.1	2.1	2.2	1.3	1.0	2.4
Nickel	mg/kg	170	140	34	120	79	220	210	210	350	150	100	80	82
Zinc	mg/kg	9100	9900	530	7700	6300	4900	5800	4100	4700	7200	8600	8400	6100
Polychlorinated Biphenyls														
Total PCBs	µg/kg	7950	890	<80	42170	20480	29420	<80	2070	10770	58760	67980	53930	400
Mean-PEC-Q		**10.7**	**5.98**	**0.534**	**34.4**	**17.8**	**24.4**	**2.82**	**4.01**	**11.0**	**46.8**	**54.1**	**43.0**	**3.07**

Appendix 2.1. Sediment chemistry data for the Assessment Area, IN (November 1979; USACE 1980a).

Substance	Units	Station Number												
		4-9-12	**4-13-16**	**5-3-6**	**5-7-10**	**6-1-4**	**6-5-8**	**7-3-4**	**7-5-6**	**8-1-2**	**8-3-4**	**9-1-2**	**9-3-4**	**9-5**
Depth	feet	3 - 6	6 - 8	0 - 3	3 - 6.5	0 - 3	3 - 6	0 - 3	3 - 6	0 - 3	3 - 6	0 - 3	3 - 6	6 - 8
Conventionals														
Ammonia-nitrogen	mg/kg	900	960	130	70	510	750	620	570	110	100	450	670	560
Chemical oxygen demand	mg/kg	198400	200000	122100	43900	314400	315700	277500	267100	92000	57300	382600	415700	290700
Nitrogen, total Kjeldahl	mg/kg	3500	3200	1600	740	3200	3400	2400	2000	1100	900	2400	2500	1800
Oil and grease	mg/kg	106100	96000	43200	550	65700	67700	41600	26400	8600	2200	100500	76000	69100
Phosphorus, total	mg/kg	2400	2300	2300	410	3200	4200	1700	1200	730	800	1300	2700	780
Volatile solids	%	21.1	20.5	10.7	7.1	21.8	24.5	16.6	19.6	8.1	6.9	18.1	19.3	13.1
Metals														
Arsenic	mg/kg	93	81	NR	64	40	49	43	40	23	16	65	101	80
Cadmium	mg/kg	24	25	9	<1	8	9	6	9	5	1	5	6	5
Chromium	mg/kg	72	62	440	16	370	430	250	120	80	40	160	280	140
Copper	mg/kg	260	100	150	32	270	240	203	120	54	28	280	280	240
Lead	mg/kg	1550	1410	530	22	630	770	450	360	140	40	630	630	600
Mercury	mg/kg	1.0	2.5	0.6	<0.2	1.2	1.5	0.8	0.9	0.2	<0.2	0.6	0.7	0.5
Nickel	mg/kg	36	27	57	36	110	87	76	62	39	35	110	120	110
Zinc	mg/kg	5700	5100	3700	80	3500	5000	3100	2600	1200	330	2300	4700	3100
Polychlorinated Biphenyls														
Total PCBs	µg/kg	110	<80	31770	<80	23690	89110	8140	2840	230	910	3600	5440	520
Mean-PEC-Q		**2.60**	**2.27**	**25.2**	**0.279**	**19.1**	**67.9**	**7.30**	**3.15**	**0.691**	**0.886**	**3.98**	**5.90**	**1.81**

Appendix 2.1. Sediment chemistry data for the Assessment Area, IN (November 1979; USACE 1980a).

Substance	Units	Station Number							
		10-5-6	**10-7-8**	**11-1-2**	**11-3-4**	**12-1-2**	**12-3-5**	**13-1-2**	**13-3-4**
Depth	feet	5 - 3	3 - 6	0 - 3	3 - 6	0 - 3	3 - 7.5	0 - 3	3 - 6
Conventionals									
Ammonia-nitrogen	mg/kg	570	450	50	30	340	300	10	<10
Chemical oxygen demand	mg/kg	304500	232400	37900	62000	163300	186500	29100	41700
Nitrogen, total Kjeldahl	mg/kg	2600	2000	680	750	2100	1900	480	700
Oil and grease	mg/kg	49600	40200	510	680	26900	27200	310	520
Phosphorus, total	mg/kg	1500	1400	740	680	1800	1700	600	600
Volatile solids	%	17.6	13.6	3.7	4.0	7.4	12.3	2.6	3.1
Metals									
Arsenic	mg/kg	63	68	12	12	NR	NR	18	14
Cadmium	mg/kg	9	9	<1	<1	8	7	<1	<1
Chromium	mg/kg	300	260	16	14	250	100	11	11
Copper	mg/kg	180	160	22	30	160	90	14	20
Lead	mg/kg	520	470	18	20	490	300	18	16
Mercury	mg/kg	0.5	0.5	<0.2	<0.2	0.3	0.4	<0.2	<0.2
Nickel	mg/kg	74	70	32	34	54	36	22	24
Zinc	mg/kg	4400	3900	80	80	4300	1700	110	50
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<80	7700	<80	60	680	480	<80	<80
Mean-PEC-Q		**1.66**	**7.19**	**0.153**	**0.174**	**2.11**	**1.16**	**0.149**	**0.136**

NR = not reported.

Appendix 2.2. Sediment chemistry data for the US Canal, IN (1979-1980; USACE 1980b).

Substance	Units	Station Number		
		Site 3	Site 1	Site 2
Depth	feet	0-3.28	0-3.28	0-3.28
Conventionals				
Ammonia-nitrogen	mg/kg	150	280	180
Nitrogen, total Kjeldahl	mg/kg	1400	2200	1400
Phenol	mg/kg	4.69	2.05	4.03
Phosphorus, total	mg/kg	2765	3303	2388
Total organic carbon		2.26	2.08	2.8
Metals				
Arsenic	mg/kg	18	25	25
Cadmium	mg/kg	16.2	12.2	64.8
Chromium	mg/kg	101	752	146
Copper	mg/kg	250	332	389
Lead	mg/kg	112	626	138
Mercury	mg/kg	0.88	1.07	1.43
Nickel	mg/kg	140	160	150
Zinc	mg/kg	5270	4050	12000
Polychlorinated Biphenyls				
Total PCBs	µg/kg	37500	31150	35500
Mean-PEC-Q		**29.3**	**25.1**	**29.7**

Appendix 2.3. Sediment chemistry data for the Assessment Area, IN (November-December 1982; Polls *et al* . 1993).

Substance	Units	Station Number								
		3-82	**2-82**	**1-82**	**4-82**	**5-82**	**6-82**	**7-82**	**8-82**	**9-82**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals										
Phenol	mg/kg	1.8	3.9	5.4	13.2	20.1	3.0	1.1	1.0	0.1
Volatile solids	%	7.6	17.0	23.9	18.3	16.7	19.4	7.4	8.5	1.8
Metals										
Iron	mg/kg	84900	60450	73120	94350	119300	76420	73970	70950	10560

Appendix 2.3. Sediment chemistry data for the Assessment Area, IN (November-December 1982; Polls *et al* . 1993).

Substance	Units	Station Number							
		10-82	**12-82**	**13-82**	**14-82**	**15-82**	**16-82**	**17-82**	**18-8**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Phenol	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Volatile solids	%	0.5	0.6	0.6	0.7	0.8	3.2	2.3	0.5
Metals									
Iron	mg/kg	8784	4789	6910	9003	9890	32340	17550	35000

Appendix 2.4. Sediment chemistry data for the Assessment Area, IN (January 1986; Polls *et al* . 1993).

Substance	Units	Station Number									
		3-86	**2-86**	**1-86**	**4-86**	**5-86**	**6-86**	**7-86**	**8-86**	**9-86**	**10-86**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals											
Phenol	mg/kg	0.5	7.1	4.6	31.1	17.1	2.5	0.2	0.1	0.1	2.38
Volatile solids	%	5.0	17.9	83.2	21.5	21.1	8.5	8.9	3.1	0.4	0.6
Metals											
Iron	mg/kg	156000	90600	20600	137000	167000	89000	30500	24600	5480	5400

Appendix 2.4. Sediment chemistry data for the Assessment Area, IN (January 1986; Polls *et al* . 1993).

Substance	Units	Station Number							
		11-86	**12-86**	**13-86**	**14-86**	**15-86**	**16-86**	**17-86**	**18-86**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Phenol	mg/kg	0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1
Volatile solids	%	0.6	1.2	0.6	0.9	0.7	4.0	2.1	1.5
Metals									
Iron	mg/kg	5060	15000	7100	7940	6900	38100	9980	11100

Appendix 2.5. Sediment chemistry data for the US Canal, IN (August 1983; USACE 1983).

Substance	Units	Station Number									
		IH83-1-A	**IH83-1-B**	**IH83-1-C**	**IH83-1-D**	**IH83-2-A**	**IH83-2-B**	**IH83-2-C**	**IH83-3-A**	**IH83-3-B**	**IH83-3-C**
Depth	feet	0-2	2-4	4-6	6-7.5	0-2	2-5	4-6.2	0-2	2-5	4-4.5
Polychlorinated Biphenyls											
Total PCBs	µg/kg	14900	17500	23600	35100	11700	23300	19400	16000	26200	30600
Mean-PEC-Q		**22.0**	**25.9**	**34.9**	**51.9**	**17.3**	**34.5**	**28.7**	**23.7**	**38.8**	**45.3**

Appendix 2.5. Sediment chemistry data for the US Canal, IN (August 1983; USACE 1983).

Substance	Units	Station Number									
		IH83-3A-A	**IH83-3A-B**	**IH83-3A-C**	**IH83-4-A**	**IH83-4-B**	**IH83-4-C**	**IH83-4-D**	**IH83-5-A**	**IH83-5-B**	**IH83-6-A**
Depth	feet	0-2	2-4	4-6.2	0-2	2-4	4-5	5-6	0-2	2-3.2	0-2
Polychlorinated Biphenyls											
Total PCBs	µg/kg	14000	24700	24300	16400	15400	26900	<300	18100	22500	<300
Mean-PEC-Q		**20.7**	**36.5**	**35.9**	**24.3**	**22.8**	**39.8**	**0.222**	**26.8**	**33.3**	**0.222**

Appendix 2.5. Sediment chemistry data for the US Canal, IN (August 1983; USACE 1983).

Substance	Units	Station Number						
		IH83-6-B	**IH83-7-A**	**IH83-7-B**	**IH83-7-C**	**IH83-8-A**	**IH83-8-B**	**IH83-8-C**
Depth	feet	2-3.2	0-2	2-4	4-5.2	0-2	2-4	4-5.1
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<300	<300	6400	9300	23100	69900	115000
Mean-PEC-Q		**0.222**	**0.222**	**9.47**	**13.8**	**34.2**	**103**	**170**

Appendix 2.6. Sediment chemistry data for the Assessment Area, IN (September 1986; USEPA 1986a).

Substance	Units	Station Number									
		Background	**S01**	**S02**	**S06**	**S07**	**S08**	**S09**	**S03**	**S10**	**S11**
Depth	feet	Surface	0-2.5	0-4	0-3	0-2	0-2	0-5	0-3	0-8	0-2
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/kg	<200	9200	<200	45000	35000	8700	72000	5400	5000	1900
Acenaphthylene	µg/kg	<200	2900	<200	25000	11000	2100	46000	4400	13000	890
Anthracene	µg/kg	<200	17000	<200	59000	81000	28000	170000	19000	13000	4500
Benz(a)anthracene	µg/kg	<100	86000	<100	63000	100000	59000	220000	27000	19000	10000
Benzo(a)pyrene	µg/kg	<300	61000	<300	48000	54000	21000	100000	4100	5200	43000
Chrysene	µg/kg	<200	46000	<200	60000	52000	32000	230000	14000	19000	12000
Dibenz(a,h)anthracene	µg/kg	<300	4200	<300	34000	1100	<300	32000	<300	<300	<300
Fluoranthene	µg/kg	<100	100000	<100	220000	170000	93000	750000	39000	37000	40000
Fluorene	µg/kg	<200	6300	<200	51000	85000	8300	100000	9500	14000	3100
2-Methylnaphthalene	µg/kg	<200	5400	<200	45000	20000	4200	56000	8900	20000	2400
Naphthalene	µg/kg	<200	6600	<200	1000000	330000	35000	1200000	140000	350000	9100
Phenanthrene	µg/kg	<200	34000	<200	190000	170000	47000	540000	37000	47000	5200
Pyrene	µg/kg	<100	190000	<100	180000	270000	170000	530000	78000	33000	19000
Total PAHs[1]	µg/kg	<1800	568600	<1800	2020000	1379100	508300	4046000	386300	575200	151090
Mean-PEC-Q		**0.0395**	**24.9**	**0.0395**	**88.6**	**60.5**	**22.3**	**177**	**16.9**	**25.2**	**6.63**

Appendix 2.6. Sediment chemistry data for the Assessment Area, IN (September 1986; USEPA 1986a).

Substance	Units	Station Number											
		D11	**S12**	**S13**	**D13**	**S14**	**S15**	**S16**	**S17**	**S18**	**S19**	**S20**	**S21**
Depth	feet	0-2	0-6	0-2.5	0-3	0-2.5	0-2	0-2	0-2	0-2	0-2	0-1	0-1.5
Polycyclic Aromatic Hydrocarbons													
Acenaphthene	µg/kg	7400	6400	24000	17000	1700	8200	<200	1900	2600	<200	<200	300
Acenaphthylene	µg/kg	2700	1300	170000	90000	3900	23000	390	570	910	430	250	170
Anthracene	µg/kg	5100	5900	76000	76000	6000	27000	3700	3600	4900	1300	850	690
Benzo(a)anthracene	µg/kg	18000	12000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Benzo(a)pyrene	µg/kg	11000	6600	41000	43000	5500	28000	1000	370	5700	3200	4000	440
Chrysene	µg/kg	20000	12000	59000	110000	12000	41000	5700	3800	11000	7700	5500	3300
Dibenz(a,h)anthracene	µg/kg	<300	<300	2200	9100	<300	<300	<300	<300	<300	<300	<300	<300
Fluoranthene	µg/kg	59000	28000	170000	260000	22000	98000	8000	9200	21000	10000	6500	4800
Fluorene	µg/kg	7900	6400	99000	71000	5100	23000	800	3000	3800	640	350	370
2-Methylnaphthalene	µg/kg	5200	3600	130000	49000	4400	15000	850	2500	1400	430	320	270
Naphthalene	µg/kg	20000	11000	930000	280000	21000	87000	3100	7300	4400	1600	1200	940
Phenanthrene	µg/kg	32000	19000	240000	260000	21000	95000	3600	11000	15000	3000	2000	1800
Pyrene	µg/kg	57000	25000	113000	190000	17000	74000	9000	9500	21000	12000	7900	5100
Total PAHs[1]	µg/kg	245300	137200	2054250	1455150	119650	519250	36190	52790	91760	40350	28920	18230
Mean-PEC-Q		**10.8**	**6.02**	**90.1**	**63.8**	**5.25**	**22.8**	**1.59**	**2.32**	**4.02**	**1.77**	**1.27**	**0.800**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

Appendix 2.7. Sediment chemistry data for the Assessment Area, IN (September 1987; Polls 1988).

Substance	Units	Station Number										
		E 5.4	**E 3.8**	**E 2.7**	**E 0.6**	**E 1.3**	**A 0.2**	**A 0.5**	**A 1.0**	**A 1.5**	**A 2.0**	**A 3.0**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals												
Total organic carbon	%	4.7398	7.1151	6.8859	1.0392	2.3718	0.015	0.4295	0.0258	0.2529	0.3919	0.0652
Volatile solids	%	20.1	19.7	20.6	6.5	9.7	1.1	2.6	0.8	1.7	5.4	0.9
Oil and grease	mg/kg	104224	59970	74293	12433	32968	<1	32	13	9	132	17
Metals												
Arsenic	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	602.0	478.0	576.0	108.0	150.0	8.0	19.0	9.0	16.0	21.0	10.0
Lead	mg/kg	153.0	940.0	963.0	255.0	439.0	62.0	120.0	28.0	155.0	112.0	59.0
Nickel	mg/kg	90.0	70.0	120.0	30.0	50.0	40.0	70.0	20.0	40.0	40.0	20.0
Zinc	mg/kg	4120.0	3250.0	4280.0	930.0	1920.0	110.0	90.0	50.0	100.0	120.0	70.0
Polychlorinated Biphenyls												
Total PCBs	µg/kg	17300	8060	10140	1450	2230	40	50	30	30	90	10
Mean-PEC-Q		**14.5**	**7.98**	**9.95**	**1.63**	**2.65**	**0.192**	**0.312**	**0.104**	**0.262**	**0.282**	**0.119**

Appendix 2.7. Sediment chemistry data for the Assessment Area, IN (September 1987; Polls 1988).

Substance	Units	Station Number									
		B 0.2	**B 0.5**	**B 1.0**	**B 1.5**	**B 2.0**	**B 3.0**	**B 5.0**	**C 0.2**	**C 0.5**	**C 1.0**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals											
Total organic carbon	%	0.0083	0.1674	0.138	0.2534	0.2546	0.024	0.0216	0.1354	0.012	0.0159
Volatile solids	%	1.8	0.8	2.9	1.9	0.9	2.3	0.6	3.0	0.7	2.7
Oil and grease	mg/kg	<1	85	112	27	28	<1	3	746	9	<1
Metals											
Arsenic	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	14.0	10.0	15.0	13.0	17.0	10.0	6.0	44.0	7.0	19.0
Lead	mg/kg	53.0	47.0	54.0	72.0	51.0	54.0	41.0	93.0	49.0	49.0
Nickel	mg/kg	20.0	20.0	20.0	40.0	20.0	20.0	10.0	20.0	10.0	40.0
Zinc	mg/kg	80.0	60.0	60.0	60.0	70.0	60.0	20.0	220.0	70.0	60.0
Polychlorinated Biphenyls											
Total PCBs	µg/kg	20	60	90	<100	40	20	60	NA	60	20
Mean-PEC-Q		**0.128**	**0.144**	**0.177**	**0.200**	**0.141**	**0.120**	**0.107**	**0.403**	**0.125**	**0.166**

Appendix 2.7. Sediment chemistry data for the Assessment Area, IN (September 1987; Polls 1988).

Substance	Units	Station Number								
		C 1.5	**C 2.0**	**C 3.0**	**C 5.0**	**D 0.3**	**D 2A**	**D 2B**	**D 3.0**	**D 5.0**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals										
Total organic carbon	%	0.0127	0.0024	0.0182	0.0106	0.0298	0.0126	0.0522	0.1667	0.1069
Volatile solids	%	0.6	1.0	1.0	0.7	0.4	0.8	0.7	2.6	2.8
Oil and grease	mg/kg	3	<1	<1	<1	<1	<1	<1	<1	63
Metals										
Arsenic	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	3.0	11.0	8.0	1.0	4.0	1.0	6.0	16.0	17.0
Lead	mg/kg	32.0	22.0	26.0	22.0	28.0	21.0	23.0	37.0	42.0
Nickel	mg/kg	10.0	20.0	10.0	10.0	<1.0	10.0	<1.0	20.0	10.0
Zinc	mg/kg	30.0	20.0	30.0	10.0	50.0	10.0	30.0	70.0	70.0
Polychlorinated Biphenyls										
Total PCBs	µg/kg	50	<10	20	<10	20	10	20	10	80
Mean-PEC-Q		**0.0919**	**0.0765**	**0.0696**	**0.0447**	**0.0523**	**0.0476**	**0.0459**	**0.107**	**0.143**

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)

Appendix 2.8. Sediment chemistry data for the Assessment Area, IN (1988; IDEM 1994).

Substance	Units	Station Number								
		049-88	**044-88**	**045-88**	**040-88**	**050-88**	**035-88**	**037-88**	**030-88**	**DD2860**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals										
Benzene	µg/kg	130	29	23	<70	<80	19	93	15	<130
Phenol	mg/kg	<5.7	<3.6	<5.3	<0.92	<11	<5.7	<5.3	<3.4	NR
Metals										
Arsenic	mg/kg	23.3	21.6	14.9	182	6	109	19.3	27.4	39
Cadmium	mg/kg	48.2	23.7	18	76.5	10.3	24.1	14	26.8	9.7
Chromium	mg/kg	141	239	180	98.6	207	469	118	229	750
Copper	mg/kg	154	290	219	683	490	381	79.7	216	410
Lead	mg/kg	772	659	405	3470	426	1020	229	537	860
Mercury	mg/kg	0.691	2.45	1.48	7.73	3.67	1.92	0.74	1.11	0.96
Nickel	mg/kg	43.5	66.5	53	24.1	34	1140	24.3	51.7	100
Selenium	mg/kg	<4.4	<5	<4.1	<7.1	<8.1	7.9	<4.1	<4.7	4.8
Zinc	mg/kg	4110	1910	1410	12200	705	3190	1210	2100	4800
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	93000	3000	4500	210	<11000	<5700	3200	2100	<1200
Acenaphthylene	µg/kg	3500	2100	4000	270	610	1600	860	1400	<1200
Anthracene	µg/kg	30000	4800	8600	340	1900	2200	3400	3000	<1200
Benz(a)anthracene	µg/kg	24000	17000	28000	4000	3000	6500	11000	7600	<3600
Benzo(a)pyrene	µg/kg	28000	18000	35000	2800	3500	6300	12000	9100	6500
Chrysene	µg/kg	25000	23000	36000	5900	4800	7900	20000	9000	10000
Dibenz(a,h)anthracene	µg/kg	2700	2200	3700	330	<11000	750	<5300	<3400	<4200
Fluoranthene	µg/kg	89000	32000	55000	5900	8900	17000	19000	16000	18000
Fluorene	µg/kg	62000	3800	5900	<920	<11000	2300	4300	1700	<1200
2-Methylnaphthalene	µg/kg	51000	2500	3700	130	2000	<5700	4700	570	<1200
Naphthalene	µg/kg	59000	2700	4000	410	<11000	<5700	2700	3300	<1200
Phenanthrene	µg/kg	100000	29000	40000	700	7200	8700	31000	9000	4100
Pyrene	µg/kg	67000	34000	59000	14000	9900	17000	29000	1200	7800

Appendix 2.8. Sediment chemistry data for the Assessment Area, IN (1988; IDEM 1994).

Substance	Units	Station Number								
		049-88	**044-88**	**045-88**	**040-88**	**050-88**	**035-88**	**037-88**	**030-88**	**DD2860**
Polycyclic Aromatic Hydrocarbons (cont.)										
Total PAHs[1]	µg/kg	634200	174100	287400	34990	41810	70250	141160	63970	46400
Polychlorinated Biphenyls										
Total PCBs	µg/kg	5699.3	2078.6	3370.3	574.1	2599.3	3312.5	1028.9	1356.7	5850
Pesticides										
Chlordane	µg/kg	<34.6	<4	<32.2	<5.6	<64.2	<62.6	<3.2	<37.2	<50
Sum DDD	µg/kg	<69	149	186.8	<11.2	230.75	<125	62.7	139.4	<10
Sum DDE	µg/kg	<69	<7.8	104.7	<11.2	<128.2	<125	<6.4	<74.4	<10
Sum DDT	µg/kg	<69	33.35	<48.3	<11.2	<128.2	<125	<6.4	<74.4	<10
Total DDTs[2]	µg/kg	NA	186.25	315.65	<33.6	230.75	NA	69.1	139.4	<30
Dieldrin	µg/kg	<17.3	<2	<16.1	<2.8	<32.1	<31.3	<1.6	<18.6	NR
Endrin	µg/kg	<172.7	<19.6	<161	<28	<320.5	<312.5	<16.1	<185.9	NR
Heptachlor	µg/kg	<172.7	<58.8	<161	<28	<240.4	<203.1	<32.2	<120.8	<10
Heptachlor epoxide	µg/kg	359.2	80.4	<80.5	<14	<160.3	<156.3	56.3	139.4	<10
Lindane	µg/kg	<17.3	<2	<16.1	<2.8	240.4	<31.3	<1.6	<18.6	<0.5
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	<1000
Mean-PEC-Q		**13.4**	**4.53**	**6.55**	**4.63**	**2.51**	**5.20**	**3.04**	**2.54**	**5.08**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR = not reported

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)

Appendix 2.9. Sediment chemistry data for the US Canal, IN (June 1990; IDEM 1994).

Substance	Units	Station Number	
		025-90	026-90
Depth	feet	Surface	Surface
Conventionals			
Total organic carbon	%	9.37	11.53
Benzene	µg/kg	31	25
Phenol	mg/kg	<14	<13
Metals			
Arsenic	mg/kg	35.1	33.9
Cadmium	mg/kg	7.87	3.27
Chromium	mg/kg	631	533
Copper	mg/kg	203	172
Lead	mg/kg	666	627
Mercury	mg/kg	1.07	0.983
Nickel	mg/kg	62.1	52.3
Selenium	mg/kg	2.1	2
Zinc	mg/kg	3340	2830
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	µg/kg	6200	5500
Acenaphthylene	µg/kg	<14000	<13000
Anthracene	µg/kg	5000	3400
Benz(a)anthracene	µg/kg	16000	12000
Benzo(a)pyrene	µg/kg	9700	9600
Chrysene	µg/kg	19000	17000
Dibenz(a,h)anthracene	µg/kg	<14000	<13000
Fluoranthene	µg/kg	37000	29000
Fluorene	µg/kg	6100	4500
2-Methylnaphthalene	µg/kg	<14000	<13000
Naphthalene	µg/kg	1700	<13000
Phenanthrene	µg/kg	29000	20000
Pyrene	µg/kg	30000	26000

Appendix 2.9. Sediment chemistry data for the US Canal, IN (June 1990; IDEM 1994).

Substance	Units	Station Number	
		025-90	026-90
Polycyclic Aromatic Hydrocarbons (cont.)			
Total PAHs[1]	µg/kg	159700	127000
Polychlorinated Biphenyls			
Total PCBs	µg/kg	17361.8	22250
Pesticides			
Chlordane	µg/kg	135.7	49.5
Sum DDD	µg/kg	101.05	97.1
Sum DDE	µg/kg	<74.5	<67.3
Sum DDT	µg/kg	<106.4	<96.2
Total DDTs[2]	µg/kg	101.05	97.1
Dieldrin	µg/kg	29.8	19.2
Endrin	µg/kg	<159.6	<144.2
Heptachlor	µg/kg	<53.2	<48.1
Heptachlor epoxide	µg/kg	<80.9	<73.1
Lindane	µg/kg	<16	<14.4
Toxaphene	µg/kg	<159.6	<144.2
Mean-PEC-Q		**12.0**	**13.8**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.10. Sediment chemistry data for the US Canal, IN (June 1992; IDEM 1994).

Substance	Units	Station Number 033-92
Depth	feet	Surface
Conventionals		
Ammonia-nitrogen	mg/kg	146
Benzene	µg/kg	97
Phenol	mg/kg	<75
Total organic carbon	%	9.065
Metals		
Arsenic	mg/kg	27.0
Cadmium	mg/kg	8.8
Chromium	mg/kg	694
Copper	mg/kg	229
Lead	mg/kg	862
Mercury	mg/kg	0.98
Nickel	mg/kg	66.4
Selenium	mg/kg	<0.8
Zinc	mg/kg	3980
Polycyclic Aromatic Hydrocarbons		
Acenaphthene	µg/kg	11326
Acenaphthylene	µg/kg	<4246
Anthracene	µg/kg	4922
Benz(a)anthracene	µg/kg	18549
Benzo(a)pyrene	µg/kg	8200
Chrysene	µg/kg	140578
Dibenz(a,h)anthracene	µg/kg	1787
Fluoranthene	µg/kg	20500
Fluorene	µg/kg	13480
2-Methylnaphthalene	µg/kg	<75000

Appendix 2.10. Sediment chemistry data for the US Canal, IN (June 1992; IDEM 1994).

Substance	Units	Station Number 033-92
Polycyclic Aromatic Hydrocarbons (cont.)		
Naphthalene	µg/kg	<4246
Phenanthrene	µg/kg	19000
Pyrene	µg/kg	25000
Total PAHs[1]	µg/kg	263341
Polychlorinated Biphenyls		
Total PCBs	µg/kg	34395
Pesticides		
Chlordane	µg/kg	<273.9
Sum DDD	µg/kg	<845
Sum DDE	µg/kg	<424.6
Sum DDT	µg/kg	<424.6
Total DDTs[2]	µg/kg	<1694.2
Dieldrin	µg/kg	<106.2
Endrin	µg/kg	<1061.6
Heptachlor	µg/kg	<530.8
Heptachlor epoxide	µg/kg	<530.8
Lindane	µg/kg	<106.2
Toxaphene	µg/kg	<2123.1
Mean-PEC-Q		**22.1**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.11. Sediment chemistry data for the US Canal and Grand Calumet River, IN (1994; IDEM 1994).

Substance	Units	Station Number						
		068-94	069-94	085-94	086-94	087-94	063-94	064-94
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Total organic carbon	%	NR	NR	10.52	10.4	18.64	15.86	10.36
Metals								
Arsenic	mg/kg	20.5	24.4	77.3	101	55.4	NR	NR
Cadmium	mg/kg	4	3	20.3	24.2	29.2	NR	NR
Chromium	mg/kg	185	204	399	261	696	NR	NR
Copper	mg/kg	137	105	243	322	879	NR	NR
Lead	mg/kg	386	230	1130	4350	1460	NR	NR
Mercury	mg/kg	0.51	0.22	1.7	12.4	4.4	NR	NR
Nickel	mg/kg	53.7	67.6	74.1	68	418	NR	NR
Selenium	mg/kg	0.99	1.3	2.9	9.5	26.1	NR	NR
Zinc	mg/kg	2290	1080	4040	3710	4860	NR	NR
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	5100	2000	2600	890	<3800	2000	5000
Acenaphthylene	µg/kg	4200	<3200	2300	470	810	<3300	<5700
Anthracene	µg/kg	3900	2600	5200	680	1600	1500	2700
Benz(a)anthracene	µg/kg	18000	7400	22000	10000	11000	7500	8100
Benzo(a)pyrene	µg/kg	24000	7100	18000	3400	4600	9800	6200
Chrysene	µg/kg	17000	8500	47000	4000	4500	15000	18000
Dibenz(a,h)anthracene	µg/kg	4000	780	2400	2200	2100	2100	1400
Fluoranthene	µg/kg	32000	17000	20000	5700	3800	12000	17000
Fluorene	µg/kg	3400	1800	5100	760	3000	1900	4800
2-Methylnaphthalene	µg/kg	1000	<17000	810	<23000	<36000	NR	NR
Naphthalene	µg/kg	2200	630	1600	660	<7500	3700	<5700
Phenanthrene	µg/kg	12000	5600	16000	1400	3500	5800	14000
Pyrene	µg/kg	26000	12000	3100	5800	4100	13000	16000
Total PAHs[1]	µg/kg	152800	65410	146110	35960	39010	74300	93200

Appendix 2.11. Sediment chemistry data for the US Canal and Grand Calumet River, IN (1994; IDEM 1994).

Substance	Units	Station Number						
		068-94	069-94	085-94	086-94	087-94	063-94	064-94
Polychlorinated Biphenyls								
Total PCBs	µg/kg	10874.4	6914.8	22197.8	14133.2	13888.8	11111.1	15646.2
Pesticides								
Chlordane	µg/kg	<102.8	<60.3	<200	<130.7	<230.2	130.7	162.6
Sum DDD	µg/kg	<171.9	<92.2	<329.7	<229.3	248.05	241.8	299.3
Sum DDE	µg/kg	<300.4	<140.1	<560.5	<349.4	<400.8	421.6	176.9
Sum DDT	µg/kg	<79	<71	<175.8	<106.6	<158.8	55.6	56.6
Total DDTs[2]	µg/kg	NA	NA	NA	NA	248.05	719	532.8
Dieldrin	µg/kg	<71.1	<17.7	<44	<26.7	<107.1	91.5	22.7
Endrin	µg/kg	<197.6	<177.3	<439.6	<266.7	<396.8	<32.7	14.1
Heptachlor	µg/kg	<98.8	<88.7	<219.8	<133.3	<198.4	88.2	199.5
Heptachlor epoxide	µg/kg	<160.1	<88.7	<169.2	<210.7	<198.4	261.4	362.8
Lindane	µg/kg	<19.8	<17.7	<44	<26.7	<39.7	<3.3	15.9
Toxaphene	µg/kg	<395.3	<354.6	<879.1	<533.3	<793.7	<65.4	<45.4
Mean-PEC-Q		**8.22**	**4.81**	**14.5**	**10.2**	**9.81**	**9.85**	**13.6**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR = not reported

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)

Appendix 2.12. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (1988-1990; Unger 1992).

Substance	Units	Station Number									
		UG1 Top	UG1 Middle	UG1 Bottom	UG2 Top	UG2 Middle	UG2 Bottom	UG3 Top	UG3 Middle	UG3 Bottom	UG4 Top
Depth	feet	0-3	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9	0-3
Conventionals											
Phenol	µg/kg	850	740	250	630	610	590	310	180	500	260
Polycyclic Aromatic Hydrocarbons											
Benz(a)anthracene	µg/kg	2720	3400	9500	1020	1310	4600	1830	760	7100	730
Benzo(a)pyrene	µg/kg	23600	24750	1400	22500	12300	600	9770	10200	200	7840
Chrysene	µg/kg	3810	2660	8400	3720	3850	3600	3280	740	2800	940
Fluoranthene	µg/kg	210	210	30500	320	310	25900	210	230	27400	230
Naphthalene	µg/kg	1210	1110	320	1830	1740	1880	3280	2160	3220	2430
Phenanthrene	µg/kg	1520	2850	230600	4740	2690	99200	4550	3660	176500	50
Pyrene	µg/kg	2140	2050	10100	6910	3950	4600	3650	2890	9900	1460
Total PAHs[1]	µg/kg	35210	37030	290820	41040	26150	140380	26570	20640	227120	13680
Polychlorinated Biphenyls											
Total PCBs	µg/kg	3180	2690	1880	860	2110	2050	7240	6830	7050	1360
Pesticides											
Chlordane	µg/kg	670	940	350	320	20	210	860	2120	1350	60
Sum DDD	µg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sum DDE	µg/kg	3190	2060	1050	2750	2630	2490	1940	2830	1750	630
Sum DDT	µg/kg	70	150	30	680	190	550	720	370	1060	60
Total DDTs[2]	µg/kg	3260	2210	1080	3430	2820	3040	2660	3200	2810	690
Dieldrin	µg/kg	120	370	20	50	450	610	210	80	ND	ND
Heptachlor	µg/kg	740	480	440	180	190	380	2190	1040	1740	280
Lindane	µg/kg	1280	680	20	240	80	260	ND	30	ND	1230
Toxaphene	µg/kg	2530	3570	3150	2110	3680	2420	970	3490	1220	1690
Mean-PEC-Q		**3.12**	**2.80**	**7.77**	**1.54**	**2.13**	**4.59**	**5.94**	**5.50**	**10.2**	**1.31**

Appendix 2.12. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (1988-1990; Unger 1992).

Substance	Units	Station Number									
		UG4 Middle	UG4 Bottom	UG5 Top	UG5 Middle	UG5 Bottom	UG6 Top	UG6 Middle	UG6 Bottom	UG10 Top	UG10 Middle
Depth	feet	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9	0-3	3-6
Conventionals											
Phenol	µg/kg	770	2080	2710	3940	1600	610	590	920	6180	470
Polycyclic Aromatic Hydrocarbons											
Benz(a)anthracene	µg/kg	950	2400	2580	1660	18900	1350	1290	10400	ND	ND
Benzo(a)pyrene	µg/kg	12550	200	36900	21690	5600	9990	7320	2400	109500	197200
Chrysene	µg/kg	850	2900	4020	4000	23300	1070	1240	1700	ND	ND
Fluoranthene	µg/kg	ND	10300	670	80	35900	ND	90	9800	15270	28260
Naphthalene	µg/kg	4230	430	4180	5280	1530	1160	1830	1640	4610	9680
Phenanthrene	µg/kg	6410	55800	5620	9250	145400	830	530	66400	9870	9380
Pyrene	µg/kg	2040	6800	6880	6990	28700	4110	1210	3300	6280	12110
Total PAHs[1]	µg/kg	27030	78830	60850	48950	259330	18510	13510	95640	145530	256630
Polychlorinated Biphenyls											
Total PCBs	µg/kg	1680	1220	14800	10280	6690	870	1460	2250	13650	9040
Pesticides											
Chlordane	µg/kg	ND	150	20	10	340	1350	520	1270	1370	5760
Sum DDD	µg/kg	ND	ND	ND	250	ND	ND	ND	ND	ND	560
Sum DDE	µg/kg	910	3260	1490	4460	3170	5880	2780	5240	6800	14690
Sum DDT	µg/kg	660	20	340	2150	20	670	ND	760	2610	3380
Total DDTs[2]	µg/kg	1570	3280	1830	6860	3190	6550	2780	6000	9410	18630
Dieldrin	µg/kg	ND	ND	10	10	ND	220	ND	810	2830	6920
Heptachlor	µg/kg	220	20	1070	30	50	710	720	180	160	1220
Lindane	µg/kg	500	50	10	220	ND	ND	ND	90	50	60
Toxaphene	µg/kg	3460	720	2820	150	2010	1800	2880	4830	1140	15460
Mean-PEC-Q		**1.84**	**2.63**	**12.3**	**8.68**	**10.6**	**1.05**	**1.38**	**3.76**	**13.3**	**12.3**

Appendix 2.12. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (1988-1990; Unger 1992).

Substance	Units	Station Number									
		UG10 Bottom	UG9 Top	UG9 Middle	UG9 Bottom	UG8 Top	UG8 Middle	UG8 Bottom	UG7 Top	UG7 Middle	UG7 Bottom
Depth	feet	6-9	0-3	3-6	6-9	0-3	3-6	6-9	0-3	3-6	6-9
Conventionals											
Phenol	µg/kg	20	2020	380	20	870	10880	1970	1560	1530	1210
Polycyclic Aromatic Hydrocarbons											
Benz(a)anthracene	µg/kg	22500	ND	ND	16200	2920	3850	26400	610	1940	600
Benzo(a)pyrene	µg/kg	2800	206300	216400	3300	68400	77750	5800	1950	1050	200
Chrysene	µg/kg	9400	ND	ND	9000	1880	950	31900	2910	1650	6000
Fluoranthene	µg/kg	17400	1280	50	32100	340	450	66600	160	230	8800
Naphthalene	µg/kg	8460	1880	10270	24460	1770	11480	590	1330	12320	6440
Phenanthrene	µg/kg	186800	6370	14270	245400	2650	1620	188200	3250	3090	27400
Pyrene	µg/kg	19000	10860	14270	19800	1770	1050	18600	4180	3760	6400
Total PAHs[1]	µg/kg	266360	226690	255260	350260	79730	97150	338090	14390	24040	55840
Polychlorinated Biphenyls											
Total PCBs	µg/kg	18660	10400	20050	ND	3140	6780	1880	6130	5180	1980
Pesticides											
Chlordane	µg/kg	8110	2350	1640	5270	2440	1990	160	1990	2640	2330
Sum DDD	µg/kg	ND	130	680	ND	ND	20	ND	ND	ND	ND
Sum DDE	µg/kg	5220	8840	11340	4220	2490	2560	2780	3160	3150	5160
Sum DDT	µg/kg	1450	1330	1870	990	150	80	20	620	60	20
Total DDTs[2]	µg/kg	6670	10300	13890	5210	2640	2660	2800	3780	3210	5180
Dieldrin	µg/kg	7410	4250	3180	10880	ND	ND	ND	590	340	1810
Heptachlor	µg/kg	7270	4610	10520	3290	150	1270	90	1720	1020	40
Lindane	µg/kg	380	1760	1290	4160	1230	1540	ND	770	80	50
Toxaphene	µg/kg	2850	6350	11270	5220	4480	4610	4440	3850	4160	4980
Mean-PEC-Q		**19.6**	**12.7**	**20.4**	**15.4**	**4.07**	**7.15**	**8.80**	**4.85**	**4.36**	**2.69**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.13. Sediment chemistry data for the West Branch Grand Calumet River, IN (November 1989; HNTB 1989).

Substance	Units	Station Number									
		UG10-A	UG10-B	UG10-C	UH9.3	UH9.4	UH9.2	UG9-A	UG9-B	UG9-C	UH9.1
Depth	feet	0-3	3-6	6-9	0-9	0-9	0-9	0-3	3-6	6-9	0-9
Conventionals											
Phenol	µg/kg	6180	470	20	60	<10	70	2020	380	20	410
Metals											
Cadmium	mg/kg	7	<2	3	<3	5	7	48	15	3	18
Chromium	mg/kg	195	199	165	153	191	184	592	360	196	362
Copper	mg/kg	280	36	11	110	180	304	549	235	39	182
Lead	mg/kg	552	79	<13	173	493	780	2450	1780	99	1160
Nickel	mg/kg	70	33	<14	<26	63	111	428	41	78	94
Zinc	mg/kg	4740	382	53	453	1180	1330	5500	3690	145	4140
Polycyclic Aromatic Hydrocarbons											
Benzo(a)pyrene	µg/kg	110000	197000	201000	119000	45600	114000	206000	216000	167000	77300
Fluoranthene	µg/kg	15300	28300	33100	12100	1620	12600	1280	50	<10	3920
Naphthalene	µg/kg	4610	9660	8460	150	8230	1260	1880	10300	24500	4670
Phenanthrene	µg/kg	9870	9380	15300	2160	1580	13100	6370	14300	4170	4880
Pyrene	µg/kg	6280	12100	14900	5630	4810	1840	10900	14300	12000	5270
Total PAHs[1]	µg/kg	146060	256440	272760	139040	61840	142800	226430	254950	207675	96040
Polychlorinated Biphenyls											
Total PCBs	µg/kg	13700	9040	18700	9210	4280	8470	10400	20100	<20	12800
Pesticides											
Chlordane	µg/kg	1370	5760	8110	4210	4660	1980	2350	1640	5270	2060
Dieldrin	µg/kg	2830	6920	7410	5070	2880	5290	4250	3180	10900	8650
Sum DDD	µg/kg	<10	560	<10	460	40	1250	130	6800	<10	70
Sum DDE	µg/kg	6800	14700	5220	9180	12300	9030	8840	11300	4220	4760

Appendix 2.13. Sediment chemistry data for the West Branch Grand Calumet River, IN (November 1989; HNTB 1989).

Substance	Units	Station Number									
		UG10-A	**UG10-B**	**UG10-C**	**UH9.3**	**UH9.4**	**UH9.2**	**UG9-A**	**UG9-B**	**UG9-C**	**UH9.1**
Pesticides (cont.)											
Sum DDT	µg/kg	2610	3380	1480	4320	4670	6180	1330	1870	990	8130
Total DDTs[2]	µg/kg	9415	18640	6705	13960	17010	16460	10300	19970	5215	12960
Heptachlor	µg/kg	160	1220	7270	930	40	350	4610	10520	3290	3940
Lindane	µg/kg	50	80	380	3220	2430	470	1760	1290	4160	990
Toxaphene	µg/kg	1140	15460	2850	4660	6490	3880	6350	11270	5220	7510
Dioxins											
2,3,7,8-TCDD	µg/kg	0.008	<0.004	0.022	<0.002	<0.004	<0.002	0.0061	<0.003	<0.003	<0.004
Mean-PEC-Q		**10.1**	**8.45**	**13.3**	**6.85**	**3.66**	**7.17**	**11.7**	**15.3**	**3.34**	**9.28**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.14. Sediment chemistry data for the West Branch Grand Calumet River, IL (HNTB 1990).

Substance	Units	Station Number						
		UH11	UH12	UH13	UH14	UH15	UH16	UH17
Depth	feet	0-9	0-9	0-9	0-9	0-9	0-9	0-9
Conventionals								
Phenol	µg/kg	4650	3380	2690	5080	2470	6730	6070
Metals								
Cadmium	mg/kg	19	9	17	8	8	8	8
Copper	mg/kg	125	31	29	97	25	14	129
Lead	mg/kg	271	36	34	173	68	19	670
Nickel	mg/kg	84	81	72	33	71	97	159
Zinc	mg/kg	1124	176	164	473	265	68	1450
Polycyclic Aromatic Hydrocarbons								
Benz(a)anthracene	µg/kg	360	320	1530	1280	320	50	130
Benzo(a)pyrene	µg/kg	33010	27470	10780	15770	22680	12220	28550
Chrysene	µg/kg	1620	1490	1170	3160	2960	4370	1840
Fluoranthene	µg/kg	5960	2370	1810	780	80	90	520
Naphthalene	µg/kg	1320	4620	3790	1860	3270	1860	3820
Phenanthrene	µg/kg	1750	1880	352	2990	2940	1150	620
Pyrene	µg/kg	3230	3450	1660	1640	2410	1840	1260
Total PAHs[1]	µg/kg	47250	41600	21092	27480	34660	21580	36740
Polychlorinated Biphenyls								
Total PCBs	µg/kg	6400	5080	4630	7240	9260	4310	6910
Pesticides								
Chlordane	µg/kg	1850	1150	740	460	520	490	1220
Dieldrin	µg/kg	140	70	150	<10	290	1040	60
Sum DDD	µg/kg	<10	<10	<10	<10	<10	<10	<10

Appendix 2.14. Sediment chemistry data for the West Branch Grand Calumet River, IL (HNTB 1990).

Substance	Units	Station Number						
		UH11	UH12	UH13	UH14	UH15	UH16	UH17
Pesticides (cont.)								
Sum DDE	µg/kg	1630	4920	3380	1850	5640	9230	2160
Sum DDT	µg/kg	320	40	160	120	460	2810	530
Total DDTs[2]	µg/kg	1955	4965	3545	1975	6105	12045	2695
Heptachlor	µg/kg	70	360	190	220	480	490	90
Lindane	µg/kg	70	30	240	1240	2170	4170	720
Toxaphene	µg/kg	1800	2310	2200	1940	920	2150	880
Dioxins								
2,3,7,8-TCDD	µg/kg	0.0018	0.0023	<0.002	<0.004	<0.002	0.0028	0.0032
Mean-PEC-Q		**4.58**	**3.40**	**2.97**	**4.33**	**5.36**	**2.71**	**4.89**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.15. Sediment chemistry data for the West Branch Grand Calumet River, IN (November 1990; HNTB 1991).

Substance	Units	Station Number									
		UG10/1.1	UG10/6.0	UG10/6.7	UH 9.4 all	UH9.4/0.9	UH9.4/5.9	UH9.4/11.2	UH 9.2 all	UH9.2/1.1	UH9.2/5.9
Depth	feet	1-1.1	5.9-6.1	6.6-6.7	0-9	0.8-1	5.7-6	11.1-11.2	0-9	1-1.1	5.7-6
Conventionals											
Total organic carbon	%	10.79	0.77	0.57	NR	25.3	6.62	0.42	NR	24.9	18.9
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Metals											
Cadmium	mg/kg	10.4	<1.5	<1.5	NR	10.4	<1.5	<1.5	NR	12.7	9.1
Chromium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	mg/kg	336	5	4	NR	838	49	<4	NR	1000	335
Lead	mg/kg	990	40	40	NR	1885	70	<30	NR	1440	760
Nickel	mg/kg	40	<20	<20	NR	160	<20	<20	NR	160	30
Zinc	mg/kg	2670	39	21	NR	3140	180	26	NR	2590	3230
Polycyclic Aromatic Hydrocarbons											
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	<20	NR	NR	NR	<20	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NR	NR	<20	NR	NR	NR	<20	NR	NR
Polychlorinated Biphenyls											
Total PCBs	µg/kg	NR	NR	NR	420	NR	NR	NR	350	NR	NR

Appendix 2.15. Sediment chemistry data for the West Branch Grand Calumet River, IN (November 1990; HNTB 1991).

Substance	Units	Station Number									
		UG10/1.1	UG10/6.0	UG10/6.7	UH 9.4 all	UH9.4/0.9	UH9.4/5.9	UH9.4/11.2	UH 9.2 all	UH9.2/1.1	UH9.2/5.9
Pesticides											
Chlordane	µg/kg	NR	NR	NR	<0.4	NR	NR	NR	<0.4	NR	NR
Dieldrin	µg/kg	NR	NR	NR	<0.4	NR	NR	NR	<0.4	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	1.3	NR	NR	NR	7.6	NR	NR
Heptachlor	µg/kg	NR	NR	NR	<0.4	NR	NR	NR	<0.4	NR	NR
Lindane	µg/kg	NR	NR	NR	<0.4	NR	NR	NR	<0.4	NR	NR
Toxaphene	µg/kg	NR	NR	NR	<0.4	NR	NR	NR	<0.4	NR	NR
Dioxins											
2,3,7,8-TCDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**3.74**	**0.157**	**0.148**	**0.311**	**6.51**	**0.325**	**0.109**	**0.259**	**5.89**	**3.53**

Appendix 2.15. Sediment chemistry data for the West Branch Grand Calumet River, IN (November 1990; HNTB 1991).

Substance	Units	Station Number								
		UH9.2/12.0	UG 9 all	UG9/1.1	UG9/5.9	UG9/12.1	UH9.15/0.9	UH9.15/5.5	UH9.15/12.1	UH8.5
Depth	feet	11.9-12.1	0-9	1-1.1	5.7-6	12-12.2	0.8-1	5.4-5.5	12-12.1	0-9
Conventionals										
Total organic carbon	%	8.47	NR	13.61	1.85	0.47	1.09	11.3	9.73	NR
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	990
Metals										
Cadmium	mg/kg	<1.5	NR	80.4	<1.5	<1.5	<1.5	27.4	3.1	<10
Chromium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	59
Copper	mg/kg	29	NR	496	28	<4	147	462	325	105
Lead	mg/kg	40	NR	1550	250	30	250	7020	410	558
Nickel	mg/kg	<20	NR	160	<20	<20	<20	<10	<20	49
Zinc	mg/kg	97	NR	8130	371	17	337	5700	2870	1285
Polycyclic Aromatic Hydrocarbons										
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	2180
Benzo(a)pyrene	µg/kg	NR	<240	NR	NR	NR	NR	NR	NR	16730
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	980
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	1540
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	460
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	990
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	2880
Total PAHs	µg/kg	NR	<240	NR	NR	NR	NR	NR	NR	25760
Polychlorinated Biphenyls										
Total PCBs	µg/kg	NR	<490	NR	NR	NR	NR	NR	NR	1580

Appendix 2.15. Sediment chemistry data for the West Branch Grand Calumet River, IN (November 1990; HNTB 1991).

Substance	Units	Station Number								
		UH9.2/12.0	UG 9 all	UG9/1.1	UG9/5.9	UG9/12.1	UH9.15/0.9	UH9.15/5.5	UH9.15/12.1	UH8.5
Pesticides										
Chlordane	µg/kg	NR	<0.5	NR	NR	NR	NR	NR	NR	1280
Dieldrin	µg/kg	NR	<0.5	NR	NR	NR	NR	NR	NR	240
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	60
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	4360
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	1200
Total DDTs	µg/kg	NR	<1.4	NR	NR	NR	NR	NR	NR	5620
Heptachlor	µg/kg	NR	<0.5	NR	NR	NR	NR	NR	NR	90
Lindane	µg/kg	NR	<0.5	NR	NR	NR	NR	NR	NR	270
Toxaphene	µg/kg	NR	<0.5	NR	NR	NR	NR	NR	NR	4370
Dioxins										
2,3,7,8-TCDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	<0.003
Mean -PEC-Q		**0.215**	**0.184**	**10.5**	**0.661**	**0.128**	**0.806**	**15.2**	**2.49**	**1.78**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR= not reported

Appendix 2.16. Sediment chemistry data for the US Canal and the Indiana Harbor, IN (December 1990; USEPA 1990).

Substance	Units	Station Number													
		S19	**S20**	**S21**	**S22**	**S23**	**S24**	**D24**	**S25**	**S26**	**D26**	**S27**	**S18**	**S28**	**S29**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Metals															
Arsenic	mg/kg	13	28	21	28	37	6.9	6.6	36	20	20	12	33	19	16
Cadmium	mg/kg	<2.1	7.0	5.0	6.9	9.5	<2.3	<2.3	8.6	<2.5	<2.3	<2.4	7.3	<2.1	<2.2
Chromium	mg/kg	230	470	330	430	650	54	57	740	97	110	67	410	100	54
Copper	mg/kg	75	260	220	300	380	58	91	310	200	220	64	240	100	50
Lead	mg/kg	140	580	440	600	790	95	140	670	390	250	110	530	170	74
Nickel	mg/kg	26	80	61	70	100	20	26	76	25	33	32	69	35	39
Selenium	mg/kg	<4.1	<3.9	<4.4	<4.2	<4.4	<4.3	<4.8	<4.3	<4.6	<4.3	<4.0	<4.4	<4.5	<4.1
Zinc	mg/kg	610	2800	1900	2700	3600	480	610	3200	1000	990	370	2500	670	410
Polycyclic Aromatic Hydrocarbons															
Acenaphthene	µg/kg	1200	39000	<44000	2300	6700	<21000	<18000	<50000	<25000	<130000	<20000	8300	3400	<22000
Acenaphthylene	µg/kg	<25000	68000	2100	2300	3300	<21000	<18000	<50000	<25000	<26000	<20000	27000	1300	<22000
Anthracene	µg/kg	4400	180000	3100	1100	4700	1000	<18000	3800	3600	3500	1600	28000	6600	<22000
Benz(a)anthracene	µg/kg	8600	170000	15000	15000	25000	4000	4800	14000	11000	6300	4300	23000	11000	5600
Benzo(a)pyrene	µg/kg	<25000	240000	19000	<41000	<61000	<21000	<18000	26000	4200	9200	6000	33000	<29000	<22000
Chrysene	µg/kg	15000	160000	18000	18000	24000	7900	6600	18000	15000	8600	4800	25000	15000	7100
Dibenz(a,h)anthracene	µg/kg	<25000	52000	<44000	<41000	<61000	<21000	<18000	<50000	<25000	<26000	<20000	<58000	<29000	<22000
Fluoranthene	µg/kg	11000	610000	27000	24000	37000	5500	7400	17000	15000	12000	6500	59000	21000	8600
Fluorene	µg/kg	4000	100000	<44000	3000	5000	<21000	<18000	<50000	2300	1900	<20000	27000	4500	<22000
2-Methylnaphthalene	µg/kg	2300	20000	<44000	<41000	7000	<21000	<18000	4000	1300	1300	<20000	28000	3600	1500
Naphthalene	µg/kg	<25000	78000	4300	9300	8800	<21000	<18000	7800	4800	6700	2700	160000	29000	4600
Phenanthrene	µg/kg	57000	580000	11000	9500	15000	1800	3000	9800	12000	10000	3700	93000	22000	3700
Pyrene	µg/kg	20000	430000	28000	28000	45000	<21000	12000	22000	20000	13000	8000	54000	23000	9700
Total PAHs[1]	µg/kg	123500	2727000	127500	112500	181500	20200	33800	122400	89200	72500	37600	565300	140400	40800
Mean-PEC-Q		**3.15**	**61.3**	**3.86**	**3.91**	**5.95**	**0.694**	**1.06**	**4.49**	**2.59**	**2.17**	**1.11**	**13.7**	**3.50**	**1.17**

Appendix 2.16. Sediment chemistry data for the US Canal and the Indiana Harbor, IN (December 1990; USEPA 1990).

Substance	Units	Station Number													
		S30	**S31**	**S32**	**S14**	**S15**	**S16**	**S17**	**S01**	**S02**	**D02**	**S03**	**S04**	**S05**	**S06**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Metals															
Arsenic	mg/kg	34	26	15	17	25	27	30	7.8	11	13	10	22	23	26
Cadmium	mg/kg	7.5	3.3	<2.3	2.8	4.1	2.7	9.4	<2.4	<2.2	2.8	<2.1	4.0	<1.9	3.0
Chromium	mg/kg	250	180	110	140	150	200	520	27	230	110	130	190	76	150
Copper	mg/kg	190	160	110	100	130	200	300	26	61	83	91	160	63	110
Lead	mg/kg	460	320	190	210	290	260	660	22	66	99	120	330	110	240
Nickel	mg/kg	54	50	32	29	37	61	84	25	11	20	20	43	18	33
Selenium	mg/kg	<4.2	<4.4	<4.5	<3.6	<4.3	<4.5	<4.2	<4.6	<3.9	<4.3	<4.0	<5.1	<3.9	<4.3
Zinc	mg/kg	2700	1500	820	1000	1500	960	3300	87	450	650	620	1800	690	1300
Polycyclic Aromatic Hydrocarbons															
Acenaphthene	µg/kg	2000	<37000	<37000	<17000	<33000	4500	3800	<13000	<17000	<15000	<87000	<13000	<24000	1800
Acenaphthylene	µg/kg	1100	<37000	33000	2100	2000	13000	5500	<13000	1200	<15000	<17000	<13000	2000	<22000
Anthracene	µg/kg	3100	<37000	67000	2800	3400	26000	9500	<13000	<17000	<15000	1600	<13000	2500	2400
Benz(a)anthracene	µg/kg	5800	<37000	74000	7500	9200	39000	24000	<13000	1800	1600	2700	<13000	5400	4500
Benzo(a)pyrene	µg/kg	<27000	<37000	81000	12000	10000	48000	<64000	<13000	3400	<15000	3300	<13000	6000	5000
Chrysene	µg/kg	6700	<37000	64000	9200	11000	38000	29000	<13000	2500	2200	3300	<13000	6900	5400
Dibenz(a,h)anthracene	µg/kg	<27000	<37000	<37000	<17000	<33000	7700	<64000	<13000	<17000	<15000	<17000	<13000	<24000	<22000
Fluoranthene	µg/kg	9400	8400	210000	11000	16000	93000	45000	<13000	3900	2700	4400	1300	9600	7200
Fluorene	µg/kg	2300	<37000	42000	2400	2300	8200	8600	<13000	<17000	<15000	1300	<13000	1300	2700
2-Methylnaphthalene	µg/kg	1400	<37000	12000	2000	<33000	<17000	9600	<13000	720	<15000	100	<13000	<24000	2300
Naphthalene	µg/kg	8500	6000	28000	18000	16000	7100	23000	<13000	2400	1800	3500	<13000	4600	10000
Phenanthrene	µg/kg	7500	<37000	250000	8000	10000	66000	41000	<13000	3300	1800	4500	<13000	6600	8000
Pyrene	µg/kg	12000	9400	170000	12000	16000	72000	43000	<13000	3700	3000	4500	1200	9700	7600
Total PAHs[1]	µg/kg	59800	23800	1031000	87000	95900	422500	242000	NA	22920	13100	29200	2500	54600	56900
Mean-PEC-Q		**2.50**	**1.30**	**23.1**	**2.44**	**2.82**	**9.97**	**6.99**	**0.253**	**0.842**	**0.652**	**0.997**	**0.886**	**1.54**	**1.88**

Appendix 2.16. Sediment chemistry data for the US Canal and the Indiana Harbor, IN (December 1990; USEPA 1990).

Substance	Units	Station Number										
		S07	**S08**	**D08**	**S09**	**S10**	**S11**	**S12**	**S13**	**S33**	**S34**	**S35**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Metals												
Arsenic	mg/kg	26	42	43	14	45	22	18	16	28	44	26
Cadmium	mg/kg	3.5	3.5	<2.3	<2.2	3.5	4.0	<2.0	<2.1	4.7	<2.4	3.8
Chromium	mg/kg	190	160	190	120	220	200	28	150	230	190	180
Copper	mg/kg	160	140	140	60	230	160	15	100	190	320	120
Lead	mg/kg	300	300	260	94	480	300	33	350	360	1200	280
Nickel	mg/kg	40	47	46	21	67	40	7.8	39	48	98	36
Selenium	mg/kg	<3.9	<4.7	<4.3	<4.7	<4.3	<4.1	<4.2	<3.8	<4.6	<4.7	<4.1
Zinc	mg/kg	1600	1000	960	480	1500	1500	160	880	2000	760	1300
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	µg/kg	<27000	50000	NR	<29000	<26000	<24000	1100	<17000	<52000	6300	<27000
Acenaphthylene	µg/kg	4200	100000	NR	<29000	2500	4300	770	<17000	<52000	1400	<27000
Anthracene	µg/kg	5000	190000	NR	3600	3400	5000	1300	<17000	<52000	8700	2300
Benz(a)anthracene	µg/kg	8600	NR	NR	<29000	6600	8700	2500	8200	<52000	14000	5200
Benzo(a)pyrene	µg/kg	13000	300000	NR	<29000	7600	11000	3000	10000	<52000	<28000	<27000
Chrysene	µg/kg	9200	240000	NR	<29000	6000	11000	3000	13000	<52000	16000	8100
Dibenz(a,h)anthracene	µg/kg	<27000	<64000	NR	<29000	<26000	<24000	<14000	2200	<52000	<28000	<27000
Fluoranthene	µg/kg	21000	690000	NR	13000	14000	17000	4300	9100	15000	30000	10000
Fluorene	µg/kg	4900	150000	NR	<29000	2300	4000	1300	<17000	2200	6600	<27000
2-Methylnaphthalene	µg/kg	<27000	<64000	NR	<29000	<26000	1900	1100	<17000	<52000	3500	<27000
Naphthalene	µg/kg	7100	200000	NR	4800	4400	7000	4200	5700	<52000	18000	<27000
Phenanthrene	µg/kg	18000	690000	NR	13000	13000	17000	3800	3800	13000	20000	6200
Pyrene	µg/kg	18000	500000	NR	10000	11000	15000	4600	11000	14000	28000	12000
Total PAHs[1]	µg/kg	109000	3110000	NR	44400	70800	101900	30970	63000	44200	152500	43800
Mean-PEC-Q		**3.17**	**68.9**	**1.32**	**1.28**	**2.55**	**3.00**	**0.812**	**1.97**	**1.92**	**4.66**	**1.66**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated); NR = not reported

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-001/01A	GC-SD-XX-002/02A	GC-SD-XX-003/03A	GC-SD-XX-003/03B	GC-SD-XX-004/04A	GC-SD-XX-004/04B	GC-SD-XX-005/05A	GC-SD-XX-005/05B
Depth	feet	0-7.9	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9
Conventionals									
Benzene	µg/kg	1590	13900	15200	6200	698000	519000	356500	151000
Phenols, total	µg/kg	17900	6100	10100	1540	13800	13900	13360	12800
Phosphorus, total	mg/kg	81.5	<61	1800	1400	1300	1900	312	245
Total organic carbon	%	4.2	2.2	9.4	4.6	9.2	6.5	10.4	5
Metals									
Arsenic	mg/kg	20	8	32	36	26	21	22	10
Cadmium	mg/kg	<0.3	<1	1	1.6	3.25	1.8	1.4	0.9
Chromium	mg/kg	17	9	350	1300	320	1000	210	170
Copper	mg/kg	12	7.5	250	390	120	92	80.5	59
Lead	mg/kg	75	9	260	210	210	100	210	140
Mercury	mg/kg	0.3	0.1	1.1	0.2	0.3	0.2	2.6	1.8
Nickel	mg/kg	4	6.5	190	260	77	92	61.5	41
Selenium	mg/kg	<4	<4	<5	<4	<3	<3	<4	<2
Zinc	mg/kg	62	96	1000	500	490	360	575	200
Total SEM metals*	µmol/g	NR	0.20	NR	NR	1.89	NR	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	11000	4110	59700	510000	3700000	290000	3700000	3900000
Acenaphthylene	µg/kg	<4020	640	<2500	30000	68000	8400	383500	220000
Anthracene	µg/kg	<8040	810	11000	230000	1800000	160000	1650000	1500000
Benz(a)anthracene	µg/kg	15900	2050	25400	260000	870000	99500	975000	930000
Benzo(a)pyrene	µg/kg	17900	2800	27600	240000	700000	82700	785000	760000
Chrysene	µg/kg	17000	2910	33200	300000	960000	120000	515000	500000

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-001/01A	GC-SD-XX-002/02A	GC-SD-XX-003/03A	GC-SD-XX-003/03B	GC-SD-XX-004/04A	GC-SD-XX-004/04B	GC-SD-XX-005/05A	GC-SD-XX-005/05B
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<19300	<1200	10700	44000	140000	15800	77500	64000
Fluoranthene	µg/kg	49900	4800	103000	640000	5800000	440000	3400000	3200000
Fluorene	µg/kg	8060	1200	33700	390000	3000000	240000	2950000	2900000
Naphthalene	µg/kg	57200	25700	16100	760000	7100000	640000	7400000	7100000
Phenanthrene	µg/kg	24300	3120	<250	600000	7500000	470000	4800000	4700000
Pyrene	µg/kg	26400	2940	59700	550000	2200000	220000	2200000	2200000
Total PAHs[1]	µg/kg	227660	51080	380225	4554000	33838000	2786400	28836000	27974000
Polychlorinated Biphenyls									
Total PCBs	µg/kg	10530	1300	6130	244000	191000	50450	122050	99400
Mean-PEC-Q		**8.60**	**1.43**	**9.25**	**188**	**589**	**66.3**	**482**	**458**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-006/06A	GC-SD-XX-006/06B	GC-SD-XX-007/07A	GC-SD-XX-007/07B	GC-SD-XX-008/08A	GC-SD-XX-008/08B	GC-SD-XX-009/09A	GC-SD-XX-009/09B
Depth	feet	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9
Conventionals									
Benzene	µg/kg	207000	139000	278000	106000	27300	181500	286000	134000
Phenols, total	µg/kg	10800	4790	28300	18900	4770	3640	42600	13900
Phosphorus, total	mg/kg	456	68.9	942	226	325.5	214.4	162	68.1
Total organic carbon	%	10	1.2	10.1	12	16.73	5.79	16.7	1.8
Metals									
Arsenic	mg/kg	34	17	47	<4	21.5	35	22	<3
Cadmium	mg/kg	3.5	10	3	1	13.15	1.5	3	3
Chromium	mg/kg	230	9	600	6	375	55	140	<1
Copper	mg/kg	135.75	25	160	5	87	182	93.5	2
Lead	mg/kg	350	90	370	12	440	121.5	430	3
Mercury	mg/kg	4	4.7	6.2	0.2	0.6	1.85	2.7	<0.07
Nickel	mg/kg	66.5	<4	110	<9	62	10	38.5	4
Selenium	mg/kg	<6	<5	<7	<4	<8	<5	<8	<3
Zinc	mg/kg	1320	160	490	11	1130	162	850	7
Total SEM metals*	µmol/g	9.26	NR	NR	NR	NR	NR	10.27	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	6100000	5200000	3600000	200000	635000	5850000	4600000	940000
Acenaphthylene	µg/kg	150000	140000	450000	24000	27650	595000	160000	23200
Anthracene	µg/kg	1000000	940000	8200000	82700	350000	2950000	2400000	160000
Benz(a)anthracene	µg/kg	450000	610000	1400000	37600	119950	1065000	1000000	120000
Benzo(a)pyrene	µg/kg	450000	630000	930000	26300	76650	815000	570000	83700
Chrysene	µg/kg	240000	310000	1400000	40000	123100	1100000	960000	120000

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-006/06A	GC-SD-XX-006/06B	GC-SD-XX-007/07A	GC-SD-XX-007/07B	GC-SD-XX-008/08A	GC-SD-XX-008/08B	GC-SD-XX-009/09A	GC-SD-XX-009/09B
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<300000	<300000	<120000	<8200	14250	105000	92800	<71000
Fluoranthene	µg/kg	2000000	2400000	9000000	240000	735000	4950000	7600000	560000
Fluorene	µg/kg	4000000	3600000	6000000	160000	555000	5250000	3800000	640000
Naphthalene	µg/kg	10000000	30000000	17000000	510000	885000	24500000	12000000	1400000
Phenanthrene	µg/kg	4400000	4300000	15000000	410000	1260000	8400000	12000000	1000000
Pyrene	µg/kg	1500000	1600000	4300000	140000	310000	2650000	2200000	350000
Total PAHs[1]	µg/kg	30290000	49730000	67280000	1870600	5091600	58230000	47382800	5396900
Polychlorinated Biphenyls									
Total PCBs	µg/kg	94200	76300	5450	28600	24500	174300	23600	<7000
Mean-PEC-Q		**490**	**765**	**987**	**41.5**	**87.2**	**937**	**705**	**118**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-010/10A	GC-SD-XX-010/10B	GC-SD-XX-011/11A	GC-SD-XX-012/12A	GC-SD-XX-013/13A	GC-SD-XX-014/14A	GC-SD-XX-015/15A	GC-SD-XX-057/57B
Depth	feet	0-7.9	8-12.9	0-7.9	0-7.9	0-7.9	0-7.9	0-7.9	8-12.9
Conventionals									
Benzene	µg/kg	231000	97000	<4000	<800	487	<10	<3000	<300
Phenols, total	µg/kg	3770	1930	2750	<1290	<1190	2980	4400	NR
Phosphorus, total	mg/kg	262	2210	291	107	57.4	380	460	NR
Total organic carbon	%	8.2	1.3	2.3	1.6	1.2	2.37	2.7	1
Metals									
Arsenic	mg/kg	70	<3	31	29	30	26	11	21
Cadmium	mg/kg	2	0.4	1.75	0.3	0.7	2.5	1.75	1
Chromium	mg/kg	150	6	250	16	46	57	17	14
Copper	mg/kg	66	38	39	33	30.5	243.5	77	10
Lead	mg/kg	250	180	170	87	130	740	380	26
Mercury	mg/kg	3	0.5	<0.1	0.1	0.2	0.115	0.5	<0.2
Nickel	mg/kg	33	<4	8	6	2.5	73	25.25	9
Selenium	mg/kg	<6	<3	<4	<3	10	<3	<2	NR
Zinc	mg/kg	650	110	680	320	700	1750	2900	180
Total SEM metals*	µmol/g	NR	NR	0.33	NR	11.88	NR	19.61	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	4930000	1910000	1840000	101000	398000	5540	60600	16800
Acenaphthylene	µg/kg	89400	29100	214000	43200	95300	317.5	21500	2050
Anthracene	µg/kg	3050000	891000	1300000	83400	320000	1260	25000	10800
Benz(a)anthracene	µg/kg	949000	249000	593000	43300	157000	2750	27100	10800
Benzo(a)pyrene	µg/kg	526000	163000	384000	28300	86000	1850	18500	<5550
Chrysene	µg/kg	899000	252000	586000	40300	150000	1387.5	13800	19200

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-010/10A	GC-SD-XX-010/10B	GC-SD-XX-011/11A	GC-SD-XX-012/12A	GC-SD-XX-013/13A	GC-SD-XX-014/14A	GC-SD-XX-015/15A	GC-SD-XX-057/57B
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<105000	<61000	<87000	<17800	<17800	<1200	3300	<6660
Fluoranthene	µg/kg	7530000	1700000	3720000	331000	742000	15550	100000	36700
Fluorene	µg/kg	4220000	1600000	1600000	101000	426000	3775	68200	15600
Naphthalene	µg/kg	7930000	2920000	1550000	65200	53500	5750	39100	2650
Phenanthrene	µg/kg	11800000	3120000	5020000	416000	943000	3860	140000	40000
Pyrene	µg/kg	2600000	646000	1480000	103000	394000	15400	96300	27200
Total PAHs[1]	µg/kg	44523400	13480100	18287000	1355700	3764800	57440	613400	181800
Polychlorinated Biphenyls									
Total PCBs	µg/kg	345000	NR	22100	NR	16600	2150	<700	NR
Mean-PEC-Q		**821**	**296**	**279**	**29.9**	**63.4**	**2.59**	**14.2**	**4.12**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-061/61B	GC-SD-XX-062/62B	GC-SD-XX-016/16A	GC-SD-XX-016/16B	GC-SD-XX-017/17A	GC-SD-XX-017/17B	GC-SD-XX-018/18A	GC-SD-XX-018/18B
Depth	feet	8-12.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9
Conventionals									
Benzene	µg/kg	34	43.5	552	<300	<6000	<6000	<3000	<300
Phenols, total	µg/kg	NR	NR	4150	4800	1210	2200	4375	1900
Phosphorus, total	mg/kg	NR	NR	660	510	560	610	595	360
Total organic carbon	%	0.95	11.45	3.6	1.6	3.4	5.1	4.95	2.1
Metals									
Arsenic	mg/kg	10	39	14	21	28	30	20	11
Cadmium	mg/kg	11	11.5	0.7	1.6	2	2	3.5	<0.1
Chromium	mg/kg	20	670	62	10	50	27	44.5	19
Copper	mg/kg	340	200	55	42	62.5	62	86	5
Lead	mg/kg	510	1300	790	260	760	660	1020	9
Mercury	mg/kg	1	1.2	0.7	0.3	0.2	0.7	0.295	0.1
Nickel	mg/kg	35	68.5	17	5	13	14	25.5	4
Selenium	mg/kg	NR	NR	<2	<2	<3	<3	<3	<3
Zinc	mg/kg	1500	6150	3400	630	1485	1800	2950	19
Total SEM metals*	µmol/g	NR	NR	NR	NR	13.69	NR	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	5550	26675	35800	300000	1700000	960000	204300	52000
Acenaphthylene	µg/kg	<2040	2752.5	6200	68100	500000	240000	59250	3700
Anthracene	µg/kg	3410	12995	12500	91000	3300000	730000	119150	14000
Benz(a)anthracene	µg/kg	<6110	46485	12000	71100	480000	240000	109800	24800
Benzo(a)pyrene	µg/kg	<8150	34675	7200	53000	310000	170000	75000	18000
Chrysene	µg/kg	7650	68900	6800	39300	250000	120000	56600	12200

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-061/61B	GC-SD-XX-062/62B	GC-SD-XX-016/16A	GC-SD-XX-016/16B	GC-SD-XX-017/17A	GC-SD-XX-017/17B	GC-SD-XX-018/18A	GC-SD-XX-018/18B
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<9780	6685	<1200	<12000	73000	30000	4900	3700
Fluoranthene	µg/kg	12000	89650	51100	280000	4100000	940000	420000	55200
Fluorene	µg/kg	<4080	6520	31500	260000	1800000	970000	240100	51800
Naphthalene	µg/kg	2770	2180	23800	280000	1800000	850000	136050	8100
Phenanthrene	µg/kg	10600	10835	47800	450000	7500000	1600000	540000	15400
Pyrene	µg/kg	11300	90650	54900	290000	1700000	870000	414200	77000
Total PAHs[1]	µg/kg	53280	399002.5	289600	2182500	23513000	7720000	2379350	335900
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	4255	1590	8200	62250	4450	7880	10270
Mean-PEC-Q		**2.09**	**9.64**	**5.75**	**36.2**	**375**	**116**	**39.5**	**10.0**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-019/19A	GC-SD-XX-019/19B	GC-SD-XX-020/20A	GC-SD-XX-021/21A	GC-SD-XX-022/22A	GC-SD-XX-023/23A	GC-SD-XX-023/23B	GC-SD-XX-024/24A
Depth	feet	0-7.9	8-12.9	0-7.9	0-7.9	0-7.9	0-7.9	8-12.9	0-7.9
Conventionals									
Benzene	µg/kg	<300	258	343	<10	1040	<40	53	<600
Phenols, total	µg/kg	3700	4500	2760	3120	1620	14100	4150	1920
Phosphorus, total	mg/kg	530	750	351	251	173	197	37.2	213
Total organic carbon	%	2.1	2.8	2.8	2.5	11	3.3	1.2	4.4
Metals									
Arsenic	mg/kg	20	18	15	14	19	3	4	8
Cadmium	mg/kg	2	3	5	2	0.9	2	0.4	2
Chromium	mg/kg	13	20	56	29	66	66	5	35
Copper	mg/kg	1119.5	89	90	98	165	130	17.5	100
Lead	mg/kg	390	350	1100	495	380	760	57	600
Mercury	mg/kg	0.7	0.6	0.3	0.4	0.3	0.5	0.2	1
Nickel	mg/kg	55.75	27	26	12	48.5	38	<2	23
Selenium	mg/kg	<3	<2	<1	<1	<2	<1	<2	<1
Zinc	mg/kg	930	550	3600	940	765	1800	100	1400
Total SEM metals*	µmol/g	68.85	NR	NR	NR	1.58	NR	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	31700	60800	16800	1800	87600	280000	52200	59700
Acenaphthylene	µg/kg	4100	3300	1200	<250	3400	15600	4000	3000
Anthracene	µg/kg	23900	13900	10000	330	53300	35400	12200	13700
Benz(a)anthracene	µg/kg	28800	7900	12800	1400	70300	16000	8500	5800
Benzo(a)pyrene	µg/kg	24100	6300	10100	1200	59000	12500	7200	5000
Chrysene	µg/kg	14000	5000	6700	820	34900	8900	4700	3400

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-019/19A	GC-SD-XX-019/19B	GC-SD-XX-020/20A	GC-SD-XX-021/21A	GC-SD-XX-022/22A	GC-SD-XX-023/23A	GC-SD-XX-023/23B	GC-SD-XX-024/24A
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	3200	2000	2200	<1200	9900	<1200	1200	<1200
Fluoranthene	µg/kg	64200	14400	33500	3900	200000	73800	25800	18600
Fluorene	µg/kg	34600	37100	19500	<500	52700	210000	45900	54600
Naphthalene	µg/kg	17100	24000	36700	1900	24900	140000	30900	25600
Phenanthrene	µg/kg	79400	42700	33900	1200	150000	200000	47100	50400
Pyrene	µg/kg	78800	20500	43200	5800	200000	41300	25100	18000
Total PAHs[1]	µg/kg	403900	237900	226600	18600	946000	1033500	264800	257800
Polychlorinated Biphenyls									
Total PCBs	µg/kg	25510	<700	4450	3990	3250	1790	4780	860
Mean-PEC-Q		**19.2**	**5.68**	**6.44**	**2.62**	**15.8**	**16.6**	**6.28**	**4.66**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-024/24B	GC-SD-XX-025/25A	GC-SD-XX-025/25B	GC-SD-XX-025/25C	GC-SD-XX-026/26A	GC-SD-XX-026/26B	GC-SD-XX-026/26C	GC-SD-XX-027/27A
Depth	feet	8-12.9	0-7.9	8-12.9	>13	0-7.9	8-12.9	>13	0-7.9
Conventionals									
Benzene	µg/kg	<20	<1000	<4000	11	<20	21	61	<1000
Phenols, total	µg/kg	1460	9820	1850	2300	457	4710	1620	24100
Phosphorus, total	mg/kg	218	294	196	225	220	295	641	464
Total organic carbon	%	3	3.5	1.6	3.7	1.6	1.6	4.7	3.8
Metals									
Arsenic	mg/kg	16	14	14	18	28.5	27	57	62
Cadmium	mg/kg	1	2	4	4	2.5	3	11	4
Chromium	mg/kg	24	71	120	22	16	100	16	150
Copper	mg/kg	76	78.5	140	220	74.5	120	170	150
Lead	mg/kg	320	530	980	650	230	740	840	1100
Mercury	mg/kg	0.7	0.4	0.4	0.6	0.4	0.3	1.9	0.7
Nickel	mg/kg	22	22	42	9	21.5	36	<7	47
Selenium	mg/kg	<2	<2	<2	<2	<5	<5	<7	15
Zinc	mg/kg	530	2650	11000	1300	1185	2800	1600	5200
Total SEM metals*	µmol/g	NR	NR	NR	NR	12.71	NR	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	6400	760000	16300	3300	14700	5800	2000	37600
Acenaphthylene	µg/kg	840	67000	1200	530	560	940	2700	<3200
Anthracene	µg/kg	3700	170000	5900	2400	3800	2700	8000	10900
Benz(a)anthracene	µg/kg	4300	170000	7100	4200	3700	2200	13100	12200
Benzo(a)pyrene	µg/kg	3300	140000	6200	3600	3100	1500	10800	<13000
Chrysene	µg/kg	2700	88900	83800	2500	2100	1700	7300	<9800

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-024/24B	GC-SD-XX-025/25A	GC-SD-XX-025/25B	GC-SD-XX-025/25C	GC-SD-XX-026/26A	GC-SD-XX-026/26B	GC-SD-XX-026/26C	GC-SD-XX-027/27A
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<1200	13000	<1200	<1200	<1200	<1200	<2300	<16000
Fluoranthene	µg/kg	13100	610000	23800	10200	12700	9100	34300	44900
Fluorene	µg/kg	6100	610000	13100	3600	12400	5400	6100	<6500
Naphthalene	µg/kg	12500	280000	9600	6700	14100	11000	24400	31000
Phenanthrene	µg/kg	14600	870000	24200	9400	15400	13900	26600	54700
Pyrene	µg/kg	11900	400000	20200	12700	10900	7200	35100	31400
Total PAHs[1]	µg/kg	79440	4178900	211400	59130	93460	61440	170400	222700
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	14500	<700	<7000	1800	<700	<700	9430
Mean-PEC-Q		**2.14**	**68.8**	**7.19**	**2.09**	**2.58**	**2.47**	**4.83**	**9.14**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-027/27B	GC-SD-XX-028/28A	GC-SD-XX-029/29A	GC-SD-XX-029/29B	GC-SD-XX-030/30A	GC-SD-XX-031/31A	GC-SD-XX-031/31B	GC-SD-XX-032/32A
Depth	feet	8-12.9	0-7.9	0-7.9	8-12.9	0-7.9	0-7.9	8-12.9	0-7.9
Conventionals									
Benzene	µg/kg	<40	35	35.5	<40	21	17.5	<20	353
Phenols, total	µg/kg	2990	6720	5415	5385	2350	3510	2570	6270
Phosphorus, total	mg/kg	176	392	326.5	428	205	289	314	568
Total organic carbon	%	3.3	4.1	6.45	4.85	2.23	2.395	2.63	5.02
Metals									
Arsenic	mg/kg	39	27	32	33	14	60.5	40	28
Cadmium	mg/kg	2	5	7	11	2	3.55	9.5	6
Chromium	mg/kg	15	20	180	74	<2	92.5	52	160
Copper	mg/kg	72	140	148.5	145	84	110	98.5	160
Lead	mg/kg	290	1800	1400	1030	760	905	605	2000
Mercury	mg/kg	1.1	0.2	0.55	1.55	0.5	0.25	0.6	1.2
Nickel	mg/kg	15	30	43	8.25	22	26.5	16.5	47
Selenium	mg/kg	<6	<6	<6	<6	<3	<6	<5	<6
Zinc	mg/kg	560	9300	11250	2850	5100	4650	2600	9500
Total SEM metals*	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	23300	92900	49500	23700	370000	39050	4820	42600
Acenaphthylene	µg/kg	<4000	4500	3565	6750	14100	1780	700	4700
Anthracene	µg/kg	8000	30500	39300	25500	71200	39750	5580	49600
Benz(a)anthracene	µg/kg	22900	31500	26100	14300	80900	28200	4870	43000
Benzo(a)pyrene	µg/kg	24600	23300	16700	7250	54100	15745	3170	29700
Chrysene	µg/kg	12400	30500	25150	16950	85800	26250	5850	41300

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-027/27B	GC-SD-XX-028/28A	GC-SD-XX-029/29A	GC-SD-XX-029/29B	GC-SD-XX-030/30A	GC-SD-XX-031/31A	GC-SD-XX-031/31B	GC-SD-XX-032/32A
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<19000	3600	1900	<2600	<19000	1600	<2000	4400
Fluoranthene	µg/kg	78300	130000	122850	52750	420000	142200	24800	160000
Fluorene	µg/kg	16800	87700	45000	29650	280000	34650	4700	37400
Naphthalene	µg/kg	12300	25100	11850	15800	98700	11060	8370	14300
Phenanthrene	µg/kg	30300	140000	146750	88300	62200	117650	21600	140000
Pyrene	µg/kg	51700	81200	63800	39650	150000	66000	10900	89800
Total PAHs[1]	µg/kg	280600	680800	552465	320600	1687000	523935	95360	656800
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	NR	3370	580	NR	<7000	<7000	6890
Mean-PEC-Q		**6.58**	**17.6**	**13.0**	**5.89**	**38.3**	**13.1**	**3.16**	**15.0**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-032/32B	GC-SD-XX-032/32C	GC-SD-XX-033/33A	GC-SD-XX-033/33B	GC-SD-XX-033/33C	GC-SD-XX-034/34A	GC-SD-XX-034/34B	GC-SD-XX-034/34C
Depth	feet	8-12.9	>13	0-7.9	8-12.9	>13	0-7.9	8-12.9	>13
Conventionals									
Benzene	µg/kg	75	17	380	988	<8000	57	<8000	383
Phenols, total	µg/kg	5250	3730	32900	62400	3850	33600	17100	18300
Phosphorus, total	mg/kg	209	131	306	223	576	516	339	300
Total organic carbon	%	2.56	1.55	6.2	4.6	2.8	6.4	4.8	2.9
Metals									
Arsenic	mg/kg	18	18	31	23	25	56	64	34
Cadmium	mg/kg	<0.7	4	4	6	3.5	5	66	30
Chromium	mg/kg	13	15	140	140	38	170	38	41
Copper	mg/kg	26	70	147.5	160	76	150	130	170
Lead	mg/kg	110	350	1500	2200	350	1200	660	910
Mercury	mg/kg	1.1	1.3	0.9	0.5	0.1	0.6	1	2
Nickel	mg/kg	16	<4	57	35	18	41	<5	13
Selenium	mg/kg	<8	<4	<7	<6	<5	22	<8	<7
Zinc	mg/kg	510	570	4450	15000	870	740	8500	6100
Total SEM metals*	µmol/g	NR	NR	29.10	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	11200	3200	124000	69700	342000	392000	30600	11600
Acenaphthylene	µg/kg	1200	810	10200	4740	4990	24400	3890	3070
Anthracene	µg/kg	10900	6400	59400	50500	121000	120000	32700	16100
Benz(a)anthracene	µg/kg	4900	5500	68700	25600	88000	139000	29100	11200
Benzo(a)pyrene	µg/kg	2600	3400	53700	11600	40300	128000	19100	5570
Chrysene	µg/kg	6600	6900	70800	25300	83200	136000	29000	12100

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-032/32B	GC-SD-XX-032/32C	GC-SD-XX-033/33A	GC-SD-XX-033/33B	GC-SD-XX-033/33C	GC-SD-XX-034/34A	GC-SD-XX-034/34B	GC-SD-XX-034/34C
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<2100	<1800	<26300	<2400	<19500	<28100	2480	<2310
Fluoranthene	µg/kg	25400	24000	234000	149000	528000	407000	104000	58500
Fluorene	µg/kg	10000	4200	104000	62600	292000	171000	28100	13900
Naphthalene	µg/kg	13900	9800	25000	18900	439000	173000	8190	18000
Phenanthrene	µg/kg	38900	23000	229000	198000	767000	340000	96500	66700
Pyrene	µg/kg	12200	9500	148000	75700	247000	279000	71800	25800
Total PAHs[1]	µg/kg	137800	96710	1126800	691640	2952490	2309400	455460	242540
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	<7000	14300	NR	NR	NR	NR	NR
Mean-PEC-Q		**3.25**	**2.55**	**24.8**	**19.1**	**65.3**	**51.9**	**12.9**	**7.41**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-035/35A	GC-SD-XX-035/35B	GC-SD-XX-035/35C	GC-SD-XX-036/36A	GC-SD-XX-037/37A	GC-SD-XX-037/37B	GC-SD-XX-038/38A	GC-SD-XX-038/38B
Depth	feet	0-7.9	8-12.9	>13	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9
Conventionals									
Benzene	µg/kg	2070	411	1120	27	<250	<10	<600	<20
Phenols, total	µg/kg	3560	2727.5	5050	4540	NR	NR	NR	NR
Phosphorus, total	mg/kg	343	297	405	494	NR	NR	NR	NR
Total organic carbon	%	5.4	4.6	3.3	2.1	1.3	2.2	2.23	1.5
Metals									
Arsenic	mg/kg	26	31.5	52	4	24	33	28	12
Cadmium	mg/kg	6	7	20	6	6	3	1.6	3
Chromium	mg/kg	96	76.5	29	220	71	240	73	22
Copper	mg/kg	155	130	200	160	75	94	68	37
Lead	mg/kg	1200	830	790	490	270	230	224	110
Mercury	mg/kg	1	0.85	1.5	0.6	0.4	0.5	0.3	0.6
Nickel	mg/kg	30.5	37.5	<7	120	1400	48	47	11
Selenium	mg/kg	<7	<7	<8	<1	NR	NR	NR	NR
Zinc	mg/kg	5600	2450	4100	1100	1200	490	500	270
Total SEM metals*	µmol/g	30.28	NR	NR	NR	NR	NR	2.09	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	75000	17950	5440	1860	19000	57400	19653	2600
Acenaphthylene	µg/kg	4080	6480	3730	490	<1840	<2750	<2110	<1390
Anthracene	µg/kg	249000	22100	13500	2260	2990	11700	5128	<1390
Benz(a)anthracene	µg/kg	32600	9405	13300	3320	<5510	<8250	4984	<4160
Benzo(a)pyrene	µg/kg	12500	4105	8780	2070	<7350	<11000	4949	<5550
Chrysene	µg/kg	31900	10990	15600	4060	<5510	<8250	5134	<4160

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-035/35A	GC-SD-XX-035/35B	GC-SD-XX-035/35C	GC-SD-XX-036/36A	GC-SD-XX-037/37A	GC-SD-XX-037/37B	GC-SD-XX-038/38A	GC-SD-XX-038/38B
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<2470	<2320	<2670	<1830	<8820	<13200	<10100	<6660
Fluoranthene	µg/kg	146000	37350	46700	6110	5530	18800	15755	5910
Fluorene	µg/kg	68400	17150	9350	3020	16200	54800	15845	<2780
Naphthalene	µg/kg	19800	15950	16200	4200	<1840	<2750	4853	2090
Phenanthrene	µg/kg	123000	72050	46900	7040	12200	49700	21830	<1390
Pyrene	µg/kg	83600	25350	28200	10400	4500	15600	13505	6380
Total PAHs[1]	µg/kg	845880	238880	207700	44830	60420	208000	111633.9	16980
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	5935	<700	NR	1700	<700	637.5	<700
Mean-PEC-Q		**20.4**	**7.21**	**6.15**	**1.92**	**3.46**	**5.15**	**2.24**	**0.593**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-039/39A	GC-SD-XX-040/40A	GC-SD-XX-040/40B	GC-SD-XX-041/41A	GC-SD-XX-041/41B	GC-SD-XX-042/42A	GC-SD-XX-042/42B	GC-SD-XX-057/57A
Depth	feet	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9
Conventionals									
Benzene	µg/kg	<20	893	2415	<20	<20	<600	<200	423
Phenols, total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phosphorus, total	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total organic carbon	%	3.1	3.1	7	4	3	5.15	2.7	0.9
Metals									
Arsenic	mg/kg	20	31	40	27	16	31	15	43
Cadmium	mg/kg	8.75	6.5	10	10	11	6.25	5	2.7
Chromium	mg/kg	32	720	570	140	190	120	18	78
Copper	mg/kg	107.75	91	150	140	180	116.5	50	86
Lead	mg/kg	120	1300	780	400	380	390	150	280
Mercury	mg/kg	<0.2	0.1	0.8	0.45	0.7	0.75	0.3	0.6
Nickel	mg/kg	24.5	37	100	56	23	54.75	5	12.5
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	1352.5	8330	2700	1600	1600	1225	600	641
Total SEM metals*	µmol/g	21.22	7.10	NR	NR	NR	7.14	NR	1.04
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<4550	78800	55500	8760	<1740	14250	4770	35100
Acenaphthylene	µg/kg	<4550	5490	9580	<2060	<1740	<2500	<1690	9840
Anthracene	µg/kg	<4550	25800	23600	2770	<1740	5350	1840	32300
Benz(a)anthracene	µg/kg	<13600	21200	22600	<6190	<5210	7185	<5060	30800
Benzo(a)pyrene	µg/kg	<18200	15100	14200	<8250	<6950	<10000	<6750	26300
Chrysene	µg/kg	<13600	22000	23600	<6190	<5210	8720	<5060	36100

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-039/39A	GC-SD-XX-040/40A	GC-SD-XX-040/40B	GC-SD-XX-041/41A	GC-SD-XX-041/41B	GC-SD-XX-042/42A	GC-SD-XX-042/42B	GC-SD-XX-057/57A
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<21800	<13000	<10500	<9900	<8340	<12000	<8100	<11500
Fluoranthene	µg/kg	<9100	72100	88500	11500	<3480	22600	7840	124000
Fluorene	µg/kg	<9100	64000	52100	7100	<3480	11750	3470	20800
Naphthalene	µg/kg	<4550	12800	40000	3590	<1740	6190	3040	106000
Phenanthrene	µg/kg	7290	128000	139000	12800	<1740	25450	8370	76800
Pyrene	µg/kg	<9100	77600	74800	8650	<3480	16750	<3380	97500
Total PAHs[1]	µg/kg	7290	522890	543480	55170	NA	118245	29330	595540
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	49500	NR	NR	2820	1190	<700	2850
Mean-PEC-Q		**0.714**	**33.9**	**13.6**	**2.12**	**2.98**	**2.83**	**0.967**	**10.4**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-058/58A	GC-SD-XX-059/59A	GC-SD-XX-060/60A	GC-SD-XX-061/61A	GC-SD-XX-062/62A	GC-SD-XX-043/43A	GC-SD-XX-043/43B	GC-SD-XX-044/44A
Depth	feet	0-7.9	0-7.9	0-7.9	0-7.9	0-7.9	0-7.9	8-12.9	0-7.9
Conventionals									
Benzene	µg/kg	<40	<20	72	2710	178	157	22	113.25
Phenols, total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phosphorus, total	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total organic carbon	%	1.6	1.4	1.07	3.9	13	5.4	4.85	2.6
Metals									
Arsenic	mg/kg	110	7	32.5	190	300	36	26	29
Cadmium	mg/kg	16	2.75	9	40.5	32	4	10.5	6.25
Chromium	mg/kg	29	8	22.5	33	78	250	20.75	130
Copper	mg/kg	140	42	170	450	260	140	94	165.75
Lead	mg/kg	980	62	695	2800	1600	470	435	735
Mercury	mg/kg	2.45	0.9	1.15	4.4	2.7	0.8	0.775	1.575
Nickel	mg/kg	9	16.5	13.5	109.5	25	82	19	50.25
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	3300	395	1700	4200	4000	1500	2152.5	2327.5
Total SEM metals*	µmol/g	NR	5.47	NR	10.35	NR	NR	NR	9.10
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	7730	7740	2835	20600	8760	6050	<1590	3547.5
Acenaphthylene	µg/kg	<1650	<3290	<2690	11800	2320	<1950	<1590	<1750
Anthracene	µg/kg	4830	<3290	4070	18700	5580	3770	<1590	4715
Benz(a)anthracene	µg/kg	18900	14900	6360	15200	31400	<5850	<4760	8315
Benzo(a)pyrene	µg/kg	12900	<13200	<10800	<11900	21600	<7800	<6350	6295
Chrysene	µg/kg	39300	16700	10435	20200	47800	6310	<4760	10462.5

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-058/58A	GC-SD-XX-059/59A	GC-SD-XX-060/60A	GC-SD-XX-061/61A	GC-SD-XX-062/62A	GC-SD-XX-043/43A	GC-SD-XX-043/43B	GC-SD-XX-044/44A
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<7920	<15800	<12900	<14300	<10100	<9360	<7620	<8400
Fluoranthene	µg/kg	30800	46300	16200	46200	67400	17200	5275	21425
Fluorene	µg/kg	4480	<6580	<5380	24000	<4220	5940	<3180	5977.5
Naphthalene	µg/kg	<1650	5270	5235	107000	8280	15400	1325	9550
Phenanthrene	µg/kg	14400	3380	19550	80600	9320	14800	3930	19825
Pyrene	µg/kg	36100	40500	19550	44800	75300	12800	4825	19250
Total PAHs[1]	µg/kg	169440	134790	84235	389100	277760	82270	15355	109363
Polychlorinated Biphenyls									
Total PCBs	µg/kg	10700	<700	<700	<700	<700	<700	<700	<700
Mean-PEC-Q		**8.84**	**3.16**	**2.81**	**12.1**	**8.93**	**2.78**	**1.21**	**3.56**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-044/44B	GC-SD-XX-045/45A	GC-SD-XX-045/45B	GC-SD-XX-048/48A	GC-SD-XX-048/48B	GC-SD-XX-049/49A	GC-SD-XX-049/49B	GC-SD-XX-049/49C
Depth	feet	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	>13
Conventionals									
Benzene	µg/kg	30.5	<6000	<10	<20	<10	<20	<10	<10
Phenols, total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phosphorus, total	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total organic carbon	%	4.15	4.2	2.1	2.2	7.2	5.8	7.4	6.7
Metals									
Arsenic	mg/kg	36.5	29	14	650	360	160	4900	61
Cadmium	mg/kg	19.5	13	0.3	30.25	17	9	40	4
Chromium	mg/kg	31.5	850	<8	52	19	500	42	7
Copper	mg/kg	225	250	8	927.5	370	137	3400	42
Lead	mg/kg	665	820	53	2700	890	1000	34000	94
Mercury	mg/kg	2.05	0.3	0.5	7	5.3	2.2	10	1.1
Nickel	mg/kg	23.5	110	20	22.75	26	44	8	2700
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	3800	1700	90	5075	1600	1135	4100	240
Total SEM metals*	µmol/g	NR	NR	NR	61.78	NR	9.96	NR	NR
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	3755	95700	<1550	<3790	<3790	3590	<3290	<4300
Acenaphthylene	µg/kg	<2010	5670	<1550	<3790	<3790	<2580	<3290	<4300
Anthracene	µg/kg	4815	121000	<1550	<3790	<3790	<2580	<3290	<4300
Benz(a)anthracene	µg/kg	7520	102000	<4650	<11400	<11400	24500	<9860	<12900
Benzo(a)pyrene	µg/kg	7325	78900	<6200	<15200	<15200	<10300	<13200	<17200
Chrysene	µg/kg	8320	95400	<4650	<11400	<11400	55400	<9860	<12900

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-044/44B	GC-SD-XX-045/45A	GC-SD-XX-045/45B	GC-SD-XX-048/48A	GC-SD-XX-048/48B	GC-SD-XX-049/49A	GC-SD-XX-049/49B	GC-SD-XX-049/49C
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<9660	<6960	<7440	<18200	<18200	<12400	<15800	<20600
Fluoranthene	µg/kg	25365	255000	<3100	<7580	<7580	31800	16100	<8600
Fluorene	µg/kg	5177.5	110000	<3100	<7580	<7580	<5150	<6580	<8600
Naphthalene	µg/kg	21470	50100	<1550	<3790	<3790	<2580	<3290	<4300
Phenanthrene	µg/kg	21305	305000	3200	<3790	<3790	8520	7430	<4300
Pyrene	µg/kg	18605	240000	<1550	10500	<7580	76000	11900	<8600
Total PAHs[1]	µg/kg	123657.5	1458770	3200	10500	NA	199810	35430	NA
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	2080	<700	<700	<700	<700	<700	<700
Mean-PEC-Q		**4.20**	**23.6**	**0.184**	**4.88**	**3.99**	**6.04**	**33.2**	**8.54**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-050/50A	GC-SD-XX-050/50B	GC-SD-XX-052/52A	GC-SD-XX-052/52B	GC-SD-XX-054/54A	GC-SD-XX-054/54B	GC-SD-XX-054/54C	GC-SD-XX-055/55A
Depth	feet	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	>13	0-7.9
Conventionals									
Benzene	µg/kg	37	<10	<20	<10	962	1730	60	273
Phenols, total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phosphorus, total	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total organic carbon	%	3.85	1.1	3.1	3.2	4.3	4.1	3.9	4.75
Metals									
Arsenic	mg/kg	30	8	<6	19	45	212	31	77.5
Cadmium	mg/kg	1.5	<0.9	4.35	2	22	47	3	18.25
Chromium	mg/kg	58	<4	18	17	480	33	21	310
Copper	mg/kg	38	4	20.5	36	200	345	39	390
Lead	mg/kg	220	<5	70	130	930	2400	32	930
Mercury	mg/kg	0.35	<0.1	0.3	0.5	1.6	4.7	0.8	2
Nickel	mg/kg	25	12	23	31	86	26	28	993
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	495	18	108.5	270	4900	6900	200	3537.5
Total SEM metals*	µmol/g	NR	NR	0.67	NR	NR	NR	NR	19.96
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	3840	<1690	<2750	<3790	<2900	<3090	<3520	6680
Acenaphthylene	µg/kg	2625	<1690	<2750	<3790	<2900	<3090	<3520	7460
Anthracene	µg/kg	6935	<1690	<2750	<3790	13000	<3090	<3520	53850
Benz(a)anthracene	µg/kg	15302.5	<5060	<8250	<11400	32900	<9260	<10600	187250
Benzo(a)pyrene	µg/kg	14350	<6750	<11000	<15200	16700	<12400	<14100	46250
Chrysene	µg/kg	22652.5	<5060	<8250	<11400	77200	<9260	<10600	310650

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number							
		GC-SD-XX-050/50A	GC-SD-XX-050/50B	GC-SD-XX-052/52A	GC-SD-XX-052/52B	GC-SD-XX-054/54A	GC-SD-XX-054/54B	GC-SD-XX-054/54C	GC-SD-XX-055/55A
Polycyclic Aromatic Hydrocarbons (cont.)									
Dibenz(a,h)anthracene	µg/kg	<14100	<8100	<13200	<18200	<13900	<14800	<16900	16025
Fluoranthene	µg/kg	27070	<3380	<5500	<7580	35600	10800	<7050	33600
Fluorene	µg/kg	7520	<3380	<5500	<7580	18200	<6180	<7050	66400
Naphthalene	µg/kg	8985	<1690	<2750	<3790	8570	12300	<3520	11200
Phenanthrene	µg/kg	23825	<1690	<2750	<3790	212000	8290	<3520	562000
Pyrene	µg/kg	25320	<3380	<5500	<7580	89100	9960	<7050	61800
Total PAHs[1]	µg/kg	158425	NA	NA	NA	503270	41350	NA	1363165
Polychlorinated Biphenyls									
Total PCBs	µg/kg	3990	<700	<700	<700	<700	<700	<700	<700
Mean-PEC-Q		**4.54**	**0.0976**	**0.360**	**0.516**	**13.3**	**4.68**	**0.465**	**33.2**

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number						
		GC-SD-XX-055/55B	GC-SD-XX-055/55C	GC-SD-XX-056/56A	GC-SD-XX-056/56B	GC-SD-XX-056/56C	GC-SD-XX-053/53A	GC-SD-XX-053/53B
Depth	feet	8-12.9	>13	0-7.9	8-12.9	>13	0-7.9	8-12.9
Conventionals								
Benzene	µg/kg	<300	<10	<400	594	<20	148	<20
Phenols, total	µg/kg	NR	NR	NR	NR	NR	NR	NR
Phosphorus, total	mg/kg	NR	NR	NR	NR	NR	NR	NR
Total organic carbon	%	2.85	2	1.3	6.9	4.9	0.86	3.2
Metals								
Arsenic	mg/kg	31.5	<6	96	205	42	<7	14
Cadmium	mg/kg	2.5	<2	17	29	26	0.2	6
Chromium	mg/kg	10	9	420	51	38	<5	7.5
Copper	mg/kg	59.5	13	360	440	380	<3	20
Lead	mg/kg	344.5	4	2200	2000	1300	8	110
Mercury	mg/kg	0.53	<0.14	2	5.1	7.9	0.2	0.8
Nickel	mg/kg	16	19	140	28	24	11	22
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	890	43	4200	5200	3600	35	265
Total SEM metals*	µmol/g	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<3250	<2840	6790	19000	<3200	2930	<1790
Acenaphthylene	µg/kg	<3250	<2840	<2110	3530	<3200	<1350	<1790
Anthracene	µg/kg	5050	<2840	13000	37700	<3200	3780	<1790
Benz(a)anthracene	µg/kg	<9750	<8510	18300	27300	<9600	9890	<5360
Benzo(a)pyrene	µg/kg	<13000	<11400	<8450	18400	<12800	<5400	<7150
Chrysene	µg/kg	10820	<8510	38400	42100	<9600	14800	<5360

Appendix 2.17. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number						
		GC-SD-XX-055/55B	GC-SD-XX-055/55C	GC-SD-XX-056/56A	GC-SD-XX-056/56B	GC-SD-XX-056/56C	GC-SD-XX-053/53A	GC-SD-XX-053/53B
Polycyclic Aromatic Hydrocarbons (cont.)								
Dibenz(a,h)anthracene	µg/kg	<15600	<13600	<10100	<13000	<15400	<6480	<8580
Fluoranthene	µg/kg	14600	<5680	21100	73800	<6400	19200	<3580
Fluorene	µg/kg	<6500	<5680	13300	30500	<6400	3890	<3580
Naphthalene	µg/kg	4130	<2840	4180	28700	<3200	3860	<1790
Phenanthrene	µg/kg	38450	<2840	94800	144000	<3200	14300	2940
Pyrene	µg/kg	16300	<5680	39200	61000	<6400	21400	4720
Total PAHs[1]	µg/kg	89350	NA	249070	486030	NA	94050	7660
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<700	<700	<700	<700	<700	<700	<700
Mean-PEC-Q		**2.45**	**0.139**	**8.44**	**13.7**	**3.98**	**2.10**	**0.434**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

*calculated using only simultaneously extracted cadmium, copper, nickel and zinc.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated); NR = not reported

Appendix 2.18. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (May-June 1991; Floyd-Browne 1993).

Substance	Units	Station Number					
		GC-SDDN001-41	GC-SDDN002-41	GC-SDDN003-41	GC-SDDN004-41	GC-SDDN005-41	GC-SDDN006-41
Depth	feet	1.5-2	1.5-2	1.5-2	1.5-2	1.5-2	1.5-2
Dioxins and Furans							
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	µg/kg	0.773	0.0337	0.6525	0.0037	1.03	NR
1,2,3,4,6,7,8-Heptachlorodibenzofuran	µg/kg	0.768	0.0163	0.256	0.00083	7.22	NR
1,2,3,4,7,8,9-Heptachlorodibenzofuran	µg/kg	0.0315	<0.0005	0.00945	<0.0018	<0.07	NR
1,2,3,4,7,8-Hexachlorodibenzodioxin	µg/kg	0.0114	0.0037	0.0236	<0.0018	<0.0304	NR
1,2,3,4,7,8-Hexachlorodibenzofuran	µg/kg	0.0654	0.0126	0.0189	<0.0012	0.107	NR
1,2,3,6,7,8-Hexachlorodibenzodioxin	µg/kg	0.0739	0.0046	0.0479	<0.0012	0.0846	NR
1,2,3,6,7,8-Hexachlorodibenzofuran	µg/kg	0.0209	0.0036	0.00475	<0.0009	0.0461	NR
1,2,3,7,8,9-Hexachlorodibenzodioxin	µg/kg	0.0414	0.0076	0.03095	<0.0016	0.0899	NR
1,2,3,7,8,9-Hexachlorodibenzofuran	µg/kg	<0.0089	<0.0004	<0.0054	<0.0014	<0.0116	NR
1,2,3,7,8,-Pentachlorodibenzofuran	µg/kg	0.0154	0.0045	0.00445	<0.0009	0.0235	0.0662
1,2,3,7,8-Pentachlorodibenzodioxin	µg/kg	0.0133	0.0035	0.010875	<0.0014	<0.0104	<0.201
2,3,4,6,7,8-Hexachlorodibenzofuran	µg/kg	0.0156	0.0031	0.00825	<0.0012	0.0475	NR
2,3,4,7,8,-Pentachlorodibenzofuran	µg/kg	0.0389	0.0043	0.01245	<0.0009	0.0301	<0.0819
2,3,7,8-Tetrachlorodibenzofuran	µg/kg	<0.0008	0.0148	0.046	<0.0007	0.0489	0.0388
2,3,7,8-TCDD	µg/kg	0.006	0.0015	0.00465	<0.0008	<0.0028	<0.0259
Octachlorodibenzodioxin	µg/kg	4.11	0.166	3.33	0.0824	3.31	NR
Octachlorodibenzofuran	µg/kg	1.06	0.0153	0.3525	<0.0026	3.85	NR

NR = not reported.

Appendix 2.19. Sediment chemistry data for the US Canal and Indiana Harbor, IN (November 1991; USEPA 1991; 1992c).

Substance	Units	Station Number										
		S16	S17	S18	S19	S12	S13	S14	S15	S08	S09	S10
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals												
Total organic carbon	%	23	22	23	23	14	38	12	26	4.1	31	37
Metals												
Arsenic*	mg/kg	41	33	34	20	15	50	14	37	65	42	43
Cadmium	mg/kg	13	9.9	9.2	7.0	<1.8	8.8	3.9	12	<1.6	<1.6	14
Chromium	mg/kg	740	540	540	450	52	710	290	870	150	200	270
Copper	mg/kg	430	340	320	250	120	280	140	480	330	290	200
Lead	mg/kg	880	710	690	530	170	820	380	1000	140	250	440
Nickel	mg/kg	110	91	92	74	<23	140	49	140	130	98	82
Selenium*	mg/kg	2.7	2.1	1.2	2.1	0.4	2.2	2.1	5.4	0.5	1.3	1.2
Zinc	mg/kg	4500	3600	3300	2500	510	3600	1500	5200	310	880	3200
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	µg/kg	3000	3700	3700	2400	<4300	14000	3100	14000	3700	9300	36000
Acenaphthylene	µg/kg	1400	1300	2500	1000	<4300	1100	<5200	880	580	1500	9100
Anthracene	µg/kg	4200	5500	6400	3800	430	17000	1600	4100	3400	8600	21000
Benz(a)anthracene	µg/kg	20000	25000	22000	15000	3500	55000	19000	24000	6700	18000	36000
Benzo(a)pyrene	µg/kg	21000	26000	26000	19000	3300	55000	11000	21000	5300	13000	24000
Chrysene	µg/kg	29000	35000	31000	21000	5400	80000	27000	34000	700	23000	48000
Dibenz(a,h)anthracene	µg/kg	3000	4100	2700	3400	<4300	7500	2200	3300	790	2500	3300
Fluoranthene	µg/kg	27000	37000	37000	23000	4000	86000	24000	35000	12000	33000	57000
Fluorene	µg/kg	4100	4800	5000	3100	<4300	13000	2200	9400	3500	8400	37000
2-Methylnaphthalene	µg/kg	5200	6000	5800	3100	<4300	2500	950	2900	2200	3100	14000
Naphthalene	µg/kg	14000	16000	19000	8100	<4300	5800	1300	2300	9200	6800	97000
Phenanthrene	µg/kg	16000	22000	25000	16000	1100	67000	2700	21000	12000	30000	91000
Pyrene	µg/kg	34000	42000	41000	30000	5200	77000	31000	38000	10000	27000	58000

Appendix 2.19. Sediment chemistry data for the US Canal and Indiana Harbor, IN (November 1991; USEPA 1991; 1992c).

Substance	Units	Station Number										
		S16	**S17**	**S18**	**S19**	**S12**	**S13**	**S14**	**S15**	**S08**	**S09**	**S10**
Polycyclic Aromatic Hydrocarbons (cont.)												
Total PAHs[1]	µg/kg	181900	228400	227100	148900	22930	480900	126050	209880	70070	184200	531400
Mean-PEC-Q		**6.30**	**6.82**	**6.72**	**4.61**	**0.83**	**12.6**	**3.62**	**7.22**	**2.26**	**4.83**	**13.1**

Appendix 2.19. Sediment chemistry data for the US Canal and Indiana Harbor, IN (November 1991; USEPA 1991; 1992c).

Substance	Units	Station Number									
		S11	**D11**	**S01**	**S02**	**S03**	**S04**	**D04**	**S05**	**S06**	**S07**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals											
Total organic carbon	%	28	18	31	27	15	18	32	16	18	17
Metals											
Arsenic*	mg/kg	21	7	74	35	15	34	34	28	39	46
Cadmium	mg/kg	4.9	3.4	11	5.1	4.7	4.7	4.4	5.0	4.9	7.5
Chromium	mg/kg	260	160	510	220	240	260	230	230	250	360
Copper	mg/kg	170	94	220	180	210	240	220	210	210	150
Lead	mg/kg	360	210	640	330	370	380	370	360	350	430
Nickel	mg/kg	46	30	74	50	56	61	60	52	55	52
Selenium*	mg/kg	1.4	0.6	<2	2.8	3.3	5.3	4.4	3.1	2.5	1.3
Zinc	mg/kg	1700	1000	4900	1900	2100	2100	2100	2000	2000	3500
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/kg	<4900	700	5000	770	940	5200	6400	1200	850	2800
Acenaphthylene	µg/kg	<4900	<3600	1800	680	1600	5500	5000	3200	1300	1100
Anthracene	µg/kg	530	910	5000	1600	2900	15000	12000	5700	3300	3300
Benz(a)anthracene	µg/kg	1300	4100	13000	5800	10000	30000	23000	13000	8900	9000
Benzo(a)pyrene	µg/kg	2000	4100	7100	5500	11000	25000	21000	10000	9800	3900
Chrysene	µg/kg	2000	7500	15000	9000	10000	33000	32000	15000	11000	11000
Dibenz(a,h)anthracene	µg/kg	<4900	<3600	1700	1400	<7100	4300	3700	2000	<7400	950
Fluoranthene	µg/kg	2400	5400	22000	7100	12000	62000	47000	21000	13000	13000
Fluorene	µg/kg	<4900	590	6000	1300	2100	13000	10000	4200	2100	3500
2-Methylnaphthalene	µg/kg	<4900	500	4400	1700	1900	3900	4900	2300	1800	2100
Naphthalene	µg/kg	910	1300	12000	5700	7100	12000	19000	8000	6200	6600
Phenanthrene	µg/kg	1800	2300	18000	4800	8100	59000	42000	18000	10000	11000
Pyrene	µg/kg	2600	7200	23000	7200	14000	47000	40000	19000	14000	13000

Appendix 2.19. Sediment chemistry data for the US Canal and Indiana Harbor, IN (November 1991; USEPA 1991; 1992c).

Substance	Units	Station Number									
		S11	**D11**	**S01**	**S02**	**S03**	**S04**	**D04**	**S05**	**S06**	**S07**
Polycyclic Aromatic Hydrocarbons (cont.)											
Total PAHs[1]	µg/kg	13540	34600	134000	52550	81640	314900	266000	122600	82250	81250
Mean-PEC-Q		**1.19**	**1.29**	**4.92**	**2.08**	**2.76**	**7.96**	**6.84**	**3.66**	**2.81**	**3.15**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.
*USEPA 1992c.

Appendix 2.20. Sediment chemistry data for the US Canal, IN (November 1993; USACE 1994).

Substance	Units	Station Number								
		IHST 93-4-2	IHST 93-4-3	IHST 93-4-4	IHST 93-4-5	IHST 93-1-1	IHST 93-1-2	IHST 93-1-3	IHST 93-1-4	IHST 93-1-5
Depth	feet	24-28	28-32	32-36	36-40	20-24	24-28	28-32	32-36	36-40
Conventionals										
Ammonia-nitrogen	mg/kg	798	822	743	291	2940	1380	1240	1090	758
Total organic carbon	%	12.8	10.94	10.44	6.81	12.98	10.76	9.25	7.36	8.81
Metals										
Arsenic	mg/kg	71	130	220	160	47	51	24	29	89
Cadmium	mg/kg	13.2	19.6	15.5	13.4	12.5	12.8	11.1	11.7	63.0
Chromium	mg/kg	2380	1500	358	221	2950	2920	2340	1880	3500
Copper	mg/kg	400	345	351	265	438	265	246	227	333
Lead	mg/kg	1350	1610	1750	1100	1510	1440	1410	1410	1260
Mercury	mg/kg	1.9	2.3	2.7	2.1	2.2	1.4	1.3	1.0	2.4
Nickel	mg/kg	132	107	51	65	394	117	115	104	193
Selenium	mg/kg	5.2	4.0	2.7	1.8	5.0	4.8	4.7	4.3	4.6
Zinc	mg/kg	7790	7270	5230	3480	5570	9110	8430	8920	5580
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	37600	46800	11700	8600	7300	20900	26900	31400	5900
Acenaphthylene	µg/kg	2000	2200	2400	1500	2000	1400	2100	2300	2500
Anthracene	µg/kg	15700	41800	57300	54100	6200	8500	10800	12400	12000
Benz(a)anthracene	µg/kg	28700	79100	154000	116600	16200	13400	15100	13700	18800
Benzo(a)pyrene	µg/kg	17300	36400	70900	46800	13900	8900	10200	9100	8600
Chrysene	µg/kg	46200	155500	323700	245300	19600	17800	18700	16900	35100
Dibenz(a,h)anthracene	µg/kg	2900	2700	16200	11400	1700	1200	1200	1200	1800
Fluoranthene	µg/kg	51500	89900	133600	103200	42400	33200	40900	40100	26900
Fluorene	µg/kg	32700	76700	115700	71300	6400	16600	20900	25100	18400
Phenanthrene	µg/kg	127600	549200	1171800	912700	17800	33100	41200	45000	126900
Pyrene	µg/kg	69600	200000	387200	292000	37800	30600	35600	33900	45200
Total PAHs[1]	µg/kg	431800	1280300	2444500	1863500	171300	185600	223600	231100	302100

Appendix 2.20. Sediment chemistry data for the US Canal, IN (November 1993; USACE 1994).

Substance	Units	Station Number								
		IHST 93-4-2	IHST 93-4-3	IHST 93-4-4	IHST 93-4-5	IHST 93-1-1	IHST 93-1-2	IHST 93-1-3	IHST 93-1-4	IHST 93-1-5
Polychlorinated Biphenyls										
Total PCBs	µg/kg	42615.325	29842.05	<366.84	<341.84	16623.065	40523.865	47194.59	46265.105	4007.22
Pesticides										
Chlordane	µg/kg	<115.39	<87.22	<91.71	<85.46	<133.11	<98.91	<91.58	<90.61	<99.58
Sum DDD	µg/kg	135.64	121.89	50.72	44.24	58.21	101	139.94	151.51	30.2
Sum DDE	µg/kg	32.86	25.11	<2.65	<2.47	46.43	37	50.2	35.84	16.7
Sum DDT	µg/kg	<3.58	<2.70	<2.84	<2.65	<4.12	<3.06	<2.84	<2.81	<3.09
Total DDTs[2]	µg/kg	170.29	148.35	53.465	46.8	106.7	139.53	191.56	188.755	48.445
Dieldrin	µg/kg	24.83	20.82	<2.61	<2.43	16.97	20.6	16.36	12.21	5.82
Endrin	µg/kg	<3.81	<2.88	<3.03	<2.82	<4.4	<3.27	<3.02	<2.99	<3.29
Heptachlor	µg/kg	<3.39	<2.56	<2.69	<2.51	<3.91	<2.90	<2.69	<2.66	<2.92
Heptachlor epoxide	µg/kg	<3.39	<2.56	<2.69	<2.51	8.04	<2.90	<2.69	7.33	<2.92
Lindane	µg/kg	<3.35	<2.53	<2.66	<2.48	6.72	<2.87	<2.66	<2.63	<2.89
Toxaphene	µg/kg	<115.39	<2.53	<91.71	<85.46	<133.11	<98.91	<91.58	<90.61	<99.58
Mean-PEC-Q		**30.1**	**36.0**	**37.8**	**28.7**	**13.8**	**25.8**	**29.3**	**28.8**	**9.97**

Appendix 2.20. Sediment chemistry data for the US Canal, IN (November 1993; USACE 1994).

Substance	Units	Station Number								
		IHST 93-2-1	IHST 93-2-2	IHST 93-2-3	IHST 93-2-4	IHST 93-2-5	IHST 93-3-1	IHST 93-3-2	IHST 93-3-3	IHST 93-3-4
Depth	feet	20-24	24-28	28-32	32-36	36-40	20-24	24-28	28-32	32-36
Conventionals										
Ammonia-nitrogen	mg/kg	3740	2570	1480	1360	732	2790	1520	1450	672
Total organic carbon	%	13.92	12.65	9.86	10.75	13.44	7.84	14.46	11.94	7.27
Metals										
Arsenic	mg/kg	71	68	38	71	110	45	61	72	110
Cadmium	mg/kg	9.6	12.9	11.1	26.0	93.7	9.1	10.6	20.3	9.2
Chromium	mg/kg	2170	3100	2980	2880	4470	1750	3100	2920	889
Copper	mg/kg	465	371	260	298	401	500	297	354	239
Lead	mg/kg	1340	1510	1510	1480	1310	1320	1440	1760	1060
Mercury	mg/kg	2.9	1.9	1.5	1.7	2.6	3.0	1.5	1.9	1.4
Nickel	mg/kg	350	320	116	105	220	270	97	116	102
Selenium	mg/kg	5.8	5.0	4.7	5.1	5.3	6.1	4.8	5.4	2.8
Zinc	mg/kg	4870	7680	9400	8270	6180	5230	9110	9710	3680
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	9600	12800	20500	38100	5200	27400	19100	55000	8500
Acenaphthylene	µg/kg	2300	1600	1400	2800	3200	3400	1400	2600	900
Anthracene	µg/kg	7000	7000	8100	14400	9900	10000	8400	17300	25400
Benz(a)anthracene	µg/kg	17400	14000	11500	14500	12300	25900	12900	18700	57600
Benzo(a)pyrene	µg/kg	16400	10900	7400	9100	6100	24400	8100	11900	23000
Chrysene	µg/kg	19700	17500	15300	17700	19800	28100	17300	23100	122300
Dibenz(a,h)anthracene	µg/kg	1800	1400	900	1100	1000	2500	1000	1600	5800
Fluoranthene	µg/kg	46200	37800	30700	43700	26800	70400	34900	58500	54400
Fluorene	µg/kg	7000	9900	15700	31800	13100	11000	15600	39100	43300
Phenanthrene	µg/kg	20500	24900	29600	57200	58300	25500	31900	76700	464800
Pyrene	µg/kg	41200	33700	27900	36200	30900	60400	32500	49400	153200
Total PAHs[1]	µg/kg	189100	171500	169000	266600	186600	289000	183100	353900	959200

Appendix 2.20. Sediment chemistry data for the US Canal, IN (November 1993; USACE 1994).

Substance	Units	Station Number								
		IHST 93-2-1	IHST 93-2-2	IHST 93-2-3	IHST 93-2-4	IHST 93-2-5	IHST 93-3-1	IHST 93-3-2	IHST 93-3-3	IHST 93-3-4
Polychlorinated Biphenyls										
Total PCBs	µg/kg	15538.415	31017.12	51302.49	63979.145	1974.215	20762.125	50831.29	100036.465	9141.33
Pesticides										
Chlordane	µg/kg	<130.93	<129.32	<101.56	<102.87	<107.27	<135.97	<110.48	<107.33	<105.82
Sum DDD	µg/kg	44.77	77.17	130.64	198.69	27.4	56.9	125.25	316.42	44.92
Sum DDE	µg/kg	56.36	50.99	34.17	14.43	50.76	51.71	35.11	36.37	<3.05
Sum DDT	µg/kg	<4.06	<4.01	<3.15	<3.19	<3.32	<4.21	<3.42	<3.33	<3.28
Total DDTs[2]	µg/kg	103.16	130.17	166.385	214.715	79.82	110.715	162.07	354.455	48.085
Dieldrin	µg/kg	9.92	22.65	22.63	14.62	13.82	18.02	25.53	25.7	24.47
Endrin	µg/kg	<4.32	<4.27	<3.35	<3.4	<3.54	<4.49	<3.65	<3.54	<3.49
Heptachlor	µg/kg	<3.84	<3.79	<2.98	<3.02	<3.15	<3.99	<3.24	<3.15	<3.1
Heptachlor epoxide	µg/kg	10.16	<3.79	<2.98	<3.02	<3.15	<3.99	<3.24	<3.15	12.19
Lindane	µg/kg	<3.80	<3.76	<2.95	<2.99	<3.12	<3.95	<3.21	<3.12	<3.07
Toxaphene	µg/kg	<130.93	<120.32	<101.56	<102.87	<107.27	<135.97	<110.48	<107.33	<105.82
Mean-PEC-Q		**13.0**	**21.1**	**30.9**	**38.6**	**8.15**	**16.8**	**30.9**	**57.9**	**20.1**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.21. Sediment chemistry data for the Grand Calumet River Lagoons, IN (July 1996; USACE 1996).

Substance	Units	Station Number 006	005	004	002	001	003
Depth	feet	0-1	0-3	0-2	0-2	2-3	0-4
Conventionals							
Ammonia-nitrogen	mg/kg	970	220	380	770	490	220
pH	S.U.	7.4	7.5	7.6	7.5	7.4	7.3
Phenol	mg/kg	35	3.8	7.9	10	24	2.8
Total organic carbon	%	38.1	10.8	8.87	10.4	6.65	9.11
Metals							
Arsenic	mg/kg	110	39	87	75	100	36
Cadmium	mg/kg	<3.9	<1.9	<2.2	<2.5	<2.4	18
Chromium	mg/kg	25	10	6.5	4.4	<2.4	31
Copper	mg/kg	32	<9.6	11	<13	14	2400
Lead	mg/kg	77	32	39	42	120	1300
Mercury	mg/kg	1.5	<0.15	<0.17	<0.2	<0.19	4
Nickel	mg/kg	<39	<19	<22	<25	<24	23
Selenium	mg/kg	20	4.2	4.8	<2.5	<2.4	<2.0
Zinc	mg/kg	380	<96	<110	<130	150	1200
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	4300000	<770	<870	<1000	<950	<800
Acenaphthylene	µg/kg	<310000	<770	<870	<1000	<950	<800
Anthracene	µg/kg	2600000	<770	<870	<1000	<950	<800
Benz(a)anthracene	µg/kg	5000000	<770	<870	<1000	<950	<800
Benzo(a)pyrene	µg/kg	470000	<770	<870	<1000	<950	<800
Chrysene	µg/kg	5500000	<770	<870	<1000	<950	<800
Dibenz(a,h)anthracene	µg/kg	<310000	<770	<870	<1000	<950	<800
Fluoranthene	µg/kg	7000000	<770	<870	<1000	<950	<800
Fluorene	µg/kg	6600000	<770	<870	<1000	<950	<800
2-Methylnaphthalene	µg/kg	<310000	<770	<870	<1000	<950	<800
Naphthalene	µg/kg	<310000	<770	<870	<1000	<950	<800

Appendix 2.21. Sediment chemistry data for the Grand Calumet River Lagoons, IN (July 1996; USACE 1996).

Substance	Units	Station Number 006	005	004	002	001	003
Polycyclic Aromatic Hydrocarbons (cont.)							
Phenanthrene	µg/kg	18000000	<770	<870	<1000	<950	<800
Pyrene	µg/kg	4800000	<770	<870	<1000	<950	<800
Total PAHs[1]	µg/kg	54270000	<5390	<5220	<6000	<5700	<5600
Polychlorinated Biphenyls							
Total PCBs	µg/kg	<1520	<770	<870	<1000	<951	<800
Pesticides							
Chlordane	µg/kg	<150	<77	<87	<100	<95	<80
Sum DDD	µg/kg	<46	<23	<26	<30	<29	<24
Sum DDE	µg/kg	<15	<7.7	<8.7	<10	<9.5	<8.0
Sum DDT	µg/kg	<46	<23	<26	<30	<29	<24
Total DDTs[2]	µg/kg	<61	<53.7	<60.7	<40	<38.5	<56
Dieldrin	µg/kg	<15	<7.7	<8.7	<10	<9.5	<8.0
Endrin	µg/kg	<15	<7.7	<8.7	<10	<9.5	<8.0
Heptachlor	µg/kg	<7.7	<3.9	<4.4	<5.0	<4.8	<4.0
Heptachlor epoxide	µg/kg	<7.7	<3.9	<4.4	<5.0	<4.8	<4.0
Lindane	µg/kg	<7.7	<3.9	<4.4	<5.0	<4.8	<4.0
Toxaphene	µg/kg	<620	<308	<348	<400	<381	<320
Mean-PEC-Q		**1190**	**0.205**	**0.317**	**0.304**	**0.412**	**2.51**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

Appendix 2.22. Sediment chemistry data for the West Branch Grand Calumet River, IN (March-April 1997; RETEC 1997).

Substance	Units	Station Number								
		SD-2	SD-3	SD-4	SD-5	SD-6	SD-7	SD-9	SD-10	SD-11
Depth	feet	2-4	2-4	2-4	2-4	2-4	2-4	2-4	0-2	2-4
Conventionals										
Benzene	µg/kg	<20	30	2900	10000	23000	21000	12000	<500	10000
Metals										
Arsenic	mg/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25
Cadmium	mg/kg	1.2	0.63	3.3	0.49	1	0.34	0.84	0.89	1
Chromium	mg/kg	29	14	48	7.9	22	11	4.9	14	10
Lead	mg/kg	160	76	210	42	180	48	37	200	100
Mercury	mg/kg	2.53	1.36	1.25	0.17	1.48	<0.1	0.76	0.59	0
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	40000	<33000	340000	360000	920000	650000	890000	160000	230000
Acenaphthylene	µg/kg	<33000	<33000	<33000	<33000	50000	<66000	<33000	<33000	<33000
Anthracene	µg/kg	<33000	<33000	120000	133000	220000	220000	210000	65000	81000
Benz(a)anthracene	µg/kg	<33000	<33000	47000	53000	120000	140000	170000	52000	38000
Benzo(a)pyrene	µg/kg	<33000	<33000	<33000	<33000	60000	100000	120000	43000	<33000
Chrysene	µg/kg	<33000	<33000	40000	55000	140000	120000	130000	51000	38000
Fluoranthene	µg/kg	<33000	<33000	100000	110000	190000	310000	300000	100000	77000
Fluorene	µg/kg	<33000	<33000	140000	170000	270000	300000	280000	77000	100000
2-Methylnaphthalene	µg/kg	57000	<33000	370000	440000	1400000	640000	900000	<33000	320000
Naphthalene	µg/kg	33000	<33000	580000	530000	1500000	980000	1400000	50000	380000
Phenanthrene	µg/kg	71000	<33000	350000	330000	820000	670000	930000	220000	230000
Pyrene	µg/kg	43000	<33000	210000	170000	300000	430000	530000	150000	110000
Total PAHs[1]	µg/kg	244000	NA	2297000	2351000	5990000	4560000	5860000	968000	1604000

Appendix 2.22. Sediment chemistry data for the West Branch Grand Calumet River, IN (March-April 1997; RETEC 1997).

Substance	Units	Station Number								
		SD-2	SD-3	SD-4	SD-5	SD-6	SD-7	SD-9	SD-10	SD-11
Polychlorinated Biphenyls										
Total PCBs	µg/kg	<28000	<28000	<28000	<28000	<28000	<28000	<28000	<28000	<28000
Mean-PEC-Q		**5.62**	**0.306**	**50.8**	**51.7**	**132**	**100**	**129**	**21.5**	**35.4**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.
NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)

Appendix 2.22. Sediment chemistry data for the West Branch Grand Calumet River, IN (March-April 1997; RETEC 1997).

Substance	Units	Station Number						
		SD-13	SD-15	SD-15d	SD-15d2	SD-15d3	SD-1	SD-1D
Depth	feet	2-4	0-2	2-3	3-4	4-5	2-4	2-4
Conventionals								
Benzene	µg/kg	9300	<80	380	770	1200	<50	<20
Metals								
Arsenic	mg/kg	30	31	<25	<25	<25	<25	<25
Cadmium	mg/kg	18	11	2.1	3	0.86	7.2	4.1
Chromium	mg/kg	110	90	42	82	5.8	18	20
Lead	mg/kg	3400	310	160	200	70	280	190
Mercury	mg/kg	1.3	0.9	0.5	1.67	0.43	2.06	<0.1
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<165000	<33000	1400000	390000	86000	<33000	48000
Acenaphthylene	µg/kg	<165000	<33000	<165000	<66000	<33000	<33000	<33000
Anthracene	µg/kg	<165000	<33000	520000	150000	<33000	<33000	<33000
Benz(a)anthracene	µg/kg	<165000	<33000	210000	<66000	<33000	<33000	<33000
Benzo(a)pyrene	µg/kg	<165000	<33000	<165000	<66000	<33000	<33000	<33000
Chrysene	µg/kg	<165000	<33000	210000	70000	<33000	<33000	<33000
Fluoranthene	µg/kg	<165000	<33000	400000	120000	42000	<33000	<33000
Fluorene	µg/kg	<165000	<33000	530000	180000	<33000	<33000	<33000
2-Methylnaphthalene	µg/kg	<165000	<33000	1600000	630000	110000	<33000	<33000
Naphthalene	µg/kg	<165000	<33000	1700000	660000	180000	<33000	<33000
Phenanthrene	µg/kg	<165000	<33000	1500000	450000	96000	66000	75000
Pyrene	µg/kg	<165000	<33000	720000	210000	<33000	<33000	33000
Total PAHs[1]	µg/kg	NA	NA	8790000	2860000	514000	66000	156000

Appendix 2.22. Sediment chemistry data for the West Branch Grand Calumet River, IN (March-April 1997; RETEC 1997).

Substance	Units	Station Number						
		SD-13	SD-15	SD-15d	SD-15d2	SD-15d3	SD-1	SD-1D
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<560000	<7000	<28000	<7000	<7000	<7000	<28000
Mean-PEC-Q		**8.02**	**1.60**	**193**	**63.1**	**11.4**	**1.97**	**3.78**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.
NA = not applicable.

Appendix 2.23. Sediment chemistry data for the USS Lead Canal, IN (September 1997; ENTACT, Inc. 1998).

Substance	Units	Station Number							
		CC-1-0-2	CC-2-0-2	CC-2-2-4	CC-3-0-2	CC-4-0-2	CC-5-0-2	CC-5-2-5	CC-6-0-2
Depth	feet	0-2	0-2	2-4	0-2	0-2	0-2	2-5	0-2
Conventionals									
Benzene	µg/kg	NR	<57	<29	NR	NR	NR	NR	NR
Phenol	µg/kg	NR	<46200	<198000	NR	NR	<9900	NR	NR
Metals									
Lead	mg/kg	4700	5900	1900	760	1400	5100	830	1100
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<660	<46200	<1140	<660	<1000	<9900	<660	<660
Acenaphthylene	µg/kg	<660	<46200	<1140	<660	<1000	<9900	<660	<660
Anthracene	µg/kg	<660	<46200	9750	12000	4500	<9900	<660	<660
Benz(a)anthracene	µg/kg	<120	<46200	55500	16000	74000	<9900	18000	20000
Benzo(a)pyrene	µg/kg	2300	<46200	10250	6200	1200	<9900	4600	1600
Chrysene	µg/kg	19000	<46200	96500	64000	110000	<9900	36000	31000
Dibenz(a,h)anthracene	µg/kg	<120	<46200	3000	1700	4700	<9900	<120	1100
Fluoranthene	µg/kg	<660	<46200	48500	26000	58000	<9900	14000	28000
Fluorene	µg/kg	<120	<46200	<1140	16000	<1000	<9900	<140	<140
Naphthalene	µg/kg	3300	<46200	<110	<480	<1000	<9900	<120	1300
Phenanthrene	µg/kg	39000	<46200	660	<660	<1000	<9900	<660	<660
Pyrene	µg/kg	19000	58000	126000	70000	150000	<9900	36000	41000
Total PAHs[1]	µg/kg	83440	58000	350215	212470	402900	NA	109450	124730
Polychlorinated Biphenyls									
Total PCBs	µg/kg	119940	14175	4080	32500	6785	62310	<100160	11000
Mean-PEC-Q		**72.6**	**23.2**	**12.1**	**21.1**	**12.9**	**66.0**	**5.64**	**10.1**

Appendix 2.23. Sediment chemistry data for the USS Lead Canal, IN (September 1997; ENTACT, Inc. 1998).

Substance	Units	Station Number				
		CC-6-2-4	CC-7-0-2	CC-7-2-5	CC-8-0-2	CC-8-2-5
Depth	feet	2-3.5	0-2	2-5	0-2	2-5
Conventionals						
Benzene	µg/kg	NR	NR	NR	110	86
Phenol	µg/kg	<16000	<33000	<82500	<19800	NR
Metals						
Lead	mg/kg	740	2400	2100	1300	1500
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	µg/kg	<16000	<33000	<82500	<19800	<660
Acenaphthylene	µg/kg	<16000	<33000	<82500	<19800	<660
Anthracene	µg/kg	<16000	<33000	<82500	<19800	4600
Benz(a)anthracene	µg/kg	23000	<33000	<82500	<19800	6800
Benzo(a)pyrene	µg/kg	23000	<33000	<82500	<19800	290
Chrysene	µg/kg	59000	<33000	<82500	<19800	11000
Dibenz(a,h)anthracene	µg/kg	<16000	<33000	<82500	<19800	480
Fluoranthene	µg/kg	31000	<33000	<82500	7900	13000
Fluorene	µg/kg	<16000	<33000	<82500	<19800	7100
Naphthalene	µg/kg	<16000	<33000	<82500	<19800	730
Phenanthrene	µg/kg	<16000	<33000	<82500	<19800	21000
Pyrene	µg/kg	81000	<33000	<82500	9100	13000
Total PAHs[1]	µg/kg	217000	NA	NA	17000	78000
Polychlorinated Biphenyls						
Total PCBs	µg/kg	4080	62370	62425	<2800000	<2800000
Mean-PEC-Q		**7.11**	**55.5**	**54.4**	**5.45**	**7.57**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated); NR = not reported.

Appendix 2.24. Sediment chemistry data for the USS Lead Canal, IN (September 1997; TechLaw, Inc. 1998).

Substance	Units	Station Number							
		CC-01-02	CC-02-02	CC-02-24	CC-03-02	CC-04-02	CC-05-02	CC-05-25	CC-06-02
Depth	feet	0-2	0-2	2-4	0-2	0-2	0-2	2-5	0-2
Conventionals									
Benzene	µg/kg	13.1	NR	<50	NR	NR	NR	NR	NR
Phenol	µg/kg	<43000	NR	<107000	NR	NR	NR	NR	NR
Metals									
Arsenic	mg/kg	1200	12100	16300	1370	10330	6660	4175	1600
Cadmium	mg/kg	62.0	115	65.9	3.78	16.8	84.2	52.5	37.1
Chromium	mg/kg	147	187	250	26.1	50.75	294	99.95	243
Copper	mg/kg	216	324	357	64.4	130.5	205	129.5	200
Lead	mg/kg	4490	7110	3980	1280	1355	3880	1070	1190
Mercury	mg/kg	0.580	1.00	1.42	0.710	0.498	0.608	2.124	1.15
Nickel	mg/kg	31.8	47.5	298	14.0	18.35	35.7	32.2	55.9
Selenium	mg/kg	<1.30	<4.48	<3.23	1.0	<2.07	<3.74	<2.32	<2.04
Zinc	mg/kg	1690	3200	7550	617	2375	3000	3815	3650
Mean-PEC-Q		**13.0**	**65.3**	**80.8**	**7.80**	**47.7**	**37.2**	**22.3**	**11.1**

Appendix 2.24. Sediment chemistry data for the USS Lead Canal, IN (September 1997; TechLaw, Inc. 1998).

Substance	Units	Station Number				
		CC-06-235	CC-7-02	CC-7-25	CC-8-02	CC-8-25
Depth	feet	0-3.5	0-2	2-5	0-2	2-5
Conventionals						
Benzene	µg/kg	NR	<5.0	<100	NR	NR
Phenol	µg/kg	NR	<34800	<37900	NR	NR
Metals						
Arsenic	mg/kg	375	915	1950	629	691
Cadmium	mg/kg	14.2	19.3	78.7	13.6	59.8
Chromium	mg/kg	59.1	498	692	2450	1470
Copper	mg/kg	97.9	265	372	267	403
Lead	mg/kg	596	1040	1860	1730	1580
Mercury	mg/kg	1.24	0.913	2.79	1.27	1.82
Nickel	mg/kg	21.4	70.0	95.8	113	122
Selenium	mg/kg	<1.46	<2.11	<2.30	<1.99	<1.39
Zinc	mg/kg	2160	3010	8940	7170	6360
Mean-PEC-Q		**3.60**	**7.71**	**17.1**	**11.0**	**11.1**

NR = not reported.

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG82S01	97CG82S02	97CG82S03	97CG82D03	97CG82S04	97CG82S05	97CG82S06	97CG82D06
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	29.59	77.585	59.31	27.08	21.715	88.445	31.16	30.315
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.19681	0.19884	0.19813	0.19809	0.19829	0.19888	0.19888	0.19888
Metals									
Arsenic	mg/kg	3.4	15.8	5.9	2.2	2.2	28.0	2.9	2.8
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	3.2	<2	<2	<2.0
Chromium	mg/kg	5.3	31.0	12.0	4.8	34.0	47	3.2	5.4
Copper	mg/kg	3.8	27.0	8.1	3.2	53.0	43	2.8	2.4
Lead	mg/kg	20.0	80.0	28.0	<14.0	820.0	130	<14	<14.0
Mercury	mg/kg	0.1	0.4	<0.1	0.09	<0.05	<0.4	<0.06	<0.05
Nickel	mg/kg	<3.9	11.0	5.5	<4.0	16.0	17	<4	<4.0
Zinc	mg/kg	33.0	210.0	65.0	23.0	490.0	360	25	24.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
Acenaphthylene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
Anthracene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
Benz(a)anthracene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
Benzo(a)pyrene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
Chrysene	µg/kg	<740	240	<1300	<840	<760	<3700	<750	<820
Dibenz(a,h)anthracene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
Fluoranthene	µg/kg	<740	420	210	<840	<760	500	<750	<820
Fluorene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820
2-Methylnaphthalene	µg/kg	<740	<2300	<1300	<840	<760	<3700	<750	<820

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG82S01	97CG82S02	97CG82S03	97CG82D03	97CG82S04	97CG82S05	97CG82S06	97CG82D06
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<830	<2300	<1400	<840	<930	<6100	<750	<820
Phenanthrene	µg/kg	<740	320	170	<840	<760	380	<750	<820
Pyrene	µg/kg	<740	330	160	<840	<760	410	<750	<820
Total PAHs[1]	µg/kg	<5180	1310	1190	<5880	<5320	1290	<5250	<5740
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Chlordane	µg/kg	<6	<12	<8	<6	<6	<24	<4	<4
Dieldrin	µg/kg	<0.005	<0.013	<0.007	<0.005	<0.005	<0.024	<0.004	<0.004
Endrin	µg/kg	<0.005	<0.013	<0.007	<0.005	<0.005	<0.024	<0.004	<0.004
Heptachlor	µg/kg	<0.003	<0.006	<0.004	<0.003	<0.003	<0.012	<0.002	<0.002
Heptachlor epoxide	µg/kg	<0.003	<0.006	<0.004	<0.003	<0.003	<0.012	<0.002	<0.002
Lindane	µg/kg	<0.003	<0.006	<0.004	<0.003	<0.003	<0.012	<0.002	<0.002
Sum DDD	µg/kg	<5	<13	<7	<5	<5	<24	<4	<4
Sum DDE	µg/kg	<5	<13	<7	<5	<5	<24	<4	<4
Sum DDT	µg/kg	<5	<13	<7	<5	<5	<24	<4	<4
Total DDTs[2]	µg/kg	NA	NA	NA	NA	NA	NA	<4	<4
Toxaphene	µg/kg	<0.10	<0.25	<0.142	<0.10	<0.10	<0.50	<0.08	<0.08
Mean-PEC-Q		**0.103**	**0.204**	**0.0986**	**0.0986**	**0.714**	**0.308**	**0.0923**	**0.0985**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG82S07	97CG82S08	97CG82S09	97CG82S10	97CG82S11	97CG82S12	97CG82S13	97CG82S14
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	19.995	46.075	20.81	19.29	26.195	23.31	50.705	59.49
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.19782	0.19912	0.20048	0.19786	0.20016	0.19880	0.19743	0.19924
Metals									
Arsenic	mg/kg	1.2	5.0	2.4	1.8	3.0	2.1	19.1	20.4
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	<2.0
Chromium	mg/kg	<2.0	7.2	3.1	2.5	4.0	2.4	33.0	38.0
Copper	mg/kg	1.4	6.3	1.7	2.1	2.0	<1.2	33.0	30.0
Lead	mg/kg	<14.0	23.0	<14.0	<14.0	<14.0	<14.0	38.0	43.0
Mercury	mg/kg	<0.05	0.09	<0.06	<0.04	<0.05	<0.05	<0.07	<0.1
Nickel	mg/kg	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	17.0	19.0
Zinc	mg/kg	11.0	52.0	11.0	NR	23.0	9.2	130.0	140.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<780	<900	<880	<880	<720	<940	<1000	120
Acenaphthylene	µg/kg	<780	<900	<880	<880	<720	<940	<1000	470
Anthracene	µg/kg	<780	<900	<880	<880	<720	<940	<1000	250
Benz(a)anthracene	µg/kg	<780	<900	<880	<80	<720	<940	180	280
Benzo(a)pyrene	µg/kg	<780	130	<880	<880	<720	<940	210	300
Chrysene	µg/kg	<780	96	<880	<880	<720	<940	220	360
Dibenz(a,h)anthracene	µg/kg	<780	94	<880	<880	<720	<940	<1000	<1100
Fluoranthene	µg/kg	<780	150	<880	<880	<720	<940	430	720
Fluorene	µg/kg	<780	<900	<880	<880	<720	<940	<1000	230
2-Methylnaphthalene	µg/kg	<780	<900	<880	<880	<720	<940	<1000	190

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG82S07	97CG82S08	97CG82S09	97CG82S10	97CG82S11	97CG82S12	97CG82S13	97CG82S14
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<820	<1100	<880	<880	<880	<940	140	400
Phenanthrene	µg/kg	<780	98	<880	<880	<720	<940	270	690
Pyrene	µg/kg	<780	150	<880	<880	<720	<940	340	700
Total PAHs[1]	µg/kg	<5460	1168	<5280	<4480	<5040	<5640	1790	4710
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	<910
Pesticides									
Chlordane	µg/kg	<4	<6	<4	<4	<4	<6	<6	<8
Dieldrin	µg/kg	<0.004	<0.005	<0.004	<0.004	<0.004	<0.005	<0.005	<0.007
Endrin	µg/kg	<0.004	<0.005	<0.004	<0.004	<0.004	<0.005	<0.005	<0.007
Heptachlor	µg/kg	<0.662	<0.003	<0.002	<0.002	<0.002	<0.003	<0.003	<0.004
Heptachlor epoxide	µg/kg	<0.002	<0.003	<0.002	<0.002	<0.002	<0.003	<0.003	<0.004
Lindane	µg/kg	<0.002	<0.003	<0.002	<0.002	<0.002	<0.003	<0.003	<0.004
Sum DDD	µg/kg	<4	<5	<4	<4	<4	<5	<5	<7
Sum DDE	µg/kg	<4	<5	<4	<4	<4	<5	<5	<7
Sum DDT	µg/kg	<4	<5	<4	<4	<4	<5	<25	<7
Total DDTs[2]	µg/kg	<4	NA	<4	<4	<4	NA	NA	NA
Toxaphene	µg/kg	<0.08	<0.10	<0.08	<0.08	<0.08	<0.10	<0.10	<0.142
Mean-PEC-Q		**0.0867**	**0.0823**	**0.0888**	**0.0814**	**0.0901**	**0.105**	**0.198**	**0.274**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG82S15	97CG82D15	97CG82S16	97CG82S17	97CG82S18	97CG82S19	97CG82S20	97CG82S21
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	54.59	52.78	45.28	63.825	37.41	42.915	33.185	57.81
Total organic carbon	%	1	1.3	1.1	1.2	1.2	1.5	1.7	1.2
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.19988	0.19774	0.20226	0.19956	0.20000	0.19786	0.19904	0.20052
Metals									
Arsenic	mg/kg	19.5	17.9	19.0	30.3	18.4	17.4	15.1	22.5
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	32.0	20.0	23.0	36.0	25.0	34.0	36.0	31.0
Copper	mg/kg	35.0	30.0	30.0	33.0	32.0	36.0	26.0	33.0
Lead	mg/kg	35.0	16.0	23.0	42.0	33.0	30.0	63.0	29.0
Mercury	mg/kg	<0.08	<0.08	<0.08	<0.1	<0.06	<0.07	<0.05	<0.1
Nickel	mg/kg	15.0	10.0	12.0	17.0	25.0	20.0	13.0	14.0
Zinc	mg/kg	110.0	62.0	84.0	140.0	98.0	130.0	110.0	98.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<1000	<1200	<950	220	710	<980	510	<1200
Acenaphthylene	µg/kg	<1000	<1200	100	290	<2000	<980	<830	<1200
Anthracene	µg/kg	<1000	<1200	160	560	2100	<980	1200	<1200
Benz(a)anthracene	µg/kg	110	<1200	150	450	6500	120	2400	290
Benzo(a)pyrene	µg/kg	120	<1200	160	490	6900	140	2500	310
Chrysene	µg/kg	120	<1200	200	570	6900	150	2800	360
Dibenz(a,h)anthracene	µg/kg	<1000	<1200	<950	<1500	1000	<980	370	<1200
Fluoranthene	µg/kg	260	240	430	1200	12000	290	5000	640
Fluorene	µg/kg	<1000	<1200	<950	350	930	<980	560	<1200
2-Methylnaphthalene	µg/kg	<1000	<1200	<950	240	<2000	<980	320	<1200

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG82S15	97CG82D15	97CG82S16	97CG82S17	97CG82S18	97CG82S19	97CG82S20	97CG82S21
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<1200	<1200	180	700	220	<1300	210	<1200
Phenanthrene	µg/kg	140	150	320	1100	7600	190	4000	350
Pyrene	µg/kg	200	200	380	1200	12000	260	4600	510
Total PAHs[1]	µg/kg	950	1790	2080	7370	56860	1150	24470	2460
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Chlordane	µg/kg	<6	<8	<6	<8	<6	<6	<4	<8
Dieldrin	µg/kg	<0.005	<0.007	<0.005	<0.008	<0.005	<0.006	<0.004	<0.007
Endrin	µg/kg	<0.005	<0.007	<0.005	<0.008	<0.005	<0.006	<0.004	<0.007
Heptachlor	µg/kg	<0.003	<0.004	<0.003	<0.004	<0.003	<0.003	<0.002	<0.004
Heptachlor epoxide	µg/kg	<0.003	<0.004	<0.003	<0.004	<0.003	<0.003	<0.002	<0.004
Lindane	µg/kg	<0.003	<0.004	<0.003	<0.004	<0.003	<0.003	<0.002	<0.004
Sum DDD	µg/kg	<5	<7	<5	<8	<5	<6	<4	<7
Sum DDE	µg/kg	<5	<7	<5	<8	<5	<6	<4	<7
Sum DDT	µg/kg	<5	<7	<5	<8	<5	<6	<4	<7
Total DDTs[2]	µg/kg	NA	NA	NA	NA	NA	NA	<4	NA
Toxaphene	µg/kg	<0.10	<0.142	<0.10	<0.167	<0.1	<0.10	<0.08	<0.142
Mean-PEC-Q		**0.173**	**0.153**	**0.174**	**0.351**	**1.40**	**0.183**	**0.691**	**0.205**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG82D21	97CG84S01	97CG84S02	97CG84S03	97CG84D03	97CG84S04	97CG84S05
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	63.99	21.5	22.615	61.915	38.48	22.08	80.12
Total organic carbon	%	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.19900	0.19920	0.19992	0.19821	0.19821	0.19719	0.19916
Metals								
Arsenic	mg/kg	24.6	4.5	5.5	33.3	15.7	3.6	90.1
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.6
Chromium	mg/kg	34.0	2.4	15.0	36.0	35.0	4.0	73.0
Copper	mg/kg	36.0	3.3	17.0	44.0	44.0	4.8	130.0
Lead	mg/kg	36.0	22.0	29.0	250.0	120.0	24.0	580.0
Mercury	mg/kg	<0.1	0.07	0.05	<0.08	0.06	<0.04	0.3
Nickel	mg/kg	14.0	<4.0	17.0	20.0	32.0	3.9	34.0
Zinc	mg/kg	120.0	55.0	85.0	1200.0	570.0	79.0	2400.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<1200	<870	<760	<1300	<900	<820	<5500
Acenaphthylene	µg/kg	<1200	<870	<760	<1300	<900	<820	<5500
Anthracene	µg/kg	170	<870	<760	<1300	<900	<820	<5500
Benz(a)anthracene	µg/kg	270	<870	<760	630	670	<820	2400
Benzo(a)pyrene	µg/kg	320	<870	<760	1000	1000	<820	3700
Chrysene	µg/kg	370	<870	<760	730	690	<820	2900
Dibenz(a,h)anthracene	µg/kg	<1200	<870	<760	<1300	<900	<820	<5500
Fluoranthene	µg/kg	710	<870	<760	940	970	<820	5200
Fluorene	µg/kg	<1200	<870	<760	<1300	<900	<820	<5500
2-Methylnaphthalene	µg/kg	<1200	<870	<760	<1300	<900	<820	<5500

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG82D21	97CG84S01	97CG84S02	97CG84S03	97CG84D03	97CG84S04	97CG84S05
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<2000	<870	<800	<1300	210	<820	1300
Phenanthrene	µg/kg	460	<870	<760	420	400	<820	2500
Pyrene	µg/kg	620	<870	<760	1100	1400	<820	4600
Total PAHs[1]	µg/kg	2920	<5220	<5320	4820	5340	<5740	22600
Polychlorinated Biphenyls								
Total PCBs	µg/kg	NR	NR	NR	31695	8550	NR	2200
Pesticides								
Chlordane	µg/kg	<8	<4	<6	<60	<40	<6	<40
Dieldrin	µg/kg	<0.008	<0.004	<0.005	<0.05	<0.04	<0.005	<0.04
Endrin	µg/kg	<0.008	<0.004	<0.005	<0.05	<0.04	<0.005	<0.04
Heptachlor	µg/kg	<0.004	<0.002	<0.003	<0.03	<0.02	<0.003	<0.02
Heptachlor epoxide	µg/kg	<0.004	<0.002	<0.003	<0.03	<0.02	<0.003	<0.02
Lindane	µg/kg	<0.004	<0.002	<0.003	<0.03	<0.02	<0.003	<0.02
Sum DDD	µg/kg	<8	<4	<5	<50	<40	<5	<40
Sum DDE	µg/kg	<8	<4	<5	<50	<40	<5	<40
Sum DDT	µg/kg	<8	<4	<5	<50	<40	<5	<40
Total DDTs[2]	µg/kg	NA	<4	NA	NA	NA	NA	NA
Toxaphene	µg/kg	<0.167	<0.08	<0.10	<1.00	<0.80	<0.100	<0.80
Mean-PEC-Q		**0.230**	**0.108**	**0.157**	**16.0**	**4.49**	**0.121**	**2.17**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG84S06	97CG84S07	97CG84S08	97CG84S09	97CG84D09	97CG84S10	97CG84S11
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	86.88	83.31	44.305	84.58	85.58	74.075	76.785
Total organic carbon	%	1	1	1	1	1	1.3	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.18712	0.20028	0.20028	0.19952	0.19928	0.19876	0.19774
Metals								
Arsenic	mg/kg	86.1	64.2	34.0	102.0	104.0	56.6	58.0
Cadmium	mg/kg	5.3	5.7	<2.0	4.8	5.9	5.0	3.2
Chromium	mg/kg	69.0	78.0	15.0	58.0	69.0	40.0	48.0
Copper	mg/kg	130.0	140.0	25.0	120.0	140.0	78.0	82.0
Lead	mg/kg	600.0	470.0	150.0	480.0	630.0	350.0	320.0
Mercury	mg/kg	0.4	0.4	<0.07	0.6	0.4	0.2	0.2
Nickel	mg/kg	31.0	34.0	7.8	29.0	30.0	27.0	33.0
Zinc	mg/kg	2500.0	2200.0	590.0	1900.0	2600.0	1100.0	1200.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<7200	1100	<800	3900	<3500	<2500	2000
Acenaphthylene	µg/kg	<7200	<5500	<800	<6500	<3500	<3600	<1800
Anthracene	µg/kg	<7200	<5500	<800	3800	<3500	1600	540
Benz(a)anthracene	µg/kg	2300	2400	330	5200	1600	2000	900
Benzo(a)pyrene	µg/kg	3300	3700	550	4600	2400	2100	1100
Chrysene	µg/kg	3000	3100	370	5800	2000	2500	1200
Dibenz(a,h)anthracene	µg/kg	<7200	<5500	<800	<6500	<3500	<3600	<1800
Fluoranthene	µg/kg	5600	4900	520	18000	3300	7300	2300
Fluorene	µg/kg	<7200	<5500	<800	6000	<3500	1700	860
2-Methylnaphthalene	µg/kg	<7200	<5500	<800	<6500	<3500	<3600	460

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG84S06	97CG84S07	97CG84S08	97CG84S09	97CG84D09	97CG84S10	97CG84S11
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<7200	1800	<800	1900	1200	<2500	1200
Phenanthrene	µg/kg	2400	3000	210	20000	1800	6700	1900
Pyrene	µg/kg	4900	4900	760	17000	3500	6400	2200
Total PAHs[1]	µg/kg	21500	24900	3140	86200	15800	30300	14660
Polychlorinated Biphenyls								
Total PCBs	µg/kg	4100	3500	440	2900	NR	1280	1600
Pesticides								
Chlordane	µg/kg	<80	<160	<60	<160	<160	<80	<100
Dieldrin	µg/kg	<0.16	<0.16	<0.05	<0.16	<0.16	<0.08	<0.10
Endrin	µg/kg	<0.16	<0.16	<0.05	<0.16	<0.16	<0.08	<0.10
Heptachlor	µg/kg	<0.08	<0.08	<0.03	<0.08	<0.08	<0.04	<0.05
Heptachlor epoxide	µg/kg	<0.08	<0.08	<0.03	<0.08	<0.08	<0.04	<0.05
Lindane	µg/kg	<0.08	<0.08	<0.03	<0.08	<0.08	<0.04	<0.05
Sum DDD	µg/kg	<160	<160	<50	<160	<160	<80	<100
Sum DDE	µg/kg	<160	<160	<50	<80	<160	<80	<100
Sum DDT	µg/kg	<160	<160	<50	<160	<160	<80	<100
Total DDTs[2]	µg/kg	NA	NA	NA	NA	NA	NA	NA
Toxaphene	µg/kg	<0.30	<0.30	<1.00	<0.30	<0.30	<1.67	<0.20
Mean-PEC-Q		**3.10**	**2.75**	**0.461**	**3.35**	**1.57**	**1.52**	**1.44**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG84S12	97CG84S13	97CG84S14	97CG84S14_1	97CG84S14_2	97CG84S15	97CG84S16
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	24.885	23.81	72.2	72.16	72.15	83.12	68.705
Total organic carbon	%	1	1	1	0	0	1	1
Semivolatile dilution factors	-	1	1	1	NR	NR	1	1
Metals correctional factor	-	0.19956	0.19944	0.19968	NR	NR	0.19700	0.19778
Metals								
Arsenic	mg/kg	5.9	9.5	71.5	NR	NR	74.3	47.5
Cadmium	mg/kg	<2.0	<2.0	4.2	NR	NR	5.8	3.2
Chromium	mg/kg	8.3	4.3	45.0	NR	NR	72.0	34.0
Copper	mg/kg	11.0	5.5	81.0	NR	NR	130.0	71.0
Lead	mg/kg	54.0	20.0	380.0	NR	NR	500.0	280.0
Mercury	mg/kg	0.09	0.2	<0.06	NR	NR	0.2	<0.3
Nickel	mg/kg	6.5	<4.0	28.0	NR	NR	37.0	25.0
Zinc	mg/kg	190.0	87.0	1400.0	NR	NR	2100.0	1200.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<810	<740	380	NR	NR	580	<1600
Acenaphthylene	µg/kg	<810	<740	<1800	NR	NR	530	<1600
Anthracene	µg/kg	<810	<740	380	NR	NR	720	<1600
Benz(a)anthracene	µg/kg	<810	<740	1400	NR	NR	2400	320
Benzo(a)pyrene	µg/kg	<810	<740	1900	NR	NR	3300	500
Chrysene	µg/kg	<810	<740	1400	NR	NR	2500	420
Dibenz(a,h)anthracene	µg/kg	<810	<740	<1800	NR	NR	460	<1600
Fluoranthene	µg/kg	280	<740	2700	NR	NR	3300	720
Fluorene	µg/kg	<810	<740	<1800	NR	NR	640	<1600
2-Methylnaphthalene	µg/kg	<810	<740	480	NR	NR	700	<1600

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG84S12	97CG84S13	97CG84S14	97CG84S14_1	97CG84S14_2	97CG84S15	97CG84S16
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	220	<740	1400	<2500	<29	1900	<1600
Phenanthrene	µg/kg	170	<740	1000	NR	NR	1700	310
Pyrene	µg/kg	240	<740	2800	NR	NR	4400	590
Total PAHs[1]	µg/kg	2530	<5180	13840	NA	<29	23130	2860
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<700	NR	1900	NR	NR	3200	1500
Pesticides								
Chlordane	µg/kg	<60	<4	<100	NR	NR	<160	<80
Dieldrin	µg/kg	<0.05	<0.004	<0.10	NR	NR	<0.16	<0.08
Endrin	µg/kg	<0.05	<0.004	<0.10	NR	NR	<0.16	<0.08
Heptachlor	µg/kg	<0.03	<0.002	<0.05	NR	NR	<0.08	<0.04
Heptachlor epoxide	µg/kg	<0.03	<0.002	<0.05	NR	NR	<0.08	<0.04
Lindane	µg/kg	<0.03	<0.002	<0.05	NR	NR	<0.08	<0.04
Sum DDD	µg/kg	<50	<4	<100	NR	NR	<160	<80
Sum DDE	µg/kg	<50	<4	<50	NR	NR	<30	<80
Sum DDT	µg/kg	<50	<4	<100	NR	NR	<160	<80
Total DDTs[2]	µg/kg	NA	<4	NA	NR	NR	NA	NA
Toxaphene	µg/kg	<1.00	<0.08	<0.20	NR	NR	<0.30	<1.67
Mean-PEC-Q		**0.162**	**0.125**	**1.64**	**NA**	**0.000636**	**2.59**	**1.17**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG84S17	97CG84S18	97CG84S19	97CG80S01	97CG80S02	97CG80S03	97CG80S04
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	26.695	37.89	27.115	50.195	64.695	86.725	83.585
Total organic carbon	%	1	1	1	24.2	17.3	2.2	2
Semivolatile dilution factors	-	1	1	1	500	1	2	5
Metals correctional factor	-	0.19888	0.19790	0.19661	0.20300	0.20635	0.17433	0.19477
Metals								
Arsenic	mg/kg	9.5	11.8	6.1	21.1	26.5	93.5	149.0
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.1	3.7	5.5
Chromium	mg/kg	8.9	14.0	5.6	240.0	470.0	4300.0	6300.0
Copper	mg/kg	15.0	25.0	10.0	24.0	17.0	88.0	74.0
Lead	mg/kg	60.0	120.0	35.0	70.0	31.0	490.0	250.0
Mercury	mg/kg	<0.1	0.07	<0.07	0.6	0.3	1	0.7
Nickel	mg/kg	7.0	9.5	5.3	9.5	4.3	16.0	23.0
Zinc	mg/kg	240.0	380.0	180.0	220.0	160.0	750.0	1100.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<860	<930	<750	29635148	13000	380000	55000
Acenaphthylene	µg/kg	<860	99	<750	210000	1300	19000	5300
Anthracene	µg/kg	<860	110	<750	48469477	240000	79000	10000
Benz(a)anthracene	µg/kg	130	210	140	10909467	96000	77000	12000
Benzo(a)pyrene	µg/kg	200	290	190	4000000	33000	91000	12000
Chrysene	µg/kg	170	320	220	133189	120000	80000	14000
Dibenz(a,h)anthracene	µg/kg	<860	<930	<750	260000	3000	3600	<37000
Fluoranthene	µg/kg	290	430	310	47945413	320000	110000	19000
Fluorene	µg/kg	<860	<930	<750	33744572	23000	250000	20000
2-Methylnaphthalene	µg/kg	<860	110	<750	6700000	3200	89000	19000

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG84S17	97CG84S18	97CG84S19	97CG80S01	97CG80S02	97CG80S03	97CG80S04
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<860	530	120	6332708	9000	560000	355000
Phenanthrene	µg/kg	130	400	140	90496808	81000	210000	16000
Pyrene	µg/kg	260	360	230	36269024	250000	150000	21000
Total PAHs[1]	µg/kg	1180	2859	1725	315105800	1192500	2098600	558300
Polychlorinated Biphenyls								
Total PCBs	µg/kg	NR	NR	NR	<3500	<1050	3200	1500
Pesticides								
Chlordane	µg/kg	<60	<40	<220	NR	NR	NR	NR
Dieldrin	µg/kg	<0.05	<0.04	<0.04	NR	NR	NR	NR
Endrin	µg/kg	<0.05	<0.04	<0.04	NR	NR	NR	NR
Heptachlor	µg/kg	<0.03	<0.02	<0.02	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	<0.03	<0.02	<0.02	NR	NR	NR	NR
Lindane	µg/kg	<0.03	<0.02	<0.02	NR	NR	NR	NR
Sum DDD	µg/kg	<50	<40	<40	NR	NR	NR	NR
Sum DDE	µg/kg	<50	<20	<400	NR	NR	NR	NR
Sum DDT	µg/kg	<50	<40	<40	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NA	NA	NA	NR	NR	NR	NR
Toxaphene	µg/kg	<1.00	<0.80	<0.80	NR	NR	NR	NR
Mean-PEC-Q		**0.155**	**0.264**	**0.129**	**6910**	**26.6**	**34.6**	**12.1**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S05	97CG80S05D01	97CG80S06	97CG80S07	97CG80D07	97CG80S08	97CG80S09
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	31.34	31.3	80.88	81.6	77.585	70.295	84.50999
Total organic carbon	%	28.9	0	1	2	1	4.9	2.6
Semivolatile dilution factors	-	NR	2500	5	2	1	2	1
Metals correctional factor	-	0.19264	NR	0.20725	0.18768	0.19755	0.20112	0.15605
Metals								
Arsenic	mg/kg	3.3	NR	156.0	84.3	60.3	92.9	66.3
Cadmium	mg/kg	<1.9	NR	3.1	6.6	2.1	2.3	2.4
Chromium	mg/kg	14.0	NR	5900.0	8300.0	16.0	4300.0	7400.0
Copper	mg/kg	4.1	NR	54.0	110.0	24.0	77.0	37.0
Lead	mg/kg	<14.0	NR	140.0	300.0	80.0	290.0	120.0
Mercury	mg/kg	0.1	NR	0.4	0.5	0.2	0.3	0.7
Nickel	mg/kg	<3.9	NR	57.0	20.0	20.0	25.0	16.0
Zinc	mg/kg	13.0	NR	680.0	1100.0	280.0	540.0	450.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	NR	27825292	130000	380000	670000	7800	2300
Acenaphthylene	µg/kg	NR	<4400000	<33000	5100	6700	<10000	490
Anthracene	µg/kg	NR	79192384	21000	50000	86000	6300	1900
Benz(a)anthracene	µg/kg	NR	16585476	8700	86000	100000	15000	4800
Benzo(a)pyrene	µg/kg	NR	6800000	9000	46000	57000	16000	5300
Chrysene	µg/kg	NR	19393254	9900	68000	80000	17000	5300
Dibenz(a,h)anthracene	µg/kg	NR	450000	<33000	<14000	3400	<10000	870
Fluoranthene	µg/kg	NR	91102584	60000	200000	470000	18000	5100
Fluorene	µg/kg	NR	42103603	160000	300000	420000	11000	1800
2-Methylnaphthalene	µg/kg	NR	3600000	<33000	10000	45000	3500	1700

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S05	97CG80S05D01	97CG80S06	97CG80S07	97CG80D07	97CG80S08	97CG80S09
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	80000	20037519	19650	34500	33000	26750	5300
Phenanthrene	µg/kg	NR	163190638	31000	440000	700000	15000	4700
Pyrene	µg/kg	NR	72053229	34000	230000	390000	25000	8500
Total PAHs[1]	µg/kg	80000	542334000	483250	1849600	3061100	161350	48060
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<32900	NR	<2800	<2100	<2100	<2100	1800
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**1.79**	**23800**	**15.1**	**46.6**	**67.4**	**6.86**	**5.00**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S10	97CG80S11	97CG80S12	97CG80S13	97CG80S14	97CG80S15	97CG80S16	97CG80S17
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	81.675	81.305	87.08	88.18	88.49001	63.125	90.3	61.125
Total organic carbon	%	1.8	1.5	1.1	1	1	1	1	1
Semivolatile dilution factors	-	2	1	2	1	1	1	1	1
Metals correctional factor	-	0.17262	0.17927	0.18168	0.19432	0.19007	0.17307	0.21159	0.15508
Metals									
Arsenic	mg/kg	125.0	52.5	170.0	75.4	107.0	36.2	189.0	49.7
Cadmium	mg/kg	<1.7	<1.8	<1.8	2.9	1.9	<1.7	<2.1	<1.6
Chromium	mg/kg	13000.0	2900.0	960.0	1000.0	850.0	65.0	1100.0	160.0
Copper	mg/kg	20.0	17.0	16.0	35.0	34.0	6.3	17.0	8.2
Lead	mg/kg	51.0	65.0	36.0	120.0	120.0	30.0	80.0	15.0
Mercury	mg/kg	<0.3	<0.2	<0.3	<0.3	<0.4	<0.1	<0.4	<0.1
Nickel	mg/kg	9.7	7.7	4.4	7.2	7.7	<3.5	7.8	<3.1
Zinc	mg/kg	200.0	210.0	110.0	370.0	400.0	63.0	250.0	42.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<6100	1800	550	100000	1300	180	<23000	<1300
Acenaphthylene	µg/kg	<6100	380	<3500	1400	<3700	<1400	<23000	<1300
Anthracene	µg/kg	1500	6200	1500	1300	3700	280	<23000	<1300
Benz(a)anthracene	µg/kg	1300	2700	840	4000	3500	200	<23000	260
Benzo(a)pyrene	µg/kg	1500	2900	860	4400	4300	200	<23000	340
Chrysene	µg/kg	2100	3900	1100	5900	4600	250	<23000	330
Dibenz(a,h)anthracene	µg/kg	<6100	460	<3500	840	1630	<1400	<23000	<1300
Fluoranthene	µg/kg	2200	7800	1300	6200	7200	390	<23000	400
Fluorene	µg/kg	770	3300	770	30000	1800	<1400	<23000	<1300
2-Methylnaphthalene	µg/kg	<6100	530	<3500	950	980	<1400	<23000	<1300

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S10	97CG80S11	97CG80S12	97CG80S13	97CG80S14	97CG80S15	97CG80S16	97CG80S17
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	1247.5	1700	610	19000	1900	840	130	150
Phenanthrene	µg/kg	3400	11000	3000	2700	7500	450	<23000	320
Pyrene	µg/kg	3500	8100	2100	8000	8000	500	<23000	540
Total PAHs[1]	µg/kg	17517.5	50770	12630	184690	46410	3290	130	2340
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<2100	<2100	<2800	<2800	<2800	<1050	<3500	<1400
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**9.12**	**3.19**	**1.33**	**5.05**	**1.98**	**0.237**	**1.24**	**0.294**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S18	97CG80S19	97CG80S20	97CG80S21	97CG80S22	97CG80S23	97CG80S24	97CG80S25
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	78.31	75.165	42.6	83.595	76.58	80.075	70.73	84.11
Total organic carbon	%	1	1	1	2.4	2.1	1	1	1
Semivolatile dilution factors	-	2	1	1	1	1	1	NR	2
Metals correctional factor	-	0.18102	0.15448	0.20222	0.36650	0.19402	0.22598	0.21459	0.23854
Metals									
Arsenic	mg/kg	110.0	3.5	34.5	137.0	68.8	57.9	45.4	218.0
Cadmium	mg/kg	<1.8	8.1	<2.0	4.2	<1.9	<2.3	<2.1	<2.4
Chromium	mg/kg	1900.0	1500.0	170.0	1200.0	90.0	88.0	130.0	620.0
Copper	mg/kg	11.0	46.0	3.7	53.0	9.3	9.1	10.0	18.0
Lead	mg/kg	53.0	220.0	85.0	270.0	22.0	29.0	38.0	80.0
Mercury	mg/kg	<0.1	0.4	<0.07	0.4	0.2	<0.2	<0.1	<0.3
Nickel	mg/kg	<3.6	15.0	<4.0	12.0	<3.9	5.4	<4.3	<4.8
Zinc	mg/kg	150.0	950.0	21.0	880.0	43.0	68.0	110.0	230.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<4900	2600	620	3400	230	320	NR	<6800
Acenaphthylene	µg/kg	<4900	8300	<1100	1800	<2000	<2500	NR	<6800
Anthracene	µg/kg	<4900	2100	320	2100	580	600	NR	<6800
Benz(a)anthracene	µg/kg	650	9300	270	7200	540	430	NR	1400
Benzo(a)pyrene	µg/kg	640	14000	190	9300	620	280	NR	1500
Chrysene	µg/kg	790	18000	240	8600	840	630	NR	1900
Dibenz(a,h)anthracene	µg/kg	<4900	2000	<1100	1400	<2000	<2500	NR	<6800
Fluoranthene	µg/kg	600	27000	920	12000	1200	1100	NR	2300
Fluorene	µg/kg	<4900	1800	530	2300	290	380	NR	<6800
2-Methylnaphthalene	µg/kg	<4900	970	<1100	1900	<2000	<2500	NR	<6800

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S18	97CG80S19	97CG80S20	97CG80S21	97CG80S22	97CG80S23	97CG80S24	97CG80S25
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	570	5400	170	7100	400	500	<35	850
Phenanthrene	µg/kg	860	4200	1700	6100	1300	1100	NR	1900
Pyrene	µg/kg	1400	25000	890	11000	1500	1900	NR	2900
Total PAHs[1]	µg/kg	5510	120670	5850	74200	7500	7240	<35	12750
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<2100	<1400	<700	<3500	<1400	<2100	<1400	<2800
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**1.66**	**4.05**	**0.382**	**3.09**	**0.411**	**0.396**	**0.244**	**1.26**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80D25	97CG80S26	97CG80S27	97CG80S28	97CG80S29	97CG80S30	97CG80S31	97CG80S32
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	96.86	88.67	88.415	87.99001	24.7	47.5	55.8	76.595
Total organic carbon	%	1	1	1	1.6	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.19025	0.23457	0.23657	0.21436	0.18294	0.19256	0.19554	0.19275
Metals									
Arsenic	mg/kg	110.0	125.0	125.0	131.0	9.0	8.4	10.5	79.4
Cadmium	mg/kg	<1.9	4.1	<2.4	2.9	<1.8	<1.9	<2.0	<1.9
Chromium	mg/kg	8.7	1300.0	680.0	1200.0	32.0	11.0	5.1	15.0
Copper	mg/kg	15.0	57.0	18.0	43.0	6.8	4.7	3.9	12.0
Lead	mg/kg	66.0	230.0	45.0	180.0	30.0	<14.0	24.0	68.0
Mercury	mg/kg	1.3	<0.3	<0.4	0.5	<0.06	<0.07	<0.09	<0.2
Nickel	mg/kg	4.6	12.0	5.2	11.0	<3.7	<3.9	4.4	5.2
Zinc	mg/kg	180.0	760.0	140.0	570.0	68.0	26.0	45.0	200.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<17000	1600	<3500	26000	<640	<1000	<1200	<1900
Acenaphthylene	µg/kg	<17000	<5400	<3500	1900	<640	<1000	<1200	<1900
Anthracene	µg/kg	<17000	1500	<3500	46000	200	190	370	<1900
Benz(a)anthracene	µg/kg	3900	4800	690	24000	270	<1000	180	<1900
Benzo(a)pyrene	µg/kg	4400	6700	920	17000	350	<1000	180	270
Chrysene	µg/kg	5000	5600	960	27000	340	130	260	220
Dibenz(a,h)anthracene	µg/kg	<17000	950	<3500	5300	<640	<1000	<1200	<1900
Fluoranthene	µg/kg	<17000	8700	1200	100000	440	300	650	280
Fluorene	µg/kg	<17000	1100	<3500	34000	100	<1000	170	<1900
2-Methylnaphthalene	µg/kg	<17000	830	<3500	8500	76	<1000	150	<1900

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80D25	97CG80S26	97CG80S27	97CG80S28	97CG80S29	97CG80S30	97CG80S31	97CG80S32
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	2100	3000	640	9100	140	100	180	<1900
Phenanthrene	µg/kg	<3400	4500	910	120000	450	400	880	220
Pyrene	µg/kg	<5300	8400	1400	79000	490	260	490	340
Total PAHs[1]	µg/kg	15400	47680	6720	497800	2856	2380	3510	1330
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<12600	2590	<2800	1500	<700	<700	<700	<1400
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.674**	**2.95**	**0.936**	**8.90**	**0.149**	**0.104**	**0.146**	**0.307**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S33	97CG80S34	97CG80S35	97CG80S36	97CG80S37	97CG80S38	97CG80S39	97CG80S40
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	52.725	78.88	60.095	60.405	78.185	22.28	36.92	57
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	2	1	1	2
Metals correctional factor	-	0.19275	0.22158	0.18152	0.20345	0.20112	0.19615	0.21574	0.20366
Metals									
Arsenic	mg/kg	41.3	66.3	11.4	36.0	84.9	4.6	11.6	32.0
Cadmium	mg/kg	<1.9	<2.2	<1.8	<2.0	<2.0	<2.0	<2.2	<2.0
Chromium	mg/kg	2.6	3.9	3.6	5.4	15.0	3.4	2.7	3.6
Copper	mg/kg	3.9	2.5	3.5	3.9	10.0	2.6	<1.3	3.0
Lead	mg/kg	17.0	17.0	<13.0	<14.0	55.0	<14.0	<15.0	18.0
Mercury	mg/kg	<0.08	<0.2	<0.1	<0.1	0.32	0.11	<0.06	<0.1
Nickel	mg/kg	<3.9	<4.4	3.7	5.2	7.8	<3.9	<4.3	5.9
Zinc	mg/kg	33.0	28.0	18.0	33.0	180.0	20.0	24.00	53.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<1300	1700	<790	<1500	<4800	<870	<640	<2400
Acenaphthylene	µg/kg	<1300	<1700	<790	<1500	<4800	<870	<640	<2400
Anthracene	µg/kg	<1300	240	140	<1500	<4800	<870	140	<2400
Benz(a)anthracene	µg/kg	140	<1700	95	160	<4800	100	<640	240
Benzo(a)pyrene	µg/kg	160	<1700	120	200	520	130	<640	310
Chrysene	µg/kg	210	<1700	130	190	610	120	78	420
Dibenz(a,h)anthracene	µg/kg	<1300	<1700	<790	<1500	<4800	<870	<640	<2400
Fluoranthene	µg/kg	340	200	320	350	640	150	150	540
Fluorene	µg/kg	<1300	<1700	<790	<1500	<4800	<870	<640	<2400
2-Methylnaphthalene	µg/kg	<1300	<1700	<790	<1500	<4800	<870	<640	<2400

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S33	97CG80S34	97CG80S35	97CG80S36	97CG80S37	97CG80S38	97CG80S39	97CG80S40
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	22	<1700	42	150	<4800	<870	<640	<2400
Phenanthrene	µg/kg	200	440	340	180	550	130	270	350
Pyrene	µg/kg	340	250	260	300	940	190	140	640
Total PAHs[1]	µg/kg	1412	2830	1447	1530	3260	820	1418	2500
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	<1400	<700	<1120	<1750	<700	<700	<700
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.155**	**0.242**	**0.0852**	**0.148**	**0.354**	**0.0556**	**0.0851**	**0.169**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S41	97CG80S51	97CG80S52	97CG80D52	97CG80S53	97CG80S54	97CG80S55
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	46.775	37.62	71.985	64.98	64.50999	25.61	41.28
Total organic carbon	%	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.19087	0.19500	0.20064	0.15757	0.19316	0.18932	0.18422
Metals								
Arsenic	mg/kg	9.7	28.0	69.4	85.2	53.7	13.8	52.2
Cadmium	mg/kg	<1.9	<2.0	<2.0	<1.6	<1.9	<1.9	<1.8
Chromium	mg/kg	3.5	2.1	7.4	5.9	5.3	2.0	4.6
Copper	mg/kg	4.6	4.4	11.0	8.5	9.6	2.2	3.4
Lead	mg/kg	<13.0	15.0	65.0	33.0	27.0	<13.0	19.0
Mercury	mg/kg	0.2	<0.06	<0.1	<0.1	<0.1	<0.06	<0.08
Nickel	mg/kg	<3.8	<3.9	6.6	3.7	4.2	<3.8	4.1
Zinc	mg/kg	26.0	32.0	150.0	96.0	68.0	18.0	39.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<850	<890	<1900	<6500	<1500	<810	<860
Acenaphthylene	µg/kg	<850	<890	<1900	<6500	<1500	<810	<860
Anthracene	µg/kg	<850	<890	<1900	<6500	<1500	<810	<860
Benz(a)anthracene	µg/kg	120	<890	210	<6500	<1500	<810	<860
Benzo(a)pyrene	µg/kg	140	<890	230	<6500	<1500	<810	<860
Chrysene	µg/kg	130	<890	340	<6500	<1500	<810	<860
Dibenz(a,h)anthracene	µg/kg	<850	<890	<1900	<6500	<1500	<810	<860
Fluoranthene	µg/kg	170	<890	500	<6500	230	<810	99
Fluorene	µg/kg	<850	<890	<1900	<6500	<1500	<810	<860
2-Methylnaphthalene	µg/kg	<850	<890	<1900	<6500	<1500	<810	<860

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S41	97CG80S51	97CG80S52	97CG80D52	97CG80S53	97CG80S54	97CG80S55
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<850	<890	210	<6500	<1500	<810	<860
Phenanthrene	µg/kg	140	<890	450	<6500	210	<810	<860
Pyrene	µg/kg	260	<890	510	<6500	240	<810	100
Total PAHs[1]	µg/kg	960	<5340	2450	NA	680	<5670	1919
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<700	<700	<1400	<910	<1050	<700	<700
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.0706**	**0.153**	**0.298**	**0.485**	**0.185**	**0.117**	**0.195**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S56	97CG80S57	97CG80S58	97CG80S59	97CG80S60	97CG80S61	97CG80S62
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	72.22	80.72	43.61	43.61	18.095	25.605	68.295
Total organic carbon	%	1	1	1	1	1	1	1.1
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.19406	0.19406	0.15427	0.16092	0.19692	0.20946	0.18744
Metals								
Arsenic	mg/kg	95.1	85.3	41.0	4.5	4.7	3.4	46.6
Cadmium	mg/kg	<1.9	<1.9	<1.5	<1.6	<2.0	<2.1	<1.9
Chromium	mg/kg	6.0	7.8	4.5	890.0	4.9	11.0	190.0
Copper	mg/kg	8.4	15.0	6.0	110.0	<1.2	<1.3	5.3
Lead	mg/kg	34.0	37.0	21.0	<11.0	<14.0	15.0	17.0
Mercury	mg/kg	<0.2	<0.2	<0.05	<0.1	<0.05	<0.06	<0.1
Nickel	mg/kg	4.2	4.3	4.5	320.0	<3.9	<4.2	18.0
Zinc	mg/kg	69.0	85.0	37.0	12.0	9.0	<8.4	41.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Acenaphthylene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Anthracene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Benz(a)anthracene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Benzo(a)pyrene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Chrysene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Dibenz(a,h)anthracene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Fluoranthene	µg/kg	260	<3100	510	80	<720	<770	190
Fluorene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
2-Methylnaphthalene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S56	97CG80S57	97CG80S58	97CG80S59	97CG80S60	97CG80S61	97CG80S62
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<1800	<3100	<1800	<650	<720	<770	<1600
Phenanthrene	µg/kg	<1800	<3100	500	<650	<720	<770	<1600
Pyrene	µg/kg	270	<3100	400	81	<720	<770	180
Total PAHs[1]	µg/kg	530	NA	1410	1786	<5040	<5390	370
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1400	<2100	<1120	<700	<700	<700	<1400
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.275**	**0.501**	**0.160**	**1.16**	**0.0914**	**0.101**	**0.290**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S63	97CG80S64	97CG80S65	97CG80S66	97CG80S67	97CG80S68	97CG80D68
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	72.225	79.72	78.16	80.485	69.59	82.665	82.875
Total organic carbon	%	1	1	1.1	1.1	1.2	1	1
Semivolatile dilution factors	-	1	1	NR	1	1	1	1
Metals correctional factor	-	0.19794	0.19485	0.19485	0.20635	0.19485	0.19481	0.19884
Metals								
Arsenic	mg/kg	42.4	46.1	42.6	82.7	31.0	147.0	235.0
Cadmium	mg/kg	<2.0	<1.9	<2.0	<2.1	<1.9	2.9	<2.0
Chromium	mg/kg	120.0	80.0	73.0	160.0	53.0	1100.0	5.9
Copper	mg/kg	6.2	9.5	5.8	14.0	13.0	79.0	16.0
Lead	mg/kg	<14.0	15.0	<14.0	42.0	<13.0	380.0	90.0
Mercury	mg/kg	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	0.4
Nickel	mg/kg	<4.0	7.1	4.1	7.3	6.8	22.0	5.4
Zinc	mg/kg	27.0	46.0	21.0	98.0	20.0	450.0	160.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<2000	<2500	NR	NR	<1400	<2100	<3300
Acenaphthylene	µg/kg	<2000	<2500	NR	NR	<1400	<2100	<3300
Anthracene	µg/kg	<2000	<2500	NR	NR	<1400	210	<3300
Benz(a)anthracene	µg/kg	<2000	<2500	NR	NR	<1400	980	340
Benzo(a)pyrene	µg/kg	<2000	<2500	NR	NR	<1400	1300	340
Chrysene	µg/kg	<2000	<2500	NR	NR	<1400	1400	440
Dibenz(a,h)anthracene	µg/kg	<2000	<2500	NR	NR	<1400	220	<3300
Fluoranthene	µg/kg	<2000	<2500	NR	270	<1400	1800	<3300
Fluorene	µg/kg	<2000	<2500	NR	NR	<1400	<2100	<3300
2-Methylnaphthalene	µg/kg	<2000	<2500	NR	NR	<1400	<2100	<3300

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S63	97CG80S64	97CG80S65	97CG80S66	97CG80S67	97CG80S68	97CG80D68
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<2000	<2500	<39	<39	<1400	<2100	<3300
Phenanthrene	µg/kg	<2000	<2500	NR	400	<1400	1000	460
Pyrene	µg/kg	<2000	<2500	NR	NR	<1400	2000	630
Total PAHs[1]	µg/kg	<2000	NA	<39	689.5	<4200	8910	2210
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1120	<1820	<3500	<1820	<980	2240	<2100
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.219**	**0.391**	**0.170**	**0.368**	**0.184**	**2.18**	**0.666**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S69	97CG80S70	97CG80S71	97CG80S72	97CG80S73	97CG80S74	97CG80S75
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	52.1	30.785	74.79	81.9	77.48	69.6	61.72
Total organic carbon	%	1	1	1	1.9	1	1.2	1.2
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.19208	0.20605	0.20173	0.18737	0.19550	0.22099	0.18484
Metals								
Arsenic	mg/kg	62.0	11.0	44.0	107.3	67.6	23.6	10.1
Cadmium	mg/kg	<1.9	<2.1	<2.0	<1.9	<2.0	<2.2	<1.8
Chromium	mg/kg	30.0	20.0	83.0	1400.0	230.0	97.0	22.0
Copper	mg/kg	4.4	5.6	8.4	4.9	9.4	7.9	3.3
Lead	mg/kg	<13.0	39.0	<14.0	<13.0	39.0	<16.0	<13.0
Mercury	mg/kg	<0.1	<0.07	<0.2	<0.3	<0.2	<0.1	<0.1
Nickel	mg/kg	<3.8	6.5	<4.0	4.5	6.3	23.0	<3.7
Zinc	mg/kg	17.0	69.0	22.0	28.0	82.0	34.0	14.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<2000	270	<2300	<5900	<2400	<1800	<1400
Acenaphthylene	µg/kg	<2000	<1700	<2300	<5900	<2400	<1800	<1400
Anthracene	µg/kg	<2000	590	<2300	<5900	<2400	<1800	<1400
Benz(a)anthracene	µg/kg	<2000	1400	<2300	<5900	<2400	<1800	<1400
Benzo(a)pyrene	µg/kg	<2000	1600	<2300	<5900	<2400	<1800	<1400
Chrysene	µg/kg	<2000	2100	<2300	<5900	<2400	<1800	<1400
Dibenz(a,h)anthracene	µg/kg	<2000	280	<2300	<5900	<2400	<1800	<1400
Fluoranthene	µg/kg	<2000	3400	<2300	<5900	<2400	<1800	<1400
Fluorene	µg/kg	<2000	430	<2300	<5900	<2400	<1800	<1400
2-Methylnaphthalene	µg/kg	<2000	<1700	<2300	<5900	<2400	<1800	<1400

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S69	97CG80S70	97CG80S71	97CG80S72	97CG80S73	97CG80S74	97CG80S75
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<2000	<1700	<2300	<5900	<2400	<1800	<1400
Phenanthrene	µg/kg	<2000	1700	<2300	<5900	<2400	<1800	<1400
Pyrene	µg/kg	<2000	3600	<2300	<5900	250	<1800	<1400
Total PAHs[1]	µg/kg	<2000	15370	NA	NA	250	<1800	<4200
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<560	280	<1750	<1400	<1400	<1400	<1050
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.272**	**0.427**	**0.355**	**2.33**	**0.362**	**0.196**	**0.105**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S76	97CG80S77	97CG80S78	97CG80S79	97CG80S80	97CG80S81	97CG80S82
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	59.8	48.98	45.275	68.425	65.9	69.985	34.495
Total organic carbon	%	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.19996	0.19451	0.20920	0.18765	0.19256	0.14684	0.19904
Metals								
Arsenic	mg/kg	25.7	9.1	19.6	11.9	17.8	83.4	11.7
Cadmium	mg/kg	<2.0	<1.9	<2.1	<1.9	<1.9	<1.5	<2.0
Chromium	mg/kg	53.0	38.0	17.0	37.0	1.3	160.0	1.5
Copper	mg/kg	7.9	3.0	5.0	5.7	5200.0	8.7	6000.0
Lead	mg/kg	25.0	<14.0	21.0	20.0	3.0	43.0	4.9
Mercury	mg/kg	<0.1	<0.08	<0.08	0.2	<0.1	<0.2	<0.05
Nickel	mg/kg	8.8	<3.9	<4.2	11.0	<1000.0	9.8	<1000.0
Zinc	mg/kg	49.0	10.0	40.0	59.0	NR	100.0	NR
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840
Acenaphthylene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840
Anthracene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840
Benz(a)anthracene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	89
Benzo(a)pyrene	µg/kg	170	<990	<1900	<1600	<1500	<1700	120
Chrysene	µg/kg	220	<990	<1900	<1600	<1500	<1700	130
Dibenz(a,h)anthracene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840
Fluoranthene	µg/kg	290	<990	200	<1600	<1500	<1700	200
Fluorene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840
2-Methylnaphthalene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S76	97CG80S77	97CG80S78	97CG80S79	97CG80S80	97CG80S81	97CG80S82
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<1400	<990	<1900	<1600	<1500	<1700	<840
Phenanthrene	µg/kg	180	<990	<1900	<1600	480	<1700	130
Pyrene	µg/kg	320	<990	<1900	<1600	240	<1700	190
Total PAHs[1]	µg/kg	1180	<5940	200	<1600	1470	<1700	1279
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<910	<700	<700	<1400	<1120	<1400	<700
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.168**	**0.133**	**0.0962**	**0.120**	**3.60**	**0.371**	**4.12**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S83	97CG80S84	97CG80S85	97CG80S86	97CG80S87	97CG80S88	97CG80S89
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	26.705	41	24.965	39	18.605	39.18	47.98
Total organic carbon	%	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.20981	0.20790	0.20525	0.16806	0.19813	0.19516	0.19841
Metals								
Arsenic	mg/kg	8.4	14.6	<0.8	14.0	0.9	12.3	3.9
Cadmium	mg/kg	<2.1	<2.10	<2.1	<1.7	<2.0	<2.0	<2.0
Chromium	mg/kg	1.3	29.00	18.0	12.0	3.6	23.0	5.1
Copper	mg/kg	5600.0	7.90	5.6	3.6	1.5	4.9	7.9
Lead	mg/kg	6.1	22.00	57.0	<12.0	<14.0	18.0	<14.0
Mercury	mg/kg	<0.05	<0.07	<0.05	<0.06	<0.05	<0.06	<0.08
Nickel	mg/kg	<1000.0	7.00	<4.1	<3.4	<4.0	<3.9	<4.0
Zinc	mg/kg	NR	34.00	170.0	23.0	<7.9	50.0	22.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<700	180	NR	<930	NR	<800	2700
Acenaphthylene	µg/kg	<700	560	NR	<930	NR	140	4900
Anthracene	µg/kg	<700	650	NR	<930	NR	<800	18000
Benz(a)anthracene	µg/kg	<700	3100	NR	<930	NR	990	71000
Benzo(a)pyrene	µg/kg	<700	3900	NR	<930	NR	1200	67000
Chrysene	µg/kg	<700	4700	NR	<930	NR	1500	81000
Dibenz(a,h)anthracene	µg/kg	<700	510	NR	<930	NR	150	7100
Fluoranthene	µg/kg	<700	9000	NR	<930	NR	2400	160000
Fluorene	µg/kg	<700	510	NR	<930	NR	100	9800
2-Methylnaphthalene	µg/kg	<700	<980	NR	<930	NR	<800	670

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number						
		97CG80S83	97CG80S84	97CG80S85	97CG80S86	97CG80S87	97CG80S88	97CG80S89
Polycyclic Aromatic Hydrocarbons (cont.)								
Naphthalene	µg/kg	<700	107.5	<11	<930	<9	<800	1200
Phenanthrene	µg/kg	<700	6500	NR	<930	NR	1300	130000
Pyrene	µg/kg	<700	8500	NR	<930	NR	2600	180000
Total PAHs[1]	µg/kg	<4900	38217.5	<11	<5580	<9	10780	733370
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<700	<700	<700	<700	<420	<700	<700
Pesticides								
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**3.86**	**0.935**	**0.0916**	**0.123**	**0.121**	**0.315**	**16.1**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S90	97CG80S42	97CG80S43	97CG80S44	97CG80S45	97CG80S46	97CG80S47	97CG80S48
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	29.515	76.9	64.8	43.5	75.98	64.1	30.4	41.1
Total organic carbon	%	1	1	1	1	1.1	1	1.4	1.8
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.17667	0.19696	0.21486	0.19474	0.20366	0.18508	0.19550	0.19334
Metals									
Arsenic	mg/kg	8.3	120.0	51.5	16.9	124.0	43.5	3.0	3.5
Cadmium	mg/kg	<1.8	<2.0	<2.1	<1.9	3.9	<1.9	<2.0	<1.9
Chromium	mg/kg	13.0	6.1	5.5	3.2	37.0	5.4	3.7	52.0
Copper	mg/kg	3.5	15.0	5.6	2.0	52.0	6.5	2.1	12.0
Lead	mg/kg	<12.0	120.0	32.0	<14.0	570.0	23.0	<14.0	<14.0
Mercury	mg/kg	<0.05	<0.2	<0.1	<0.08	<0.2	<0.09	<0.05	<0.06
Nickel	mg/kg	<3.5	6.9	5.7	<3.9	18.0	8.2	4.6	7.7
Zinc	mg/kg	34.0	130.0	49.0	14.0	540.0	32.0	23.0	39.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<820	<4900	<2700	<890	<3900	<1300	<880	<1100
Acenaphthylene	µg/kg	<820	<4900	<2700	<890	<3900	<1300	<880	<1100
Anthracene	µg/kg	<820	<4900	<2700	<890	550	<1300	<880	<1100
Benz(a)anthracene	µg/kg	<820	630	<2700	<890	2400	130	100	<1100
Benzo(a)pyrene	µg/kg	120	720	<2700	<890	3100	150	110	<1100
Chrysene	µg/kg	140	970	<2700	<890	3800	180	150	<1100
Dibenz(a,h)anthracene	µg/kg	<820	<4900	<2700	<890	460	<1300	<880	<1100
Fluoranthene	µg/kg	<820	1100	<2700	<890	4200	270	220	140
Fluorene	µg/kg	<820	<4900	<2700	<890	<3900	<1300	<880	<1100
2-Methylnaphthalene	µg/kg	<820	<4900	<2700	<890	<3900	<1300	<880	<1100

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S90	97CG80S42	97CG80S43	97CG80S44	97CG80S45	97CG80S46	97CG80S47	97CG80S48
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<820	<4900	<2700	<890	<3900	<1300	7	<1100
Phenanthrene	µg/kg	130	500	<2700	<890	2200	<1300	200	<1100
Pyrene	µg/kg	220	1200	<2700	98	4900	290	230	120
Total PAHs[1]	µg/kg	1840	5120	NA	2323	21610	1020	1017	1910
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	<1400	<700	<700	<980	<700	<350	<350
Pesticides									
Chlordane	µg/kg	NR	26.5	<6	<4	15.5	<4	<2	4
Dieldrin	µg/kg	NR	<0.01	<0.005	<0.004	<0.007	<0.002	<0.003	0.001
Endrin	µg/kg	NR	<0.01	<0.005	<0.004	0.007	0.002	<0.003	<0.003
Heptachlor	µg/kg	NR	<0.005	<0.003	<0.002	<0.003	<0.002	<0.001	<0.001
Heptachlor epoxide	µg/kg	NR	<0.005	<0.003	<0.002	<0.003	<0.002	<0.001	<0.001
Lindane	µg/kg	NR	<0.005	<0.003	<0.002	<0.003	<0.002	<0.001	<0.001
Sum DDD	µg/kg	NR	<10	<5	<2	<7	<4	<3	7
Sum DDE	µg/kg	NR	790	3	<2	586	7	14	8
Sum DDT	µg/kg	NR	180	<5	<4	144	4	<3	82
Total DDTs[2]	µg/kg	NR	970	3	<4	730	13	17	97
Toxaphene	µg/kg	NR	<0.20	<0.10	<0.07	<0.14	<0.08	<0.05	<0.05
Mean-PEC-Q		**0.0925**	**0.495**	**0.333**	**0.113**	**1.28**	**0.167**	**0.127**	**0.169**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S49	97CG80S50	97CG80S91	97CG80S92	97CG80S93	97CG80S94	97CG80S95	97CG80S96
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	31.385	20.8	21.51	80.81	75.785	30.92	16.58	77.685
Total organic carbon	%	1.7	1	1	1	1.4	1	3.3	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.18477	0.18577	0.19708	0.19716	0.19394	0.22411	0.19976	0.18811
Metals									
Arsenic	mg/kg	7.9	6.7	4.6	62.3	70.8	12.8	65.8	118.0
Cadmium	mg/kg	<1.8	<1.9	<2.0	<2.0	<1.9	<2.2	2.1	<1.9
Chromium	mg/kg	120.0	10.0	2.6	17.0	9.9	4.0	23.0	5.1
Copper	mg/kg	8.7	34.0	4.7	33.0	23.0	4.5	41.0	12.0
Lead	mg/kg	<13.0	58.0	<14.0	220.0	180.0	36.0	310.0	76.0
Mercury	mg/kg	<0.05	<0.04	0.1	0.4	0.3	0.09	0.08	0.3
Nickel	mg/kg	11.0	<3.7	<3.9	9.1	8.6	<4.5	14.0	4.2
Zinc	mg/kg	49.0	37.0	36.0	310.0	270.0	53.0	420.0	130.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<790	1500	<890	<6200	<2400	<890	5400	<2100
Acenaphthylene	µg/kg	<790	410	<890	<6200	<2400	<890	<940	<2100
Anthracene	µg/kg	<790	5100	<890	<6200	<2400	<890	560	<2100
Benz(a)anthracene	µg/kg	200	14000	200	1800	700	<890	1300	<2100
Benzo(a)pyrene	µg/kg	210	13000	190	2100	660	<890	880	<2100
Chrysene	µg/kg	260	15000	240	2900	890	<890	1400	<2100
Dibenz(a,h)anthracene	µg/kg	<790	1800	<890	<6200	<2400	<890	110	<2100
Fluoranthene	µg/kg	250	24000	400	3700	<2400	<890	4600	<2100
Fluorene	µg/kg	<790	2900	<890	<6200	<2400	<890	3300	<2100
2-Methylnaphthalene	µg/kg	<790	190	<890	<6200	<2400	<890	260	<2100

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80S49	97CG80S50	97CG80S91	97CG80S92	97CG80S93	97CG80S94	97CG80S95	97CG80S96
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<790	240	<890	<6200	<2400	<890	200	<2100
Phenanthrene	µg/kg	430	11000	200	1300	1500	<890	6100	<2100
Pyrene	µg/kg	380	25000	420	3600	1800	120	4000	270
Total PAHs[1]	µg/kg	2125	114140	1650	15400	5550	2345	28110	1320
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<420	<350	NR	<2100	<2100	<700	<350	<1400
Pesticides									
Chlordane	µg/kg	<2	51.5	7	16.5	<14	NR	3.5	<10
Dieldrin	µg/kg	<0.002	<0.003	<0.004	<0.015	<0.015	NR	<0.003	<0.01
Endrin	µg/kg	<0.002	<0.003	<0.004	<0.015	<0.015	NR	<0.003	<0.01
Heptachlor	µg/kg	<0.001	<0.001	<0.002	<0.007	<0.007	NR	<0.001	<0.005
Heptachlor epoxide	µg/kg	<0.001	<0.001	<0.002	<0.007	<0.007	NR	<0.001	<0.005
Lindane	µg/kg	<0.001	<0.001	<0.002	<0.007	<0.007	NR	<0.001	<0.005
Sum DDD	µg/kg	93	1670	23	57	95	NR	7	<5
Sum DDE	µg/kg	69	1270	90	277	298	NR	45	40
Sum DDT	µg/kg	15	<3	11	28	23	NR	6	<0
Total DDTs[2]	µg/kg	177	2941.5	124	362	416	NR	58	40
Toxaphene	µg/kg	<0.06	<0.05	<0.07	<0.30	<0.30	NR	<0.05	<0.02
Mean-PEC-Q		**0.227**	**1.82**	**0.0768**	**0.698**	**0.461**	**0.131**	**0.808**	**0.376**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80D96	97CG80S97	97CG80S98	97CG80S99	97CG81S01	97CG81S02	97CG81S03	97CG81S04
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	80.99001	82.08	53.105	20.11	84.795	25.12	76.185	73.205
Total organic carbon	%	1	1	1	1	1	1	1	1.3
Semivolatile dilution factors	-	1	1	1	1	1	1	1	2
Metals correctional factor	-	0.19033	0.20044	0.20096	0.18501	0.19716	0.19716	0.19928	0.19829
Metals									
Arsenic	mg/kg	55.2	220.0	32.3	2.2	274.0	11.7	83.3	81.2
Cadmium	mg/kg	2.1	3.0	<2.0	<1.9	2.2	<2.0	<2.0	3.2
Chromium	mg/kg	13.0	16.0	4.8	<1.9	14.0	<2.0	3.9	34.0
Copper	mg/kg	26.0	34.0	8.5	1.5	26.0	1.4	9.4	53.0
Lead	mg/kg	200.0	300.0	46.0	<13.0	240.0	19.0	65.0	820.0
Mercury	mg/kg	0.3	0.4	0.2	0.1	<0.3	<0.06	0.4	<0.2
Nickel	mg/kg	9.7	11.0	<4.0	<3.7	7.3	<4.0	<4.0	16.0
Zinc	mg/kg	370.0	460.0	75.0	8.1	370.0	22.0	68.0	490.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	470
Acenaphthylene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	<4200
Anthracene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	840
Benz(a)anthracene	µg/kg	670	1300	130	<890	600	<670	560	4700
Benzo(a)pyrene	µg/kg	730	1500	140	<890	690	<670	720	5400
Chrysene	µg/kg	920	2000	160	<890	800	<670	730	6400
Dibenz(a,h)anthracene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	880
Fluoranthene	µg/kg	730	2700	<1100	<890	<2800	<670	1200	10000
Fluorene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	620
2-Methylnaphthalene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	<4200

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG80D96	97CG80S97	97CG80S98	97CG80S99	97CG81S01	97CG81S02	97CG81S03	97CG81S04
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<2500	<4700	<1100	<890	<2800	<670	<2300	1300
Phenanthrene	µg/kg	600	900	130	<890	450	<670	480	4300
Pyrene	µg/kg	1300	2800	260	<890	1100	<670	1500	10000
Total PAHs[1]	µg/kg	4950	11200	1370	<5340	3640	<4690	5190	44910
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<1750	<2100	NR	<700	<2100	<420	<1540	<1400
Pesticides									
Chlordane	µg/kg	<12	<14	NR	<4	12.5	NR	NR	NR
Dieldrin	µg/kg	<0.013	<0.007	NR	<0.004	<0.015	NR	NR	NR
Endrin	µg/kg	<0.013	<0.014	NR	<0.004	<0.015	NR	NR	NR
Heptachlor	µg/kg	<0.006	<0.007	NR	<0.002	<0.007	NR	NR	NR
Heptachlor epoxide	µg/kg	<0.006	<0.007	NR	<0.002	<0.007	NR	NR	NR
Lindane	µg/kg	<0.006	<0.007	NR	<0.002	<0.007	NR	NR	NR
Sum DDD	µg/kg	48	75	NR	<4	85	NR	NR	NR
Sum DDE	µg/kg	381	346	NR	<4	630	NR	NR	NR
Sum DDT	µg/kg	29	67	NR	<4	94	NR	NR	NR
Total DDTs[2]	µg/kg	458	488	NR	<4	809	NR	NR	NR
Toxaphene	µg/kg	<0.25	<0.03	NR	<0.08	<0.30	NR	NR	NR
Mean-PEC-Q		**0.462**	**1.05**	**0.162**	**0.0859**	**0.928**	**0.176**	**0.365**	**1.81**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG81S05	97CG81S06	97CG81S07	97CG81S08	97CG81S09	97CG81D09	97CG81S10	97CG81S11
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	77.21	78.45	55.3	72.685	72.1	73.9	64.9	59.9
Total organic carbon	%	1	1	1	1	1.3	1	1	1
Semivolatile dilution factors	-	1	NR	1	1	1	1	1	1
Metals correctional factor	-	0.19944	0.19696	0.19956	0.1986	0.19809	0.19964	0.19960	0.19936
Metals									
Arsenic	mg/kg	47.2	94.4	28.9	77.0	80.7	98.5	28.0	29.0
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	3.3	15.0	4.2	5.4	7.1	13.0	8.4	2.3
Copper	mg/kg	9.7	21.0	6.7	8.9	14.0	24.0	14.0	4.0
Lead	mg/kg	16.0	210.0	69.0	52.0	160.0	260.0	110.0	20.0
Mercury	mg/kg	<0.2	<0.2	<0.09	0.2	<0.2	0.8	<0.1	<0.1
Nickel	mg/kg	<4.0	8.5	<4.0	<4.0	5.6	6.8	4.9	<4.0
Zinc	mg/kg	36.0	240.0	76.0	91.0	140.0	230.0	140.0	31.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<2000	NR	<1000	<1700	<2100	<2200	<2800	<1400
Acenaphthylene	µg/kg	<2000	NR	<1000	<1700	<2100	<2200	<2800	<1400
Anthracene	µg/kg	<2000	NR	<1000	<1700	<2100	260	700	<1400
Benz(a)anthracene	µg/kg	<2000	NR	190	<1700	690	1600	3400	<1400
Benzo(a)pyrene	µg/kg	<2000	NR	240	<1700	900	2100	3900	<1400
Chrysene	µg/kg	<2000	NR	280	190	1000	2200	4400	<1400
Dibenz(a,h)anthracene	µg/kg	<2000	NR	<1000	<1700	<2100	350	470	<1400
Fluoranthene	µg/kg	<2000	NR	<1000	<1700	1500	3000	7700	<1400
Fluorene	µg/kg	<2000	NR	<1000	<1700	<2100	<2200	320	<1400
2-Methylnaphthalene	µg/kg	<2000	NR	<1000	<1700	<2100	<2200	<2800	<1400

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG81S05	97CG81S06	97CG81S07	97CG81S08	97CG81S09	97CG81D09	97CG81S10	97CG81S11
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<2000	<51	<1000	<1700	<2100	<2200	<2800	<1400
Phenanthrene	µg/kg	<2000	NR	130	<1700	580	1500	3600	<1400
Pyrene	µg/kg	<2000	NR	380	300	1500	3500	7600	<1400
Total PAHs[1]	µg/kg	<2000	<51	1720	1340	6170	14510	32090	<4200
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	<1750	<840	<1400	<1400	<1400	900	<980
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.163**	**0.406**	**0.174**	**0.264**	**0.455**	**0.756**	**1.03**	**0.145**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG81S12	97CG81S13	97CG81S14	97CG81S15	97CG81S16	97CG81S17	97CG81S18	97CG81S19
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	29.8	77.375	71.705	23.605	68.38	79.895	27.38	23.295
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.19860	0.19928	0.19948	0.19786	0.19864	0.19778	0.19829	0.19904
Metals									
Arsenic	mg/kg	6.1	135.0	45.8	9.1	50.6	136.0	6.3	3.6
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	<2.0	7.4	2.8	<2.0	3.8	5.4	13.0	2.8
Copper	mg/kg	3.0	13.0	5.9	2.4	10.0	22.0	4.7	3.1
Lead	mg/kg	<14.0	99.0	17.0	14.0	74.0	72.0	<14.0	<14.0
Mercury	mg/kg	<0.06	<0.2	<0.2	<0.06	<0.1	<0.2	<0.06	<0.05
Nickel	mg/kg	<4.0	5.5	<4.0	<4.0	<4.0	4.1	<4.0	<4.0
Zinc	mg/kg	22.0	130.0	23.0	NR	81.0	110.0	17.0	12.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<900	<2300	<1800	<720	<1500	<1900	<750	<760
Acenaphthylene	µg/kg	<900	<2300	<1800	<720	<1500	<1900	<750	<760
Anthracene	µg/kg	<900	280	<1800	<720	<1500	<1900	<750	<760
Benz(a)anthracene	µg/kg	<900	1600	<1800	230	<1500	<1900	<750	<760
Benzo(a)pyrene	µg/kg	<900	2200	<1800	370	160	<1900	<750	<760
Chrysene	µg/kg	<900	2400	<1800	310	180	<1900	<750	<760
Dibenz(a,h)anthracene	µg/kg	<900	340	<1800	<720	<1500	<1900	<750	<760
Fluoranthene	µg/kg	90	3700	<1800	500	300	<1900	<750	<760
Fluorene	µg/kg	<900	<2300	<1800	<720	<1500	<1900	<750	<760
2-Methylnaphthalene	µg/kg	<900	<2300	<1800	83	<1500	<1900	<750	<760

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG81S12	97CG81S13	97CG81S14	97CG81S15	97CG81S16	97CG81S17	97CG81S18	97CG81S19
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<900	<2300	<1800	230	<1500	<1900	<750	<760
Phenanthrene	µg/kg	<900	1500	<1800	310	<1500	<1900	<750	<760
Pyrene	µg/kg	94	3600	<1800	450	290	240	<750	<760
Total PAHs[1]	µg/kg	1984	15620	<1800	2843	930	1190	<5250	<5320
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	<1750	<1400	<700	<1400	<2100	<700	<700
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.0834**	**0.744**	**0.154**	**0.117**	**0.208**	**0.412**	**0.106**	**0.0925**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG81S20	97CG83S01	97CG83D01	97CG83S02	97CG83S03	97CG83S04	97CG83S05	97CG83S06
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	34.47	50.07	40.01	39.305	64.21	33.01	30.79	52.015
Total organic carbon	%	1	1.1	1.1	1	1.1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	NR	1	1	1
Metals correctional factor	-	0.19904	0.20028	0.20021	0.20108	0.19944	0.19908	0.19770	0.19712
Metals									
Arsenic	mg/kg	17.0	26.8	25.1	18.5	59.7	17.8	4.3	13.1
Cadmium	mg/kg	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	2.1	5.1	3.5	6.8	15.0	4.5	2.2	7.0
Copper	mg/kg	6.9	8.7	6.8	8.3	18.0	6.1	3.5	7.3
Lead	mg/kg	32.0	29.0	28.0	31.0	81.0	31.0	<14.0	29.0
Mercury	mg/kg	<0.06	<0.06	<0.05	<0.05	<0.1	<0.05	<0.04	<0.07
Nickel	mg/kg	<4.0	<4.0	<4.0	<4.0	4.1	<4.0	<4.0	<3.9
Zinc	mg/kg	47.0	81.0	64.0	88.0	230.0	77.0	32.0	81.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<760	<1200	<840	<1100	NR	<770	<760	<1300
Acenaphthylene	µg/kg	<760	<1200	<840	<1100	NR	<770	<760	<1300
Anthracene	µg/kg	<760	<1200	<840	<1100	NR	<770	<760	170
Benz(a)anthracene	µg/kg	120	300	<840	220	NR	<770	<760	270
Benzo(a)pyrene	µg/kg	140	500	<840	320	NR	89	<760	430
Chrysene	µg/kg	170	390	<840	290	NR	<770	<760	370
Dibenz(a,h)anthracene	µg/kg	<760	<1200	<840	<1100	NR	<770	<760	<1300
Fluoranthene	µg/kg	200	610	<840	450	NR	100	<760	540
Fluorene	µg/kg	<760	<1200	<840	<1100	NR	<770	<760	<1300
2-Methylnaphthalene	µg/kg	<760	<1200	<840	<1100	NR	<770	<760	<1300

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG81S20	97CG83S01	97CG83D01	97CG83S02	97CG83S03	97CG83S04	97CG83S05	97CG83S06
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<760	300	<1100	200	<1900	<940	<930	220
Phenanthrene	µg/kg	94	370	<840	320	NR	<770	<760	380
Pyrene	µg/kg	230	550	<840	400	NR	110	<760	500
Total PAHs[1]	µg/kg	1334	3020	<5880	2200	NA	1839	<5320	2880
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	<700	<700	600	840	<700	<700	<910
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.128**	**0.178**	**0.167**	**0.392**	**0.870**	**0.131**	**0.0969**	**0.146**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG83S07	97CG83S08	97CG83S09	97CG83S10	97CG83S11	97CG83S12	97CG83S13	97CG83S14
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	53.19	53.99	31.1	42.425	28.58	32.895	39.455	27
Total organic carbon	%	1.5	1.4	1	1	1	1	1	1.1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.20000	0.19762	0.19864	0.20032	0.19857	0.19833	0.19960	0.20000
Metals									
Arsenic	mg/kg	43.3	9.5	4.3	10.4	3.3	5.6	3.2	3.7
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	7.1	17.0	3.9	9.3	2.7	7.6	5.9	5.0
Copper	mg/kg	8.9	21.0	4.1	9.9	4.0	8.4	5.4	6.2
Lead	mg/kg	45.0	62.0	17.0	30.0	<14.0	35.0	22.0	29.0
Mercury	mg/kg	<0.06	<0.07	<0.06	<0.05	<0.05	<0.05	<0.05	<0.08
Nickel	mg/kg	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Zinc	mg/kg	120.0	190.0	57.0	110.0	27.0	100.0	71.0	77.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<1100	<1100	NR	<900	<810	<780	<920	<870
Acenaphthylene	µg/kg	<1100	<1100	NR	<900	<810	<780	<920	<870
Anthracene	µg/kg	<1100	170	NR	<900	<810	<780	<920	<870
Benz(a)anthracene	µg/kg	290	680	NR	130	91	85	200	<870
Benzo(a)pyrene	µg/kg	500	990	NR	220	150	130	350	91
Chrysene	µg/kg	430	830	NR	170	110	120	280	<870
Dibenz(a,h)anthracene	µg/kg	<1100	<1100	NR	<900	<810	<780	<920	<870
Fluoranthene	µg/kg	650	1500	NR	270	200	180	420	120
Fluorene	µg/kg	<1100	<1100	NR	<900	<810	<780	<920	<870
2-Methylnaphthalene	µg/kg	150	190	NR	<900	<810	<780	<920	<870

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG83S07	97CG83S08	97CG83S09	97CG83S10	97CG83S11	97CG83S12	97CG83S13	97CG83S14
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	240	270	<880	90	<810	<990	<920	<870
Phenanthrene	µg/kg	410	780	NR	160	130	110	240	<870
Pyrene	µg/kg	610	1400	NR	240	210	160	390	110
Total PAHs[1]	µg/kg	3280	6810	NA	1280	1296	1175	1880	1626
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	<6800	<700	430	<700	<700	<700	<700
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.236**	**0.272**	**0.0988**	**0.287**	**0.0646**	**0.0992**	**0.0951**	**0.0953**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG83S15	97CG83S16	97CG83S17	97CG83S18	97CG83S19	97CG83D19	97CG83S20	97CG85S01
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	30.62	30.095	34.19	27.595	56.21	48.575	24.8	44.525
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.20008	0.19778	0.19782	0.19960	0.19751	0.19782	0.19912	0.19661
Metals									
Arsenic	mg/kg	5.8	5.9	3.7	<3.1	15.8	15.2	3.5	8.5
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	6.0	4.9	4.5	7.0	22.0	17.0	<2.0	2.9
Copper	mg/kg	5.7	4.4	5.3	7.8	20.0	17.0	4.1	5.3
Lead	mg/kg	17.0	15.0	<14.0	30.0	82.0	72.0	<14.0	23.0
Mercury	mg/kg	<0.04	0.05	<0.06	<0.06	0.2	<0.09	<0.04	0.08
Nickel	mg/kg	<4.0	<4.0	<4.0	<4.0	6.3	6.0	<4.0	<4.0
Zinc	mg/kg	65.0	56.0	40.0	69.0	220.0	210.0	37.0	56.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<820	<800	<770	<710	160	<1000	<860	<1100
Acenaphthylene	µg/kg	<820	<800	<770	<710	<1200	<1000	<860	<1100
Anthracene	µg/kg	<820	<800	<770	<710	240	140	<860	<1100
Benz(a)anthracene	µg/kg	170	92	180	150	540	390	<860	120
Benzo(a)pyrene	µg/kg	280	160	310	210	830	580	<860	170
Chrysene	µg/kg	210	110	220	190	750	530	<860	140
Dibenz(a,h)anthracene	µg/kg	<820	<800	<770	<710	130	<1000	<860	<1100
Fluoranthene	µg/kg	290	160	360	290	1400	840	<860	210
Fluorene	µg/kg	<820	<800	<770	<710	250	170	<860	<1100
2-Methylnaphthalene	µg/kg	<820	<800	<770	86	320	170	<860	<1100

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG83S15	97CG83S16	97CG83S17	97CG83S18	97CG83S19	97CG83D19	97CG83S20	97CG85S01
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<820	<800	<980	190	1600	710	<860	<1100
Phenanthrene	µg/kg	170	84	170	200	790	550	<860	130
Pyrene	µg/kg	290	140	340	280	1200	730	<860	200
Total PAHs[1]	µg/kg	1820	1146	1965	1951	8210	4810	<5160	970
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	430	<700	600	400	400	<700	<910
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.0959**	**0.264**	**0.084**	**0.362**	**0.425**	**0.366**	**0.0937**	**0.0829**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG85S02	97CG85S03	97CG85S04	97CG85S05	97CG85S06	97CG85D06	97CG85S07	97CG85S08
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	31	48.695	47.005	34.08	43.205	34.315	37.705	40.19
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.19704	0.19868	0.19727	0.19940	0.19972	0.19500	0.19600	0.19860
Metals									
Arsenic	mg/kg	3.5	31.0	27.3	8.1	25.2	11.5	56.1	11.3
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	<2.0	2.4	3.6	<2.0	2.2	2.2	<2.0	2.8
Copper	mg/kg	4.6	4.4	4.6	6.2	4.9	3.0	3.3	3.4
Lead	mg/kg	19.0	21.0	14.0	<14.0	22.0	<14.0	<14.0	<14.0
Mercury	mg/kg	<0.04	0.2	0.1	0.1	0.09	0.08	0.08	0.1
Nickel	mg/kg	<3.9	<4.0	<3.9	<4.0	<4.0	<3.9	8.9	<4.0
Zinc	mg/kg	57.0	50.0	44.0	27.0	50.0	25.0	30.0	34.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<860	<1200	<1000	<860	<1000	<850	<930	<1000
Acenaphthylene	µg/kg	<860	<1200	<1000	<860	<1000	<850	<930	<1000
Anthracene	µg/kg	<860	<1200	<1000	<860	<1000	<850	<930	170
Benz(a)anthracene	µg/kg	88	<1200	<1000	150	<1000	<850	<930	<1000
Benzo(a)pyrene	µg/kg	130	<1200	<1000	230	140	<850	<930	<1000
Chrysene	µg/kg	120	140	<1000	350	130	<850	<930	<1000
Dibenz(a,h)anthracene	µg/kg	<860	<1200	<1000	<860	<1000	<850	<930	<1000
Fluoranthene	µg/kg	170	230	190	630	210	120	93	140
Fluorene	µg/kg	<860	<1200	<1000	<860	<1000	<850	<930	<1000
2-Methylnaphthalene	µg/kg	<860	<1200	<1000	<860	<1000	<850	<930	<1000

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG85S02	97CG85S03	97CG85S04	97CG85S05	97CG85S06	97CG85D06	97CG85S07	97CG85S08
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<860	<1200	<1000	<860	<1000	3	<930	<1000
Phenanthrene	µg/kg	120	220	200	370	140	90	<930	140
Pyrene	µg/kg	140	210	170	480	170	98	<930	110
Total PAHs[1]	µg/kg	768	1400	2060	2210	1290	1586	2418	2060
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	<910	<700	<700	<700	<700	<700	<700
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.0639**	**0.138**	**0.141**	**0.095**	**0.124**	**0.0875**	**0.213**	**0.0995**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG85S09	97CG85S10	97CG85D10	97CG85S11	97CG85S12	97CG85S13	97CG85S14	97CG85S15
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	42.65	29.31	31.715	25.08	28.905	24.39	24.28	32.72
Total organic carbon	%	1	1	1	1	1	1	1	1
Semivolatile dilution factors	-	NR	1	1	1	1	1	1	1
Metals correctional factor	-	0.19860	0.19833	0.19896	0.19766	0.19841	0.19297	0.19402	0.19669
Metals									
Arsenic	mg/kg	14.6	8.3	5.2	13.7	12.9	3.0	4.5	6.9
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<1.9	<1.9	<2.0
Chromium	mg/kg	2.0	<20.0	4.1	2.7	<2.0	<1.9	<1.9	2.2
Copper	mg/kg	3.9	3.7	4.2	3.0	2.8	2.6	2.4	3.7
Lead	mg/kg	14.0	<14.0	<14.0	<14.0	<14.0	<14.0	<14.0	21.0
Mercury	mg/kg	0.1	0.1	0.1	0.07	<0.05	0.06	0.06	0.06
Nickel	mg/kg	<4.0	<4.0	<4.0	<4.0	<4.0	<3.9	<3.9	<3.9
Zinc	mg/kg	25.0	33.0	52.0	28.0	25.0	21.0	24.0	52.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	<850	<770	<740	<950	<850	<980	<1000
Acenaphthylene	µg/kg	NR	<850	<770	<740	<950	<850	<980	<1000
Anthracene	µg/kg	NR	<850	<770	<740	<950	<850	<980	<1000
Benz(a)anthracene	µg/kg	NR	110	130	<740	<950	<850	<980	120
Benzo(a)pyrene	µg/kg	NR	170	190	<740	<950	<850	<980	160
Chrysene	µg/kg	NR	240	210	75	<950	<850	<980	180
Dibenz(a,h)anthracene	µg/kg	NR	<850	<770	<740	<950	<850	<980	<1000
Fluoranthene	µg/kg	NR	460	330	130	<950	110	<980	290
Fluorene	µg/kg	NR	<850	<770	<740	<950	<850	<980	<1000
2-Methylnaphthalene	µg/kg	NR	<850	78	<740	<950	<850	<980	<1000

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number							
		97CG85S09	97CG85S10	97CG85D10	97CG85S11	97CG85S12	97CG85S13	97CG85S14	97CG85S15
Polycyclic Aromatic Hydrocarbons (cont.)									
Naphthalene	µg/kg	<16	<850	170	7	<950	<850	<980	180
Phenanthrene	µg/kg	NR	390	270	<740	<950	90	<980	220
Pyrene	µg/kg	NR	440	290	120	<950	110	<980	220
Total PAHs[1]	µg/kg	<16	1810	2053	1812	<5700	1585	<5880	1370
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<700	<700	<700	<700	<700	<700	<700	<700
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.0639**	**0.0922**	**0.0902**	**0.0981**	**0.117**	**0.0668**	**0.100**	**0.0852**

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number			
		97CG85S16	97CG85S17	97CG85S18	97CG85S19
Depth	feet	Surface	Surface	Surface	Surface
Conventionals					
Percent moisture	%	29.305	24.48	43.385	86.995
Total organic carbon	%	1	1	1	1
Semivolatile dilution factors	-	1	1	2	1
Metals correctional factor	-	0.19996	0.19857	0.19888	0.19794
Metals					
Arsenic	mg/kg	8.2	4.5	24.7	8.1
Cadmium	mg/kg	<2.0	<2.0	<2.0	<2.0
Chromium	mg/kg	2.0	2.5	6.1	4.0
Copper	mg/kg	2.1	2.7	6.6	8.0
Lead	mg/kg	<14.0	<14.0	0.1	40.0
Mercury	mg/kg	0.08	<0.04	<0.06	<0.3
Nickel	mg/kg	<4.0	<4.0	<4.0	7.3
Zinc	mg/kg	33.0	28.0	120.0	120.0
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	µg/kg	<900	<820	<2300	<5100
Acenaphthylene	µg/kg	<900	<820	<2300	<5100
Anthracene	µg/kg	<900	<820	<2300	<5100
Benz(a)anthracene	µg/kg	<900	<820	<2300	710
Benzo(a)pyrene	µg/kg	<900	110	240	1100
Chrysene	µg/kg	<900	87	<2300	890
Dibenz(a,h)anthracene	µg/kg	<900	<820	<2300	<5100
Fluoranthene	µg/kg	<900	130	300	1300
Fluorene	µg/kg	<900	<820	<2300	<5100
2-Methylnaphthalene	µg/kg	<900	<820	<2300	<5100

Appendix 2.25. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1997; Simon 2000).

Substance	Units	Station Number			
		97CG85S16	97CG85S17	97CG85S18	97CG85S19
Polycyclic Aromatic Hydrocarbons (cont.)					
Naphthalene	µg/kg	<900	<820	<2300	45
Phenanthrene	µg/kg	<900	<820	<2300	800
Pyrene	µg/kg	<900	120	250	1100
Total PAHs[1]	µg/kg	<5400	1677	790	5945
Polychlorinated Biphenyls					
Total PCBs	µg/kg	<700	<700	<700	<3500
Pesticides					
Chlordane	µg/kg	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR
Mean-PEC-Q		**0.106**	**0.075**	**0.114**	**0.220**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated); NR = not reported.

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number							
		98CG50S08	98CG50S09	98CG50S06	98CG50S07	98CG50S10	98CG50S11	98CG50S12	98CG50S13
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	52.40355	55.80045	75.2406	81.5641	75.02225	83.335	83.0532	75.9243
Total organic carbon	%	1.34	0.68	0.04	0.86	0.76	0.9	0.87	0.94
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.10333	0.09513	0.12097	0.10666	0.11980	0.11178	0.10869	0.11005
Metals									
Cadmium	mg/kg	1.4	1.1	<1.2	1.5	5.6	5.3	5.2	3.7
Chromium	mg/kg	44.0	39.0	21.0	37.0	82.0	80.0	76.0	59.0
Copper	mg/kg	35.0	38.0	19.0	29.0	140.0	130.0	140.0	99.0
Lead	mg/kg	41.0	33.0	54.0	89.0	500.0	450.0	510.0	460.0
Mercury	mg/kg	0.1	0.1	<0.1	<0.1	0.3	0.5	0.2	0.2
Nickel	mg/kg	27.0	22.0	8.9	16.0	37.0	35.0	36.0	33.0
Zinc	mg/kg	150.0	130.0	140.0	260.0	NR	2100.0	2300.0	2000.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<1100	<1100	<2000	<1800	610	<1400	<5600	<4200
Acenaphthylene	µg/kg	930	<1100	<2000	<1800	720	<1300	<5600	<4200
Anthracene	µg/kg	1100	380	<2000	<1800	750	1500	<5600	<4200
Benz(a)anthracene	µg/kg	750	510	<2000	450	1900	3400	3700	<2100
Benzo(a)pyrene	µg/kg	590	490	<2000	500	2400	4600	3700	2600
Chrysene	µg/kg	930	580	<2000	660	2300	3800	1900	<2300
Dibenz(a,h)anthracene	µg/kg	<1100	<1100	<2000	<1800	440	1000	<5600	<4200
Fluoranthene	µg/kg	2000	1300	590	1100	4300	7300	4100	3700
Fluorene	µg/kg	470	<1100	<2000	<1800	610	1200	<5600	<4200
2-Methylnaphthalene	µg/kg	310	<1100	<2000	<1800	710	<980	<5600	<4200
Naphthalene	µg/kg	<540	<1100	<2000	510	1600	<1500	2500	1100

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number							
		98CG50S08	98CG50S09	98CG50S06	98CG50S07	98CG50S10	98CG50S11	98CG50S12	98CG50S13
Polycyclic Aromatic Hydrocarbons (cont.)									
Phenanthrene	µg/kg	1600	830	<420	720	2000	3400	2400	1600
Pyrene	µg/kg	2000	1100	460	790	3200	6600	4100	4300
Total PAHs[1]	µg/kg	10950	5190	1260	4730	21540	32800	22400	13300
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<490	<700	<980	NR	4450	3400	3000	3140
Pesticides									
Chlordane	µg/kg	<4	NR	<8	<10	<8	<10	<10	<8
Dieldrin	µg/kg	<0.004	NR	<0.007	<0.01	<0.007	<0.01	<0.01	<0.008
Endrin	µg/kg	<0.004	NR	<0.007	<0.01	<0.007	<0.01	<0.01	<0.008
Heptachlor	µg/kg	<0.002	NR	<0.004	<0.005	<0.004	<0.005	<0.005	<0.004
Heptachlor epoxide	µg/kg	<0.002	NR	<0.004	<0.005	<0.004	<0.005	<0.005	<0.004
Lindane	µg/kg	<0.002	NR	<0.004	<0.005	<0.004	<0.005	<0.005	<0.004
Sum DDD	µg/kg	<4	NR	<7	<10	<7	<10	<10	<8
Sum DDE	µg/kg	7	NR	7	7	38	<10	44	31
Sum DDT	µg/kg	<4	NR	<7	<10	<7	<10	<10	<8
Total DDTs[2]	µg/kg	11	NR	7	7	38	NA	44	31
Toxaphene	µg/kg	<0.07	NR	<0.14	<0.20	<0.14	<0.20	<0.20	<0.17
Mean-PEC-Q		**0.398**	**0.266**	**0.140**	**0.305**	**3.01**	**2.79**	**2.50**	**2.33**

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number							
		98CG50S14	98CG50S15	98CG50S16	98CG50S17	98CG50S18	98CG50D18	98CG50S19	98CG50S20
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	53.5119	83.8709	15.8068	42.48405	83.4444	43.0279	78.0715	81.01575
Total organic carbon	%	15.8	1	0.42	1.12	0.67	0.62	0.54	0.55
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.10957	0.10992	0.09414	0.10975	0.10614	0.10877	0.11173	0.10649
Metals									
Cadmium	mg/kg	1.8	2.3	<0.9	3.1	2.5	2.4	2.0	1.2
Chromium	mg/kg	76.0	36.0	2.2	50.0	43.0	34.0	27.0	17.0
Copper	mg/kg	31.0	32.0	1.5	42.0	36.0	33.0	26.0	16.0
Lead	mg/kg	150.0	140.0	<6.6	150.0	140.0	130.0	110.0	74.0
Mercury	mg/kg	0.6	0.3	<0.0	0.20	<0.3	<0.2	<0.2	<0.2
Nickel	mg/kg	11.0	9.2	<1.9	10.0	11.0	8.3	9.7	6.3
Zinc	mg/kg	710.0	420.0	22.0	530.0	450.0	400.0	NR	240.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	81000	<6100	110	4200	<12000	<14000	470	<2600
Acenaphthylene	µg/kg	3400	<6100	<490	2800	<12000	<14000	<1500	<2600
Anthracene	µg/kg	24000	<6100	110	3000	<12000	<14000	500	290
Benz(a)anthracene	µg/kg	56000	3800	330	10000	5400	6700	2700	1600
Benzo(a)pyrene	µg/kg	62000	5100	450	14000	6200	9000	2800	1900
Chrysene	µg/kg	44000	4300	390	11000	4200	5100	2200	1500
Dibenz(a,h)anthracene	µg/kg	4800	<6100	<490	3100	<12000	<14000	480	<2600
Fluoranthene	µg/kg	71000	7100	810	18000	7100	7900	3500	2000
Fluorene	µg/kg	39000	<6100	<490	2400	<12000	<14000	410	<2600
2-Methylnaphthalene	µg/kg	21000	<6100	<490	2300	<12000	<14000	520	<2600
Naphthalene	µg/kg	70290	1146	160	5530.5	2600	3400	1200	830

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number							
		98CG50S14	98CG50S15	98CG50S16	98CG50S17	98CG50S18	98CG50D18	98CG50S19	98CG50S20
Polycyclic Aromatic Hydrocarbons (cont.)									
Phenanthrene	µg/kg	68000	3500	330	8700	3400	4200	1900	1300
Pyrene	µg/kg	150000	7700	770	21000	6700	9500	7100	4800
Total PAHs[1]	µg/kg	694490	32646	3705	106030.5	35600	45800	23780	14220
Polychlorinated Biphenyls									
Total PCBs	µg/kg	670	1000	<420	1310	960	1230	640	<1400
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**10.7**	**1.15**	**0.17**	**2.41**	**1.18**	**1.45**	**0.788**	**0.456**

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number							
		98CG50S21	98CG50S22	98CG50S23	98CG50S24	98CG50S25	98CG50S26	98CG50S27	98CG50S28
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Percent moisture	%	37.9047	72.62075	63.9134	79.88155	83.24319	74.02264	76.15445	79.21405
Total organic carbon	%	0.84	0.51	0.32	0.49	0.57	0.45	0.38	0.6
Semivolatile dilution factors	-	1	1	1	1	1	1	1	1
Metals correctional factor	-	0.10981	0.11111	0.10557	0.10625	0.10809	0.08926	0.10464	0.10771
Metals									
Cadmium	mg/kg	<1.1	<1.1	<1.1	1.1	2.5	1.1	1.5	3.0
Chromium	mg/kg	16.0	8.7	7.9	13.0	39.0	15.0	13.0	31.0
Copper	mg/kg	14.0	9.7	7.9	23.0	64.0	19.0	23.0	49.0
Lead	mg/kg	60.0	48.0	41.0	130.0	380.0	110.0	240.0	480.0
Mercury	mg/kg	0.10	<0.1	<0.1	<0.1	<0.2	<0.2	0.40	0.20
Nickel	mg/kg	4.7	3.5	3.7	5.4	14.0	6.8	8.8	15.0
Zinc	mg/kg	190.0	110.0	89.0	240.0	490.0	230.0	260.0	500.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<2100	<1800	<880	<2400	<3000	<1800	<2000	<2400
Acenaphthylene	µg/kg	<2100	<1800	<880	<2400	<3000	<1800	<2000	<2400
Anthracene	µg/kg	<2100	<1800	<880	<2400	650	<1800	<2000	560
Benz(a)anthracene	µg/kg	1800	680	370	1400	4500	730	2300	4300
Benzo(a)pyrene	µg/kg	2100	730	420	1500	5400	920	2800	5800
Chrysene	µg/kg	1700	600	350	1300	4500	800	2100	5000
Dibenz(a,h)anthracene	µg/kg	<2100	<1800	<880	<2400	<3000	<1800	<2000	<2400
Fluoranthene	µg/kg	1700	610	390	1400	4800	750	4600	9500
Fluorene	µg/kg	<2100	<1800	<880	<2400	<3000	<1800	<2000	<2400
2-Methylnaphthalene	µg/kg	<2100	<1800	<880	<2400	<3000	<1800	<2000	<2400
Naphthalene	µg/kg	660	44	<880	<2400	<3000	13	<2000	<2400

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number							
		98CG50S21	98CG50S22	98CG50S23	98CG50S24	98CG50S25	98CG50S26	98CG50S27	98CG50S28
Polycyclic Aromatic Hydrocarbons (cont.)									
Phenanthrene	µg/kg	1500	580	310	990	3600	550	1100	2800
Pyrene	µg/kg	6800	2300	1000	4200	15000	2400	2800	7100
Total PAHs[1]	µg/kg	16260	5544	2840	10790	38450	6163	15700	35060
Polychlorinated Biphenyls									
Total PCBs	µg/kg	740	<910	<700	NR	1860	<980	<1050	<1400
Pesticides									
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	13	47.5
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	<0.007	0.026
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	<0.007	0.014
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	<0.004	<0.005
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	<0.004	<0.005
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	<0.004	<0.005
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	81	78
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	250	394
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	80	88
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	411	560
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	<0.14	<0.20
Mean-PEC-Q		**0.676**	**0.200**	**0.131**	**0.415**	**1.79**	**0.300**	**0.611**	**1.30**

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number						
		98CG50S29	98CG50S30	98CG50S31	98CG50S03	98CG50S04	98CG50S01	98CG50S02
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals								
Percent moisture	%	77.66135	77.3433	82.9404	36.29805	36.9915	62.825	23.91395
Total organic carbon	%	0.8	0.87	0.52	0.69	0.02	0.51	0.14
Semivolatile dilution factors	-	1	1	1	1	1	1	1
Metals correctional factor	-	0.10699	0.10402	0.10886	0.10410	0.10410	0.10275	0.11160
Metals								
Cadmium	mg/kg	2.9	2.1	1.8	<1.0	<1.1	<1.0	<1.1
Chromium	mg/kg	37.0	33.0	29.0	16.0	4.0	12.0	2.3
Copper	mg/kg	56.0	50.0	44.0	21.0	4.0	11.0	<0.7
Lead	mg/kg	490.0	390.0	280.0	47.0	<8.0	61.0	<7.8
Mercury	mg/kg	0.40	0.30	<0.1	<0.1	<0.0	<0.1	<0.0
Nickel	mg/kg	16.0	13.0	14.0	4.1	<2.3	4.2	<2.2
Zinc	mg/kg	500.0	440.0	350.0	180.0	27.0	160.0	15.0
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<2100	<2100	<5900	<3400	<1600	<900	<1300
Acenaphthylene	µg/kg	<2100	<2100	<5900	<3400	<1600	<900	<1300
Anthracene	µg/kg	1100	670	1300	<3400	<1600	<900	<1300
Benz(a)anthracene	µg/kg	6600	4800	13000	1100	470	<900	<1300
Benzo(a)pyrene	µg/kg	6500	5100	13000	1400	620	<900	<1300
Chrysene	µg/kg	7500	5400	12000	1300	510	<900	<1300
Dibenz(a,h)anthracene	µg/kg	<2100	<2100	<5900	<3400	<1600	<900	<1300
Fluoranthene	µg/kg	15000	8700	23000	2200	1200	240	<1300
Fluorene	µg/kg	<2100	<2100	<5900	<3400	<1600	<900	<1300
2-Methylnaphthalene	µg/kg	<2100	<2100	<5900	<3400	<1600	<900	<1300
Naphthalene	µg/kg	<2100	<2100	63	93	<1600	<900	<1300

Appendix 2.26. Sediment chemistry data for the East Branch Grand Calumet River and Grand Calumet River Lagoons, IN (1998; Simon 2000).

Substance	Units	Station Number						
		98CG50S29	98CG50S30	98CG50S31	98CG50S03	98CG50S04	98CG50S01	98CG50S02
Polycyclic Aromatic Hydrocarbons (cont.)								
Phenanthrene	µg/kg	5600	3200	6800	1200	540	<900	<1300
Pyrene	µg/kg	11000	7400	20000	1800	830	200	<1300
Total PAHs[1]	µg/kg	53300	35270	89163	9093	4170	2240	<3900
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1400	<1400	<1400	640	<490	<700	<350
Pesticides								
Chlordane	µg/kg	78.5	33	198	NR	NR	NR	NR
Dieldrin	µg/kg	<0.01	<0.008	<0.008	NR	NR	NR	NR
Endrin	µg/kg	<0.01	<0.008	<0.008	NR	NR	NR	NR
Heptachlor	µg/kg	<0.005	<0.004	<0.004	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	<0.005	<0.004	<0.004	NR	NR	NR	NR
Lindane	µg/kg	<0.005	<0.004	<0.004	NR	NR	NR	NR
Sum DDD	µg/kg	151	76	5240	NR	NR	NR	NR
Sum DDE	µg/kg	540	423	5340	NR	NR	NR	NR
Sum DDT	µg/kg	113	88	3940	NR	NR	NR	NR
Total DDTs[2]	µg/kg	804	587	14520	NR	NR	NR	NR
Toxaphene	µg/kg	<0.20	<0.17	<17	NR	NR	NR	NR
Mean-PEC-Q		**1.71**	**1.22**	**2.30**	**0.517**	**0.198**	**0.149**	**0.127**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated); NR = not reported.

Appendix 2.27. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (November 1998; IDEM 1998).

Substance	Units	Station Number							
		R04818	R04819	R04820	R04815	R04816	R04817	R04821	R04822
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals									
Phenol	µg/kg	<16000	<15000	<28000	<22000	<19000	<24000	<40000	<33000
Metals									
Arsenic	mg/kg	15.3	8.2	32.6	42.2	20.6	53.9	92.1	55.3
Cadmium	mg/kg	1.9	1.1	6.9	10.3	5.7	9.9	20.0	21.5
Chromium	mg/kg	183	93.6	939	931	235	2030	70.1	495
Lead	mg/kg	169	88.5	717	1140	596	1310	37200	2290
Mercury	mg/kg	0.13	0.09	0.96	0.51	0.87	0.77	3.5	5.0
Selenium	mg/kg	1.0	<1.1	4.1	10.8	2.4	9.0	2.2	10.4
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	8700	4200	3800	33000	24000	69000	41000	<33000
Acenaphthylene	µg/kg	<16000	<15000	<28000	<22000	4300	<24000	<40000	<33000
Anthracene	µg/kg	4800	2600	<28000	9800	33000	17000	190000	38000
Benz(a)anthracene	µg/kg	15000	8300	6700	14000	75000	14000	500000	73000
Benzo(a)pyrene	µg/kg	18000	8400	<28000	14000	66000	12000	150000	34000
Chrysene	µg/kg	15000	7000	8500	14000	68000	14000	1400000	150000
Dibenz(a,h)anthracene	µg/kg	3600	<15000	<28000	<22000	11000	<24000	61000	<33000
Fluoranthene	µg/kg	28000	15000	14000	41000	160000	52000	330000	44000
Fluorene	µg/kg	<16000	3700	3000	24000	30000	55000	240000	10000
2-Methylnaphthalene	µg/kg	<16000	<15000	<28000	7400	6200	36000	330000	<33000
Naphthalene	µg/kg	<16000	<15000	<28000	8000	5200	21000	<40000	<33000
Phenanthrene	µg/kg	9300	6100	3300	34000	120000	67000	4200000	38000
Pyrene	µg/kg	24000	13000	12000	29000	110000	31000	1400000	110000
Total PAHs[1]	µg/kg	126400	68300	51300	228200	712700	388000	8842000	497000

Appendix 2.27. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (November 1998; IDEM 1998).

Substance	Units	Station Number							
		R04818	R04819	R04820	R04815	R04816	R04817	R04821	R04822
Polychlorinated Biphenyls									
Total PCBs	µg/kg	3110	3135	8915	4535	2380	16375	<1030	6115
Mean-PEC-Q		**3.70**	**2.71**	**6.52**	**7.29**	**12.3**	**16.4**	**231**	**12.6**

Appendix 2.27. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (November 1998; IDEM 1998).

Substance	Units	Station Number					
		R04823	R04824	R04813	R04814	R04825	R04826
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface
Conventionals							
Phenol	µg/kg	<23000	<19000	<26000	<43000	<20000	<36000
Metals							
Arsenic	mg/kg	122	77.3	35.9	58.9	73.7	33.0
Cadmium	mg/kg	21.4	15.9	7.6	16.1	14.8	9.0
Chromium	mg/kg	411	257	399	495	218	418
Lead	mg/kg	1320	812	663	1000	725	734
Mercury	mg/kg	2.3	1.5	1.3	2.0	2.3	0.95
Selenium	mg/kg	9.7	8.2	3.6	5.8	3.2	3.8
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	2900	<19000	7400	<43000	<20000	24000
Acenaphthylene	µg/kg	<23000	<19000	<26000	<43000	<20000	<36000
Anthracene	µg/kg	8100	<19000	4900	<43000	<20000	<36000
Benz(a)anthracene	µg/kg	28000	9700	13000	6800	20000	21000
Benzo(a)pyrene	µg/kg	11000	<19000	11000	7200	17000	<36000
Chrysene	µg/kg	57000	19000	18000	12000	31000	30000
Dibenz(a,h)anthracene	µg/kg	<23000	<19000	<26000	<43000	<20000	<36000
Fluoranthene	µg/kg	26000	7300	33000	13000	25000	60000
Fluorene	µg/kg	13000	<19000	8100	<43000	5400	19000
2-Methylnaphthalene	µg/kg	2400	<19000	4700	<43000	<20000	<36000
Naphthalene	µg/kg	<23000	<19000	2700	<43000	<20000	<36000
Phenanthrene	µg/kg	93000	3500	7300	6600	<20000	<36000
Pyrene	µg/kg	63000	18000	30000	11000	38000	64000
Total PAHs[1]	µg/kg	304400	57500	140100	56600	136400	218000

Appendix 2.27. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (November 1998; IDEM 1998).

Substance	Units	Station Number					
		R04823	R04824	R04813	R04814	R04825	R04826
Polychlorinated Biphenyls							
Total PCBs	µg/kg	1845	736	17270	6385	4110	44050
Mean-PEC-Q		**7.19**	**2.39**	**11.5**	**5.42**	**5.09**	**25.9**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		A-M ACORE01SD_1	A-M ACORE01SD_2	A-M ACORE02SD	A-M ACORE03SD	A-M ECH-E-AM01	A-M ECH-E-AM02	A-M ECH-E-AM03
Depth	feet	0 - 2.26	0 - 2.26	2.26 - 4.00	4.00 - 6.56	0 - 0.33	0.33 - 0.66	0.66 - 0.98
Conventionals								
Acid volatile sulfides	µmol/g	96	89	82	2.0	16.1	37.8	56.7
Ammonia-nitrogen	mg/kg	180	172	1300	90	47	123	<130
Benzene	µg/kg	NR	NR	NR	NR	<2.00	340	570
Nitrogen, total Kjeldahl	mg/kg	1310	710	12300	350	540	1100	2260
Oil and grease	mg/kg	24900	31700	4900	<760	8100	17700	68500
pH	S.U.	7.70	7.59	7.16	7.26	7.36	7.49	7.77
Phenol	µg/kg	NR	NR	NR	NR	<470	<900	<4800
Phenols, total	mg/kg	2.30	1.70	<1.00	<0.3	0.530	2.50	<0.330
Phosphorus, total	mg/kg	640	490	1000	90.0	910	620	480
Total organic carbon	%	1.11	0.93	3.9	0.338	1.03	1.22	3.2
Metals								
Arsenic	mg/kg	23.8	19.3	29.9	<3.40	8.50	15.7	25.0
Cadmium	mg/kg	1.61	1.91	<0.210	<0.0640	<0.0720	<0.0680	2.62
Chromium	mg/kg	23.1	16.5	15.3	2.05	102	82.9	32.3
Copper	mg/kg	111	148	25.1	2.04	75.4	115	454
Lead	mg/kg	1010	670	13.5	2.10	203	480	3700
Mercury	mg/kg	0.72	0.970	<0.0210	<0.00610	0.290	0.800	1.30
Nickel	mg/kg	7.07	7.05	24.3	3.28	33.3	46.1	23.5
Zinc	mg/kg	2910	2530	122	12.1	837	850	1850
Total SEM metals	µmol/g	NR	NR	NR	NR	10.21	18.26	21.16
SEM-AVS	µmol/g	NR	NR	NR	NR	-5.89	-19.54	-35.54

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		A-M ACORE01SD_1	A-M ACORE01SD_2	A-M ACORE02SD	A-M ACORE03SD	A-M ECH-E-AM01	A-M ECH-E-AM02	A-M ECH-E-AM03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	NR	NR	NR	NR	4100	330000	1400000
Acenaphthylene	µg/kg	NR	NR	NR	NR	5100	36000	150000
Anthracene	µg/kg	NR	NR	NR	NR	11000	520000	2100000
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	24000	350000	1400000
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	24000	240000	930000
Chrysene	µg/kg	NR	NR	NR	NR	25000	400000	1400000
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	3700	25000	110000
Fluoranthene	µg/kg	NR	NR	NR	NR	46000	860000	3500000
Fluorene	µg/kg	NR	NR	NR	NR	4900	370000	1600000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	810	120000	840000
Naphthalene	µg/kg	NR	NR	NR	NR	1200	7400	110000
Phenanthrene	µg/kg	NR	NR	NR	NR	26000	1300000	6100000
Pyrene	µg/kg	NR	NR	NR	NR	35000	700000	2900000
Total PAHs[1]	µg/kg	NR	NR	NR	NR	210810	5258400	22540000
Polychlorinated Biphenyls								
Total PCBs	µg/kg	NR	NR	NR	NR	3980	<3150	<3290
Pesticides								
Aldrin	µg/kg	NR	NR	NR	NR	<9.40	<9.10	<9.60
Chlordane	µg/kg	NR	NR	NR	NR	<18.8	28.75	37.4
Sum DDD	µg/kg	NR	NR	NR	NR	<18.0	<18.0	<19.0
Sum DDE	µg/kg	NR	NR	NR	NR	<18.0	<18.0	<19.0
Sum DDT	µg/kg	NR	NR	NR	NR	<18.0	<18.0	47.0
Total DDTs[2]	µg/kg	NR	NR	NR	NR	<54	<54	66

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		A-M ACORE01SD_1	A-M ACORE01SD_2	A-M ACORE02SD	A-M ACORE03SD	A-M ECH-E-AM01	A-M ECH-E-AM02	A-M ECH-E-AM03
Pesticides (cont.)								
Dieldrin	µg/kg	NR	NR	NR	NR	<18.0	<18.0	20.0
Endrin	µg/kg	NR	NR	NR	NR	<18.0	<18.0	<19.0
Heptachlor	µg/kg	NR	NR	NR	NR	<9.40	<9.10	<9.60
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	40.8	<9.10	<9.60
Lindane	µg/kg	NR	NR	NR	NR	<9.40	<9.10	<9.60
Toxaphene	µg/kg	NR	NR	NR	NR	<940	<910	<960
Mean-PEC-Q		**2.34**	**1.86**	**0.301**	**0.0286**	**5.32**	**116**	**497**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		A-N ECH-E-AN01_1	A-N ECH-E-AN01_2	A-S ECH-E-AS01	B-M BCORE01SD	B-M BCORE02SD_1	B-M BCORE02SD_2	B-M BCORE03SD
Depth	feet	0 - 0.33	0 - 0.33	0 - 0.33	0 - 1.80	1.80 - 3.94	1.80 - 3.94	4 - 5.68
Conventionals								
Acid volatile sulfides	µmol/g	38.6	28.5	26.6	203	46.6	36.6	1.40
Ammonia-nitrogen	mg/kg	51	60	360	220	1270	1330	<150
Benzene	µg/kg	<2.00	<2.00	<4.00	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	1490	1420	5300	1900	16600	13100	370
Oil and grease	mg/kg	11400	11000	9500	17000	5500	9000	<730
pH	S.U.	7.35	7.34	7.50	7.58	7.32	7.27	7.79
Phenol	µg/kg	<560	<530	<900	910	<310	NR	<81.0
Phenols, total	mg/kg	1.50	0.720	0.670	6.60	<1.10	3.60	1.23
Phosphorus, total	mg/kg	1900	1800	650	1900	1200	1100	80.0
Total organic carbon	%	2.24	2.03	2.12	3	4.2	3.5	0.253
Metals								
Arsenic	mg/kg	12.8	12.6	9.90	54.0	71.9	73.7	5.50
Cadmium	mg/kg	0.710	0.440	<0.140	18.3	1.47	0.340	<0.0620
Chromium	mg/kg	146	148	79.8	76.0	24.1	20.2	3.08
Copper	mg/kg	213	231	58.6	303	81.0	69.8	<1.31
Lead	mg/kg	420	370	103	734	175	151	<3.30
Mercury	mg/kg	18.0	1.99	<0.0750	3.07	0.520	0.424	<0.00560
Nickel	mg/kg	53.6	62.2	34.6	<33.0	26.8	26.5	3.91
Zinc	mg/kg	1230	1260	471	4500	804	709	14.9
Total SEM metals	µmol/g	22.79	11.52	22.17	62.98	16.05	NR	0.40
SEM-AVS	µmol/g	-15.81	-16.98	-4.43	-140.02	-30.55	NR	-1.00

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		A-N ECH-E-AN01_1	A-N ECH-E-AN01_2	A-S ECH-E-AS01	B-M BCORE01SD	B-M BCORE02SD_1	B-M BCORE02SD_2	B-M BCORE03SD
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	2900	2900	970	13000	<160	NR	<41.0
Acenaphthylene	µg/kg	5000	5200	560	4300	<160	NR	<41.0
Anthracene	µg/kg	6700	6800	2300	19000	200	NR	<41.0
Benz(a)anthracene	µg/kg	23000	23000	8200	25000	240	NR	<41.0
Benzo(a)pyrene	µg/kg	22000	22000	4800	18000	<160	NR	<41.0
Chrysene	µg/kg	30000	31000	18000	32000	230	NR	<41.0
Dibenz(a,h)anthracene	µg/kg	4000	3600	1300	<460	<160	NR	<41.0
Fluoranthene	µg/kg	35000	36000	9400	59000	840	NR	<41.0
Fluorene	µg/kg	4100	4000	2200	22000	200	NR	<41.0
2-Methylnaphthalene	µg/kg	2100	2200	460	2900	<160	NR	<41.0
Naphthalene	µg/kg	1800	2000	820	5600	<160	NR	<41.0
Phenanthrene	µg/kg	31000	31000	19000	71000	480	NR	<41.0
Pyrene	µg/kg	36000	36000	20000	69000	920	NR	<41.0
Total PAHs[1]	µg/kg	203600	205700	88010	340800	3350	NR	<533
Polychlorinated Biphenyls								
Total PCBs	µg/kg	6280	5490	<6230	<630.0	<1050	NR	<280.0
Pesticides								
Aldrin	µg/kg	<11.0	<11.0	<18.0	<1.80	<3.10	NR	<0.820
Chlordane	µg/kg	25.5	16.5	<36	<3.6	7.65	NR	<1.64
Sum DDD	µg/kg	<22.0	<30.0	<34.0	<36.0	<6.10	NR	<1.60
Sum DDE	µg/kg	<22.0	320	<34.0	<36.0	<6.10	NR	<1.60
Sum DDT	µg/kg	<22.0	<21.0	<35.0	<36.0	<6.10	NR	<1.60
Total DDTs[2]	µg/kg	<66	330.5	<35	<36	<18.3	NR	<4.8

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		A-N ECH-E-AN01_1	A-N ECH-E-AN01_2	A-S ECH-E-AS01	B-M BCORE01SD	B-M BCORE02SD_1	B-M BCORE02SD_2	B-M BCORE03SD
Pesticides (cont.)								
Dieldrin	µg/kg	<22.0	<21.0	<35.0	6.40	<6.10	NR	<1.60
Endrin	µg/kg	33.0	<21.0	<35.0	<3.60	<6.10	NR	<1.60
Heptachlor	µg/kg	<11.0	<11.0	<18.0	<1.80	3.1	NR	<0.820
Heptachlor epoxide	µg/kg	<11.0	39.0	<18.0	<1.80	<3.10	NR	<0.820
Lindane	µg/kg	<11.0	12.0	<18.0	<1.80	<3.10	NR	<0.820
Toxaphene	µg/kg	<1100	<1100	<1800	<180	<310	NR	<82.0
Mean-PEC-Q		**6.57**	**6.20**	**2.21**	**6.28**	**0.567**	**0.889**	**0.0887**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		B-M ECH-E-BM01	B-N ECH-E-BN01	B-S ECH-E-BS01	C-CORE CCORE01SD	C-CORE CCORE02SD	C-CORE CCORE03SD	C-N ECH-E-CN01	C-N ECH-E-CN02
Depth	feet	0 - 0.33	0 - 0.33	0 - 0.33	0 - 4.43	4.43 - 8.83	8.83 - 15.09	0 - 0.33	0.33 - 0.66
Conventionals									
Acid volatile sulfides	µmol/g	20.2	14.9	112	25.5	16.2	26.3	75.8	36.9
Ammonia-nitrogen	mg/kg	230	72	194	540	720	340	170	310
Benzene	µg/kg	NR	<2.00	9.00	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	3380	990	3400	1170	2090	2900	1900	2200
Oil and grease	mg/kg	27500	16700	137000	41100	40000	30500	118000	93600
pH	S.U.	7.09	7.08	7.10	7.68	7.85	7.57	7.33	7.43
Phenol	µg/kg	NR	<560	<3800	NR	NR	NR	NR	NR
Phenols, total	mg/kg	0.740	1.05	1.70	1.60	2.30	0.670	1.42	1.54
Phosphorus, total	mg/kg	2100	2000	2200	2600	2200	860	4300	3800
Total organic carbon	%	1.04	1.17	3	1.88	2.67	2.08	0.34	3.7
Metals									
Arsenic	mg/kg	15.4	12.1	35.0	13.2	37	34.3	37.0	54.0
Cadmium	mg/kg	<0.0940	<0.420	<0.580	<0.830	<0.97	<0.0870	<0.770	<0.730
Chromium	mg/kg	197	235	468	548	1120	496	2040	2150
Copper	mg/kg	171	118	250	195	240	141	360	323
Lead	mg/kg	329	301	860	610	810	481	830	1330
Mercury	mg/kg	2.54	0.480	0.380	0.570	0.75	0.620	0.910	1.52
Nickel	mg/kg	66.1	107	129	128	142	57.0	147	136
Zinc	mg/kg	2020	1120	3320	3560	1800	1460	3320	3370
Total SEM metals	µmol/g	NR	12.74	21.92	NR	NR	NR	NR	NR
SEM-AVS	µmol/g	NR	-2.16	-90.08	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		B-M ECH-E-BM01	B-N ECH-E-BN01	B-S ECH-E-BS01	C-CORE CCORE01SD	C-CORE CCORE02SD	C-CORE CCORE03SD	C-N ECH-E-CN01	C-N ECH-E-CN02
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	3300	3600	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	1500	6100	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	2800	20000	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	9600	37000	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	9300	30000	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	12000	54000	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	1600	5400	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	19000	84000	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	2400	30000	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	900	3600	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	1400	5700	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	8800	100000	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	18000	87000	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	90600	466400	NR	NR	NR	NR	NR
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	7950	70750	NR	NR	NR	NR	NR
Pesticides									
Aldrin	µg/kg	NR	<11.0	<15.0	NR	NR	NR	NR	NR
Chlordane	µg/kg	NR	<22.0	27.5	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	<22.0	<30.0	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	<22.0	320	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	37.0	<30.0	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	59	335	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		B-M ECH-E-BM01	B-N ECH-E-BN01	B-S ECH-E-BS01	C-CORE CCORE01SD	C-CORE CCORE02SD	C-CORE CCORE03SD	C-N ECH-E-CN01	C-N ECH-E-CN02
Pesticides (cont.)									
Dieldrin	µg/kg	NR	<22.0	51.0	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	<22.0	<30.0	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	<11.0	<15.0	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	<11.0	772	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	<11.0	35.0	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	<1100	<1500	NR	NR	NR	NR	NR
Mean-PEC-Q		**1.68**	**5.74**	**42.8**	**3.13**	**3.73**	**2.08**	**5.53**	**6.25**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		C-N ECH-E-CN03_1	C-N ECH-E-CN03_2	C-S ECH-E-CS01	D-M (S) DCORE01SD	D-M DCORE02SD	D-M DCORE03SD	D-M ECH-E-DM01	D-N ECH-E-DN01
Depth	feet	0.66 - 0.98	0.66 - 0.98	0 - 0.33	0 - 3.38	3.38 - 5.91	5.91 - 6.82	0 - 0.33	0 - 0.33
Conventionals									
Acid volatile sulfides	µmol/g	30.3	46.1	98	1.25	8.80	0.750	4.30	10.7
Ammonia-nitrogen	mg/kg	280	350	60	<81	670	<170	<110	470
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	97.0
Nitrogen, total Kjeldahl	mg/kg	1700	1900	1670	360	5100	590	<290	1290
Oil and grease	mg/kg	93200	92400	13400	6000	<15000	<800	6100	20000
pH	S.U.	7.53	7.48	8.09	7.70	7.37	7.55	7.32	7.00
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	<870
Phenols, total	mg/kg	NR	<0.600	<0.520	1.82	0.950	1.96	0.330	0.98
Phosphorus, total	mg/kg	4000	7700	1900	470	1100	140	370	1900
Total organic carbon	%	3	2.82	2.39	0.45	2.56	0.49	0.63	2.16
Metals									
Arsenic	mg/kg	53.0	41.0	31.0	5.80	7.60	2.30	4.40	16.4
Cadmium	mg/kg	<0.660	<0.670	<0.570	<0.0660	<0.120	<0.0670	0.330	<0.10
Chromium	mg/kg	2410	2470	1410	86.0	22.9	4.47	58.5	240
Copper	mg/kg	379	385	320	52.9	20.9	2.39	44.6	157
Lead	mg/kg	1480	1510	830	103	14.2	<3.20	107	380
Mercury	mg/kg	1.26	1.00	0.750	0.200	0.0290	<0.00630	0.170	0.68
Nickel	mg/kg	170	173	151	24.1	27.1	4.98	16.1	66
Zinc	mg/kg	3550	3560	3130	622	81.7	17.8	463	1480
Total SEM metals	µmol/g	NR	NR	NR	NR	NR	NR	NR	24.95
SEM-AVS	µmol/g	NR	NR	NR	NR	NR	NR	NR	14.25

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		C-N ECH-E-CN03_1	C-N ECH-E-CN03_2	C-S ECH-E-CS01	D-M (S) DCORE01SD	D-M DCORE02SD	D-M DCORE03SD	D-M ECH-E-DM01	D-N ECH-E-DN01
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	6900
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	4800
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	6100
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	19000
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	23000
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	25000
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	4700
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	31000
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	5700
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	3400
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	6600
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	15000
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	28000
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR	NR	NR	179200
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	13280
Pesticides									
Aldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	<18.0
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	37
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	<34.0
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	<34.0
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	67.0
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	67

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		C-N ECH-E-CN03_1	C-N ECH-E-CN03_2	C-S ECH-E-CS01	D-M (S) DCORE01SD	D-M DCORE02SD	D-M DCORE03SD	D-M ECH-E-DM01	D-N ECH-E-DN01
Pesticides (cont.)									
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	<34.0
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	<34.0
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	<18.0
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	<18.0
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	<18.0
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	<1800
Mean-PEC-Q		**6.96**	**7.04**	**4.61**	**0.567**	**0.205**	**0.0409**	**0.457**	**9.71**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		D-S ECH-E-DS01	E-CORE ECORE01SD	E-CORE ECORE02SD	E-CORE ECORE03SD	E-N ECH-E-EN01	E-N ECH-E-EN02	E-N ECH-E-EN03	E-S ECH-E-ES01
Depth	feet	0 - 0.33	0 - 1.48	1.48 - 3.87	3.87 - 5.41	0 - 0.33	0.33 - 0.66	0.66 - 0.98	0 - 0.33
Conventionals									
Acid volatile sulfides	µmol/g	42.6	119	106	<0.26	6.60	70.3	172	61.9
Ammonia-nitrogen	mg/kg	670	<120	670	<120	<67	<230	270	81
Benzene	µg/kg	<5.00	NR	NR	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	330	950	5800	370	<320	<240	<470	<380
Oil and grease	mg/kg	39800	48600	45100	<770	5100	13800	36400	74000
pH	S.U.	7.06	8.49	7.38	7.66	7.30	7.32	7.46	7.2
Phenol	µg/kg	<1100	NR	NR	NR	NR	NR	NR	NR
Phenols, total	mg/kg	1.86	0.420	1.23	0.420	<0.500	2.00	15.8	1.12
Phosphorus, total	mg/kg	820	1100	1600	100	220	1500	1700	2300
Total organic carbon	%	3.34	2.34	4.8	0.41	0.45	0.584	3.61	2.25
Metals									
Arsenic	mg/kg	22.0	21.0	433	<1.50	18.6	65.0	74.0	51.0
Cadmium	mg/kg	2.72	15.0	21.3	<0.06580	7.56	49.9	42.0	23.7
Chromium	mg/kg	99.2	74.9	30.2	2.59	99.7	201	65.0	205
Copper	mg/kg	275	146	764	2.20	87.3	154	356	417
Lead	mg/kg	397	563	4940	2.20	300	1160	1000	1270
Mercury	mg/kg	0.510	2.42	9.10	<0.00620	0.620	2.33	2.91	2.70
Nickel	mg/kg	39.1	50.0	14.3	5.26	37.8	108	14.0	48.0
Zinc	mg/kg	1080	1630	3770	14.9	3350	4580	4270	4110
Total SEM metals	µmol/g	16.75	NR	NR	NR	NR	NR	NR	NR
SEM-AVS	µmol/g	-25.85	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		D-S ECH-E-DS01	E-CORE ECORE01SD	E-CORE ECORE02SD	E-CORE ECORE03SD	E-N ECH-E-EN01	E-N ECH-E-EN02	E-N ECH-E-EN03	E-S ECH-E-ES01
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	5000	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	3300	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	22000	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	90000	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	43000	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	210000	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	13000	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	82000	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	16000	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	960	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	1500	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	250000	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	230000	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	966760	NR	NR	NR	NR	NR	NR	NR
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<7700	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Aldrin	µg/kg	<23.0	NR	NR	NR	NR	NR	NR	NR
Chlordane	µg/kg	119.5	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	<44.0	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	<44.0	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	<44.0	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	<44	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		D-S ECH-E-DS01	E-CORE ECORE01SD	E-CORE ECORE02SD	E-CORE ECORE03SD	E-N ECH-E-EN01	E-N ECH-E-EN02	E-N ECH-E-EN03	E-S ECH-E-ES01
Pesticides (cont.)									
Dieldrin	µg/kg	<44.0	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	<44.0	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	<23.0	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	<23.0	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	<23.0	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	<2300	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**21.9**	**2.04**	**9.99**	**0.0322**	**2.00**	**5.16**	**4.44**	**4.40**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		E-S ECH-E-ES02	E-S ECH-E-ES03	F-CORE FCORE01SD	F-CORE FCORE02SD	F-CORE FCORE03SD_1	F-CORE FCORE03SD_2	F-N ECH-E-FN01	F-S ECH-E-FS01
Depth	feet	0.33 - 0.66	0.66 - 0.98	0 - 1.80	0 - 4.92	4.92 - 6.73	4.92 - 6.73	0 - 0.33	0 - 0.33
Conventionals									
Acid volatile sulfides	µmol/g	121	32.8	27	340	27	13	176	352
Ammonia-nitrogen	mg/kg	136	19.9	132	1200	230	214	34	390
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	<320	<280	730	9500	1830	1880	930	1220
Oil and grease	mg/kg	23200	23500	27100	3600	3400	1400	44300	147000
pH	S.U.	7.54	8.32	7.60	7.44	7.40	7.39	7.25	7.56
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenols, total	mg/kg	3.90	1.70	1.90	<1.00	<0.380	2.20	28.6	<1.00
Phosphorus, total	mg/kg	1700	1400	1200	1600	240	240	2200	7200
Total organic carbon	%	1.25	0.74	1.01	2.7	0.67	0.85	1.39	4.3
Metals									
Arsenic	mg/kg	68.0	117	25.0	843	381	361	325	50.0
Cadmium	mg/kg	29.0	9.80	0.950	21.5	<0.0850	<0.0860	9.03	11.7
Chromium	mg/kg	97.0	98.90	126	38.2	6.22	5.65	287	1600
Copper	mg/kg	343	210	111	1470	6.89	6.29	284	496
Lead	mg/kg	850	1220	278	8430	4.90	4.60	700	1320
Mercury	mg/kg	2.16	3.73	0.670	42.0	<0.00800	<0.00810	1.44	1.85
Nickel	mg/kg	20.0	121	30.5	27.8	9.20	8.40	79.4	188
Zinc	mg/kg	2760	4490	1440	3140	29.2	26.2	10200	6820
Total SEM metals	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR
SEM-AVS	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		E-S ECH-E-ES02	E-S ECH-E-ES03	F-CORE FCORE01SD	F-CORE FCORE02SD	F-CORE FCORE03SD_1	F-CORE FCORE03SD_2	F-N ECH-E-FN01	F-S ECH-E-FS01
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Aldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		E-S ECH-E-ES02	E-S ECH-E-ES03	F-CORE FCORE01SD	F-CORE FCORE02SD	F-CORE FCORE03SD_1	F-CORE FCORE03SD_2	F-N ECH-E-FN01	F-S ECH-E-FS01
Pesticides (cont.)									
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**3.45**	**4.23**	**1.25**	**16.2**	**1.71**	**1.62**	**6.50**	**7.24**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		G-M GCORE01SD	G-M GCORE02SD	G-M GCORE03SD_1	G-M GCORE03SD_2	G-N ECH-E-GN01	G-N ECH-E-GN02	G-N ECH-E-GN03
Depth	feet	0 - 2.10	3.08 - 6.82	6.82 - 8.50	6.82 - 8.50	0 - 0.33	0.33 - 0.66	0.66 - 0.98
Conventionals								
Acid volatile sulfides	µmol/g	36.6	263	129	131	89.7	70	354
Ammonia-nitrogen	mg/kg	2200	930	13500	14300	137	<40	<21
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	4000	21600	19200	19300	1230	850	1170
Oil and grease	mg/kg	11500	3700	<1800	<1900	28800	13000	10800
pH	S.U.	7.06	6.9	6.51	6.55	7.9	7.47	7.32
Phenol	µg/kg	<720	<230	<200	<210	NR	NR	NR
Phenols, total	mg/kg	1.15	1.30	<0.680	<0.720	<0.440	<0.34	<0.360
Phosphorus, total	mg/kg	1000	2300	1500	1400	1300	600	670
Total organic carbon	%	1.19	3.1	2.5	3.4	1.08	0.73	0.63
Metals								
Arsenic	mg/kg	61.0	114	8.10	8.50	36.0	72	240
Cadmium	mg/kg	<0.110	4.35	<0.150	<0.160	0.38	2.9	12.5
Chromium	mg/kg	197	13.6	25.6	20.7	206	127	74.5
Copper	mg/kg	276	279	22.2	23.7	331	190	412
Lead	mg/kg	1020	763	15.0	15.9	840	710	330
Mercury	mg/kg	2.27	3.10	0.0550	0.0490	0.710	0.79	4.30
Nickel	mg/kg	52.6	18.0	25.5	26.1	46.8	51	140
Zinc	mg/kg	1680	2220	77.7	76.8	2640	5800	16900
Total SEM metals	µmol/g	30.44	8.85	1.25	1.23	NR	NR	NR
SEM-AVS	µmol/g	-6.16	-254.15	-127.75	-129.77	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		G-M GCORE01SD	G-M GCORE02SD	G-M GCORE03SD_1	G-M GCORE03SD_2	G-N ECH-E-GN01	G-N ECH-E-GN02	G-N ECH-E-GN03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	2200	<120	<98.0	<100	NR	NR	NR
Acenaphthylene	µg/kg	1700	<120	<98.0	<100	NR	NR	NR
Anthracene	µg/kg	5000	<120	<98.0	<100	NR	NR	NR
Benz(a)anthracene	µg/kg	13000	<120	<98.0	<100	NR	NR	NR
Benzo(a)pyrene	µg/kg	10000	<120	<98.0	<100	NR	NR	NR
Chrysene	µg/kg	29000	<120	<98.0	<100	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	2300	<120	<98.0	<100	NR	NR	NR
Fluoranthene	µg/kg	17000	210	<98.0	<100	NR	NR	NR
Fluorene	µg/kg	1400	<120	<98.0	<100	NR	NR	NR
2-Methylnaphthalene	µg/kg	740	<120	<98.0	<100	NR	NR	NR
Naphthalene	µg/kg	820	<120	<98.0	<100	NR	NR	NR
Phenanthrene	µg/kg	6100	130	<98.0	<100	NR	NR	NR
Pyrene	µg/kg	33000	250	<98.0	<100	NR	NR	NR
Total PAHs[1]	µg/kg	122260	1130	<1176	<1200	NR	NR	NR
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<3552	<770	<679	<700	NR	NR	NR
Pesticides								
Aldrin	µg/kg	<1.40	<2.30	<2.00	<2.10	NR	NR	NR
Chlordane	µg/kg	24.5	<4.6	<4.00	<4.20	NR	NR	NR
Sum DDD	µg/kg	<2.80	<4.50	<3.80	<4.00	NR	NR	NR
Sum DDE	µg/kg	<2.80	<4.50	<3.80	<4.00	NR	NR	NR
Sum DDT	µg/kg	<2.80	<4.50	<3.80	<4.00	NR	NR	NR
Total DDTs[2]	µg/kg	<8.4	<13.5	<11.4	<12	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number						
		G-M GCORE01SD	G-M GCORE02SD	G-M GCORE03SD_1	G-M GCORE03SD_2	G-N ECH-E-GN01	G-N ECH-E-GN02	G-N ECH-E-GN03
Pesticides (cont.)								
Dieldrin	µg/kg	<2.80	<4.50	<3.80	<4.00	NR	NR	NR
Endrin	µg/kg	19.0	<4.50	<3.80	<4.00	NR	NR	NR
Heptachlor	µg/kg	4.00	<2.30	<2.00	<2.10	NR	NR	NR
Heptachlor epoxide	µg/kg	4.20	<2.30	<2.00	<2.10	NR	NR	NR
Lindane	µg/kg	<1.40	<2.30	<2.00	<2.10	NR	NR	NR
Toxaphene	µg/kg	<140	<230	<200	<210	NR	NR	NR
Mean-PEC-Q		**3.98**	**1.27**	**0.117**	**0.117**	**2.65**	**3.49**	**7.93**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		G-S ECH-E-GS01_1	G-S ECH-E-GS01_2	G-S ECH-E-GS02	G-S ECH-E-GS03	H-CORE HCORE01SD	H-CORE HCORE02SD	H-CORE HCORE03SD	H-N ECH-E-HN01
Depth	feet	0 - 0.33	0 - 0.33	0.33 - 0.66	0.66 - 0.98	0 - 1.18	1.18 - 2.92	2.92 - 4.07	0 - 0.33
Conventionals									
Acid volatile sulfides	µmol/g	8.20	7.00	5.30	9.80	39	57	3.1	194
Ammonia-nitrogen	mg/kg	71	200	242	350	720	1240	72	261
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	<500	2100	<590	<400	6700	8700	280	2200
Oil and grease	mg/kg	27500	20000	36000	51800	11800	2700	<770	43700
pH	S.U.	7.31	7.56	8.42	8.60	8.07	8.87	10.4	7.71
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenols, total	mg/kg	<0.630	<0.650	2.10	7.90	<0.640	<0.70	<0.300	2.3
Phosphorus, total	mg/kg	1900	1900	1400	1500	1400	1100	100	2100
Total organic carbon	%	1.64	1.75	2.22	1.55	2.81	3.2	0.4	1.32
Metals									
Arsenic	mg/kg	30.0	43.0	21.0	57.0	14.8	<8.50	<3.80	26.0
Cadmium	mg/kg	<0.700	<0.720	<0.650	<0.660	0.150	<0.170	<0.0650	3.54
Chromium	mg/kg	390	419	496	683	88.0	17.7	2.56	316
Copper	mg/kg	205	217	152	181	136	23.2	2.28	173
Lead	mg/kg	580	580	580	610	492	12.3	2.40	680
Mercury	mg/kg	0.420	0.580	0.450	0.480	0.600	0.0340	<0.00620	2.04
Nickel	mg/kg	94.4	104	97.5	98.1	34.5	26.9	3.80	57.5
Zinc	mg/kg	1710	1820	1090	1240	759	76.0	12.5	2990
Total SEM metals	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR
SEM-AVS	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		G-S ECH-E-GS01_1	G-S ECH-E-GS01_2	G-S ECH-E-GS02	G-S ECH-E-GS03	H-CORE HCORE01SD	H-CORE HCORE02SD	H-CORE HCORE03SD	H-N ECH-E-HN01
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Aldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		G-S ECH-E-GS01_1	G-S ECH-E-GS01_2	G-S ECH-E-GS02	G-S ECH-E-GS03	H-CORE HCORE01SD	H-CORE HCORE02SD	H-CORE HCORE03SD	H-N ECH-E-HN01
Pesticides (cont.)									
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**2.30**	**2.46**	**2.16**	**2.66**	**1.20**	**0.182**	**0.0324**	**2.65**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		H-S ECH-E-HS01	I-M ECH-E-IM01	I-M ECH-E-IM02_1	I-M ECH-E-IM02_2	I-M ECH-E-IM03	I-M ICORE01SD	I-M ICORE02SD	I-M ICORE03SD
Depth	feet	0 - 0.33	0 - 0.33	0.33 - 0.66	0.33 - 0.66	0.66 - 0.98	0 - 2.43	2.43 - 5.09	5.09 - 6.00
Conventionals									
Acid volatile sulfides	µmol/g	7.40	42.9	106	136	293	74.3	41	<0.250
Ammonia-nitrogen	mg/kg	148	216	171	540	270	210	1230	<160
Benzene	µg/kg	NR	5.00	7.00	6.00	6.00	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	640	1870	2300	2300	2600	390	5300	240
Oil and grease	mg/kg	15600	24000	40800	42300	50500	59600	2900	<750
pH	S.U.	7.09	7.13	7.21	7.18	7.31	7.27	7.13	7.86
Phenol	µg/kg	NR	<580	<770	<750	<1100	<760	<230	<83.0
Phenols, total	mg/kg	<0.300	2.40	1.25	2.50	6.30	2.20	<0.70	<0.290
Phosphorus, total	mg/kg	1300	2200	2300	2100	2300	1500	720	130
Total organic carbon	%	0.64	1.31	1.94	1.13	2.04	2.5	1.8	0.63
Metals									
Arsenic	mg/kg	10.4	58.0	127	123	104	141	85	<2.50
Cadmium	mg/kg	<0.0670	<2.20	<2.80	<2.80	22.7	19.7	13.3	<0.0630
Chromium	mg/kg	184	222	181	178	70.0	101	19.8	2.42
Copper	mg/kg	112	197	368	350	529	335	260	2.11
Lead	mg/kg	170	480	1740	1670	3700	1570	1630	2.60
Mercury	mg/kg	0.360	1.37	4.90	5.80	11.0	6.20	7.4	<0.00600
Nickel	mg/kg	58.0	74.0	72.0	80.0	28.0	23.1	14.9	3.63
Zinc	mg/kg	980	2180	4750	4780	8490	4590	2030	13.1
Total SEM metals	µmol/g	NR	23.36	73.02	78.82	110.61	53.01	1,508.63	0.73
SEM-AVS	µmol/g	NR	-19.54	-32.98	-57.18	-182.39	-21.29	1,467.63	0.60

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		H-S ECH-E-HS01	I-M ECH-E-IM01	I-M ECH-E-IM02_1	I-M ECH-E-IM02_2	I-M ECH-E-IM03	I-M ICORE01SD	I-M ICORE02SD	I-M ICORE03SD
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	3200	11000	9100	4100	20000	<110	<42.0
Acenaphthylene	µg/kg	NR	2300	4200	400	3300	3900	<110	<42.0
Anthracene	µg/kg	NR	3200	60000	30000	13000	71000	<110	48.0
Benz(a)anthracene	µg/kg	NR	10000	97000	90000	35000	140000	210	100
Benzo(a)pyrene	µg/kg	NR	11000	60000	46000	21000	73000	190	50.0
Chrysene	µg/kg	NR	18000	190000	220000	65000	380000	260	270
Dibenz(a,h)anthracene	µg/kg	NR	1400	8800	6900	2800	10000	<110	<42.0
Fluoranthene	µg/kg	NR	15000	150000	100000	51000	180000	470	130
Fluorene	µg/kg	NR	2800	53000	53000	24000	98000	<110	50.0
2-Methylnaphthalene	µg/kg	NR	1300	6600	7500	1700	5700	<110	<42.0
Naphthalene	µg/kg	NR	2200	2800	2900	3700	2900	<110	<42.0
Phenanthrene	µg/kg	NR	8900	570000	720000	220000	1200000	400	790
Pyrene	µg/kg	NR	18000	230000	230000	83000	360000	600	260
Total PAHs[1]	µg/kg	NR	97300	1443400	1515800	527600	2544500	2460	1803
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	7410	8180	4962	<770	<10925	<770	<287
Pesticides									
Aldrin	µg/kg	NR	<12.0	<15.0	<15.0	<22.0	<1.50	<2.30	<0.840
Chlordane	µg/kg	NR	<24.0	125.5	279.5	78	165.75	<4.60	1.42
Sum DDD	µg/kg	NR	<23.0	<30.0	<29.0	<42.0	<2.90	<4.40	<1.60
Sum DDE	µg/kg	NR	<23.0	<30.0	92.0	<42.0	29.0	<4.40	<1.60
Sum DDT	µg/kg	NR	<23.0	<30.0	<29.0	<42.0	5.40	<4.40	<1.60
Total DDTs[2]	µg/kg	NR	<69	<60	106.5	<42	35.85	<13.2	<4.8

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		H-S ECH-E-HS01	I-M ECH-E-IM01	I-M ECH-E-IM02_1	I-M ECH-E-IM02_2	I-M ECH-E-IM03	I-M ICORE01SD	I-M ICORE02SD	I-M ICORE03SD
Pesticides (cont.)									
Dieldrin	µg/kg	NR	<23.0	<30.0	<29.0	<42.0	18.0	<4.40	<1.60
Endrin	µg/kg	NR	<23.0	<30.0	49.0	<42.0	<2.90	<4.40	<1.60
Heptachlor	µg/kg	NR	<12.0	<15.0	<15.0	<22.0	<1.50	<2.30	<0.840
Heptachlor epoxide	µg/kg	NR	<12.0	<15.0	<15.0	<22.0	15.1	<2.30	<0.840
Lindane	µg/kg	NR	<12.0	<15.0	17.0	<22.0	7.80	<2.30	<0.840
Toxaphene	µg/kg	NR	<1200	<1500	<150	<220	<150	<230	<84.0
Mean-PEC-Q		**1.06**	**5.81**	**26.7**	**26.2**	**15.8**	**58.2**	**1.81**	**0.107**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number								
		I-N ECH-E-IN01	I-N (S) ECH-E-IN02	I-N ECH-E-IN03	I-S ECH-E-IS01	I-S ECH-E-IS02	I-S ECH-E-IS03	J-CORE JCORE01SD	J-CORE JCORE02SD	J-CORE JCORE03SD
Depth	feet	0 - 0.33	0.33 - 0.66	0.66 - 0.98	0 - 0.33	0.33 - 0.66	0.66 - 0.98	0 - 0.98	0.98 - 2.82	2.82 - 5.84
Conventionals										
Acid volatile sulfides	µmol/g	66.7	78.7	71.1	160	204	16.1	13	33	15
Ammonia-nitrogen	mg/kg	290	260	300	200	360	<190	<180	210	1700
Benzene	µg/kg	15.0	7.00	21.0	7.00	<6.00	<1.00	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	2300	2000	2200	1800	4400	460	340	720	8600
Oil and grease	mg/kg	11100	10300	14500	24600	7800	1210	11700	16000	2500
pH	S.U.	6.91	7.15	7.28	7.55	7.73	7.11	7.60	7.26	7.20
Phenol	µg/kg	<950	<450	<1900	<860	<1200	<480	NR	NR	NR
Phenols, total	mg/kg	1.74	1.48	1.61	1.58	2.50	0.850	0.910	0.550	<0.700
Phosphorus, total	mg/kg	3400	2700	2400	1300	1500	80.0	420	650	1800
Total organic carbon	%	3.49	2.5	2.2	1.25	1.5	0.21	0.53	1.14	2.8
Metals										
Arsenic	mg/kg	19.7	310	470	92.0	240	12.9	14.1	82.9	96.1
Cadmium	mg/kg	<3.60	<3.40	21.0	33.2	50.6	3.83	1.96	16.3	11.6
Chromium	mg/kg	423	299	60.0	125	53.6	3.46	78.6	37.2	24.9
Copper	mg/kg	355	357	546	624	1030	43.2	82.7	189	221
Lead	mg/kg	2800	3200	2990	4300	4900	310	249	1100	1150
Mercury	mg/kg	9.10	6.10	6.30	15.5	15.6	1.05	0.440	2.66	4.81
Nickel	mg/kg	81.0	59.0	23.0	30.1	18.9	2.47	17.5	19.2	22.8
Zinc	mg/kg	9190	7720	7610	10600	13500	636	797	2640	2380
Total SEM metals	µmol/g	111.50	73.60	85.47	164.75	186.68	12.97	NR	NR	NR
SEM-AVS	µmol/g	44.80	-5.10	14.37	4.75	-17.32	-3.13	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number								
		I-N ECH-E-IN01	I-N (S) ECH-E-IN02	I-N ECH-E-IN03	I-S ECH-E-IS01	I-S ECH-E-IS02	I-S ECH-E-IS03	J-CORE JCORE01SD	J-CORE JCORE02SD	J-CORE JCORE03SD
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	5300	13000	23000	1000	<600	<240	NR	NR	NR
Acenaphthylene	µg/kg	3800	2400	5300	1200	<600	<240	NR	NR	NR
Anthracene	µg/kg	5200	22000	33000	1600	650	<240	NR	NR	NR
Benz(a)anthracene	µg/kg	17000	36000	21000	8300	4100	<240	NR	NR	NR
Benzo(a)pyrene	µg/kg	18000	19000	13000	5500	3300	<240	NR	NR	NR
Chrysene	µg/kg	26000	79000	24000	12000	3100	<240	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	2700	3800	1600	>430	<600	<240	NR	NR	NR
Fluoranthene	µg/kg	26000	50000	59000	9900	3600	<240	NR	NR	NR
Fluorene	µg/kg	4500	23000	59000	950	<600	<240	NR	NR	NR
2-Methylnaphthalene	µg/kg	1500	3400	8400	490	<600	<240	NR	NR	NR
Naphthalene	µg/kg	2700	3800	15000	1000	<600	<240	NR	NR	NR
Phenanthrene	µg/kg	14000	230000	100000	2200	1100	<240	NR	NR	NR
Pyrene	µg/kg	34000	95000	47000	23000	12000	390	NR	NR	NR
Total PAHs[1]	µg/kg	160700	580400	409300	67570	27850	1350	NR	NR	NR
Polychlorinated Biphenyls										
Total PCBs	µg/kg	<6580	<6230	<6650	<5950	<8400	<3290	NR	NR	NR
Pesticides										
Aldrin	µg/kg	<19.0	<18.0	<19.0	<17.0	<24.0	<9.60	NR	NR	NR
Chlordane	µg/kg	46.5	65	57.5	<34	<48	<19.2	NR	NR	NR
Sum DDD	µg/kg	<37.0	<35.0	<38.0	<34.0	<47.0	<19.0	NR	NR	NR
Sum DDE	µg/kg	<37.0	<35.0	<38.0	<34.0	<47.0	<19.0	NR	NR	NR
Sum DDT	µg/kg	<37.0	<35.0	<38.0	<34.0	<47.0	<19.0	NR	NR	NR
Total DDTs[2]	µg/kg	<37	<35	<38	<34	<47	<57	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number								
		I-N ECH-E-IN01	I-N (S) ECH-E-IN02	I-N ECH-E-IN03	I-S ECH-E-IS01	I-S ECH-E-IS02	I-S ECH-E-IS03	J-CORE JCORE01SD	J-CORE JCORE02SD	J-CORE JCORE03SD
Pesticides (cont.)										
Dieldrin	µg/kg	<37.0	<35.0	<38.0	<34.0	<47.0	<19.0	NR	NR	NR
Endrin	µg/kg	<37.0	<35.0	<38.0	<34.0	<47.0	<19.0	NR	NR	NR
Heptachlor	µg/kg	<19.0	<18.0	<19.0	<17.0	<24.0	<9.60	NR	NR	NR
Heptachlor epoxide	µg/kg	<19.0	<18.0	<19.0	<17.0	<24.0	<9.60	NR	NR	NR
Lindane	µg/kg	<19.0	<18.0	<19.0	<17.0	<24.0	<9.60	NR	NR	NR
Toxaphene	µg/kg	<1900	<1800	<1900	<1700	<2400	<960	NR	NR	NR
Mean-PEC-Q		**7.15**	**16.9**	**13.5**	**6.63**	**7.25**	**0.411**	**0.875**	**3.16**	**3.08**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		J-N ECH-E-JN01	J-N ECH-E-JN02	J-N ECH-E-JN03	J-S ECH-E-JS01	K-M ECH-E-KM01	K-M KCORE01SD	K-M KCORE02SD_1	K-M KCORE02SD_2
Depth	feet	0 - 0.33	0.33 - 0.66	0.66 - 0.98	0 - 0.33	0 - 0.33	0 - 1.51	1.51 - 4.99	1.51 - 4.99
Conventionals									
Acid volatile sulfides	µmol/g	29.5	54.4	18	20.3	34.9	79.1	1.40	0.790
Ammonia-nitrogen	mg/kg	170	330	510	88	71	140	<150	<150
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	4500	2400	2140	1120	2450	1210	750	850
Oil and grease	mg/kg	30500	34600	24000	20000	65500	133000	3800	3600
pH	S.U.	7.06	7.16	7.25	7.2	7.56	7.61	8.00	8.0
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenols, total	mg/kg	1.90	1.1	2.40	0.410	0.550	13.1	3.10	1.85
Phosphorus, total	mg/kg	3600	2900	2000	2100	2300	1200	130	150
Total organic carbon	%	2.5	2.36	1.95	1.08	2.66	1.79	0.66	0.637
Metals									
Arsenic	mg/kg	58.0	53.0	44	17.5	45.0	63.7	8.70	13.0
Cadmium	mg/kg	<0.130	<2.80	<0.49	<0.0830	<0.0910	7.17	0.600	7.02
Chromium	mg/kg	378	378	310	222	191	271	21.0	61.1
Copper	mg/kg	258	255	170	105	158	388	12.2	150
Lead	mg/kg	670	700	870	550	470	846	58.5	313
Mercury	mg/kg	1.59	1.38	0.99	0.630	1.01	1.01	0.107	0.0727
Nickel	mg/kg	117	117	85	47.5	62.7	96.2	8.44	14.7
Zinc	mg/kg	2590	2490	2100	1220	2000	3840	203	425
Total SEM metals	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR
SEM-AVS	µmol/g	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		J-N ECH-E-JN01	J-N ECH-E-JN02	J-N ECH-E-JN03	J-S ECH-E-JS01	K-M ECH-E-KM01	K-M KCORE01SD	K-M KCORE02SD_1	K-M KCORE02SD_2
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Aldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		J-N ECH-E-JN01	J-N ECH-E-JN02	J-N ECH-E-JN03	J-S ECH-E-JS01	K-M ECH-E-KM01	K-M KCORE01SD	K-M KCORE02SD_1	K-M KCORE02SD_2
Pesticides (cont.)									
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**2.88**	**2.90**	**2.63**	**1.60**	**1.92**	**3.62**	**0.247**	**1.00**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		K-M KCORE03SD	K-N ECH-E-KN01_1	K-N ECH-E-KN01_2	K-S ECH-E-KS01	K-S ECH-E-KS02	K-S ECH-E-KS03	WETLAND1 ECH-E-W101	WETLAND2 ECH-E-W102_1
Depth	feet	4.99 - 6.00	0 - 0.33	0 - 0.33	0 - 0.33	0.33 - 0.66	0.66 - 0.98	0 - 0.33	0 - 0.33
Conventionals									
Acid volatile sulfides	µmol/g	20.8	8.80	13.5	39.1	47.3	14.1	<0.7	<1.20
Ammonia-nitrogen	mg/kg	250	46	66	235	560	520	1570	1900
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	<6.00	<9.00
Nitrogen, total Kjeldahl	mg/kg	2110	600	430	2700	2700	2200	8200	20000
Oil and grease	mg/kg	13200	7100	5700	38700	52200	46400	6200	NR
pH	S.U.	7.47	8.14	7.86	7.23	7.26	7.39	6.85	6.19
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenols, total	mg/kg	1.60	0.340	0.930	0.940	1.80	3.50	1.00	2.80
Phosphorus, total	mg/kg	340	650	380	4100	6400	4300	1800	2900
Total organic carbon	%	1.55	0.44	0.46	2.7	1.6	2	7.1	8.2
Metals									
Arsenic	mg/kg	23.4	7.00	6.20	44.0	45.0	48.0	20.5	29.1
Cadmium	mg/kg	2.14	0.0750	<0.0690	<2.80	<2.60	<2.90	0.17	<0.310
Chromium	mg/kg	64.1	42.0	43.7	869	1360	1270	230	295
Copper	mg/kg	45.4	16.2	17.2	242	321	266	175	209
Lead	mg/kg	205	94.0	69.0	1220	1560	1890	400	605
Mercury	mg/kg	0.420	0.0898	0.140	0.820	1.35	0.920	<0.28	<0.532
Nickel	mg/kg	17.8	9.30	8.19	93.0	129	123	53	68.0
Zinc	mg/kg	635	292	323	8090	12500	8520	1540	2110
Total SEM metals	µmol/g	NR	NR	NR	NR	NR	NR	202.49	29.09
SEM-AVS	µmol/g	NR	NR	NR	NR	NR	NR	202.14	28.49

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		K-M KCORE03SD	K-N ECH-E-KN01_1	K-N ECH-E-KN01_2	K-S ECH-E-KS01	K-S ECH-E-KS02	K-S ECH-E-KS03	WETLAND1 ECH-E-W101	WETLAND2 ECH-E-W102_1
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Polychlorinated Biphenyls									
Total PCBs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
Aldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number							
		K-M KCORE03SD	K-N ECH-E-KN01_1	K-N ECH-E-KN01_2	K-S ECH-E-KS01	K-S ECH-E-KS02	K-S ECH-E-KS03	WETLAND1 ECH-E-W101	WETLAND2 ECH-E-W102_1
Pesticides (cont.)									
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Mean-PEC-Q		**0.767**	**0.325**	**0.302**	**5.73**	**8.30**	**7.26**	**1.64**	**2.24**

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number				
		WETLAND2 ECH-E-W102_2	WETLAND3 ECH-E-W103	WETLAND4 ECH-E-W104	WETLAND5 ECH-E-W105	WETLAND6 ECH-E-W106
Depth	feet	0 - 0.33	0 - 0.33	0 - 0.33	0 - 0.33	0 - 0.33
Conventionals						
Acid volatile sulfides	µmol/g	<1.30	59.7	43.9	<0.800	52.5
Ammonia-nitrogen	mg/kg	1860	830	1110	1240	710
Benzene	µg/kg	NR	NR	NR	NR	NR
Nitrogen, total Kjeldahl	mg/kg	21000	14000	12500	10600	7300
Oil and grease	mg/kg	14000	47000	25600	28400	101000
pH	S.U.	6.21	6.77	6.60	6.28	6.51
Phenol	µg/kg	NR	NR	NR	NR	NR
Phenols, total	mg/kg	<1.40	13.1	2.50	1.04	18.1
Phosphorus, total	mg/kg	2600	5100	3200	4400	3200
Total organic carbon	%	9.7	7.9	4.9	7.5	8.1
Metals						
Arsenic	mg/kg	28.9	35.2	46.4	343	276
Cadmium	mg/kg	<0.320	0.280	1.07	9.82	3.54
Chromium	mg/kg	277	439	513	493	601
Copper	mg/kg	207	278	327	377	415
Lead	mg/kg	553	906	2080	2540	2660
Mercury	mg/kg	<0.680	0.990	1.38	1.86	1.60
Nickel	mg/kg	61.7	85.5	90.1	92.4	73.4
Zinc	mg/kg	2000	6860	2800	3410	2570
Total SEM metals	µmol/g	NR	NR	NR	43.35	NR
SEM-AVS	µmol/g	NR	NR	NR	42.95	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number				
		WETLAND2 ECH-E-W102_2	WETLAND3 ECH-E-W103	WETLAND4 ECH-E-W104	WETLAND5 ECH-E-W105	WETLAND6 ECH-E-W106
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	µg/kg	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR
Polychlorinated Biphenyls						
Total PCBs	µg/kg	NR	NR	NR	NR	NR
Pesticides						
Aldrin	µg/kg	NR	NR	NR	NR	NR
Chlordane	µg/kg	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR
Total DDTs[2]	µg/kg	NR	NR	NR	NR	NR

Appendix 2.28. Sediment chemistry data for the East Branch Grand Calumet River, IN (1998-1999; Exponent 1999).

Substance	Units	Station Number				
		WETLAND2 ECH-E-W102_2	WETLAND3 ECH-E-W103	WETLAND4 ECH-E-W104	WETLAND5 ECH-E-W105	WETLAND6 ECH-E-W106
Pesticides (cont.)						
Dieldrin	µg/kg	NR	NR	NR	NR	NR
Endrin	µg/kg	NR	NR	NR	NR	NR
Heptachlor	µg/kg	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR
Lindane	µg/kg	NR	NR	NR	NR	NR
Toxaphene	µg/kg	NR	NR	NR	NR	NR
Mean-PEC-Q		**2.11**	**4.39**	**4.66**	**6.93**	**6.45**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR = not reported.

Appendix 2.29. Sediment chemistry data for the East Branch Grand Calumet River, IN (October 1998; Tetra Tech EM Inc. 1998).

Substance	Units	Station Number		
		D-MIDDLE (S)	I-NORTH (S)	WETLAND-2 (S)
Depth	feet	0-3.38	0.33-0.66	0-0.33
Conventionals				
Benzene	µg/kg	NR	<660	<49
Acid volatile sulfides (µmol/g units)	µmol/g	NR	89.5	1.19
Metals				
Arsenic	mg/kg	7.9	310	28.7
Cadmium	mg/kg	0.70	30.8	2.7
Chromium	mg/kg	90.3	267	260
Copper	mg/kg	76.6	296	180
Lead	mg/kg	112	3330	524
Mercury	mg/kg	0.21	5.1	<0.60
Nickel	mg/kg	24.8	52.5	52.9
Zinc	mg/kg	773	6230	1800
Total SEM metals	µmol/g	NR	93.68	29.35
SEM-AVS	µmol/g	NR	4.18	28.16
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	µg/kg	NR	4600	260
Anthracene	µg/kg	NR	7000	<2000
Benz(a)anthracene	µg/kg	NR	11000	500
Benzo(a)pyrene	µg/kg	NR	5800	820
Chrysene	µg/kg	NR	25000	730
Fluoranthene	µg/kg	NR	16000	980
Fluorene	µg/kg	NR	13000	230
2-Methylnaphthalene	µg/kg	NR	<11000	240
Naphthalene	µg/kg	NR	1300	410
Phenanthrene	µg/kg	NR	73000	600

Appendix 2.29. Sediment chemistry data for the East Branch Grand Calumet River, IN (October 1998; Tetra Tech EM Inc. 1998).

Substance	Units	Station Number		
		D-MIDDLE (S)	I-NORTH (S)	WETLAND-2 (S)
Polycyclic Aromatic Hydrocarbons (cont.)				
Pyrene	µg/kg	NR	31000	840
Total PAHs[1]	µg/kg	NA	187700	5610
Polychlorinated Biphenyls				
Total PCBs	µg/kg	NR	<174	1690
Pesticides				
Sum DDD	µg/kg	NR	12	<10
Sum DDT	µg/kg	NR	<4.5	12
Total DDTs[2]	µg/kg	NR	14.25	17
Mean-PEC-Q		**0.682**	**5.67**	**1.59**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR = not reported.

Appendix 2.30. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (October 1999; IDEM 1999).

Substance	Units	Station Number											
		RO5873	RO5874	RO5875	RO5876	RO5877	RO5878	RO5879	RO5880	RO5881	RO5882	RO5869	RO5870
Depth	feet	0-0.3	0-4	0-0.3	0-4	0-0.3	0-4	0-0.3	0-4	0-0.3	0-4	0-0.3	0-4
Conventionals													
Phenol	µg/kg	<54000	<12000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Metals													
Arsenic	mg/kg	37	44	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/kg	6.6	6.7	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/kg	280	330	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/kg	1300	1800	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/kg	2.3	1.5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Selenium	mg/kg	3.1	4.7	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons													
Acenaphthene	µg/kg	54000	33000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	13000	6000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	41000	23000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	96000	51000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	110000	55000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	96000	49000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	32000	9600	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	240000	120000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	36000	23000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	8500	7600	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	5200	9300	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	120000	72000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	210000	120000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	1061700	578500	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 2.30. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (October 1999; IDEM 1999).

Substance	Units	Station Number											
		RO5873	RO5874	RO5875	RO5876	RO5877	RO5878	RO5879	RO5880	RO5881	RO5882	RO5869	RO5870
Polychlorinated Biphenyls													
Total PCBs	µg/kg	15900	8275	12800	2065	9870	3975	120000	124700	8200	7725	4765	6495
Pesticides													
Chlordane	µg/kg	<54	<58	<60	<56	<38	<52	<340	<124	<56	<58	<52	<58
Sum DDD	µg/kg	<55	<59	<60	<57	<38	<51	<340	<120	<56	<57	<53	<59
Sum DDE	µg/kg	<55	<59	<60	<57	<38	<51	<340	<120	<56	<57	<53	<59
Sum DDT	µg/kg	<55	<59	<60	<57	100	<51	<340	<120	<56	<57	<53	<59
Total DDTs[2]	µg/kg	<55	<59	<60	<57	100	<51	NA	NA	<56	<57	<53	<59
Dieldrin	µg/kg	81	<59	<60	<57	<38	<51	<340	150	<56	<57	<53	<59
Endrin	µg/kg	<55	<59	<60	<57	<38	<51	<340	<120	<56	<57	<53	<59
Heptachlor	µg/kg	<27	<29	<30	<28	<19	<26	<170	<62	<28	<29	<26	<29
Heptachlor epoxide	µg/kg	<27	<29	<30	<28	<19	<26	<170	<62	<28	<29	<26	<29
Lindane	µg/kg	<27	<29	<30	<28	<19	<26	<170	<62	<28	<29	<26	<29
Toxaphene	µg/kg	<1800	<1900	<1900	<1800	<1200	<1600	<11000	<4000	<1800	<1800	<1700	<1900
Mean-PEC-Q		**24.6**	**14.2**	**18.9**	**3.05**	**14.6**	**5.88**	**178**	**184**	**12.1**	**11.4**	**7.05**	**9.61**

Appendix 2.30. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (October 1999; IDEM 1999).

Substance	Units	Station Number										
		RO5871	RO5872	RO5863	RO5864	RO5865	RO5866	RO5867	RO5847	RO5848	RO5849	RO5850
Depth	feet	0-0.3	0-4	0-4	0-0.3	0-0.3	0-4	0-0.3	0-4	0-0.5	0-4	0-0.3
Conventionals												
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	<13000	<16000	<17000	<71000
Metals												
Arsenic	mg/kg	NR	NR	NR	NR	NR	NR	NR	130	85	210	74
Cadmium	mg/kg	NR	NR	NR	NR	NR	NR	NR	57	30	33	57
Chromium	mg/kg	NR	NR	NR	NR	NR	NR	NR	1200	790	860	850
Lead	mg/kg	NR	NR	NR	NR	NR	NR	NR	1800	1300	6800	1600
Mercury	mg/kg	NR	NR	NR	NR	NR	NR	NR	2.7	5.1	3.8	3.6
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR	3.8	19	4.4	12
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	5200	1600	17000	9800
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	<13000	4400	<17000	6400
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	42000	4100	140000	23000
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	96000	25000	280000	110000
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	45000	28000	110000	48000
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	200000	35000	600000	250000
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	18000	10000	41000	<71000
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	80000	33000	200000	84000
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	58000	3200	170000	28000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	66000	1300	340000	<71000
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	17000	1200	98000	<71000
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	620000	8100	1900000	140000
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	260000	51000	720000	240000
Total PAHs[1]	µg/kg	NR	NR	NR	NR	NR	NR	NR	1507200	205900	4616000	939200

Appendix 2.30. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (October 1999; IDEM 1999).

Substance	Units	Station Number									
		RO5871	**RO5872**	**RO5863**	**RO5864**	**RO5865**	**RO5866**	**RO5867**	**RO5847**	**RO5848**	**RO5849**	**RO5850**
Polychlorinated Biphenyls												
Total PCBs	µg/kg	3570	<6090	3880	5150	20450	52350	17500	3060	12700	3290	12100
Pesticides												
Chlordane	µg/kg	<96	<88	<46	<58	<58	<62	<58	<64	160.5	<88	218
Sum DDD	µg/kg	<96	<87	<46	<58	<58	<62	<59	70	200	<88	310
Sum DDE	µg/kg	<96	<87	<46	<58	<58	<62	<59	<64	<81	<88	<72
Sum DDT	µg/kg	<96	<87	<46	<58	<58	<62	<59	<64	<81	<88	180
Total DDTs[2]	µg/kg	NA	NA	<46	<58	<58	<62	<59	70	200	NA	490
Dieldrin	µg/kg	<96	<87	<46	<58	78	<62	77	<64	<81	<88	120
Endrin	µg/kg	<96	<87	<46	<58	<58	<62	<59	<64	<81	<88	<72
Heptachlor	µg/kg	<48	<44	<23	<29	<29	<31	<29	<32	<41	<44	<36
Heptachlor epoxide	µg/kg	<48	<44	<23	<29	<29	<31	<29	<32	<41	<44	<36
Lindane	µg/kg	<48	<44	<23	<29	<29	<31	<29	<32	<41	<44	<36
Toxaphene	µg/kg	<3100	<2800	<1500	<1800	<1800	<2000	<1900	<2000	<2600	<2800	<2300
Mean-PEC-Q		**5.28**	**NA**	**5.74**	**7.62**	**30.3**	**77.4**	**25.9**	**35.3**	**11.4**	**75.3**	**22.5**

Appendix 2.30. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (October 1999; IDEM 1999).

Substance	Units	Station Number										
		RO5851	RO5852	RO5853	RO5854	RO5855	RO5857	RO5858	RO5859	RO5860	RO5861	RO5862
Depth	feet	0-4	0-0.3	0-4	0-0.3	0-4	0-4	0-0.3	0-1.5	0-0.3	0-3	0-0.3
Conventionals												
Phenol	µg/kg	<7000	<7200	<13000	<12000	<11000	NR	NR	NR	NR	NR	NR
Metals												
Arsenic	mg/kg	8	<7.2	150	97	49	NR	NR	NR	NR	NR	NR
Cadmium	mg/kg	2.3	<1.4	45	30	20	NR	NR	NR	NR	NR	NR
Chromium	mg/kg	110	55	1100	650	500	NR	NR	NR	NR	NR	NR
Lead	mg/kg	140	170	3700	1900	720	NR	NR	NR	NR	NR	NR
Mercury	mg/kg	0.42	0.4	2.1	1.6	2.6	NR	NR	NR	NR	NR	NR
Selenium	mg/kg	2.9	<1.4	3.4	<2.3	13	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	µg/kg	<7000	<7200	5900	5100	1400	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	600	<7200	<13000	<12000	2200	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	1000	<7200	50000	41000	2800	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	3100	970	120000	96000	14000	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	2900	1100	55000	44000	15000	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	3400	1600	250000	210000	18000	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	<7000	<7200	21000	18000	<11000	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	6900	1400	80000	68000	17000	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	<7000	<7200	65000	54000	2900	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	<7000	<7200	120000	93000	1800	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<7000	<7200	21000	17000	890	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	3600	<7200	750000	620000	5500	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	5900	1700	330000	260000	26000	NR	NR	NR	NR	NR	NR
Total PAHs[1]	µg/kg	27400	6770	1867900	1526100	107490	NR	NR	NR	NR	NR	NR

Appendix 2.30. Sediment chemistry data for the Grand Calumet River and Indiana Harbor Canal, IN (October 1999; IDEM 1999).

Substance	Units	Station Number										
		RO5851	**RO5852**	**RO5853**	**RO5854**	**RO5855**	**RO5857**	**RO5858**	**RO5859**	**RO5860**	**RO5861**	**RO5862**
Polychlorinated Biphenyls												
Total PCBs	µg/kg	1455	1740	2475	2675	4800	3240	7190	3070	5550	<2800	2440
Pesticides												
Chlordane	µg/kg	<36	32	<64	<58	58	<64	<102	40.5	<66	<40	<54
Sum DDD	µg/kg	<35	120	<65	<58	110	<64	<100	<50	<66	<40	<54
Sum DDE	µg/kg	<35	<36	<65	<58	<56	120	<100	<50	<66	<40	<54
Sum DDT	µg/kg	<35	4800	<65	<58	3100	<64	<100	<50	<66	<40	<54
Total DDTs[2]	µg/kg	<35	4920	NA	<58	3210	120	NA	<50	NA	<40	<54
Dieldrin	µg/kg	<35	<36	<65	<58	<56	<64	<100	<50	<66	<40	<54
Endrin	µg/kg	<35	<36	<65	<58	<56	<64	<100	<50	<66	<40	<54
Heptachlor	µg/kg	<18	<18	<32	<29	<28	<32	<51	<25	<33	<20	<27
Heptachlor epoxide	µg/kg	<18	<18	<32	<29	<28	<32	<51	<25	<33	<20	<27
Lindane	µg/kg	<18	<18	<32	<29	<28	<32	<51	<25	<33	<20	<27
Toxaphene	µg/kg	<1100	<1200	<2100	<1900	<1800	<2000	<3800	<1600	<2100	<1300	<1700
Mean-PEC-Q		**1.35**	**1.13**	**32.9**	**26.1**	**5.24**	**4.79**	**10.6**	**4.54**	**8.21**	**NA**	**3.61**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated); NR = not reported.

Appendix III

Sediment Biological Effects Data

Appendix 3.1. Sediment biological effects data for the East Branch Grand Calumet River, IN (September 1972; Lucas and Steinfeld 1972)

Toxicity Test	Endpoint/Units	Station Number												
		0-100	**0-700**	**0-700**	**0-900**	**0-900**	**1-600**	**2-100**	**2-700**	**2-700**	**3-300**	**3-300**	**3-900**	**3-900**
Depth	feet	Surface	Surface	2-3	Surface	1.5-3	Surface	Surface	Surface	3-4.5	Surface	4-5.5	Surface	3.5-5
Hyalella azteca (96-h)	Mortality (%)	NT (0)	NT (20)	NT (30)	T (100)	T (100)	T (100)	NT (35)	T (100)	T (100)	T (100)	T ($90)	T (100)	T (100)
Pimephales promelas (96-h)	Mortality (%)	T (70)	T (60)	NT (40)	T (100)	T (100)	T (100)	T (100)	T (100)	T (100)	T (100)	T (100)	T (100)	T (100)
Overall Toxicity		**T**	**T**	**NT**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**

Appendix 3.1. Sediment biological effects data for the East Branch Grand Calumet River, IN (September 1972; Lucas & Steinfeld 1972).

Toxicity Test	Endpoint/Units	Station Number											
		4-500	**5-300**	**5-300**	**6-975**	**7-300**	**7-900**	**7-900**	**8-700**	**8-700**	**9-600**	**9-600**	**10-800**	**10-800**
Depth	feet	2.9-4.4	Surface	2.5-4	3.3-4.8	Surface	Surface	0.83-2	Surface	1.3-2.8	Surface	2-3.5	Surface	2.3-3.8
Hyalella azteca (96-h)	Mortality (%)	T (100)	T (100)	T (100)	T (100)	T (100)	T (100)	NT (10)	T (100)	NT (25)	T (100)	NT (45)	T (100)	T (100)
Pimephales promelas (96-h)	Mortality (%)	T (100)	T (100)	T (100)	T (100)	T (100)	NA'	T (100)	T (100)	T (100)	T (100)	NT (30)	T (100)	T (100)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**NT**	**T**	**T**

Appendix 3.1. Sediment biological effects data for the East Branch Grand Calumet River, IN (September 1972; Lucas & Steinfeld 1972).

		Station Number												
Toxicity Test	**Endpoint/Units**	**11-500**	**11-500**	**12-200**	**12-200**	**12-900**	**14-350**	**14-350**	**17-000**	**17-000**	**19-500**	**19-500**	**22-000**	**22-000**
Depth	feet	Surface	2-4	Surface	2.5-4.3	Surface	Surface	2.8-4.5	Surface	4.7-5.9	Surface	5.5-7	Surface	6.7-7.7
Hyalella azteca (96-h)	Mortality (%)	T (90)	T (85)	T (100)	NT (20)	NT (20)	NT (5)	NT (15)	NT (15)	NT (45)	NT (10)	NT (40)	NT ($60)	NT (5)
Pimephales promelas (96-h)	Mortality (%)	T (100)	T (100)	T (100)	NT (20)	NT($40)	T (70)	NT (10)	T (70)	T (80)	T (50)	T (100)	T ($80)	T (70)
Overall Toxicity		**T**	**T**	**T**	**NT**	**NT**	**T**	**NT**	**T**	**T**	**T**	**T**	**T**	**T**

Appendix 3.1. Sediment biological effects data for the East Branch Grand Calumet River, IN (September 1972; Lucas & Steinfeld 1972).

Toxicity Test	Endpoint/Units	Station Number												
		23-000	**23-000**	**23-400**	**23-400**	**25-200**	**25-200**	**26-200**	**26-200**	**26-900**	**26-900**	**27-700**	**27-700**	**29-500**
Depth	feet	Surface	4-5.5	Surface	4.3-6	Surface	4.8-6.5	Surface	5-7	Surface	3.2-4.7	Surface	4-5.5	Surface
Hyalella azteca (96-h)	Mortality (%)	T (100)	NT (10)	T (100)	NT (5)	NT (30)	NT (0)	NT (20)	NT (40)	NT (15)	NT (10)	NT (5)	T (55)	NT (35)
Pimephales promelas (96-h)	Mortality (%)	T (50)	NT (40)	T (100)	T (80)	T (60)	T (80)	T (80)	T (90)	T (60)	T (50)	T (100)	T (70)	T (60)
Overall Toxicity		**T**	**NT**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**

Appendix 3.1. Sediment biological effects data for the East Branch Grand Calumet River, IN (September 1972; Lucas & Steinfeld 1972).

Toxicity Test	Endpoint/Units	Station Number												
		29-500	**30-000**	**30-000**	**32-000**	**32-000**	**33-650**	**33-650**	**34-650**	**34-650**	**35-600**	**35-600**	**38-700**	**38-700**
Depth	feet	3.3-4.8	Surface	4.2-5.7	Surface	-	Surface	2.3-3.8	Surface	2.5-4	Surface	2.9-4.4	Surface	2-3.5
Hyalella azteca (96-h)	Mortality (%)	NT (5)	NT (0)	T (80)	T (80)	NT (0)	NA'	NT (5)	NT (25)	NT (35)	NT (30)	NT (10)	NT (35)	NT (15)
Pimephales promelas (96-h)	Mortality (%)	NT (40)	NT (40)	NT (10)	NT (30)	NA'	T (100)	NT (20)	NT (40)	NT (30)	NT (30)	NT (30)	T (50)	NT (20)
Overall Toxicity		**NT**	**NT**	**T**	**T**	**NT**	**T**	**NT**	**NT**	**NT**	**NT**	**NT**	**T**	**NT**

NA' = not applicable (i.e., toxicity test or chemical analyses not performed); NT = not toxic; T = toxic.

Appendix 3.2. Sediment biological effects data for the East Branch Grand Calumet River, IN (June-July 1994; Sobiech *et al* . 1994).

Toxicity Test	Endpoint/Units	Station Number									
		GCR-06	**GCR-11**	**GCR-18**	**GCR-21**	**GCR-24**	**GCR-28**	**GCR-32**	**GCR-34**	**GCR-35**	**GCR-36**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Hyalella azteca (10-d)	Mortality (%)	T (100)	T (72)	T (96)	T (52)	T (100)	T (99)	T (100)	T (84)	T (100)	T (100)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**

T = toxic.

Appendix IV

Sediment Chemistry and Biological Effects Data

Appendix 4.1. Matching sediment chemistry and biological effects data for the Assessment Area, IN (1988-1990; Hoke *et al* . 1993).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		UG-1	**UG-2**	**UG-3**	**UG-4**	**UG-5**	**UG-6**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface
Biological Effects							
Ceriodaphnia dubia (48-h)	Mortality (EC_{50}, as % pore water)	T (24.6)	NT (>100)	T (16.4)	T (60.2)	T (34.5)	T (67)
Chironomus tentans (10-d)	Growth (% weight)	T (0)	T (10.8)	T (0)	T (0)	T (5)	T (1)
Daphnia magna (48-h)	Mortality (EC_{50}, as % pore water)	T (34.4)	NT (>100)	NT (>100)	T (16.2)	T (67.6)	NT (>100)
Microtox (30-min)	Bioluminescence (EC_{50}, as % pore water)	T (8.6)	T (5.7)	T (23.8)	T (5.6)	T (0.2)	T (14.3)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**
Conventionals							
Total organic carbon	%	28.1	4.4	7.2	12.5	14.3	15.9
Phenol	µg/kg	860	890	480	250	4030	840
Acid volatile sulfides	µmol/g	126.9	0.41	11.97	6.57	0.340	19.55
Metals							
Cadmium	mg/kg	20	79	32	42	12	69
Chromium	mg/kg	9	327	393	344	438	923
Copper	mg/kg	7	226	153	99	242	241
Lead	mg/kg	17	912	403	538	803	1526
Nickel	mg/kg	30	47	288	391	166	33
Zinc	mg/kg	108	2834	69	1542	218	486
Dioxins							
2,3,7,8-TCDD	µg/kg	6200000	<2000000	<3000000	2000000	12400000	350000
Polycyclic Aromatic Hydrocarbons							
Benz(a)anthracene	µg/kg	2630	1680	2140	580	1430	166
Benzo(a)pyrene	µg/kg	27210	20260	16880	8440	45660	8940
Chrysene	µg/kg	2090	3560	3460	830	4210	1150

Appendix 4.1. Matching sediment chemistry and biological effects data for the Assessment Area, IN (1988-1990; Hoke *et al* . 1993).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		UG-1	UG-2	UG-3	UG-4	UG-5	UG-6
Polycyclic Aromatic Hydrocarbons (cont.)							
Fluoranthene	µg/kg	340	660	1220	420	990	60
Naphthalene	µg/kg	1020	1750	3780	2110	4920	1890
Phenanthrene	µg/kg	2040	4320	5060	660	5280	1280
Pyrene	µg/kg	3680	5110	4810	1590	7260	3050
Total PAHs[1]	µg/kg	39010	37340	37350	14630	69750	16536
Polychlorinated Biphenyls							
Total PCBs	µg/kg	2170	1490	6890	940	18330	1660
Pesticides							
Chlordane	µg/kg	1040	440	1230	50	90	1640
Sum DDD	µg/kg	40	80	<10	<10	620	170
Sum DDE	µg/kg	2460	2460	2490	710	1550	4230
Sum DDT	µg/kg	230	670	1440	250	750	1010
Total DDTs[2]	µg/kg	2730	3210	3935	965	2920	5410
Dieldrin	µg/kg	210	760	720	40	80	930
Heptachlor	µg/kg	980	420	2660	360	1240	520
Lindane	µg/kg	340	210	1830	1430	290	380
Toxaphene	µg/kg	2450	2090	950	1880	2650	3100
Mean-PEC-Q		**1.93**	**3.20**	**5.07**	**2.22**	**11.1**	**3.14**

Appendix 4.1. Matching sediment chemistry and biological effects data for the Assessment Area, IN (1988-1990; Hoke *et al* . 1993).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		UG-10	**UG-9**	**UG-8**	**UG-7**	**UG-11**	**UG-12**	**UG-13**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Biological Effects								
Ceriodaphnia dubia (48-h)	Mortality (EC_{50}, as % pore water)	T (71.5)	T (20.3)	T (3.2)	NT (>100)	NT (>100)	T (14.7)	T (41.7)
Chironomus tentans (10-d)	Growth (% weight)	T (11)	T (10)	T (2)	T (63)	T (2.4)	T (0)	T (0)
Daphnia magna (48-h)	Mortality (EC_{50}, as % pore water)	T (70.6)	T (67.6)	T (5.5)	NT (>100)	NT (>100)	T (17)	T (38)
Microtox (30-min)	Bioluminescence (EC_{50}, as % pore water)	T (29.3)	T (30.9)	T (17.6)	T (21.3)	T (54.5)	T (2.9)	T (70.4)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	13.4	18.8	22.3	14.7	NA'	NA'	NA'
Phenol	µg/kg	5100	70	910	1550	NA'	NA'	NA'
Acid volatile sulfides	µmol/g	158.6	549.5	81.90	87.52	NA'	NA'	NA'
Metals								
Cadmium	mg/kg	18	52	89	49	NA'	NA'	NA'
Chromium	mg/kg	97	904	1225	814	NA'	NA'	NA'
Copper	mg/kg	257	544	387	271	NA'	NA'	NA'
Lead	mg/kg	1306	1916	3940	1815	NA'	NA'	NA'
Nickel	mg/kg	55	361	337	160	NA'	NA'	NA'
Zinc	mg/kg	125	450	793	5230	NA'	NA'	NA'
Dioxins								
2,3,7,8-TCDD	µg/kg	7300000	7300000	3500000	<1000000	NA'	NA'	NA'
Polycyclic Aromatic Hydrocarbons								
Benz(a)anthracene	µg/kg	170	1650	2660	530	NA'	NA'	NA'
Benzo(a)pyrene	µg/kg	32510	100210	83620	1850	NA'	NA'	NA'
Chrysene	µg/kg	2570	5210	2640	2960	NA'	NA'	NA'

Appendix 4.1. Matching sediment chemistry and biological effects data for the Assessment Area, IN (1988-1990; Hoke *et al* . 1993).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		UG-10	UG-9	UG-8	UG-7	UG-11	UG-12	UG-13
Polycyclic Aromatic Hydrocarbons								
Fluoranthene	µg/kg	6830	310	480	180	NA'	NA'	NA'
Naphthalene	µg/kg	8240	3580	1630	1380	NA'	NA'	NA'
Phenanthrene	µg/kg	2550	4040	2150	3610	NA'	NA'	NA'
Pyrene	µg/kg	4200	4570	1720	4050	NA'	NA'	NA'
Total PAHs[1]	µg/kg	57070	119570	94900	14560	NA'	NA'	NA'
Polychlorinated Biphenyls								
Total PCBs	µg/kg	7930	4610	2800	4260	NA'	NA'	NA'
Pesticides								
Chlordane	µg/kg	2140	2180	2410	1890	NA'	NA'	NA'
Sum DDD	µg/kg	<10	10	230	10	NA'	NA'	NA'
Sum DDE	µg/kg	2710	4650	1780	2900	NA'	NA'	NA'
Sum DDT	µg/kg	90	1750	550	830	NA'	NA'	NA'
Total DDTs[2]	µg/kg	2805	6410	2560	3740	NA'	NA'	NA'
Dieldrin	µg/kg	1140	3210	40	620	NA'	NA'	NA'
Heptachlor	µg/kg	190	1720	440	1370	NA'	NA'	NA'
Lindane	µg/kg	260	3160	790	640	NA'	NA'	NA'
Toxaphene	µg/kg	2050	3320	7380	3670	NA'	NA'	NA'
Mean-PEC-Q		**5.73**	**6.56**	**6.71**	**4.97**	**NA'**	**NA'**	**NA'**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NA' = not applicable (toxicity test or chemical analyses not performed); NT = not toxic; T = toxic.

Appendix 4.2. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (August 1989; USEPA 1996a).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH 01 07	**IH 01 08**	**IH 01 10**	**IH 01 06**	**IH 01 05**	**IH 01 03**	**IH 01 04**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Biological Effects								
Chironomus riparius (14-d)	Mortality (%)	T (100)	NA'	NA'	T (100)	NA'	T (98)	T (98.5)
Chironomus tentans (10-d)	Growth (length-mm)	ND'	NA'	NA'	ND'	NA'	T (10.3)	ND' (9.8)
Chironomus tentans (10-d)	Mortality (%)	T (100)	NA'	NA'	T (100)	NA'	T (53.3)	T (73.3)
Daphnia magna (48-h)	Mortality (EC_{50})	T (0.7)	T (5.4)	T (39.4)	NT (>100)	T (25)	T (1)	T (70.7)
Hyalella azteca (14-d)	# antennal segment	ND'	NA'	NA'	ND' (15)	NA'	ND' (17)	ND'
Hyalella azteca (28-d)	# antennal segment	ND'	NA'	NA'	ND'	NA'	ND'	ND'
Hyalella azteca (14-d)	Growth (length-mm)	ND'	NA'	NA'	ND' (1.7)	NA'	ND' (2.4)	ND'
Hyalella azteca (28-d)	Growth (length-mm)	ND'	NA'	NA'	ND'	NA'	ND'	ND'
Hyalella azteca (14-d)	Mortality (%)	T (100)	NA'	NA'	T (98.7)	NA'	T (98.7)	T (100)
Hyalella azteca (28-d)	Mortality (%)	T	NA'	NA'	T	NA'	T	T
Hyalella azteca (14-d)	Percent mature	ND'	NA'	NA'	ND' (0)	NA'	ND' (0)	ND'
Hyalella azteca (28-d)	Percent mature	ND'	NA'	NA'	ND'	NA'	ND'	ND'
Microtox (15-min)	Bioluminescence (EC_{50})	T (34.4)	T (6.0)	T (6.8)	T (4.3)	T (27.3)	T (20.3)	T (31.5)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Acid volatile sulfides	µmol/g	62.65	54.1	31.7	52.6	21.8	33.5	15.7
Total organic carbon	%	8.77	10.41	12.25	11.58	11.1	7.65	5.64
Metals								
Arsenic	mg/kg	93	56	63	52	45	60	32
Cadmium	mg/kg	24.2	12.4	18.4	11.7	10.4	9.1	5.2
Chromium	mg/kg	2610	780	1412	1132	580	572	407
Copper	mg/kg	287	284	354	379	219	226	182
Lead	mg/kg	1354	1223	791	878	415	589	396
Mercury	mg/kg	2.06	1.77	1.85	1.86	0.91	0.91	0.67

Appendix 4.2. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (August 1989; USEPA 1996a).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH 01 07	IH 01 08	IH 01 10	IH 01 06	IH 01 05	IH 01 03	IH 01 04
Metals (cont.)								
Nickel	mg/kg	<58	95	88	103	<50	50	50
Selenium	mg/kg	3.1	3.9	3.3	3.8	2.0	2.6	2.3
Zinc	mg/kg	7960	3540	4080	4460	2290	3250	2250
Total SEM metals	µmol/g	6.26	1.64	1.34	2.32	1.81	1.61	2.61
SEM-AVS	µmol/g	-56.4	-52.5	-30.4	-50.3	-20.0	-14.1	-30.9
Polycyclic Aromatic Hydrocarbons								
Anthracene	µg/kg	215000	26000	3500	3400	2200	2400	1400
Benz(a)anthracene	µg/kg	32000	30000	6900	16000	5800	7300	4200
Benzo(a)pyrene	µg/kg	31000	29000	9200	25000	5700	10000	7000
Chrysene	µg/kg	51000	33000	9400	26000	7200	8600	5200
Fluoranthene	µg/kg	80000	56000	9600	14000	7200	8600	4800
Fluorene	µg/kg	30515.25	12000	3200	3200	1400	2400	790
2-Methylnaphthalene	µg/kg	42015.5	20000	4200	5400	1200	2000	930
Naphthalene	µg/kg	4550	6100	24000	8500	6300	7300	3600
Phenanthrene	µg/kg	151500	79000	13000	9900	5100	7000	3400
Pyrene	µg/kg	46500	43000	16000	40000	10000	16000	5500
Total PAHs[1]	µg/kg	684080.75	334100	99000	151400	52100	71600	36820
Polychlorinated Biphenyls								
Total PCBs	µg/kg	44230	19470	11825	25500	13523.33	11080	4900
Butyltins								
Dibutyltin	µg/kg	15	110	160	370	58	47	32
Monobutyltin	µg/kg	20	12	26	39	17	7.4	7.2
Tributyltin	µg/kg	16.5	370	530	1500	300	240	110

Appendix 4.2. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (August 1989; USEPA 1996a).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH 01 07	IH 01 08	IH 01 10	IH 01 06	IH 01 05	IH 01 03	IH 01 04
Dioxins and Furans								
1,2,3,4,6,7,8-Heptachlorodibenzodioxi	µg/kg	10.75	4.7	1.6	5.1	0.58	1.4	0.41
Total Heptachlorodibenzodioxin	µg/kg	23	5.3	3.1	9.3	1.2	3.3	0.98
1,2,3,4,6,7,8-Heptachlorodibenzofuran	µg/kg	3.15	0.34	0.81	1.6	0.22	<0.038	0.18
1,2,3,4,7,8,9-Heptachlorodibenzofuran	µg/kg	0.096	0.7	0.036	0.081	0.0088	0.66	ND
Total Heptachlorodibenzofuran	µg/kg	7.7	8.2	1.5	4.2	0.51	0.66	0.38
1,2,3,4,7,8-Hexachlorodibenzodioxin	µg/kg	0.39	<0.047	0.032	0.13	0.017	0.053	0.013
1,2,3,6,7,8-Hexachlorodibenzodioxin	µg/kg	0.42	0.23	0.099	0.21	0.031	0.073	0.023
1,2,3,7,8,9-Hexachlorodibenzodioxin	µg/kg	0.46	0.29	0.26	0.38	0.019	0.097	0.014
Total Hexachlorodibenzodioxin	µg/kg	6.8	2.6	1.7	2.5	0.42	0.95	0.35
1,2,3,4,7,8-Hexachlorodibenzofuran	µg/kg	0.225	0.095	0.086	0.13	0.015	0.041	0.016
1,2,3,6,7,8-Hexachlorodibenzofuran	µg/kg	0.098	<0.045	0.043	0.076	0.0068	<0.066	0.012
1,2,3,7,8,9-Hexachlorodibenzofuran	µg/kg	0.05275	0.032	0.03	0.055	0.0052	0.032	0.01
2,3,4,6,7,8-Hexachlorodibenzofuran	µg/kg	<0.14	<0.013	<0.018	0.013	ND	<0.0056	ND
Total Hexachlorodibenzofuran	µg/kg	3.6	2.1	0.92	1.9	0.22	0.7	0.25
Octachlorodibenzodioxin	µg/kg	43.5	25	12	43	2.9	6.7	2.3
Octachlorodibenzofuran	µg/kg	17.3	12	2.5	6.9	0.25	1.6	0.18
1,2,3,7,8-Pentachlorodibenzodioxin	µg/kg	0.061	0.029	0.02	0.042	ND	<0.052	ND
Total Pentachlorodibenzodioxin	µg/kg	1.9	0.14	0.066	0.51	0.035	ND	0.022
1,2,3,7,8,-Pentachlorodibenzofuran	µg/kg	0.059	0.027	0.03	0.056	0.0038	0.027	0.012
2,3,4,7,8,-Pentachlorodibenzofuran	µg/kg	0.106	0.089	0.068	0.12	0.0078	0.029	0.021
Total Pentachlorodibenzofuran	µg/kg	1.35	0.68	0.72	1.3	0.076	0.34	0.19
2,3,7,8-TCDD	µg/kg	<0.11	<0.039	<0.018	<0.059	ND	0.13	ND
Total Tetrachorodibenzodioxin	µg/kg	0.195	0.23	0.11	0.49	0.032	0.19	0.037
2,3,7,8-Tetrachlorodibenzofuran	µg/kg	0.61	0.32	0.31	0.6	0.011	0.29	0.027
Total Tetrachlorodibenzofuran	µg/kg	3.45	2.2	1.7	3.7	0.17	0.86	0.4

Appendix 4.2. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (August 1989; USEPA 1996a).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH 01 07	IH 01 08	IH 01 10	IH 01 06	IH 01 05	IH 01 03	IH 01 04
Pesticides								
Chlordane	µg/kg	190.5	124.5	108.5	175	91.33	84	<72
Sum DDD	µg/kg	70	<49	<69	<50	<36	<36	<36
Sum DDE	µg/kg	210	78	95	100	86.33	49	<36
Sum DDT	µg/kg	<41	100	<69	100	38	<36	<36
Total DDTs[2]	µg/kg	300.5	178	95	200	124.33	67	<36
Dieldrin	µg/kg	48	280	<69	330	126	280	<36
Endrin	µg/kg	44	<49	<69	<50	<36	<36	<36
Heptachlor	µg/kg	320	74	<69	100	53.33	<48	<36
Heptachlor epoxide	µg/kg	270	260	79	320	101	<36	<36
Lindane	µg/kg	<41	<49	<69	<50	<36	<36	<36
Toxaphene	µg/kg	<410	<490	<690	<500	<360	<360	<360
Mean-PEC-Q		**35.2**	**16.0**	**9.07**	**16.5**	**8.45**	**7.61**	**3.71**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

ND = compounds were measured as less than the detection limit, but the detection limit is unknown.

ND' = toxicity not determined because mortality was >40%.

NA' = not applicable (i.e., toxicity test or chemical analyses not performed).

NT = not toxic; T = toxic.

Appendix 4.3. Sediment chemistry and biological effects data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		1	**1**	**2**	**2**	**2B**	**12/12A**	**12a**	**3**	**3**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Biological Effects										
Microtox (15-min)	Bioluminescence (% response)	NA'	T (146.07)	NA'	T (152.9)	NA'	NA'	T (137.07)	NA'	T (165.5)
Overall Toxicity			**T**		**T**			**T**		**T**
Conventionals										
Total organic carbon	%	12.57	NA'	16.84	NA'	17.81	10.3	NA'	12.66	NA'
Phenol	µg/kg	42	NA'	70	NA'	70	60	NA'	278	NA'
Ammonia-nitrogen	mg/kg	55.8	NA'	545.0	NA'	234.5	54.0	NA'	101.5	NA'
Metals										
Arsenic	mg/kg	<130	NA'	<130	NA'	<130	<130	NA'	<130	NA'
Cadmium	mg/kg	23	NA'	45	NA'	45	30	NA'	38	NA'
Chromium	mg/kg	940	NA'	993	NA'	1070	450	NA'	855	NA'
Copper	mg/kg	235	NA'	488	NA'	268	110	NA'	275	NA'
Lead	mg/kg	1430	NA'	835	NA'	910	388	NA'	730	NA'
Mercury	mg/kg	0.652	NA'	1.71	NA'	1.36	0.826	NA'	1.42	NA'
Nickel	mg/kg	100	NA'	115	NA'	125	70	NA'	103	NA'
Selenium	mg/kg	<63	NA'	<63	NA'	<63	<63	NA'	<63	NA'
Zinc	mg/kg	3540	NA'	4280	NA'	4700	2470	NA'	4630	NA'
Polychlorinated Biphenyls										
Total PCBs	µg/kg	71.51	NA'	102.52	NA'	<2.8	4.55	NA'	58.29	NA'
Polycyclic Aromatic Hydrocarbons										
Total PAHs	µg/kg	935.28	NA'	141.41	NA'	181.53	107.53	NA'	188.18	NA'
Mean-PEC-Q		**2.03**	**NA'**	**2.25**	**NA'**	**2.25**	**1.15**	**NA'**	**1.98**	**NA'**

Appendix 4.3. Sediment chemistry and biological effects data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		4	**4**	**5**	**5**	**6**	**6**	**7**	**8**	**8A**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Biological Effects										
Microtox (15-min)	Bioluminescence (% response)	NA'	T (130.9)	NA'	T (24.19)	NA'	T (183.93)	NA'	NT (-2.69)	NA'
Overall Toxicity			**T**		**T**		**T**		**NT**	
Conventionals										
Total organic carbon	%	7.49	NA'	4.6	NA'	0.07	NA'	0.03	NA'	7.64
Phenol	µg/kg	71	NA'	24	NA'	24	NA'	0	NA'	24
Ammonia-nitrogen	mg/kg	59.0	NA'	52.0	NA'	7.0	NA'	9.5	NA'	58.5
Metals										
Arsenic	mg/kg	183	NA'	<130	NA'	<130	NA'	<130	NA'	<130
Cadmium	mg/kg	28	NA'	13	NA'	<11	NA'	<11	NA'	33
Chromium	mg/kg	423	NA'	190	NA'	<115	NA'	<115	NA'	548
Copper	mg/kg	<36	NA'	55	NA'	<36	NA'	<36	NA'	90
Lead	mg/kg	208	NA'	95	NA'	<94	NA'	<94	NA'	<94
Mercury	mg/kg	0.594	NA'	0.253	NA'	<0.005	NA'	0.121	NA'	0.68
Nickel	mg/kg	100	NA'	50	NA'	28	NA'	30	NA'	88
Selenium	mg/kg	<63	NA'	<63	NA'	<63	NA'	<63	NA'	<63
Zinc	mg/kg	1860	NA'	923	NA'	520	NA'	133	NA'	4250
Polychlorinated Biphenyls										
Total PCBs	µg/kg	<2.8	NA'	<2.8	NA'	55.61	NA'	17.69	NA'	<2.8
Polycyclic Aromatic Hydrocarbons										
Total PAHs	µg/kg	87.33	NA'	134.36	NA'	1.14	NA'	0.91	NA'	24.2
Mean-PEC-Q[1]		**1.09**	**NA'**	**0.473**	**NA'**	**0.211**	**NA'**	**0.125**	**NA'**	**1.31**

Appendix 4.3. Sediment chemistry and biological effects data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		8a	**9A**	**9a**	**10**	**10a**	**11/11A**	**11a**
Depth	feet	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Biological Effects								
Microtox (15-min)	Bioluminescence (% response)	T (27.64)	NA'	NT (-7.24)	NA'	NT (-5.29)	NA'	NT (2.11)
Overall Toxicity		**T**		**NT**		**NT**		**NT**
Conventionals								
Total organic carbon	%	NA'	2.74	NA'	1.43	NA'	1.91	NA'
Phenol	µg/kg	NA'	94	NA'	0	NA'	24	NA'
Ammonia-nitrogen	mg/kg	NA'	36.5	NA'	3.5	NA'	25.5	NA'
Metals								
Arsenic	mg/kg	NA'	<130	NA'	<130	NA'	<130	NA'
Cadmium	mg/kg	NA'	<11	NA'	<11	NA'	<11	NA'
Chromium	mg/kg	NA'	215	NA'	195	NA'	213	NA'
Copper	mg/kg	NA'	<36	NA'	120	NA'	<36	NA'
Lead	mg/kg	NA'	398	NA'	<94	NA'	<94	NA'
Mercury	mg/kg	NA'	0.178	NA'	0.071	NA'	0.122	NA'
Nickel	mg/kg	NA'	53	NA'	48	NA'	50	NA'
Selenium	mg/kg	NA'	<63	NA'	<63	NA'	<63	NA'
Zinc	mg/kg	NA'	658	NA'	578	NA'	398	NA'
Polychlorinated Biphenyls								
Total PCBs	µg/kg	NA'	19.01	NA'	68.53	NA'	494.6	NA'
Polycyclic Aromatic Hydrocarbons								
Total PAHs	µg/kg	NA'	13.45	NA'	6.43	NA'	9.41	NA'
Mean-PEC-Q[1]		**NA'**	**0.522**	**NA'**	**0.379**	**NA'**	**0.531**	**NA'**

NA' = not applicable (i.e., toxicity test or chemical analyses not performed); NT = not toxic; T = toxic.

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH20701C101	**IH20701C102**	**IH20701C103**	**IH20801C101**	**IH20801C102**	**IH21301C101**	**IH21301C102**
Depth	feet	0-2	4-6	8-9.4	0-1.2	4-5.5	0-1	3-5.08
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (8.5)	T (1.3)	T (0.9)	T (13)	NT (100)	T (1.6)	T (12)
Overall Toxicity		**T**	**T**	**T**	**T**	**NT**	**T**	**T**
Conventionals								
Total organic carbon	%	11.17	9.5	8.92	14.83	0.93	11.64	0.5
Metals								
Cadmium	mg/kg	17.0	27.0	18.0	14.0	0.50	9.30	0.40
Chromium	mg/kg	920	1100	190	1300	29.0	520	17.0
Copper	mg/kg	440	450	370	440	24.0	300	23.0
Lead	mg/kg	1200	1800	1900	2000	<1.90	810	6.70
Nickel	mg/kg	120	100	66.0	130	27.0	100	24.0
Zinc	mg/kg	6000	8100	5200	6100	71.0	3500	61.0
Mean-PEC-Q		**6.60**	**8.69**	**5.89**	**8.18**	**0.207**	**4.10**	**0.178**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21302C101	**IH21302C102**	**IH22301C101**	**IH22301C102**	**IH22301C103**	**IH22302C101**	**IH22302C102**
Depth	feet	0-2	2-3.4	0-2	2-4	17-7.17	0-2	3.33-5.33
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (7)	T (12)	T (5)	T (18)	T (48)	T (21)	T (13)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	9.71	11.13	5.61	5.56	4.69	10.94	10.85
Metals								
Cadmium	mg/kg	25.0	24.0	6.90	13.0	4.10	8.70	17.0
Chromium	mg/kg	260	210	450	530	20.0	790	240
Copper	mg/kg	300	330	220	210	52.0	260	270
Lead	mg/kg	2500	2700	980	1200	680	1200	3700
Nickel	mg/kg	81.0	80.0	60.0	59.0	12.0	85.0	100
Zinc	mg/kg	5500	6000	2400	2400	970	3300	4700
Mean-PEC-Q		**7.09**	**7.46**	**3.51**	**4.10**	**1.50**	**4.82**	**8.10**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH22302C103	**IH21001C101**	**IH21001C102**	**IH21001C103**	**IH21101C101**	**IH21101C102**	**IH21101C103**
Depth	feet	6.83-8.33	0-2	3-5	6-8.33	0-2	2-3.2	7-9
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	NT (100)	T (5.8)	T (2.1)	T (1.6)	T (1.8)	T (0.9)	T (1.7)
Overall Toxicity		**NT**	**T**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	2.93	12.54	12.41	12.71	23.74	34.88	14.48
Metals								
Cadmium	mg/kg	0.50	11.0	11.0	12.0	5.60	9.80	11.0
Chromium	mg/kg	32.0	550	570	790	270	440	600
Copper	mg/kg	26.0	390	410	470	220	370	280
Lead	mg/kg	24.0	790	1000	1100	490	840	1000
Nickel	mg/kg	25.0	97.0	120	230	85.0	170	140
Zinc	mg/kg	95.0	3800	4000	4300	2000	3500	3400
Mean-PEC-Q		**0.245**	**4.37**	**4.85**	**5.90**	**2.49**	**4.35**	**4.60**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21101C201D	**IH21101C202D**	**IH21101C203D**	**IH21102C101**	**IH21102C102**	**IH21102C103**	**IH21201C101**
Depth	feet	0-2	4-6	8-10.1	0-2	4-6	7-9.5	0-2
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (2.6)	T (3.1)	T (2.2)	T (2.4)	T (0.8)	T (1.8)	T (12)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	14.53	13.79	14.14	12.71	13.14	13.39	14.46
Metals								
Cadmium	mg/kg	7.40	12.0	18.0	13.0	11.0	16.0	12.0
Chromium	mg/kg	320	640	960	600	570	930	520
Copper	mg/kg	240	370	510	540	440	460	400
Lead	mg/kg	580	1000	1500	950	960	1300	790
Nickel	mg/kg	76.0	170	560	110	110	400	100
Zinc	mg/kg	2500	3600	5800	4100	4300	4800	4000
Mean-PEC-Q		**2.92**	**4.97**	**8.59**	**5.04**	**4.90**	**7.25**	**4.45**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b)

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21201C102	**IH21201C103**	**IH21202C101**	**IH21202C102**	**IH21202C103**	**IH21401C101**	**IH21401C102**
Depth	feet	4-6	7-9.1	0-2	5-7	8.67-10.67	0-2	4-6
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (34)	NT (100)	T (5)	T (1.2)	T (1.7)	T (0.8)	T (4)
Overall Toxicity		**T**	**NT**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	9.76	9.63	13.95	12.96	13.72	13.59	10.78
Metals								
Cadmium	mg/kg	17.0	16.0	14.0	12.0	17.0	13.0	21.0
Chromium	mg/kg	1600	1700	610	590	1000	820	1600
Copper	mg/kg	390	370	460	440	530	450	360
Lead	mg/kg	1600	1500	870	1100	1500	1200	1600
Nickel	mg/kg	98.0	98.0	120	150	470	170	84.0
Zinc	mg/kg	9100	9500	4500	4100	5400	5200	9600
Mean-PEC-Q		**9.13**	**9.24**	**5.08**	**5.22**	**8.19**	**6.20**	**9.37**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21401C103	**IH21402C101**	**IH21402C102**	**IH21402C103**	**IH21501C101**	**IH21501C102**	**IH21501C103**
Depth	feet	8-10	0-2	4-6	8-10	0-2	3.5-4.9	7-9
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (26)	T (18)	T (2.9)	T (9.5)	T (1.3)	NT (100)	NT (100)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**NT**	**NT**
Conventionals								
Total organic carbon	%	11.31	11.37	11.09	9.53	13.77	3.12	1.42
Metals								
Cadmium	mg/kg	22.0	20.0	22.0	22.0	11.0	0.40	0.40
Chromium	mg/kg	200	1600	1800	86.0	620	11.0	34.0
Copper	mg/kg	380	370	400	310	390	13.0	31.0
Lead	mg/kg	2100	1500	1700	1500	920	15.0	<1.50
Nickel	mg/kg	82.0	90.0	91.0	30.0	130	6.00	32.0
Zinc	mg/kg	6800	9300	10000	4700	4100	94.0	71.0
Mean-PEC-Q		**6.95**	**9.12**	**10.0**	**4.97**	**4.87**	**0.119**	**0.236**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21502C101	**IH21601C101**	**IH21601C102**	**IH21601C103**	**IH22201C101**	**IH22201C102**	**IH22201C103**
Depth	feet	0-1	0-2	4-4.1	5.75-7.75	0-2	3-5	7-9
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (73)	T (3.4)	T (9.5)	NT (100)	T (2.7)	T (4.3)	T (40)
Overall Toxicity		**T**	**T**	**T**	**NT**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	2.28	11.73	1.76	1.15	9.69	10.43	7.72
Metals								
Cadmium	mg/kg	1.40	12.0	2.10	0.40	11.0	10.0	9.00
Chromium	mg/kg	73.0	700	160	5.80	740	1000	950
Copper	mg/kg	67.0	420	81.0	6.10	450	880	210
Lead	mg/kg	77.0	970	190	2.30	930	1100	840
Nickel	mg/kg	44.0	110	28.0	<5.40	100	130	54.0
Zinc	mg/kg	350	4500	900	40.0	4600	4900	5600
Mean-PEC-Q		**0.610**	**5.20**	**1.07**	**0.0557**	**5.21**	**6.48**	**5.27**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH22202C101	**IH22202C102**	**IH22202C103**	**IH20601C101**	**IH20601C102**	**IH20601C103**	**IH20602C101**
Depth	feet	0-2	4-6	7-8.8	0-2	3-5	6.6-8.6	0-2
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (2.2)	T (31)	NT (100)	T (22)	NT (100)	NT (100)	NT (100)
Overall Toxicity		**T**	**T**	**NT**	**T**	**NT**	**NT**	**NT**
Conventionals								
Total organic carbon	%	11.67	10.7	9	9.65	7.71	1.77	2.35
Metals								
Cadmium	mg/kg	8.00	12.0	12.0	12.0	15.0	0.30	0.20
Chromium	mg/kg	470	960	980	1100	740	5.80	5.30
Copper	mg/kg	270	740	230	370	340	6.20	6.10
Lead	mg/kg	550	1200	830	1100	820	4.40	6.20
Nickel	mg/kg	81.0	150	57.0	99.0	74.0	5.50	5.10
Zinc	mg/kg	2800	5400	4900	6100	5400	39.0	50.0
Mean-PEC-Q		**3.29**	**6.71**	**5.19**	**6.45**	**5.28**	**0.0644**	**0.0652**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21701C101	**IH21701C102**	**IH21701C103**	**IH21801C101**	**IH22101C101**	**IH22101C102**	**IH22101C103**
Depth	feet	0-2	4-6	8-10	0-2	0-2	3-5	6-8
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (18)	T (27)	NT (100)	NT (100)	T (1.9)	T (21)	T (27)
Overall Toxicity		**T**	**T**	**NT**	**NT**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	5.91	10.76	1.32	8.53	11.76	2.89	1.56
Metals								
Cadmium	mg/kg	9.30	17.0	ND	1.30	11.0	6.00	6.00
Chromium	mg/kg	370	120	5.00	81.0	710	410	130
Copper	mg/kg	130	260	5.00	34.0	430	120	64.0
Lead	mg/kg	440	1800	4.00	98.0	920	390	270
Nickel	mg/kg	37.0	59.0	3.00	11.0	130	32.0	25.0
Zinc	mg/kg	2600	4400	41.0	500	4300	3000	1600
Mean-PEC-Q		**2.66**	**5.18**	**0.0522**	**0.550**	**5.12**	**2.66**	**1.49**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH21901C101	**IH21901C102**	**IH21902C101**	**IH21902C102**	**IH22601C101**	**IH22601C102**	**IH22601C103**
Depth	feet	0-2	2-4	0-2	2-4	0-2	4-6	8-9.8
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (9.9)	NT (100)	T (2.4)	NT (100)	T (8.7)	T (31)	T (6.1)
Overall Toxicity		**T**	**NT**	**T**	**NT**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	4.59	1.87	10.16	1.07	13.7	15.6	20.96
Metals								
Cadmium	mg/kg	8.60	0.60	8.50	0.70	7.00	14.0	9.00
Chromium	mg/kg	410	35.0	470	29.0	440	1000	610
Copper	mg/kg	280	32.0	310	32.0	350	440	320
Lead	mg/kg	630	9.40	670	33.0	610	1200	640
Nickel	mg/kg	77.0	32.0	88.0	13.0	91.0	120	77.0
Zinc	mg/kg	3100	93.0	2900	180	2900	6900	4800
Mean-PEC-Q		**3.43**	**0.264**	**3.56**	**0.256**	**3.45**	**6.94**	**4.42**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH20501C101	**IH20501C102**	**IH20501C103**	**IH20501C201D**	**IH20501C202D**	**IH20501C203D**	**IH20501C204D**
Depth	feet	0-2	2-4	4-6	0-2	6-8	11-13	13-14.9
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (7)	T (24)	T (15)	T (4)	T (16)	NT (100)	NT (100)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**NT**	**NT**
Conventionals								
Total organic carbon	%	17.73	12.19	8	13.26	19.57	4.1	6.25
Metals								
Cadmium	mg/kg	7.60	26.0	45.0	5.90	12.0	26.0	23.0
Chromium	mg/kg	400	290	240	240	530	140	110
Copper	mg/kg	250	240	280	220	250	200	230
Lead	mg/kg	620	580	710	460	660	640	740
Nickel	mg/kg	60.0	60.0	66.0	54.0	62.0	44.0	43.0
Zinc	mg/kg	3200	4000	4500	2000	4600	2400	3200
Mean-PEC-Q		**3.31**	**3.99**	**4.96**	**2.31**	**4.22**	**3.16**	**3.47**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH22401C101	**IH22501C101**	**IH22501C102**	**IH22501C103**	**IH20201C101**	**IH20201C102**	**IH20301C101**
Depth	feet	0-2	0-2	3-5	7.5-9.6	0-2	2-4.33	0-2
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	NT (100)	T (4.4)	T (65)	NT (100)	NT (100)	NT (100)	T (67)
Overall Toxicity		**NT**	**T**	**T**	**NT**	**NT**	**NT**	**T**
Conventionals								
Total organic carbon	%	0.76	9.31	12.43	1.41	0.13	0.2	9.42
Metals								
Cadmium	mg/kg	0.40	6.00	13.0	0.50	ND	0.30	34.0
Chromium	mg/kg	32.0	280	650	27.0	7.00	5.30	490
Copper	mg/kg	32.0	220	290	31.0	8.00	5.60	400
Lead	mg/kg	4.00	450	820	8.20	6.00	5.60	930
Nickel	mg/kg	31.0	50.0	71.0	27.0	5.00	4.90	110
Zinc	mg/kg	68.0	2400	5500	82.0	38.0	34.0	5600
Mean-PEC-Q		**0.233**	**2.50**	**5.04**	**0.225**	**0.0699**	**0.0607**	**5.94**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH20301C102	**IH20301C103**	**IH20401C101**	**IH20401C102**	**IH20401C103**	**IH20402C101**	**IH20403C101**
Depth	feet	4-6	8.1-12.9	0-2	4-6	4-8.8	0-2	0-2
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (67)	NT (100)	T (8.6)	T (21)	T (75)	NT (100)	T (8.7)
Overall Toxicity		**T**	**NT**	**T**	**T**	**T**	**NT**	**T**
Conventionals								
Total organic carbon	%	6.74	0.15	7.74	8.3	5.04	0.99	8.62
Metals								
Cadmium	mg/kg	12.0	0.10	5.40	8.10	6.00	1.10	6.90
Chromium	mg/kg	56.0	3.40	220	360	280	32.0	320
Copper	mg/kg	160	4.50	220	400	360	34.0	260
Lead	mg/kg	740	4.90	450	510	290	38.0	520
Nickel	mg/kg	34.0	4.10	51.0	110	120	27.0	59.0
Zinc	mg/kg	2200	20.0	2300	3200	2000	160	2800
Mean-PEC-Q		**2.54**	**0.0412**	**2.35**	**3.46**	**2.54**	**0.323**	**2.90**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH20403C102	IH20403C103	IH20403C201D	IH20403C202D	IH22001C101	IH22001C102	IH22001C103
Depth	feet	5-7	8.4-9.67	0-2	5-7	0-2	3-5	9-11
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (77)	T (93)	T (11)	T (16)	T (29)	T (3.2)	T (2.5)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**T**	**T**
Conventionals								
Total organic carbon	%	10.63	2.16	8.79	8.87	9.77	28.89	46.44
Metals								
Cadmium	mg/kg	23.0	5.40	7.30	28.0	6.50	4.50	3.00
Chromium	mg/kg	620	63.0	330	650	250	330	210
Copper	mg/kg	330	86.0	270	340	400	460	230
Lead	mg/kg	910	140	590	980	620	780	310
Nickel	mg/kg	73.0	43.0	63.0	68.0	110	110	62.0
Zinc	mg/kg	6700	800	3100	6700	1200	1200	1100
Mean-PEC-Q		**5.94**	**0.992**	**3.15**	**6.24**	**2.66**	**2.99**	**1.69**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IH22001C201D	**IH22001C202D**	**IH22001C203D**	**IH22001C204D**	**IH22701C101**	**IH22701C102**	**IH22701C103**
Depth	feet	0-2	2-4	6-8	8.4-10.4	0-2	2-4	4-6
Biological Effects								
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (5.8)	T (2.1)	T (1.6)	T (3.3)	T (83)	NT (100)	NT (100)
Overall Toxicity		**T**	**T**	**T**	**T**	**T**	**NT**	**NT**
Conventionals								
Total organic carbon	%	23.54	23.71	60.21	17.8	3.88	0.08	0.17
Metals								
Cadmium	mg/kg	5.00	3.90	2.00	10.0	6.00	0.50	0.20
Chromium	mg/kg	300	360	150	370	99.0	9.80	4.10
Copper	mg/kg	370	430	130	400	110	10.0	4.50
Lead	mg/kg	540	790	240	670	270	19.0	7.10
Nickel	mg/kg	100	110	32.0	94.0	45.0	8.20	4.70
Zinc	mg/kg	1900	1100	490	2800	2600	230	45.0
Mean-PEC-Q		**2.77**	**2.96**	**1.04**	**3.55**	**1.92**	**0.179**	**0.0596**

Appendix 4.4. Matching sediment chemistry and biological effects data for the US Canal and Indiana Harbor, IN (November 1990; USEPA 1996b).

Toxicity Test/Substance	Endpoint/Units	Station Number		
		IH22801C101	**IH22801C102**	**IH22801C103**
Depth	feet	0-2	5.5-7.5	7.5-9.5
Biological Effects				
Microtox (unknown duration)	Bioluminescence (EC_{50})	T (21)	T (43)	T (64)
Overall Toxicity		**T**	**T**	**T**
Conventionals				
Total organic carbon	%	7.85	4.93	3.99
Metals				
Cadmium	mg/kg	7.00	14.0	7.30
Chromium	mg/kg	270	130	46.0
Copper	mg/kg	240	170	110
Lead	mg/kg	530	570	440
Nickel	mg/kg	55.0	42.0	21.0
Zinc	mg/kg	3000	2200	1300
Mean-PEC-Q		**2.88**	**2.54**	**1.55**

ND = compounds were measured as less than the detection limit, but the detection limit is unknown.
NT = toxic; T = toxic.

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		TORR1-01A	TORR1-01B	TORR2-01	TORR2-02	TORR2-03	STATE1-05	STATE2-07	STATE2-09
Depth	feet	0-3	0-3	0-3	3-6	6-7.5	0-3	0-3	3-4.3
Biological Effects									
Hyalella azteca (10-d)	Mortality (%)	T (27.5)	NA'	NA'	NA'	NA'	T (100)	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	T (100)	NA'	NA'	NA'	NA'	T (100)	NA'	NA'
Overall Toxicity		**T**					**T**		
Conventionals									
Total organic carbon	%	11.7	NR	11.7	11.7	1.8	10.1	NR	11.3
Benzene	µg/kg	50	NR	NR	NR	NR	<190	NR	NR
Phenol	µg/kg	<7400	<6800	<42000	<12000	<3600	<22000	<440000	<106000
Ammonia-nitrogen	mg/kg	1560	NR	2420	2070	922	674	622	1060
Metals									
Arsenic	mg/kg	12.0	NR	97.0	56.0	<6.1	44.0	26.0	15.0
Cadmium	mg/kg	18.0	NR	93.0	9.2	<0.8	18.0	22.0	5.2
Chromium	mg/kg	270.0	NR	510.0	320.0	19.0	280.0	140.0	130.0
Copper	mg/kg	430.0	NR	620.0	280.0	25.0	350.0	280.0	260.0
Lead	mg/kg	930.0	NR	1300.0	1200.0	130.0	940.0	1100.0	340.0
Nickel	mg/kg	150.0	NR	290.0	120.0	21.0	53.0	36.0	31.0
Zinc	mg/kg	2400.0	NR	8400.0	3200.0	97.0	2900.0	2300.0	1700.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	6900.0	5100.0	<42000	<12000	4600.0	130000.0	1400000.0	560000.0
Acenaphthylene	µg/kg	<7400	<6800	<42000	<12000	<3600	<22000	<440000	<106000
Anthracene	µg/kg	11000.0	8100.0	<42000	6100.0	<3600	90000.0	540000.0	230000.0
Benz(a)anthracene	µg/kg	37000.0	26000.0	25000.0	20000.0	<3600	94000.0	330000.0	140000.0
Benzo(a)pyrene	µg/kg	28000.0	21000.0	19000.0	8800.0	<3600	58000.0	160000.0	65000.0

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		TORR1-01A	TORR1-01B	TORR2-01	TORR2-02	TORR2-03	STATE1-05	STATE2-07	STATE2-09
Polycyclic Aromatic Hydrocarbons (cont.)									
Chrysene	µg/kg	54000.0	37000.0	40000.0	36000.0	<3600	99000.0	320000.0	150000.0
Dibenz(a,h)anthracene	µg/kg	4400.0	3200.0	<42000	<12000	<3600	7200.0	<440000	<106000
Fluoranthene	µg/kg	42000.0	29000.0	33000.0	15000.0	1800.0	130000.0	520000.0	210000.0
Fluorene	µg/kg	6500.0	4900.0	<42000	6800.0	1900.0	83000.0	590000.0	290000.0
2-Methylnaphthalene	µg/kg	7400.0	5500.0	<42000	8500.0	4800.0	52000.0	3400000.0	1500000.0
Naphthalene	µg/kg	5000.0	3300.0	<42000	<12000	4600.0	29000.0	3800000.0	1600000.0
Phenanthrene	µg/kg	35000.0	24000.0	48000.0	59000.0	6800.0	320000.0	1900000.0	800000.0
Pyrene	µg/kg	69000.0	53000.0	60000.0	37000.0	2800.0	220000.0	830000.0	330000.0
Total PAHs[1]	µg/kg	306200	220100	225000	197200	27300	1312200	13790000	5875000
Mean-PEC-Q		**8.49**	**9.65**	**9.56**	**6.26**	**0.754**	**30.5**	**304**	**130**

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		STATE2-13	STATE2-14	STATE2-19	STATE2-20	SOHL1-09	SOHL2-21	SOHL2-23	SOHL2-25
Depth	feet	0-3	3-5.1	0-3	0-3	0-3	0-3	3-6	6-6.5
Biological Effects									
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	T (90)	NA'	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	T (60)	NA'	NA'	NA'
Overall Toxicity						**T**			
Conventionals									
Total organic carbon	%	13.4	4.6	10.7	9.3	1.96	10.7	9.4	6.3
Benzene	µg/kg	NR	NR	NR	NR	16	NR	NR	NR
Phenol	µg/kg	<97000	<10200	<61000	<54000	NR	<77000	<51000	<12000
Ammonia-nitrogen	mg/kg	975	714	566	441	288	581	1050	938
Metals									
Arsenic	mg/kg	32.0	<8.5	96.0	38.0	<4	38.0	32.0	13.0
Cadmium	mg/kg	6.0	<1.1	75.0	20.0	1.9	12.0	4.6	3.4
Chromium	mg/kg	140.0	17.0	340.0	200.0	50.0	160.0	32.0	25.0
Copper	mg/kg	240.0	23.0	670.0	410.0	140.0	410.0	330.0	180.0
Lead	mg/kg	460.0	20.0	3400.0	840.0	180.0	970.0	330.0	170.0
Nickel	mg/kg	31.0	23.0	160.0	45.0	19.0	100.0	32.0	30.0
Zinc	mg/kg	1700.0	98.0	7900.0	3000.0	420.0	3500.0	1300.0	1000.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	460000.0	8400.0	52000.0	170000.0	7200.0	1300000.0	440000.0	38000.0
Acenaphthylene	µg/kg	<97000	<10200	<61000	<54000	<81000	35000.0	<51000	<12000
Anthracene	µg/kg	180000.0	<10200	50000.0	99000.0	4400.0	320000.0	170000.0	15000.0
Benz(a)anthracene	µg/kg	91000.0	<10200	79000.0	68000.0	19000.0	170000.0	83000.0	12000.0
Benzo(a)pyrene	µg/kg	48000.0	<10200	43000.0	36000.0	22000.0	98000.0	46000.0	6100.0

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		STATE2-13	STATE2-14	STATE2-19	STATE2-20	SOHL1-09	SOHL2-21	SOHL2-23	SOHL2-25
Polycyclic Aromatic Hydrocarbons									
Chrysene	µg/kg	93000.0	<10200	140000.0	77000.0	21000.0	190000.0	86000.0	10900.0
Dibenz(a,h)anthracene	µg/kg	<97000	<10200	<61000	<54000	3300.0	<7700	<51000	<12000
Fluoranthene	µg/kg	150000.0	<10200	83000.0	110000.0	34000.0	270000.0	150000.0	17000.0
Fluorene	µg/kg	190000.0	<10200	51000.0	91000.0	3100.0	400000.0	180000.0	15000.0
2-Methylnaphthalene	µg/kg	1200000.0	27000.0	105000.0	48000.0	4100.0	2000000.0	930000.0	56000.0
Naphthalene	µg/kg	1300000.0	54000.0	55000.0	24000.0	4800.0	2900000.0	1400000.0	73000.0
Phenanthrene	µg/kg	610000.0	13000.0	330000.0	320000.0	22000.0	1400000.0	690000.0	53000.0
Pyrene	µg/kg	240000.0	5700.0	200000.0	190000.0	28000.0	410000.0	230000.0	25000.0
Total PAHs[1]	µg/kg	4562000	108100	1188000	1233000	172900	9493000	4405000	321000
Mean-PEC-Q		**101**	**2.47**	**31.2**	**28.7**	**4.12**	**210**	**97.3**	**7.51**

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		SOHL2-27	SOHL2-28	SOHL2-29	SOHL2-33	SOHL2-35	SOHL2-96	COL1-13	COL2-37	COL2-38
Depth	feet	0-3	3-6	6-7	0-3	3-6	6-7.8	0-1	0-3	3-6
Biological Effects										
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	T (100)	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	T (40)	NA'	NA'
Overall Toxicity								**T**		
Conventionals										
Total organic carbon	%	11.3	7.6	5.1	5.1	7.8	6.4	1.3	2.2	4.8
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	<67	NR	NR
Phenol	µg/kg	<46000	<40000	<6000	<5800	<21000	<7000	NR	<6600	<10500
Ammonia-nitrogen	mg/kg	647	1120	623	293	1130	879	112	262	938
Metals										
Arsenic	mg/kg	26.0	<12	<10	<6.2	<11	<9.6	5.3	5.5	100
Cadmium	mg/kg	14.0	2.2	2.1	4.9	2.9	<1.2	2.8	3.9	17.0
Chromium	mg/kg	200.0	30.0	20.0	81.0	26.0	22.0	47.0	84.0	41.0
Copper	mg/kg	380.0	130.0	77.0	360.0	170	34.0	330.0	260.0	450.0
Lead	mg/kg	570.0	110.0	67.0	390.0	180.0	<18	150.0	480.0	1200.0
Nickel	mg/kg	64.0	30.0	28.0	25.0	27.0	32.0	20.0	28.0	24.0
Zinc	mg/kg	2300.0	530.0	350.0	1000.0	720.0	140.0	480.0	870.0	4200.0
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	520000.0	140000.0	13000.0	11000.0	87000.0	16000.0	<4600	<6600	17000.0
Acenaphthylene	µg/kg	<4600	<40000	<6000	<5800	<21000	<7000	<4600	<6600	<10500
Anthracene	µg/kg	170000.0	62000.0	5100.0	6000.0	32000.0	8200.0	<4600	<6600	10700.0
Benz(a)anthracene	µg/kg	97000.0	32000.0	3700.0	8500.0	34000.0	5000.0	3000.0	3500.0	18000.0
Benzo(a)pyrene	µg/kg	44000.0	<40000	<6000	4200.0	18000.0	2700.0	3300.0	<6600	8900.0

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		SOHL2-27	SOHL2-28	SOHL2-29	SOHL2-33	SOHL2-35	SOHL2-96	COL1-13	COL2-37	COL2-38
Polycyclic Aromatic Hydrocarbons										
Chrysene	µg/kg	96000.0	33000.0	3600.0	10000.0	38000.0	4700.0	3400.0	5700.0	24000.0
Dibenz(a,h)anthracene	µg/kg	<46000	<40000	<6000	<5800	<21000	<7000	<4600	<6600	<10500
Fluoranthene	µg/kg	150000.0	56000.0	5100.0	14000.0	53000.0	8600.0	5000.0	5700.0	29000.0
Fluorene	µg/kg	200000.0	59000.0	5100.0	5700.0	37000.0	8100.0	<4600	<6600	14000.0
2-Methylnaphthalene	µg/kg	790000.0	220000.0	19000.0	7500.0	130000.0	25000.0	2000.0	4000.0	19000.0
Naphthalene	µg/kg	1100000.0	310000.0	23000.0	6100.0	180000.0	52000.0	1700.0	2900.0	29000.0
Phenanthrene	µg/kg	570000.0	200000.0	19000.0	22000.0	120000.0	29000.0	3200.0	13000.0	45000.0
Pyrene	µg/kg	240000.0	86000.0	8100.0	17000.0	70000.0	13000.0	5100.0	9100.0	31000.0
Total PAHs[1]	µg/kg	3977000	1198000	104700	112000	799000	172300	26700	43900	245600
Mean-PEC-Q		**88.6**	**26.6**	**2.52**	**3.17**	**17.9**	**3.90**	**1.01**	**1.65**	**7.45**

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number									
		COL2-39	COL2-40	COL2-41	COL2-42	COL2-46	COL2-47	MOL1-17	MOL2-48	MOL2-50	MOL2-52
Depth	feet	6-7.2	0-3	3-6	6-7.1	0-3	0-3	0-3	0-3	3-6	6-9
Biological Effects											
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	T (85)	NA'	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	T (30)	NA'	NA'	NA'
Overall Toxicity								**T**			
Conventionals											
Total organic carbon	%	7.4	3.4	7.3	6.9	1.4	3.8	11.72	12.5	9	6.8
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	<120	NR	NR	NR
Phenol	µg/kg	<33000	<8200	<16000	<22000	<12000	<10500	NR	<18000	<23000	<5200
Ammonia-nitrogen	mg/kg	2140	293	1040	2130	128	383	987	1080	1580	1680
Metals											
Arsenic	mg/kg	38.0	<5.2	77.0	34.0	<5	18.0	30.0	140.0	41.0	17.0
Cadmium	mg/kg	23.0	4.4	15.0	12.0	2.5	7.0	21.0	82.0	14.0	8.0
Chromium	mg/kg	120.0	60.0	72.0	97.0	44.0	120.0	170.0	890.0	110.0	29.0
Copper	mg/kg	330.0	240.0	370.0	240.0	180.0	300.0	240.0	550.0	310.0	140.0
Lead	mg/kg	660.0	480.0	1500.0	430.0	710.0	800.0	640.0	1800.0	1200.0	510.0
Nickel	mg/kg	32.0	29.0	22.0	35.0	22.0	51.0	38.0	180.0	55.0	33.0
Zinc	mg/kg	5000.0	800.0	3600.0	2300.0	720.0	1200.0	3200.0	10000.0	3300.0	1600.0
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/kg	150000.0	<8200	50000.0	83000.0	<12000	5200.0	21000.0	<18000	10000.0	<5200
Acenaphthylene	µg/kg	<33000	<8200	<16000	<22000	<12000	<10500	<15000	<18000	<23000	<5200
Anthracene	µg/kg	72000.0	5300.0	29000.0	44000.0	<12000	7300.0	15000.0	11000.0	17000.0	<5200
Benz(a)anthracene	µg/kg	53000.0	12000.0	30000.0	32000.0	<12000	17000.0	42000.0	56000.0	41000.0	5700.0
Benzo(a)pyrene	µg/kg	23000.0	8000.0	14000.0	16000.0	<12000	9000.0	31000.0	24000.0	22000.0	<5200

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number									
		COL2-39	COL2-40	COL2-41	COL2-42	COL2-46	COL2-47	MOL1-17	MOL2-48	MOL2-50	MOL2-52
Polycyclic Aromatic Hydrocarbons											
Chrysene	µg/kg	56000.0	20000.0	44000.0	36000.0	6200.0	33000.0	86000.0	120000.0	80000.0	9300.0
Dibenz(a,h)anthracene	µg/kg	<33000	<8200	<16000	<22000	<12000	<10500	<15000	<18000	<23000	<5200
Fluoranthene	µg/kg	80000.0	19000.0	48000.0	52000.0	7200.0	16000.0	28000.0	38000.0	33000.0	4000.0
Fluorene	µg/kg	71000.0	6000.0	32000.0	43000.0	<12000	8900.0	14000.0	12000.0	19000.0	<5200
2-Methylnaphthalene	µg/kg	230000.0	8300.0	79000.0	130000.0	<12000	18000.0	5400.0	15000.0	33000.0	3500.0
Naphthalene	µg/kg	210000.0	6500.0	74000.0	120000.0	<12000	5300.0	<15000	<18000	<23000	3000.0
Phenanthrene	µg/kg	220000.0	52000.0	110000.0	150000.0	9400.0	87000.0	6800.0	130000.0	190000.0	15000.0
Pyrene	µg/kg	130000.0	32000.0	70000.0	81000.0	9400.0	41000.0	78000.0	97000.0	82000.0	8900.0
Total PAHs[1]	µg/kg	1295000	169100	580000	787000	32200	247700	327200	503000	527000	49400
Mean-PEC-Q		**30.2**	**4.37**	**14.8**	**18.3**	**1.40**	**6.50**	**8.68**	**16.2**	**13.3**	**1.90**

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		MOL2-54	MOL2-56	MOL2-58	MOL2-59	MOL2-60	MOL2-61	MOL2-68	MOL2-70	ROX1-21A
Depth	feet	9-12	12-13	0-3	3-6	6-9	9-11.7	0-3	0-3	0-3
Biological Effects										
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	NA'	NA'	T (97.4)
Pimephales promelas (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	NA'	NA'	T (26.7)
Overall Toxicity										**T**
Conventionals										
Total organic carbon	%	8	1.3	15.8	9.7	8.7	5.5	18.1	17.4	8.4
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	57
Phenol	µg/kg	<5200	<2000	<27000	<2500	<3800	<3600	<54000	<29000	NR
Ammonia-nitrogen	mg/kg	1350	355	1370	1600	1560	820	214	1830	672
Metals										
Arsenic	mg/kg	<11	<5.4	100.0	<13	18.0	<7.2	<11	180.0	35.0
Cadmium	mg/kg	<1.3	<0.7	75.0	9.9	3.2	<0.9	5.4	80.0	19.0
Chromium	mg/kg	20.0	9.4	900.0	44.0	25.0	11.0	65.0	560.0	210.0
Copper	mg/kg	27.0	8.4	560.0	250.0	79.0	13.0	160.0	710.0	150.0
Lead	mg/kg	24.0	<5.4	2600.0	1100.0	210.0	<7.2	1100.0	12000.0	780.0
Nickel	mg/kg	29.0	11.0	180.0	36.0	33.0	19.0	37.0	130.0	49.0
Zinc	mg/kg	98.0	34.0	9500.0	1800.0	750.0	52.0	1800.0	11000.0	2500.0
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	<5200	<2000	<27000	1900.0	<3800	<3600	<54000	35000.0	4800.0
Acenaphthylene	µg/kg	<5200	<2000	<27000	<2500	<3800	<3600	<54000	<2900	<11000
Anthracene	µg/kg	<5200	<2000	22000.0	2000.0	<3800	<3600	57000.0	50000.0	4000.0
Benz(a)anthracene	µg/kg	<5200	<2000	99000.0	4600.0	<3800	<3600	420000.0	190000.0	14000.0
Benzo(a)pyrene	µg/kg	<5200	<2000	42000.0	2000.0	<3800	<3600	160000.0	73000.0	12000.0

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		MOL2-54	MOL2-56	MOL2-58	MOL2-59	MOL2-60	MOL2-61	MOL2-68	MOL2-70	ROX1-21A
Polycyclic Aromatic Hydrocarbons										
Chrysene	µg/kg	<5200	<2000	210000.0	9000.0	2500.0	<3600	730000.0	230000.0	31000.0
Dibenz(a,h)anthracene	µg/kg	<5200	<2000	<27000	<2500	<3800	<3600	26000.0	<2900	<11000
Fluoranthene	µg/kg	<5200	<2000	64000.0	3400.0	<3800	<3600	200000.0	130000.0	9300.0
Fluorene	µg/kg	<5200	<2000	33000.0	2600.0	<3800	<3600	51000.0	69000.0	4700.0
2-Methylnaphthalene	µg/kg	<5200	<2000	54000.0	3500.0	<3800	<3600	<54000	<2900	<11000
Naphthalene	µg/kg	<5200	<2000	<27000	<2500	<3800	<3600	<54000	<2900	<11000
Phenanthrene	µg/kg	2700.0	<2000	420000.0	19000.0	5400.0	1200.0	1070000.0	430000.0	<11000
Pyrene	µg/kg	<5200	<2000	180000.0	8300.0	2400.0	<3600	700000.0	250000.0	28000.0
Total PAHs[1]	µg/kg	2700	<2000	1124000	56300	10300	1200	3414000	1457000	107800
Mean-PEC-Q		**0.178**	**0.0658**	**30.0**	**2.49**	**0.647**	**0.0919**	**76.0**	**42.8**	**3.82**

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		ROX1-21B	ROX2-71	ROX2-72	ROX2-73	ROX2-74	ROX2-75	ROX2-76	ROX2-80	ROX2-81
Depth	feet	0-3	0-3	3-6	6-7.5	0-3	3-6	6-7.7	0-3	0-3
Biological Effects										
Hyalella azteca (10-d)	Mortality (%)	T (100)	NA'	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	T (36.7)	NA'	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity		**T**								
Conventionals										
Total organic carbon	%	6.5	19.2	15.2	9.1	13.4	14.8	10.5	4	8.5
Benzene	µg/kg	<160	NR	NR	NR	NR	NR	NR	NR	NR
Phenol	µg/kg	NR	<16000	<21000	<4700	<5500	<7400	<5300	<2100	<5800
Ammonia-nitrogen	mg/kg	598	677	763	793	572	711	690	14	273
Metals										
Arsenic	mg/kg	43.0	76.0	97.0	16.0	41.0	95.0	18.0	8.3	30.0
Cadmium	mg/kg	22.0	38.0	29.0	3.3	24.0	32.0	1.6	7.2	20.0
Chromium	mg/kg	240.0	440.0	180.0	23.0	320.0	100.0	18.0	140.0	240.0
Copper	mg/kg	180.0	250.0	520.0	82.0	180.0	560.0	59.0	71.0	200.0
Lead	mg/kg	740.0	1300.0	4100.0	190.0	900.0	2600.0	140.0	380.0	1500.0
Nickel	mg/kg	57.0	160.0	57.0	29.0	74.0	55.0	24.0	26.0	54.0
Zinc	mg/kg	2700.0	5100.0	6800.0	800.0	3300.0	6400.0	600.0	880.0	3200.0
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	4000.0	12000.0	34000.0	3300.0	8700.0	15000.0	<5300	<2100	3800.0
Acenaphthylene	µg/kg	<4600	<16000	<21000	<4700	<5500	<7400	<5300	<2100	<5800
Anthracene	µg/kg	6200.0	18000.0	29000.0	2600.0	13000.0	17000.0	<5300	1000.0	6500.0
Benz(a)anthracene	µg/kg	25000.0	70000.0	44000.0	4200.0	35000.0	30000.0	<5300	6900.0	17000.0
Benzo(a)pyrene	µg/kg	13000.0	31000.0	24000.0	2500.0	24000.0	17000.0	<5300	5300.0	10100.0

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		ROX1-21B	ROX2-71	ROX2-72	ROX2-73	ROX2-74	ROX2-75	ROX2-76	ROX2-80	ROX2-81
Polycyclic Aromatic Hydrocarbons										
Chrysene	µg/kg	56000.0	150000.0	84000.0	8100.0	46000.0	53000.0	<5300	16000.0	35000.0
Dibenz(a,h)anthracene	µg/kg	1900.0	<16000	<21000	<4700	4000.0	<7400	<5300	700.0	<5800
Fluoranthene	µg/kg	19000.0	48000.0	48000.0	4000.0	27000.0	27000.0	<5300	5600.0	15000.0
Fluorene	µg/kg	7800.0	29000.0	36000.0	3500.0	20000.0	24000.0	<5300	<2100	8600.0
2-Methylnaphthalene	µg/kg	1500.0	<16000	<21000	2600.0	<5500	<7400	<5300	21000.0	2900.0
Naphthalene	µg/kg	<4600	<16000	<21000	<4700	<5500	5300.0	<5300	<2000.1	<5800
Phenanthrene	µg/kg	6300.0	71000.0	170000.0	20000.0	10400.0	120000.0	1800.0	2000.0	48000.0
Pyrene	µg/kg	52000.0	130000.0	99000.0	9800.0	70000.0	67000.0	<5300	18000.0	44000.0
Total PAHs[1]	µg/kg	192700	559000	568000	60600	258100	375300	1800	76500	190900
Mean-PEC-Q		**5.79**	**15.1**	**16.9**	**1.74**	**7.51**	**11.8**	**0.348**	**2.31**	**6.20**

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		ROX2-82	ROX2-84	ROX2-86	ROX2-88	ROX2-89	ROX2-90	ROX2-94	ROX2-95
Depth	feet	0-3	3-6	6-7.8	0-3	3-6	6-7.2	0-3	0-3
Biological Effects									
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity									
Conventionals									
Total organic carbon	%	5.8	5.1	4.5	6.7	6.2	4.3	13.3	8.9
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Phenol	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	<32000	<4700
Ammonia-nitrogen	mg/kg	392	284	201	349	275	207	542	203
Metals									
Arsenic	mg/kg	<9.5	<9.7	<8.6	<13	<9.7	<6.8	37.0	<12
Cadmium	mg/kg	1.7	<1.2	<1.1	<1.6	1.6	1.3	17.0	<1.5
Chromium	mg/kg	62.0	25.0	19.0	51.0	30.0	22.0	320.0	38.0
Copper	mg/kg	41.0	40.0	28.0	38.0	43.0	30.0	400.0	21.0
Lead	mg/kg	58.0	31.0	28.0	45.0	57.0	33.0	1500.0	<12
Nickel	mg/kg	31.0	30.0	23.0	32.0	31.0	20.0	85.0	26.0
Zinc	mg/kg	220.0	150.0	93.0	160.0	180.0	140.0	3400.0	76.0
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	<32000	<4700
Acenaphthylene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	<32000	<4700
Anthracene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	5900.0	<4700
Benz(a)anthracene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	19000.0	<4700
Benzo(a)pyrene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	15000.0	<4700

Appendix 4.5. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1993; Dorkin 1994; Burton 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		ROX2-82	ROX2-84	ROX2-86	ROX2-88	ROX2-89	ROX2-90	ROX2-94	ROX2-95
Polycyclic Aromatic Hydrocarbons									
Chrysene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	41000.0	<4700
Dibenz(a,h)anthracene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	<32000	<4700
Fluoranthene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	18000.0	<4700
Fluorene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	6800.0	<4700
2-Methylnaphthalene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	<32000	<4700
Naphthalene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	<32000	<4700
Phenanthrene	µg/kg	<1900	<3000	<3100	<3100	<3300	<2400	72000.0	1700.0
Pyrene	µg/kg	700.0	<3000	<3100	<3100	<3300	<2400	51000.0	<4700
Total PAHs[1]	µg/kg	1650	NA	NA	NA	NA	NA	228700	1700
Mean-PEC-Q		**0.243**	**0.278**	**0.213**	**0.347**	**0.357**	**0.248**	**7.23**	**0.149**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

NR = not reported; NT = not toxic; T = toxic.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated).

NA' = not applicable (i.e., toxicity test or chemical analyses not performed).

Appendix 4.6. Sediment chemistry and biological effects data for the Grand Calumet River Lagoons, IN (July 1994; Gillespie et al. 1998; USDOI 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number									
		WL1	WL1	WL2	WL2	WL3	WL3	WL4	WL4	WL5	WL5
Depth	feet	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98
Biological effects											
Ceriodaphnia dubia (7-d)	Mortality (%)	T (45)	NA'	T (85)	NA'	T (85)	NA'	NT (20)	NA'	NA'	NA'
Ceriodaphnia dubia (8-d)	Mortality (%)	NT (0)	NA'	T (80)	NA'	T (90)	NA'	T (90)	NA'	NA'	NA'
Hyalella azteca (20-d)	Growth (length-mm)	T (2.85)	NA'	NT (3.25)	NA'	NT (3.23)	NA'	NT (3.23)	NA'	NA'	NA'
Hyalella azteca (20-d)	Growth (weight-mg)	T (0.107)	NA'	NT (0.148)	NA'	NT (0.132)	NA'	T (0.123)	NA'	NA'	NA'
Hyalella azteca (20-d)	Mortality (%)	NT (4)	NA'	NT (6)	NA'	NT (11)	NA'	NT (8)	NA'	NA'	NA'
Pimephales promelas (10-d)	Growth (length-mm)	NT (8.12)	NA'	NT (7.99)	NA'	NT (8.06)	NA'	NT (8)	NA'	T	NA'
Pimephales promelas (10-d)	Growth (weight-mg)	NT (0.314)	NA'	NT (0.276)	NA'	NT (0.295)	NA'	NT (0.285)	NA'	T	NA'
Pimephales promelas (10-d)	Mortality (%)	NT (2)	NA'	NT (3)	NA'	NT (2)	NA'	NT (7)	NA'	T (100)	NA'
Pimephales promelas (12-d)	Growth (length-mm)	NT (7.83)	NA'	NT (7.91)	NA'	NT (8.09)	NA'	NT (7.87)	NA'	ND"	NA'
Pimephales promelas (12-d)	Growth (weight-mg)	NT (0.285)	NA'	NT (0.303)	NA'	NT (0.312)	NA'	NT (0.292)	NA'	ND"	NA'
Pimephales promelas (12-d)	Mortality (%)	NT (0)	NA'	NT (5)	NA'	NT (0)	NA'	NT (2)	NA'	ND"	NA'
Overall Toxicity		**T**		**T**		**T**		**T**		**T**	
Conventionals											
pH	S.U.	NA'	8.1	NA'	8.1	NA'	8.3	NA'	8.0	NA'	8.4
Phosphorus, total	mg/kg	NA'	44	NA'	47	NA'	48	NA'	99	NA'	119
Total organic carbon	%	NA'	0.8	NA'	0.2	NA'	0.1	NA'	5.1	NA'	34.1
Metals											
Arsenic	mg/kg	NA'	3.70	NA'	1.60	NA'	0.61	NA'	8.20	NA'	8.60
Cadmium	mg/kg	NA'	<1	NA'	<1	NA'	NR	NA'	<1	NA'	<1
Chromium	mg/kg	NA'	1.7	NA'	1.1	NA'	1.8	NA'	15.3	NA'	19.5
Copper	mg/kg	NA'	1.7	NA'	1.2	NA'	1.1	NA'	11	NA'	10.3
Lead	mg/kg	NA'	5.9	NA'	5.3	NA'	3.4	NA'	36.3	NA'	30.2
Mercury	mg/kg	NA'	<0.02	NA'	<0.02	NA'	<0.02	NA'	0.05	NA'	0.12
Nickel	mg/kg	NA'	1.10	NA'	<1	NA'	1.00	NA'	3.10	NA'	2.90
Selenium	mg/kg	NA'	0.37	NA'	0.11	NA'	0.03	NA'	0.69	NA'	1.1
Zinc	mg/kg	NA'	15	NA'	15.2	NA'	10.1	NA'	114	NA'	123

Appendix 4.6. Sediment chemistry and biological effects data for the Grand Calumet River Lagoons, IN (July 1994; Gillespie et al. 1998; USDOI 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number									
		WL1	WL1	WL2	WL2	WL3	WL3	WL4	WL4	WL5	WL5
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	5666000
Acenaphthylene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	425000
Anthracene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	792000
Benz(a)anthracene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	523000
Benzo(a)pyrene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	444000
Chrysene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	453000
Fluoranthene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	700	NA'	2122000
Fluorene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	2470000
2-Methylnaphthalene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	4800000
Naphthalene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	95455000
Phenanthrene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	3286000
Pyrene	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	<700	NA'	1644000
Total PAHs[1]	µg/kg	NA'	NR	NA'	NR	NA'	NR	NA'	2800	NA'	118080000
Mean-PEC-Q		**NA'**	**0.0487**	**NA'**	**0.0360**	**NA'**	**0.0185**	**NA'**	**0.144**	**NA'**	**2560**

Appendix 4.6. Sediment chemistry and biological effects data for the Grand Calumet River Lagoons, IN (July 1994; Gillespie et al. 1998; USDOI 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		ML1	**ML1[3]**	**ML2**	**ML3**	**ML3[3]**	**18 12 1 1[2]**	**18 11 1 1[2]**	**18 9 1 1[2]**	**18 10 1 1[2]**
Depth	feet	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98	0.66-0.98
Biological effects										
Ceriodaphnia dubia (7-d)	Mortality (%)	NA'	T (55)	NA'	NA'	NT (20)	NA'	NA'	NA'	NA'
Ceriodaphnia dubia (8-d)	Mortality (%)	NA'	NT (40)	NA'	NA'	NT (0)	NA'	NA'	NA'	NA'
Hyalella azteca (20-d)	Growth (length-mm)	NA'	NT (3.91)	NA'	NA'	NT (3.37)	NA'	NA'	NA'	NA'
Hyalella azteca (20-d)	Growth (weight-mg)	NA'	NT (0.17)	NA'	NA'	NT (0.167)	NA'	NA'	NA'	NA'
Hyalella azteca (20-d)	Mortality (%)	NA'	NT (6)	NA'	NA'	NT (2)	NA'	NA'	NA'	NA'
Pimephales promelas (10-d)	Growth (length-mm)	NA'	NT (8.16)	NA'	NA'	NT (7.99)	NA'	NA'	NA'	NA'
Pimephales promelas (10-d)	Growth (weight-mg)	NA'	NT (0.273)	NA'	NA'	NT (0.28)	NA'	NA'	NA'	NA'
Pimephales promelas (10-d)	Mortality (%)	NA'	NT (2)	NA'	NA'	NT (2)	NA'	NA'	NA'	NA'
Pimephales promelas (12-d)	Growth (length-mm)	NA'	NT (7.79)	NA'	NA'	NT (7.79)	NA'	NA'	NA'	NA'
Pimephales promelas (12-d)	Growth (weight-mg)	NA'	NT (0.268)	NA'	NA'	NT (0.303)	NA'	NA'	NA'	NA'
Pimephales promelas (12-d)	Mortality (%)	NA'	NT (5)	NA'	NA'	NT (2)	NA'	NA'	NA'	NA'
Overall Toxicity			**T**			**NT**				
Conventionals										
pH	S.U.	7.9	NA'	7.9	8.0	NA'	NR	NR	NR	NR
Phosphorus, total	mg/kg	47	NA'	40	41	NA'	68	61	45	45
Total organic carbon	%	0.2	NA'	0.1	0.4	NA'	NR	NR	NR	NR
Metals										
Arsenic	mg/kg	0.59	NA'	0.75	2.90	NA'	8.6	3.3	2.8	1.1
Cadmium	mg/kg	NR	NA'	NR	NR	NA'	<1	<1	<1	<1
Chromium	mg/kg	1.2	NA'	1	1.4	NA'	11.1	3.7	2.3	2.3
Copper	mg/kg	<1	NA'	<1	<1	NA'	20	4.1	2	1.3
Lead	mg/kg	3.5	NA'	2.1	2.9	NA'	38.1	12.7	7.5	4.6
Mercury	mg/kg	<0.02	NA'	<0.02	<0.02	NA'	<0.02	<0.02	<0.02	<0.02
Nickel	mg/kg	<1	NA'	<1	<1	NA'	3.9	2	1.1	<1
Selenium	mg/kg	0.04	NA'	0.06	0.04	NA'	0.41	0.15	0.06	0.04
Zinc	mg/kg	8.6	NA'	6.1	8.8	NA'	105	32.6	19.3	11.2

Appendix 4.6. Sediment chemistry and biological effects data for the Grand Calumet River Lagoons, IN (July 1994; Gillespie et al. 1998; USDOI 1994).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		ML1	ML1[3]	ML2	ML3	ML3[3]	18 12 1 1[2]	18 11 1 1[2]	18 9 1 1[2]	18 10 1 1[2]
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Anthracene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Chrysene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Fluorene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Pyrene	µg/kg	NR	NA'	<700	NR	NA'	NR	NR	NR	NR
Total PAHs[1]	µg/kg	NR	NA'	<4900	NR	NA'	NR	NR	NR	NR
Mean-PEC-Q		**0.0147**	**NA'**	**0.0600**	**0.0260**	**NA'**	**0.172**	**0.0675**	**0.0490**	**0.0334**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] USDOI (1994)

[3] reference sites for *Pimephales* and *Hyalella* tests

NR = not reported; NA' = not applicable (i.e., toxicity test or chemical analyses not performed); NT = not toxic; T = toxic.

ND" = not determined because lab considered this sample to be a hazard to personnel

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		SD-98-16/0-2	SD-98-16/2-4.5	SD-98-17/2-5	SD-98-17S/0-2	SD-98-17S/0-2	SD-98-18/0-2
Depth	feet	0-2	2-4.5	2-5	0-2	0-2	0-2
Biological Effects							
Chironomus tentans (10-d)	Growth (weight-mg)	NA'	NA'	NA'	NA'	NA'	NA'
Chironomus tentans (10-d)	Mortality (%)	NA'	NA'	NA'	T (100)	NA'	NA'
Hyalella azteca (10-d)	Growth (weight-mg)	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	T (100)	NA'	NA'
Overall Toxicity					**T**		
Conventionals							
Total organic carbon	%	12.9	8.71	10.5	NA'	4.44	8.34
Benzene	µg/kg	1000	2700	9100	NA'	25000	570
Phenol	mg/kg	<3.3	<0.66	<33	NA'	<66	<3.3
Metals							
Arsenic	mg/kg	6.5	2.4	3.7	NA'	5.2	7.2
Cadmium	mg/kg	5.6	<0.5	0.34	NA'	1.5	1.8
Chromium	mg/kg	41.5	4.1	5.9	NA'	5.4	13.8
Copper	mg/kg	122	8.6	19.8	NA'	37	81.6
Lead	mg/kg	627	9.5	31.7	NA'	184	154
Mercury	mg/kg	1.9	0.016	0.74	NA'	0.55	2
Nickel	mg/kg	23.4	6.4	6.3	NA'	3.5	7.8
Zinc	mg/kg	462	38.8	132	NA'	383	518
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	5300	<660	97000	NA'	340000	31000
Acenaphthylene	µg/kg	<3300	<660	<33000	NA'	33000	1100
Anthracene	µg/kg	5400	140	34000	NA'	130000	16000
Benz(a)anthracene	µg/kg	5400	<660	15000	NA'	66000	9700

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		SD-98-16/0-2	SD-98-16/2-4.5	SD-98-17/2-5	SD-98-17S/0-2	SD-98-17S/0-2	SD-98-18/0-2
Polycyclic Aromatic Hydrocarbons (cont.)							
Benzo(a)pyrene	µg/kg	3600	<660	<33000	NA'	52000	6200
Chrysene	µg/kg	6700	<660	14000	NA'	68000	11000
Dibenz(a,h)anthracene	µg/kg	<3300	<660	<33000	NA'	<66000	<3300
Fluoranthene	µg/kg	5900	110	31000	NA'	120000	14000
Fluorene	µg/kg	4900	<660	40000	NA'	160000	14000
2-Methylnaphthalene	µg/kg	10000	36	150000	NA'	630000	2800
Naphthalene	µg/kg	8400	76	220000	NA'	820000	8300
Phenanthrene	µg/kg	26000	130	110000	NA'	440000	49000
Pyrene	µg/kg	13000	110	47000	NA'	190000	20000
Total PAHs[1]	µg/kg	94600	1592	758000	NA'	3096000	183100
Mean-PEC-Q		**2.71**	**0.0712**	**16.7**	**NA'**	**67.1**	**4.28**

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		SD-98-18/2-4	SD-98-19/0-2	SD-98-19/2-5	SD-98-20/0-2	SD-98-20/2-4	SD-98-20S/0-0.83[a]	SD-98-21/0-2
Depth	feet	2-4	0-2	2-5	0-2	2-4	0-0.83	0-2
Biological Effects								
Chironomus tentans (10-d)	Growth (weight-mg)	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Chironomus tentans (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	T (100)	NA'
Hyalella azteca (10-d)	Growth (weight-mg)	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	T (100)	NA'
Overall Toxicity							**T**	
Conventionals								
Total organic carbon	%	7.43	NR	NR	14.4	12.1	10.4	NR
Benzene	µg/kg	6650	26000	17000	44000	<50000	14000	42000
Phenol	mg/kg	<33	<66	<66	<130	<330	<26	<66
Metals								
Arsenic	mg/kg	2.7	6.5	3.8	9.4	4.2	26.5	6.6
Cadmium	mg/kg	<0.5	1.1	<0.5	1.6	0.41	24.4	1.7
Chromium	mg/kg	4.75	17	4.5	18	5.4	86.3	22.6
Copper	mg/kg	10.3	87.7	24.6	91.4	26.4	174	87.4
Lead	mg/kg	9.05	119	37.6	185	43.8	305	141
Mercury	mg/kg	0.0305	3.6	0.29	3.1	0.39	1.4	4.4
Nickel	mg/kg	7.45	8.7	6.4	19.8	7.1	30.6	8.8
Zinc	mg/kg	40.95	419	169	603	157	1780	461
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	67000	500000	350000	510000	590000	84000	200000
Acenaphthylene	µg/kg	8850	25000	17000	20000	<330000	<26000	<66000
Anthracene	µg/kg	23500	160000	120000	160000	220000	21000	64000
Benz(a)anthracene	µg/kg	14100	96000	74000	66000	120000	12000	27000

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		SD-98-18/2-4	SD-98-19/0-2	SD-98-19/2-5	SD-98-20/0-2	SD-98-20/2-4	SD-98-20S/0-0.83[a]	SD-98-21/0-2
Polycyclic Aromatic Hydrocarbons (cont.)								
Benzo(a)pyrene	µg/kg	11100	74000	58000	<130000	<330000	9200	<66000
Chrysene	µg/kg	13350	88000	65000	66000	100000	25000	28000
Dibenz(a,h)anthracene	µg/kg	<33000	<66000	<66000	<130000	<330000	<26000	<66000
Fluoranthene	µg/kg	34000	220000	170000	130000	270000	21000	60000
Fluorene	µg/kg	31000	220000	160000	190000	260000	30000	81000
2-Methylnaphthalene	µg/kg	72000	610000	440000	900000	720000	65000	290000
Naphthalene	µg/kg	131000	1000000	780000	1400000	1600000	220000	480000
Phenanthrene	µg/kg	100000	650000	470000	530000	800000	78000	210000
Pyrene	µg/kg	49000	300000	240000	210000	380000	40000	85000
Total PAHs[1]	µg/kg	554900	3943000	2944000	4182000	5060000	631200	1525000
Mean-PEC-Q		**12.2**	**86.7**	**64.6**	**92.0**	**111**	**14.3**	**33.7**

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		SD-98-21/2-4	SD-98-22/0-2	SD-98-22/2-4	SD-98-23/0-2	SD-98-23/2-4.5	SD-98-24/0-2
Depth	feet	2-4	0-2	2-4	0-2	2-4.5	0-2
Biological Effects							
Chironomus tentans (10-d)	Growth (weight-mg)	NA'	NA'	NA'	NA'	NA'	NA'
Chironomus tentans (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Growth (weight-mg)	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity							
Conventionals							
Total organic carbon	%	NR	13.7	10.1	NR	NR	10
Benzene	µg/kg	18000	8200	26000	15000	14000	<50000
Phenol	mg/kg	<66	<33	<66	<66	<66	<66
Metals							
Arsenic	mg/kg	2.2	14.3	5	7.8	2.9	13.3
Cadmium	mg/kg	<0.5	5.8	0.47	3.3	<0.5	1.6
Chromium	mg/kg	4.7	63	5.9	61.5	5.3	16.8
Copper	mg/kg	8.7	156	40.1	169	16.3	81.5
Lead	mg/kg	8.2	287	73	233	21	196
Mercury	mg/kg	<0.1	1.3	0.65	2.8	0.16	3.5
Nickel	mg/kg	7.5	26.5	7.1	15.6	7.7	8.3
Zinc	mg/kg	35.4	997	231	675	72.1	517
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	180000	44000	270000	530000	190000	310000
Acenaphthylene	µg/kg	<66000	<33000	7600	12000	<66000	<66000
Anthracene	µg/kg	64000	19000	170000	340000	67000	100000
Benz(a)anthracene	µg/kg	34000	18000	47000	75000	37000	45000

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		SD-98-21/2-4	SD-98-22/0-2	SD-98-22/2-4	SD-98-23/0-2	SD-98-23/2-4.5	SD-98-24/0-2
Polycyclic Aromatic Hydrocarbons (cont.)							
Benzo(a)pyrene	µg/kg	26000	15000	41000	61000	36000	35000
Chrysene	µg/kg	32000	31000	52000	71000	34000	44000
Dibenz(a,h)anthracene	µg/kg	<66000	<33000	<66000	<66000	<66000	<66000
Fluoranthene	µg/kg	78000	31000	140000	190000	88000	110000
Fluorene	µg/kg	77000	21000	120000	210000	78000	120000
2-Methylnaphthalene	µg/kg	210000	41000	250000	660000	180000	380000
Naphthalene	µg/kg	480000	47000	680000	1300000	430000	690000
Phenanthrene	µg/kg	230000	89000	370000	590000	230000	340000
Pyrene	µg/kg	110000	55000	190000	270000	120000	160000
Total PAHs[1]	µg/kg	1521000	411000	2337600	4309000	1490000	2334000
Mean-PEC-Q		**33.4**	**9.60**	**51.4**	**94.9**	**32.7**	**51.5**

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		SD-98-24/2-5	SD-98-24S/0-0.83	SD-98-25/0-2	SD-98-25/2-5	SD-98-26/0-2	SD-98-26/2-5
Depth	feet	2-5	0-0.83	0-2	2-5	0-2	2-5
Biological Effects							
Chironomus tentans (10-d)	Growth (weight-mg)	NA'	T (0.1732)	NA'	NA'	NA'	NA'
Chironomus tentans (10-d)	Mortality (%)	NA'	T (56)	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Growth (weight-mg)	NA'	NT (18)	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NT (10)	NA'	NA'	NA'	NA'
Overall Toxicity			**T**				
Conventionals							
Total organic carbon	%	6.83	15	NR	NR	7.96	6.22
Benzene	µg/kg	330	270	<50000	<620	<6200	<620
Phenol	mg/kg	<66	<0.66	<66	<6.6	<33	<0.66
Metals							
Arsenic	mg/kg	2.9	5.9	20.5	2.4	9.6	5.55
Cadmium	mg/kg	<0.5	3.2	5.4	<0.5	3.2	1.5
Chromium	mg/kg	5	52.5	53.9	3.9	28.5	7.4
Copper	mg/kg	13.7	159	130	5.7	109	63.5
Lead	mg/kg	15.5	185	556	8	166	114
Mercury	mg/kg	0.078	0.81	1.5	0.11	1.2	0.89
Nickel	mg/kg	7.6	13	68.9	6.5	10.5	8.15
Zinc	mg/kg	54.6	562	1320	25.9	924	339
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	55000	1600	61000	11000	37000	1500
Acenaphthylene	µg/kg	<66000	170	<66000	<6600	<33000	175
Anthracene	µg/kg	18000	790	26000	3900	22000	1300
Benz(a)anthracene	µg/kg	<66000	1600	20000	1700	14000	1400

Appendix 4.7. Sediment chemistry data for the West Branch Grand Calumet River, IN (October 1998; ThermoRetec 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		SD-98-24/2-5	SD-98-24S/0-0.83	SD-98-25/0-2	SD-98-25/2-5	SD-98-26/0-2	SD-98-26/2-5
Polycyclic Aromatic Hydrocarbons (cont.)							
Benzo(a)pyrene	µg/kg	<66000	1400	<66000	<6600	<33000	1150
Chrysene	µg/kg	<66000	2400	37000	1800	14000	1650
Dibenz(a,h)anthracene	µg/kg	<66000	<660	<66000	<6600	<33000	<660
Fluoranthene	µg/kg	19000	2800	30000	3600	25000	2700
Fluorene	µg/kg	22000	790	27000	4100	18000	895
2-Methylnaphthalene	µg/kg	64000	1400	79000	13000	59000	2700
Naphthalene	µg/kg	100000	3900	130000	15000	50000	4000
Phenanthrene	µg/kg	63000	2200	110000	12000	68000	4350
Pyrene	µg/kg	28000	3600	59000	5400	39000	3750
Total PAHs[1]	µg/kg	369000	23560	579000	71500	346000	25570
Mean-PEC-Q		**8.14**	**0.875**	**13.5**	**1.60**	**7.98**	**0.758**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[a] Biological effects values determined from 2-hour acute exposures.

NA' = not applicable (i.e., toxicity test or chemical analyses not performed); NR = not reported; NT = not toxic; T = toxic.

Appendix 4.8. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1998; URS Greiner Woodward Clyde 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		01RA01SE00	01RA01SE07	01RA02SE00	01RA02SE07	01RB01SE00	01RB01SE07
Depth	feet	0-0.16	2-3.7	0-0.16	2-5.5	0-0.16	2-7
Biological Effects							
Hyalella azteca (10-d)	Mortality (%)	NT (10)	NA'	NA'	NA'	NT (24)	NA'
Overall Toxicity		**NT**				**NT**	
Conventionals							
Total organic carbon	%	16.9	5.33	27.4	2.39	16.3	3.76
Benzene	µg/kg	<11	<7	<9.6	<5.5	NR	NR
Cyanide	mg/kg	<0.5	<0.5	1.1	<0.5	<0.5	<0.5
Phenol	µg/kg	<660	<330	<660	<330	NR	NR
Metals							
Arsenic	mg/kg	8	3	0.96	1.9	7.9	2.4
Cadmium	mg/kg	4.4	<0.5	<0.5	<0.5	4.6	<0.5
Chromium	mg/kg	87.8	8	2.6	8.9	85.4	5.3
Copper	mg/kg	198	11.5	9.3	10.6	212	5.5
Lead	mg/kg	247	7.7	13.7	9.7	255	4.2
Mercury	mg/kg	0.46	<0.1	<0.1	<0.1	0.45	<0.1
Nickel	mg/kg	40.4	16	4.4	15.6	39.9	7.1
Selenium	mg/kg	5.3	0.36	0.97	0.28	5.3	<0.2
Zinc	mg/kg	737	36.1	72.2	36.8	709	19.6
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	<660	<330	<660	<330	<660	<330
Acenaphthylene	µg/kg	<660	<330	<660	<330	<660	<330
Anthracene	µg/kg	<660	<330	<660	<330	<660	<330
Benz(a)anthracene	µg/kg	<660	<330	<660	<330	<660	<330
Benzo(a)pyrene	µg/kg	<660	<330	<660	<330	<660	<330
Chrysene	µg/kg	<660	<330	<660	<330	<660	<330
Dibenz(a,h)anthracene	µg/kg	<660	<330	<660	<330	<660	<330

Appendix 4.8. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1998; URS Greiner Woodward Clyde 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		01RA01SE00	01RA01SE07	01RA02SE00	01RA02SE07	01RB01SE00	01RB01SE07
Polycyclic Aromatic Hydrocarbons (cont.)							
Fluoranthene	µg/kg	<660	<330	<660	<330	<660	<330
Fluorene	µg/kg	<660	<330	<660	<330	<660	<330
2-Methylnaphthalene	µg/kg	<660	<330	<660	<330	<660	<330
Naphthalene	µg/kg	<11	<7	<9.6	<5.5	<11	<5.9
Phenanthrene	µg/kg	<660	<330	<660	<330	NR	NR
Pyrene	µg/kg	<660	<330	<660	<330	700	NR
Total PAHs[1]	µg/kg	<4631	<2647	<4629.6	<2645.5	2355.5	<1985.9
Polychlorinated Biphenyls							
Total PCBs	µg/kg	<23100	<1120	131	<231	<23100	<231
Pesticides							
Chlordane	µg/kg	<340	<68	<34	<34	<340	<3.4
Sum DDD	µg/kg	<340	<68	<34	<34	<340	<3.4
Sum DDE	µg/kg	<340	<68	<34	<34	<340	<3.4
Sum DDT	µg/kg	<340	<68	<34	<34	<340	<3.4
Total DDTs[2]	µg/kg	NA	NA	<34	<34	NA	<10.2
Dieldrin	µg/kg	<340	<68	<34	<34	<340	<3.4
Endrin	µg/kg	<340	<68	<34	<34	<340	<3.4
Heptachlor epoxide	µg/kg	<170	<34	<17	<17	<170	<1.7
Heptachlor	µg/kg	<170	<34	<17	<17	<170	<1.7
Lindane	µg/kg	<170	<34	<17	<17	<170	<1.7
Toxaphene	µg/kg	<6700	<1300	<670	<670	<6700	<67
Mean-PEC-Q		**0.595**	**0.0832**	**0.123**	**0.111**	**0.603**	**0.0919**

Appendix 4.8. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1998; URS Greiner Woodward Clyde 1998).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		01RC01SE00	01RC01SE07	01RC02SE00	01RC02SE07	01RA03SD10	01RA03SE00
Depth	feet	0-2	2-6.5	0-5	2-3.5	5-8	0-0.16
Biological Effects							
Hyalella azteca (10-d)	Mortality (%)	NT (26)	NA'	T (96)	NA'	NA'	T (81)
Overall Toxicity		**NT**		**T**			**T**
Conventionals							
Total organic carbon	%	12.4	5.02	23.1	4.2	6.33	12
Benzene	µg/kg	<7.3	<5.6	<8.4	<8.4	NR	NR
Cyanide	mg/kg	0.68	<0.5	10.7	<0.5	<0.5	7.6
Phenol	µg/kg	<330	<330	<330	<330	NR	NR
Metals							
Arsenic	mg/kg	7.5	2	13.2	1.5	1.9	18.3
Cadmium	mg/kg	1.9	<0.5	6.8	<0.5	<0.5	5.9
Chromium	mg/kg	27.5	5.9	137	6.7	6.7	160
Copper	mg/kg	56.1	6.7	137	6.9	7.6	213
Lead	mg/kg	141	4.8	240	4.2	5.9	747
Mercury	mg/kg	0.14	<0.1	0.67	<0.1	<0.1	0.75
Nickel	mg/kg	27.4	10.3	35.6	10	11.2	72.9
Selenium	mg/kg	2.1	<0.2	6.4	<0.2	<0.2	4.5
Zinc	mg/kg	288	24.7	694	30.2	25.2	1040
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	<330	<330	<330	<330	<330	<8200
Acenaphthylene	µg/kg	<330	<330	<330	<330	<330	<8200
Anthracene	µg/kg	<330	<330	<330	<330	<330	<8200
Benz(a)anthracene	µg/kg	<330	<330	<330	<330	<330	<8200
Benzo(a)pyrene	µg/kg	<330	<330	<330	<330	<330	<8200
Chrysene	µg/kg	400	<330	<330	<330	<330	<8200
Dibenz(a,h)anthracene	µg/kg	<330	<330	<330	<330	<330	<8200

Appendix 4.8. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1998; URS Greiner Woodward Clyde 1998).

Toxicity Test/Substance	Endpoint/Units	Station Number					
		01RC01SE00	01RC01SE07	01RC02SE00	01RC02SE07	01RA03SD10	01RA03SE00
Polycyclic Aromatic Hydrocarbons (cont.)							
Fluoranthene	µg/kg	530	<330	<330	<330	<330	<8200
Fluorene	µg/kg	<330	<330	<330	<330	<330	<8200
2-Methylnaphthalene	µg/kg	<330	<330	<330	<330	<330	<8200
Naphthalene	µg/kg	<7.3	<5.6	<8.4	<8.4	<13	14
Phenanthrene	µg/kg	<330	<330	<330	<330	<330	NR
Pyrene	µg/kg	620	<330	<330	<330	NR	9700
Total PAHs[1]	µg/kg	2378.65	<2645.6	<2648.4	<2648.4	<2323	9714
Polychlorinated Biphenyls							
Total PCBs	µg/kg	<4620	<231	229	<1120	<231	<23100
Pesticides							
Chlordane	µg/kg	<340	<3.4	<124	<34	<17	<680
Sum DDD	µg/kg	<340	<3.4	<170	<34	<17	<680
Sum DDE	µg/kg	<340	<3.4	<170	<34	<17	<680
Sum DDT	µg/kg	<340	<3.4	<170	<34	<17	<680
Total DDTs[2]	µg/kg	NA	<10.2	NA	<34	<51	NA
Dieldrin	µg/kg	<340	<3.4	<170	<34	<17	<680
Endrin	µg/kg	<340	<3.4	<170	<34	<17	<680
Heptachlor epoxide	µg/kg	<170	<1.7	<85	<17	<8.5	<340
Heptachlor	µg/kg	<170	<1.7	<85	<17	<8.5	<340
Lindane	µg/kg	<170	<1.7	<85	<17	<8.5	<340
Toxaphene	µg/kg	<6700	<67	<3400	<670	<340	<13000
Mean-PEC-Q		**0.304**	**0.101**	**0.515**	**0.0652**	**0.100**	**1.23**

Appendix 4.8. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1998; URS Greiner Woodward Clyde 1998).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		01RA03SE10	01RB03SD10	01RB03SE05	01RB03SE10	01RB03SE15	01RC03SE00	01RC03SE10
Depth	feet	5-8	5-10	0-5	5-10	10-13	0-0.16	5-9.5
Biological Effects								
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	T (100)	NA'
Overall Toxicity							**T**	
Conventionals								
Total organic carbon	%	5.95	9.96	10.2	11.1	4.14	17.5	2.92
Benzene	µg/kg	NR	NR	NR	NR	<7.2	<48000	<7.6
Cyanide	mg/kg	<0.5	<0.5	1.6	<0.5	<0.5	6.2	<0.5
Phenol	µg/kg	NR	NR	NR	NR	<330	<50000	<330
Metals								
Arsenic	mg/kg	1.8	8.8	37.9	7.4	3	21.5	3.6
Cadmium	mg/kg	<0.5	1.3	11.6	1.1	<0.5	4.5	<0.5
Chromium	mg/kg	6.8	6.9	213	5.9	7.3	188	4.3
Copper	mg/kg	8.4	26	195	19.8	7.1	113	4.6
Lead	mg/kg	5.2	91.6	1640	99	5.5	212	9.1
Mercury	mg/kg	<0.1	0.23	0.76	0.23	<0.1	0.35	<0.1
Nickel	mg/kg	11	9.3	44.4	7.7	10.6	94.4	6.4
Selenium	mg/kg	<0.2	0.37	1.4	0.32	<0.2	3.3	<0.2
Zinc	mg/kg	26.7	261	2250	203	28.1	761	20.4
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<330	<330	4100	<330	<330	100000	<330
Acenaphthylene	µg/kg	<330	<330	<3300	<330	<330	59000	<330
Anthracene	µg/kg	<330	<330	6500	<330	<330	<50000	<330
Benz(a)anthracene	µg/kg	<330	<330	8500	<330	<330	<50000	<330
Benzo(a)pyrene	µg/kg	<330	<330	<3300	<330	<330	<50000	<330
Chrysene	µg/kg	<330	<330	16000	350	<330	<50000	<330
Dibenz(a,h)anthracene	µg/kg	<330	<330	<3300	<330	<330	<50000	<330

Appendix 4.8. Sediment chemistry and biological effects data for the West Branch Grand Calumet River, IN (1998; URS Greiner Woodward Clyde 1998).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		01RA03SE10	01RB03SD10	01RB03SE05	01RB03SE10	01RB03SE15	01RC03SE00	01RC03SE10
Polycyclic Aromatic Hydrocarbons (cont.)								
Fluoranthene	µg/kg	<330	<330	11000	330	<330	<50000	<330
Fluorene	µg/kg	<330	<330	6900	<330	<330	91000	<330
2-Methylnaphthalene	µg/kg	<330	<330	11000	<330	<330	170000	<330
Naphthalene	µg/kg	<13	<9.8	11000	<8.4	130	1300000	<7.6
Phenanthrene	µg/kg	NR	550	39000	1000	<330	160000	330
Pyrene	µg/kg	NR	360	24000	590	<330	<50000	<330
Total PAHs[1]	µg/kg	<1993	1904.9	138000	2934.2	1450	1880000	1488.8
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<231	<2310	<23100	<2310	<231	<23100	<231
Pesticides								
Chlordane	µg/kg	<17	<340	<1700	<340	<17	<3400	<34
Sum DDD	µg/kg	<17	<340	<1700	<340	<17	<3400	<34
Sum DDE	µg/kg	<17	<340	<1700	<340	<17	<3400	<34
Sum DDT	µg/kg	<17	<340	<1700	<340	<17	<3400	<34
Total DDTs[2]	µg/kg	<51	NA	NA	NA	<51	NA	<34
Dieldrin	µg/kg	<17	<340	<1700	<340	<17	<3400	<34
Endrin	µg/kg	<17	<340	<1700	<340	<17	<3400	<34
Heptachlor epoxide	µg/kg	<8.5	<170	<850	<170	<8.5	<1700	<17
Heptachlor	µg/kg	<8.5	<170	<850	<170	<8.5	<1700	<17
Lindane	µg/kg	<8.5	<170	<850	<170	<8.5	<1700	<17
Toxaphene	µg/kg	<340	<6700	<34000	<6700	<340	<67000	<670
Mean-PEC-Q		**0.0976**	**0.202**	**4.84**	**0.208**	**0.106**	**41.9**	**0.101**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR = not reported; NT = not toxic; T = toxic.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)

NA' = not applicable (i.e., toxicity test or chemical analyses not performed).

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		IHC99S07 IH-19	GC99T01C1	GC99T01C2	GC99T01C3	GC99T01CS	GC99T01L1	GC99T01LS IH-15	GC99T01R1
Depth	feet	0-0.33	0-5	5-9	9-10	0-0.33	0-3	0-0.33	0-5
Biological Effects									
Hyalella azteca (10-d)	Growth (length-mm)	NT (2.54)	NA'	NA'	NA'	NA'	NA'	ND'	NA'
Hyalella azteca (10-d)	Mortality (%)	NT (2)	NA'	NA'	NA'	NA'	NA'	T (100)	NA'
Overall Toxicity		**NT**						**T**	
Conventionals									
Total organic carbon	%	13	7.2	10	13	9	0.34	1.1	8.5
Acid volatile sulfides	µmol/g	4.15	11.6	44.8	11.8	8.08	14.2	12.7	83.6
Oil and grease	mg/kg	1100	32300	28900	4700	62000	3000	11800	64350
Metals									
Arsenic	mg/kg	67	63	72	140	27	4.4	13	60
Cadmium	mg/kg	5.2	4.7	23	2.7	<0.65	<0.66	<0.71	8.3
Chromium	mg/kg	340	230	54	20	200	75	78	245
Copper	mg/kg	130	180	150	36	130	30	46	365
Lead	mg/kg	360	470	730	70	190	41	120	690
Mercury	mg/kg	<0.34	0.89	1.8	<0.37	0.34	<0.13	<0.14	2.05
Nickel	mg/kg	28	82	11	10	83	24	25	81.5
Selenium	mg/kg	<3.4	<1.8	5.8	<3.7	<1.3	<1.3	<1.4	1.8
Zinc	mg/kg	980	1100	3600	270	370	160	340	1650
Total SEM metals	µmol/g	16.43	19.35	43.54	2.37	9.64	2.72	4.80	29.23
SEM-AVS	µmol/g	12.28	7.75	-1.26	-9.43	1.56	-11.48	-7.90	-54.37

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		IHC99S07 IH-19	GC99T01C1	GC99T01C2	GC99T01C3	GC99T01CS	GC99T01L1	GC99T01LS IH-15	GC99T01R1
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<570	140000	1100000	2500	3900000	58000	NR	6400
Acenaphthylene	µg/kg	<570	6300	62000	700	160000	6400	NR	2400
Anthracene	µg/kg	<570	48000	390000	970	1400000	3900	49000	6850
Benz(a)anthracene	µg/kg	<570	34000	250000	790	990000	39000	160000	8350
Benzo(a)pyrene	µg/kg	150	19000	120000	<3100	910000	37000	180000	5850
Chrysene	µg/kg	150	35000	250000	940	950000	38000	140000	10500
Dibenz(a,h)anthracene	µg/kg	<570	NR	NR	<3100	86000	2500	NR	NR
Fluoranthene	µg/kg	180	150000	1000000	3000	3500000	160000	440000	20500
Fluorene	µg/kg	<570	110000	840000	1700	3000000	1100	46000	8450
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<570	72000	520000	2800	1400000	<1100	2000	13500
Phenanthrene	µg/kg	<570	190000	1500000	3200	5000000	1400	99000	23000
Pyrene	µg/kg	190	73000	530000	1800	2300000	78000	310000	16950
Total PAHs[1]	µg/kg	1525	877300	6562000	18400	23596000	425300	1426000	122750
Polychlorinated Biphenyls									
Total PCBs	µg/kg	<399	1750	4350	413	24330	1930	4860	690
Pesticides									
Chlordane	µg/kg	<11.4	<118	<200	<12.2	<860	<86	<94	<130
Sum DDD	µg/kg	<11	<120	<200	<12	<860	<87	<94	<130
Sum DDE	µg/kg	<11	<120	<200	<12	<860	<87	<94	<130
Sum DDT	µg/kg	1.5	<120	<200	<12	<860	<87	<94	<130
Total DDTs[2]	µg/kg	12.5	NA	NA	<36	NA	NA	NA	NA
Dieldrin	µg/kg	<11	<120	<200	<12	<860	<87	<94	<130
Endrin	µg/kg	<11	<120	<200	<12	<860	<87	<94	<130

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		IHC99S07 IH-19	GC99T01C1	GC99T01C2	GC99T01C3	GC99T01CS	GC99T01L1	GC99T01LS IH-15	GC99T01R1
Pesticides (cont.)									
Heptachlor	µg/kg	<5.7	<59	<100	<6.1	<430	<43	<47	<65
Heptachlor epoxide	µg/kg	<5.7	<59	<100	<6.1	<430	<43	<47	<65
Lindane	µg/kg	<5.7	<59	<100	<6.1	<430	<43	<47	<65
Toxaphene	µg/kg	<110	<1200	<2000	<120	<8600	<870	<940	<1300
Mean-PEC-Q		**0.718**	**14.4**	**99.1**	**0.784**	**357**	**7.28**	**23.4**	**3.03**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T01R2	GC99T01R3	GC99T02C1	GC99T02CS	GC99T02L1	GC99T02L2	GC99T02R1
Depth	feet	5-7.92	7.92-10	0-5	0-0.33	0-3	3-5	0-5
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity								
Conventionals								
Total organic carbon	%	7.6	13	9.6	11	7.5	0.8	10
Acid volatile sulfides	µmol/g	27.1	9.16	17.1	2.48	19.3	0.28	20.5
Oil and grease	mg/kg	24100	3100	24500	17600	16400	600	23900
Metals								
Arsenic	mg/kg	64	150	34	28	36	3	43
Cadmium	mg/kg	18	4.3	5.7	1.8	6.1	<0.66	6.3
Chromium	mg/kg	79	31	180	230	240	14	290
Copper	mg/kg	140	87	130	130	120	6.2	170
Lead	mg/kg	600	280	350	230	330	18	420
Mercury	mg/kg	1.7	0.45	0.72	0.41	0.53	<0.13	0.66
Nickel	mg/kg	19	16	49	97	59	5.6	82
Selenium	mg/kg	2.9	<3.8	<2.1	<1.5	<2.5	<1.3	<2.2
Zinc	mg/kg	3500	1100	1200	1100	1200	62	1500
Total SEM metals	µmol/g	37.02	2.85	34.05	15.26	21.75	1.05	24.61
SEM-AVS	µmol/g	9.92	-6.31	16.95	12.78	2.45	0.77	4.11

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T01R2	GC99T01R3	GC99T02C1	GC99T02CS	GC99T02L1	GC99T02L2	GC99T02R1
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	2200	3200	<700	2300	12000	370	<370
Acenaphthylene	µg/kg	5200	1500	2100	5400	590	58	740
Anthracene	µg/kg	5200	NR	18000	2700	2100	110	4600
Benz(a)anthracene	µg/kg	6700	<3200	15000	23000	3000	260	4600
Benzo(a)pyrene	µg/kg	4800	<3200	14000	37000	2600	340	3700
Chrysene	µg/kg	8400	<3200	16000	24000	3500	310	5100
Dibenz(a,h)anthracene	µg/kg	NR	<3200	<700	5300	<410	<220	<370
Fluoranthene	µg/kg	20000	1400	19000	64000	4700	600	7000
Fluorene	µg/kg	7900	1800	<700	1100	5700	260	9400
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	<220	NR
Naphthalene	µg/kg	55000	6400	2000	1100	1700	<220	1900
Phenanthrene	µg/kg	25000	1700	<700	5600	12000	500	<370
Pyrene	µg/kg	13000	930	35000	42000	8900	540	14000
Total PAHs[1]	µg/kg	153400	16930	121450	213500	56790	3458	51225
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1260	<910	1050	1790	178	<154	1840
Pesticides								
Chlordane	µg/kg	<144	<12.6	<36	<26	<8.2	<4.4	<36
Sum DDD	µg/kg	<140	<13	<35	<25	<8.3	<4.3	<37
Sum DDE	µg/kg	<140	<13	<35	<25	<8.3	<4.3	<37
Sum DDT	µg/kg	<140	<13	<35	<25	<8.3	<4.3	<37
Total DDTs[2]	µg/kg	NA	<39	<35	<75	<24.9	<12.9	<37
Dieldrin	µg/kg	<140	<13	<35	<25	<8.3	<4.3	<37
Endrin	µg/kg	<140	<13	<35	<25	<8.3	<4.3	<37

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T01R2	GC99T01R3	GC99T02C1	GC99T02CS	GC99T02L1	GC99T02L2	GC99T02R1
Pesticides (cont.)								
Heptachlor	µg/kg	<72	<6.3	<18	<13	<4.1	<2.2	<18
Heptachlor epoxide	µg/kg	<72	<6.3	<18	<13	<4.1	<2.2	<18
Lindane	µg/kg	<72	<6.3	<18	<13	<4.1	<2.2	<18
Toxaphene	µg/kg	<1400	<130	<350	<250	<83	<43	<370
Mean-PEC-Q		**4.79**	**1.17**	**2.82**	**4.50**	**1.47**	**0.123**	**2.35**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T02R2	GC99T02R3	GC99T02RS IH-07	GC99T03C1	GC99T03C2	GC99T03CS	GC99T03L1
Depth	feet	5-7.25	7.25-10	0-0.33	0-5	7.5-10	0-0.33	0-5
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	ND'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	T (95)	NA'	NA'	NA'	NA'
Overall Toxicity				**T**				
Conventionals								
Total organic carbon	%	9.1	10	10	11.15	2.3	9.6	10
Acid volatile sulfides	µmol/g	11.2	24.7	36.5	9.43	4.13	4.06	12.7
Oil and grease	mg/kg	30400	2900	19600	33400	7800	15500	49800
Metals								
Arsenic	mg/kg	63	19	44	45.5	12	22	67
Cadmium	mg/kg	10	<1.5	3.8	4.75	1.9	1.7	8.8
Chromium	mg/kg	170	35	610	1160	76	240	1300
Copper	mg/kg	270	34	200	235	33	120	290
Lead	mg/kg	710	40	660	615	96	210	800
Mercury	mg/kg	2	<0.3	0.94	0.49	0.18	0.43	0.98
Nickel	mg/kg	43	31	190	180	22	90	160
Selenium	mg/kg	<2.2	<3	<2	<1.9	<1.5	<1.6	<2.4
Zinc	mg/kg	2000	170	2400	2100	370	1100	2000
Total SEM metals	µmol/g	49.65	7.70	41.77	34.92	5.82	17.40	26.95
SEM-AVS	µmol/g	38.45	-17.00	5.27	25.49	1.69	13.34	14.25

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T02R2	GC99T02R3	GC99T02RS IH-07	GC99T03C1	GC99T03C2	GC99T03CS	GC99T03L1
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	4900	200	340	160000	40000	11000	280000
Acenaphthylene	µg/kg	1800	<500	1900	13500	1300	1600	19000
Anthracene	µg/kg	4700	150	16000	73500	11000	5400	170000
Benz(a)anthracene	µg/kg	6100	230	15000	38000	4500	11000	57000
Benzo(a)pyrene	µg/kg	5100	<500	12000	26000	3700	11000	34000
Chrysene	µg/kg	7000	290	15000	30000	3300	7800	44000
Dibenz(a,h)anthracene	µg/kg	<370	<500	320	3300	450	1500	5100
Fluoranthene	µg/kg	16000	590	21000	95500	12000	18000	180000
Fluorene	µg/kg	4100	140	360	250000	36000	4700	500000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	14000	250	2400	450000	5800	3100	620000
Phenanthrene	µg/kg	<370	740	350	290000	36000	13000	550000
Pyrene	µg/kg	19000	870	50000	83500	8800	13000	120000
Total PAHs[1]	µg/kg	82885	3710	134670	1513300	162850	101100	2579100
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1260	<350	35450	14860	870	2820	12600
Pesticides								
Chlordane	µg/kg	<36	<10	<34	<124	<102	<108	<160
Sum DDD	µg/kg	<37	<10	<34	<120	<100	<110	<160
Sum DDE	µg/kg	<37	<10	<34	<120	<100	<110	<160
Sum DDT	µg/kg	<37	<10	<34	<120	<100	<110	<160
Total DDTs[2]	µg/kg	<37	<30	<34	NA	NA	NA	NA
Dieldrin	µg/kg	<37	<10	<34	<120	<100	<110	<160
Endrin	µg/kg	<37	<10	<34	<120	<100	<110	<160

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T02R2	GC99T02R3	GC99T02RS IH-07	GC99T03C1	GC99T03C2	GC99T03CS	GC99T03L1
Pesticides (cont.)								
Heptachlor	µg/kg	<18	<5	<17	<62	<51	<54	<80
Heptachlor epoxide	µg/kg	<18	<5	<17	<62	<51	<54	<80
Lindane	µg/kg	<18	<5	<17	<62	<51	<54	<80
Toxaphene	µg/kg	<370	<100	<340	<1200	<1000	<1100	<1600
Mean-PEC-Q		**3.11**	**0.264**	**11.8**	**30.8**	**2.98**	**3.34**	**45.4**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T03L2	GC99T03L3	GC99T03R1	GC99T03R2 IH-11	GC99T03RS IH-10	GC99T04C1	GC99T04C2
Depth	feet	7.5-10	10-15	0-5	7.5-10	0-0.33	0-5	8.5-6.5
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NT (1.66)	ND'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NT (20)	T (97)	NA'	NA'
Overall Toxicity					**NT**	**T**		
Conventionals								
Total organic carbon	%	8.1	0.32	12	0.45	13	7.7	2.6
Acid volatile sulfides	µmol/g	14.7	0.33	40.4	0.44	13.4	18.4	5.85
Oil and grease	mg/kg	39100	300	63600	500	54500	1400	1400
Metals								
Arsenic	mg/kg	67	5.1	53	4	43	75	12
Cadmium	mg/kg	9	<0.68	7.2	<0.64	5.4	22	<0.88
Chromium	mg/kg	260	4.5	1800	9.2	1200	150	19
Copper	mg/kg	250	2.5	260	270	230	220	13
Lead	mg/kg	790	<6.8	1200	<6.4	860	670	21
Mercury	mg/kg	1.3	<0.14	0.66	<0.13	0.67	1.4	<0.18
Nickel	mg/kg	63	4	130	4.2	120	30	11
Selenium	mg/kg	2.4	<1.4	2.6	<1.3	<2.6	<2.6	<1.8
Zinc	mg/kg	2300	21	2800	21	2600	3400	130
Total SEM metals	µmol/g	44.60	0.51	40.14	0.54	40.51	52.07	2.67
SEM-AVS	µmol/g	29.90	0.18	-0.26	0.10	27.11	33.67	-3.18

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T03L2	GC99T03L3	GC99T03R1	GC99T03R2 IH-11	GC99T03RS IH-10	GC99T04C1	GC99T04C2
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	3000	240	91000	210	62000	4300	220
Acenaphthylene	µg/kg	<6700	<220	5700	<210	<6500	2700	<580
Anthracene	µg/kg	3200	63	71000	72	38000	6900	<580
Benz(a)anthracene	µg/kg	3200	33	31000	39	19000	6400	270
Benzo(a)pyrene	µg/kg	1700	27	20000	36	15000	4300	620
Chrysene	µg/kg	2400	27	24000	33	15000	4900	190
Dibenz(a,h)anthracene	µg/kg	250	<22	2800	<21	1900	560	72
Fluoranthene	µg/kg	8600	100	110000	160	77000	20000	460
Fluorene	µg/kg	4200	200	190000	180	68000	6400	<580
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	7400	780	14000	<210	14000	75000	350
Phenanthrene	µg/kg	12000	230	270000	320	140000	22000	190
Pyrene	µg/kg	5500	70	66000	68	50000	17000	460
Total PAHs[1]	µg/kg	51450	1781	895500	1233.5	499900	170460	3122
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1190	<154	27540	233	55660	<609	197
Pesticides								
Chlordane	µg/kg	<134	<4.4	<146	<4.2	<174	<86	<5.8
Sum DDD	µg/kg	<130	<4.5	<150	<4.2	<170	<87	<5.8
Sum DDE	µg/kg	<130	<4.5	<150	<4.2	<170	<87	<5.8
Sum DDT	µg/kg	<130	<4.5	<150	<4.2	<170	<87	<5.8
Total DDTs[2]	µg/kg	NA	<13.5	NA	<12.6	NA	NA	<17.4
Dieldrin	µg/kg	<130	<4.5	<150	<4.2	<170	<87	<5.8
Endrin	µg/kg	<130	<4.5	<150	<4.2	<170	<87	<5.8

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T03L2	GC99T03L3	GC99T03R1	GC99T03R2 IH-11	GC99T03RS IH-10	GC99T04C1	GC99T04C2
Pesticides (cont.)								
Heptachlor	µg/kg	<67	<2.2	<73	<2.1	<87	<43	<2.9
Heptachlor epoxide	µg/kg	<67	<2.2	<73	<2.1	<87	<43	<2.9
Lindane	µg/kg	<67	<2.2	<73	<2.1	<87	<43	<2.9
Toxaphene	µg/kg	<1300	<45	<1500	<42	<1700	<870	<58
Mean-PEC-Q		**2.58**	**0.0847**	**28.5**	**0.239**	**36.2**	**3.73**	**0.209**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T04C3	GC99T04CS	GC99T04L1	GC99T04L2	GC99T04R1	GC99T04RS IH-06	GC99T05C1
Depth	feet	5-9.29	0-0.33	0-5	8.5-10	0-5	0-0.33	0-5
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NA'	NA'	ND'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	T (97)	NA'
Overall Toxicity							**T**	
Conventionals								
Total organic carbon	%	0.23	6.1	4.5	3.4	1.8	8.8	3.7
Acid volatile sulfides	µmol/g	0.2	5.02	34.2	12.7	25.2	55.1	19.8
Oil and grease	mg/kg	200	29500	21300	800	2600	66400	9600
Metals								
Arsenic	mg/kg	2	15	55	13	11	30	17
Cadmium	mg/kg	<0.63	1	19	<0.85	<0.98	3.3	2.1
Chromium	mg/kg	2.6	140	66	7.3	13	310	120
Copper	mg/kg	<1.3	63	180	9.8	10	160	120
Lead	mg/kg	<6.3	130	470	19	14	410	220
Mercury	mg/kg	<0.13	<0.14	1.7	<0.17	<0.2	0.47	0.53
Nickel	mg/kg	2.6	41	18	6.7	11	60	48
Selenium	mg/kg	<1.3	<1.4	<2	<1.7	<2	<2.2	<1.3
Zinc	mg/kg	9.7	750	2300	110	51	1300	910
Total SEM metals	µmol/g	0.17	15.89	71.69	1.20	0.73	16.92	18.09
SEM-AVS	µmol/g	-0.03	10.87	37.49	-11.50	-24.47	-38.18	-1.71

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T04C3	GC99T04CS	GC99T04L1	GC99T04L2	GC99T04R1	GC99T04RS IH-06	GC99T05C1
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<210	7300	4100	<280	<650	6500	<2200
Acenaphthylene	µg/kg	<210	1200	2100	<280	<650	<3600	710
Anthracene	µg/kg	<210	3300	6400	<280	<650	4900	6900
Benz(a)anthracene	µg/kg	7.8	8300	4900	8.2	110	7500	8400
Benzo(a)pyrene	µg/kg	8.3	8200	4100	7.6	53	7000	5600
Chrysene	µg/kg	6.8	6200	4300	7	82	5600	NR
Dibenz(a,h)anthracene	µg/kg	<21	1200	510	<28	<65	890	990
Fluoranthene	µg/kg	28	13000	16000	37	250	15000	8800
Fluorene	µg/kg	<210	2400	6400	<280	<650	3600	6800
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<210	900	38000	<280	<650	<3600	<2200
Phenanthrene	µg/kg	<210	7000	21000	<280	<650	5000	57000
Pyrene	µg/kg	21	10000	13000	28	110	7600	NR
Total PAHs[1]	µg/kg	502.4	69000	120810	661.8	1287.5	63590	95200
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<147	500	<238	<196	<1120	5640	1330
Pesticides								
Chlordane	µg/kg	<4.2	<46	<34	<5.6	<64	<144	<22
Sum DDD	µg/kg	<4.1	<46	<34	<5.6	<65	<140	<22
Sum DDE	µg/kg	<4.1	<46	<34	<5.6	<65	<140	<22
Sum DDT	µg/kg	<4.1	<46	<34	<5.6	<65	<140	<22
Total DDTs[2]	µg/kg	<12.3	<46	<34	<16.8	NA	NA	<66
Dieldrin	µg/kg	<4.1	<46	<34	<5.6	<65	<140	<22
Endrin	µg/kg	<4.1	<46	<34	<5.6	<65	<140	<22

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T04C3	GC99T04CS	GC99T04L1	GC99T04L2	GC99T04R1	GC99T04RS IH-06	GC99T05C1
Pesticides (cont.)								
Heptachlor	µg/kg	<2.1	<23	<17	<2.8	<32	<72	<11
Heptachlor epoxide	µg/kg	<2.1	<23	<17	<2.8	<32	<72	<11
Lindane	µg/kg	<2.1	<23	<17	<2.8	<32	<72	<11
Toxaphene	µg/kg	<41	<460	<340	<56	<650	<1400	<220
Mean-PEC-Q		**0.0555**	**1.53**	**2.60**	**0.112**	**0.104**	**4.32**	**2.41**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T05C2	GC99T05C3	GC99T05CS	GC99T05L1	GC99T05L2	GC99T05R1	GC99T05R2
Depth	feet	5-6.63	6.63-10.72	0-0.33	0-5	5-8	0-5	5-7.75
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity								
Conventionals								
Total organic carbon	%	4.8	14	6.3	6.5	0.14	10	9.3
Acid volatile sulfides	µmol/g	125	20	9.96	72.5	0.38	54	35.6
Oil and grease	mg/kg	19900	23600	14800	11400	200	1300	2600
Metals								
Arsenic	mg/kg	42	34	20	38	2.4	24	19
Cadmium	mg/kg	18	2	2.2	10	<0.63	3.7	<1.6
Chromium	mg/kg	76	24	190	28	3.2	34	43
Copper	mg/kg	220	43	140	110	1.7	58	35
Lead	mg/kg	500	77	230	280	<6.3	110	41
Mercury	mg/kg	2.8	<0.34	0.43	0.92	<0.13	0.5	0.33
Nickel	mg/kg	24	25	69	14	3.3	27	32
Selenium	mg/kg	3.6	<3.4	<1.6	<2.8	<1.3	<3.8	<3.2
Zinc	mg/kg	4600	380	1100	2200	12	970	210
Total SEM metals	µmol/g	75.14	11.04	20.22	25.13	0.22	30.10	6.33
SEM-AVS	µmol/g	-49.86	-8.96	10.26	-47.37	-0.16	-23.90	-29.27

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T05C2	GC99T05C3	GC99T05CS	GC99T05L1	GC99T05L2	GC99T05R1	GC99T05R2
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	3000	<1100	6600	2600	<210	<630	<1100
Acenaphthylene	µg/kg	470	<1100	910	<920	<210	730	<1100
Anthracene	µg/kg	2500	<1100	3600	6400	<210	2000	<1100
Benz(a)anthracene	µg/kg	2800	170	7200	2800	<21	2400	170
Benzo(a)pyrene	µg/kg	2600	140	7000	2200	5.6	2300	150
Chrysene	µg/kg	3000	190	7900	4300	13	3200	320
Dibenz(a,h)anthracene	µg/kg	310	<110	1400	310	<21	310	<110
Fluoranthene	µg/kg	9500	640	11000	8400	15	5300	150
Fluorene	µg/kg	1800	<1100	2000	2900	<210	690	<1100
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	640	<1100	1700	1400	<210	<630	<1100
Phenanthrene	µg/kg	7700	550	7700	8600	<210	6400	780
Pyrene	µg/kg	6600	550	10000	8700	19	NR	400
Total PAHs[1]	µg/kg	40920	2295	67010	48610	493.6	23330	2025
Polychlorinated Biphenyls								
Total PCBs	µg/kg	900	<399	2120	<322	<147	<441	469
Pesticides								
Chlordane	µg/kg	<32	<11.4	<28	<46	<4.2	<12.6	<10.6
Sum DDD	µg/kg	<32	<11	<27	<46	<4.2	<13	<11
Sum DDE	µg/kg	<32	<11	<27	<46	<4.2	<13	<11
Sum DDT	µg/kg	<32	<11	<27	<46	<4.2	<13	<11
Total DDTs[2]	µg/kg	<32	<33	<81	<46	<12.6	<39	<33
Dieldrin	µg/kg	<32	<11	<27	<46	<4.2	<13	<11
Endrin	µg/kg	<32	<11	<27	<46	<4.2	<13	<11

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T05C2	GC99T05C3	GC99T05CS	GC99T05L1	GC99T05L2	GC99T05R1	GC99T05R2
Pesticides (cont.)								
Heptachlor	µg/kg	<16	<5.7	<14	<23	<2.1	<6.3	<5.3
Heptachlor epoxide	µg/kg	<16	<5.7	<14	<23	<2.1	<6.3	<5.3
Lindane	µg/kg	<16	<5.7	<14	<23	<2.1	<6.3	<5.3
Toxaphene	µg/kg	<320	<110	<270	<460	<42	<130	<110
Mean-PEC-Q		**2.06**	**0.317**	**2.47**	**1.33**	**0.0575**	**0.721**	**0.394**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		GC99T05R3	GC99T05RS IH-05	GC99E1	GC99E2	GC99E3	GC99T06C1	GC99T06CS	GC99T06L1
Depth	feet	7.75-10	0-0.33	0-5	5-6.29	6.29-10	0-5	0-0.33	0-5
Biological Effects									
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NT (1.7)	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	T (35)	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity			**T**						
Conventionals									
Total organic carbon	%	0.41	10	12	8.1	0.55	0.53	0.59	7.1
Acid volatile sulfides	µmol/g	0.57	8.85	58.4	29.9	0.53	1.72	13.1	32.9
Oil and grease	mg/kg	300	13000	76850	37100	300	700	5900	25400
Metals									
Arsenic	mg/kg	2.5	26	145	130	4.1	6.4	13	24
Cadmium	mg/kg	<0.64	2.5	26	26	<0.63	<0.68	2.4	0.83
Chromium	mg/kg	2.8	210	1550	810	11	8.2	65	170
Copper	mg/kg	<1.3	140	355	290	3.9	6.8	61	110
Lead	mg/kg	<6.4	280	1600	1100	12	13	190	480
Mercury	mg/kg	<0.13	0.75	2.25	1.9	<0.13	<0.14	0.35	0.9
Nickel	mg/kg	3.1	75	115	66	3.9	6.2	18	38
Selenium	mg/kg	<1.3	<2	3.15	2.6	<1.3	<1.4	<1.4	<1.5
Zinc	mg/kg	12	1200	9150	4300	52	57	720	1200
Total SEM metals	µmol/g	0.21	21.08	130.24	66.94	0.79	0.69	9.54	24.03
SEM-AVS	µmol/g	-0.36	12.23	71.84	37.04	0.26	-1.03	-3.56	-8.87

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		GC99T05R3	GC99T05RS IH-05	GC99E1	GC99E2	GC99E3	GC99T06C1	GC99T06CS	GC99T06L1
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<210	<970	29500	29000	410	<220	<690	<10000
Acenaphthylene	µg/kg	<210	460	3600	1600	<210	<220	<690	<10000
Anthracene	µg/kg	<210	2500	21500	18000	310	<220	630	5800
Benz(a)anthracene	µg/kg	6.4	4700	12250	NR	190	230	1600	12000
Benzo(a)pyrene	µg/kg	<21	5000	6700	5700	170	280	1800	13000
Chrysene	µg/kg	16	6600	12350	18000	290	250	2300	12000
Dibenz(a,h)anthracene	µg/kg	<21	850	1030	740	21	34	240	1300
Fluoranthene	µg/kg	5.3	5800	45000	19000	340	270	3000	27000
Fluorene	µg/kg	<210	1500	38500	37000	460	<220	250	<10000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<210	1500	8400	1900	<210	<220	<690	5300
Phenanthrene	µg/kg	71	6100	99500	110000	1600	81	2000	17000
Pyrene	µg/kg	30	7500	33500	42000	850	250	2700	24000
Total PAHs[1]	µg/kg	464.7	42510	311830	282940	4746	1725	14520	117400
Polychlorinated Biphenyls									
Total PCBs	µg/kg	52063	1680	45070	14450	233	114	1200	4950
Pesticides									
Chlordane	µg/kg	<4.2	<32	<154	<62	<4.2	<4.4	<92	<26
Sum DDD	µg/kg	<4.2	<32	<150	<61	<4.2	<4.5	<92	<25
Sum DDE	µg/kg	<4.2	<32	<150	<61	<4.2	<4.5	11	<25
Sum DDT	µg/kg	<4.2	<32	<150	<61	<4.2	<4.5	<92	<25
Total DDTs[2]	µg/kg	<12.6	<32	NA	<61	<12.6	<13.5	11	<75
Dieldrin	µg/kg	<4.2	<32	<150	<61	<4.2	<4.5	<92	<25
Endrin	µg/kg	<4.2	<32	<150	<61	<4.2	<4.5	<92	<25

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		GC99T05R3	GC99T05RS IH-05	GC99E1	GC99E2	GC99E3	GC99T06C1	GC99T06CS	GC99T06L1
Pesticides (cont.)									
Heptachlor	µg/kg	<2.1	<16	<77	<31	<2.1	<2.2	<46	<13
Heptachlor epoxide	µg/kg	<2.1	<16	<77	<31	<2.1	<2.2	<46	<13
Lindane	µg/kg	<2.1	<16	<77	<31	<2.1	<2.2	<46	<13
Toxaphene	µg/kg	<42	<320	<1500	<610	<42	<45	<920	<250
Mean-PEC-Q		**25.7**	**1.95**	**29.7**	**13.1**	**0.213**	**0.116**	**1.06**	**3.43**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T06L2	GC99T06L3	GC99T06L4	GC99T06LS IH-03	GC99T06R1	GC99T06R2	GC99T07C1
Depth	feet	5-10	10-11	11-13.16	0-0.33	0-5	5.25-9.5	0-5
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NT (1.81)	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	T (60)	NA'	NA'	NA'
Overall Toxicity					**T**			
Conventionals								
Total organic carbon	%	8.5	4.7	5.5	10	3.7	0.96	2.8
Acid volatile sulfides	µmol/g	40	21.7	4.55	1.78	0.8	0.62	6.02
Oil and grease	mg/kg	43000	12900	1600	18500	500	300	1300
Metals								
Arsenic	mg/kg	90	34	23	28	5.6	2.8	12
Cadmium	mg/kg	19	2.3	<1.3	<1.1	<0.93	<0.7	<0.78
Chromium	mg/kg	170	87	19	160	13	6.2	18
Copper	mg/kg	240	84	21	130	13	4.5	15
Lead	mg/kg	1000	430	33	290	9.8	<7	28
Mercury	mg/kg	3.7	0.96	<0.26	0.62	<0.19	<0.14	<0.31
Nickel	mg/kg	73	28	23	54	17	6.8	13
Selenium	mg/kg	2.8	<1.4	<2.6	<2.1	<1.9	<1.4	<1.6
Zinc	mg/kg	3000	1100	140	1100	50	23	140
Total SEM metals	µmol/g	58.04	28.08	2.53	28.48	2.35	0.31	2.65
SEM-AVS	µmol/g	18.04	6.38	-2.02	26.70	1.55	-0.31	-3.37

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T06L2	GC99T06L3	GC99T06L4	GC99T06LS IH-03	GC99T06R1	GC99T06R2	GC99T07C1
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<8100	<2400	<430	<7000	<310	<230	<260
Acenaphthylene	µg/kg	<8100	<2400	<430	<7000	<310	<230	<260
Anthracene	µg/kg	32000	3500	<430	4700	<310	<230	79
Benz(a)anthracene	µg/kg	21000	4100	24	6900	<31	<23	190
Benzo(a)pyrene	µg/kg	6400	3600	<43	8400	<31	<23	160
Chrysene	µg/kg	NR	5900	48	7700	<31	<23	430
Dibenz(a,h)anthracene	µg/kg	530	480	<43	420	<31	<23	36
Fluoranthene	µg/kg	30000	6300	<43	18000	<31	5.8	190
Fluorene	µg/kg	51000	4200	<430	<7000	<310	<230	<260
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<8100	<2400	<430	<7000	<310	<230	<260
Phenanthrene	µg/kg	410000	19000	260	6100	<310	<230	130
Pyrene	µg/kg	8400	5100	<43	12000	<31	<23	370
Total PAHs[1]	µg/kg	559330	52180	1063	64220	<1426	523.3	1845
Polychlorinated Biphenyls								
Total PCBs	µg/kg	6240	5060	<301	6120	<217	<161	318
Pesticides								
Chlordane	µg/kg	<28	<48	<8.6	<36	<6.2	<4.6	<52
Sum DDD	µg/kg	<27	<48	<8.7	<35	<6.1	0.48	<52
Sum DDE	µg/kg	<27	<48	<8.7	<35	<6.1	<4.6	<52
Sum DDT	µg/kg	<27	<48	<8.7	<35	<6.1	0.54	<52
Total DDTs[2]	µg/kg	<81	<48	<26.1	<35	<18.3	3.32	<52
Dieldrin	µg/kg	<27	<48	<8.7	<35	<6.1	<4.6	<52
Endrin	µg/kg	<27	<48	<8.7	<35	<6.1	<4.6	<52

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T06L2	GC99T06L3	GC99T06L4	GC99T06LS IH-03	GC99T06R1	GC99T06R2	GC99T07C1
Pesticides (cont.)								
Heptachlor	µg/kg	<14	<24	<4.3	<18	<3.1	<2.3	<26
Heptachlor epoxide	µg/kg	<14	<24	<4.3	<18	<3.1	<2.3	<26
Lindane	µg/kg	<14	<24	<4.3	<18	<3.1	<2.3	<26
Toxaphene	µg/kg	<270	<480	<87	<350	<61	<46	<520
Mean-PEC-Q		**10.9**	**3.69**	**0.193**	**2.88**	**0.112**	**0.0692**	**0.255**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		GC99T07CS	GC99T07R1	GC99T07RS IH-02	GC99S01 IH-09	GC99S02 IH-17	GC99S03 IH-16	GC99S04 IH-18	GC99S05 IH-04	GC99S05A
Depth	feet	0.33	0-3	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33
Biological Effects										
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	ND'	NT (2.64)	NT (2.88)	NT (2.66)	ND'	NT (1.92)	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	T (92)	T (20)	NT (2)	NT (10)	T (97)	T (45)	NA'
Overall Toxicity				**T**	**T**	**NT**	**NT**	**T**	**T**	
Conventionals										
Total organic carbon	%	6.1	0.32	7.3	14	0.17	4.8	7.2	14	11
Acid volatile sulfides	µmol/g	8.42	1.62	4.84	0.44	5.16	125	0.08	25	16.1
Oil and grease	mg/kg	11300	2000	11800	4100	600	5400	19700	24400	37300
Metals										
Arsenic	mg/kg	700	3.3	47	13	3.9	46	29	120	120
Cadmium	mg/kg	<1.3	<0.63	<0.72	3.2	<0.65	<1.4	370	8.5	9.1
Chromium	mg/kg	190	11	120	71	2.3	6.2	9700	940	670
Copper	mg/kg	140	6.9	70	210	1.5	5.5	16000	200	210
Lead	mg/kg	360	29	230	110	5.1	18	420	800	850
Mercury	mg/kg	0.94	<0.13	0.4	<0.59	<0.13	<0.27	0.56	3.4	0.96
Nickel	mg/kg	63	5.4	35	40	<2.6	<5.4	1900	70	77
Selenium	mg/kg	<2.5	<1.3	<1.4	<5.9	<1.3	<2.7	<2.9	<2.4	<2.2
Zinc	mg/kg	1500	88	820	400	20	45	6800	3700	3500
Total SEM metals	µmol/g	14.76	1.31	15.64	13.74	0.41	1.00	464.75	64.21	37.41
SEM-AVS	µmol/g	6.34	-0.31	10.80	13.30	-4.75	-124.00	464.67	39.21	21.31

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		GC99T07CS	GC99T07R1	GC99T07RS IH-02	GC99S01 IH-09	GC99S02 IH-17	GC99S03 IH-16	GC99S04 IH-18	GC99S05 IH-04	GC99S05A
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	<2100	<2100	<4800	<970	<210	<890	<940	10000	2100
Acenaphthylene	µg/kg	<2100	<2100	<4800	<970	<210	<890	<940	<12000	180
Anthracene	µg/kg	1600	670	6700	<970	<210	<890	<940	5900	1600
Benz(a)anthracene	µg/kg	3600	980	19000	<970	<210	<890	<940	8100	1800
Benzo(a)pyrene	µg/kg	NR	1400	9600	300	<210	<890	<940	8800	2100
Chrysene	µg/kg	NR	5800	NR	350	<210	<890	<940	8900	2000
Dibenz(a,h)anthracene	µg/kg	770	120	750	<970	<210	<890	<940	1200	260
Fluoranthene	µg/kg	3600	5000	19000	270	<210	<890	<940	17000	4200
Fluorene	µg/kg	980	<2100	2500	<970	<210	<890	<940	5500	1600
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	1000	<2100	3100	<970	<210	<890	<940	<12000	<3700
Phenanthrene	µg/kg	2900	<2100	11000	<970	<210	<890	<940	16000	4500
Pyrene	µg/kg	NR	3200	21000	280	<210	<890	<940	12000	3900
Total PAHs[1]	µg/kg	14450	17170	92650	2170	<1890	<5340	<5640	93400	24240
Polychlorinated Biphenyls										
Total PCBs	µg/kg	2623	650	2060	<679	<147	<315	224	8200	8110
Pesticides										
Chlordane	µg/kg	<166	<42	<96	<19.4	<4.2	<90	<48	<40	<146
Sum DDD	µg/kg	<170	<41	<96	<19	<4.3	<8.9	<47	<39	<150
Sum DDE	µg/kg	<170	<41	<96	<19	<4.3	<8.9	<47	<39	<150
Sum DDT	µg/kg	<170	<41	<96	<19	<4.3	<8.9	<47	<39	<150
Total DDTs[2]	µg/kg	NA	<41	NA	<57	<12.9	<26.7	<47	<39	NA
Dieldrin	µg/kg	<170	<41	<96	<19	<4.3	<8.9	<47	<39	<150
Endrin	µg/kg	<170	<41	<96	<19	<4.3	<8.9	<47	<39	<150

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		GC99T07CS	GC99T07R1	GC99T07RS IH-02	GC99S01 IH-09	GC99S02 IH-17	GC99S03 IH-16	GC99S04 IH-18	GC99S05 IH-04	GC99S05A
Pesticides (cont.)										
Heptachlor	µg/kg	<83	<21	<48	<9.7	<2.1	<45	<24	<20	<73
Heptachlor epoxide	µg/kg	<83	<21	<48	<9.7	<2.1	<45	<24	<20	<73
Lindane	µg/kg	<83	<21	<48	<9.7	<2.1	<45	<24	<20	<73
Toxaphene	µg/kg	<1700	<410	<960	<190	<43	<89	<470	<390	<1500
Mean-PEC-Q		**3.00**	**0.611**	**2.72**	**0.450**	**0.0655**	**0.208**	**15.7**	**6.88**	**5.72**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		GC99S06 IH-08	GC99S015 IH-12	GC99T07L1	GC99T07L2	GC99T08C1	GC99T08C2	GC99T08CS	GC99T08L1
Depth	feet	0-0.33	0-0.33	0-5	5-10	0-5	5-10	0-0.33	0-5
Biological Effects									
Hyalella azteca (10-d)	Growth (length-mm)	NT (2.13)	ND'	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	T (30)	T (85)	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity		**T**	**T**						
Conventionals									
Total organic carbon	%	9.9	14	6.6	5.1	6.3	2.4	40	6.1
Acid volatile sulfides	µmol/g	24.3	14.4	93.1	9.565	37.1	3.43	25.3	72.3
Oil and grease	mg/kg	19200	39000	29100	4200	15900	2900	352000	38500
Metals									
Arsenic	mg/kg	28	43	170	18	84	15	59	79
Cadmium	mg/kg	13	3.9	30	<1.2	24	2.4	10	12
Chromium	mg/kg	220	510	70	37	33	13	110	220
Copper	mg/kg	170	240	260	31	250	39	310	230
Lead	mg/kg	730	500	1500	96.5	2200	2500	13000	3200
Mercury	mg/kg	1.6	0.74	6.2	0.325	4.4	0.97	2.7	1.9
Nickel	mg/kg	53	82	27	22.5	16	8.7	40	56
Selenium	mg/kg	<3.3	<3.1	<2.4	<2.4	<2.2	<1.7	<1.6	<2
Zinc	mg/kg	1900	2700	5500	370	4000	470	2200	2900
Total SEM metals	µmol/g	32.05	32.29	122.38	11.26	70.75	8.12	18.36	58.94
SEM-AVS	µmol/g	7.75	17.89	29.28	1.7	33.65	4.69	-6.94	-13.36

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		GC99S06 IH-08	GC99S015 IH-12	GC99T07L1	GC99T07L2	GC99T08C1	GC99T08C2	GC99T08CS	GC99T08L1
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<2800	3400	<7900	<790	<11000	<2800	<63000	<3400
Acenaphthylene	µg/kg	530	1300	<7900	<790	<11000	<2800	<63000	1600
Anthracene	µg/kg	790	2100	9500	225	26000	4600	190000	27000
Benz(a)anthracene	µg/kg	3400	6100	5800	430	19000	4500	140000	16000
Benzo(a)pyrene	µg/kg	4000	8400	5200	570	3400	530	11000	3100
Chrysene	µg/kg	7300	7500	10000	815	42000	10000	330000	NR
Dibenz(a,h)anthracene	µg/kg	<2800	1700	740	64	1100	270	7800	430
Fluoranthene	µg/kg	NR	8600	16000	880	44000	8500	320000	NR
Fluorene	µg/kg	520	2400	7000	605	24000	3800	160000	26000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	1500	3300	<7900	<790	<11000	<2800	<63000	28000
Phenanthrene	µg/kg	5700	5500	45000	1800	290000	53000	2100000	260000
Pyrene	µg/kg	NR	17000	16000	1600	26000	5300	190000	NR
Total PAHs[1]	µg/kg	23740	67300	115240	6989	475500	90500	3448800	362130
Polychlorinated Biphenyls									
Total PCBs	µg/kg	375	2656	1380	752	<2590	<1960	2090	<1190
Pesticides									
Chlordane	µg/kg	<11	<52	<40	<7.8	<146	<56	<520	<134
Sum DDD	µg/kg	<11	<52	<39	<7.9	<150	<55	<520	<130
Sum DDE	µg/kg	<11	<52	<39	<7.9	<150	<55	<520	<130
Sum DDT	µg/kg	<11	<52	<39	<7.9	<150	<55	<520	<130
Total DDTs[2]	µg/kg	<33	<52	<39	<23.7	NA	<55	NA	NA
Dieldrin	µg/kg	<11	<52	<39	<7.9	<150	<55	<520	<130
Endrin	µg/kg	<11	<52	<39	<7.9	<150	<55	<520	<130

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		GC99S06 IH-08	GC99S015 IH-12	GC99T07L1	GC99T07L2	GC99T08C1	GC99T08C2	GC99T08CS	GC99T08L1
Pesticides (cont.)									
Heptachlor	µg/kg	<5.5	<26	<20	<3.9	<73	<28	<260	<67
Heptachlor epoxide	µg/kg	<5.5	<26	<20	<3.9	<73	<28	<260	<67
Lindane	µg/kg	<5.5	<26	<20	<3.9	<73	<28	<260	<67
Toxaphene	µg/kg	<110	<520	390	<79	<1500	<550	<5200	<1300
Mean-PEC-Q		**1.37**	**3.23**	**4.17**	**0.627**	**13.0**	**3.56**	**56.9**	**10.9**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T08L2	GC99T08L3	GC99T08R1	GC99T08R2	GC99T08RS IH-01	IHC99T09C1	IHC99T09CS
Depth	feet	5-9.5	9.5-10	0-5	5-10	0-0.33	0-0.33	0-0.33
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NA'	ND'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	T (100)	NA'	NA'
Overall Toxicity						**T**		
Conventionals								
Total organic carbon	%	8.6	6.6	1.7	0.13	12	2.3	3.1
Acid volatile sulfides	µmol/g	82.4	11.8	33.9	0.27	25.8	1.9	2.88
Oil and grease	mg/kg	23300	1100	95400	400	404000	800	7200
Metals								
Arsenic	mg/kg	230	110	34	3.4	55	16	17
Cadmium	mg/kg	34	34	5.3	<0.63	8.4	2.2	2
Chromium	mg/kg	47	41	14	2.5	110	150	100
Copper	mg/kg	390	360	68	2.5	200	59	48
Lead	mg/kg	3700	1700	9100	91	5600	180	140
Mercury	mg/kg	9.6	5.9	0.43	<0.13	1.7	0.38	0.37
Nickel	mg/kg	24	32	5.3	3.1	35	23	20
Selenium	mg/kg	<2.3	<2.9	<1.4	<1.3	<1.8	<1.4	<1.5
Zinc	mg/kg	5100	5900	960	29	1700	610	540
Total SEM metals	µmol/g	99.46	101.31	28.06	1.13	15.09	10.75	12.32
SEM-AVS	µmol/g	17.06	89.51	-5.84	0.86	-10.71	8.85	9.44

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T08L2	GC99T08L3	GC99T08R1	GC99T08R2	GC99T08RS IH-01	IHC99T09C1	IHC99T09CS
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<3800	<970	27000	<2100	200000	520	858
Acenaphthylene	µg/kg	4500	<970	<4600	<2100	<29000	960	1820
Anthracene	µg/kg	19000	380	18000	950	210000	920	2110
Benz(a)anthracene	µg/kg	12000	740	18000	1100	200000	3500	10100
Benzo(a)pyrene	µg/kg	6700	260	4700	370	53000	4300	9970
Chrysene	µg/kg	17000	1300	26000	1800	320000	7500	18500
Dibenz(a,h)anthracene	µg/kg	450	43	<460	<210	<2900	670	1550
Fluoranthene	µg/kg	NR	1200	11000	760	150000	5700	13700
Fluorene	µg/kg	19000	580	15000	<2100	190000	540	823
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	40000	<970	16000	<2100	220000	630	803
Phenanthrene	µg/kg	110000	6400	150000	8300	1800000	2100	3620
Pyrene	µg/kg	7100	440	<460	<210	<2900	4800	13500
Total PAHs[1]	µg/kg	235750	11343	285930	13385	3343000	32140	77354
Polychlorinated Biphenyls								
Total PCBs	µg/kg	<1330	<1680	<3220	<2940	<4060	1930	1690
Pesticides								
Chlordane	µg/kg	<154	<9.8	<92	<4.2	<1160	<46	<50
Sum DDD	µg/kg	<150	<9.7	<93	<4.2	<1200	<45	<51
Sum DDE	µg/kg	<150	<9.7	<93	<4.2	<1200	<45	<51
Sum DDT	µg/kg	<150	<9.7	<93	<4.2	<1200	<45	<51
Total DDTs[2]	µg/kg	NA	<29.1	NA	<12.6	NA	<45	<51
Dieldrin	µg/kg	<150	<9.7	<93	<4.2	<1200	<45	<51
Endrin	µg/kg	<150	<9.7	<93	<4.2	<1200	<45	<51

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		GC99T08L2	GC99T08L3	GC99T08R1	GC99T08R2	GC99T08RS IH-01	IHC99T09C1	IHC99T09CS
Pesticides (cont.)								
Heptachlor	µg/kg	<77	<4.9	<46	<2.1	<580	<23	<25
Heptachlor epoxide	µg/kg	<77	<4.9	<46	<2.1	<580	<23	<25
Lindane	µg/kg	<77	<4.9	<46	<2.1	<580	<23	<25
Toxaphene	µg/kg	<1500	<97	<930	<42	<12000	<450	<510
Mean-PEC-Q		**9.27**	**3.09**	**11.7**	**0.368**	**77.2**	**1.70**	**2.19**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T09L1	IHC99T09LS IH-13	IHC99T09R1	IHC99T10C1	IHC99T10CS	IHC99T10L1	IHC99T10R1
Depth	feet	0-4	0-0.33	0-5	0-5	0-0.33	0-5	0-3
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NT (1.72)	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	T (37)	NA'	NA'	NA'	NA'	NA'
Overall Toxicity			**T**					
Conventionals								
Total organic carbon	%	0.6	1.1	0.51	8.2	2.2	2	1.4
Acid volatile sulfides	µmol/g	1.38	1.23	0.67	43.6	9.28	113	1.3
Oil and grease	mg/kg	1200	200	300	20300	10500	10000	3300
Metals								
Arsenic	mg/kg	3.8	7.3	3.9	99	13	71	9.1
Cadmium	mg/kg	<0.63	1.9	<0.63	38	2	26	<0.64
Chromium	mg/kg	11	35	8.1	160	73	18	11
Copper	mg/kg	8.6	28	5.5	560	58	250	12
Lead	mg/kg	28	65	60	2000	140	980	59
Mercury	mg/kg	<0.13	0.17	<0.13	2.9	0.34	2	<0.13
Nickel	mg/kg	4.8	8.8	3.5	22	22	22	5.1
Selenium	mg/kg	<1.3	<1.3	<1.3	6.5	<1.4	<1.7	<1.3
Zinc	mg/kg	96	280	81	7500	660	2400	100
Total SEM metals	µmol/g	1.56	5.27	2.03	96.74	15.72	60.88	2.46
SEM-AVS	µmol/g	0.18	4.04	1.36	53.14	6.44	-52.12	1.16

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T09L1	IHC99T09LS IH-13	IHC99T09R1	IHC99T10C1	IHC99T10CS	IHC99T10L1	IHC99T10R1
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<210	140	<210	5400	6600	1500	<850
Acenaphthylene	µg/kg	<210	190	<210	1800	1300	880	320
Anthracene	µg/kg	55	230	NR	5000	2800	860	550
Benz(a)anthracene	µg/kg	320	1200	280	9000	7200	2900	3500
Benzo(a)pyrene	µg/kg	290	1200	260	6200	9300	1700	1900
Chrysene	µg/kg	520	2400	520	14000	10000	3000	8300
Dibenz(a,h)anthracene	µg/kg	91	69	77	660	NR	NR	NR
Fluoranthene	µg/kg	390	1500	300	23000	16000	NR	5300
Fluorene	µg/kg	<210	120	<210	6300	5100	260	<850
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<210	180	<210	4800	1100	760	<850
Phenanthrene	µg/kg	110	440	80	17000	10000	670	640
Pyrene	µg/kg	600	1900	450	18000	9700	6700	7600
Total PAHs[1]	µg/kg	2586	9569	2177	111160	79100	19230	28110
Polychlorinated Biphenyls								
Total PCBs	µg/kg	266	479	226	3530	1360	680	1260
Pesticides								
Chlordane	µg/kg	<4.2	<22	<4.2	<62	<24	<28	<22
Sum DDD	µg/kg	<4.2	<21	<4.2	<62	<24	<28	<21
Sum DDE	µg/kg	<4.2	<21	<4.2	<62	<24	<28	<21
Sum DDT	µg/kg	<4.2	3.1	0.46	<62	<24	<28	5.5
Total DDTs[2]	µg/kg	<12.6	24.1	4.66	<62	<72	<84	26.5
Dieldrin	µg/kg	<4.2	<11	<4.2	<62	<24	<28	<21
Endrin	µg/kg	<4.2	<21	<4.2	<62	<24	<28	<21

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T09L1	IHC99T09LS IH-13	IHC99T09R1	IHC99T10C1	IHC99T10CS	IHC99T10L1	IHC99T10R1
Pesticides (cont.)								
Heptachlor	µg/kg	<2.1	<11	<2.1	<31	<12	<14	<11
Heptachlor epoxide	µg/kg	<2.1	<11	<2.1	<31	<12	<14	<11
Lindane	µg/kg	<2.1	<11	<2.1	<31	<12	<14	<11
Toxaphene	µg/kg	<42	<210	<42	<620	<240	<280	<210
Mean-PEC-Q		**0.210**	**0.491**	**0.191**	**5.66**	**2.06**	**1.69**	**1.09**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T10RS IH-14	IHC99T12C1	IHC99T12C2	IHC99T12C3	IHC99T12CS	IHC99T12L1	IHC99T12L2
Depth	feet	0-0.33	0-5	5-10	0-14	0-0.33	0-5	5-10
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	ND'	NA'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	T (97)	NA'	NA'	NA'	NA'	NA'	NA'
Overall Toxicity		**T**						
Conventionals								
Total organic carbon	%	4.9	21	15	1.7	14	22	14
Acid volatile sulfides	µmol/g	23.4	840	469	5.51	59.9	301	63.5
Oil and grease	mg/kg	54800	204000	154000	1400	70200	227000	129000
Metals								
Arsenic	mg/kg	37	81	83	9.1	44	53	63
Cadmium	mg/kg	8.3	25	20	2.5	6.4	12	13
Chromium	mg/kg	53	2800	230	8.8	680	1500	90
Copper	mg/kg	130	410	170	14	240	230	100
Lead	mg/kg	420	3100	5400	100	770	2900	3600
Mercury	mg/kg	1.4	2.3	1.5	<0.14	0.84	1.8	2.3
Nickel	mg/kg	18	220	74	6.8	53	120	43
Selenium	mg/kg	<1.4	16	<2.8	<1.4	5.7	9.1	<2.3
Zinc	mg/kg	1300	5200	3600	400	2300	2800	2800
Total SEM metals	µmol/g	28.18	107.25	102.16	6.77	54.12	79.78	12.92
SEM-AVS	µmol/g	4.78	-732.75	-366.84	1.26	-5.78	-221.22	-50.58

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T10RS IH-14	IHC99T12C1	IHC99T12C2	IHC99T12C3	IHC99T12CS	IHC99T12L1	IHC99T12L2
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	<4500	36000	<4600	150	<9200	56000	<7700
Acenaphthylene	µg/kg	1700	<9700	<4600	<230	<9200	<6900	<7700
Anthracene	µg/kg	3500	<9700	25000	160	<9200	20000	12000
Benz(a)anthracene	µg/kg	15000	6700	39000	310	<9200	29000	33000
Benzo(a)pyrene	µg/kg	8800	5300	41000	400	3700	29000	37000
Chrysene	µg/kg	38000	13000	62000	450	4400	50000	48000
Dibenz(a,h)anthracene	µg/kg	1300	<9700	11000	<230	<9200	8600	9000
Fluoranthene	µg/kg	27000	9100	30000	420	<9200	27000	18000
Fluorene	µg/kg	2200	18000	22000	200	<9200	30000	12000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<4500	<9700	<4600	<230	<9200	<6900	<7700
Phenanthrene	µg/kg	3300	58000	140000	680	<9200	130000	94000
Pyrene	µg/kg	36000	20000	78000	850	4400	64000	53000
Total PAHs[1]	µg/kg	136800	166100	448000	3735	12500	443600	316000
Polychlorinated Biphenyls								
Total PCBs	µg/kg	5560	51700	<6440	368	6660	15200	<5390
Pesticides								
Chlordane	µg/kg	<90	<1940	<920	<4.6	<360	<1380	<380
Sum DDD	µg/kg	<89	<1900	<920	<4.6	<370	<1400	<380
Sum DDE	µg/kg	<89	<1900	<920	<4.6	<370	<1400	<380
Sum DDT	µg/kg	<89	<1900	<920	<4.6	<370	<1400	<380
Total DDTs[2]	µg/kg	NA	NA	NA	<13.8	NA	NA	NA
Dieldrin	µg/kg	<89	<1900	<920	<4.6	<370	<1400	<380
Endrin	µg/kg	<89	<1900	<920	<4.6	<370	<1400	<380

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T10RS IH-14	IHC99T12C1	IHC99T12C2	IHC99T12C3	IHC99T12CS	IHC99T12L1	IHC99T12L2
Pesticides (cont.)								
Heptachlor	µg/kg	<45	<970	<460	<2.3	<180	<690	<190
Heptachlor epoxide	µg/kg	<45	<970	<460	<2.3	<180	<690	<190
Lindane	µg/kg	<45	<970	<460	<2.3	<180	<690	<190
Toxaphene	µg/kg	<890	<19000	<9200	<46	<3700	<14000	<3800
Mean-PEC-Q		**5.25**	**31.5**	**14.2**	**0.367**	**4.54**	**16.4**	**9.87**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T12L3	IHC99T12LS IH-30	IHC99T12R1	IHC99T12R2	IHC99T11C1	IHC99T11C2	IHC99T11C3
Depth	feet	10-13.41	10-13.41	0-5	5-7.17	0-5	5-10	10-14.5
Biological Effects								
Hyalella azteca (10-d)	Growth (length-mm)	NA'	ND'	NA'	NA'	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	T (100)	NA'	NA'	NA'	NA'	NA'
Overall Toxicity			**T**					
Conventionals								
Total organic carbon	%	7	16	16	3.935	6.65	12	4.9
Acid volatile sulfides	µmol/g	7.76	111	175	110.79	50.65	49.5	29.3
Oil and grease	mg/kg	11400	60400	62400	1000	54200	107000	21300
Metals								
Arsenic	mg/kg	9.3	39	22	15.35	19.5	88	20
Cadmium	mg/kg	2.3	5.2	4.9	3.15	4.65	13	4
Chromium	mg/kg	60	560	440	274.85	240	130	16
Copper	mg/kg	28	190	72	42.85	85	170	38
Lead	mg/kg	310	740	1000	621.5	1300	10000	1600
Mercury	mg/kg	<0.14	0.83	0.6	0.2756	0.79	2.2	0.55
Nickel	mg/kg	13	46	37	22.65	34	44	7.9
Selenium	mg/kg	<1.4	<5	2.4	1.435	<1.4	<1.7	<1.4
Zinc	mg/kg	360	1800	1100	675.5	1200	3400	680
Total SEM metals	µmol/g	4.24	40.05	24.52	15.60	28.60	95.93	19.76
SEM-AVS	µmol/g	-3.52	-70.95	-150.48	-95.19	-22.05	46.43	-9.54

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T12L3	IHC99T12LS IH-30	IHC99T12R1	IHC99T12R2	IHC99T11C1	IHC99T11C2	IHC99T11C3
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	µg/kg	5400	<8300	<1800	3800	9300	<5700	7900
Acenaphthylene	µg/kg	<2200	<8300	<1800	<3700	<4800	<5700	<2300
Anthracene	µg/kg	3100	<8300	<1800	1625	5950	29000	6500
Benz(a)anthracene	µg/kg	4700	<8300	3000	3350	8150	45000	9700
Benzo(a)pyrene	µg/kg	5200	2700	<1800	1625	6300	44000	12000
Chrysene	µg/kg	8200	4200	4700	2800	13050	78000	12000
Dibenz(a,h)anthracene	µg/kg	<2200	<8300	<1800	725	2700	10000	3800
Fluoranthene	µg/kg	3500	<8300	3500	3490	8700	34000	8500
Fluorene	µg/kg	3400	<8300	5200	5020	7750	31000	8000
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<2200	<8300	<1800	425	1500	<5700	<2300
Phenanthrene	µg/kg	19000	2200	14000	18260	39500	90000	34000
Pyrene	µg/kg	9400	4700	12000	7825	19500	89000	13000
Total PAHs[1]	µg/kg	61900	13800	42400	48945	122400	450000	115400
Polychlorinated Biphenyls								
Total PCBs	µg/kg	1070	26300	3440	4010.5	13670	1500	1500
Pesticides								
Chlordane	µg/kg	<90	<820	<140	<360	<480	<114	<90
Sum DDD	µg/kg	25	<830	<140	<370	<480	<110	<90
Sum DDE	µg/kg	<89	120	<140	<370	<480	<110	<90
Sum DDT	µg/kg	<89	<830	<140	<370	<480	<110	<90
Total DDTs[2]	µg/kg	25	120	NA	NA	NA	NA	NA
Dieldrin	µg/kg	<89	<830	<140	<370	<480	<110	<90
Endrin	µg/kg	<89	<830	<140	<370	<480	<110	<90

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number						
		IHC99T12L3	IHC99T12LS IH-30	IHC99T12R1	IHC99T12R2	IHC99T11C1	IHC99T11C2	IHC99T11C3
Pesticides (cont.)								
Heptachlor	µg/kg	<45	<410	<70	<180	<240	<57	<45
Heptachlor epoxide	µg/kg	<45	<410	<70	<180	<240	<57	<45
Lindane	µg/kg	<45	<410	<70	<180	<240	<57	<45
Toxaphene	µg/kg	<890	<8300	<1400	<3700	<4800	<1100	<900
Mean-PEC-Q		**1.67**	**7.60**	**3.13**	**3.20**	**6.00**	**11.8**	**3.19**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		IHC99T11CS	IHC99T11L1	IHC99T11R1	IHC99T11R2	IHC99T11RS IH-29	LG99S08 IH-26	LG99S09 IH-25	LG99T13C1
Depth	feet	0-0.33	0-2	0-5	5-9.67	0-0.33	0-0.33	0-0.33	0-4.75
Biological Effects									
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NA'	ND'	NT (2.87)	ND'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	T (100)	NT (5)	T (100)	NA'
Overall Toxicity						**T**	**NT**	**T**	
Conventionals									
Total organic carbon	%	3.6	5	2.1	3.5	1.8	3.6	2	4
Acid volatile sulfides	µmol/g	43.4	33.9	15.5	15	13.1	0.08	17.6	23.2
Oil and grease	mg/kg	20200	21400	13100	25500	7500	19700	6000	17300
Metals									
Arsenic	mg/kg	11	16	6.5	10	89	3.3	64	21
Cadmium	mg/kg	1.7	2.6	1.2	1.3	12	<0.67	<1	4.1
Chromium	mg/kg	160	190	72	13	59	5.6	41	17
Copper	mg/kg	49	65	25	18	130	4.1	58	40
Lead	mg/kg	330	880	370	1000	5200	11	130	580
Mercury	mg/kg	0.23	0.44	0.27	0.31	1.6	<0.13	<0.2	0.24
Nickel	mg/kg	19	26	13	9	12	3.5	340	11
Selenium	mg/kg	<1.4	1.4	<1.3	<1.3	<1.2	<1.3	2.4	<2.3
Zinc	mg/kg	590	810	320	290	4700	41	200	750
Total SEM metals	µmol/g	11.86	20.97	7.85	9.08	15.49	464.75	3.07	18.00
SEM-AVS	µmol/g	-31.54	-12.93	-7.65	-5.92	2.39	464.67	-14.53	-5.21

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		IHC99T11CS	IHC99T11L1	IHC99T11R1	IHC99T11R2	IHC99T11RS IH-29	LG99S08 IH-26	LG99S09 IH-25	LG99T13C1
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<2300	2300	4500	5300	6100	<440	<660	<1900
Acenaphthylene	µg/kg	<2300	<1100	<1000	650	<2000	<440	<660	<1900
Anthracene	µg/kg	2200	<1100	3600	7800	3500	<440	200	<1900
Benz(a)anthracene	µg/kg	3500	3000	3800	16000	4700	<440	500	<1900
Benzo(a)pyrene	µg/kg	4100	<1100	<1000	<1000	5500	<440	<660	5600
Chrysene	µg/kg	6100	4500	5900	19000	6800	<440	1100	4600
Dibenz(a,h)anthracene	µg/kg	1000	<1100	<1000	<1000	1600	<440	<660	<1900
Fluoranthene	µg/kg	4100	2800	3800	6300	4600	<440	190	3300
Fluorene	µg/kg	1700	2500	4800	7300	3800	<440	<660	1600
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<2300	<1100	<1000	<1000	<2000	<440	<660	<1900
Phenanthrene	µg/kg	5900	9600	18000	37000	18000	<440	310	3900
Pyrene	µg/kg	7500	10000	14000	34000	7400	<440	1000	8300
Total PAHs[1]	µg/kg	36100	35250	58900	133850	62000	<3960	3630	27300
Polychlorinated Biphenyls									
Total PCBs	µg/kg	8380	2130	1300	520	1310	<770	565	<1330
Pesticides									
Chlordane	µg/kg	<220	<440	<82	<420	<82	<4.4	<6.6	<150
Sum DDD	µg/kg	<230	<430	<83	<420	<81	<4.4	<6.6	<150
Sum DDE	µg/kg	<230	<430	<83	<420	<81	<4.4	1.9	<150
Sum DDT	µg/kg	<230	<430	<83	<420	<81	<4.4	2	<150
Total DDTs[2]	µg/kg	NA	NA	NA	NA	NA	<13.2	7.2	NA
Dieldrin	µg/kg	<230	<430	<83	<420	<81	<4.4	<6.6	<150
Endrin	µg/kg	<230	<430	<83	<420	<81	<4.4	<6.6	<150

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		IHC99T11CS	IHC99T11L1	IHC99T11R1	IHC99T11R2	IHC99T11RS IH-29	LG99S08 IH-26	LG99S09 IH-25	LG99T13C1
Pesticides (cont.)									
Heptachlor	µg/kg	<110	<220	<41	<210	<41	<2.2	<3.3	<75
Heptachlor epoxide	µg/kg	<110	<220	<41	<210	<41	<2.2	<3.3	<75
Lindane	µg/kg	<110	<220	<41	<210	<41	<2.2	<3.3	<75
Toxaphene	µg/kg	<2300	<4300	<830	<4200	<810	<44	<66	<1500
Mean-PEC-Q		**2.91**	**2.15**	**1.75**	**2.66**	**4.30**	**0.0786**	**0.867**	**1.19**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		LG99T13CS	LG99T13L1	LG99T13R1	LG99T13R2	LG99T13RS IH-28	LG99T14C1	LG99T14CS	LG99T14L1
Depth	feet	0-0.33	0-4.75	0-5	5-8.33	0-0.33	0-3.42	0-0.33	0-0.33
Biological Effects									
Hyalella azteca (10-d)	Growth (length-mm)	NA'	NA'	NA'	NA'	NT (2.26)	NA'	NA'	NA'
Hyalella azteca (10-d)	Mortality (%)	NA'	NA'	NA'	NA'	NT (20)	NA'	NA'	NA'
Overall Toxicity						**NT**			
Conventionals									
Total organic carbon	%	9.75	1.1	4.3	0.75	6.7	3	7.6	1.5
Acid volatile sulfides	µmol/g	237.5	2.51	16.6	1.38	94.9	NR	20.2	13.3
Oil and grease	mg/kg	34400	1100	17100	500	19800	NR	11000	6200
Metals									
Arsenic	mg/kg	33.5	2.7	19	2.3	42	14	28	9.4
Cadmium	mg/kg	<3.6	<0.63	3.3	<0.62	<2.4	1.8	<4.5	1.2
Chromium	mg/kg	75	3.3	35	3.1	57	15	76	8.4
Copper	mg/kg	170	2.8	71	2.4	99	29	130	17
Lead	mg/kg	515	12	380	8.7	330	330	460	210
Mercury	mg/kg	1.3	<.013	0.33	<0.12	0.63	<0.2	0.96	<0.15
Nickel	mg/kg	80	3.3	23	3.2	120	10	31	6.5
Selenium	mg/kg	<7.1	<1.3	<2.4	<1.2	<4.8	<2	13	<1.5
Zinc	mg/kg	545	21	500	32	420	320	690	230
Total SEM metals	µmol/g	10.34	0.58	5.32	0.59	7.56	0.00	5.26	0.54
SEM-AVS	µmol/g	-227.16	-1.93	-11.28	-0.79	-87.34	0.00	-14.94	-12.76

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		LG99T13CS	LG99T13L1	LG99T13R1	LG99T13R2	LG99T13RS IH-28	LG99T14C1	LG99T14CS	LG99T14L1
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	µg/kg	<5900	<1000	<2000	<200	<3900	460	<7500	<1200
Acenaphthylene	µg/kg	<5900	<1000	<2000	<200	<3900	<1700	<7500	<1200
Anthracene	µg/kg	<5900	<1000	<2000	<200	<3900	910	<7500	650
Benz(a)anthracene	µg/kg	1100	<1000	1700	<200	720	1900	<7500	1500
Benzo(a)pyrene	µg/kg	<5900	<1000	<2000	<200	<3900	2800	<7500	2100
Chrysene	µg/kg	1850	<1000	2800	76	1300	2400	<7500	1900
Dibenz(a,h)anthracene	µg/kg	<5900	<1000	<2000	<200	<3900	<1700	<7500	<1200
Fluoranthene	µg/kg	2025	<1000	1500	51	880	1400	<7500	1000
Fluorene	µg/kg	<5900	<1000	610	<200	<3900	<1700	<7500	<1200
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<5900	<1000	<2000	<200	<3900	<1700	<7500	<1200
Phenanthrene	µg/kg	<5900	<1000	670	<200	<3900	2600	<7500	2100
Pyrene	µg/kg	2850	370	5000	120	1700	4600	2000	3100
Total PAHs[1]	µg/kg	7825	2870	12280	847	4600	17070	2000	12350
Polychlorinated Biphenyls									
Total PCBs	µg/kg	4100	<700	<1400	<700	<2730	<1190	2500	<840
Pesticides									
Chlordane	µg/kg	<480	<4.2	<158	<4	<320	<134	<600	<98
Sum DDD	µg/kg	<470	<4.1	<160	<4.1	<310	<130	<600	<99
Sum DDE	µg/kg	<470	<4.1	140	27	27	<130	<600	<99
Sum DDT	µg/kg	<470	<4.1	<160	<4.1	<310	<130	<600	<99
Total DDTs[2]	µg/kg	NA	<12.3	140	31.1	27	NA	NA	NA
Dieldrin	µg/kg	<470	<4.1	<160	<4.1	<310	<130	<600	<99
Endrin	µg/kg	<470	<4.1	<160	<4.1	<310	<130	<600	<99

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number							
		LG99T13CS	LG99T13L1	LG99T13R1	LG99T13R2	LG99T13RS IH-28	LG99T14C1	LG99T14CS	LG99T14L1
Pesticides (cont.)									
Heptachlor	µg/kg	<240	<2.1	<79	<2	<160	<67	<300	<49
Heptachlor epoxide	µg/kg	<240	<2.1	<79	<2	<160	<67	<300	<49
Lindane	µg/kg	<240	<2.1	<79	<2	<160	<67	<300	<49
Toxaphene	µg/kg	<4700	<41	<1600	<41	<3100	<1300	<6000	<990
Mean-PEC-Q		**1.60**	**0.0916**	**0.738**	**0.0457**	**0.719**	**0.703**	**1.67**	**0.484**

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		LG99T14LS IH-27	**LG99T14R1**	**LP99S17 IH-31**	**LP99S18 IH-32**	**ML99S12 IH-22**	**ML99S13 IH-21**	**ML99S14 IH-20**	**ML99S11 IH-23**	**ML99S10 IH-24**
Depth	feet	0-0.33	0-3.67	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33
Biological Effects										
Hyalella azteca (10-d)	Growth (length-mm)	NT (2.4)	NA'	NT (2.66)	NT (2.68)	NT (2.8)	NT (2.86)	NT (2.63)	NT (2.42)	NT (2.59)
Hyalella azteca (10-d)	Mortality (%)	NT (7)	NA'	NT (2)	NT (15)	NT (12)	NT (10)	NT (10)	NT (30)	NT (7)
Overall Toxicity		**NT**		**NT**	**NT**	**NT**	**NT**	**NT**	**NT**	**NT**
Conventionals										
Total organic carbon	%	17	3.1	11	11	13	11	13	9.9	13
Acid volatile sulfides	µmol/g	155	51.7	16.1	2.2	45.1	94.2	73.8	56.45	14.4
Oil and grease	mg/kg	53700	7900	1400	1800	3700	3200	1000	4000	20000
Metals										
Arsenic	mg/kg	27	11	4.2	4.9	78	73	74	73	20
Cadmium	mg/kg	<4.5	1.5	<1.9	<1.9	<2.9	<2.5	<2.6	<2.8	<1.8
Chromium	mg/kg	74	14	26	22	27	25	44	17	35
Copper	mg/kg	130	25	26	15	20	18	26	20.5	42
Lead	mg/kg	420	220	13	8.2	91	78	110	110	180
Mercury	mg/kg	<0.91	<0.19	<0.38	<0.37	<0.59	<0.5	<0.53	<0.56	<0.36
Nickel	mg/kg	30	9.3	18	10	<12	<10	<11	<11	12
Selenium	mg/kg	<9.1	<1.9	<3.8	<3.7	<5.9	<5	<5.3	<5.6	<3.6
Zinc	mg/kg	610	290	60	46	260	210	390	220	350
Total SEM metals	µmol/g	13.42	5.75	1.75	1.36	11.34	4.83	8.26	5.82	9.47
SEM-AVS	µmol/g	-141.58	-45.95	-14.35	-0.84	-33.76	-89.37	-65.54	-50.63	-4.93

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		LG99T14LS IH-27	LG99T14R1	LP99S17 IH-31	LP99S18 IH-32	ML99S12 IH-22	ML99S13 IH-21	ML99S14 IH-20	ML99S11 IH-23	ML99S10 IH-24
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	<7500	<1600	<6300	<6100	<4900	420	440	<1800	<2900
Acenaphthylene	µg/kg	<7500	<1600	<6300	<6100	<4900	<1700	<1700	<1800	<2900
Anthracene	µg/kg	<7500	720	<6300	<6100	<4900	480	440	<1800	980
Benz(a)anthracene	µg/kg	<7500	1700	<6300	<6100	<4900	1400	1500	660	4400
Benzo(a)pyrene	µg/kg	<7500	2500	<6300	<6100	1600	2500	2700	895	6300
Chrysene	µg/kg	<7500	2500	<6300	<6100	1300	1600	1800	660	5800
Dibenz(a,h)anthracene	µg/kg	<7500	<1600	<6300	<6100	<4900	<1700	<1700	<1800	<2900
Fluoranthene	µg/kg	<7500	1400	<6300	<6100	2200	2900	3100	1145	12000
Fluorene	µg/kg	<7500	<1600	<6300	<6100	<4900	<1700	460	<1800	<2900
2-Methylnaphthalene	µg/kg	NR	NR	NR	<6100	NR	NR	NR	NR	NR
Naphthalene	µg/kg	<7500	<1600	<6300	<6100	<4900	610	620	<1800	<2900
Phenanthrene	µg/kg	<7500	1900	<6300	<36600	<4900	1100	460	620	4600
Pyrene	µg/kg	2300	4400	<6300	<36600	2000	2600	2700	1085	9200
Total PAHs[1]	µg/kg	2300	15120	NA	NA	7100	13610	14220	5065	43280
Polychlorinated Biphenyls										
Total PCBs	µg/kg	2500	532	<2240	<310	356	312	441	456	247
Pesticides										
Chlordane	µg/kg	<150	<124	<12.6	<120	<19.4	<16.6	<17.4	<18.4	55
Sum DDD	µg/kg	<150	<120	<13	<1200	<19	<17	<17	<18	23
Sum DDE	µg/kg	41	23	<13	<240	<19	<17	<17	<18	81
Sum DDT	µg/kg	<150	<120	0.92	<240	3.7	3.4	10	8.45	23
Total DDTs[2]	µg/kg	41	23	13.92	NA	22.7	20.4	27	26.45	127
Dieldrin	µg/kg	<150	<120	<13	<120	<19	<17	<17	<18	<59
Endrin	µg/kg	<150	<120	<13	<240	<19	<17	<17	<18	<59

Appendix 4.9. Sediment chemistry and biological effects data for the Assessment Area, IN (January-March 1999; Maxim Technologies 1999; USGS 1999).

Toxicity Test/Substance	Endpoint/Units	Station Number								
		LG99T14LS IH-27	LG99T14R1	LP99S17 IH-31	LP99S18 IH-32	ML99S12 IH-22	ML99S13 IH-21	ML99S14 IH-20	ML99S11 IH-23	ML99S10 IH-24
Pesticides (cont.)										
Heptachlor	µg/kg	<75	<62	<6.3	<240	<9.7	<8.3	<8.7	<9.2	<29
Heptachlor epoxide	µg/kg	<75	<62	<6.3	<120	<9.7	<8.3	<8.7	<9.2	<29
Lindane	µg/kg	<75	<62	<6.3	<120	<9.7	<8.3	<8.7	<9.2	<29
Toxaphene	µg/kg	<1500	<1200	<130	<2400	<190	<170	<170	<180	<590
Mean-PEC-Q		**1.65**	**0.649**	**0.190**	**0.144**	**0.490**	**0.542**	**0.659**	**0.501**	**0.935**

[1] Total PAHs are calculated using all values except those with a detection limit >PEC.

[2] Total DDTs are calculated using all values except those with a detection limit >PEC.

NR = not reported; NT = not toxic; T = toxic.

NA = not applicable (i.e., all <DL values were >PEC; therefore total was not calculated)

NA' = not applicable (i.e., toxicity test or chemical analyses not performed).

ND' = toxicity not determined because mortality was >40%.

Appendix V

Tissue Chemistry Data

Appendix 5.1. Tissue chemistry data for the Grand Calumet River, IN near the East Branch and West Branch Confluence (September 1982; IDEM 1994).

Substance	Units	Station Number/Sample Preparation	
		477	**478**
		Whole	**Whole**
Group		3 Carp	3 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*
Conventionals			
Lipid	%	8.03	8.8
Metals			
Arsenic	mg/kg	0.202	0.192
Cadmium	mg/kg	NR	<0.03
Chromium	mg/kg	0.38	0.51
Copper	mg/kg	0.82	1.34
Lead	mg/kg	0.58	0.79
Zinc	mg/kg	70	130
Polychlorinated Biphenyls			
Total PCBs	µg/kg	12504	4633
Pesticides			
Aldrin	µg/kg	ND	ND
Chlordane-alpha	µg/kg	65	74
Chlordane-gamma	µg/kg	377	199
Chlordane-total	µg/kg	442	273
o,p'-DDD	µg/kg	ND	ND
p,p'-DDD	µg/kg	189	172
Sum DDD	µg/kg	189	172
o,p'-DDE	µg/kg	ND	ND
p,p'-DDE	µg/kg	1296	322

Appendix 5.1. Tissue chemistry data for the Grand Calumet River, IN near the East Branch and West Branch Confluence (September 1982; IDEM 1994).

Substance	Units	Station Number/Sample Preparation	
		477 Whole	478 Whole
Pesticides (cont.)			
Sum DDE	µg/kg	1296	322
o,p'-DDT	µg/kg	ND	ND
p,p'-DDT	µg/kg	ND	ND
Sum DDT	µg/kg	ND	ND
Total DDTs	µg/kg	1485	494
Dieldrin	µg/kg	ND	ND
Endrin	µg/kg	ND	ND
Heptachlor	µg/kg	ND	ND
Heptachlor epoxide	µg/kg	ND	ND
Hexachlorobenzene	µg/kg	ND	88
Hexachlorocyclohexane-alpha	µg/kg	3	13
Hexachlorocyclohexane-beta	µg/kg	3	11
Hexachlorocyclohexane-delta	µg/kg	ND	ND
Lindane (gamma-BHC)	µg/kg	ND	ND
Methoxychlor	µg/kg	ND	ND
cis-Nonachlor	µg/kg	31	ND
trans-Nonachlor	µg/kg	65	26
Oxychlordane	µg/kg	1	ND
Pentachloroanisole	µg/kg	10	ND

ND = compounds were measured as less than the detection limit, but the detection limit is unknown; NR = not reported.

Appendix 5.2. Tissue chemistry data for the East Branch Grand Calumet River, IN; near Kennedy Avenue (October 1984; IDEM 1994).

Substance	Units	Station Number/Sample Preparation	
		199 Whole	70602947 Whole
Group		5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*
Conventionals			
Benzene	µg/kg	NR	26
Dibenzofuran	µg/kg	NR	<660
Phenol	µg/kg	NR	<660
Lipid	%	7.35	7.8
Metals			
Aluminum	mg/kg	NR	<0.01
Antimony	mg/kg	NR	<0.002
Arsenic	mg/kg	0.146	NR
Barium	mg/kg	NR	<0.005
Beryllium	mg/kg	NR	<0.001
Cadmium	mg/kg	0.03	<0.001
Calcium	mg/kg	NR	15.9
Chromium	mg/kg	0.39	<0.001
Cobalt	mg/kg	NR	<0.005
Copper	mg/kg	0.86	<0.003
Iron	mg/kg	NR	0.057
Lead	mg/kg	0.25	0.002
Magnesium	mg/kg	NR	0.46
Manganese	mg/kg	NR	0.002
Mercury	mg/kg	<0.014	NR
Nickel	mg/kg	NR	<0.004
Potassium	mg/kg	NR	2.78
Selenium	mg/kg	NR	<0.001
Silver	mg/kg	NR	<0.001
Sodium	mg/kg	NR	1.22

Appendix 5.2. Tissue chemistry data for the East Branch Grand Calumet River, IN; near Kennedy Avenue (October 1984; IDEM 1994).

Substance	Units	Station Number/Sample Preparation	
		199 Whole	70602947 Whole
Metals (cont.)			
Thallium	mg/kg	NR	<0.002
Vanadium	mg/kg	NR	<0.005
Zinc	mg/kg	67	0.099
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	µg/kg	NR	170
Acenaphthylene	µg/kg	NR	<660
Anthracene	µg/kg	NR	<660
Benz(a)anthracene	µg/kg	NR	<660
Benzo(a)pyrene	µg/kg	NR	<660
Benzo(b)fluoranthene	µg/kg	NR	<660
Benzo(k)fluoranthene	µg/kg	NR	<660
Chrysene	µg/kg	NR	<660
Dibenz(a,h)anthracene	µg/kg	NR	<660
Fluoranthene	µg/kg	NR	<660
Fluorene	µg/kg	NR	<660
Indeno(1,2,3-cd)pyrene	µg/kg	NR	<660
Naphthalene	µg/kg	NR	<660
Phenanthrene	µg/kg	NR	<660
Pyrene	µg/kg	NR	<660
Polychlorinated Biphenyls			
Total PCBs	µg/kg	5868	NR
Pesticides			
Aldrin	µg/kg	ND	NR
Chlordane-alpha	µg/kg	ND	NR
Chlordane-gamma	µg/kg	9	NR
Chlordane-total	µg/kg	9	NR

Appendix 5.2. Tissue chemistry data for the East Branch Grand Calumet River, IN; near Kennedy Avenue (October 1984; IDEM 1994).

Substance	Units	Station Number/Sample Preparation	
		199 Whole	70602947 Whole
Pesticides (cont.)			
o,p'-DDD	µg/kg	ND	NR
p,p'-DDD	µg/kg	66	NR
Sum DDD	µg/kg	66	NR
o,p'-DDE	µg/kg	ND	NR
p,p'-DDE	µg/kg	151	NR
Sum DDE	µg/kg	151	NR
o,p'-DDT	µg/kg	ND	NR
p,p'-DDT	µg/kg	ND	NR
Sum DDT	µg/kg	ND	NR
Total DDTs	µg/kg	217	NR
Dieldrin	µg/kg	10	NR
Endrin	µg/kg	ND	NR
Heptachlor	µg/kg	ND	NR
Heptachlor epoxide	µg/kg	10	NR
Hexachlorobenzene	µg/kg	14	NR
Hexachlorocyclohexane-alpha	µg/kg	1	NR
Hexachlorocyclohexane-beta	µg/kg	ND	NR
Hexachlorocyclohexane-delta	µg/kg	ND	NR
Lindane (gamma-BHC)	µg/kg	3	NR
Methoxychlor	µg/kg	ND	NR
cis-Nonachlor	µg/kg	14	NR
trans-Nonachlor	µg/kg	20	NR
Oxychlordane	µg/kg	2	NR
Unclassified			
Pentachloroanisole	µg/kg	18	NR

ND = compounds were measured as less than the detection limit, but the detection limit is unknown; NR = not reported.

Appendix 5.3. Tissue chemistry data for the East Branch and West Branch Grand Calumet River, IN (June 1986; IDEM 1994).

Substance	Units	Station Number/Sample Preparation			
		80502396 Whole	**80502398 Whole**	**80502399 Whole**	**80502404 Whole**
Group		3 Carp	4 Carp	4 Carp	3 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Conventionals					
Benzene	µg/kg	5	15	20	120
Dibenzofuran	µg/kg	350	1200	610	1700
Phenol	µg/kg	<660	<660	<660	<660
Lipid	%	13.3	14.5	9.3	13.5
Metals					
Aluminum	mg/kg	22.2	25.3	<20	24.2
Antimony	mg/kg	<2	<2	<2	<2
Arsenic	mg/kg	<1	<1	<1	<1
Barium	mg/kg	<5	<5	<5	<5
Beryllium	mg/kg	<0.5	<0.5	<0.5	<0.5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5
Calcium	mg/kg	6450	4310	6670	8930
Chromium	mg/kg	0.6	<1	<1	1
Cobalt	mg/kg	<5	<5	<5	<5
Copper	mg/kg	2.3	3.9	3.6	2.7
Iron	mg/kg	79	67.1	121	480
Lead	mg/kg	<0.5	<0.5	<0.5	1.7
Magnesium	mg/kg	430	220	280	280
Manganese	mg/kg	0.8	<1.5	1.7	7.6
Mercury	mg/kg	0.142	0.17	0.19	0.224
Nickel	mg/kg	<4	<4	<4	<4
Potassium	mg/kg	2580	2310	2650	2120
Selenium	mg/kg	<1	<1	<1	<1
Silver	mg/kg	<0.5	<0.5	<0.5	<0.5
Sodium	mg/kg	700	690	810	690
Thallium	mg/kg	<2	<2	<2	<2

Appendix 5.3. Tissue chemistry data for the East Branch and West Branch Grand Calumet River, IN (June 1986; IDEM 1994).

Substance	Units	Station Number/Sample Preparation			
		80502396 Whole	80502398 Whole	80502399 Whole	80502404 Whole
Metals (cont.)					
Vanadium	mg/kg	<5	<5	<5	<5
Zinc	mg/kg	63	52.4	56	80.3
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	µg/kg	<1100	2000	1500	4300
Acenaphthylene	µg/kg	<660	<660	100	310
Anthracene	µg/kg	<660	<660	<660	<660
Benz(a)anthracene	µg/kg	<660	<660	<660	<660
Benzo(a)pyrene	µg/kg	<660	<660	<660	<660
Benzo(b)fluoranthene	µg/kg	<660	<660	<660	<660
Benzo(k)fluoranthene	µg/kg	<660	<660	<660	<660
Chrysene	µg/kg	<660	<660	<660	<660
Dibenz(a,h)anthracene	µg/kg	<660	<660	<660	<660
Fluoranthene	µg/kg	190	350	150	<660
Fluorene	µg/kg	260	<660	380	870
Indeno(1,2,3-cd)pyrene	µg/kg	<660	<660	<660	<660
Naphthalene	µg/kg	<660	<660	220	1500
Phenanthrene	µg/kg	170	480	290	720
Pyrene	µg/kg	120	<660	<660	<660
Polychlorinated Biphenyls					
Total PCBs	µg/kg	5100	5500	5100	9700
Pesticides					
Aldrin	µg/kg	<248	26	<248	22
Chlordane-alpha	µg/kg	19	121	54	98
Chlordane-gamma	µg/kg	9	77	38	53
Chlordane-total	µg/kg	28	198	92	151
o,p'-DDD	µg/kg	11	<10	<10	<10
p,p'-DDD	µg/kg	106	345	148	460

Appendix 5.3. Tissue chemistry data for the East Branch and West Branch Grand Calumet River, IN (June 1986; IDEM 1994).

Substance	Units	Station Number/Sample Preparation			
		80502396 Whole	80502398 Whole	80502399 Whole	80502404 Whole
Pesticides (cont.)					
Sum DDD	µg/kg	117	350	153	465
o,p'-DDE	µg/kg	37	90	38	61
p,p'-DDE	µg/kg	855	1200	840	2600
Sum DDE	µg/kg	892	1290	878	2661
o,p'-DDT	µg/kg	<10	<10	<10	<10
p,p'-DDT	µg/kg	15	<10	<10	221
Sum DDT	µg/kg	20	<20	<20	226
Total DDTs	µg/kg	1029	1645	1036	3352
Dieldrin	µg/kg	43	126	65	185
Endosulfan sulfate	µg/kg	<20	<20	<20	<20
Endosulfan-alpha	µg/kg	<20	<20	<20	<20
Endosulfan-beta	µg/kg	<20	<20	<20	<20
Endrin	µg/kg	<10	31	<10	41
Endrin aldehyde	µg/kg	<10	<10	<10	<10
Endrin ketone	µg/kg	<10	<10	<10	<10
Heptachlor	µg/kg	<248	<248	<248	<808
Heptachlor epoxide	µg/kg	<8	16	<8	24
Hexachlorobenzene	µg/kg	<10	<10	<10	11
Hexachlorocyclohexane-alpha	µg/kg	<8	<8	<8	8
Hexachlorocyclohexane-beta	µg/kg	<8	<8	<8	<8
Hexachlorocyclohexane-delta	µg/kg	<8	<8	<8	<8
Lindane (gamma-BHC)	µg/kg	<8	<8	<8	<8
Methoxychlor	µg/kg	<20	<20	<20	<20
cis-Nonachlor	µg/kg	11	57	19	40
trans-Nonachlor	µg/kg	14	86	34	59
Oxychlordane	µg/kg	<8	20	12	27
Unclassified					
Pentachloroanisole	µg/kg	<8	<8	<8	<8

Appendix 5.4. Tissue chemistry data for the East Branch Grand Calumet River, IN (July 1987; IDEM 1994).

Substance	Units	Station Number/Sample Preparation					
		80502406 Whole	**80502407 Whole**	**80502408 Whole**	**80502409 Whole**	**80502410 Whole**	**80502411 Whole**
Group		2 Carp	16 Golden Shiners	10 Pumpkinseed	4 Carp	1 Carp	14 Golden Shiners
Species		*Cyprinus carpio*	*Notemigonus crysoleucas*	*Lepomis gibbosus*	*Cyprinus carpio*	*Cyprinus carpio*	*Notemigonus crysoleucas*
Conventionals							
Benzene	µg/kg	9	19	7	5	17	22
Dibenzofuran	µg/kg	200	300	90	250	250	770
Phenol	µg/kg	<660	<660	<660	<660	<660	<660
Lipid	%	5.8	3.7	1.5	8.3	4.7	1.6
Metals							
Aluminum	mg/kg	122	49.9	<20	31.6	<20	75.7
Antimony	mg/kg	<2	<2	<2	<2	<2	<2
Arsenic	mg/kg	<1	<1	<1	<1	<1	<1
Barium	mg/kg	<5	<5	<5	<5	<5	<5
Beryllium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Calcium	mg/kg	5200	12900	14600	7420	5950	11000
Chromium	mg/kg	1	1.7	<1	1.5	<1	1.7
Cobalt	mg/kg	<5	<5	<5	<5	<5	<5
Copper	mg/kg	2.5	<2.5	<2.5	<2.5	4	4.9
Iron	mg/kg	285	487	151	392	45.7	1080
Lead	mg/kg	2.6	1.8	<0.5	1.6	<0.5	8.9
Magnesium	mg/kg	290	470	450	280	270	440
Manganese	mg/kg	3.5	6.7	3.6	4.4	<1.5	17.3
Mercury	mg/kg	0.052	0.029	<0.025	0.05	0.045	0.031
Nickel	mg/kg	<4	<4	<4	<4	<4	<4.0
Potassium	mg/kg	2450	2880	2830	2370	2450	2490
Selenium	mg/kg	<1	<1	<1	<1	<1	<1
Silver	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sodium	mg/kg	800	880	1120	810	830	760
Thallium	mg/kg	<2	<2	<2	<2	<2	<2

Appendix 5.4. Tissue chemistry data for the East Branch Grand Calumet River, IN (July 1987; IDEM 1994).

Substance	Units	Station Number/Sample Preparation					
		80502406 Whole	80502407 Whole	80502408 Whole	80502409 Whole	80502410 Whole	80502411 Whole
Metals (cont.)							
Vanadium	mg/kg	<5	<5	<5	<5	<5	<5
Zinc	mg/kg	86	45	28.8	62	122	49.8
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	640	510	140	690	610	1200
Acenaphthylene	µg/kg	31	<660	<660	45	<660	<660
Anthracene	µg/kg	<660	<660	<660	<660	<660	<660
Benz(a)anthracene	µg/kg	<660	<660	<660	<660	<660	<660
Benzo(a)pyrene	µg/kg	<660	<660	<660	<660	<660	<660
Benzo(b)fluoranthene	µg/kg	<660	<660	<660	<660	<660	<660
Benzo(k)fluoranthene	µg/kg	<660	<660	<660	<660	<660	240
Chrysene	µg/kg	<660	<660	<660	<660	<660	<660
Dibenz(a,h)anthracene	µg/kg	<660	<660	<660	<660	<660	<660
Fluoranthene	µg/kg	200	220	130	<660	<660	490
Fluorene	µg/kg	200	210	60	<660	180	470
Indeno(1,2,3-cd)pyrene	µg/kg	<660	<660	<660	<660	<660	<660
Naphthalene	µg/kg	73	81	20	<660	83	290
Phenanthrene	µg/kg	<660	210	80	<660	<660	470
Pyrene	µg/kg	<660	180	50	290	<660	<660
Polychlorinated Biphenyls							
Total PCBs	µg/kg	4300	2900	NR	4700	3300	NR
Pesticides							
Aldrin	µg/kg	16	<101	NR	33	<168	NR
Chlordane-alpha	µg/kg	11	<17	NR	14	<8	NR
Chlordane-gamma	µg/kg	11	<17	NR	15	<8	NR
Chlordane-total	µg/kg	22	<34	NR	29	<16	
o,p'-DDD	µg/kg	<10	<21	NR	<10	<10	NR
p,p'-DDD	µg/kg	36	<21	NR	30	<10	NR

Appendix 5.4. Tissue chemistry data for the East Branch Grand Calumet River, IN (July 1987; IDEM 1994).

Substance	Units	Station Number/Sample Preparation					
		80502406 Whole	80502407 Whole	80502408 Whole	80502409 Whole	80502410 Whole	80502411 Whole
Pesticides (cont.)							
Sum DDD	µg/kg	41	<42	NR	35	<20	NR
o,p'-DDE	µg/kg	17	<21	NR	23	<10	NR
p,p'-DDE	µg/kg	<210	<126	NR	19	<210	NR
Sum DDE	µg/kg	122	<147	NR	42	<220	NR
o,p'-DDT	µg/kg	<10	<21	NR	<10	<10	NR
p,p'-DDT	µg/kg	<10	<21	NR	<10	<10	NR
Sum DDT	µg/kg	<20	<42	NR	<20	<20	NR
Total DDTs	µg/kg	173	<231	NR	87	<260	NR
Dieldrin	µg/kg	<10	<21	NR	24	<10	NR
Endosulfan sulfate	µg/kg	<20	<42	NR	<20	<20	NR
Endosulfan-alpha	µg/kg	<20	<42	NR	<20	<20	NR
Endosulfan-beta	µg/kg	<20	<42	NR	<20	<20	NR
Endrin	µg/kg	<10	<21	NR	<10	<10	NR
Endrin aldehyde	µg/kg	<10	<21	NR	<10	<10	NR
Endrin ketone	µg/kg	<10	<21	NR	<10	<10	NR
Heptachlor	µg/kg	<168	<101	NR	<248	<168	NR
Heptachlor epoxide	µg/kg	<8	<17	NR	14	<8	NR
Hexachlorobenzene	µg/kg	<10	<21	NR	<10	<10	NR
Hexachlorocyclohexane-alpha	µg/kg	<8	<17	NR	<8	<8	NR
Hexachlorocyclohexane-beta	µg/kg	<8	<17	NR	<8	<8	NR
Hexachlorocyclohexane-delta	µg/kg	<8	<17	NR	<8	<8	NR
Lindane (gamma-BHC)	µg/kg	<8	<17	NR	<8	<8	NR
Methoxychlor	µg/kg	<20	<42	NR	<20	<20	NR
cis-Nonachlor	µg/kg	<8	<17	NR	<8	<8	NR
trans-Nonachlor	µg/kg	<8	<17	NR	<8	<8	NR
Oxychlordane	µg/kg	<8	<17	NR	<8	<8	NR
Unclassified							
Pentachloroanisole	µg/kg	<8	<17	NR	<8	<8	NR

NR = not reported.

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		065-94 Fillets	**066-94 Fillets**	**067-94 Fillets**	**070-94 Fillets**	**071-94 Fillets**	**072-94 Whole**	**073-94 Fillets**	**074-94 Fillets**	**075-94 Fillets**
Group		1 Carp	1 Carp	1 Carp	2 Carp	1 Carp	8 Goldfish	2 Carp	2 Carp	1 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Carassius auratus*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Conventionals										
Benzene	µg/kg	3	7	61	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	47	13	260	NR	NR	NR	NR	NR	NR
Phenol	µg/kg	<330	<330	<330	NR	NR	NR	NR	NR	NR
Lipid	%	2.7	3.46	20.86	5.37	5.99	3.92	1.64	5.14	11.98
Metals										
Aluminum	mg/kg	0.49	0.47	0.68	NR	NR	NR	NR	NR	NR
Antimony	mg/kg	<0.35	<0.35	<0.34	NR	NR	NR	NR	NR	NR
Arsenic	mg/kg	0.1	<0.05	0.06	NR	NR	NR	NR	NR	NR
Barium	mg/kg	0.04	0.03	0.07	NR	NR	NR	NR	NR	NR
Beryllium	mg/kg	<0.002	<0.002	<0.002	NR	NR	NR	NR	NR	NR
Cadmium	mg/kg	<0.010	<0.01	0.01	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Calcium	mg/kg	297	291	325	NR	NR	NR	NR	NR	NR
Chromium	mg/kg	0.11	0.13	0.12	NR	NR	NR	NR	NR	NR
Cobalt	mg/kg	<0.04	<0.04	<0.04	NR	NR	NR	NR	NR	NR
Copper	mg/kg	0.38	0.51	0.57	NR	NR	NR	NR	NR	NR
Iron	mg/kg	5.6	11.8	11.3	NR	NR	NR	NR	NR	NR
Lead	mg/kg	0.17	<0.05	0.08	0.200	0.130	1.00	0.160	0.080	0.15
Magnesium	mg/kg	221	209	180	NR	NR	NR	NR	NR	NR
Manganese	mg/kg	0.15	0.16	0.14	NR	NR	NR	NR	NR	NR
Mercury	mg/kg	<0.04	0.05	0.06	<0.020	0.05	0.030	0.030	0.020	0.13
Nickel	mg/kg	<0.11	<0.11	<0.11	NR	NR	NR	NR	NR	NR
Potassium	mg/kg	2810	3180	2550	NR	NR	NR	NR	NR	NR

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		065-94 Fillets	066-94 Fillets	067-94 Fillets	070-94 Fillets	071-94 Fillets	072-94 Whole	073-94 Fillets	074-94 Fillets	075-94 Fillets
Metals (cont.)										
Selenium	mg/kg	0.81	0.53	0.26	NR	NR	NR	NR	NR	NR
Silver	mg/kg	0.18	0.17	0.35	NR	NR	NR	NR	NR	NR
Sodium	mg/kg	280	295	355	NR	NR	NR	NR	NR	NR
Thallium	mg/kg	<0.10	<0.1	<0.1	NR	NR	NR	NR	NR	NR
Vanadium	mg/kg	<0.40	<0.04	<0.04	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	34	14	17.5	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	120	34	660	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	<120	6	51	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	7	<7.5	59	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	<5	<5	<25	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	<10	<10	<50	NR	NR	NR	NR	NR	NR
Benzo(b)fluoranthene	µg/kg	<10	<10	<50	NR	NR	NR	NR	NR	NR
Benzo(g,h,i)perylene	µg/kg	<12	<12	<60	NR	NR	NR	NR	NR	NR
Benzo(k)fluoranthene	µg/kg	<5	<5	<25	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	<5	<5	<25	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	<15	<15	<75	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	16	14	98	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	52	22	170	NR	NR	NR	NR	NR	NR
Indeno(1,2,3-cd)pyrene	µg/kg	<7.5	<7.5	<37	NR	NR	NR	NR	NR	NR
1-Methylnaphthalene	µg/kg	<100	NR	<500	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	<100	100	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	25	12	200	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	18	19	100	NR	NR	NR	NR	NR	NR

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		065-94 Fillets	066-94 Fillets	067-94 Fillets	070-94 Fillets	071-94 Fillets	072-94 Whole	073-94 Fillets	074-94 Fillets	075-94 Fillets
Polychlorinated Biphenyls										
Aroclor 1248	µg/kg	1795	2233	11633	3914	3337	1896	340	4684	13507
Aroclor 1254	µg/kg	1047	2053	6008	2296	2672	1592	246	2542	11293
Aroclor 1260	µg/kg	197	635	5288	596	619	623	219	679	2326
Total PCBs	µg/kg	3039	4921	22929	6806	6628	4111	805	7905	27126
Pesticides										
Aldrin	µg/kg	<8	28	9	<8	<8	<8	<8	<8	<8
Chlordane-alpha	µg/kg	<16	14	55	<8	<8	<8	<8	16	24
Chlordane-gamma	µg/kg	<16	<16	41	<8	<8	<8	<8	17	<8
Chlordane-total	µg/kg	<32	22	96	<16	<16	<16	<16	33	28
o,p'-DDD	µg/kg	<10	19	40	<10	<10	<10	23	15.5	26
p,p'-DDD	µg/kg	<10	78	290	30	19	<10	120	76.5	200
Sum DDD	µg/kg	<20	97	330	35	24	<20	143	92	226
o,p'-DDE	µg/kg	15	20	62	<84	<20	<71	<38	<106	<20
p,p'-DDE	µg/kg	37	53	330	<40	69	<10	23	39	1300
Sum DDE	µg/kg	52	73	392	<124	79	<81	<42	92	1310
o,p'-DDT	µg/kg	<20	<20	13	<20	<20	<20	<20	<20	<20
p,p'-DDT	µg/kg	<20	<20	<20	<10	<20	<10	<10	<10	<10
Sum DDT	µg/kg	<40	<40	23	<30	<40	<30	<30	<30	<30
Total DDTs	µg/kg	82	190	745	112	123	<131	179	199	1551
Dieldrin	µg/kg	<10	23	26	<10	<10	<10	<10	<10	21
Endosulfan sulfate	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Endosulfan-alpha	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Endosulfan-beta	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Endrin	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endrin aldehyde	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endrin ketone	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		065-94 Fillets	066-94 Fillets	067-94 Fillets	070-94 Fillets	071-94 Fillets	072-94 Whole	073-94 Fillets	074-94 Fillets	075-94 Fillets
Pesticides (cont.)										
Heptachlor	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Heptachlor epoxide	µg/kg	<8	<8	11	<8	<8	<8	<8	<8	<8
Hexachlorobenzene	µg/kg	<10	<10	15	<20	<10	<10	<10	<10	<10
Hexachlorocyclohexane-alpha	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Hexachlorocyclohexane-beta	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Hexachlorocyclohexane-delta	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Lindane (gamma-BHC)	µg/kg	<8	<8	9	<8	<8	<8	<8	NR	<8
Methoxychlor	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
cis-Nonachlor	µg/kg	<8	<70	<260	<8	<8	<8	<8	<8	25
trans-Nonachlor	µg/kg	<16	<16	37	<38	<48	<38	<22	<45	36
Oxychlordane	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Toxaphene	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Unclassified										
Pentachloroanisole	µg/kg	<16	<16	<16	<8	<8	<8	<8	<8	<8

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		076-94 Whole	**077-94 Fillets**	**078-94 Fillets**	**079-94 Fillets**	**080-94 Whole**	**081-94 Fillets**	**082-94 Fillets**	**083-94 Fillets**	**084-94 Whole**
Group		8 Goldfish	3 Carp	3 Carp	1 Carp	9 Goldfish	3 Carp	4 Carp	2 Carp	10 Goldfish
Species		*Carassius auratus*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Carassius auratus*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Carassius auratus*
Conventionals										
Benzene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lipid	%	3.19	8.22	5.03	16.51	4.55	4.75	6.64	8.81	3.44
Metals										
Aluminum	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Antimony	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Calcium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Iron	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead	mg/kg	1.3	0.19	0.21	0.12	1.3	0.09	0.07	1.5	1.1
Magnesium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Manganese	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Mercury	mg/kg	0.03	0.020	0.020	0.04	0.03	0.03	0.02	0.13	0.03
Nickel	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Potassium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		076-94 Whole	077-94 Fillets	078-94 Fillets	079-94 Fillets	080-94 Whole	081-94 Fillets	082-94 Fillets	083-94 Fillets	084-94 Whole
Metals (cont.)										
Selenium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Silver	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Thallium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vanadium	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	mg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(b)fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(g,h,i)perylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benzo(k)fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chrysene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Indeno(1,2,3-cd)pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
1-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnaphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pyrene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		076-94 Whole	077-94 Fillets	078-94 Fillets	079-94 Fillets	080-94 Whole	081-94 Fillets	082-94 Fillets	083-94 Fillets	084-94 Whole
Polychlorinated Biphenyls										
Aroclor 1248	µg/kg	2953	6491	3534	9061	1750	4927	4004	5721	2614
Aroclor 1254	µg/kg	1856	3491	1741	6979	1376	2416	2019	8309	2011
Aroclor 1260	µg/kg	523	844	436	2498	486	567	461	1883	564
Total PCBs	µg/kg	5332	10826	5711	18538	3612	7910	6484	15913	5189
Pesticides										
Aldrin	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Chlordane-alpha	µg/kg	<8	18	11	30	16	<8	<8	27	<8
Chlordane-gamma	µg/kg	<8	18	12	29	14	<8	11	<8	<8
Chlordane-total	µg/kg	<16	36	23	59	30	<16	15	31	<16
o,p'-DDD	µg/kg	<10	10	<10	20	<10	<10	<10	12	<10
p,p'-DDD	µg/kg	<10	75	45	160	120	37	52	97	54
Sum DDD	µg/kg	<20	85	50	180	125	42	57	109	59
o,p'-DDE	µg/kg	<84	<20	<20	<20	<59	<110	<108	<200	<83
p,p'-DDE	µg/kg	<77	34	27	78	25	29	19	600	19
Sum DDE	µg/kg	<161	44	37	88	54.5	84	73	700	60.5
o,p'-DDT	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
p,p'-DDT	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sum DDT	µg/kg	<30	<30	<30	<30	<30	<30	<30	<30	<30
Total DDTs	µg/kg	<211	144	102	283	194.5	141	145	824	134.5
Dieldrin	µg/kg	<10	<10	<10	16	<10	<10	<10	15	<10
Endosulfan sulfate	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Endosulfan-alpha	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Endosulfan-beta	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Endrin	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endrin aldehyde	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endrin ketone	µg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10

Appendix 5.5. Tissue chemistry data for the Assessment Area, IN (August-September 1994; IDEM 1994).

Substance	Units	Station Number/Sample Preparation								
		076-94 Whole	077-94 Fillets	078-94 Fillets	079-94 Fillets	080-94 Whole	081-94 Fillets	082-94 Fillets	083-94 Fillets	084-94 Whole
Pesticides (cont.)										
Heptachlor	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Heptachlor epoxide	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Hexachlorobenzene	µg/kg	<10	<10	<10	11	<10	<10	<10	<20	<10
Hexachlorocyclohexane-alpha	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Hexachlorocyclohexane-beta	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Hexachlorocyclohexane-delta	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Lindane (gamma-BHC)	µg/kg	<8	<8	<8	13	<8	<8	<8	10	<8
Methoxychlor	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
cis-Nonachlor	µg/kg	<8	<8	<8	9	<8	<8	<8	26	<8
trans-Nonachlor	µg/kg	<39	<57	<38	<92	<34	<46	<44	31	<42
Oxychlordane	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8
Toxaphene	µg/kg	<20	<20	<20	<20	<20	<20	<20	<20	<20
Unclassified										
Pentachloroanisole	µg/kg	<8	<8	<8	<8	<8	<8	<8	<8	<8

Fillets = skin-on, scaleless.
NR = not reported

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation					
		PERIPHYTON-R-925 Whole	PERIPHYTON-R-926 Whole	PERIPHYTON-R-929 Whole	PERIPHYTON-R-935 Whole	PLANKTON-R-8 Whole	PLANKTON-Q-5 Whole
Group		Periphyton	Periphyton	Periphyton	Periphyton	Plankton	Plankton
Species		Periphyton	Periphyton	Periphyton	Periphyton	Plankton	Plankton
Conventionals							
Ash	%	1.59	1.22	0.76	3.42	1.82	2.30
Lipid	%	0.31	0.79	2.11	16.94	2.57	6.44
Moisture	%	95.6	94.3	95.5	91.45	95.45	95.4
Metals							
Aluminum	mg/kg	117.0	151.0	135.0	768.0	377.0	481.0
Antimony	mg/kg	<0.80	0.825	<0.80	<0.80	0.89	0.83
Arsenic	mg/kg	1.80	3.25	3.25	8.65	2.97	5.44
Barium	mg/kg	2.47	3.64	1.94	11.10	4.90	8.48
Beryllium	mg/kg	<0.03	<0.03	<0.03	0.05	0.05	0.05
Boron	mg/kg	4.74	4.85	2.72	20.40	3.42	5.54
Cadmium	mg/kg	0.31	0.49	0.437	2.50	0.89	1.52
Calcium	mg/kg	4020	6410	1140	6350	1320	1250
Chromium	mg/kg	3.2	4.5	6.07	27.8	12.2	28.0
Cobalt	mg/kg	<0.25	<0.25	<0.25	1.35	<0.25	<0.25
Copper	mg/kg	0.46	0.39	2.33	11.0	7.57	15.2
Iron	mg/kg	1470	2310	2060	11500	3200	5490
Lead	mg/kg	1.75	2.86	7.38	34.8	15.60	35.20
Magnesium	mg/kg	503	539	310	1240	359	376
Manganese	mg/kg	78.9	112	155	730	132.0	263.0
Mercury	mg/kg	<0.005	<0.005	<0.005	0.0133	0.0319	0.0518

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation					
		PERIPHYTON-R-925 Whole	PERIPHYTON-R-926 Whole	PERIPHYTON-R-929 Whole	PERIPHYTON-R-935 Whole	PLANKTON-R-8 Whole	PLANKTON-Q-5 Whole
Metals (cont.)							
Molybdenum	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Nickel	mg/kg	0.83	1.07	1.55	6.05	1.83	3.28
Selenium	mg/kg	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
Sodium	mg/kg	<218	<218	<218	243	387	601
Tin	mg/kg	1.55	1.26	1.31	6.05	6.34	11.7
Vanadium	mg/kg	<0.98	10.8	4.47	13.0	5.69	5.64
Zinc	mg/kg	27.3	41.5	32.8	140	106	200
Polychlorinated Biphenyls							
Total PCBs	µg/kg	265.53	275.41	34.58	109.40	480.43	162.59

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation								
		Q-ALE-1 Whole	**Q-ALE-2 Whole**	**Q-CARP-1 Whole**	**Q-CARP-2 Whole**	**Q-CARP-3 Whole**	**Q-CARP-4 Whole**	**Q-CARP-5 Whole**	**Q-CARP-6 Whole**	**Q-GOLD-1 Whole**
Group		Alewife	Alewife	Carp	Carp	Carp	Carp	Carp	Carp	24 Golden Shiners/ 5 Goldfish
Species		*Alosa pseudoharengus*	*Alosa pseudoharengus*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Notemigonus crysoleucas/ Carassius auratus*
Conventionals										
Ash	%	0.81	5.31	2.86	1.65	3.26	2.82	1.71	1.82	3.48
Lipid	%	2.56	5.05	8.13	31.6	0.71	16.2	1.68	32.1	6.80
Moisture	%	82.9	79.7	72.6	64.8	70.1	73.5	81.7	83.6	74.8
Metals										
Aluminum	mg/kg	4.0	9.8	5.43	5.50	6.09	11.10	8.27	6.51	3.64
Antimony	mg/kg	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
Arsenic	mg/kg	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30
Barium	mg/kg	0.55	0.58	0.81	0.64	1.19	0.59	0.86	0.30	0.62
Beryllium	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Boron	mg/kg	4.86	<0.12	<0.12	<0.12	1.09	0.89	0.56	2.92	0.35
Cadmium	mg/kg	<0.11	<0.11	<0.110	<0.110	<0.110	<0.110	<0.110	<0.110	<0.11
Calcium	mg/kg	7970	7500	7950	7280	11200	6140	20600	1650	15500
Chromium	mg/kg	<1.2	1.2	<1.2	1.7	1.5	2.2	2.0	1.5	2.2
Cobalt	mg/kg	<0.25	<0.25	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.25
Copper	mg/kg	0.64	0.91	1.71	1.73	1.58	1.29	1.41	1.88	1.30
Iron	mg/kg	50.5	73.6	106	79.2	96.5	149	123	85.1	50.7
Lead	mg/kg	<0.94	<0.94	1.05	1.29	1.09	<0.94	1.11	<0.94	1.01
Magnesium	mg/kg	221	236	317	247	383	318	677	170	437
Manganese	mg/kg	3.27	5.19	4.14	3.37	4.95	4.90	6.57	2.87	2.11
Mercury	mg/kg	0.0276	0.0394	0.0409	0.0341	0.0401	0.0444	<0.005	0.0112	0.0175

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation								
		Q-ALE-1 Whole	Q-ALE-2 Whole	Q-CARP-1 Whole	Q-CARP-2 Whole	Q-CARP-3 Whole	Q-CARP-4 Whole	Q-CARP-5 Whole	Q-CARP-6 Whole	Q-GOLD-1 Whole
Metals (cont.)										
Molybdenum	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Nickel	mg/kg	<0.27	0.39	0.33	0.35	0.30	1.63	0.35	0.40	0.29
Selenium	mg/kg	<0.63	<0.63	2.19	1.78	1.24	1.93	5.15	1.09	1.66
Sodium	mg/kg	396	629	1140	893	1150	980	1710	676	1000
Tin	mg/kg	<1.10	<1.10	2.76	3.56	<1.10	<1.10	<1.10	<1.10	<1.10
Vanadium	mg/kg	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98
Zinc	mg/kg	20.6	24.0	119	80	109	117	123	46	60.4
Polychlorinated Biphenyls										
Total PCBs	µg/kg	125.70	531.62	1817.20	7863.95	453.74	1620.89	1181.49	200.41	739.74

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation						
		Q-GOLD-2,3 Whole	**Q-PACU-1 Whole**	**Q-PACU-2 Whole**	**Q-SHAD-1 Whole**	**Q-SHAD-7 Whole**	**Q-SUN-1,2,3 Whole**	**R-ALE-1 Whole**
Group		25 Golden Shiners/ 5 Goldfish	2 Crayfish	6 Crayfish	25 Gizzard Shad	25 Gizzard Shad	3 Sunfish	25 Alewifes
Species		*Notemigonus crysoleucas/ Carassius auratus*	*Procambarus acutus* and *Orconectes virilis*	*Procambarus acutus*	*Dorosoma cepedianum*	*Dorosoma cepedianum*	*Lepomis (Hybrid)*	*Alosa pseudoharengus*
Conventionals								
Ash	%	2.72	6.59	6.31	1.83	3.15	3.68	NR
Lipid	%	5.08	13.4	2.14	19.5	5.15	NR	NR
Moisture	%	79.5	78.0	83.8	67.1	78.4	82.6	NR
Metals								
Aluminum	mg/kg	4.80	37.1	21.5	2.6	7.4	<1.6	2.6
Antimony	mg/kg	<0.80	1.6	<0.80	<0.80	<0.80	<0.80	<0.80
Arsenic	mg/kg	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	1.38
Barium	mg/kg	0.58	6.79	2.48	0.41	1.08	0.05	0.33
Beryllium	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Boron	mg/kg	<0.12	0.97	1.94	1.43	1.01	1.70	1.62
Cadmium	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
Calcium	mg/kg	13000	27400	11500	4290	14100	12	6000
Chromium	mg/kg	1.2	3.5	2.0	<1.2	1.2	<1.2	<1.2
Cobalt	mg/kg	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Copper	mg/kg	1.20	22.00	10.10	1.12	1.41	<0.36	1.19
Iron	mg/kg	63.5	575.0	168.0	53.6	98.2	<1.3	31.5
Lead	mg/kg	<0.94	2.83	1.26	<0.94	<0.94	<0.94	<0.94
Magnesium	mg/kg	396	434	174	245	368	0.51	224
Manganese	mg/kg	2.74	29.8	10.8	3.93	6.89	<0.51	2.95
Mercury	mg/kg	0.0122	<0.005	<0.005	0.0530	0.0290	0.031	0.0803

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation						
		Q-GOLD-2,3 Whole	Q-PACU-1 Whole	Q-PACU-2 Whole	Q-SHAD-1 Whole	Q-SHAD-7 Whole	Q-SUN-1,2,3 Whole	R-ALE-1 Whole
Metals (cont.)								
Molybdenum	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Nickel	mg/kg	6.25	0.66	0.28	0.31	0.30	<0.27	<0.27
Selenium	mg/kg	1.59	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
Sodium	mg/kg	729	1250	535	715	818	<218	681
Tin	mg/kg	<1.10	<1.10	<1.10	1.12	<1.10	<1.10	<1.10
Vanadium	mg/kg	<0.98	1.84	<0.98	<0.98	<0.98	<0.98	<0.98
Zinc	mg/kg	59.1	31.6	19.2	18.1	26.2	3.0	33.4
Polychlorinated Biphenyls								
Total PCBs	µg/kg	1130.42	381.81	124.95	418.48	209.2	512.49	NR

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation							
		R-ALE-2 Whole	**R-ALE-3 Whole**	**R-ALE-4,5 Whole**	**R-ALE-6 Whole**	**R-CARP-1 Whole**	**R-CARP-2 Whole**	**R-CARP-3 Whole**	**R-OVIR-1 Whole**
Group		25 Alewifes	25 Alewifes	25 Alewifes	25 Alewifes	1 Carp	1 Carp	1 Carp	7 Crayfish
Species		*Alosa pseudoharengus*	*Alosa pseudoharengus*	*Alosa pseudoharengus*	*Alosa pseudoharengus*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Orconectes virilus*
Conventionals									
Ash	%	4.31	3.80	0.84	4.34	4.27	2.29	3.59	13.08
Lipid	%	33.4	8.34	7.40	16.5	11.3	11.4	9.34	1.64
Moisture	%	78.45	71.9	77.3	75.6	67.8	69.3	67.7	72.9
Metals									
Aluminum	mg/kg	<1.6	1.8	<1.6	<1.6	<1.61	<1.61	<1.61	569
Antimony	mg/kg	<0.80	<0.80	<0.80	<0.80	0.81	<0.80	<0.80	0.88
Arsenic	mg/kg	1.15	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30
Barium	mg/kg	0.20	0.60	0.36	0.45	0.98	0.84	0.80	43.40
Beryllium	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Boron	mg/kg	0.25	1.53	0.79	<0.12	1.32	0.40	0.90	<0.12
Cadmium	mg/kg	<0.11	<0.11	<0.11	<0.11	0.12	<0.110	0.20	0.278
Calcium	mg/kg	5800	9400	7300	10500	5850	11900	11200	37100
Chromium	mg/kg	1.6	1.2	1.3	1.7	<1.2	1.5	<1.2	1.9
Cobalt	mg/kg	<0.25	<0.25	<0.25	<0.25	<0.250	<0.250	<0.250	<0.25
Copper	mg/kg	0.80	1.11	0.78	1.05	1.94	1.14	1.75	25.00
Iron	mg/kg	24.2	27.7	24.7	32.5	53.4	40.0	48.6	685.0
Lead	mg/kg	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94
Magnesium	mg/kg	210	294	250	322	298	389	354	718
Manganese	mg/kg	3.15	3.47	2.82	4.85	2.30	2.87	2.60	373.0
Mercury	mg/kg	0.0823	0.053	0.0263	0.0374	0.0605	0.0781	0.1350	0.0172

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation							
		R-ALE-2 Whole	R-ALE-3 Whole	R-ALE-4,5 Whole	R-ALE-6 Whole	R-CARP-1 Whole	R-CARP-2 Whole	R-CARP-3 Whole	R-OVIR-1 Whole
Metals (cont.)									
Molybdenum	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Nickel	mg/kg	<0.27	<0.27	<0.27	0.35	0.41	1.19	0.35	1.76
Selenium	mg/kg	<0.63	0.74	<0.63	<0.63	1.54	1.29	1.50	<0.63
Sodium	mg/kg	766	767	641	854	1160	1020	1100	1530
Tin	mg/kg	<1.10	<1.10	<1.10	<1.10	1.78	2.77	<1.10	<1.10
Vanadium	mg/kg	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	2.22
Zinc	mg/kg	28.2	23.0	28.9	31.7	134	86	77	62.0
Polychlorinated Biphenyls									
Total PCBs	µg/kg	309.58	118.40	15.065	414.70	4339.76	633.60	981.95	120.79

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation						
		R-OVIR-2 Whole	**R-SHAD-1 Whole**	**R-SHAD-2 Whole**	**R-SHAD-3 Whole**	**R-SHAD-4,5 Whole**	**R-SHAD-6,11 Whole**	**R-SHAD-12 Whole**
Group		8 Crayfish	14 Gizzard Shad	14 Gizzard Shad	14 Gizzard Shad	14 Gizzard Shad	14 Gizzard Shad	14 Gizzard Shad
Species		*Orconectes virilus*	*Dorosoma cepedianum*	*Dorosoma cepedianum*	*Dorosoma cepedianum*	*Dorosoma cepedianum*	*Dorosoma cepedianum*	*Dorosoma cepedianum*
Conventionals								
Ash	%	12.77	4.69	1.55	2.32	1.94	1.52	1.72
Lipid	%	23.2	23.1	4.21	12.6	6.16	4.66	15.7
Moisture	%	75.5	66.2	78.3	63.3	75.7	84.2	76.8
Metals								
Aluminum	mg/kg	97.6	2.89	3.75	4.09	4.12	5.05	7.00
Antimony	mg/kg	0.94	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
Arsenic	mg/kg	2.03	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30
Barium	mg/kg	14.50	0.26	0.57	0.61	0.46	0.34	0.29
Beryllium	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Boron	mg/kg	<0.12	<0.12	1.29	1.63	<0.12	0.34	0.92
Cadmium	mg/kg	0.297	<0.110	<0.110	<0.110	<0.110	<0.110	<0.110
Calcium	mg/kg	38300	1590	6330	5150	5420	1980	2060
Chromium	mg/kg	2.4	1.4	1.1	1.4	<1.2	1.3	1.7
Cobalt	mg/kg	<0.25	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250
Copper	mg/kg	27.30	1.12	3.29	1.17	3.29	2.04	5.24
Iron	mg/kg	1140.0	35.3	105.0	125.0	83.8	80.1	85.4
Lead	mg/kg	6.24	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94
Magnesium	mg/kg	535	181	248	235	262	156	245
Manganese	mg/kg	180.0	1.84	6.24	5.36	3.66	4.81	3.40
Mercury	mg/kg	<0.005	0.0547	0.0242	0.0157	0.0218	<0.005	ND

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation						
		R-OVIR-2 Whole	R-SHAD-1 Whole	R-SHAD-2 Whole	R-SHAD-3 Whole	R-SHAD-4,5 Whole	R-SHAD-6,11 Whole	R-SHAD-12 Whole
Metals (cont.)								
Molybdenum	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Nickel	mg/kg	1.39	0.36	0.33	0.41	0.28	<0.27	1.41
Selenium	mg/kg	<0.63	0.77	1.24	0.77	<0.63	1.41	2.33
Sodium	mg/kg	1200	666	904	711	703	524	882
Tin	mg/kg	<1.10	<1.10	3.43	1.73	1.76	<1.10	2.43
Vanadium	mg/kg	1.93	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98
Zinc	mg/kg	47.9	14	17	17	14	12	30
Polychlorinated Biphenyls								
Total PCBs	µg/kg	148.55	986.22	265.81	142.39	1618.30	903.345	117.08

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation					
		R-SHAD-13,14 Whole	**R-SUN-1,2,3 Whole**	**S-ORUS-1 Whole**	**S-PER-1-10 Whole**	**T-ALE-1 Whole**	**T-OVIR-1 Whole**
Group		14 Gizzard Shad	3 Sunfish	1 Crayfish	30 Perch	25 Alewifes	Crayfish
Species		*Dorosoma cepedianum*	*Lepomis (Hybrid)*	*Orconectes rusticus*	*Perca flavescens*	*Alosa pseudohare*	*Orconectes virilus*
Conventionals							
Ash	%	1.66	5.15	20.0	5.69	4.35	11.1
Lipid	%	20.1	5.18	5.32	2.87	5.37	1.61
Moisture	%	80.9	78.4	67.5	74.9	80.0	76.9
Metals							
Aluminum	mg/kg	194.00	9.50	26.90	<1.6	<1.6	109
Antimony	mg/kg	<0.80	<0.80	1.68	<0.80	<0.80	<0.80
Arsenic	mg/kg	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30
Barium	mg/kg	0.60	0.63	39.0	0.90	0.35	23.40
Beryllium	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Boron	mg/kg	1.42	1.19	1.99	<0.12	<0.12	1.80
Cadmium	mg/kg	<0.110	<0.11	<0.11	<0.11	<0.11	<0.11
Calcium	mg/kg	10100	20900	56900	13200	7200	41000
Chromium	mg/kg	<1.2	<1.2	1.3	<1.2	<1.2	<1.2
Cobalt	mg/kg	<0.250	<0.25	<0.25	<0.25	<0.25	<0.25
Copper	mg/kg	1.61	1.32	31.50	<0.36	0.70	30.20
Iron	mg/kg	38.9	67.3	39.7	14.3	26.4	140.0
Lead	mg/kg	<0.94	<0.94	1.15	<0.94	<0.94	<0.94
Magnesium	mg/kg	283	501	702	382	224	662
Manganese	mg/kg	3.44	5.54	16.20	1.85	3.85	32.5
Mercury	mg/kg	0.0266	<0.005	0.0151	0.0228	0.0385	0.0161

Appendix 5.6. Tissue chemistry data for the Assessment Area, IN (November 1989; Risatti and Ross 1989).

Substance	Units	Station Number/Sample Preparation					
		R-SHAD-13,14 Whole	R-SUN-1,2,3 Whole	S-ORUS-1 Whole	S-PER-1-10 Whole	T-ALE-1 Whole	T-OVIR-1 Whole
Metals (cont.)							
Molybdenum	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Nickel	mg/kg	<0.27	0.48	<0.27	0.300	<0.27	<0.27
Selenium	mg/kg	1.51	<0.63	<0.63	<0.63	<0.63	<0.63
Sodium	mg/kg	709	865	951	698	414	1150
Tin	mg/kg	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10
Vanadium	mg/kg	1.01	<0.98	1.44	<0.98	<0.98	1.52
Zinc	mg/kg	19	36.2	18.8	22.5	19.6	27.5
Polychlorinated Biphenyls							
Total PCBs	µg/kg	119.75	776.91	356.29	377.85	108.58	90.22

ND = compounds were measured as less than the detection limit, but the detection limit is unknown; NR = not reported.

Appendix 5.7. Tissue chemistry data for the Grand Calumet River Lagoons, IN (1994; Stewart *et al.* 1999).

Substance	Units	Station Number/Sample Preparation			
		WL3-A Whole	**WL3-B Whole**	**WL5-A Whole**	**WL5-B Whole**
Group		Carp	Carp	Carp	Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	µg/kg	80.9	34.3	450.9	446.6
Fluoranthene	µg/kg	11.6	36.5	84.5	18
Fluorene	µg/kg	14.0	11.1	138.6	105.5
Naphthalene	µg/kg	29.5	29.6	212.1	145.9
Total PAHs (reported)	µg/kg	257.4	282.4	1413.4	807

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		A			B			C		
		3499 Fillet	3500 Whole	3501 GI Tract	3502 Fillet	3503 Whole	3504 GI Tract	3505 Fillet	3506 Whole	3507 GI Tract
Group		5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Metals										
Aluminum	µg/kg	4.02	12.7	11.7	NR	3.86	13.3	NR	4.05	23.4
Antimony	µg/kg	NR	NR	0.294	NR	NR	0.362	NR	NR	0.269
Arsenic	µg/kg	NR	0.257	0.435	NR	NR	0.622	NR	NR	0.262
Barium	µg/kg	0.124	3.76	0.987	0.157	3.20	1.99	0.0929	2.89	0.944
Beryllium	µg/kg	NR	NR	NR	NR	NR	NR	NR	0.0209	NR
Cadmium	µg/kg	NR	NR	0.025	0.041	NR	0.0570	NR	0.06	0.045
Calcium	µg/kg	444	21300	1620	370	18400	4120	426	18300	647
Chromium	µg/kg	0.110	0.0500	0.180	NR	0.070	0.120	NR	0.13	0.24
Cobalt	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	µg/kg	0.558	NR	2.16	0.595	NR	2.39	0.388	0.353	2.7
Iron	µg/kg	20.0	30.0	178	14.0	22.2	262	8.5	36.6	162
Lead	µg/kg	NR	0.250	0.940	NR	0.330	0.930	NR	0.36	0.94
Magnesium	µg/kg	253	520	208	236	487	256	250	463	246
Manganese	µg/kg	0.299	3.43	4.66	0.208	3.99	6.41	0.186	4.19	5.26
Mercury	µg/kg	0.105	0.040	NR	0.075	NR	NR	NR	NR	NR
Nickel	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Potassium	µg/kg	3230	1890	2360	3260	1960	2840	3330	2070	2690
Selenium	µg/kg	0.376	0.300	0.579	0.196	0.262	0.425	0.17	3.651	0.675
Silver	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	µg/kg	357	1320	1210	309	1260	1270	312	1270	1250
Thalium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vanadium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	µg/kg	9.02	79.5	171	7.98	59.2	149	8.58	75.3	217

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		A			B			C		
		3499 Fillet	3500 Whole	3501 GI Tract	3502 Fillet	3503 Whole	3504 GI Tract	3505 Fillet	3506 Whole	3507 GI Tract
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	6.30	NR	NR	NR	NR	NR	15
Benzo(a)pyrene	µg/kg	NR	NR	9.10	NR	NR	6.50	NR	NR	22
Benzo(b)fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	18
Benzo(g,h,i)perylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	21
Benzo(k)fluoranthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	9.6
Chrysene	µg/kg	NR	NR	8.60	NR	NR	6.90	NR	NR	17
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	12.0	2.10	NR	10.0	19.0	NR	16	41
Fluorene	µg/kg	NR	14.0	NR	NR	14.0	17.0	NR	20	NR
lndeno(1,2,3-cd)pyrene	µg/kg	NR	NR	7.30	NR	NR	7.40	NR	NR	16
1-Methylnapthhalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	20
2-Methylnapthhalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	97
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	7.70	20.0	13.0	5.50	18.0	13.0	6.2	31	24
Pyrene	µg/kg	NR	5.90	18.0	NR	NR	15.0	NR	7.7	36
Polychlorinated Biphenyls										
Total PCBs	µg/kg	410	1500	710	340	2000	730	280	1300	390
Pesticides										
Chlordane-alpha	µg/kg	24.0	45.0	29.0	25.0	130	53.0	23	100	41
Chlordane-gamma	µg/kg	8.30	23.0	8.30	8.70	56.0	16.0	NR	34	12
Chlordane-total	µg/kg	32.3	68	37.3	33.7	186	69	23	134	53

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		A			B			C		
		3499 Fillet	3500 Whole	3501 GI Tract	3502 Fillet	3503 Whole	3504 GI Tract	3505 Fillet	3506 Whole	3507 GI Tract
Pesticides (cont.)										
Dieldrin	µg/kg	NR	13.0	NR	NR	13.0	NR	NR	NR	NR
o,p'-DDD	µg/kg	NR	13.0	NR	NR	35.0	NR	NR	16	NR
p,p'-DDD	µg/kg	79.0	140	66.0	68.0	380	110	51	270	82
Sum DDD	µg/kg	79	153	66	68	415	110	51	286	82
p,p'-DDE	µg/kg	NR	NR	NR	NR	35.0	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	35	NR	NR	NR	NR
p,p'-DDT	µg/kg	NR	NR	NR	NR	16.0	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	16	NR	NR	NR	NR
Total DDTs	µg/kg	79	153	66	68	466	110	51	286	82
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	8.20	NR	NR	NR	NR
cis-Nonachlor	µg/kg	11.0	37.0	NR	NR	78.0	NR	NR	49	NR
trans-Nonachlor	µg/kg	NR	18.0	NR	NR	41.0	NR	NR	26	NR
Unclassified										
Benzoic Acid	µg/kg	NR	NR	640	NR	NR	NR	NR	NR	NR
Carbazole	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Di-N-octyl phthalate	µg/kg	1400	NR	NR	NR	NR	NR	NR	NR	NR
4-Methylphenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		D			E			F		
		3508 Fillet	3509 Whole	3510 GI Tract	3511 Fillet	3512 Whole	3513 GI Tract	3514 Fillet	3515 Whole	3516 GI Tract
Group		5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Metals										
Aluminum	µg/kg	NR	2.41	11.3	NR	NR	14.7	NR	NR	8.61
Antimony	µg/kg	0.658	NR	0.269	0.342	NR	NR	0.559	NR	NR
Arsenic	µg/kg	NR	0.666	0.668	NR	NR	1.04	NR	0.501	0.753
Barium	µg/kg	0.0795	3.5	1.62	0.0727	3.87	2.09	0.09	3.81	1.38
Beryllium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cadmium	µg/kg	0.027	0.035	0.046	NR	0.042	0.049	NR	NR	0.065
Calcium	µg/kg	320	20900	1500	366	18200	1690	367	22100	1650
Chromium	µg/kg	0.05	0.06	0.16	NR	0.08	0.17	NR	NR	0.15
Cobalt	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	µg/kg	0.348	0.522	2.42	0.386	0.505	2.98	0.477	NR	3.19
Iron	µg/kg	10.6	26.6	212	8.72	29.3	328	8.21	21	227
Lead	µg/kg	NR	0.42	0.85	NR	0.32	1.17	NR	0.31	0.66
Magnesium	µg/kg	238	497	190	253	471	201	255	552	192
Manganese	µg/kg	0.151	4.13	6.3	0.173	3.48	7.21	0.174	4.77	5.22
Mercury	µg/kg	0.115	NR	NR	NR	NR	NR	0.075	0.04	NR
Nickel	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Potassium	µg/kg	3290	2120	2430	3500	2240	2720	3490	2200	2640
Selenium	µg/kg	0.258	3.091	0.438	0.36	0.496	0.651	0.367	0.339	0.667
Silver	µg/kg	NR	0.231	NR	NR	NR	NR	NR	NR	NR
Sodium	µg/kg	296	1350	1440	323	1340	1310	316	1400	1240
Thalium	µg/kg	NR	NR	1160	NR	NR	NR	NR	NR	NR
Vanadium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zinc	µg/kg	7.56	73.8	193	7.73	78.7	170	8.56	73.2	167

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		D			E			F		
		3508 Fillet	3509 Whole	3510 GI Tract	3511 Fillet	3512 Whole	3513 GI Tract	3514 Fillet	3515 Whole	3516 GI Tract
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	6	NR	NR	8.6	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	7.7	NR	NR	12	NR	NR	5.5
Benzo(b)fluoranthene	µg/kg	NR	NR	NR	NR	NR	12	NR	NR	NR
Benzo(g,h,i)perylene	µg/kg	NR	NR	10	NR	NR	14	NR	NR	NR
Benzo(k)fluoranthene	µg/kg	NR	NR	NR	NR	NR	6.2	NR	NR	NR
Chrysene	µg/kg	NR	NR	7.9	NR	NR	12	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	10	20	NR	NR	27	NR	NR	12
Fluorene	µg/kg	NR	12	NR	NR	14	NR	NR	NR	NR
lndeno(1,2,3-cd)pyrene	µg/kg	NR	NR	9.3	NR	NR	10	NR	NR	NR
1-Methylnapthhalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-Methylnapthhalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	18	12	NR	10	17	NR	10	8.5
Pyrene	µg/kg	NR	NR	16	NR	NR	26	NR	NR	9.8
Polychlorinated Biphenyls										
Total PCBs	µg/kg	290	1400	390	270	2000	860	160	1100	490
Pesticides										
Chlordane-alpha	µg/kg	18	53	36	NR	10	13	NR	27	27
Chlordane-gamma	µg/kg	NR	26	11	NR	NR	NR	NR	11	NR
Chlordane-total	µg/kg	18	79	47	NR	10	13	NR	38	27

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		D			E			F		
		3508 Fillet	3509 Whole	3510 GI Tract	3511 Fillet	3512 Whole	3513 GI Tract	3514 Fillet	3515 Whole	3516 GI Tract
Pesticides (cont.)										
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
o,p'-DDD	µg/kg	NR	14	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	µg/kg	48	190	87	NR	40	15	11	120	40
Sum DDD	µg/kg	48	204	87	NR	40	15	11	120	40
p,p'-DDE	µg/kg	NR	22	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	22	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	29	NR
Total DDTs	µg/kg	48	226	87	NR	40	15	11	120	40
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-Nonachlor	µg/kg	NR	42	NR	NR	NR	NR	NR	19	NR
trans-Nonachlor	µg/kg	NR	20	NR	NR	NR	NR	NR	10	NR
Unclassified										
Benzoic Acid	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbazole	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Di-N-octyl phthalate	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Methylphenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		G			H			I		
		3517 Fillet	3518 Whole	3519 GI Tract	3520 Fillet	3521 Whole	3522 GI Tract	3523 Fillet	3524 Whole	3525 GI Tract
Group		5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Metals										
Aluminum	µg/kg	NR	NR	18.1	2.65	2.83	20.2	NR	NR	8.8
Antimony	µg/kg	0.404	NR	0.201	0.587	NR	0.689	0.386	NR	NR
Arsenic	µg/kg	0.335	NR	0.54	NR	NR	0.41	NR	0.42	1.21
Barium	µg/kg	0.11	5.61	1.37	0.14	4.49	0.958	0.19	4.43	1.58
Beryllium	µg/kg	NR	NR	NR	NR	NR	NR	0.0585	0.0438	NR
Cadmium	µg/kg	NR	0.055	0.07	NR	NR	0.09	0.047	0.066	0.037
Calcium	µg/kg	554	38600	848	563	22500	866	704	27900	1660
Chromium	µg/kg	0.07	0.11	0.14	NR	0.06	0.15	0.05	0.19	0.18
Cobalt	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	µg/kg	0.451	NR	1.26	0.451	1.8	2.39	0.462	0.338	1.03
Iron	µg/kg	23.6	26.5	315	27.2	30.8	392	8.61	22.7	255
Lead	µg/kg	NR	0.95	1.38	NR	0.48	1.45	NR	0.3	0.74
Magnesium	µg/kg	220	781	181	213	530	224	234	582	193
Manganese	µg/kg	0.154	5.82	5.08	0.183	3.4	4.62	0.242	4.32	5.53
Mercury	µg/kg	0.075	0.04	NR	NR	NR	0.085	NR	NR	0.09
Nickel	µg/kg	NR	NR	NR	NR	NR	NR	0.355	NR	NR
Potassium	µg/kg	3300	1880	2410	3210	2140	3050	3420	1840	2120
Selenium	µg/kg	0.277	0.288	0.384	0.315	0.371	0.561	0.232	0.276	0.536
Silver	µg/kg	NR	NR	NR	7.78	NR	NR	NR	6.43	NR
Sodium	µg/kg	457	1850	1480	388	1670	1390	374	1700	1500
Thalium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	824
Vanadium	µg/kg	NR	NR	NR	NR	NR	0.22	NR	NR	0.207
Zinc	µg/kg	8.95	65.8	96.6	7.59	56.1	110	7.44	54.5	18.6

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		G			H			I		
		3517 Fillet	3518 Whole	3519 GI Tract	3520 Fillet	3521 Whole	3522 GI Tract	3523 Fillet	3524 Whole	3525 GI Tract
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	NR	NR	110	NR	NR	NR	NR	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz(a)anthracene	µg/kg	NR	NR	10	NR	NR	13	NR	NR	NR
Benzo(a)pyrene	µg/kg	NR	NR	17	NR	NR	20	NR	NR	NR
Benzo(b)fluoranthene	µg/kg	NR	NR	15	NR	NR	20	NR	NR	NR
Benzo(g,h,i)perylene	µg/kg	NR	NR	17	NR	NR	25	NR	NR	NR
Benzo(k)fluoranthene	µg/kg	NR	NR	7.5	NR	NR	10	NR	NR	NR
Chrysene	µg/kg	NR	NR	12	NR	NR	17	NR	NR	NR
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	27	NR	NR	39	NR	NR	NR
Fluorene	µg/kg	NR	NR	NR	16	NR	NR	NR	NR	NR
lndeno(1,2,3-cd)pyrene	µg/kg	NR	NR	13	NR	NR	20	NR	NR	7.9
1-Methylnapthhalene	µg/kg	NR	NR	NR	NR	NR	20	NR	NR	NR
2-Methylnapthhalene	µg/kg	NR	NR	NR	37	NR	NR	NR	NR	NR
Naphthalene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenanthrene	µg/kg	NR	12	13	5.8	11	19	NR	NR	6.9
Pyrene	µg/kg	NR	NR	25	NR	NR	36	NR	NR	NR
Polychlorinated Biphenyls										
Total PCBs	µg/kg	300	1800	620	210	1100	560	70	570	200
Pesticides										
Chlordane-alpha	µg/kg	13	84	36	11	37	43	NR	NR	NR
Chlordane-gamma	µg/kg	NR	28	10	NR	13	11	NR	NR	NR
Chlordane-total	µg/kg	13	112	46	11	50	54	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		G			H			I		
		3517 Fillet	3518 Whole	3519 GI Tract	3520 Fillet	3521 Whole	3522 GI Tract	3523 Fillet	3524 Whole	3525 GI Tract
Pesticides (cont.)										
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
o,p'-DDD	µg/kg	NR	11	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	µg/kg	36	240	97	32	100	100	NR	16	NR
Sum DDD	µg/kg	36	251	97	32	100	100	NR	16	NR
p,p'-DDE	µg/kg	NR	NR	NR	NR	NR	14	NR	NR	NR
Sum DDE	µg/kg	NR	NR	14	NR	NR	22	NR	NR	NR
p,p'-DDT	µg/kg	NR	29	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs	µg/kg	36	280	97	32	100	114	NR	16	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-Nonachlor	µg/kg	NR	40	NR	NR	22	NR	NR	NR	NR
trans-Nonachlor	µg/kg	NR	22	NR	NR	11	NR	NR	NR	NR
Unclassified										
Benzoic Acid	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbazole	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
di-N-octyl phthalate	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Methylphenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		J			K			L		
		3526 Fillet	3527 Whole	3528 GI Tract	3529 Fillet	3530 Whole	3531 GI Tract	3532 Fillet	3533 Whole	3534 GI Tract
Group		5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Metals										
Aluminum	µg/kg	NR	NR	23.4	NR	NR	6.08	NR	2.39	14.8
Antimony	µg/kg	NR	NR	NR	0.433	NR	NR	NR	NR	NR
Arsenic	µg/kg	0.395	0.622	1.34	NR	0.326	0.574	0.298	0.475	1.21
Barium	µg/kg	0.139	4.1	1.18	0.177	2.2	0.652	0.108	4.01	1.2
Beryllium	µg/kg	NR	0.0406	NR	0.0916	NR	NR	NR	NR	NR
Cadmium	µg/kg	NR	0.078	0.044	0.127	0.05	0.407	NR	NR	0.028
Calcium	µg/kg	679	23100	1310	565	25200	648	363	17400	1120
Chromium	µg/kg	NR	0.25	0.51	0.09	0.09	0.11	NR	0.16	0.19
Cobalt	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper	µg/kg	0.423	0.488	3.21	0.766	NR	3.21	0.38	1.23	4.98
Iron	µg/kg	12.8	37.4	666	28.9	24.7	655	13	30.2	341
Lead	µg/kg	NR	0.36	2.99	NR	0.51	0.42	NR	0.17	0.66
Magnesium	µg/kg	234	566	189	216	560	127	271	486	242
Manganese	µg/kg	0.253	4.69	15.5	0.267	3.6	8.09	0.338	4.45	18.6
Mercury	µg/kg	0.11	0.04	0.08	0.245	0.055	0.095	0.085	NR	0.085
Nickel	µg/kg	NR	NR	NR	0.304	NR	NR	NR	NR	NR
Potassium	µg/kg	3230	1910	2800	3100	1780	2230	3540	2060	2520
Selenium	µg/kg	0.476	0.739	0.963	0.69	0.524	1.11	0.588	0.562	1.17
Silver	µg/kg	NR	0.29	NR	0.383	NR	NR	NR	NR	NR
Sodium	µg/kg	438	1620	1120	512	1720	1360	343	1220	933
Thalium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vanadium	µg/kg	NR	NR	0.259	NR	NR	NR	NR	NR	NR
Zinc	µg/kg	8.3	85.8	168	9.01	68	191	9.7	91.2	167

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		J			K			L		
		3526 Fillet	3527 Whole	3528 GI Tract	3529 Fillet	3530 Whole	3531 GI Tract	3532 Fillet	3533 Whole	3534 GI Tract
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	300	710	2200	NR	78	95	110	660	480
Acenaphthylene	µg/kg	NR	NR	83	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	5.1	5.8
Benz(a)anthracene	µg/kg	NR	NR	97	NR	NR	NR	NR	NR	11
Benzo(a)pyrene	µg/kg	NR	NR	120	NR	NR	NR	NR	NR	16
Benzo(b)fluoranthene	µg/kg	NR	NR	71	NR	NR	NR	NR	NR	13
Benzo(g,h,i)perylene	µg/kg	NR	NR	92	NR	NR	NR	NR	NR	15
Benzo(k)fluoranthene	µg/kg	NR	NR	61	NR	NR	NR	NR	NR	6.1
Chrysene	µg/kg	NR	NR	100	NR	NR	NR	NR	6.5	14
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	270	NR	NR	NR	NR	NR	35
Fluorene	µg/kg	50	140	550	NR	NR	15	15	100	71
lndeno(1,2,3-cd)pyrene	µg/kg	NR	NR	77	NR	NR	9.5	NR	NR	13
1-Methylnapthhalene	µg/kg	43	140	420	NR	NR	24	NR	92	82
2-Methylnapthhalene	µg/kg	120	67	200	NR	36	61	46	250	230
Naphthalene	µg/kg	NR	150	490	NR	NR	NR	NR	87	67
Phenanthrene	µg/kg	7.5	21	200	NR	NR	11	NR	NR	22
Pyrene	µg/kg	NR	NR	180	NR	NR	16	NR	14	28
Polychlorinated Biphenyls										
Total PCBs	µg/kg	320	2200	1500	240	4300	7500	240	1900	830
Pesticides										
Chlordane-alpha	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane-gamma	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane-total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		J			K			L		
		3526 Fillet	3527 Whole	3528 GI Tract	3529 Fillet	3530 Whole	3531 GI Tract	3532 Fillet	3533 Whole	3534 GI Tract
Pesticides (cont.)										
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
o,p'-DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	µg/kg	NR	NR	NR	NR	11	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	11	NR	NR	NR	NR
p,p'-DDE	µg/kg	NR	NR	NR	NR	NR	22	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs	µg/kg	NR	NR	NR	NR	11	22	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-Nonachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
trans-Nonachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Unclassified										
Benzoic Acid	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbazole	µg/kg	NR	NR	68	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	66	210	680	NR	NR	NR	NR	NR	NR
di-N-octyl phthalate	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Methylphenol	µg/kg	NR	NR	110	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		M			N			O		
		3535 Fillet	3536 Whole	3537 GI Tract	3538 Fillet	3539 Whole	3540 GI Tract	3541 Fillet	3542 Whole	3543 GI Tract
Group		5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Metals										
Aluminum	µg/kg	NR	NR	11.5	NR	3.11	16.5	NR	2.98	35.7
Antimony	µg/kg	NR	NR	0.232	0.289	NR	NR	NR	NR	0.248
Arsenic	µg/kg	0.261	0.478	0.569	0.273	0.531	1.94	0.346	0.869	3.07
Barium	µg/kg	0.0985	4.67	1.83	0.0778	2.66	1.27	0.14	3.75	2.17
Beryllium	µg/kg	NR	NR	NR	NR	0.0378	NR	0.0478	NR	NR
Cadmium	µg/kg	NR	NR	0.039	NR	0.069	0.022	0.067	0.042	0.063
Calcium	µg/kg	335	19300	2230	347	15800	1110	401	22100	1720
Chromium	µg/kg	0.1	0.4	0.24	0.05	0.26	0.41	0.07	0.22	0.64
Cobalt	µg/kg	NR	NR	NR	NR	NR	NR	0.148	NR	NR
Copper	µg/kg	0.515	0.349	6.02	0.443	0.195	3.63	0.428	NR	3.58
Iron	µg/kg	4.22	38.7	392	3.11	50.9	502	12	52.6	972
Lead	µg/kg	NR	0.2	0.95	NR	0.19	0.66	0.15	0.33	2.05
Magnesium	µg/kg	274	514	184	259	469	206	258	556	250
Manganese	µg/kg	0.202	4.22	16.1	0.232	4.17	16.6	0.272	5.45	31.2
Mercury	µg/kg	0.08	NR	NR	0.06	0.04	NR	0.145	NR	NR
Nickel	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	0.217
Potassium	µg/kg	3610	2190	2320	3370	2390	2690	3580	2060	2800
Selenium	µg/kg	0.624	0.592	1.14	0.538	0.524	1.14	0.909	0.623	1.04
Silver	µg/kg	NR	NR	NR	NR	0.368	NR	NR	NR	NR
Sodium	µg/kg	335	1390	1230	291	1260	962	341	1570	1150
Thalium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vanadium	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	0.51
Zinc	µg/kg	10.2	70.4	148	10.8	87.9	181	6.45	75.4	132

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		M			N			O		
		3535 Fillet	3536 Whole	3537 GI Tract	3538 Fillet	3539 Whole	3540 GI Tract	3541 Fillet	3542 Whole	3543 GI Tract
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	68	77	520	2500	1100	NR	56	NR
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	6.2	NR	23	24	NR	7.4	NR
Benz(a)anthracene	µg/kg	NR	NR	22	NR	NR	26	NR	25	76
Benzo(a)pyrene	µg/kg	NR	NR	35	NR	NR	33	NR	32	140
Benzo(b)fluoranthene	µg/kg	NR	NR	29	NR	NR	27	NR	25	86
Benzo(g,h,i)perylene	µg/kg	NR	NR	36	NR	NR	30	NR	25	100
Benzo(k)fluoranthene	µg/kg	NR	NR	14	NR	NR	14	NR	13	43
Chrysene	µg/kg	NR	NR	22	NR	NR	27	NR	26	67
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	75
Fluoranthene	µg/kg	NR	NR	55	11	60	91	NR	90	180
Fluorene	µg/kg	NR	16	25	95	450	200	NR	13	NR
lndeno(1,2,3-cd)pyrene	µg/kg	NR	NR	30	NR	NR	26	NR	20	94
1-Methylnapthhalene	µg/kg	NR	NR	36	60	320	180	NR	57	NR
2-Methylnapthhalene	µg/kg	NR	48	120	190	920	530	NR	290	440
Naphthalene	µg/kg	NR	NR	NR	NR	240	89	NR	NR	NR
Phenanthrene	µg/kg	NR	NR	25	16	99	68	NR	60	94
Pyrene	µg/kg	NR	9.1	49	5.5	33	76	NR	74	190
Polychlorinated Biphenyls										
Total PCBs	µg/kg	240	1900	780	420	2100	940	370	3000	1500
Pesticides										
Chlordane-alpha	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane-gamma	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane-total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		M			N			O		
		3535 Fillet	3536 Whole	3537 GI Tract	3538 Fillet	3539 Whole	3540 GI Tract	3541 Fillet	3542 Whole	3543 GI Tract
Pesticides (cont.)										
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
o,p'-DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-Nonachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
trans-Nonachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Unclassified										
Benzoic Acid	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbazole	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
di-N-octyl phthalate	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Methylphenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		P			Q			R		
		3544 Fillet	3545 Whole	3546 GI Tract	3547 Fillet	3548 Whole	3549 GI Tract	3610 Fillet	3611 Whole	3612 GI Tract
Group		5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp	5 Carp
Species		*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*	*Cyprinus carpio*
Metals										
Aluminum	µg/kg	NR	NR	39.8	NR	2.31	9.95	NR	NR	31.6
Antimony	µg/kg	0.507	NR	0.196	NR	NR	NR	0.348	NR	NR
Arsenic	µg/kg	NR	NR	2.13	NR	NR	0.975	0.416	NR	0.676
Barium	µg/kg	0.0914	3.41	2.51	0.094	NR	0.901	0.183	2.48	0.844
Beryllium	µg/kg	NR	NR	NR	NR	0.45	NR	0.162	NR	NR
Cadmium	µg/kg	NR	NR	0.094	0.027	0.597	0.172	0.166	0.049	0.113
Calcium	µg/kg	500	20200	3040	575	21300	979	306	19000	912
Chromium	µg/kg	NR	0.18	0.6	NR	NR	0.2	0.14	0.15	0.17
Cobalt	µg/kg	NR	NR	NR	NR	NR	NR	0.24	NR	NR
Copper	µg/kg	0.32	NR	3.73	0.392	NR	4.82	0.462	NR	5.15
Iron	µg/kg	12.5	61	1160	16.1	29.5	366	11	25	356
Lead	µg/kg	NR	0.3	2.85	0.1	NR	0.7	0.22	0.35	0.45
Magnesium	µg/kg	263	514	215	250	550	161	207	504	150
Manganese	µg/kg	0.159	3.53	36.3	0.213	4.43	12.1	0.282	3.6	18.3
Mercury	µg/kg	0.11	0.05	NR	0.17	NR	0.04	0.2	0.04	0.09
Nickel	µg/kg	NR	NR	0.29	NR	NR	NR	NR	0.356	NR
Potassium	µg/kg	3560	1980	2500	3460	1970	2830	3010	1930	2650
Selenium	µg/kg	0.874	0.705	1.31	0.823	NR	1.14	0.77	0.516	1.11
Silver	µg/kg	NR	NR	NR	NR	NR	NR	0.283	NR	NR
Sodium	µg/kg	375	1450	1270	440	1540	1260	397	1530	1340
Thalium	µg/kg	NR	NR	NR	NR	NR	752	NR	NR	NR
Vanadium	µg/kg	NR	NR	0.62	NR	NR	NR	NR	NR	NR
Zinc	µg/kg	9.63	91.5	243	10.2	73.9	230	5.85	59	243

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		P			Q			R		
		3544 Fillet	3545 Whole	3546 GI Tract	3547 Fillet	3548 Whole	3549 GI Tract	3610 Fillet	3611 Whole	3612 GI Tract
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	µg/kg	NR	260	310	66	280	340	270	600	870
Acenaphthylene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Anthracene	µg/kg	NR	NR	NR	NR	11	23	NR	5.9	25
Benz(a)anthracene	µg/kg	NR	NR	61	NR	NR	24	NR	NR	45
Benzo(a)pyrene	µg/kg	NR	NR	110	NR	NR	34	NR	NR	70
Benzo(b)fluoranthene	µg/kg	NR	NR	76	NR	NR	25	NR	NR	46
Benzo(g,h,i)perylene	µg/kg	NR	NR	89	NR	NR	23	NR	NR	48
Benzo(k)fluoranthene	µg/kg	NR	NR	37	NR	NR	12	NR	NR	23
Chrysene	µg/kg	NR	NR	57	NR	8.8	23	NR	NR	42
Dibenz(a,h)anthracene	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Fluoranthene	µg/kg	NR	NR	140	NR	38	71	NR	16	120
Fluorene	µg/kg	NR	22	56	13	60	67	40	93	140
lndeno(1,2,3-cd)pyrene	µg/kg	NR	NR	88	NR	NR	29	NR	NR	46
1-Methylnapthhalene	µg/kg	NR	44	120	NR	64	76	65	160	290
2-Methylnapthhalene	µg/kg	NR	61	370	30	170	240	120	320	660
Naphthalene	µg/kg	NR	NR	NR	NR	96	110	NR	310	590
Phenanthrene	µg/kg	NR	6.3	72	NR	41	68	9.8	30	100
Pyrene	µg/kg	NR	8.9	130	NR	29	56	NR	10	110
Polychlorinated Biphenyls										
Total PCBs	µg/kg	320	2500	2500	930	7200	3100	660	3100	3800
Pesticides										
Chlordane-alpha	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane-gamma	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlordane-total	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

Appendix 5.8. Tissue chemistry data for the Grand Calumet River Lagoons, IN (September 1997; IDEM 2000b).

Substance	Units	Composite Number/Sample Number/Sample Preparation[1]								
		P			Q			R		
		3544 Fillet	3545 Whole	3546 GI Tract	3547 Fillet	3548 Whole	3549 GI Tract	3610 Fillet	3611 Whole	3612 GI Tract
Pesticides (cont.)										
Dieldrin	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
o,p'-DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDD	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDTs	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-Nonachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
trans-Nonachlor	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Unclassified										
Benzoic Acid	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbazole	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibenzofuran	µg/kg	NR	NR	NR	NR	79	96	NR	NR	NR
di-N-octyl phthalate	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR
4-Methylphenol	µg/kg	NR	NR	NR	NR	NR	NR	NR	NR	NR

[1]Each station represents the composite of five fish and is split into three sample preparations (i.e., fillet, whole, GI tract).

Fillet = skin-off fillets; Whole = head, gills, skin, fins, skeletal with attached flesh; GI tract = organs in body cavity post gills.

NR = not reported.

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation					
		IHCOR01 Composite	IHCOR02 Composite	CACOR01 Composite	KACOR01 Composite	KACOR02 Composite	KACOR03 Composite
Species included		*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*
Mass	g	15.9	17.3	20.0	20.9	17.3	23.9
Conventionals							
Lipid	%	1.18	1.29	0.901	0.876	1.05	1.01
Moisture	%	85.4	84.5	84	84.9	85.1	86
Metals							
Arsenic	mg/kg	1.23	1.25	1.40	1.43	1.40	1.29
Aluminum	mg/kg	85.1	88.5	98.4	81.2	77.2	76.4
Barium	mg/kg	1.19	1.35	1.33	1.36	1.40	1.39
Beryllium	mg/kg	<0.0310	<0.0322	<0.0312	<0.0282	<0.0304	<0.0276
Boron	mg/kg	0.813	0.950	<0.622	0.918	0.757	0.564
Cadmium	mg/kg	0.0669	0.0905	0.0866	0.134	0.120	0.133
Chromium	mg/kg	1.94	2.37	3.41	2.54	2.58	3.12
Copper	mg/kg	11.4	11.8	10.5	11.1	9.16	8.33
Iron	mg/kg	622	727	898	676	665	704
Lead	mg/kg	2.74	3.24	3.89	4.98	5.04	5.47
Magnesium	mg/kg	221	245	241	197	201	195
Manganese	mg/kg	17.2	19.8	20.8	15.1	15.3	15.5
Mercury	mg/kg	0.00705	0.00823	0.00802	0.0118	0.0101	0.0114
Molybdenum	mg/kg	0.212	0.298	0.264	0.181	0.183	0.209
Nickel	mg/kg	1.84	2.29	1.73	1.35	1.35	1.39
Selenium	mg/kg	0.975	1.17	0.941	1.03	1.03	0.986
Strontium	mg/kg	1.25	1.11	1.00	1.11	1.01	0.946
Vanadium	mg/kg	0.362	0.397	0.458	0.362	0.350	0.367
Zinc	mg/kg	38.8	48.4	45.8	45.5	50.2	49.3

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation					
		IHCOR01 Composite	IHCOR02 Composite	CACOR01 Composite	KACOR01 Composite	KACOR02 Composite	KACOR03 Composite
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/kg	462	690	238	367	225	266
Acenaphthylene	µg/kg	266	275	258	196	177	260
Anthracene	µg/kg	535	605	361	343	230	377
Benz(a)anthracene	µg/kg	1360	1430	1210	1950	1210	1630
Benzo(a)pyrene	µg/kg	1130	1390	1090	1310	1140	1580
Benzo(b)fluoranthene	µg/kg	1940	2260	1960	2410	2040	2860
Benzo(e)pyrene	µg/kg	1310	1430	1260	1860	1490	2080
Benzo(g,h,i)perylene	µg/kg	422	457	407	559	565	658
Benzo(k)fluoranthene	µg/kg	909	1050	934	984	730	1070
Biphenyl	µg/kg	80	115	38	52	39	44
Chrysene	µg/kg	1630	1710	1350	2280	1840	2570
C1-Chrysenes	µg/kg	718	750	640	1960	1570	2100
C2-Chrysenes	µg/kg	25	137	15	52	19	27
C3-Chrysenes	µg/kg	<100	<100	<100	<100	<100	<100
C4-Chrysenes	µg/kg	<100	<100	<100	<100	<100	<100
Dibenz(a,h)anthracene	µg/kg	158	144	158	186	179	194
Dibenzothiophene	µg/kg	91	104	62	113	81	93
C1-Dibenzothiophenes	µg/kg	202	225	150	396	286	341
C2-Dibenzothiophenes	µg/kg	406	416	400	1120	727	957
C3-Dibenzothiophenes	µg/kg	<100	<100	<100	<100	<100	<100
2,6-Dimethylnaphthalene	µg/kg	81	125	33	74	35	42
Fluoranthene	µg/kg	4090	4170	2890	3820	2610	3650
C1-Fluoranthenes and pyrenes	µg/kg	200	1560	1280	3510	2410	3680
Fluorene	µg/kg	525	602	312	346	257	329
C1-Fluorenes	µg/kg	662	631	530	732	589	787
C2-Fluorenes	µg/kg	422	467	330	847	639	908
C3-Fluorenes	µg/kg	483	617	650	737	566	660
Indeno(1,2,3-cd)pyrene	µg/kg	388	465	428	461	463	572

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation					
		IHCOR01 Composite	IHCOR02 Composite	CACOR01 Composite	KACOR01 Composite	KACOR02 Composite	KACOR03 Composite
Polycyclic Aromatic Hydrocarbons (cont.)							
1-Methylnaphthalene	µg/kg	68	116	27	49	30	32
1-Methylphenanthrene	µg/kg	130	132	92	152	108	142
2-Methylnaphthalene	µg/kg	109	179	45	86	52	54
Naphthalene	µg/kg	133	269	48	80	60	66
C1-Naphthalenes	µg/kg	177	295	72	135	82	86
C2-Naphthalenes	µg/kg	310	448	130	275	140	159
C3-Naphthalenes	µg/kg	416	588	220	494	287	323
C4-Naphthalenes	µg/kg	455	519	260	651	363	384
Perylene	µg/kg	206	267	182	172	152	217
Phenanthrene	µg/kg	1110	1270	673	772	592	703
C1-Phenanthrenes	µg/kg	832	874	630	1250	940	1200
C2-Phenanthrenes	µg/kg	1860	1890	1500	3340	2420	3110
C3-Phenanthrenes	µg/kg	2830	2840	2700	5080	3590	4770
C4-Phenanthrenes	µg/kg	1670	2000	1940	2800	1840	2680
Pyrene	µg/kg	3560	3720	2510	4040	2620	3710
1,6,7-Trimethyl-naphthalene	µg/kg	71	83	41	71	42	47
Polychlorinated Biphenyls							
PCB# 8	µg/kg	8.7	10	8.2	6.6	8.3	8
PCB# 9	µg/kg	0.28	0.65	0.52	0.44	0.54	0.49
PCB# 10	µg/kg	1	0.92	0.72	0.58	0.77	0.83
PCB# 16	µg/kg	36	29	24	11	54	27
PCB# 17	µg/kg	44	55	58	40	61	61
PCB# 20/33	µg/kg	13	34	33	30	39	33
PCB# 22	µg/kg	18	25	24	21	27	25
PCB# 25	µg/kg	16	18	22	12	15	13
PCB# 28	µg/kg	130	81	64	55	84	60
PCB# 29	µg/kg	0.56	0.6	0.54	0.54	0.43	0.49

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation					
		IHCOR01 Composite	IHCOR02 Composite	CACOR01 Composite	KACOR01 Composite	KACOR02 Composite	KACOR03 Composite
Polychlorinated Biphenyls (cont.)							
PCB# 30	µg/kg	0.11	0.12	0.079	0.12	0.063	0.094
PCB# 31	µg/kg	64	82	67	54	74	57
PCB# 39	µg/kg	0.044	0.7	0.06	1.7	0.057	0.056
PCB# 41	µg/kg	27	25	26	1.4	24	21
PCB# 48/49	µg/kg	94	120	100	91	130	98
PCB# 52	µg/kg	120	160	130	110	160	130
PCB# 53	µg/kg	24	29	33	25	36	34
PCB# 55	µg/kg	1.2	1.3	1.2	1.1	1	0.86
PCB# 60	µg/kg	22	32	23	22	32	24
PCB# 61/67	µg/kg	0.02	0.066	0.02	0.02	0.02	0.065
PCB# 63	µg/kg	3.6	3.7	3.8	3.5	3.9	3.5
PCB# 66	µg/kg	71	90	85	75	92	85
PCB# 70	µg/kg	80	97	87	83	110	92
PCB# 72	µg/kg	3.2	3.2	3.4	2.9	2.6	2.4
PCB# 74	µg/kg	45	63	49	48	63	51
PCB# 77	µg/kg	5.1	7.8	5.5	6.1	6.1	5.8
PCB# 80	µg/kg	59	0.49	0.14	0.39	0.036	0.037
PCB# 81	µg/kg	0.33	0.44	0.3	0.31	0.36	0.34
PCB# 84	µg/kg	34	48	40	36	50	41
PCB# 87	µg/kg	22	33	24	22	32	25
PCB# 91	µg/kg	15	22	17	17	21	19
PCB# 105	µg/kg	13	19	15	13	18	15
PCB# 110	µg/kg	49	63	51	47	65	54
PCB# 114	µg/kg	1.1	1.3	1.3	1.3	1.1	0.95
PCB# 118	µg/kg	33	43	33	31	43	36
PCB# 123	µg/kg	2.9	3.4	3.4	3.3	2.8	2.3
PCB# 126	µg/kg	0.19	0.21	0.14	0.15	0.2	0.19
PCB# 128	µg/kg	2.8	3.4	2.9	2.9	2.6	2.3

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation					
		IHCOR01 Composite	IHCOR02 Composite	CACOR01 Composite	KACOR01 Composite	KACOR02 Composite	KACOR03 Composite
Polychlorinated Biphenyls (cont.)							
PCB# 138	µg/kg	18	24	17	16	21	18
PCB# 153	µg/kg	21	28	21	19	24	22
PCB# 156	µg/kg	1.2	1.4	1.2	1.2	1.1	0.99
PCB# 157	µg/kg	0.26	0.28	0.25	0.27	0.23	0.26
PCB# 158	µg/kg	1.9	2	1.8	1.7	1.6	1.4
PCB# 166	µg/kg	0.078	0.078	0.078	0.11	0.076	0.063
PCB# 167	µg/kg	0.65	0.69	0.65	0.72	0.68	0.54
PCB# 169	µg/kg	0.068	0.073	0.1	0.058	0.059	0.049
PCB# 170	µg/kg	1.5	1.6	2	1.2	1.6	1.5
PCB# 189	µg/kg	0.049	0.14	0.068	0.078	0.077	0.086
Total PCBs	µg/kg	1096.139	1254.557	1073.165	910.086	1302.998	1066.59
Pesticides							
Chlordane-alpha	µg/kg	<100	<100	<100	<100	<100	<100
Chlordane-gamma	µg/kg	<100	<100	<100	<100	<100	<100
Chlordane-total	µg/kg	<200	<200	<200	<200	<200	<200
cis-nonachlor	µg/kg	<100	<100	<100	<100	<100	<100
o,p'-DDD	µg/kg	<100	<100	<100	<100	<100	<100
p,p'-DDD	µg/kg	<100	<100	<100	<100	<100	<100
Sum DDD	µg/kg	<200	<200	<200	<200	<200	<200
o,p'-DDE	µg/kg	<100	<100	<100	<100	<100	<100
p,p'-DDE	µg/kg	<100	<100	<100	<100	<100	<100
Sum DDE	µg/kg	<200	<200	<200	<200	<200	<200
o,p'-DDT	µg/kg	<100	<100	<100	<100	<100	<100
p,p'-DDT	µg/kg	<100	<100	<100	<100	<100	<100
Sum DDT	µg/kg	<200	<200	<200	<200	<200	<200
Total DDTs	µg/kg	<600	<600	<600	<600	<600	<600
Dieldrin	µg/kg	<100	<100	<100	<100	<100	<100

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation					
		IHCOR01 Composite	IHCOR02 Composite	CACOR01 Composite	KACOR01 Composite	KACOR02 Composite	KACOR03 Composite
Pesticides (cont.)							
Endrin	µg/kg	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	µg/kg	<100	<100	<100	<100	<100	<100
Heptachlor epoxide	µg/kg	<100	<100	<100	<100	<100	<100
Hexachlorocyclohexane-alpha	µg/kg	<100	<100	<100	<100	<100	<100
Hexachlorocyclohexane-beta	µg/kg	<100	<100	<100	<100	<100	<100
Hexachlorocyclohexane-delta	µg/kg	<100	<100	<100	<100	<100	<100
Lindane (gamma-BHC)	µg/kg	<100	<100	<100	<100	<100	<100
Mirex	µg/kg	<100	<100	<100	<100	<100	<100
Oxychlordane	µg/kg	<100	<100	<100	<100	<100	<100
Trans-nonachlor	µg/kg	<100	<100	<100	<100	<100	<100
Toxaphene	µg/kg	<500	<500	<500	<500	<500	<500

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation				
		CDCOR01 Composite	CDCOR02 Composite	151COR01 Composite	151COR02 Composite	CHICOR01 Composite
Species included		*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*	*Corbicula fluminea*
Mass	g	20.1	22.6	22.5	24.2	12.1
Conventionals						
Lipid	%	0.914	0.913	0.818	0.802	0.93
Moisture	%	85.1	84.6	85.1	86.7	85.7
Metals						
Arsenic	mg/kg	1.32	1.30	1.25	1.12	1.18
Aluminum	mg/kg	51.3	30.8	34.6	43.0	26.6
Barium	mg/kg	0.904	0.662	0.642	0.771	0.561
Beryllium	mg/kg	<0.0295	<0.0302	<0.0291	<0.0258	<0.0270
Boron	mg/kg	<0.589	<0.604	<0.580	<0.516	0.829
Cadmium	mg/kg	0.0754	0.0710	0.0772	0.0902	0.0656
Chromium	mg/kg	2.32	1.77	1.41	1.77	1.21
Copper	mg/kg	10.5	9.19	11.2	7.14	7.89
Iron	mg/kg	506	344	336	505	279
Lead	mg/kg	3.46	2.43	2.44	2.94	2.00
Magnesium	mg/kg	151	149	133	135	125
Manganese	mg/kg	9.88	6.53	7.27	9.36	6.05
Mercury	mg/kg	0.0112	0.00867	0.00989	0.00887	0.00641
Molybdenum	mg/kg	0.212	0.152	0.213	0.201	0.157
Nickel	mg/kg	0.971	0.849	0.851	0.911	0.762
Selenium	mg/kg	1.13	1.20	1.07	0.9709	1.13
Strontium	mg/kg	0.690	0.822	0.632	0.649	0.542
Vanadium	mg/kg	0.255	0.152	0.150	0.20748	0.135278
Zinc	mg/kg	32.8	34.8	31.7	34.7	26.7

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation				
		CDCOR01 Composite	CDCOR02 Composite	151COR01 Composite	151COR02 Composite	CHICOR01 Composite
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	µg/kg	253	133	71	163	16
Acenaphthylene	µg/kg	210	180	91	216	19
Anthracene	µg/kg	313	249	124	303	<100
Benz(a)anthracene	µg/kg	1880	1590	788	1420	<100
Benzo(a)pyrene	µg/kg	1340	1350	557	1210	<100
Benzo(b)fluoranthene	µg/kg	2350	2270	1080	2240	<100
Benzo(e)pyrene	µg/kg	2130	2080	979	1880	19
Benzo(g,h,i)perylene	µg/kg	488	576	270	528	<100
Benzo(k)fluoranthene	µg/kg	926	892	367	799	<100
Biphenyl	µg/kg	29	24	10	25	10
Chrysene	µg/kg	3490	3130	1450	2920	<100
C1-Chrysenes	µg/kg	2940	2820	1250	2640	<100
C2-Chrysenes	µg/kg	67	17	11	19	<100
C3-Chrysenes	µg/kg	<100	<100	<100	<100	<100
C4-Chrysenes	µg/kg	<100	<100	<100	<100	<100
Dibenz(a,h)anthracene	µg/kg	183	207	76	190	<100
Dibenzothiophene	µg/kg	162	92	56	155	<100
C1-Dibenzothiophenes	µg/kg	760	450	240	1120	26
C2-Dibenzothiophenes	µg/kg	2030	1100	550	2670	<100
C3-Dibenzothiophenes	µg/kg	<100	<100	<100	<100	<100
2,6-Dimethylnaphthalene	µg/kg	61	27	15	31	<100
Fluoranthene	µg/kg	3480	2900	1320	2930	36
C1-Fluoranthenes and pyrenes	µg/kg	4980	4310	1930	4270	16
Fluorene	µg/kg	236	188	94	230	<100
C1-Fluorenes	µg/kg	860	690	340	780	41
C2-Fluorenes	µg/kg	1440	1150	500	1130	108
C3-Fluorenes	µg/kg	1020	690	490	910	586
Indeno(1,2,3-cd)pyrene	µg/kg	421	459	204	455	<100

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation				
		CDCOR01 Composite	CDCOR02 Composite	151COR01 Composite	151COR02 Composite	CHICOR01 Composite
Polycyclic Aromatic Hydrocarbons (cont.)						
1-Methylnaphthalene	µg/kg	35	<100	<100	<100	<100
1-Methylphenanthrene	µg/kg	236	152	79	209	<100
2-Methylnaphthalene	µg/kg	59	29	20	35	25
Naphthalene	µg/kg	60	<100	<100	31	<100
C1-Naphthalenes	µg/kg	94	29	20	35	26
C2-Naphthalenes	µg/kg	220	97	61	130	54
C3-Naphthalenes	µg/kg	660	260	230	340	115
C4-Naphthalenes	µg/kg	1030	420	310	460	92
Perylene	µg/kg	139	152	91	139	<100
Phenanthrene	µg/kg	751	550	266	741	<100
C1-Phenanthrenes	µg/kg	2020	1440	740	1840	70
C2-Phenanthrenes	µg/kg	5080	3780	1840	6310	1510
C3-Phenanthrenes	µg/kg	6610	4620	2470	7430	467
C4-Phenanthrenes	µg/kg	3450	2660	1330	3840	88
Pyrene	µg/kg	4840	3410	1560	3680	37
1,6,7-Trimethyl-naphthalene	µg/kg	79	42	17	50	13
Polychlorinated Biphenyls						
PCB# 8	µg/kg	5.9	5.7	4.1	5.6	5.5
PCB# 9	µg/kg	0.45	0.44	0.21	0.24	0.27
PCB# 10	µg/kg	0.6	0.58	0.39	0.46	0.55
PCB# 16	µg/kg	23	24	29	34	28
PCB# 17	µg/kg	35	37	30	37	35
PCB# 20/33	µg/kg	22	22	21	27	29
PCB# 22	µg/kg	15	18	14	18	20
PCB# 25	µg/kg	11	9.4	10	11	12
PCB# 28	µg/kg	45	50	51	58	46
PCB# 29	µg/kg	0.35	0.45	0.089	0.51	0.58

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation				
		CDCOR01 Composite	CDCOR02 Composite	151COR01 Composite	151COR02 Composite	CHICOR01 Composite
Polychlorinated Biphenyls (cont.)						
PCB# 30	µg/kg	0.054	0.063	0.12	0.096	0.072
PCB# 31	µg/kg	43	48	51	58	40
PCB# 39	µg/kg	0.051	0.041	0.071	0.064	0.093
PCB# 41	µg/kg	19	18	0.88	21	25
PCB# 48/49	µg/kg	69	83	88	98	79
PCB# 52	µg/kg	93	110	150	170	110
PCB# 53	µg/kg	18	26	27	30	34
PCB# 55	µg/kg	0.99	0.89	0.99	0.96	1.3
PCB# 60	µg/kg	17	20	16	17	21
PCB# 61/67	µg/kg	0.02	0.02	5.5	5.7	0.02
PCB# 63	µg/kg	3.4	3.2	0.29	0.6	4.5
PCB# 66	µg/kg	61	72	51	54	69
PCB# 70	µg/kg	70	82	57	60	78
PCB# 72	µg/kg	2.3	2.3	2.8	2.8	3.4
PCB# 74	µg/kg	37	44	30	31	38
PCB# 77	µg/kg	3.6	4.4	3.4	3.2	4.7
PCB# 80	µg/kg	0.1	0.099	0.16	0.21	0.27
PCB# 81	µg/kg	0.19	0.23	0.27	0.2	0.3
PCB# 84	µg/kg	27	35	27	28	31
PCB# 87	µg/kg	17	21	17	19	23
PCB# 91	µg/kg	13	15	13	16	17
PCB# 105	µg/kg	10	13	12	12	14
PCB# 110	µg/kg	40	48	34	36	41
PCB# 114	µg/kg	0.94	0.9	1.1	1.1	1.3
PCB# 118	µg/kg	25	30	24	25	29
PCB# 123	µg/kg	2.6	2.3	2.7	2.8	3.5
PCB# 126	µg/kg	0.14	0.16	0.12	0.18	0.15
PCB# 128	µg/kg	2.2	2.1	2.3	2.4	2.9

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation				
		CDCOR01 Composite	CDCOR02 Composite	151COR01 Composite	151COR02 Composite	CHICOR01 Composite
Polychlorinated Biphenyls (cont.)						
PCB# 138	µg/kg	11	15	13	13	16
PCB# 153	µg/kg	13	19	16	16	18
PCB# 156	µg/kg	0.89	0.81	0.99	0.99	1.2
PCB# 157	µg/kg	0.21	0.24	0.26	0.26	0.28
PCB# 158	µg/kg	1.3	1.3	1.6	1.6	1.9
PCB# 166	µg/kg	0.098	0.1	0.094	0.13	0.18
PCB# 167	µg/kg	0.61	0.51	0.7	0.62	0.72
PCB# 169	µg/kg	0.094	0.053	0.067	0.065	0.095
PCB# 170	µg/kg	0.74	0.65	1.2	1	0.86
PCB# 189	µg/kg	0.065	0.07	0.088	0.096	0.083
Total PCBs	µg/kg	755.992	881.306	807.389	915.281	882.223
Pesticides						
Chlordane-alpha	µg/kg	<100	<100	<100	<100	<100
Chlordane-gamma	µg/kg	<100	<100	<100	<100	<100
Chlordane-total	µg/kg	<200	<200	<200	<200	<200
cis-nonachlor	µg/kg	<100	<100	<100	<100	<100
o,p'-DDD	µg/kg	<100	<100	<100	<100	<100
p,p'-DDD	µg/kg	<100	<100	<100	<100	<100
Sum DDD	µg/kg	<200	<200	<200	<200	<200
o,p'-DDE	µg/kg	<100	<100	<100	<100	<100
p,p'-DDE	µg/kg	<100	<100	<100	<100	<100
Sum DDE	µg/kg	<200	<200	<200	<200	<200
o,p'-DDT	µg/kg	<100	<100	<100	<100	<100
p,p'-DDT	µg/kg	<100	<100	<100	<100	<100
Sum DDT	µg/kg	<200	<200	<200	<200	<200
Total DDTs	µg/kg	<600	<600	<600	<600	<600
Dieldrin	µg/kg	<100	<100	<100	<100	<100

Appendix 5.9. Tissue chemistry data for the Assessment Area (May 1999; USFWS 2000).

Substance	Units	Station Number/Sample Preparation				
		CDCOR01 Composite	CDCOR02 Composite	151COR01 Composite	151COR02 Composite	CHICOR01 Composite
Pesticides (cont.)						
Endrin	µg/kg	<100	<100	<100	<100	<100
Hexachlorobenzene	µg/kg	<100	<100	<100	<100	<100
Heptachlor epoxide	µg/kg	<100	<100	<100	<100	<100
Hexachlorocyclohexane-alpha	µg/kg	<100	<100	<100	<100	<100
Hexachlorocyclohexane-beta	µg/kg	<100	<100	<100	<100	<100
Hexachlorocyclohexane-delta	µg/kg	<100	<100	<100	<100	<100
Lindane (gamma-BHC)	µg/kg	<100	<100	<100	<100	<100
Mirex	µg/kg	<100	<100	<100	<100	<100
Oxychlordane	µg/kg	<100	<100	<100	<100	<100
Trans-nonachlor	µg/kg	<100	<100	<100	<100	<100
Toxaphene	µg/kg	<500	<500	<500	<500	<500

Appendix VI

Sampling Stations Descriptions

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Polls *et al.* 1993 (1982 samples)	3-82	3-82	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.608	-87.3938	Clark St.
IND/0006-1	2-82	2-82	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61399	-87.46154	Kennedy Ave.
	1-82	1-82	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6256	-87.5202	0.16 miles west of Hohman Ave.
	4-82	4-82	IHC	Chicago Ave. to Columbus Dr.	Surface	41.63774	-87.47113	0.01 miles south of Columbus Drive
	5-82	5-82	USC	Hwy 912 to Dickey Rd.	Surface	41.65331	-87.46169	0.19 miles south of Dickey Road
	6-82	6-82	USC	B & O Railroad to IH	Surface	41.6621	-87.4498	0.21 miles north of 3-track railroad bridge
	7-82	7-82	IH	Indiana Harbor	Surface	41.6679	-87.442	USC mouth
	8-82	8-82	IH	Indiana Harbor	Surface	41.6745	-87.4405	Lower IH
	9-82	9-82	IH	Indiana Harbor	Surface	41.6788	-87.4421	Upper IH
	10-82	10-82	Lake Mich.	Lake Michigan	Surface	41.67527	-87.47085	1.50 miles NW of USC mouth
	12-82	12-82	Lake Mich.	Lake Michigan	Surface	41.69343	-87.44164	1.75 miles north of USC mouth
	13-82	13-82	Lake Mich.	Lake Michigan	Surface	41.69962	-87.49506	3.50 miles NW of USC mouth
	14-82	14-82	Lake Mich.	Lake Michigan	Surface	41.70974	-87.48109	3.50 miles NW of USC mouth
	15-82	15-82	Lake Mich.	Lake Michigan	Surface	41.7185	-87.46841	3.75 miles NW of USC mouth
	16-82	16-82	Lake Mich.	Lake Michigan	Surface	41.72281	-87.52026	5.50 miles NW of USC mouth
	17-82	17-82	Lake Mich.	Lake Michigan	Surface	41.73371	-87.50659	5.60 miles NW of USC mouth
	18-82	18-82	Lake Mich.	Lake Michigan	Surface	41.73974	-87.49634	5.65 miles NW of USC mouth
Polls *et al.* 1993 (1986 samples)	3-86	3-86	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.608	-87.3938	Clark St.
IND/0006-2	2-86	2-86	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61399	-87.46154	Kennedy Ave.
	1-86	1-86	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6256	-87.5202	0.16 miles west of Hohman Ave.
	4-86	4-86	IHC	Chicago Ave. to Columbus Dr.	Surface	41.63774	-87.47113	0.01 miles south of Columbus Drive
	5-86	5-86	USC	Hwy 912 to Dickey Rd.	Surface	41.65331	-87.46169	0.19 miles south of Dickey Road
	6-86	6-86	USC	B & O Railroad to IH	Surface	41.6621	-87.4498	0.21 miles north of 3-track railroad bridge
	7-86	7-86	IH	Indiana Harbor	Surface	41.6679	-87.442	USC mouth
	8-86	8-86	IH	Indiana Harbor	Surface	41.6745	-87.4405	Lower IH
	9-86	9-86	IH	Indiana Harbor	Surface	41.6788	-87.4421	Upper IH
	10-86	10-86	Lake Mich.	Lake Michigan	Surface	41.67527	-87.47085	1.50 miles NW of USC mouth
	11-86	11-86	Lake Mich.	Lake Michigan	Surface	41.68486	-87.46128	1.75 miles north of USC mouth
	12-86	12-86	Lake Mich.	Lake Michigan	Surface	41.69343	-87.44164	3.50 miles NW of USC mouth
	13-86	13-86	Lake Mich.	Lake Michigan	Surface	41.69962	-87.49506	3.50 miles NW of USC mouth
	14-86	14-86	Lake Mich.	Lake Michigan	Surface	41.70974	-87.48109	3.75 miles NW of USC mouth
	15-86	15-86	Lake Mich.	Lake Michigan	Surface	41.7185	-87.46841	5.50 miles NW of USC mouth
	16-86	16-86	Lake Mich.	Lake Michigan	Surface	41.72281	-87.52026	5.60 miles NW of USC mouth
	17-86	17-86	Lake Mich.	Lake Michigan	Surface	41.73371	-87.50659	5.65 miles NW of USC mouth

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Risatti and Ross 1989	18-86	18-86	Lake Mich.	Lake Michigan	Surface	41.73974	-87.49634	5.65 miles NW of USC mouth
IND/0009	1	S1	LGB	Indianapolis Blvd. to B & O Railroad	Surface	41.64684	-87.481	Indianapolis Blvd.
	2	S2	USC	Columbus Dr. to Forks	Surface	41.63963	-87.4711	Columbus Drive
	2B	S2B	USC	Columbus Dr. to Forks	Surface	41.63963	-87.4711	Columbus Drive
	12/12A	S12	USC	Forks to Hwy. 912	Surface	41.64883	-87.4682	E.J. & E. Railroad
	3	S3	USC	Dickey Rd. to B & O Railroad	Surface	41.65542	-87.4587	Dickey Road
	4	S4	IH	Indiana Harbor	Surface	41.66527	-87.4383	IH-east of USC mouth
	5	S5	IH	Indiana Harbor	Surface	41.67873	-87.442	Upper Indiana Harbor
	10	S10	Lake Mich.	Lake Michigan	Surface	41.68878	-87.4314	1.60 miles north of USC mouth
	11/11A	S11	Lake Mich.	Lake Michigan	Surface	41.67649	-87.401	2.25 miles east of USC mouth
	6	S6	Lake Mich.	Lake Michigan	Surface	41.68529	-87.4501	1.25 miles NW of USC mouth
	7	S7	Lake Mich.	Lake Michigan	Surface	41.68936	-87.4683	2.00 miles NW of USC mouth
	8A	S8A	Lake Mich.	Lake Michigan	Surface	41.69058	-87.4382	1.60 miles north of USC mouth
	9A	S9A	Lake Mich.	Lake Michigan	Surface	41.67646	-87.4018	2.25 miles NE of USC mouth
HNTB 1991	UG10/1.1	UG10 (1.1' deep)	WBGCR II	Illinois portion	1-1.1	41.62614	-87.52498	State Line Ave.
IND/0017	UG10/6.0	UG10 (6.6' deep)	WBGCR II	Illinois portion	5.9-6.1	41.62614	-87.52498	State Line Ave.
	UG10/6.7	UG10 (6.7' deep)	WBGCR II	Illinois portion	6.6-6.7	41.62614	-87.52498	State Line Ave.
	UH 9.4 all	UH 9.4	WBGCR II	Calumet Ave. to Hohman Ave.	0-9	41.62304	-87.51481	0.10 miles west of Sohl Ave.
	UH9.4/0.9	UH9.4 (0.9' deep)	WBGCR II	Calumet Ave. to Hohman Ave.	0.8-1	41.62304	-87.51481	0.10 miles west of Sohl Ave.
	UH9.4/11.2	UH9.4 (11.2' deep)	WBGCR II	Calumet Ave. to Hohman Ave.	11.1-11.2	41.62304	-87.51481	0.10 miles west of Sohl Ave.
	UH9.4/5.9	UH9.4 (5.9' deep)	WBGCR II	Calumet Ave. to Hohman Ave.	5.7-6	41.62304	-87.51481	0.10 miles west of Sohl Ave.
	UH 9.2 all	UH 9.2	WBGCR II	Columbia Ave. to Calumet Ave.	0-9	41.61892	-87.50063	0.04 miles west of Columbia Ave.
	UH9.2/1.1	UH9.2 (1.1' deep)	WBGCR II	Columbia Ave. to Calumet Ave.	1-1.1	41.61892	-87.50063	0.04 miles west of Columbia Ave.
	UH9.2/12	UH9.2 (12.0' deep)	WBGCR II	Columbia Ave. to Calumet Ave.	11.9-12.1	41.61892	-87.50063	0.04 miles west of Columbia Ave.
	UH9.2/5.9	UH9.2 (5.9' deep)	WBGCR II	Columbia Ave. to Calumet Ave.	5.7-6	41.61892	-87.50063	0.04 miles west of Columbia Ave.
	UG 9 all	UG 9	WBGCR II	I-90 to Columbia Ave.	0-9	41.61632	-87.49038	White Oak Ave.
	UG9/1.1	UG9 (1.1' deep)	WBGCR II	I-90 to Columbia Ave.	1-1.1	41.61632	-87.49038	White Oak Ave.
	UG9/12.1	UG9 (12.1' deep)	WBGCR II	I-90 to Columbia Ave.	12-12.2	41.61632	-87.49038	White Oak Ave.
	UG9/5.9	UG9 (5.9' deep)	WBGCR II	I-90 to Columbia Ave.	5.7-6	41.61632	-87.49038	White Oak Ave.
	UH9.15/0.9	UH9.15 (0.9' deep)	WBGCR II	I-90 to Columbia Ave.	0.8-1	41.61878	-87.49957	Columbia Ave.
	UH9.15/12.1	UH9.15 (12.1' deep)	WBGCR II	I-90 to Columbia Ave.	12-12.1	41.61878	-87.49957	Columbia Ave.
	UH9.15/5.5	UH9.15 (5.5' deep)	WBGCR II	I-90 to Columbia Ave.	5.4-5.5	41.61878	-87.49957	Columbia Ave.
	UH 8.5	UH 8.5	WBGCR II	Indianapolis Blvd. to I-90	0-9	41.61879	-87.48619	0.44 miles west of Indianapolis Blvd.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
HNTB 1989	UG10-A	UG10, Top	WBGCR II	Illinois portion	0-3	41.626	-87.5253	State Line Ave.
IND/0022	UG10-B	UG10, Middle	WBGCR II	Illinois portion	3-6	41.626	-87.5253	State Line Ave.
	UG10-C	UG10, Bottom	WBGCR II	Illinois portion	6-9	41.626	-87.5253	State Line Ave.
	UH9.3	UH9.3	WBGCR II	Calumet Ave. to Hohman Ave.	0-9	41.6223	-87.5127	Sohl Ave.
	UH9.4	UH9.4	WBGCR II	Calumet Ave. to Hohman Ave.	0-9	41.6228	-87.5143	0.10 miles west of Sohl Ave.
	UH9.2	UH9.2	WBGCR II	Columbia Ave. to Calumet Ave.	0-9	41.6189	-87.5002	Columbia Ave.
	UG9-A	UG9, Top	WBGCR II	I-90 to Columbia Ave.	0-3	41.6162	-87.4902	White Oak Ave.
	UG9-B	UG9, Middle	WBGCR II	I-90 to Columbia Ave.	3-6	41.6162	-87.4902	White Oak Ave.
	UG9-C	UG9, Bottom	WBGCR II	I-90 to Columbia Ave.	6-9	41.6162	-87.4902	White Oak Ave.
	UH9.1	UH9.1	WBGCR II	I-90 to Columbia Ave.	0-9	41.6172	-87.4973	Molsberger Place
Dorkin 1994; Burton 1994	TORR1-01A	93CM06S01; Center; H1	WBGCR II	Illinois portion	0-3	41.64554	-87.558	Torrence Ave., Illinois (UG/UH-17)*
(Phase 1 - Aug. 1993)	TORR1-01B	93CM06S01; Center; H1	WBGCR II	Illinois portion	0-3	41.64554	-87.558	Torrence Ave., Illinois (UG/UH-17)
IND/0025	STATE1-05	93CM06S05; Center; H1	WBGCR II	Hohman Ave. to State Line Ave.	0-3	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	SOHL1-09	93CM06S09; Center; H1	WBGCR II	Calumet Ave. to Hohman Ave.	0-3	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	COL1-13	93CM06S13; Center; H1	WBGCR II	I-90 to Columbia Ave.	0-1	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	MOL1-17	93CM06S17; Center; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	ROX1-21A	93CM06S21; Center-1; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX1-21B	93CM06D21; Center-2; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
Dorkin 1994; Burton 1994	TORR2-01	93CM07S01; Center; H1	WBGCR II	Illinois portion	0-3	41.64554	-87.558	Torrence Ave., Illinois (UG/UH-17)*
(Phase 2 - Sept. 1993)	TORR2-02	93CM07S02; Center; H2	WBGCR II	Illinois portion	3-6	41.64554	-87.558	Torrence Ave., Illinois (UG/UH-17)
IND/0025	TORR2-03	93CM07S03; Center; H3	WBGCR II	Illinois portion	6-7.5	41.64554	-87.558	Torrence Ave., Illinois (UG/UH-17)
	STATE2-07	93CM07S07; Center-1; H1	WBGCR II	Hohman Ave. to State Line Ave.	0-3	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	STATE2-09	93CM07S09; Center-1; H2	WBGCR II	Hohman Ave. to State Line Ave.	3-4.3	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	STATE2-13	93CM07S13; Center-2; H1	WBGCR II	Hohman Ave. to State Line Ave.	0-3	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	STATE2-14	93CM07S14; Center-2; H2	WBGCR II	Hohman Ave. to State Line Ave.	3-5.1	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	STATE2-19	93CM07S19; south; H1	WBGCR II	Hohman Ave. to State Line Ave.	0-3	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	STATE2-20	93CM07S20; north; H1	WBGCR II	Hohman Ave. to State Line Ave.	0-3	41.62546	-87.5201	0.24 miles east of State Line Ave. (UG/UH-10)
	SOHL2-21	93CM07S21; Center-1; H1	WBGCR II	Calumet Ave. to Hohman Ave.	0-3	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-23	93CM07S23; Center-1; H2	WBGCR II	Calumet Ave. to Hohman Ave.	3-6	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-25	93CM07S25; Center-1; H3	WBGCR II	Calumet Ave. to Hohman Ave.	6-6.5	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-27	93CM07S27; Center-2; H1	WBGCR II	Calumet Ave. to Hohman Ave.	0-3	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-28	93CM07S28; Center-2; H2	WBGCR II	Calumet Ave. to Hohman Ave.	3-6	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-29	93CM07S29; Center-2; H3	WBGCR II	Calumet Ave. to Hohman Ave.	6-7	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-33	93CM07S33; Center-4; H1	WBGCR II	Calumet Ave. to Hohman Ave.	0-3	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
	SOHL2-35	93CM07S35; Center-4; H2	WBGCR II	Calumet Ave. to Hohman Ave.	3-6	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Dorkin 1994; Burton 1994	SOHL2-96	93CM07S96; Center-4; H3	WBGCR II	Calumet Ave. to Hohman Ave.	6-7.8	41.6222	-87.5127	Sohl Ave. (UG/UH 9.3)
(Phase 2 - Sept. 1993)	COL2-37	93CM07S37; Center-1; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
IND/0025 (cont.)	COL2-38	93CM07S38; Center-1; H2	WBGCR II	I-90 to Columbia Ave.	3-6	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	COL2-39	93CM07S39; Center-1; H3	WBGCR II	I-90 to Columbia Ave.	6-7.2	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	COL2-40	93CM07S40; Center-2; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	COL2-41	93CM07S41; Center-2; H2	WBGCR II	I-90 to Columbia Ave.	3-6	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	COL2-42	93CM07S42; Center-2; H3	WBGCR II	I-90 to Columbia Ave.	6-7.1	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	COL2-46	93CM07S46; south; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	COL2-47	93CM07S47; north; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61866	-87.4997	Columbia Ave. (UG/UH 9.15)
	MOL2-48	93CM07S48; Center-1; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-50	93CM07S50; Center-1; H2	WBGCR II	I-90 to Columbia Ave.	3-6	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-52	93CM07S52; Center-1; H3	WBGCR II	I-90 to Columbia Ave.	6-9	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-54	93CM07S54; Center-1; H4	WBGCR II	I-90 to Columbia Ave.	9-12	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-56	93CM07S56;Center-1; H5	WBGCR II	I-90 to Columbia Ave.	12-13	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-58	93CM07S58; Center-2; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-59	93CM07S59; Center-2; H2	WBGCR II	I-90 to Columbia Ave.	3-6	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-60	93CM07S60; Center-2; H3	WBGCR II	I-90 to Columbia Ave.	6-9	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-61	93CM07S61; Center-2; H4	WBGCR II	I-90 to Columbia Ave.	9-11.7	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-68	93CM07S68; south; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	MOL2-70	93CM07S70; north; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.6159	-87.4938	0.14 miles east of Molsberger Place (UG/UH 9.1)
	ROX2-71	93CM07S71; Center-1; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-72	93CM07S72; Center-1; H2	WBGCR II	I-90 to Columbia Ave.	3-6	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-73	93CM07S73; Center-1; H3	WBGCR II	I-90 to Columbia Ave.	6-7.5	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-74	93CM07S74; Center-2; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-75	93CM07S75; Center-2; H2	WBGCR II	I-90 to Columbia Ave.	3-6	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-76	93CM07S76; Center-2; H3	WBGCR II	I-90 to Columbia Ave.	6-7.7	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-80	93CM07S80; south; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-81	93CM07S81; north; H1	WBGCR II	I-90 to Columbia Ave.	0-3	41.61617	-87.4902	Roxana Marsh @ White Oak Ave (UG 9)
	ROX2-82	93CM07S82; Center-1; H1	WBGCR II	Indianapolis Blvd. to I-90	0-3	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-84	93CM07S84; Center-1; H2	WBGCR II	Indianapolis Blvd. to I-90	3-6	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-86	93CM07S86; Center-1; H3	WBGCR II	Indianapolis Blvd. to I-90	6-7.8	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-88	93CM07S88; Center-2; H1	WBGCR II	Indianapolis Blvd. to I-90	0-3	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-89	93CM07S89; Center-2; H2	WBGCR II	Indianapolis Blvd. to I-90	3-6	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-90	93CM07S90; Center-2; H3	WBGCR II	Indianapolis Blvd. to I-90	6-7.2	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-94	93CM07S94; south; H1	WBGCR II	Indianapolis Blvd. to I-90	0-3	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)
	ROX2-95	93CM07S95; north; H1	WBGCR II	Indianapolis Blvd. to I-90	0-3	41.6188	-87.48642	Roxana Marsh (UG/UH 8.5)

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Unger 1992	UG1 Bottom	UG1 Bottom	EBGCR II	Tennessee St. to Lagoon Culvert	6-9	41.60837	-87.31184	1.00 Mile west of Lagoon Culvert
IND/0030	UG1 Middle	UG1 Middle	EBGCR II	Tennessee St. to Lagoon Culvert	3-6	41.60837	-87.31184	1.00 Mile west of Lagoon Culvert
	UG1 Top	UG1 Top	EBGCR II	Tennessee St. to Lagoon Culvert	0-3	41.60837	-87.31184	1.00 Mile west of Lagoon Culvert
	UG2 Bottom	UG2 Bottom	EBGCR II	I-90 to Broadway	6-9	41.60953	-87.34734	0.55 miles west of Broadway
	UG2 Middle	UG2 Middle	EBGCR II	I-90 to Broadway	3-6	41.60953	-87.34734	0.55 miles west of Broadway
	UG2 Top	UG2 Top	EBGCR II	I-90 to Broadway	0-3	41.60953	-87.34734	0.55 miles west of Broadway
	UG3 Bottom	UG3 Bottom	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	6-9	41.60829	-87.39604	0.10 miles west of Clark St.
	UG3 Middle	UG3 Middle	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	3-6	41.60829	-87.39604	0.10 miles west of Clark St.
	UG3 Top	UG3 Top	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-3	41.60829	-87.39604	0.10 miles west of Clark St.
	UG4 Bottom	UG4 Bottom	EBGCR I	Cline Ave. to Cline/I-90 Ramps	6-9	41.61213	-87.42734	0.28 miles east of Cline Ave.
	UG4 Middle	UG4 Middle	EBGCR I	Cline Ave. to Cline/I-90 Ramps	3-6	41.61213	-87.42734	0.28 miles east of Cline Ave.
	UG4 Top	UG4 Top	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-3	41.61213	-87.42734	0.28 miles east of Cline Ave.
	UG5 Bottom	UG5 Bottom	EBGCR I	Kennedy Ave. to Cline Ave.	6-9	41.612	-87.44414	0.60 miles west of Cline Ave.
	UG5 Middle	UG5 Middle	EBGCR I	Kennedy Ave. to Cline Ave.	3-6	41.612	-87.44414	0.60 miles west of Cline Ave.
	UG5 Top	UG5 Top	EBGCR I	Kennedy Ave. to Cline Ave.	0-3	41.612	-87.44414	0.60 miles west of Cline Ave.
	UG6 Bottom	UG6 Bottom	EBGCR I	EB & WB Confluence to Kennedy Ave.	6-9	41.61552	-87.46761	Mouth of USS Lead Canal
	UG6 Middle	UG6 Middle	EBGCR I	EB & WB Confluence to Kennedy Ave.	3-6	41.61552	-87.46761	Mouth of USS Lead Canal
	UG6 Top	UG6 Top	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-3	41.61552	-87.46761	Mouth of USS Lead Canal
	UG10 Bottom	UG10 Bottom	WBGCR II	Hohman Ave. to State Line Ave.	6-9	41.62592	-87.52284	0.10 miles east of State Line Ave.
	UG10 Middle	UG10 Middle	WBGCR II	Hohman Ave. to State Line Ave.	3-6	41.62592	-87.52284	0.10 miles east of State Line Ave.
	UG10 Top	UG10 Top	WBGCR II	Hohman Ave. to State Line Ave.	0-3	41.62592	-87.52284	0.10 miles east of State Line Ave.
	UG9 Bottom	UG9 Bottom	WBGCR II	I-90 to Columbia Ave.	6-9	41.61653	-87.48994	White Oak Ave.
	UG9 Middle	UG9 Middle	WBGCR II	I-90 to Columbia Ave.	3-6	41.61653	-87.48994	White Oak Ave.
	UG9 Top	UG9 Top	WBGCR II	I-90 to Columbia Ave.	0-3	41.61653	-87.48994	White Oak Ave.
	UG8 Bottom	UG8 Bottom	WBGCR I	EB & WB Confluence to Indianapolis Blvd	6-9	41.61474	-87.47554	0.35 miles west of EB & WB Confluence
	UG8 Middle	UG8 Middle	WBGCR I	EB & WB Confluence to Indianapolis Blvd	3-6	41.61474	-87.47554	0.35 miles west of EB & WB Confluence
	UG8 Top	UG8 Top	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-3	41.61474	-87.47554	0.35 miles west of EB & WB Confluence
	UG7 Bottom	UG7 Bottom	IHC	EB & WB Confluence to 151st St.	6-9	41.61824	-87.47106	EB & WB Confluence
	UG7 Middle	UG7 Middle	IHC	EB & WB Confluence to 151st St.	3-6	41.61824	-87.47106	EB & WB Confluence
	UG7 Top	UG7 Top	IHC	EB & WB Confluence to 151st St.	0-3	41.61824	-87.47106	EB & WB Confluence
Sobeich *et al.* 1994	GCR-06	GCR-06	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.60782	-87.31823	0.24 miles east of Tennessee St.
IND/0042	GCR-11	GCR-11	EBGCR II	Virginia St. to Tennessee St.	Surface	41.607590	-87.329120	0.11 miles east of Virginia St.
	GCR-18	GCR-18	EBGCR II	I-90 to Broadway	Surface	41.609790	-87.341050	0.13 miles west of Broadway
	GCR-21	GCR-21	EBGCR II	I-90 to Broadway	Surface	41.609780	-87.346060	0.50 miles west of Broadway
	GCR-24	GCR-24	EBGCR II	Grant St. to I-90	Surface	41.607870	-87.350480	0.09 miles east of Buchanan
	GCR-28	GCR-28	EBGCR II	Bridge St. to Grant St.	Surface	41.608640	-87.362720	0.44 miles east of Bridge St.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Sobeich *et al.* 1994	GCR-32	GCR-32	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.606780	-87.375980	0.18 miles east of Wabash Railroad
IND/0042 (cont.)	GCR-34	GRC-34	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.609140	-87.380440	0.28 miles east of Wabash Railroad
	GCR-35	GCR-35	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.611450	-87.382050	0.47 miles east of Industrial Hwy
	GCR-36	GCR-36	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.611590	-87.385220	0.04 miles east of ConRail Bridge
USEPA 1996a (Phase I)	IH 01 07	IH 07	USC	Indianapolis Blvd. to Forks	Surface	41.64598	-87.47243	Forks
IND/0046-1	IH 01 08	IH 08	USC	Indianapolis Blvd. to Forks	Surface	41.64676	-87.48051	Indianapolis Blvd.
	IH 01 10	IH 10	USC	Columbus Dr. to Forks	Surface	41.63982	-87.47146	Columbus Drive
	IH 01 06	IH 06	USC	Hwy 912 to Dickey Rd.	Surface	41.65518	-87.45998	Dickey Road
	IH 01 05	IH 05	USC	B & O Railroad to IH	Surface	41.66085	-87.45175	3-track railroad bridge
	IH 01 03	IH 03	IH	Indiana Harbor	Surface	41.67395	-87.43911	Lower Indiana Harbor
	IH 01 04	IH 04	IH	Indiana Harbor	Surface	41.66798	-87.4363	IH-east of USC mouth
USEPA 1996b (Phase II)	IH20701C101	IH20701C101	USC	Indianapolis Blvd. to Forks	0-2	41.64592	-87.47235	Forks
IND/0046-2	IH20701C102	IH20701C102	USC	Indianapolis Blvd. to Forks	4-6	41.64592	-87.47235	Forks
	IH20701C103	IH20701C103	USC	Indianapolis Blvd. to Forks	8-9.4	41.64592	-87.47235	Forks
	IH20801C101	IH20801C101	USC	Indianapolis Blvd. to Forks	0-1.2	41.64653	-87.48013	Indianapolis Blvd.
	IH20801C102	IH20801C102	USC	Indianapolis Blvd. to Forks	4-5.5	41.64653	-87.48013	Indianapolis Blvd.
	IH21301C101	IH21301C101	USC	Indianapolis Blvd. to Forks	0-1	41.6466	-87.47518	0.30 miles east of Indianapolis Blvd.
	IH21301C102	IH21301C102	USC	Indianapolis Blvd. to Forks	3-5.08	41.6466	-87.47518	0.30 miles east of Indianapolis Blvd.
	IH21302C101	IH21302C101	USC	Indianapolis Blvd. to Forks	0-2	41.6464	-87.4753	0.30 miles east of Indianapolis Blvd.
	IH21302C102	IH21302C102	USC	Indianapolis Blvd. to Forks	2-3.4	41.6464	-87.4753	0.30 miles east of Indianapolis Blvd.
	IH22301C101	IH22301C101	USC	Indianapolis Blvd. to Forks	0-2	41.6465	-87.4804	Indianapolis Blvd.
	IH22301C102	IH22301C102	USC	Indianapolis Blvd. to Forks	2-4	41.6465	-87.4804	Indianapolis Blvd.
	IH22301C103	IH22301C103	USC	Indianapolis Blvd. to Forks	5.17-7.17	41.6465	-87.4804	Indianapolis Blvd.
	IH22302C101	IH22302C101	USC	Indianapolis Blvd. to Forks	0-2	41.64647	-87.48043	Indianapolis Blvd.
	IH22302C102	IH22302C102	USC	Indianapolis Blvd. to Forks	3.33-5.33	41.64647	-87.48043	Indianapolis Blvd.
	IH22302C103	IH22302C103	USC	Indianapolis Blvd. to Forks	6.83-8.33	41.64647	-87.48043	Indianapolis Blvd.
	IH21001C101	IH21001C101	USC	Columbus Dr. to Forks	0-2	41.64108	-87.47137	0.13 miles north of Columbus Dr.
	IH21001C102	IH21001C102	USC	Columbus Dr. to Forks	3-5	41.64108	-87.47137	0.13 miles north of Columbus Dr.
	IH21001C103	IH21001C103	USC	Columbus Dr. to Forks	6-8.33	41.64108	-87.47137	0.13 miles north of Columbus Dr.
	IH21101C101	IH21101C101	USC	Columbus Dr. to Forks	0-2	41.63973	-87.47113	Columbus Drive
	IH21101C102	IH21101C102	USC	Columbus Dr. to Forks	2-3.2	41.63973	-87.47113	Columbus Drive
	IH21101C103	IH21101C103	USC	Columbus Dr. to Forks	7-9	41.63973	-87.47113	Columbus Drive
	IH21101C201D	IH21101C201D	USC	Columbus Dr. to Forks	0-2	41.63973	-87.47113	Columbus Drive
	IH21101C202D	IH21101C202D	USC	Columbus Dr. to Forks	4-6	41.63973	-87.47113	Columbus Drive
	IH21101C203D	IH21101C203D	USC	Columbus Dr. to Forks	8-10.1	41.63973	-87.47113	Columbus Drive

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USEPA 1996b (Phase II)	IH21102C101	IH21102C101	USC	Columbus Dr. to Forks	0-2	41.63977	-87.47142	Columbus Drive
IND/0046-2 (cont.)	IH21102C102	IH21102C102	USC	Columbus Dr. to Forks	4-6	41.63977	-87.47142	Columbus Drive
	IH21102C103	IH21102C103	USC	Columbus Dr. to Forks	7-9.5	41.63977	-87.47142	Columbus Drive
	IH21201C101	IH21201C101	USC	Columbus Dr. to Forks	0-2	41.64257	-87.47142	0.23 miles north of Columbus Dr.
	IH21201C102	IH21201C102	USC	Columbus Dr. to Forks	4-6	41.64257	-87.47142	0.23 miles north of Columbus Dr.
	IH21201C103	IH21201C103	USC	Columbus Dr. to Forks	7-9.1	41.64257	-87.47142	0.23 miles north of Columbus Dr.
	IH21202C101	IH21202C101	USC	Columbus Dr. to Forks	0-2	41.64248	-87.47078	0.23 miles north of Columbus Dr.
	IH21202C102	IH21202C102	USC	Columbus Dr. to Forks	5-7	41.64248	-87.47078	0.23 miles north of Columbus Dr.
	IH21202C103	IH21202C103	USC	Columbus Dr. to Forks	8.67-10.67	41.64248	-87.47078	0.23 miles north of Columbus Dr.
	IH21401C101	IH21401C101	USC	Forks to Hwy. 912	0-2	41.64735	-87.47018	0.12 miles south of E.J. & E. Railroad
	IH21401C102	IH21401C102	USC	Forks to Hwy. 912	4-6	41.64735	-87.47018	0.12 miles south of E.J. & E. Railroad
	IH21401C103	IH21401C103	USC	Forks to Hwy. 912	8-10	41.64735	-87.47018	0.12 miles south of E.J. & E. Railroad
	IH21402C101	IH21402C101	USC	Forks to Hwy. 912	0-2	41.6472	-87.47053	0.12 miles south of E.J. & E. Railroad
	IH21402C102	IH21402C102	USC	Forks to Hwy. 912	4-6	41.6472	-87.47053	0.12 miles south of E.J. & E. Railroad
	IH21402C103	IH21402C103	USC	Forks to Hwy. 912	8-10	41.6472	-87.47053	0.12 miles south of E.J. & E. Railroad
	IH21501C101	IH21501C101	USC	Forks to Hwy. 912	0-2	41.64832	-87.46918	E.J. & E. Railroad
	IH21501C102	IH21501C102	USC	Forks to Hwy. 912	3.5-4.9	41.64832	-87.46918	E.J. & E. Railroad
	IH21501C103	IH21501C103	USC	Forks to Hwy. 912	7-9	41.64832	-87.46918	E.J. & E. Railroad
	IH21502C101	IH21502C101	USC	Forks to Hwy. 912	0-1	41.64827	-87.46852	E.J. & E. Railroad
	IH21601C101	IH21601C101	USC	Forks to Hwy. 912	0-2	41.65095	-87.46612	0.05 miles south of Highway 912
	IH21601C102	IH21601C102	USC	Forks to Hwy. 912	2.4-4.1	41.65095	-87.46612	0.05 miles south of Highway 912
	IH21601C103	IH21601C103	USC	Forks to Hwy. 912	5.75-7.75	41.65095	-87.46612	0.05 miles south of Highway 912
	IH22201C101	IH22201C101	USC	Forks to Hwy. 912	0-2	41.64947	-87.46543	0.05 miles south of Highway 912
	IH22201C102	IH22201C102	USC	Forks to Hwy. 912	3-5	41.64947	-87.46543	0.05 miles south of Highway 912
	IH22201C103	IH22201C103	USC	Forks to Hwy. 912	7-9	41.64947	-87.46543	0.05 miles south of Highway 912
	IH22202C101	IH22202C101	USC	Forks to Hwy. 912	0-2	41.65017	-87.46557	0.05 miles south of Highway 912
	IH22202C102	IH22202C102	USC	Forks to Hwy. 912	4-6	41.65017	-87.46557	0.05 miles south of Highway 912
	IH22202C103	IH22202C103	USC	Forks to Hwy. 912	7-8.8	41.65017	-87.46557	0.05 miles south of Highway 912
	IH20601C101	IH20601C101	USC	Hwy 912 to Dickey Rd.	0-2	41.65507	-87.45973	Dickey Road
	IH20601C102	IH20601C102	USC	Hwy 912 to Dickey Rd.	3-5	41.65507	-87.45973	Dickey Road
	IH20601C103	IH20601C103	USC	Hwy 912 to Dickey Rd.	6.6-8.6	41.65507	-87.45973	Dickey Road
	IH20602C101	IH20602C101	USC	Hwy 912 to Dickey Rd.	0-2	41.6548	-87.45922	Dickey Road
	IH21701C101	IH21701C101	USC	Hwy 912 to Dickey Rd.	0-2	41.65183	-87.46317	0.05 miles south of Highway 912
	IH21701C102	IH21701C102	USC	Hwy 912 to Dickey Rd.	4-6	41.65183	-87.46317	0.13 miles north of Highway 912
	IH21701C103	IH21701C103	USC	Hwy 912 to Dickey Rd.	8-10	41.65183	-87.46317	0.13 miles north of Highway 912
	IH21801C101	IH21801C101	USC	Hwy 912 to Dickey Rd.	0-2	41.65372	-87.46213	0.16 miles south of Dickey Road
	IH22101C101	IH22101C101	USC	Hwy 912 to Dickey Rd.	0-2	41.65192	-87.46435	0.09 miles north of Highway 912

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USEPA 1996b (Phase II) IND/0046-2 (cont.)	IH22101C102	IH22101C102	USC	Hwy 912 to Dickey Rd.	3-5	41.65192	-87.46435	0.09 miles north of Highway 912
	IH22101C103	IH22101C103	USC	Hwy 912 to Dickey Rd.	6-8	41.65192	-87.46435	0.09 miles north of Highway 912
	IH21901C101	IH21901C101	USC	Dickey Rd. to B & O Railroad	0-2	41.6564	-87.4569	0.16 miles north of Dickey Road
	IH21901C102	IH21901C102	USC	Dickey Rd. to B & O Railroad	2-4	41.6564	-87.4569	0.16 miles north of Dickey Road
	IH21902C101	IH21902C101	USC	Dickey Rd. to B & O Railroad	0-2	41.6567	-87.45735	0.16 miles north of Dickey Road
	IH21902C102	IH21902C102	USC	Dickey Rd. to B & O Railroad	2-4	41.6567	-87.45735	0.16 miles north of Dickey Road
	IH22601C101	IH22601C101	USC	Dickey Rd. to B & O Railroad	0-2	41.65913	-87.45412	0.11 miles south of 3-track railroad bridge
	IH22601C102	IH22601C102	USC	Dickey Rd. to B & O Railroad	4-6	41.65913	-87.45412	0.11 miles south of 3-track railroad bridge
	IH22601C103	IH22601C103	USC	Dickey Rd. to B & O Railroad	8-9.8	41.65913	-87.45412	0.11 miles south of 3-track railroad bridge
	IH20501C101	IH20501C101	USC	B & O Railroad to IH	0-2	41.66085	-87.45183	3-track railroad bridge
	IH20501C102	IH20501C102	USC	B & O Railroad to IH	2-4	41.66085	-87.45183	3-track railroad bridge
	IH20501C103	IH20501C103	USC	B & O Railroad to IH	4-6	41.66085	-87.45183	3-track railroad bridge
	IH20501C201D	IH20501C201D	USC	B & O Railroad to IH	0-2	41.66085	-87.45183	3-track railroad bridge
	IH20501C202D	IH20501C202D	USC	B & O Railroad to IH	6-8	41.66085	-87.45183	3-track railroad bridge
	IH20501C203D	IH20501C203D	USC	B & O Railroad to IH	11-13	41.66085	-87.45183	3-track railroad bridge
	IH20501C204D	IH20501C204D	USC	B & O Railroad to IH	13-14.9	41.66085	-87.45183	3-track railroad bridge
	IH22401C101	IH22401C101	USC	B & O Railroad to IH	0-2	41.6663	-87.4434	0.10 miles south of USC mouth
	IH22501C101	IH22501C101	USC	B & O Railroad to IH	0-2	41.663	-87.448	0.31 miles north of 3-track railroad bridge
	IH22501C102	IH22501C102	USC	B & O Railroad to IH	3-5	41.663	-87.448	0.31 miles north of 3-track railroad bridge
	IH22501C103	IH22501C103	USC	B & O Railroad to IH	7.5-9.6	41.663	-87.448	0.31 miles north of 3-track railroad bridge
	IH20201C101	IH20201C101	IH	Indiana Harbor	0-2	41.67703	-87.44367	Lower Indiana Harbor
	IH20201C102	IH20201C102	IH	Indiana Harbor	2-4.33	41.67703	-87.44367	Lower Indiana Harbor
	IH20301C101	IH20301C101	IH	Indiana Harbor	0-2	41.67242	-87.44187	Lower Indiana Harbor
	IH20301C102	IH20301C102	IH	Indiana Harbor	4-6	41.67242	-87.44187	Lower Indiana Harbor
	IH20301C103	IH20301C103	IH	Indiana Harbor	8.1-12.9	41.67242	-87.44187	Lower Indiana Harbor
	IH20401C101	IH20401C101	IH	Indiana Harbor	0-2	41.66802	-87.4344	IH-east of USC mouth
	IH20401C102	IH20401C102	IH	Indiana Harbor	4-6	41.66802	-87.4344	IH-east of USC mouth
	IH20401C103	IH20401C103	IH	Indiana Harbor	4-8.8	41.66802	-87.4344	IH-east of USC mouth
	IH20402C101	IH20402C101	IH	Indiana Harbor	0-2	41.66883	-87.43722	IH-east of USC mouth
	IH20403C101	IH20403C101	IH	Indiana Harbor	0-2	41.66885	-87.44227	Lower Indiana Harbor
	IH20403C102	IH20403C102	IH	Indiana Harbor	5-7	41.66885	-87.44227	Lower Indiana Harbor
	IH20403C103	IH20403C103	IH	Indiana Harbor	8.4-9.67	41.66885	-87.44227	Lower Indiana Harbor
	IH20403C201D	IH20403C201D	IH	Indiana Harbor	0-2	41.66885	-87.44227	Lower Indiana Harbor
	IH20403C202D	IH20403C202D	IH	Indiana Harbor	5-7	41.66885	-87.44227	Lower Indiana Harbor
	IH22001C101	IH22001C101	IH	Indiana Harbor	0-2	41.6649	-87.4382	IH-east of USC mouth
	IH22001C102	IH22001C102	IH	Indiana Harbor	3-5	41.6649	-87.4382	IH-east of USC mouth
	IH22001C103	IH22001C103	IH	Indiana Harbor	9-11	41.6649	-87.4382	IH-east of USC mouth

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USEPA 1996b (Phase II)	IH22001C201D	IH22001C201D	IH	Indiana Harbor	0-2	41.6649	-87.4382	IH-east of USC mouth
IND/0046-2 (cont.)	IH22001C202D	IH22001C202D	IH	Indiana Harbor	2-4	41.6649	-87.4382	IH-east of USC mouth
	IH22001C203D	IH22001C203D	IH	Indiana Harbor	6-8	41.6649	-87.4382	IH-east of USC mouth
	IH22001C204D	IH22001C204D	IH	Indiana Harbor	8.4-10.4	41.6649	-87.4382	IH-east of USC mouth
	IH22701C101	IH22701C101	IH	Indiana Harbor	0-2	41.67317	-87.44195	Lower Indiana Harbor
	IH22701C102	IH22701C102	IH	Indiana Harbor	2-4	41.67317	-87.44195	Lower Indiana Harbor
	IH22701C103	IH22701C103	IH	Indiana Harbor	4-6	41.67317	-87.44195	Lower Indiana Harbor
	IH22801C101	IH22801C101	IH	Indiana Harbor	0-2	41.67088	-87.44203	Lower Indiana Harbor
	IH22801C102	IH22801C102	IH	Indiana Harbor	5.5-7.5	41.67088	-87.44203	Lower Indiana Harbor
	IH22801C103	IH22801C103	IH	Indiana Harbor	7.5-9.5	41.67088	-87.44203	Lower Indiana Harbor
IDEM 1994 (1988 samples)	049-88	049-88	EBGCR II	Bridge St. to Grant St.	Surface	41.6091	-87.3719	1.15 miles east of Clark St.
IND/0051	044-88	044-88	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61289	-87.4321	Cline Ave.
	045-88	045-88	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61289	-87.4321	Cline Ave.
	040-88	040-88	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61409	-87.4614	Kennedy Ave.
	050-88	050-88	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6243	-87.5176	Hohman Ave.
	035-88	035-88	WBGCR II	Indianapolis Blvd. to I-90	Surface	41.6144	-87.4806	Indianapolis Blvd.
	037-88	037-88	IHC	EB & WB Confluence to 151st St.	Surface	41.61824	-87.47106	EB & WB Confluence
	030-88	030-88	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road
	DD2860	DD2860	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road
IDEM 1994 (1990 samples)	025-90	025-90	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road
IND/0051	026-90	026-90	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road
IDEM 1994 (1992 samples)	033-92	033-92	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road
IND/0051								
IDEM 1994 (1994 samples)	068-94	068-94	EBGCR II	Bridge St. to Grant St.	Surface	41.6091	-87.3719	1.15 miles east of Clark St.
IND/0051	069-94	069-94	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61289	-87.4321	Cline Ave.
	085-94	085-94	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61409	-87.4614	Kennedy Ave.
	086-94	086-94	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61409	-87.4614	Kennedy Ave.
	087-94	087-94	WBGCR II	Indianapolis Blvd. to I-90	Surface	41.6144	-87.4806	Indianapolis Blvd.
	063-94	063-94	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road
	064-94	064-94	USC	Dickey Rd. to B & O Railroad	Surface	41.65525	-87.4592	Dickey Road

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USEPA 1986a	Background	Background	WBGCR II	I-90 to Columbia Ave.	Surface	41.61722	-87.48914	White Oak Ave.
IND/0052	S01	S01	USC	Indianapolis Blvd. to Forks	0-2.5	41.64614	-87.47183	Forks
	S02	S02	USC	Dickey Rd. to B & O Railroad	0-4	41.65705	-87.45674	0.20 miles north of Dickey Road
	S06	S06	USC	Dickey Rd. to B & O Railroad	0-3	41.65855	-87.45464	0.17 miles south of 3-track railroad bridge
	S07	S07	USC	Dickey Rd. to B & O Railroad	0-2	41.659	-87.45405	0.10 miles south of 3-track railroad bridge
	S08	S08	USC	Dickey Rd. to B & O Railroad	0-2	41.65957	-87.45345	3-track railroad bridge
	S09	S09	USC	Dickey Rd. to B & O Railroad	0-5	41.6572	-87.45594	0.22 miles north of Dickey Road
	D11	D11	USC	B & O Railroad to IH	0-2	41.66717	-87.44331	USC mouth
	S03	S03	USC	B & O Railroad to IH	0-3	41.66143	-87.45074	0.13 miles north of 3-track railroad bridge
	S10	S10	USC	B & O Railroad to IH	0-8	41.66164	-87.44984	0.18 miles north of 3-track railroad bridge
	S11	S11	USC	B & O Railroad to IH	0-2	41.66739	-87.44294	USC mouth
	S12	S12	USC	B & O Railroad to IH	0-6	41.66535	-87.44454	USC mouth
	D13	D13	IH	Indiana Harbor	0-3	41.66604	-87.43894	IH-east of USC mouth
	S13	S13	IH	Indiana Harbor	0-2.5	41.66604	-87.43816	IH-east of USC mouth
	S14	S14	IH	Indiana Harbor	0-2.5	41.6671	-87.43693	IH-east of USC mouth
	S15	S15	IH	Indiana Harbor	0-2	41.66856	-87.43604	IH-east of USC mouth
	S16	S16	IH	Indiana Harbor	0-2	41.66963	-87.43543	IH-east of USC mouth
	S17	S17	IH	Indiana Harbor	0-2	41.6685	-87.43735	IH-east of USC mouth
	S18	S18	IH	Indiana Harbor	0-2	41.66802	-87.43934	IH-east of USC mouth
	S19	S19	IH	Indiana Harbor	0-2	41.67081	-87.44186	Lower Indiana Harbor
	S20	S20	IH	Indiana Harbor	0-1	41.67347	-87.44053	Lower Indiana Harbor
	S21	S21	IH	Indiana Harbor	0-1.5	41.67527	-87.43924	Lower Indiana Harbor
Polls 1988	E 5.4	E 5.4	LGB	Indianapolis Blvd. to B & O Railroad	Surface	41.6465	-87.482	0.04 miles west of Indianapolis Blvd.
IND/0053	E 3.8	E 3.8	USC	Columbus Dr. to Forks	Surface	41.64237	-87.47117	0.25 miles north of Columbus Dr.
	E 2.7	E 2.7	USC	Dickey Rd. to B & O Railroad	Surface	41.65603	-87.45783	0.15 miles north of Dickey Road
	E 0.6	E 0.6	IH	Indiana Harbor	Surface	41.67643	-87.44103	Lower Indiana Harbor
	E 1.3	E 1.3	IH	Indiana Harbor	Surface	41.6677	-87.44195	USC mouth
	A 0.2	A 0.2	Lake Mich.	Lake Michigan	Surface	41.684	-87.45016	1.21 miles NW of USC mouth
	A 0.5	A 0.5	Lake Mich.	Lake Michigan	Surface	41.68567	-87.454	1.40 miles NW of USC mouth
	A 1.0	A 1.0	Lake Mich.	Lake Michigan	Surface	41.69	-87.46283	1.90 miles NW of USC mouth
	A 1.5	A 1.5	Lake Mich.	Lake Michigan	Surface	41.6955	-87.46833	2.38 miles NW of USC mouth
	A 2.0	A 2.0	Lake Mich.	Lake Michigan	Surface	41.70033	-87.475	2.85 miles NW of USC mouth
	A 3.0	A 3.0	Lake Mich.	Lake Michigan	Surface	41.71	-87.48333	3.65 miles NW of USC mouth
	B 0.2	B 0.2	Lake Mich.	Lake Michigan	Surface	41.68467	-87.451	1.30 miles north of USC mouth
	B 0.5	B 0.5	Lake Mich.	Lake Michigan	Surface	41.68983	-87.45033	1.62 miles north of USC mouth
	B 1.0	B 1.0	Lake Mich.	Lake Michigan	Surface	41.69633	-87.448	2.00 miles north of USC mouth

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Polls 1988	B 1.5	B 1.5	Lake Mich.	Lake Michigan	Surface	41.7035	-87.44867	2.55 miles north of USC mouth
IND/0053 (cont.)	B 2.0	B 2.0	Lake Mich.	Lake Michigan	Surface	41.7125	-87.44833	3.15 miles north of USC mouth
	B 3.0	B 3.0	Lake Mich.	Lake Michigan	Surface	41.72633	-87.44867	4.10 miles north of USC mouth
	B 5.0	B 5.0	Lake Mich.	Lake Michigan	Surface	41.67733	-87.30617	7.05 miles north of USC mouth
	C 0.2	C 0.2	Lake Mich.	Lake Michigan	Surface	41.68367	-87.4455	1.19 miles NE of USC mouth
	C 0.5	C 0.5	Lake Mich.	Lake Michigan	Surface	41.68767	-87.44067	1.45 miles NE of USC mouth
	C 1.0	C 1.0	Lake Mich.	Lake Michigan	Surface	41.69233	-87.4345	1.80 miles NE of USC mouth
	C 1.5	C 1.5	Lake Mich.	Lake Michigan	Surface	41.69767	-87.4285	2.25 miles NE of USC mouth
	C 2.0	C 2.0	Lake Mich.	Lake Michigan	Surface	41.70333	-87.42	2.75 miles NE of USC mouth
	C 3.0	C 3.0	Lake Mich.	Lake Michigan	Surface	41.71333	-87.40517	3.75 miles NE of USC mouth
	C 5.0	C 5.0	Lake Mich.	Lake Michigan	Surface	41.73433	-87.37933	5.70 miles NE of USC mouth
	D 0.3	D 0.3	Lake Mich.	Lake Michigan	Surface	41.68583	-87.46183	1.60 miles NW of USC mouth
	D 2A	D 2A	Lake Mich.	Lake Michigan	Surface	41.67667	-87.40067	2.27 miles east of USC mouth
	D 2B	D 2B	Lake Mich.	Lake Michigan	Surface	41.67283	-87.40234	2.15 miles east of USC mouth
	D 3.0	D 3.0	Lake Mich.	Lake Michigan	Surface	41.676	-87.34517	5.10 miles east of USC mouth
	D 5.0	D 5.0	Lake Mich.	Lake Michigan	Surface	41.67733	-87.30617	7.05 miles east of USC mouth
LTI 1984	SB-1	SB-1	Lake Mich.	Lake Michigan	Surface	41.6823	-87.4381	within 1.46 miles NE of Entrance to IH
IND/0054	SB-10	SB-10	Lake Mich.	Lake Michigan	Surface	41.6846	-87.434	within 1.46 miles NE of Entrance to IH
	SB-11	SB-11	Lake Mich.	Lake Michigan	Surface	41.6862	-87.4346	within 1.46 miles NE of Entrance to IH
	SB-12	SB-12	Lake Mich.	Lake Michigan	Surface	41.6874	-87.4354	within 1.46 miles NE of Entrance to IH
	SB-2	SB-2	Lake Mich.	Lake Michigan	Surface	41.6836	-87.439	within 1.46 miles NE of Entrance to IH
	SB-3	SB-3	Lake Mich.	Lake Michigan	Surface	41.685	-87.4397	within 1.46 miles NE of Entrance to IH
	SB-4	SB-4	Lake Mich.	Lake Michigan	Surface	41.6831	-87.4367	within 1.46 miles NE of Entrance to IH
	SB-5	SB-5	Lake Mich.	Lake Michigan	Surface	41.6846	-87.4375	within 1.46 miles NE of Entrance to IH
	SB-6	SB-6	Lake Mich.	Lake Michigan	Surface	41.6859	-87.4382	within 1.46 miles NE of Entrance to IH
	SB-7	SB-7	Lake Mich.	Lake Michigan	Surface	41.6837	-87.4352	within 1.46 miles NE of Entrance to IH
	SB-8	SB-8	Lake Mich.	Lake Michigan	Surface	41.6855	-87.436	within 1.46 miles NE of Entrance to IH
	SB-9	SB-9	Lake Mich.	Lake Michigan	Surface	41.6866	-87.4367	within 1.46 miles NE of Entrance to IH
	WS-1	WS-1	Lake Mich.	Lake Michigan	Surface	41.6847	-87.4838	within 0.26 miles north of Whiting Park
	WS-10	WS-10	Lake Mich.	Lake Michigan	Surface	41.6862	-87.4896	within 0.26 miles north of Whiting Park
	WS-11	WS-11	Lake Mich.	Lake Michigan	Surface	41.6877	-87.489	within 0.26 miles north of Whiting Park
	WS-12	WS-12	Lake Mich.	Lake Michigan	Surface	41.6891	-87.4887	within 0.26 miles north of Whiting Park
	WS-2	WS-2	Lake Mich.	Lake Michigan	Surface	41.6861	-87.4837	within 0.26 miles north of Whiting Park
	WS-3	WS-3	Lake Mich.	Lake Michigan	Surface	41.6874	-87.4832	within 0.26 miles north of Whiting Park
	WS-4	WS-4	Lake Mich.	Lake Michigan	Surface	41.6851	-87.4857	within 0.26 miles north of Whiting Park
	WS-5	WS-5	Lake Mich.	Lake Michigan	Surface	41.6865	-87.4853	within 0.26 miles north of Whiting Park

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
LTI 1984	WS-6	WS-6	Lake Mich.	Lake Michigan	Surface	41.6879	-87.4847	within 0.26 miles north of Whiting Park
IND/0054 (cont.)	WS-7	WS-7	Lake Mich.	Lake Michigan	Surface	41.6857	-87.4877	within 0.26 miles north of Whiting Park
	WS-8	WS-8	Lake Mich.	Lake Michigan	Surface	41.6871	-87.4874	within 0.26 miles north of Whiting Park
	WS-9	WS-9	Lake Mich.	Lake Michigan	Surface	41.6883	-87.4868	within 0.26 miles north of Whiting Park
USACE 1994	IHST 93-4-2	IHST 93-4 (24-28')	USC	Indianapolis Blvd. to Forks	24-28	41.64611	-87.4719	Forks
IND/0057	IHST 93-4-3	IHST 93-4 (28-32')	USC	Indianapolis Blvd. to Forks	28-32	41.64611	-87.4719	Forks
	IHST 93-4-4	IHST 93-4 (32-36')	USC	Indianapolis Blvd. to Forks	32-36	41.64611	-87.4719	Forks
	IHST 93-4-5	IHST 93-4 (36-40')	USC	Indianapolis Blvd. to Forks	36-40	41.64611	-87.4719	Forks
	IHST 93-1-1	IHST 93-1 (20-24')	USC	Columbus Dr. to Forks	20-24	41.64075	-87.4711	0.11 miles north of Columbus Ave.
	IHST 93-1-2	IHST 93-1 (24-28')	USC	Columbus Dr. to Forks	24-28	41.64075	-87.4711	0.11 miles north of Columbus Ave.
	IHST 93-1-3	IHST 93-1 (28-32')	USC	Columbus Dr. to Forks	28-32	41.64075	-87.4711	0.11 miles north of Columbus Ave.
	IHST 93-1-4	IHST 93-1 (32-36')	USC	Columbus Dr. to Forks	32-36	41.64075	-87.4711	0.11 miles north of Columbus Ave.
	IHST 93-1-5	IHST 93-1 (36-40')	USC	Columbus Dr. to Forks	36-40	41.64075	-87.4711	0.11 miles north of Columbus Ave.
	IHST 93-2-1	IHST 93-2 (20-24')	USC	Columbus Dr. to Forks	20-24	41.64233	-87.4713	0.19 miles north of Columbus Ave.
	IHST 93-2-2	IHST 93-2 (24-28')	USC	Columbus Dr. to Forks	24-28	41.64233	-87.4713	0.19 miles north of Columbus Ave.
	IHST 93-2-3	IHST 93-2 (28-32')	USC	Columbus Dr. to Forks	28-32	41.64233	-87.4713	0.19 miles north of Columbus Ave.
	IHST 93-2-4	IHST 93-2 (32-36')	USC	Columbus Dr. to Forks	32-36	41.64233	-87.4713	0.19 miles north of Columbus Ave.
	IHST 93-2-5	IHST 93-2 (36-40')	USC	Columbus Dr. to Forks	36-40	41.64233	-87.4713	0.19 miles north of Columbus Ave.
	IHST 93-3-1	IHST 93-3 (20-24')	USC	Columbus Dr. to Forks	20-24	41.64323	-87.4713	0.28 miles north of Columbus Ave.
	IHST 93-3-2	IHST 93-3 (24-28')	USC	Columbus Dr. to Forks	24-28	41.64323	-87.4713	0.28 miles north of Columbus Ave.
	IHST 93-3-3	IHST 93-3 (28-32')	USC	Columbus Dr. to Forks	28-32	41.64323	-87.4713	0.28 miles north of Columbus Ave.
	IHST 93-3-4	IHST 93-3 (32-36)	USC	Columbus Dr. to Forks	32-36	41.64323	-87.4713	0.28 miles north of Columbus Ave.
USACE 1980a	2-1-4	2-1-4	USC	Indianapolis Blvd. to Forks	0 - 3	41.6467	-87.4805	0.45 miles west of Forks
IND/0060	2-5-8	2-5-8	USC	Indianapolis Blvd. to Forks	3 - 6	41.6467	-87.4805	0.45 miles west of Forks
	2-9-12	2-9-12	USC	Indianapolis Blvd. to Forks	6 - 10	41.6467	-87.4805	0.45 miles west of Forks
	3-11-14	3-11-14	USC	Indianapolis Blvd. to Forks	6 - 9	41.6462	-87.4718	Forks
	3-15-18	3-15-18	USC	Indianapolis Blvd. to Forks	9 - 12	41.6462	-87.4718	Forks
	3-3-6	3-3-6	USC	Indianapolis Blvd. to Forks	0 - 3	41.6462	-87.4718	Forks
	3-7-10	3-7-10	USC	Indianapolis Blvd. to Forks	3 - 6	41.6462	-87.4718	Forks
	1-13-16	1-13-16	USC	Columbus Dr. to Forks	9 - 12	41.6423	-87.4711	0.27 miles south of Forks
	1-1-4	1-1-4	USC	Columbus Dr. to Forks	0 - 3	41.6423	-87.4711	0.27 miles south of Forks
	1-17-21	1-17-21	USC	Columbus Dr. to Forks	12 - 15.5	41.6423	-87.4711	0.27 miles south of Forks
	1-5-8	1-5-8	USC	Columbus Dr. to Forks	3 - 6	41.6423	-87.4711	0.27 miles south of Forks
	1-9-12	1-9-12	USC	Columbus Dr. to Forks	6 - 9	41.6423	-87.4711	0.27 miles south of Forks
	4-13-16	4-13-16	USC	Forks to Hwy. 912	6 - 8	41.6498	-87.4657	0.41 miles NE of Entrance to IH

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USACE 1980a	4-5-8	4-5-8	USC	Forks to Hwy. 912	0 - 3	41.6498	-87.4657	0.41 miles NE of Entrance to IH
IND/0060 (cont.)	4-9-12	4-9-12	USC	Forks to Hwy. 912	3 - 6	41.6498	-87.4657	0.41 miles NE of Entrance to IH
	5-3-6	5-3-6	USC	Dickey Rd. to B & O Railroad	0 - 3	41.6559	-87.4587	0.96 miles NE of Entrance to IH
	5-7-10	5-7-10	USC	Dickey Rd. to B & O Railroad	3 - 6.5	41.6559	-87.4587	0.96 miles NE of Entrance to IH
	6-1-4	6-1-4	USC	Dickey Rd. to B & O Railroad	0 - 3	41.6593	-87.4538	0.81 miles SW of Entrance to IH
	6-5-8	6-5-8	USC	Dickey Rd. to B & O Railroad	3 - 6	41.6593	-87.4538	0.81 miles SW of Entrance to IH
	7-3-4	7-3-4	USC	B & O Railroad to IH	0 - 3	41.6612	-87.4512	0.61 miles SW of Entrance to IH
	7-5-6	7-5-6	USC	B & O Railroad to IH	3 - 6	41.6612	-87.4512	0.61 miles SW of Entrance to IH
	8-1-2	8-1-2	USC	B & O Railroad to IH	0 - 3	41.6673	-87.4427	Entrance to IH
	8-3-4	8-3-4	USC	B & O Railroad to IH	3 - 6	41.6673	-87.4427	Entrance to IH
	10-5-6	10-5-6	IH	Indiana Harbor	0.5 - 3	41.6688	-87.4365	0.35 miles NE of Entrance to IH
	10-7-8	10-7-8	IH	Indiana Harbor	3 - 6	41.6688	-87.4365	0.35 miles NE of Entrance to IH
	11-1-2	11-1-2	IH	Indiana Harbor	0 - 3	41.6751	-87.4399	0.57 miles NE of Entrance to IH
	11-3-4	11-3-4	IH	Indiana Harbor	3 - 6	41.6751	-87.4399	0.57 miles NE of Entrance to IH
	12-1-2	12-1-2	IH	Indiana Harbor	0 - 3	41.6787	-87.4422	0.79 miles north of Entrance to IH
	12-3-5	12-3-5	IH	Indiana Harbor	3 - 7.5	41.6787	-87.4422	0.79 miles north of Entrance to IH
	9-1-2	9-1-2	IH	Indiana Harbor	0 - 3	41.6656	-87.438	0.26 miles SE of Entrance to IH
	9-3-4	9-3-4	IH	Indiana Harbor	3 - 6	41.6656	-87.438	0.26 miles SE of Entrance to IH
	9-5	9-5	IH	Indiana Harbor	6 - 8	41.6656	-87.438	0.26 miles SE of Entrance to IH
	13-1-2	13-1-2	Lake Mich.	Lake Michigan	0 - 3	41.6861	-87.4423	1.3 miles north of Entrance to IH
	13-3-4	13-3-4	Lake Mich.	Lake Michigan	3 - 6	41.6861	-87.4423	1.3 miles north of Entrance to IH
USACE 1983	IH83-1-A	IH83-1 (0-2)	USC	Columbus Dr. to Forks	0-2	41.6451	-87.47135	Forks
IND/0061	IH83-1-B	IH83-1 (2-4)	USC	Columbus Dr. to Forks	2-4	41.6451	-87.47135	Forks
	IH83-1-C	IH83-1 (4-6)	USC	Columbus Dr. to Forks	4-6	41.6451	-87.47135	Forks
	IH83-1-D	IH83-1 (6-7.5)	USC	Columbus Dr. to Forks	6-7.5	41.6451	-87.47135	Forks
	IH83-2-A	IH83-2 (0-2)	USC	Forks to Hwy. 912	0-2	41.64762	-87.47008	0.10 miles south of E.J. & E. RR (westbank)
	IH83-2-B	IH83-2 (2-4)	USC	Forks to Hwy. 912	2-5	41.64762	-87.47008	0.10 miles south of E.J. & E. RR (westbank)
	IH83-2-C	IH83-2 (4-6.2)	USC	Forks to Hwy. 912	4-6.2	41.64762	-87.47008	0.10 miles south of E.J. & E. RR (westbank)
	IH83-3-A	IH83-3 (0-2)	USC	Forks to Hwy. 912	0-2	41.6473	-87.4698	0.10 miles south of E.J. & E. RR (eastbank)
	IH83-3A-A	IH83-3A (0-2)	USC	Forks to Hwy. 912	0-2	41.6473	-87.4698	0.10 miles south of E.J. & E. RR (eastbank)
	IH83-3A-B	IH83-3A (2-4)	USC	Forks to Hwy. 912	2-4	41.6473	-87.4698	0.10 miles south of E.J. & E. RR (eastbank)
	IH83-3A-C	IH83-3A (4-6.2)	USC	Forks to Hwy. 912	4-6.2	41.6473	-87.4698	0.10 miles south of E.J. & E. RR (eastbank)
	IH83-3-B	IH83-3 (2-4)	USC	Forks to Hwy. 912	2-5	41.6473	-87.4698	0.10 miles south of E.J. & E. RR (eastbank)
	IH83-3-C	IH83-3 (4-4.5)	USC	Forks to Hwy. 912	4-4.5	41.6473	-87.4698	0.10 miles south of E.J. & E. RR (eastbank)
	IH83-4-A	IH83-4 (0-2)	USC	Forks to Hwy. 912	0-2	41.65055	-87.46644	0.18 miles north of E.J. & E. railroad
	IH83-4-B	IH83-4 (2-4)	USC	Forks to Hwy. 912	2-4	41.65055	-87.46644	0.18 miles north of E.J. & E. railroad

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USACE 1983	IH83-4-C	IH83-4 (4-5)	USC	Forks to Hwy. 912	4-5	41.65055	-87.46644	0.18 miles north of E.J. & E. railroad
IND/0061 (cont.)	IH83-4-D	IH83-4 (5-6)	USC	Forks to Hwy. 912	5-6	41.65055	-87.46644	0.18 miles north of E.J. & E. railroad
	IH83-5-A	IH83-5 (0-2)	USC	Dickey Rd. to B & O Railroad	0-2	41.65623	-87.45718	0.15 miles north of Dickey Road (eastbank)
	IH83-5-B	IH83-5 (2-3.2)	USC	Dickey Rd. to B & O Railroad	2-3.2	41.65623	-87.45718	0.15 miles north of Dickey Road (eastbank)
	IH83-6-A	IH83-6 (0-2)	USC	Dickey Rd. to B & O Railroad	0-2	41.65655	-87.45765	0.15 miles north of Dickey Road (eastbank)
	IH83-6-B	IH83-6 (2-3.2)	USC	Dickey Rd. to B & O Railroad	2-3.2	41.65655	-87.45765	0.15 miles north of Dickey Road (eastbank)
	IH83-7-A	IH83-7 (0-2)	USC	Dickey Rd. to B & O Railroad	0-2	41.6582	-87.4545	0.35 miles north of Dickey Road (eastbank)
	IH83-7-B	IH83-7 (2-4)	USC	Dickey Rd. to B & O Railroad	2-4	41.6582	-87.4545	0.35 miles north of Dickey Road (eastbank)
	IH83-7-C	IH83-7 (4-5.2)	USC	Dickey Rd. to B & O Railroad	4-5.2	41.6582	-87.4545	0.35 miles north of Dickey Road (eastbank)
	IH83-8-A	IH83-8 (0-2)	USC	Dickey Rd. to B & O Railroad	0-2	41.65858	-87.4551	0.35 miles north of Dickey Road (westbank)
	IH83-8-B	IH83-8 (2-4)	USC	Dickey Rd. to B & O Railroad	2-4	41.65858	-87.4551	0.35 miles north of Dickey Road (westbank)
	IH83-8-C	IH83-8 (4-5.1)	USC	Dickey Rd. to B & O Railroad	4-5.1	41.65858	-87.4551	0.35 miles north of Dickey Road (westbank)
Lucas and Steinfeld 1972	0-100/surface	0-100	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6084	-87.3018	0.02 miles west of Lagoon Culvert
IND/0066	0-700/2-3	0-700	EBGCR II	Tennessee St. to Lagoon Culvert	2-3	41.6085	-87.304	0.13 miles west of Lagoon Culvert
	0-700/surface	0-700	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6085	-87.304	0.13 miles west of Lagoon Culvert
	0-900/1.5-3	0-900	EBGCR II	Tennessee St. to Lagoon Culvert	1.5-3	41.6085	-87.3048	0.17 miles west of Lagoon Culvert
	0-900/surface	0-900	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6085	-87.3048	0.17 miles west of Lagoon Culvert
	1-600/surface	1-600	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6086	-87.3071	0.30 miles west of Lagoon Culvert
	2-100/surface	2-100	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6086	-87.309	0.40 miles west of Lagoon Culvert
	2-700/3-4.5	2-700	EBGCR II	Tennessee St. to Lagoon Culvert	3-4.5	41.6086	-87.3112	0.51 miles west of Lagoon Culvert
	2-700/surface	2-700	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6086	-87.3112	0.51 miles west of Lagoon Culvert
	3-300/4-5.5	3-300	EBGCR II	Tennessee St. to Lagoon Culvert	4-5.5	41.6084	-87.3134	0.63 miles west of Lagoon Culvert
	3-300/surface	3-300	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6084	-87.3134	0.63 miles west of Lagoon Culvert
	3-900/3.5-5	3-900	EBGCR II	Tennessee St. to Lagoon Culvert	3.5-5	41.6082	-87.3155	0.74 miles west of Lagoon Culvert
	3-900/surface	3-900	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6082	-87.3155	0.74 miles west of Lagoon Culvert
	4-500/2.9-4.4	4-500	EBGCR II	Tennessee St. to Lagoon Culvert	2.9-4.4	41.6079	-87.3179	1.00 miles east of Broadway
	5-300/2.5-4	5-300	EBGCR II	Tennessee St. to Lagoon Culvert	2.5-4	41.6077	-87.3207	0.85 miles east of Broadway
	5-300/surface	5-300	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6077	-87.3207	0.85 miles east of Broadway
	6-975/3.3-4.8	6-975	EBGCR II	Virginia St. to Tennessee St.	3.3-4.8	41.60762	-87.32689	0.55 miles east of Broadway
	7-300/surface	7-300	EBGCR II	Virginia St. to Tennessee St.	Surface	41.60757	-87.32819	0.48 miles east of Broadway
	7-900/0.83-2	7-900	EBGCR II	Broadway to Virginia St.	0.83-2	41.6076	-87.3301	0.38 miles east of Broadway
	7-900/surface	7-900	EBGCR II	Broadway to Virginia St.	Surface	41.6076	-87.3301	0.38 miles east of Broadway
	8-700/1.3-2.8	8-700	EBGCR II	Broadway to Virginia St.	1.3-2.8	41.60767	-87.33311	0.23 miles east of Broadway
	8-700/surface	8-700	EBGCR II	Broadway to Virginia St.	Surface	41.60767	-87.33311	0.23 miles east of Broadway
	9-600/2-3.5	9-600	EBGCR II	Broadway to Virginia St.	2-3.5	41.60762	-87.33666	0.04 miles east of Broadway
	9-600/surface	9-600	EBGCR II	Broadway to Virginia St.	Surface	41.60762	-87.33666	0.04 miles east of Broadway

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Lucas and Steinfeld 1972 IND/0066 (cont.)	10-800/2.3-3.8	10-800	EBGCR II	I-90 to Broadway	2.3-3.8	41.6096	-87.3409	0.21 miles west of Broadway
	10-800/surface	10-800	EBGCR II	I-90 to Broadway	Surface	41.6096	-87.3409	0.21 miles west of Broadway
	11-500/2-4	11-500	EBGCR II	I-90 to Broadway	2-4	41.6099	-87.3434	0.35 miles west of Broadway
	11-500/surface	11-500	EBGCR II	I-90 to Broadway	Surface	41.6099	-87.3434	0.35 miles west of Broadway
	12-200/2.5-4.3	12-200	EBGCR II	I-90 to Broadway	2.5-4.3	41.6097	-87.346	0.47 miles west of Broadway
	12-200/surface	12-200	EBGCR II	I-90 to Broadway	Surface	41.6097	-87.346	0.47 miles west of Broadway
	12-900/surface	12-900	EBGCR II	I-90 to Broadway	Surface	41.6093	-87.3484	0.57 miles west of Broadway
	14-350/2.8-4.5	14-350	EBGCR II	Grant St. to I-90	2.8-4.5	41.60717	-87.35364	0.85 miles west of Broadway
	14-350/surface	14-350	EBGCR II	Grant St. to I-90	Surface	41.60717	-87.35364	0.85 miles west of Broadway
	17-000/4.7-5.9	17-000	EBGCR II	Bridge St. to Grant St.	4.7-5.9	41.6087	-87.3634	0.35 miles west of Broadway
	17-000/surface	17-000	EBGCR II	Bridge St. to Grant St.	Surface	41.6087	-87.3634	1.35 miles west of Broadway
	19-500/5.5-7	19-500	EBGCR II	ConRail Bridge to Bridge St.	5.5-7	41.609	-87.3726	1.09 miles east of Clark St.
	19-500/surface	19-500	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.609	-87.3726	1.09 miles east of Clark St.
	22-000/6.7-7.7	22-000	EBGCR II	ConRail Bridge to Bridge St.	6.7-7.7	41.61118	-87.38184	0.65 miles east of Clark St.
	22-000/surface	22-000	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.61118	-87.38184	0.65 miles east of Clark St.
	23-000/4-5.5	23-000	EBGCR II	ConRail Bridge to Bridge St.	4-5.5	41.61155	-87.38528	0.50 miles east of Clark St.
	23-000/surface	23-000	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.61155	-87.38528	0.50 miles east of Clark St.
	23-400/4.3-6	23-400	EBGCR I	Industrial Hwy to ConRail Bridge	4.3-6	41.6095	-87.3872	0.35 miles east of Clark St.
	23-400/surface	23-400	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.6095	-87.3872	0.35 miles east of Clark St.
	25-200/4.8-6.5	25-200	EBGCR I	Industrial Hwy to ConRail Bridge	4.8-6.5	41.6080	-87.3935	0.03 miles east of Clark St.
	25-200/surface	25-200	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.6080	-87.3935	0.03 miles east of Clark St.
	26-200/5-7	26-200	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	5-7	41.6087	-87.3975	0.18 miles west of Clark St.
	26-200/surface	26-200	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.6087	-87.3975	0.18 miles west of Clark St.
	26-900/3.2-4.7	26-900	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	3.2-4.7	41.60906	-87.40015	0.32 miles west of Clark St.
	26-900/surface	26-900	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.60906	-87.40015	0.32 miles west of Clark St.
	27-700/4-5.5	27-700	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	4-5.5	41.6099	-87.4041	0.53 miles west of Clark St.
	27-700/surface	27-700	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.6099	-87.4041	0.53 miles west of Clark St.
	29-500/3.3-4.8	29-500	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	3.3-4.8	41.6093	-87.4112	0.09 miles west of Clark St.
	29-500/surface	29-500	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.6093	-87.4112	0.09 miles west of Clark St.
	30-000/4.2-5.7	30-000	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	4.2-5.7	41.60925	-87.41171	0.92 miles west of Clark St.
	30-000/surface	30-000	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.60925	-87.41171	0.92 miles west of Clark St.
	32-000/-	32-000/-	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	999	41.6098	-87.41908	0.75 miles east of Cline Ave.
	32-000/surface	32-000	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.6098	-87.41908	0.75 miles east of Cline Ave.
	33-650/2.3-3.8	34-650	EBGCR I	Cline Ave. to Cline/I-90 Ramps	2.3-3.8	41.61108	-87.42498	0.43 miles east of Cline Ave.
	33-650/surface	33-650	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61108	-87.42498	0.43 miles east of Cline Ave.
	34-650/2.5-4	34-650	EBGCR I	Cline Ave. to Cline/I-90 Ramps	2.5-4	41.61256	-87.42891	0.21 miles east of Cline Ave.
	34-650/surface	34-650	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61256	-87.42891	0.21 miles east of Cline Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Lucas and Steinfeld 1972	35-600/2.9-4.4	35-600	EBGCR I	Cline Ave. to Cline/I-90 Ramps	2.9-4.4	41.6133	-87.4319	0.05 miles east of Cline Ave.
IND/0066 (cont.)	35-600/surface	35-600	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.6133	-87.4319	0.05 miles east of Cline Ave.
	38-700/2-3.5	38-700	EBGCR I	Kennedy Ave. to Cline Ave.	2-3.5	41.61237	-87.44342	0.50 miles west of Cline Ave.
	38-700/surface	38-700	EBGCR I	Kennedy Ave. to Cline Ave.	Surface	41.61237	-87.44342	0.50 miles west of Cline Ave.
Floyd-Browne 1993	GC-SDDN001-41	GC-SDDN001-41	EBGCR II	Tennessee St. to Lagoon Culvert	1.5-2	41.60782	-87.31823	0.90 miles west of Lagoon Culvert
IND/0068	GC-SD-XX-001/01A	GC-SDPN001-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.60844	-87.30154	Lagoon Culvert
	GC-SD-XX-002/02A	GC-SDPN002-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.60848	-87.30382	0.11 miles west of Lagoon Culvert
	GC-SD-XX-003/03A	GC-SDPN003-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.60855	-87.30742	0.30 miles west of Lagoon Culvert
	GC-SD-XX-003/03B	GC-SDPN003-02	EBGCR II	Tennessee St. to Lagoon Culvert	8-12.9	41.60855	-87.30742	0.30 miles west of Lagoon Culvert
	GC-SD-XX-004/04A	GC-SDPN004-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.6085	-87.3111	0.50 miles west of Lagoon Culvert
	GC-SD-XX-004/04B	GC-SDPN004-02	EBGCR II	Tennessee St. to Lagoon Culvert	8-12.9	41.6085	-87.3111	0.50 miles west of Lagoon Culvert
	GC-SD-XX-005/05A	GC-SDPN005-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.60818	-87.31468	0.70 miles west of Lagoon Culvert
	GC-SD-XX-005/05B	GC-SDPN005-02	EBGCR II	Tennessee St. to Lagoon Culvert	8-12.9	41.60818	-87.31468	0.70 miles west of Lagoon Culvert
	GC-SD-XX-006/06A	GC-SDPN006-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.60782	-87.31823	0.90 miles west of Lagoon Culvert
	GC-SD-XX-006/06B	GC-SDPN006-02	EBGCR II	Tennessee St. to Lagoon Culvert	8-12.9	41.60782	-87.31823	0.90 miles west of Lagoon Culvert
	GC-SD-XX-007/07A	GC-SDPN007-01	EBGCR II	Tennessee St. to Lagoon Culvert	0-7.9	41.6075	-87.32189	0.81 miles east of Broadway
	GC-SD-XX-007/07B	GC-SDPN007-02	EBGCR II	Tennessee St. to Lagoon Culvert	8-12.9	41.6075	-87.32189	0.81 miles east of Broadway
	GC-SD-XX-008/08A	GC-SDPN008-01	EBGCR II	Virginia St. to Tennessee St.	0-7.9	41.60753	-87.32367	0.72 miles east of Broadway
	GC-SD-XX-008/08B	GC-SDPN008-02	EBGCR II	Virginia St. to Tennessee St.	8-12.9	41.60753	-87.32367	0.72 miles east of Broadway
	GC-SD-XX-009/09A	GC-SDPN009-01	EBGCR II	Virginia St. to Tennessee St.	0-7.9	41.60755	-87.32546	0.62 miles east of Broadway
	GC-SD-XX-009/09B	GC-SDPN009-02	EBGCR II	Virginia St. to Tennessee St.	8-12.9	41.60755	-87.32546	0.62 miles east of Broadway
	GC-SD-XX-010/10A	GC-SDPN010-01	EBGCR II	Virginia St. to Tennessee St.	0-7.9	41.60757	-87.32729	0.53 miles east of Broadway
	GC-SD-XX-010/10B	GC-SDPN010-02	EBGCR II	Virginia St. to Tennessee St.	8-12.9	41.60757	-87.32729	0.53 miles east of Broadway
	GC-SD-XX-011/11A	GC-SDPN011-01	EBGCR II	Virginia St. to Tennessee St.	0-7.9	41.60759	-87.32912	0.43 miles east of Broadway
	GC-SD-XX-012/12A	GC-SDPN012-01	EBGCR II	Broadway to Virginia St.	0-7.9	41.6076	-87.33098	0.34 miles east of Broadway
	GC-SD-XX-013/13A	GC-SDPN013-01	EBGCR II	Broadway to Virginia St.	0-7.9	41.60764	-87.33276	0.24 miles east of Broadway
	GC-SD-XX-014/14A	GC-SDPN014-01	EBGCR II	Broadway to Virginia St.	0-7.9	41.60766	-87.33461	0.14 miles east of Broadway
	GC-SD-XX-015/15A	GC-SDPN015-01	EBGCR II	Broadway to Virginia St.	0-7.9	41.6077	-87.33638	0.05 miles east of Broadway
	GC-SDDN002-41	GC-SDDN002-41	EBGCR II	I-90 to Broadway	1.5-2	41.6095	-87.3476	0.60 miles west of Broadway
	GC-SD-XX-016/16A	GC-SDPN016-01	EBGCR II	I-90 to Broadway	0-7.9	41.60795	-87.33845	0.06 miles west of Broadway
	GC-SD-XX-016/16B	GC-SDPN016-02	EBGCR II	I-90 to Broadway	8-12.9	41.60795	-87.33845	0.06 miles west of Broadway
	GC-SD-XX-017/17A	GC-SDPN017-01	EBGCR II	I-90 to Broadway	0-7.9	41.60903	-87.33973	0.17 miles west of Broadway
	GC-SD-XX-017/17B	GC-SDPN017-02	EBGCR II	I-90 to Broadway	8-12.9	41.60903	-87.33973	0.17 miles west of Broadway
	GC-SD-XX-018/18A	GC-SDPN018-01	EBGCR II	I-90 to Broadway	0-7.9	41.60979	-87.34105	0.26 miles west of Broadway
	GC-SD-XX-018/18B	GC-SDPN018-02	EBGCR II	I-90 to Broadway	8-12.9	41.60979	-87.34105	0.26 miles west of Broadway
	GC-SD-XX-019/19A	GC-SDPN019-01	EBGCR II	I-90 to Broadway	0-7.9	41.60998	-87.34249	0.34 miles west of Broadway

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Floyd-Browne 1993 IND/0068 (cont.)	GC-SD-XX-019/19B	GC-SDPN019-02	EBGCR II	I-90 to Broadway	8-12.9	41.60998	-87.34249	0.34 miles west of Broadway
	GC-SD-XX-020/20A	GC-SDPN020-01	EBGCR II	I-90 to Broadway	0-7.9	41.60999	-87.34436	0.43 miles west of Broadway
	GC-SD-XX-021/21A	GC-SDPN021-01	EBGCR II	I-90 to Broadway	0-7.9	41.60978	-87.34606	0.50 miles west of Broadway
	GC-SD-XX-022/22A	GC-SDPN022-01	EBGCR II	I-90 to Broadway	0-7.9	41.60946	-87.34762	0.60 miles west of Broadway
	GC-SD-XX-023/23A	GC-SDPN023-01	EBGCR II	I-90 to Broadway	0-7.9	41.60864	-87.34901	0.70 miles west of Broadway
	GC-SD-XX-023/23B	GC-SDPN023-02	EBGCR II	I-90 to Broadway	8-12.9	41.60864	-87.34901	0.70 miles west of Broadway
	GC-SD-XX-024/24A	GC-SDPN024-01	EBGCR II	Grant St. to I-90	0-7.9	41.60787	-87.35048	0.68 miles west of Broadway
	GC-SD-XX-024/24B	GC-SDPN024-02	EBGCR II	Grant St. to I-90	8-12.9	41.60787	-87.35048	0.68 miles west of Broadway
	GC-SD-XX-025/25A	GC-SDPN025-01	EBGCR II	Grant St. to I-90	0-7.9	41.60732	-87.35228	0.77 miles west of Broadway
	GC-SD-XX-025/25B	GC-SDPN025-02	EBGCR II	Grant St. to I-90	8-12.9	41.60732	-87.35228	0.77 miles west of Broadway
	GC-SD-XX-025/25C	GC-SDPN025-03	EBGCR II	Grant St. to I-90	13-?	41.60732	-87.35228	0.77 miles west of Broadway
	GC-SD-XX-026/26A	GC-SDPN026-01	EBGCR II	Grant St. to I-90	0-7.9	41.607	-87.35587	0.96 miles west of Broadway
	GC-SD-XX-026/26B	GC-SDPN026-02	EBGCR II	Grant St. to I-90	8-12.9	41.607	-87.35587	0.96 miles west of Broadway
	GC-SD-XX-026/26C	GC-SDPN026-03	EBGCR II	Grant St. to I-90	13-?	41.607	-87.35587	0.96 miles west of Broadway
	GC-SD-XX-027/27A	GC-SDPN027-01	EBGCR II	Bridge St. to Grant St.	0-7.9	41.60738	-87.35956	1.15 miles west of Broadway
	GC-SD-XX-027/27B	GC-SDPN027-02	EBGCR II	Bridge St. to Grant St.	8-12.9	41.60738	-87.35956	1.15 miles west of Broadway
	GC-SD-XX-028/28A	GC-SDPN028-01	EBGCR II	Bridge St. to Grant St.	0-7.9	41.60864	-87.36272	1.63 miles east of Clark St.
	GC-SD-XX-029/29A	GC-SDPN029-01	EBGCR II	Bridge St. to Grant St.	0-7.9	41.60882	-87.36633	1.44 miles east of Clark St.
	GC-SD-XX-029/29B	GC-SDPN029-02	EBGCR II	Bridge St. to Grant St.	8-12.9	41.60882	-87.36633	1.44 miles east of Clark St.
	GC-SD-XX-030/30A	GC-SDPN030-01	EBGCR II	Bridge St. to Grant St.	0-7.9	41.60887	-87.37002	1.25 miles east of Clark St.
	GC-SD-XX-031/31A	GC-SDPN031-01	EBGCR II	ConRail Bridge to Bridge St.	0-7.9	41.60868	-87.37323	1.08 miles east of Clark St.
	GC-SD-XX-031/31B	GC-SDPN031-02	EBGCR II	ConRail Bridge to Bridge St.	8-12.9	41.60868	-87.37323	1.08 miles east of Clark St.
	GC-SD-XX-032/32A	GC-SDPN032-01	EBGCR II	ConRail Bridge to Bridge St.	0-7.9	41.60678	-87.37598	0.95 miles east of Clark St.
	GC-SD-XX-032/32B	GC-SDPN032-02	EBGCR II	ConRail Bridge to Bridge St.	8-12.9	41.60678	-87.37598	0.95 miles east of Clark St.
	GC-SD-XX-032/32C	GC-SDPN032-03	EBGCR II	ConRail Bridge to Bridge St.	13-?	41.60678	-87.37598	0.95 miles east of Clark St.
	GC-SD-XX-033/33A	GC-SDPN033-01	EBGCR II	ConRail Bridge to Bridge St.	0-7.9	41.6068	-87.37963	0.75 miles east of Clark St.
	GC-SD-XX-033/33B	GC-SDPN033-02	EBGCR II	ConRail Bridge to Bridge St.	8-12.9	41.6068	-87.37963	0.75 miles east of Clark St.
	GC-SD-XX-033/33C	GC-SDPN033-03	EBGCR II	ConRail Bridge to Bridge St.	13-?	41.6068	-87.37963	0.75 miles east of Clark St.
	GC-SD-XX-034/34A	GC-SDPN034-01	EBGCR II	ConRail Bridge to Bridge St.	0-7.9	41.60914	-87.38044	0.72 miles east of Clark St.
	GC-SD-XX-034/34B	GC-SDPN034-02	EBGCR II	ConRail Bridge to Bridge St.	8-12.9	41.60914	-87.38044	0.72 miles east of Clark St.
	GC-SD-XX-034/34C	GC-SDPN034-03	EBGCR II	ConRail Bridge to Bridge St.	13-?	41.60914	-87.38044	0.72 miles east of Clark St.
	GC-SD-XX-035/35A	GC-SDPN035-01	EBGCR II	ConRail Bridge to Bridge St.	0-7.9	41.61145	-87.38205	0.67 miles east of Clark St.
	GC-SD-XX-035/35B	GC-SDPN035-02	EBGCR II	ConRail Bridge to Bridge St.	8-12.9	41.61145	-87.38205	0.67 miles east of Clark St.
	GC-SD-XX-035/35C	GC-SDPN035-03	EBGCR II	ConRail Bridge to Bridge St.	13-?	41.61145	-87.38205	0.67 miles east of Clark St.
	GC-SD-XX-036/36A	GC-SDPN036-01	EBGCR II	ConRail Bridge to Bridge St.	0-7.9	41.61159	-87.38522	0.53 miles east of Clark St.
	GC-SD-XX-037/37A	GC-SDPN037-01	EBGCR I	Industrial Hwy to ConRail Bridge	0-7.9	41.60934	-87.38721	0.40 miles east of Clark St.
	GC-SD-XX-037/37B	GC-SDPN037-02	EBGCR I	Industrial Hwy to ConRail Bridge	8-12.9	41.60934	-87.38721	0.40 miles east of Clark St.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Floyd-Browne 1993 IND/0068 (cont.)	GC-SD-XX-038/38A	GC-SDPN038-01	EBGCR I	Industrial Hwy to ConRail Bridge	0-7.9	41.6088	-87.3889	0.28 miles east of Clark St.
	GC-SD-XX-038/38B	GC-SDPN038-02	EBGCR I	Industrial Hwy to ConRail Bridge	8-12.9	41.6088	-87.3889	0.28 miles east of Clark St.
	GC-SDDN003-41	GC-SDDN003-41	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	1.5-2	41.6087	-87.3977	0.20 miles west of Clark St.
	GC-SD-XX-039/39A	GC-SDPN039-01	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-7.9	41.60878	-87.39791	0.20 miles west of Clark St.
	GC-SD-XX-040/40A	GC-SDPN040-01	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-7.9	41.60973	-87.4085	0.75 miles west of Clark St.
	GC-SD-XX-040/40B	GC-SDPN040-02	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	8-12.9	41.60973	-87.4085	0.75 miles west of Clark St.
	GC-SD-XX-041/41A	GC-SDPN041-01	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-7.9	41.61041	-87.42175	0.62 miles east of Cline Ave.
	GC-SD-XX-041/41B	GC-SDPN041-02	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	8-12.9	41.61041	-87.42175	0.62 miles east of Cline Ave.
	GC-SD-XX-042/42A	GC-SDPN042-01	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-7.9	41.61064	-87.42239	0.58 miles east of Cline Ave.
	GC-SD-XX-042/42B	GC-SDPN042-02	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	8-12.9	41.61064	-87.42239	0.58 miles east of Cline Ave.
	GC-SDDN004-41	GC-SDDN004-41	EBGCR I	Cline Ave. to Cline/I-90 Ramps	1.5-2	41.613	-87.4324	0.02 miles east of Cline Ave.
	GC-SD-XX-043/43A	GC-SDPN043-01	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-7.9	41.613	-87.43143	0.08 miles east of Cline Ave.
	GC-SD-XX-043/43B	GC-SDPN043-02	EBGCR I	Cline Ave. to Cline/I-90 Ramps	8-12.9	41.613	-87.43143	0.08 miles east of Cline Ave.
	GC-SD-XX-044/44A	GC-SDPN044-01	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-7.9	41.61315	-87.43239	0.02 miles east of Cline Ave.
	GC-SD-XX-044/44B	GC-SDPN044-02	EBGCR I	Cline Ave. to Cline/I-90 Ramps	8-12.9	41.61315	-87.43239	0.02 miles east of Cline Ave.
	GC-SD-XX-045/45A	GC-SDPN045-01	EBGCR I	Kennedy Ave. to Cline Ave.	0-7.9	41.61331	-87.43504	0.11 miles west of Cline Ave.
	GC-SD-XX-045/45B	GC-SDPN045-02	EBGCR I	Kennedy Ave. to Cline Ave.	8-12.9	41.61331	-87.43504	0.11 miles west of Cline Ave.
	GC-SD-XX-048/48A	GC-SDPN048-01	EBGCR I	Kennedy Ave. to Cline Ave.	0-7.9	41.61247	-87.45117	0.55 miles east of Kennedy Ave.
	GC-SD-XX-048/48B	GC-SDPN048-02	EBGCR I	Kennedy Ave. to Cline Ave.	8-12.9	41.61247	-87.45117	0.55 miles east of Kennedy Ave.
	GC-SD-XX-049/49A	GC-SDPN049-01	EBGCR I	Kennedy Ave. to Cline Ave.	0-7.9	41.61707	-87.45592	0.33 miles east of Kennedy Ave.
	GC-SD-XX-049/49B	GC-SDPN049-02	EBGCR I	Kennedy Ave. to Cline Ave.	8-12.9	41.61707	-87.45592	0.33 miles east of Kennedy Ave.
	GC-SD-XX-049/49C	GC-SDPN049-03	EBGCR I	Kennedy Ave. to Cline Ave.	13-?	41.61707	-87.45592	0.33 miles east of Kennedy Ave.
	GC-SD-XX-050/50A	GC-SDPN050-01	EBGCR I	Kennedy Ave. to Cline Ave.	0-7.9	41.61639	-87.46011	0.14 miles east of Kennedy Ave.
	GC-SD-XX-050/50B	GC-SDPN050-02	EBGCR I	Kennedy Ave. to Cline Ave.	8-12.9	41.61639	-87.46011	0.14 miles east of Kennedy Ave.
	GC-SD-XX-052/52A	GC-SDPN052-01	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-7.9	41.61324	-87.46356	0.16 miles west of Kennedy Ave.
	GC-SD-XX-052/52B	GC-SDPN052-02	EBGCR I	EB & WB Confluence to Kennedy Ave.	8-12.9	41.61324	-87.46356	0.16 miles west of Kennedy Ave.
	GC-SD-XX-056/56A	GC-SDPN056-01	WBGCR II	Indianapolis Blvd. to I-90	0-7.9	41.61461	-87.48131	0.06 miles west of Indianapolis Blvd.
	GC-SD-XX-056/56B	GC-SDPN056-02	WBGCR II	Indianapolis Blvd. to I-90	8-12.9	41.61461	-87.48131	0.06 miles west of Indianapolis Blvd.
	GC-SD-XX-056/56C	GC-SDPN056-03	WBGCR II	Indianapolis Blvd. to I-90	13-?	41.61461	-87.48131	0.06 miles west of Indianapolis Blvd.
	GC-SD-XX-054/54A	GC-SDPN054-01	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-7.9	41.61803	-87.47142	0.28 miles west of EB & WB Confluence
	GC-SD-XX-054/54B	GC-SDPN054-02	WBGCR I	EB & WB Confluence to Indianapolis Blvd	8-12.9	41.61803	-87.47142	0.28 miles west of EB & WB Confluence
	GC-SD-XX-054/54C	GC-SDPN054-03	WBGCR I	EB & WB Confluence to Indianapolis Blvd	13-?	41.61803	-87.47142	0.28 miles west of EB & WB Confluence
	GC-SD-XX-055/55A	GC-SDPN055-01	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-7.9	41.61409	-87.47974	0.28 miles east of Indianapolis Blvd.
	GC-SD-XX-055/55B	GC-SDPN055-02	WBGCR I	EB & WB Confluence to Indianapolis Blvd	8-12.9	41.61409	-87.47974	0.28 miles east of Indianapolis Blvd.
	GC-SD-XX-055/55C	GC-SDPN055-03	WBGCR I	EB & WB Confluence to Indianapolis Blvd	13-?	41.61409	-87.47974	0.28 miles east of Indianapolis Blvd.
	GC-SDDN005-41	GC-SDDN005-41	IHC	EB & WB Confluence to 151st St.	1.5-2	41.6181	-87.4709	EB & WB Confluence
	GC-SD-XX-053/53A	GC-SDPN053-01	IHC	EB & WB Confluence to 151st St.	0-7.9	41.61808	-87.47089	EB & WB Confluence

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Floyd-Browne 1993	GC-SD-XX-053/53B	GC-SDPN053-02	IHC	EB & WB Confluence to 151st St.	8-12.9	41.61808	-87.47089	EB & WB Confluence
IND/0068 (cont.)	GC-SD-XX-057/57A	GC-SDPN057-01	IHC	EB & WB Confluence to 151st St.	0-7.9	41.61873	-87.47114	0.28 miles north of EB & WB Confluence
	GC-SD-XX-057/57B	GC-SDPN057-02	IHC	EB & WB Confluence to 151st St.	8-12.9	41.61873	-87.47114	0.28 miles north of EB & WB Confluence
	GC-SD-XX-058/58A	GC-SDPN058-01	IHC	151st St. to Chicago Ave.	0-7.9	41.6229	-87.47117	0.43 miles south of Chicago Ave.
	GC-SD-XX-059/59A	GC-SDPN059-01	IHC	151st St. to Chicago Ave.	0-7.9	41.62712	-87.47108	0.13 miles south of Chicago Ave.
	GC-SDDN006-41	GC-SDDN006-41	IHC	Chicago Ave. to Columbus Dr.	1.5-2	41.6392	-87.4712	Columbus Drive
	GC-SD-XX-060/60A	GC-SDPN060-01	IHC	Chicago Ave. to Columbus Dr.	0-7.9	41.63125	-87.47114	0.15 miles north of Chicago Ave.
	GC-SD-XX-061/61A	GC-SDPN061-01	IHC	Chicago Ave. to Columbus Dr.	0-7.9	41.63535	-87.47121	0.26 miles north of Chicago Ave.
	GC-SD-XX-061/61B	GC-SDPN061-02	IHC	Chicago Ave. to Columbus Dr.	8-12.9	41.63535	-87.47121	0.26 miles north of Chicago Ave.
	GC-SD-XX-062/62A	GC-SDPN062-01	IHC	Chicago Ave. to Columbus Dr.	0-7.9	41.63921	-87.47127	Columbus Drive
	GC-SD-XX-062/62B	GC-SDPN062-02	IHC	Chicago Ave. to Columbus Dr.	8-12.9	41.63921	-87.47127	Columbus Drive
Hoke *et al.* 1993	UG-1	UG-1	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.60837	-87.31184	0.5 miles west of Lagoon Culvert
IND/0071	UG-2	UG-2	EBGCR II	I-90 to Broadway	Surface	41.60953	-87.34734	0.55 miles west of Broadway
	UG-3	UG-3	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.60829	-87.39604	0.10 miles west of Clark St.
	UG-4	UG-4	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61213	-87.42734	0.30 miles east of Cline Ave.
	UG-5	UG-5	EBGCR I	Kennedy Ave. to Cline Ave.	Surface	41.612	-87.44414	0.60 miles west of Cline Ave.
	UG-6	UG-6	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61552	-87.46761	0.23 miles east of WB & EB Confluence
	UG-10	UG-10	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.62592	-87.52284	State Line Ave.
	UG-9	UG-9	WBGCR II	I-90 to Columbia Ave.	Surface	41.61653	-87.48994	White Oak Ave.
	UG-8	UG-8	WBGCR I	EB & WB Confluence to Indianapolis Blvd	Surface	41.61474	-87.47554	0.34 miles west of WB & EB Confluence
	UG-7	UG-7	IHC	EB & WB Confluence to 151st St.	Surface	41.61824	-87.47106	WB & EB Confluence
	UG-11	UG-11	IHC	Chicago Ave. to Columbus Dr.	Surface	41.632	-87.471	0.19 miles north of Chicago Ave.
	UG-12	UG-12	USC	Columbus Dr. to Forks	Surface	41.646	-87.471	Forks
	UG-13	UG-13	IH	Indiana Harbor	Surface	41.666	-87.438	IH-east of USC mouth
URS Greiner Woodward	01RA01SE00	01RA01SE00	WBGCR II	Roxana Marsh	0-0.16	41.6169	-87.4867	Roxana Marsh (non-vegetated)
Clyde 1999 IND/0075	01RA01SE07	01RA01SE07	WBGCR II	Roxana Marsh	2-3.7	41.6169	-87.4867	Roxana Marsh (non-vegetated)
	01RA02SE00	01RA02SE00	WBGCR II	Roxana Marsh	0-0.16	41.6182	-87.4877	Roxana Marsh (vegetated)
	01RA02SE07	01RA02SE07	WBGCR II	Roxana Marsh	2-5.5	41.6182	-87.4877	Roxana Marsh (vegetated)
	01RB01SE00	01RB01SE00	WBGCR II	Roxana Marsh	0-0.16	41.6179	-87.4859	Roxana Marsh (non-vegetated)
	01RB01SE07	01RB01SE07	WBGCR II	Roxana Marsh	2-7	41.6179	-87.4859	Roxana Marsh (non-vegetated)
	01RC01SE00	01RC01SE00	WBGCR II	Roxana Marsh	0-2	41.6168	-87.4853	Roxana Marsh (non-vegetated)
	01RC01SE07	01RC01SE07	WBGCR II	Roxana Marsh	2-6.5	41.6168	-87.4853	Roxana Marsh (non-vegetated)
	01RC02SE00	01RC02SE00	WBGCR II	Roxana Marsh	0-5	41.6175	-87.4843	Roxana Marsh (vegetated)
	01RC02SE07	01RC02SE07	WBGCR II	Roxana Marsh	2-3.5	41.6175	-87.4843	Roxana Marsh (vegetated)
	01RA03SD10	01RA03SD10	WBGCR II	Indianapolis Blvd. to I-90	5-8	41.6188	-87.4881	WBGCR - 0.19 miles east of White Oak Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
URS Greiner Woodward Clyde 1999 IND/0075 (cont.)	01RA03SE00	01RA03SE00	WBGCR II	Indianapolis Blvd. to I-90	0-0.16	41.6188	-87.4881	WBGCR - 0.19 miles east of White Oak Ave.
	01RA03SE10	01RA03SE10	WBGCR II	Indianapolis Blvd. to I-90	5-8	41.6188	-87.4881	WBGCR - 0.19 miles east of White Oak Ave.
	01RB03SD10	01RB03SD10	WBGCR II	Indianapolis Blvd. to I-90	5-10	41.6188	-87.4859	WBGCR - 0.28 miles east of White Oak Ave.
	01RB03SE05	01RB03SE05	WBGCR II	Indianapolis Blvd. to I-90	0-5	41.6188	-87.4859	WBGCR - 0.28 miles east of White Oak Ave.
	01RB03SE10	01RB03SE10	WBGCR II	Indianapolis Blvd. to I-90	5-10	41.6188	-87.4859	WBGCR - 0.28 miles east of White Oak Ave.
	01RB03SE15	01RB03SE15	WBGCR II	Indianapolis Blvd. to I-90	10-13	41.6188	-87.4859	WBGCR - 0.28 miles east of White Oak Ave.
	01RC03SE00	01RC03SE00	WBGCR II	Indianapolis Blvd. to I-90	0-0.16	41.6179	-87.4838	WBGCR - 0.35 miles east of White Oak Ave.
	01RC03SE10	01RC03SE10	WBGCR II	Indianapolis Blvd. to I-90	5-9.5	41.6179	-87.4838	WBGCR - 0.35 miles east of White Oak Ave.
HNTB 1990 IND/0078	UH11	UH11	WBGCR II	Illinois portion	0-9	41.62755	-87.52935	Illinois -0.27 miles west of State Line Ave.
	UH12	UH12	WBGCR II	Illinois portion	0-9	41.63095	-87.53554	Illinois -0.67 miles west of State Line Ave.
	UH13	UH13	WBGCR II	Illinois portion	0-9	41.63244	-87.54128	Illinois -1.00 miles west of State Line Ave.
	UH14	UH14	WBGCR II	Illinois portion	0-9	41.63887	-87.54299	Illinois -1.30 miles west of State Line Ave.
	UH15	UH15	WBGCR II	Illinois portion	0-9	41.64309	-87.54722	Illinois -1.66 miles west of State Line Ave.
	UH16	UH16	WBGCR II	Illinois portion	0-9	41.6455	-87.5541	Illinois -2.04 miles west of State Line Ave.
	UH17	UH17	WBGCR II	Illinois portion	0-9	41.64552	-87.55745	Illinois -2.18 miles west of State Line Ave.
Thermoretec-Phase II 1999 IND/0079	SD-98-16/0-2'	SD-98-16 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6258	-87.5215	0.23 miles west of Hohman Ave.
	SD-98-16/2-4.5'	SD-98-16 (2-4.5')	WBGCR II	Hohman Ave. to State Line Ave.	2-4.5	41.6258	-87.5215	0.23 miles west of Hohman Ave.
	SD-98-17/2-5'	SD-98-17 (2-5')	WBGCR II	Hohman Ave. to State Line Ave.	2-5	41.6257	-87.5208	0.19 miles west of Hohman Ave.
	SD-98-17S/0-2'		WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6257	-87.5208	0.19 miles west of Hohman Ave.
	SD-98-17S^/0-2'		WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6257	-87.5208	0.19 miles west of Hohman Ave.
	SD-98-18/0-2'	SD-98-18 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6255	-87.5199	0.15 miles west of Hohman Ave.
	SD-98-18/2-4'	SD-98-18 (2-4')	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6255	-87.5199	0.15 miles west of Hohman Ave.
	SD-98-19/0-2'	SD-98-19 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6254	-87.5199	0.14 miles west of Hohman Ave.
	SD-98-19/2-5'	SD-98-19 (2-5')	WBGCR II	Hohman Ave. to State Line Ave.	2-5	41.6254	-87.5199	0.14 miles west of Hohman Ave.
	SD-98-20/0-2'	SD-98-20 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6253	-87.5193	0.11 miles west of Hohman Ave.
	SD-98-20/2-4'	SD-98-20 (2-4')	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6253	-87.5193	0.11 miles west of Hohman Ave.
	SD-98-20S/0-0.83	SD-98-20 (0-10 cm)	WBGCR II	Hohman Ave. to State Line Ave.	0-0.83	41.6253	-87.5193	0.11 miles west of Hohman Ave.
	SD-98-21/0-2'	SD-98-21 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6252	-87.5193	0.11 miles west of Hohman Ave.
	SD-98-21/2-4'	SD-98-21 (2-4')	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6252	-87.5193	0.11 miles west of Hohman Ave.
	SD-98-22/0-2'	SD-98-22 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6249	-87.5186	0.07 miles west of Hohman Ave.
	SD-98-22/2-4'	SD-98-22 (2-4')	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6249	-87.5186	0.07 miles west of Hohman Ave.
	SD-98-23/0-2'	SD-98-23 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6249	-87.5187	0.07 miles west of Hohman Ave.
	SD-98-23/2-4.5'	SD-98-23 (2-4.5')	WBGCR II	Hohman Ave. to State Line Ave.	2-4.5	41.6249	-87.5187	0.07 miles west of Hohman Ave.
	SD-98-24/0-2'	SD-98-24 (0-2')	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6245	-87.51785	0.02 miles west of Hohman Ave.
	SD-98-24/2-5'	SD-98-24 (2-5')	WBGCR II	Hohman Ave. to State Line Ave.	2-5	41.6245	-87.51785	0.02 miles west of Hohman Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Thermoretec-Phase II 1999 IND/0079 (cont.)	SD-98-24S/0-0.83	SD-98-24 (0-10 cm)	WBGCR II	Hohman Ave. to State Line Ave.	0-0.83	41.6245	-87.5179	0.02 miles west of Hohman Ave.
	SD-98-25/0-2'	SD-98-25 (0-2')	WBGCR II	Calumet Ave. to Hohman Ave.	0-2	41.6242	-87.5173	0.02 miles east of Hohman Ave.
	SD-98-25/2-5'	SD-98-25 (2-5')	WBGCR II	Calumet Ave. to Hohman Ave.	2-5	41.6242	-87.5173	0.02 miles east of Hohman Ave.
	SD-98-26/0-2'	SD-98-26 (0-2')	WBGCR II	Calumet Ave. to Hohman Ave.	0-2	41.6239	-87.5168	0.05 miles east of Hohman Ave.
	SD-98-26/2-5'	SD-98-26 (2-5')	WBGCR II	Calumet Ave. to Hohman Ave.	2-5	41.6239	-87.5168	0.05 miles east of Hohman Ave.
USGS; Maxim Technologies 1999 IND/0083	*(same in studies and IHDB)*							
	Station ID	***Sample ID***						
	LP99S17	IH-31	REF SITE	Pony Creek Park, WI	0-0.33	44.15167	-88.90806	Not measured
	LP99S18	IH-32	REF SITE	Lake Poygon	0-0.33	44.11333	-88.93194	Not measured
	ML99S12	IH-22	GCRL	West Lagoon	0-0.33	41.61392	-87.27775	West Lagoon
	ML99S13	IH-21	GCRL	West Lagoon	0-0.33	41.61337	-87.28122	West Lagoon
	ML99S14	IH-20	GCRL	West Lagoon	0-0.33	41.61388	-87.28405	West Lagoon
	ML99S11	IH-23	GCRL	Middle Lagoon	0-0.33	41.61588	-87.27055	Middle Lagoon
	ML99S10	IH-24	GCRL	East Lagoon	0-0.33	41.61622	-87.26277	East Lagoon
	GC99T01C1	NA	EBGCR I	Industrial Hwy to ConRail Bridge	0-5	41.60800	-87.39332	0.06 miles east of Industrial Hwy
	GC99T01C2	NA	EBGCR I	Industrial Hwy to ConRail Bridge	5-9	41.60800	-87.39332	0.06 miles east of Industrial Hwy
	GC99T01C3	NA	EBGCR I	Industrial Hwy to ConRail Bridge	9-10	41.60800	-87.39332	0.06 miles east of Industrial Hwy
	GC99T01CS	NA	EBGCR I	Industrial Hwy to ConRail Bridge	0-0.33	41.60800	-87.39332	0.06 miles east of Industrial Hwy
	GC99T01L1	NA	EBGCR I	Industrial Hwy to ConRail Bridge	0-3	41.60800	-87.39310	0.06 miles east of Industrial Hwy
	GC99T01LS	IH-15	EBGCR I	Industrial Hwy to ConRail Bridge	0-0.33	41.60800	-87.39310	0.06 miles east of Industrial Hwy
	GC99T01R1	NA	EBGCR I	Industrial Hwy to ConRail Bridge	0-5	41.60817	-87.39312	0.06 miles east of Industrial Hwy
	GC99T01R2	NA	EBGCR I	Industrial Hwy to ConRail Bridge	5-7.92	41.60817	-87.39312	0.06 miles east of Industrial Hwy
	GC99T01R3	NA	EBGCR I	Industrial Hwy to ConRail Bridge	7.92-10	41.60817	-87.39312	0.06 miles east of Industrial Hwy
	GC99T02C1	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-5	41.60908	-87.41072	0.63 miles east of Cline/I-90 Ramps
	GC99T02CS	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-0.33	41.60908	-87.41072	0.63 miles east of Cline/I-90 Ramps
	GC99T02L1	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-3	41.60900	-87.41140	0.60 miles east of Cline/I-90 Ramps
	GC99T02L2	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	3-5	41.60900	-87.41140	0.60 miles east of Cline/I-90 Ramps
	GC99T02R1	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-5	41.60920	-87.41122	0.62 miles east of Cline/I-90 Ramps
	GC99T02R2	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	5-7.25	41.60920	-87.41122	0.62 miles east of Cline/I-90 Ramps
	GC99T02R3	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	7.25-10	41.60920	-87.41122	0.62 miles east of Cline/I-90 Ramps
	GC99T02RS	IH-07	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-0.33	41.60920	-87.41122	0.62 miles east of Cline/I-90 Ramps
	GC99T03C1	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-5	41.61010	-87.42042	0.12 miles east of Cline/I-90 Ramps
	GC99T03C2	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	5-10	41.61010	-87.42042	0.12 miles east of Cline/I-90 Ramps
	GC99T03CS	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-0.33	41.61010	-87.42042	0.12 miles east of Cline/I-90 Ramps
	GC99T03L1	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-5	41.60987	-87.42057	0.12 miles east of Cline/I-90 Ramps
	GC99T03L2	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	5-10	41.60987	-87.42057	0.12 miles east of Cline/I-90 Ramps

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USGS; Maxim Technologies 1999 IND/0083 (cont.)	GC99T03L3	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	10-15	41.60987	-87.42057	0.12 miles east of Cline/I-90 Ramps
	GC99T03R1	NA	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-5	41.61017	-87.42062	0.12 miles east of Cline/I-90 Ramps
	GC99T03R2	IH-11	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	5-10	41.61017	-87.42062	0.12 miles east of Cline/I-90 Ramps
	GC99T03RS	IH-10	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-0.33	41.61017	-87.42062	0.12 miles east of Cline/I-90 Ramps
	GC99T04C1	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-5	41.61283	-87.43132	0.07 miles east of Cline Ave.
	GC99T04C2	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	5-6.5	41.61283	-87.43132	0.07 miles east of Cline Ave.
	GC99T04C3	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	6.5-9.29	41.61283	-87.43132	0.07 miles east of Cline Ave.
	GC99T04CS	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-0.33	41.61283	-87.43132	0.07 miles east of Cline Ave.
	GC99T04L1	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-5	41.61260	-87.43140	0.09 m east of Cline Ave.
	GC99T04L2	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	5-10	41.61260	-87.43140	0.09 m east of Cline Ave.
	GC99T04R1	NA	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-5	41.61310	-87.43125	0.09 m east of Cline Ave.
	GC99T04RS	IH-06	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-0.33	41.61310	-87.43125	0.09 m east of Cline Ave.
	GC99T05C1	NA	EBGCR I	Kennedy Ave. to Cline Ave.	0-5	41.61210	-87.44292	0.51 miles west of Cline Ave.
	GC99T05C2	NA	EBGCR I	Kennedy Ave. to Cline Ave.	5-6.63	41.61210	-87.44292	0.51 miles west of Cline Ave.
	GC99T05C3	NA	EBGCR I	Kennedy Ave. to Cline Ave.	6.63-10.72	41.61210	-87.44292	0.51 miles west of Cline Ave.
	GC99T05CS	NA	EBGCR I	Kennedy Ave. to Cline Ave.	0-0.33	41.61210	-87.44292	0.51 miles west of Cline Ave.
	GC99T05L1	NA	EBGCR I	Kennedy Ave. to Cline Ave.	0-5	41.61208	-87.44267	0.51 miles west of Cline Ave.
	GC99T05L2	NA	EBGCR I	Kennedy Ave. to Cline Ave.	5-8	41.61208	-87.44267	0.51 miles west of Cline Ave.
	GC99T05R1	NA	EBGCR I	Kennedy Ave. to Cline Ave.	0-5	41.61243	-87.44277	0.51 miles west of Cline Ave.
	GC99T05R2	NA	EBGCR I	Kennedy Ave. to Cline Ave.	5-7.75	41.61243	-87.44277	0.51 miles west of Cline Ave.
	GC99T05R3	NA	EBGCR I	Kennedy Ave. to Cline Ave.	7.75-10	41.61243	-87.44277	0.51 miles west of Cline Ave.
	GC99T05RS	IH-05	EBGCR I	Kennedy Ave. to Cline Ave.	0-0.33	41.61243	-87.44277	0.51 miles west of Cline Ave.
	GC99E1	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-5	41.61540	-87.46723	0.27 miles SE of EB & WB Confluence
	GC99E2	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	5-6.29	41.61540	-87.46723	0.27 miles SE of EB & WB Confluence
	GC99E3	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	6.29-10	41.61540	-87.46723	0.27 miles SE of EB & WB Confluence
	GC99T06C1	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-5	41.61400	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06CS	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.33	41.61400	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06L1	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-5	41.61500	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06L2	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	5-10	41.61500	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06L3	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	10-11	41.61500	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06L4	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	11-13.16	41.61500	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06LS	IH-03	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.33	41.61500	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06R1	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-5	41.61390	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T06R2	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	5.25-9.5	41.61390	-87.46220	0.07 miles west of Kennedy Ave.
	GC99T07C1	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-5	41.61722	-87.46875	0.15 miles SE of EB & WB Confluence
	GC99T07CS	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.33	41.61722	-87.46875	0.15 miles SE of EB & WB Confluence
	GC99T07R1	NA	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-3	41.61730	-87.46870	0.15 miles SE of EB & WB Confluence

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USGS; Maxim Technologies 1999 IND/0083 (cont.)	GC99T07RS	IH-02	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.33	41.61730	-87.46870	0.15 miles SE of EB & WB Confluence
	GC99S01	IH-09	EBGCR I	EB Wetland	0-0.33	41.60945	-87.38808	0.03 west of ConRail Bridge
	GC99S015	IH-12	EBGCR I	EB Wetland	0-0.33	41.61075	-87.42075	0.13 miles east of Cline/I-90 Ramps
	GC99S02	IH-17	EBGCR I	EB Wetland	0-0.33	41.61195	-87.42007	0.16 miles east of Cline/I-90 Ramps
	GC99S03	IH-16	EBGCR I	EB Wetland	0-0.33	41.61937	-87.41950	0.20 miles east of Cline/I-90 Ramps
	GC99S04	IH-18	EBGCR I	EB Wetland	0-0.33	41.62315	-87.42400	0.47 miles east of Cline Ave.
	GC99S05	IH-04	EBGCR I	EB Wetland	0-0.33	41.61545	-87.46667	0.29 miles SE of EB & WB Confluence
	GC99S05A	NA	EBGCR I	EB Wetland	0-0.33	41.61550	-87.46667	0.29 miles SE of EB & WB Confluence
	GC99S06	IH-08	EBGCR I	EB Wetland	0-0.33	41.61575	-87.46868	0.21 miles SE of EB & WB Confluence
	GC99T07L1	NA	EBGCR I	EB Wetland	0-5	41.60900	-87.41150	0.60 miles east of Cline/I-90 Ramps
	GC99T07L2	NA	EBGCR I	EB Wetland	5-10	41.60900	-87.41150	0.60 miles east of Cline/I-90 Ramps
	GC99T08C1	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	0-5	41.61548	-87.47457	0.26 miles SW of EB & WB Confluence
	GC99T08C2	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	5-10	41.61548	-87.47457	0.26 miles SW of EB & WB Confluence
	GC99T08CS	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	0-0.33	41.61548	-87.47457	0.26 miles SW of EB & WB Confluence
	GC99T08L1	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	0-5	41.61562	-87.47465	0.26 miles SW of EB & WB Confluence
	GC99T08L2	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	5-9.5	41.61562	-87.47465	0.26 miles SW of EB & WB Confluence
	GC99T08L3	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	9.5-10	41.61562	-87.47465	0.26 miles SW of EB & WB Confluence
	GC99T08R1	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	0-5	41.61530	-87.47470	0.26 miles SW of EB & WB Confluence
	GC99T08R2	NA	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	5-10	41.61530	-87.47470	0.26 miles SW of EB & WB Confluence
	GC99T08RS	IH-01	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	0-0.33	41.61530	-87.47470	0.26 miles SW of EB & WB Confluence
	IHC99T09C1	NA	IHC	151st St. to Chicago Ave.	0-0.33	41.62242	-87.47112	0.28 miles north of EB & WB Confluence
	IHC99T09CS	NA	IHC	151st St. to Chicago Ave.	0-0.33	41.62242	-87.47112	0.28 miles north of EB & WB Confluence
	IHC99T09L1	NA	IHC	151st St. to Chicago Ave.	0-4	41.62257	-87.47122	0.30 miles north of EB & WB Confluence
	IHC99T09LS	IH-13	IHC	151st St. to Chicago Ave.	0-0.33	41.62257	-87.47122	0.30 miles north of EB & WB Confluence
	IHC99T09R1	NA	IHC	151st St. to Chicago Ave.	0-5	41.62170	-87.47088	0.23 miles north of EB & WB Confluence
	IHC99T10C1	NA	IHC	Chicago Ave. to Columbus Dr.	0-5	41.63660	-87.47122	0.52 miles north of Chicago Ave.
	IHC99T10CS	NA	IHC	Chicago Ave. to Columbus Dr.	0-0.33	41.63660	-87.47122	0.52 miles north of Chicago Ave.
	IHC99T10L1	NA	IHC	Chicago Ave. to Columbus Dr.	0-5	41.63637	-87.47127	0.51 miles north of Chicago Ave.
	IHC99T10R1	NA	IHC	Chicago Ave. to Columbus Dr.	0-3	41.63680	-87.47090	0.53 miles north of Chicago Ave.
	IHC99T10RS	IH-14	IHC	Chicago Ave. to Columbus Dr.	0-0.33	41.63680	-87.47090	0.53 miles north of Chicago Ave.
	IHC99S07	IH-19	IHC	IHC Wetland	0-0.33	41.63353	-87.46798	0.30 miles north of Chicago Ave.
	IHC99T12C1	NA	LGB	B & O Railroad to headwaters	0-5	41.64672	-87.49347	0.24 miles west of B & O Railroad
	IHC99T12C2	NA	LGB	B & O Railroad to headwaters	5-10	41.64672	-87.49347	0.24 miles west of B & O Railroad
	IHC99T12C3	NA	LGB	B & O Railroad to headwaters	10-14	41.64672	-87.49347	0.24 miles west of B & O Railroad
	IHC99T12CS	NA	LGB	B & O Railroad to headwaters	0-0.33	41.64672	-87.49347	0.24 miles west of B & O Railroad
	IHC99T12L1	NA	LGB	B & O Railroad to headwaters	0-5	41.64698	-87.49350	0.24 miles west of B & O Railroad
	IHC99T12L2	NA	LGB	B & O Railroad to headwaters	5-10	41.64698	-87.49350	0.24 miles west of B & O Railroad

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USGS; Maxim Technologies 1999	IHC99T12L3	NA	LGB	B & O Railroad to headwaters	10-13.41	41.64698	-87.49350	0.24 miles west of B & O Railroad
IND/0083 (cont.)	IHC99T12LS	IH-30	LGB	B & O Railroad to headwaters	10-13.41	41.64698	-87.49350	0.24 miles west of B & O Railroad
	IHC99T12R1	NA	LGB	B & O Railroad to headwaters	0-5	41.64642	-87.49300	0.24 miles west of B & O Railroad
	IHC99T12R2	NA	LGB	B & O Railroad to headwaters	5-7.17	41.64642	-87.49300	0.24 miles west of B & O Railroad
	IHC99T11C1	NA	LGB	Indianapolis Blvd. to B & O Railroad	0-5	41.64680	-87.48607	0.29 miles west of Indianapolis Blvd.
	IHC99T11C2	NA	LGB	Indianapolis Blvd. to B & O Railroad	5-10	41.64680	-87.48607	0.29 miles west of Indianapolis Blvd.
	IHC99T11C3	NA	LGB	Indianapolis Blvd. to B & O Railroad	10-14.5	41.64680	-87.48607	0.29 miles west of Indianapolis Blvd.
	IHC99T11CS	NA	LGB	Indianapolis Blvd. to B & O Railroad	0-0.33	41.64680	-87.48607	0.29 miles west of Indianapolis Blvd.
	IHC99T11L1	NA	LGB	Indianapolis Blvd. to B & O Railroad	0-2	41.64698	-87.48638	0.29 miles west of Indianapolis Blvd.
	IHC99T11R1	NA	LGB	Indianapolis Blvd. to B & O Railroad	0-5	41.64662	-87.48645	0.29 miles west of Indianapolis Blvd.
	IHC99T11R2	NA	LGB	Indianapolis Blvd. to B & O Railroad	5-9.67	41.64662	-87.48645	0.29 miles west of Indianapolis Blvd.
	IHC99T11RS	IH-29	LGB	Indianapolis Blvd. to B & O Railroad	0-0.33	41.64662	-87.48645	0.29 miles west of Indianapolis Blvd.
	LG99S08	IH-26	LGB	Lake George Wetlands	0-0.33	41.64497	-87.49332	0.24 miles west of B & O Railroad
	LG99S09	IH-25	LGB	Lake George Wetlands	0-0.33	41.64502	-87.50182	0.65 miles west of B & O Railroad
	LG99T13C1	NA	LGB	Lake George Wetlands	0-4.75	41.64662	-87.50083	0.60 miles west of B & O Railroad
	LG99T13CS	NA	LGB	Lake George Wetlands	0-0.33	41.64662	-87.50083	0.60 miles west of B & O Railroad
	LG99T13L1	NA	LGB	Lake George Wetlands	0-4.75	41.64683	-87.50032	0.60 miles west of B & O Railroad
	LG99T13R1	NA	LGB	Lake George Wetlands	0-5	41.64658	-87.50112	0.60 miles west of B & O Railroad
	LG99T13R2	NA	LGB	Lake George Wetlands	5-8.33	41.64658	-87.50112	0.60 miles west of B & O Railroad
	LG99T13RS	IH-28	LGB	Lake George Wetlands	0-0.33	41.64658	-87.50112	0.60 miles west of B & O Railroad
	LG99T14C1	NA	LGB	Lake George Wetlands	0-3.42	41.64650	-87.50633	0.91 miles west of B & O Railroad
	LG99T14CS	NA	LGB	Lake George Wetlands	0-0.33	41.64650	-87.50633	0.91 miles west of B & O Railroad
	LG99T14L1	NA	LGB	Lake George Wetlands	0-0.33	41.64665	-87.50663	0.91 miles west of B & O Railroad
	LG99T14LS	IH-27	LGB	Lake George Wetlands	0-0.33	41.64665	-87.50663	0.91 miles west of B & O Railroad
	LG99T14R1	NA	LGB	Lake George Wetlands	0-3.67	41.64622	-87.50650	0.91 miles west of B & O Railroad
USACE 1996	006	GCML-0796-006	GCRL	West Lagoon	0-1	41.61221	-87.2924	2.00 miles east of Lagoon Culvert
IND/0085	005	GCML-0796-005	GCRL	West Lagoon	0-3	41.61358	-87.2863	1.60 miles east of Lagoon Culvert
	004	GCML-0796-004	GCRL	West Lagoon	0-2	41.61329	-87.2811	1.30 miles east of Lagoon Culvert
	002	GCML-0796-002	GCRL	Middle Lagoon	0-2	41.61546	-87.2725	0.90 miles east of Lagoon Culvert
	001	GCML-0796-001	GCRL	East Lagoon	2-3	41.61588	-87.264	0.50 miles east of Lagoon Culvert
	003	GCML-0796-003	GCRL	West Pond	0-4	41.61589	-87.2789	1.10 miles east of Lagoon Culvert
Retec-Phase I 1997	SD-10	SD-10	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6255	-87.5201	0.16 miles west of Hohman Ave.
IND/0086	SD-11	SD-11	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6257	-87.5207	0.19 miles west of Hohman Ave.
	SD-13	SD-13	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6258	-87.5214	0.22 miles west of Hohman Ave.
	SD-15	SD-15	WBGCR II	Hohman Ave. to State Line Ave.	0-2	41.6252	-87.5193	0.11 miles west of Hohman Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Retec-Phase I 1997	SD-15d	SD-15d	WBGCR II	Hohman Ave. to State Line Ave.	2-3	41.6252	-87.5193	0.11 miles west of Hohman Ave.
IND/0086 (cont.)	SD-15d2	SD-15d2	WBGCR II	Hohman Ave. to State Line Ave.	3-4	41.6252	-87.5193	0.11 miles west of Hohman Ave.
	SD-15d3	SD-15d3	WBGCR II	Hohman Ave. to State Line Ave.	4-5	41.6252	-87.5193	0.11 miles west of Hohman Ave.
	SD-2	SD-2	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6245	-87.5178	0.02 miles west of Hohman Ave.
	SD-3	SD-3	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6246	-87.5181	0.03 miles west of Hohman Ave.
	SD-4	SD-4	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6248	-87.5184	0.06 miles west of Hohman Ave.
	SD-5	SD-5	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.625	-87.5187	0.08 miles west of Hohman Ave.
	SD-6	SD-6	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6252	-87.5191	0.10 miles west of Hohman Ave.
	SD-7	SD-7	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6253	-87.5195	0.12 miles west of Hohman Ave.
	SD-9	SD9	WBGCR II	Hohman Ave. to State Line Ave.	2-4	41.6254	-87.5198	0.14 miles west of Hohman Ave.
	SD-1	SD-1	WBGCR II	Calumet Ave. to Hohman Ave.	2-4	41.6242	-87.5174	0.01 miles east of Hohman Ave.
	SD-1D	SD-1D	WBGCR II	Calumet Ave. to Hohman Ave.	2-4	41.6242	-87.5174	0.01 miles east of Hohman Ave.
Gillespie *et al.* 1998;	WL1	WL1	GCRL	West Lagoon	0.66-0.98	41.6133	-87.2783	1.25 miles east of Lagoon Culvert
IND/0087	WL2	WL2	GCRL	West Lagoon	0.66-0.98	41.61396	-87.278	1.25 miles east of Lagoon Culvert
	WL3	WL3	GCRL	West Lagoon	0.66-0.98	41.6141	-87.2846	1.00 Mile east of Lagoon Culvert
	WL4	WL4	GCRL	West Lagoon	0.66-0.98	41.6133	-87.2889	0.70 miles east of Lagoon Culvert
	WL5	WL5	GCRL	West Lagoon	0.66-0.98	41.61176	-87.2931	0.50 miles east of Lagoon Culvert
	ML1	ML1	GCRL	Middle Lagoon	0.66-0.98	41.61664	-87.2735	1.50 miles east of Lagoon Culvert
	ML2	ML2	GCRL	Middle Lagoon	0.66-0.98	41.61527	-87.2731	1.50 miles east of Lagoon Culvert
	ML3	ML3	GCRL	Middle Lagoon	0.66-0.98	41.6145	-87.2749	1.40 miles east of Lagoon Culvert
USDOI 1994 (as cited in	18 9 1 1	18 9 1 1	GCRL	Little East Pond	0.66-0.98	41.61508	-87.2767	1.40 miles east of Lagoon Culvert
IDEM 1997) IND/0069	18 10 1 1	18 10 1 1	GCRL	Little East Pond	0.66-0.98	41.61635	-87.2768	1.40 miles east of Lagoon Culvert
	18 12 1 1	18 12 1 1	GCRL	Little West Pond	0.66-0.98	41.61613	-87.2789	1.30 miles east of Lagoon Culvert
	18 11 1 1	18 11 1 1	GCRL	Little West Pond	0.66-0.98	41.6156	-87.2789	1.25 miles east of Lagoon Culvert
Exponent 1999	*(same in studies and IHDB)*							
IND/0089	***Station ID***	***Sample ID***						
	SD009	SD009	NR	NR	NR	NR	NR	NR
	A-M	ECH-E-AM01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-M	ACORE01SD_1	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 2.26	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-M	ACORE01SD_2	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 2.26	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-M	ACORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	2.26 - 4.00	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-M	ACORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	4.00 - 6.56	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-M	ECH-E-AM03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-M	ECH-E-AM02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6133	-87.4341	0.07 miles west of Cline Ave.
	A-N	ECH-E-AN01_2	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6134	-87.4341	0.07 miles west of Cline Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Exponent 1999	A-N	ECH-E-AN01_1	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6134	-87.4341	0.07 miles west of Cline Ave.
IND/0089 (cont.)	A-S	ECH-E-AS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6132	-87.4341	0.07 miles west of Cline Ave.
	B-M	ECH-E-BM01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6132	-87.4381	0.28 miles west of Cline Ave.
	B-M	BCORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 1.80	41.6132	-87.4381	0.28 miles west of Cline Ave.
	B-M	BCORE02SD_1	EBGCR I	Kennedy Ave. to Cline Ave.	1.80 - 3.94	41.6132	-87.4381	0.28 miles west of Cline Ave.
	B-M	BCORE02SD_2	EBGCR I	Kennedy Ave. to Cline Ave.	1.80 - 3.94	41.6132	-87.4381	0.28 miles west of Cline Ave.
	B-M	BCORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	3.94 - 5.68	41.6132	-87.4381	0.28 miles west of Cline Ave.
	B-N	ECH-E-BN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6134	-87.4381	0.28 miles west of Cline Ave.
	B-S	ECH-E-BS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6130	-87.4380	0.28 miles west of Cline Ave.
	C-CORE	CCORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	8.83 - 15.09	41.6117	-87.4495	0.62 miles east of Kennedy Ave.
	C-CORE	CCORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	4.43 - 8.83	41.6117	-87.4495	0.62 miles east of Kennedy Ave.
	C-CORE	CCORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 4.43	41.6117	-87.4495	0.62 miles east of Kennedy Ave.
	C-N	ECH-E-CN03_1	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6119	-87.4494	0.62 miles east of Kennedy Ave.
	C-N	ECH-E-CN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6119	-87.4494	0.62 miles east of Kennedy Ave.
	C-N	ECH-E-CN02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6119	-87.4494	0.62 miles east of Kennedy Ave.
	C-N	ECH-E-CN03_2	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6119	-87.4494	0.62 miles east of Kennedy Ave.
	C-S	ECH-E-CS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6115	-87.4495	0.62 miles east of Kennedy Ave.
	D-M	ECH-E-DM01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6127	-87.4512	0.52 miles east of Kennedy Ave.
	D-M	DCORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	5.91 - 6.82	41.6127	-87.4512	0.52 miles east of Kennedy Ave.
	D-M	DCORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	3.38 - 5.91	41.6127	-87.4512	0.52 miles east of Kennedy Ave.
	D-M (S)	DCORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 3.38	41.6127	-87.4512	0.52 miles east of Kennedy Ave.
	D-N	ECH-E-DN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6128	-87.4511	0.52 miles east of Kennedy Ave.
	D-S	ECH-E-DS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6126	-87.4514	0.52 miles east of Kennedy Ave.
	E-CORE	ECORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	1.48 - 3.87	41.6158	-87.4538	0.40 miles east of Kennedy Ave.
	E-CORE	ECORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	3.87 - 5.41	41.6158	-87.4538	0.40 miles east of Kennedy Ave.
	E-CORE	ECORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 1.48	41.6158	-87.4538	0.40 miles east of Kennedy Ave.
	E-N	ECH-E-EN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6159	-87.4537	0.40 miles east of Kennedy Ave.
	E-N	ECH-E-EN03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6159	-87.4537	0.40 miles east of Kennedy Ave.
	E-N	ECH-E-EN02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6159	-87.4537	0.40 miles east of Kennedy Ave.
	E-S	ECH-E-ES01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6157	-87.4539	0.40 miles east of Kennedy Ave.
	E-S	ECH-E-ES03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6157	-87.4539	0.40 miles east of Kennedy Ave.
	E-S	ECH-E-ES02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6157	-87.4539	0.40 miles east of Kennedy Ave.
	F-CORE	FCORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 1.80	41.6171	-87.4561	0.27 miles east of Kennedy Ave.
	F-CORE	FCORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	1.80 - 4.92	41.6171	-87.4561	0.27 miles east of Kennedy Ave.
	F-CORE	FCORE03SD_1	EBGCR I	Kennedy Ave. to Cline Ave.	4.92 - 6.73	41.6171	-87.4561	0.27 miles east of Kennedy Ave.
	F-CORE	FCORE03SD_2	EBGCR I	Kennedy Ave. to Cline Ave.	4.92 - 6.73	41.6171	-87.4561	0.27 miles east of Kennedy Ave.
	F-N	ECH-E-FN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6172	-87.456	0.27 miles east of Kennedy Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Exponent 1999	F-S	ECH-E-FS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6170	-87.4561	0.27 miles east of Kennedy Ave.
IND/0089 (cont.)	G-M	GCORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	3.08 - 6.82	41.6172	-87.4582	0.15 miles east of Kennedy Ave.
	G-M	GCORE03SD_2	EBGCR I	Kennedy Ave. to Cline Ave.	6.82 - 8.50	41.6172	-87.4582	0.15 miles east of Kennedy Ave.
	G-M	GCORE03SD_1	EBGCR I	Kennedy Ave. to Cline Ave.	6.82 - 8.50	41.6172	-87.4582	0.15 miles east of Kennedy Ave.
	G-M	GCORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 2.10	41.6172	-87.4582	0.15 miles east of Kennedy Ave.
	G-N	ECH-E-GN02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6173	-87.4582	0.15 miles east of Kennedy Ave.
	G-N	ECH-E-GN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6173	-87.4582	0.15 miles east of Kennedy Ave.
	G-N	ECH-E-GN03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6173	-87.4582	0.15 miles east of Kennedy Ave.
	G-S	ECH-E-GS02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6171	-87.4582	0.15 miles east of Kennedy Ave.
	G-S	ECH-E-GS01_2	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6171	-87.4582	0.15 miles east of Kennedy Ave.
	G-S	ECH-E-GS01_1	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6171	-87.4582	0.15 miles east of Kennedy Ave.
	G-S	ECH-E-GS03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6171	-87.4582	0.15 miles east of Kennedy Ave.
	H-CORE	HCORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 1.18	41.6163	-87.4601	0.07 miles east of Kennedy Ave.
	H-CORE	HCORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	2.92 - 4.07	41.6163	-87.4601	0.07 miles east of Kennedy Ave.
	H-CORE	HCORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	1.18 - 2.92	41.6163	-87.4601	0.07 miles east of Kennedy Ave.
	H-N	ECH-E-HN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6164	-87.4602	0.07 miles east of Kennedy Ave.
	H-S	ECH-E-HS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6162	-87.460	0.07 miles east of Kennedy Ave.
	I-M	ECH-E-IM01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6148	-87.4610	Kennedy Ave.
	I-M	ECH-E-IM02_2	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6148	-87.4610	Kennedy Ave.
	I-M	ICORE01SD	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 2.43	41.6148	-87.4610	Kennedy Ave.
	I-M	ICORE03SD	EBGCR I	Kennedy Ave. to Cline Ave.	5.09 - 6.00	41.6148	-87.4610	Kennedy Ave.
	I-M	ECH-E-IM02_1	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6148	-87.4610	Kennedy Ave.
	I-M	ICORE02SD	EBGCR I	Kennedy Ave. to Cline Ave.	2.43 - 5.09	41.6148	-87.4610	Kennedy Ave.
	I-M	ECH-E-IM03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6148	-87.4610	Kennedy Ave.
	I-N	ECH-E-IN01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6148	-87.4611	Kennedy Ave.
	I-N	ECH-E-IN03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6148	-87.4611	Kennedy Ave.
	I-N (S)	ECH-E-IN02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6148	-87.4611	Kennedy Ave.
	I-S	ECH-E-IS02	EBGCR I	Kennedy Ave. to Cline Ave.	0.33 - 0.66	41.6147	-87.4609	Kennedy Ave.
	I-S	ECH-E-IS01	EBGCR I	Kennedy Ave. to Cline Ave.	0 - 0.33	41.6147	-87.4609	Kennedy Ave.
	I-S	ECH-E-IS03	EBGCR I	Kennedy Ave. to Cline Ave.	0.66 - 0.98	41.6147	-87.4609	Kennedy Ave.
	J-CORE	JCORE02SD	EBGCR I	EB & WB Confluence to Kennedy Ave.	0.98 - 2.82	41.6134	-87.4657	0.23 miles west of Kennedy Ave.
	J-CORE	JCORE03SD	EBGCR I	EB & WB Confluence to Kennedy Ave.	2.82 - 5.84	41.6134	-87.4657	0.23 miles west of Kennedy Ave.
	J-CORE	JCORE01SD	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.98	41.6134	-87.4657	0.23 miles west of Kennedy Ave.
	J-N	ECH-E-JN03	EBGCR I	EB & WB Confluence to Kennedy Ave.	0.66 - 0.98	41.6135	-87.4657	0.23 miles west of Kennedy Ave.
	J-N	ECH-E-JN01	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.33	41.6135	-87.4657	0.23 miles west of Kennedy Ave.
	J-N	ECH-E-JN02	EBGCR I	EB & WB Confluence to Kennedy Ave.	0.33 - 0.66	41.6135	-87.4657	0.23 miles west of Kennedy Ave.
	J-S	ECH-E-JS01	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.33	41.6133	-87.4657	0.23 miles west of Kennedy Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Exponent 1999	K-M	KCORE01SD	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 1.51	41.6169	-87.4684	0.16 miles east of EB & WB Confluence
IND/0089 (cont.)	K-M	KCORE02SD_1	EBGCR I	EB & WB Confluence to Kennedy Ave.	1.51 - 4.99	41.6169	-87.4684	0.16 miles east of EB & WB Confluence
	K-M	KCORE02SD_2	EBGCR I	EB & WB Confluence to Kennedy Ave.	1.51 - 4.99	41.6169	-87.4684	0.16 miles east of EB & WB Confluence
	K-M	KCORE03SD	EBGCR I	EB & WB Confluence to Kennedy Ave.	4.99 - 6.00	41.6169	-87.4684	0.16 miles east of EB & WB Confluence
	K-M	ECH-E-KM01	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.33	41.6169	-87.4684	0.16 miles east of EB & WB Confluence
	K-N	ECH-E-KN01_1	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.33	41.6169	-87.4683	0.16 miles east of EB & WB Confluence
	K-N	ECH-E-KN01_2	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.33	41.6169	-87.4683	0.16 miles east of EB & WB Confluence
	K-S	ECH-E-KS02	EBGCR I	EB & WB Confluence to Kennedy Ave.	0.33 - 0.66	41.6168	-87.4685	0.16 miles east of EB & WB Confluence
	K-S	ECH-E-KS01	EBGCR I	EB & WB Confluence to Kennedy Ave.	0 - 0.33	41.6168	-87.4685	0.16 miles east of EB & WB Confluence
	K-S	ECH-E-KS03	EBGCR I	EB & WB Confluence to Kennedy Ave.	0.66 - 0.98	41.6168	-87.4685	0.16 miles east of EB & WB Confluence
	WETLAND1	ECH-E-W101	EBGCR I	EB Wetland	0 - 0.33	41.6130	-87.4415	0.44 miles west of Cline Ave.
	WETLAND2	ECH-E-W102_2	EBGCR I	EB Wetland	0 - 0.33	41.6126	-87.4502	0.58 miles west of Cline Ave.
	WETLAND2	ECH-E-W102_1	EBGCR I	EB Wetland	0 - 0.33	41.6126	-87.4502	0.58 miles west of Cline Ave.
	WETLAND3	ECH-E-W103	EBGCR I	EB Wetland	0 - 0.33	41.6165	-87.4558	0.27 miles east of Kennedy Ave.
	WETLAND4	ECH-E-W104	EBGCR I	EB Wetland	0 - 0.33	41.6153	-87.4598	0.06 miles east of Kennedy Ave.
	WETLAND5	ECH-E-W105	EBGCR I	EB Wetland	0 - 0.33	41.6137	-87.4650	0.20 miles west of Kennedy Ave.
	WETLAND6	ECH-E-W106	EBGCR I	EB Wetland	0 - 0.33	41.6148	-87.4664	0.25 miles west of Kennedy Ave.
IDEM 1998 (G9 data)	R04818	R04818	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.60805	-87.39329	0.05 miles east of Clark St.
IND/0090	R04819	R04819	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.60805	-87.39329	0.05 miles east of Clark St.
	R04820	R04820	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.61044	-87.42088	0.65 miles east of Cline Ave.
	R04815	R04815	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.61202	-87.42792	0.25 miles east of Cline Ave.
	R04816	R04816	EBGCR I	Kennedy Ave. to Cline Ave.	Surface	41.61308	-87.43787	0.25 miles west of Cline Ave.
	R04817	R04817	EBGCR I	Kennedy Ave. to Cline Ave.	Surface	41.6118	-87.4491	0.85 miles west of Cline Ave.
	R04821	R04821	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	Surface	41.6142	-87.4765	0.20 miles east of Indianapolis Blvd.
	R04822	R04822	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	Surface	41.61425	-87.48035	Indianapolis Blvd.
	R04823	R04823	IHC	151st St. to Chicago Ave.	Surface	41.6262	-87.4712	0.20 miles south of Chicago Ave.
	R04824	R04824	IHC	151st St. to Chicago Ave.	Surface	41.629	-87.4712	Chicago Ave.
	R04813	R04813	IHC	Chicago Ave. to Columbus Dr.	Surface	41.63906	-87.47083	Columbus Dr.
	R04814	R04814	IHC	Chicago Ave. to Columbus Dr.	Surface	41.6392	-87.47135	Columbus Dr.
	R04825	R04825	IHC	Chicago Ave. to Columbus Dr.	Surface	41.6321	-87.4711	0.20 miles north of Chicago Ave.
	R04826	R04826	IHC	Chicago Ave. to Columbus Dr.	Surface	41.63641	-87.47084	0.20 miles south of Columbus Drive
Tetra Tech EM Inc. 1998	D-MIDDLE (S)	D-MIDDLE (S)	EBGCR I	Kennedy Ave. to Cline Ave.	0-3.38	41.6127	-87.4512	Between railroad bridge and Kennedy Ave.
(Dupont splits)	I-NORTH (S)	I-NORTH (S)	EBGCR I	Kennedy Ave. to Cline Ave.	0.33-0.66	41.6148	-87.4611	Just east of Kennedy Ave
IND/0091	WETLAND-2 (S)	WETLAND-2 (S)	EBGCR I	EB Wetland	0-0.33	41.6126	-87.4502	Just east of Kennedy Ave

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USACE 1980b	SITE3	SITE3	USC	Hwy 912 to Dickey Rd.	0-3.3	41.65115	-87.4645	0.38 miles south of Dickey Road
IND/0096	SITE1	SITE1	USC	Dickey Rd. to B & O Railroad	0-3.3	41.65917	-87.4541	0.04 miles north of Dickey Road
	SITE2	SITE2	USC	Dickey Rd. to B & O Railroad	0-3.3	41.65571	-87.45867	0.06 miles north of Dickey Road
ENTACT, Inc 1998	CC-1-0-2	CC-1-0-2	EBGCR I	USS Lead Canal	0-2	41.61647	-87.46429	USS Lead Canal - 0.17 miles from mouth
(USS Lead splits)	CC-2-0-2	CC-2-0-2	EBGCR I	USS Lead Canal	0-2	41.61636	-87.46446	USS Lead Canal - 0.16 miles from mouth
IND/0098	CC-2-2-4	CC-2-2-4	EBGCR I	USS Lead Canal	2-4	41.61636	-87.46446	USS Lead Canal - 0.16 miles from mouth
	CC-3-0-2	CC-3-0-2	EBGCR I	USS Lead Canal	0-2	41.61627	-87.46465	USS Lead Canal - 0.15 miles from mouth
	CC-4-0-2	CC-4-0-2	EBGCR I	USS Lead Canal	0-2	41.6162	-87.46487	USS Lead Canal - 0.13 miles from mouth
	CC-5-0-2	CC-5-0-2	EBGCR I	USS Lead Canal	0-2	41.61605	-87.46532	USS Lead Canal - 0.11 miles from mouth
	CC-5-2-5	CC-5-2-5	EBGCR I	USS Lead Canal	2-5	41.61605	-87.46532	USS Lead Canal - 0.11 miles from mouth
	CC-6-0-2	CC-6-0-2	EBGCR I	USS Lead Canal	0-2	41.61591	-87.46575	USS Lead Canal - 0.08 miles from mouth
	CC-6-2-4	CC-6-2-4	EBGCR I	USS Lead Canal	2-3.5	41.61591	-87.46575	USS Lead Canal - 0.08 miles from mouth
	CC-7-0-2	CC-7-0-2	EBGCR I	USS Lead Canal	0-2	41.61576	-87.46622	USS Lead Canal - 0.06 miles from mouth
	CC-7-2-5	CC-7-2-5	EBGCR I	USS Lead Canal	2-5	41.61576	-87.46622	USS Lead Canal - 0.06 miles from mouth
	CC-8-0-2	CC-8-0-2	EBGCR I	USS Lead Canal	0-2	41.61562	-87.46672	USS Lead Canal - 0.03 miles from mouth
	CC-8-2-5	CC-8-2-5	EBGCR I	USS Lead Canal	2-5	41.61562	-87.46672	USS Lead Canal - 0.03 miles from mouth
TechLaw, Inc 1998	CC-01-02	CC-01-02	EBGCR I	USS Lead Canal	0-2	41.61647	-87.46429	USS Lead Canal - 0.17 miles from mouth
(USS Lead splits)	CC-02-02	CC-02-02	EBGCR I	USS Lead Canal	0-2	41.61636	-87.46446	USS Lead Canal - 0.16 miles from mouth
IND/0099	CC-02-24	CC-02-24	EBGCR I	USS Lead Canal	2-4	41.61636	-87.46446	USS Lead Canal - 0.16 miles from mouth
	CC-03-02	CC-03-02	EBGCR I	USS Lead Canal	0-2	41.61627	-87.46465	USS Lead Canal - 0.15 miles from mouth
	CC-04-02	CC-04-02	EBGCR I	USS Lead Canal	0-2	41.6162	-87.46487	USS Lead Canal - 0.13 miles from mouth
	CC-05-02	CC-05-02	EBGCR I	USS Lead Canal	0-2	41.61605	-87.46532	USS Lead Canal - 0.11 miles from mouth
	CC-05-25	CC-05-25	EBGCR I	USS Lead Canal	2-5	41.61605	-87.46532	USS Lead Canal - 0.11 miles from mouth
	CC-06-02	CC-06-02	EBGCR I	USS Lead Canal	0-2	41.61591	-87.46575	USS Lead Canal - 0.08 miles from mouth
	CC-06-235	CC-06-235	EBGCR I	USS Lead Canal	0-3.5	41.61591	-87.46575	USS Lead Canal - 0.08 miles from mouth
	CC-7-02	CC-7-02	EBGCR I	USS Lead Canal	0-2	41.61576	-87.46622	USS Lead Canal - 0.06 miles from mouth
	CC-7-25	CC-7-25	EBGCR I	USS Lead Canal	2-5	41.61576	-87.46622	USS Lead Canal - 0.06 miles from mouth
	CC-8-02	CC-8-02	EBGCR I	USS Lead Canal	0-2	41.61562	-87.46672	USS Lead Canal - 0.03 miles from mouth
	CC-8-25	CC-8-25	EBGCR I	USS Lead Canal	2-5	41.61562	-87.46672	USS Lead Canal - 0.03 miles from mouth
Simon 2000 (1998 samples)	97CG82S01	97CG82S01	EBGCR II	EB II Wetland	Surface	41.6124	-87.3821	South Bonji
IND/0104	97CG82S02	97CG82S02	EBGCR II	EB II Wetland	Surface	41.6131	-87.3834	South Bonji
	97CG82S03	97CG82S03	EBGCR II	EB II Wetland	Surface	41.613	-87.3825	South Bonji
	97CG82D03	97CG82D03	EBGCR II	EB II Wetland	Surface	41.613	-87.3825	South Bonji

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples) IND/0104 (cont.)	97CG82S04	97CG82S04	EBGCR II	EB II Wetland	Surface	41.613	-87.3816	South Bonji
	97CG82S05	97CG82S05	EBGCR II	EB II Wetland	Surface	41.6136	-87.3839	South Bonji
	97CG82S06	97CG82S06	EBGCR II	EB II Wetland	Surface	41.6136	-87.383	South Bonji
	97CG82D06	97CG82D06	EBGCR II	EB II Wetland	Surface	41.6136	-87.383	South Bonji
	97CG82S07	97CG82S07	EBGCR II	EB II Wetland	Surface	41.6136	-87.3821	South Bonji
	97CG82S08	97CG82S08	EBGCR II	EB II Wetland	Surface	41.6142	-87.3834	South Bonji
	97CG82S09	97CG82S09	EBGCR II	EB II Wetland	Surface	41.6142	-87.3825	South Bonji
	97CG82S10	97CG82S10	EBGCR II	EB II Wetland	Surface	41.6142	-87.3816	South Bonji
	97CG82S11	97CG82S11	EBGCR II	EB II Wetland	Surface	41.6148	-87.3839	South Bonji
	97CG82S12	97CG82S12	EBGCR II	EB II Wetland	Surface	41.6156	-87.3838	North Bonji
	97CG82S13	97CG82S13	EBGCR II	EB II Wetland	Surface	41.6156	-87.3826	North Bonji
	97CG82S14	97CG82S14	EBGCR II	EB II Wetland	Surface	41.6156	-87.3815	North Bonji
	97CG82S15	97CG82S15	EBGCR II	EB II Wetland	Surface	41.6165	-87.3838	North Bonji
	97CG82D15	97CG82D15	EBGCR II	EB II Wetland	Surface	41.6165	-87.3838	North Bonji
	97CG82S16	97CG82S16	EBGCR II	EB II Wetland	Surface	41.6165	-87.3826	North Bonji
	97CG82S17	97CG82S17	EBGCR II	EB II Wetland	Surface	41.6165	-87.3815	North Bonji
	97CG82S18	97CG82S18	EBGCR II	EB II Wetland	Surface	41.6174	-87.3838	North Bonji
	97CG82S19	97CG82S19	EBGCR II	EB II Wetland	Surface	41.6174	-87.3826	North Bonji
	97CG82S20	97CG82S20	EBGCR II	EB II Wetland	Surface	41.6183	-87.3838	North Bonji
	97CG82S21	97CG82S21	EBGCR II	EB II Wetland	Surface	41.6183	-87.3826	North Bonji
	97CG82D21	97CG82D21	EBGCR II	EB II Wetland	Surface	41.6183	-87.3826	North Bonji
	97CG84S01	97CG84S01	EBGCR II	EB II Wetland	Surface	41.6078	-87.3827	Georgia Pacific
	97CG84S02	97CG84S02	EBGCR II	EB II Wetland	Surface	41.6078	-87.3823	Georgia Pacific
	97CG84S03	97CG84S03	EBGCR II	EB II Wetland	Surface	41.6078	-87.3819	Georgia Pacific
	97CG84D03	97CG84D03	EBGCR II	EB II Wetland	Surface	41.6078	-87.3819	Georgia Pacific
	97CG84S04	97CG84S04	EBGCR II	EB II Wetland	Surface	41.6081	-87.3831	Georgia Pacific
	97CG84S05	97CG84S05	EBGCR II	EB II Wetland	Surface	41.6081	-87.3827	Georgia Pacific
	97CG84S06	97CG84S06	EBGCR II	EB II Wetland	Surface	41.6081	-87.3823	Georgia Pacific
	97CG84S07	97CG84S07	EBGCR II	EB II Wetland	Surface	41.6081	-87.3819	Georgia Pacific
	97CG84S08	97CG84S08	EBGCR II	EB II Wetland	Surface	41.6084	-87.3835	Georgia Pacific
	97CG84S09	97CG84S09	EBGCR II	EB II Wetland	Surface	41.6084	-87.3831	Georgia Pacific
	97CG84D09	97CG84D09	EBGCR II	EB II Wetland	Surface	41.6084	-87.3831	Georgia Pacific
	97CG84S10	97CG84S10	EBGCR II	EB II Wetland	Surface	41.6084	-87.3827	Georgia Pacific
	97CG84S11	97CG84S11	EBGCR II	EB II Wetland	Surface	41.6084	-87.3823	Georgia Pacific
	97CG84S12	97CG84S12	EBGCR II	EB II Wetland	Surface	41.6084	-87.3819	Georgia Pacific
	97CG84S13	97CG84S13	EBGCR II	EB II Wetland	Surface	41.6087	-87.384	Georgia Pacific

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples) IND/0104 (cont.)	97CG84S14	97CG84S14	EBGCR II	EB II Wetland	Surface	41.6087	-87.3835	Georgia Pacific
	97CG84S14_1	97CG84S14_1	EBGCR II	EB II Wetland	Surface	41.6087	-87.3835	Georgia Pacific
	97CG84S14_2	97CG84S14_2	EBGCR II	EB II Wetland	Surface	41.6087	-87.3835	Georgia Pacific
	97CG84S15	97CG84S15	EBGCR II	EB II Wetland	Surface	41.6087	-87.3831	Georgia Pacific
	97CG84S16	97CG84S16	EBGCR II	EB II Wetland	Surface	41.6087	-87.3827	Georgia Pacific
	97CG84S17	97CG84S17	EBGCR II	EB II Wetland	Surface	41.6087	-87.3823	Georgia Pacific
	97CG84S18	97CG84S18	EBGCR II	EB II Wetland	Surface	41.6087	-87.3819	Georgia Pacific
	97CG84S19	97CG84S19	EBGCR II	EB II Wetland	Surface	41.609	-87.3827	Georgia Pacific
	97CG80S01	97CG80S01	GCRL	West Lagoon	Surface	41.6115	-87.2947	West Lagoon
	97CG80S02	97CG80S02	GCRL	West Lagoon	Surface	41.6115	-87.294	West Lagoon
	97CG80S03	97CG80S03	GCRL	West Lagoon	Surface	41.6119	-87.2937	West Lagoon
	97CG80S04	97CG80S04	GCRL	West Lagoon	Surface	41.6119	-87.2931	West Lagoon
	97CG80S05	97CG80S05	GCRL	West Lagoon	Surface	41.6119	-87.2924	West Lagoon
	97CG80S05D01	97CG80S05D01	GCRL	West Lagoon	Surface	41.6119	-87.2924	West Lagoon
	97CG80S06	97CG80S06	GCRL	West Lagoon	Surface	41.6123	-87.2927	West Lagoon
	97CG80S07	97CG80S07	GCRL	West Lagoon	Surface	41.6123	-87.2921	West Lagoon
	97CG80D07	97CG80D07	GCRL	West Lagoon	Surface	41.6123	-87.2921	West Lagoon
	97CG80S08	97CG80S08	GCRL	West Lagoon	Surface	41.6127	-87.2911	West Lagoon
	97CG80S09	97CG80S09	GCRL	West Lagoon	Surface	41.6127	-87.2905	West Lagoon
	97CG80S10	97CG80S10	GCRL	West Lagoon	Surface	41.6132	-87.2895	West Lagoon
	97CG80S11	97CG80S11	GCRL	West Lagoon	Surface	41.6132	-87.2888	West Lagoon
	97CG80S12	97CG80S12	GCRL	West Lagoon	Surface	41.6132	-87.2882	West Lagoon
	97CG80S13	97CG80S13	GCRL	West Lagoon	Surface	41.6132	-87.2875	West Lagoon
	97CG80S14	97CG80S14	GCRL	West Lagoon	Surface	41.6132	-87.281	West Lagoon
	97CG80S15	97CG80S15	GCRL	West Lagoon	Surface	41.6132	-87.2803	West Lagoon
	97CG80S16	97CG80S16	GCRL	West Lagoon	Surface	41.6132	-87.2797	West Lagoon
	97CG80S17	97CG80S17	GCRL	West Lagoon	Surface	41.6132	-87.279	West Lagoon
	97CG80S18	97CG80S18	GCRL	West Lagoon	Surface	41.6132	-87.2784	West Lagoon
	97CG80S19	97CG80S19	GCRL	West Lagoon	Surface	41.6136	-87.2885	West Lagoon
	97CG80S20	97CG80S20	GCRL	West Lagoon	Surface	41.6136	-87.2879	West Lagoon
	97CG80S21	97CG80S21	GCRL	West Lagoon	Surface	41.6136	-87.2872	West Lagoon
	97CG80S22	97CG80S22	GCRL	West Lagoon	Surface	41.6136	-87.2865	West Lagoon
	97CG80S23	97CG80S23	GCRL	West Lagoon	Surface	41.6136	-87.2859	West Lagoon
	97CG80S24	97CG80S24	GCRL	West Lagoon	Surface	41.6136	-87.2852	West Lagoon
	97CG80S25	97CG80S25	GCRL	West Lagoon	Surface	41.6136	-87.2846	West Lagoon
	97CG80D25	97CG80D25	GCRL	West Lagoon	Surface	41.6136	-87.2846	West Lagoon

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples) IND/0104 (cont.)	97CG80S26	97CG80S26	GCRL	West Lagoon	Surface	41.6136	-87.2839	West Lagoon
	97CG80S27	97CG80S27	GCRL	West Lagoon	Surface	41.6136	-87.2833	West Lagoon
	97CG80S28	97CG80S28	GCRL	West Lagoon	Surface	41.6136	-87.2826	West Lagoon
	97CG80S29	97CG80S29	GCRL	West Lagoon	Surface	41.6136	-87.282	West Lagoon
	97CG80S30	97CG80S30	GCRL	West Lagoon	Surface	41.6136	-87.2813	West Lagoon
	97CG80S31	97CG80S31	GCRL	West Lagoon	Surface	41.6136	-87.2807	West Lagoon
	97CG80S32	97CG80S32	GCRL	West Lagoon	Surface	41.6136	-87.2787	West Lagoon
	97CG80S33	97CG80S33	GCRL	West Lagoon	Surface	41.6136	-87.278	West Lagoon
	97CG80S34	97CG80S34	GCRL	West Lagoon	Surface	41.6136	-87.2774	West Lagoon
	97CG80S35	97CG80S35	GCRL	West Lagoon	Surface	41.614	-87.2856	West Lagoon
	97CG80S36	97CG80S36	GCRL	West Lagoon	Surface	41.614	-87.2849	West Lagoon
	97CG80S37	97CG80S37	GCRL	West Lagoon	Surface	41.614	-87.2843	West Lagoon
	97CG80S38	97CG80S38	GCRL	West Lagoon	Surface	41.614	-87.2836	West Lagoon
	97CG80S39	97CG80S39	GCRL	West Lagoon	Surface	41.614	-87.2784	West Lagoon
	97CG80S40	97CG80S40	GCRL	West Lagoon	Surface	41.614	-87.2777	West Lagoon
	97CG80S41	97CG80S41	GCRL	West Lagoon	Surface	41.614	-87.2771	West Lagoon
	97CG80S42	97CG80S42	GCRL	East Lagoon	Surface	41.6166	-87.2626	East Lagoon
	97CG80S43	97CG80S43	GCRL	East Lagoon	Surface	41.6166	-87.262	East Lagoon
	97CG80S44	97CG80S44	GCRL	East Lagoon	Surface	41.617	-87.2623	East Lagoon
	97CG80S45	97CG80S45	GCRL	East Lagoon	Surface	41.617	-87.2617	East Lagoon
	97CG80S46	97CG80S46	GCRL	East Lagoon	Surface	41.6174	-87.262	East Lagoon
	97CG80S47	97CG80S47	GCRL	East Lagoon	Surface	41.6174	-87.2614	East Lagoon
	97CG80S48	97CG80S48	GCRL	East Lagoon	Surface	41.6174	-87.2609	East Lagoon
	97CG80S49	97CG80S49	GCRL	East Lagoon	Surface	41.6174	-87.2603	East Lagoon
	97CG80S50	97CG80S50	GCRL	East Lagoon	Surface	41.6174	-87.2597	East Lagoon
	97CG80S51	97CG80S51	GCRL	Middle Lagoon	Surface	41.6145	-87.2758	Middle Lagoon
	97CG80S52	97CG80S52	GCRL	Middle Lagoon	Surface	41.6145	-87.2753	Middle Lagoon
	97CG80D52	97CG80D52	GCRL	Middle Lagoon	Surface	41.6145	-87.2753	Middle Lagoon
	97CG80S53	97CG80S53	GCRL	Middle Lagoon	Surface	41.6145	-87.2747	Middle Lagoon
	97CG80S54	97CG80S54	GCRL	Middle Lagoon	Surface	41.6145	-87.2741	Middle Lagoon
	97CG80S55	97CG80S55	GCRL	Middle Lagoon	Surface	41.6149	-87.2744	Middle Lagoon
	97CG80S56	97CG80S56	GCRL	Middle Lagoon	Surface	41.6149	-87.2738	Middle Lagoon
	97CG80S57	97CG80S57	GCRL	Middle Lagoon	Surface	41.6149	-87.2732	Middle Lagoon
	97CG80S58	97CG80S58	GCRL	Middle Lagoon	Surface	41.6149	-87.2726	Middle Lagoon
	97CG80S59	97CG80S59	GCRL	Middle Lagoon	Surface	41.6149	-87.2721	Middle Lagoon
	97CG80S60	97CG80S60	GCRL	Middle Lagoon	Surface	41.6149	-87.2715	Middle Lagoon

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples) IND/0104 (cont.)	97CG80S61	97CG80S61	GCRL	Middle Lagoon	Surface	41.6152	-87.2741	Middle Lagoon
	97CG80S62	97CG80S62	GCRL	Middle Lagoon	Surface	41.6153	-87.2735	Middle Lagoon
	97CG80S63	97CG80S63	GCRL	Middle Lagoon	Surface	41.6153	-87.2729	Middle Lagoon
	97CG80S64	97CG80S64	GCRL	Middle Lagoon	Surface	41.6153	-87.2723	Middle Lagoon
	97CG80S65	97CG80S65	GCRL	Middle Lagoon	Surface	41.6153	-87.2718	Middle Lagoon
	97CG80S66	97CG80S66	GCRL	Middle Lagoon	Surface	41.6153	-87.2712	Middle Lagoon
	97CG80S67	97CG80S67	GCRL	Middle Lagoon	Surface	41.6153	-87.2706	Middle Lagoon
	97CG80S68	97CG80S68	GCRL	Middle Lagoon	Surface	41.6153	-87.27	Middle Lagoon
	97CG80D68	97CG80D68	GCRL	Middle Lagoon	Surface	41.6153	-87.27	Middle Lagoon
	97CG80S69	97CG80S69	GCRL	Middle Lagoon	Surface	41.6153	-87.2694	Middle Lagoon
	97CG80S70	97CG80S70	GCRL	Middle Lagoon	Surface	41.6153	-87.2689	Middle Lagoon
	97CG80S71	97CG80S71	GCRL	Middle Lagoon	Surface	41.6156	-87.2732	Middle Lagoon
	97CG80S72	97CG80S72	GCRL	Middle Lagoon	Surface	41.6156	-87.2726	Middle Lagoon
	97CG80S73	97CG80S73	GCRL	Middle Lagoon	Surface	41.6156	-87.2721	Middle Lagoon
	97CG80S74	97CG80S74	GCRL	Middle Lagoon	Surface	41.6155	-87.2715	Middle Lagoon
	97CG80S75	97CG80S75	GCRL	Middle Lagoon	Surface	41.6156	-87.2709	Middle Lagoon
	97CG80S76	97CG80S76	GCRL	Middle Lagoon	Surface	41.6156	-87.2703	Middle Lagoon
	97CG80S77	97CG80S77	GCRL	Middle Lagoon	Surface	41.6156	-87.2697	Middle Lagoon
	97CG80S78	97CG80S78	GCRL	Middle Lagoon	Surface	41.616	-87.2729	Middle Lagoon
	97CG80S79	97CG80S79	GCRL	Middle Lagoon	Surface	41.616	-87.2723	Middle Lagoon
	97CG80S80	97CG80S80	GCRL	Middle Lagoon	Surface	41.616	-87.2718	Middle Lagoon
	97CG80S81	97CG80S81	GCRL	Middle Lagoon	Surface	41.616	-87.2712	Middle Lagoon
	97CG80S82	97CG80S82	GCRL	Middle Lagoon	Surface	41.6164	-87.2738	Middle Lagoon
	97CG80S83	97CG80S83	GCRL	Middle Lagoon	Surface	41.6164	-87.2732	Middle Lagoon
	97CG80S84	97CG80S84	GCRL	Middle Lagoon	Surface	41.6164	-87.2726	Middle Lagoon
	97CG80S85	97CG80S85	GCRL	Middle Lagoon	Surface	41.6164	-87.2721	Middle Lagoon
	97CG80S86	97CG80S86	GCRL	Middle Lagoon	Surface	41.6168	-87.2741	Middle Lagoon
	97CG80S87	97CG80S87	GCRL	Middle Lagoon	Surface	41.6168	-87.2735	Middle Lagoon
	97CG80S88	97CG80S88	GCRL	Middle Lagoon	Surface	41.6168	-87.2729	Middle Lagoon
	97CG80S89	97CG80S89	GCRL	Middle Lagoon	Surface	41.6168	-87.2724	Middle Lagoon
	97CG80S90	97CG80S90	GCRL	Middle Lagoon	Surface	41.6168	-87.2718	Middle Lagoon
	97CG80S91	97CG80S91	GCRL	East Lagoon	Surface	41.6152	-87.2682	East Lagoon
	97CG80S92	97CG80S92	GCRL	East Lagoon	Surface	41.6152	-87.2677	East Lagoon
	97CG80S93	97CG80S93	GCRL	East Lagoon	Surface	41.6152	-87.2671	East Lagoon
	97CG80S94	97CG80S94	GCRL	East Lagoon	Surface	41.6152	-87.2665	East Lagoon
	97CG80S95	97CG80S95	GCRL	East Lagoon	Surface	41.6155	-87.2674	East Lagoon

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples)	97CG80S96	97CG80S96	GCRL	East Lagoon	Surface	41.6155	-87.2668	East Lagoon
IND/0104 (cont.)	97CG80D96	97CG80D96	GCRL	East Lagoon	Surface	41.6155	-87.2668	East Lagoon
	97CG80S97	97CG80S97	GCRL	East Lagoon	Surface	41.6155	-87.2662	East Lagoon
	97CG80S98	97CG80S98	GCRL	East Lagoon	Surface	41.6155	-87.2657	East Lagoon
	97CG80S99	97CG80S99	GCRL	East Lagoon	Surface	41.6155	-87.2651	East Lagoon
	97CG81S01	97CG81S01	GCRL	East Lagoon	Surface	41.6155	-87.2645	East Lagoon
	97CG81S02	97CG81S02	GCRL	East Lagoon	Surface	41.6155	-87.264	East Lagoon
	97CG81S03	97CG81S03	GCRL	East Lagoon	Surface	41.6155	-87.2634	East Lagoon
	97CG81S04	97CG81S04	GCRL	East Lagoon	Surface	41.6155	-87.2628	East Lagoon
	97CG81S05	97CG81S05	GCRL	East Lagoon	Surface	41.6159	-87.2654	East Lagoon
	97CG81S06	97CG81S06	GCRL	East Lagoon	Surface	41.6159	-87.2648	East Lagoon
	97CG81S07	97CG81S07	GCRL	East Lagoon	Surface	41.6159	-87.2643	East Lagoon
	97CG81S08	97CG81S08	GCRL	East Lagoon	Surface	41.6159	-87.2637	East Lagoon
	97CG81S09	97CG81S09	GCRL	East Lagoon	Surface	41.6159	-87.2631	East Lagoon
	97CG81D09	97CG81D09	GCRL	East Lagoon	Surface	41.6159	-87.2631	East Lagoon
	97CG81S10	97CG81S10	GCRL	East Lagoon	Surface	41.6159	-87.2626	East Lagoon
	97CG81S11	97CG81S11	GCRL	East Lagoon	Surface	41.6163	-87.264	East Lagoon
	97CG81S12	97CG81S12	GCRL	East Lagoon	Surface	41.6163	-87.2634	East Lagoon
	97CG81S13	97CG81S13	GCRL	East Lagoon	Surface	41.6163	-87.2629	East Lagoon
	97CG81S14	97CG81S14	GCRL	East Lagoon	Surface	41.6163	-87.2623	East Lagoon
	97CG81S15	97CG81S15	GCRL	East Lagoon	Surface	41.6166	-87.2637	East Lagoon
	97CG81S16	97CG81S16	GCRL	East Lagoon	Surface	41.6166	-87.2631	East Lagoon
	97CG81S17	97CG81S17	GCRL	East Lagoon	Surface	41.6177	-87.2617	East Lagoon
	97CG81S18	97CG81S18	GCRL	East Lagoon	Surface	41.6177	-87.2612	East Lagoon
	97CG81S19	97CG81S19	GCRL	East Lagoon	Surface	41.6177	-87.2606	East Lagoon
	97CG81S20	97CG81S20	GCRL	East Lagoon	Surface	41.6177	-87.26	East Lagoon
	97CG83S01	97CG83S01	GCRL	Little West Pond	Surface	41.6154	-87.2788	Little West Pond
	97CG83D01	97CG83D01	GCRL	Little West Pond	Surface	41.6154	-87.2788	Little West Pond
	97CG83S02	97CG83S02	GCRL	Little West Pond	Surface	41.6156	-87.2785	Little West Pond
	97CG83S03	97CG83S03	GCRL	Little West Pond	Surface	41.6156	-87.2789	Little West Pond
	97CG83S04	97CG83S04	GCRL	Little West Pond	Surface	41.6156	-87.2787	Little West Pond
	97CG83S05	97CG83S05	GCRL	Little West Pond	Surface	41.6156	-87.2784	Little West Pond
	97CG83S06	97CG83S06	GCRL	Little West Pond	Surface	41.6158	-87.2791	Little West Pond
	97CG83S07	97CG83S07	GCRL	Little West Pond	Surface	41.6158	-87.2788	Little West Pond
	97CG83S08	97CG83S08	GCRL	Little West Pond	Surface	41.6158	-87.2785	Little West Pond
	97CG83S09	97CG83S09	GCRL	Little West Pond	Surface	41.616	-87.2792	Little West Pond

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples) IND/0104 (cont.)	97CG83S10	97CG83S10	GCRL	Little West Pond	Surface	41.616	-87.2789	Little West Pond
	97CG83S11	97CG83S11	GCRL	Little West Pond	Surface	41.616	-87.2787	Little West Pond
	97CG83S12	97CG83S12	GCRL	Little West Pond	Surface	41.6161	-87.2793	Little West Pond
	97CG83S13	97CG83S13	GCRL	Little West Pond	Surface	41.6161	-87.2791	Little West Pond
	97CG83S14	97CG83S14	GCRL	Little West Pond	Surface	41.6161	-87.2788	Little West Pond
	97CG83S15	97CG83S15	GCRL	Little West Pond	Surface	41.6163	-87.2794	Little West Pond
	97CG83S16	97CG83S16	GCRL	Little West Pond	Surface	41.6163	-87.2792	Little West Pond
	97CG83S17	97CG83S17	GCRL	Little West Pond	Surface	41.6163	-87.2789	Little West Pond
	97CG83S18	97CG83S18	GCRL	Little West Pond	Surface	41.6163	-87.2787	Little West Pond
	97CG83S19	97CG83S19	GCRL	Little West Pond	Surface	41.6165	-87.2798	Little West Pond
	97CG83D19	97CG83D19	GCRL	Little West Pond	Surface	41.6165	-87.2798	Little West Pond
	97CG83S20	97CG83S20	GCRL	Little West Pond	Surface	41.6165	-87.2796	Little West Pond
	97CG85S01	97CG85S01	GCRL	Little East Pond	Surface	41.6155	-87.2761	Little East Pond
	97CG85S02	97CG85S02	GCRL	Little East Pond	Surface	41.6157	-87.2768	Little East Pond
	97CG85S03	97CG85S03	GCRL	Little East Pond	Surface	41.6157	-87.2757	Little East Pond
	97CG85S04	97CG85S04	GCRL	Little East Pond	Surface	41.616	-87.2768	Little East Pond
	97CG85S05	97CG85S05	GCRL	Little East Pond	Surface	41.616	-87.2764	Little East Pond
	97CG85S06	97CG85S06	GCRL	Little East Pond	Surface	41.616	-87.2761	Little East Pond
	97CG85D06	97CG85D06	GCRL	Little East Pond	Surface	41.616	-87.2761	Little East Pond
	97CG85S07	97CG85S07	GCRL	Little East Pond	Surface	41.616	-87.2757	Little East Pond
	97CG85S08	97CG85S08	GCRL	Little East Pond	Surface	41.6163	-87.2771	Little East Pond
	97CG85S09	97CG85S09	GCRL	Little East Pond	Surface	41.6163	-87.2768	Little East Pond
	97CG85S10	97CG85S10	GCRL	Little East Pond	Surface	41.6163	-87.2764	Little East Pond
	97CG85D10	97CG85D10	GCRL	Little East Pond	Surface	41.6163	-87.2764	Little East Pond
	97CG85S11	97CG85S11	GCRL	Little East Pond	Surface	41.6163	-87.2761	Little East Pond
	97CG85S12	97CG85S12	GCRL	Little East Pond	Surface	41.6163	-87.2757	Little East Pond
	97CG85S13	97CG85S13	GCRL	Little East Pond	Surface	41.6165	-87.2764	Little East Pond
	97CG85S14	97CG85S14	GCRL	Little East Pond	Surface	41.6165	-87.2761	Little East Pond
	97CG85S15	97CG85S15	GCRL	Little East Pond	Surface	41.6165	-87.2757	Little East Pond
	97CG85S16	97CG85S16	GCRL	Little East Pond	Surface	41.6168	-87.2761	Little East Pond
	97CG85S17	97CG85S17	GCRL	Little East Pond	Surface	41.6168	-87.2757	Little East Pond
	97CG85S18	97CG85S18	GCRL	Little East Pond	Surface	41.6168	-87.2754	Little East Pond
	97CG85S19	97CG85S19	GCRL	Little East Pond	Surface	41.6171	-87.2754	Little East Pond
	98CG50S06	98CG50S06	EBGCR II	EB II Wetland	Surface	41.6131	-87.3834	South Bonji
	98CG50S07	98CG50S07	EBGCR II	EB II Wetland	Surface	41.6136	-87.3839	South Bonji

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
Simon 2000 (1998 samples)	98CG50S08	98CG50S08	EBGCR II	EB II Wetland	Surface	41.6165	-87.3815	North Bonji
IND/0104 (cont.)	98CG50S09	98CG50S09	EBGCR II	EB II Wetland	Surface	41.6183	-87.3826	North Bonji
	98CG50S10	98CG50S10	EBGCR II	EB II Wetland	Surface	41.6081	-87.3827	Georgia Pacific
	98CG50S11	98CG50S11	EBGCR II	EB II Wetland	Surface	41.6081	-87.3819	Georgia Pacific
	98CG50S12	98CG50S12	EBGCR II	EB II Wetland	Surface	41.6084	-87.3831	Georgia Pacific
	98CG50S13	98CG50S13	EBGCR II	EB II Wetland	Surface	41.6087	-87.3835	Georgia Pacific
	98CG50S14	98CG50S14	GCRL	West Lagoon	Surface	41.6115	-87.2947	West Lagoon
	98CG50S15	98CG50S15	GCRL	West Lagoon	Surface	41.6132	-87.2797	West Lagoon
	98CG50S16	98CG50S16	GCRL	West Lagoon	Surface	41.6132	-87.2784	West Lagoon
	98CG50S17	98CG50S17	GCRL	West Lagoon	Surface	41.6136	-87.2872	West Lagoon
	98CG50S18	98CG50S18	GCRL	West Lagoon	Surface	41.6136	-87.2826	West Lagoon
	98CG50D18	98CG50D18	GCRL	West Lagoon	Surface	41.6136	-87.2826	West Lagoon
	98CG50S19	98CG50S19	GCRL	West Lagoon	Surface	41.6136	-87.2787	West Lagoon
	98CG50S20	98CG50S20	GCRL	West Lagoon	Surface	41.6136	-87.278	West Lagoon
	98CG50S21	98CG50S21	GCRL	West Lagoon	Surface	41.614	-87.2777	West Lagoon
	98CG50S22	98CG50S22	GCRL	Middle Lagoon	Surface	41.6145	-87.2753	Middle Lagoon
	98CG50S23	98CG50S23	GCRL	Middle Lagoon	Surface	41.6149	-87.2738	Middle Lagoon
	98CG50S24	98CG50S24	GCRL	Middle Lagoon	Surface	41.6153	-87.2712	Middle Lagoon
	98CG50S25	98CG50S25	GCRL	Middle Lagoon	Surface	41.6153	-87.27	Middle Lagoon
	98CG50S26	98CG50S26	GCRL	Middle Lagoon	Surface	41.6156	-87.2726	Middle Lagoon
	98CG50S27	98CG50S27	GCRL	East Lagoon	Surface	41.6155	-87.2662	East Lagoon
	98CG50S28	98CG50S28	GCRL	East Lagoon	Surface	41.6155	-87.2645	East Lagoon
	98CG50S29	98CG50S29	GCRL	East Lagoon	Surface	41.6155	-87.2628	East Lagoon
	98CG50S30	98CG50S30	GCRL	East Lagoon	Surface	41.617	-87.2617	East Lagoon
	98CG50S31	98CG50S31	GCRL	East Lagoon	Surface	41.6174	-87.2597	East Lagoon
	98CG50S03	98CG50S03	GCRL	Little West Pond	Surface	41.6158	-87.2788	Little West Pond
	98CG50S04	98CG50S04	GCRL	Little West Pond	Surface	41.6163	-87.2787	Little West Pond
	98CG50S01	98CG50S01	GCRL	Little East Pond	Surface	41.616	-87.2764	Little East Pond
	98CG50S02	98CG50S02	GCRL	Little East Pond	Surface	41.6171	-87.2754	Little East Pond
IDEM 1999	RO5873	RO5873	EBGCR II	ConRail Bridge to Bridge St.	0-0.3	41.61190	-87.38368	0.55 miles east of Clark St.
IND/0105	RO5874	RO5874	EBGCR II	ConRail Bridge to Bridge St.	0-4	41.61190	-87.38368	0.55 miles east of Clark St.
	RO5875	RO5875	EBGCR I	Industrial Hwy to ConRail Bridge	0-0.3	41.60820	-87.39300	0.05 miles east of Clark St.
	RO5876	RO5876	EBGCR I	Industrial Hwy to ConRail Bridge	0-4	41.60820	-87.39300	0.05 miles east of Clark St.
	RO5877	RO5877	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-0.3	41.60897	-87.41128	1.13 miles east of Cline Ave.
	RO5878	RO5878	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-4	41.60897	-87.41128	1.13 miles east of Cline Ave.
	RO5879	RO5879	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-0.3	41.61054	-87.42078	0.62 miles east of Cline Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
IDEM 1999	RO5880	RO5880	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	0-4	41.61054	-87.42078	0.62 miles east of Cline Ave.
IND/0105 (cont.)	RO5881	RO5881	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-0.3	41.61313	-87.43127	0.09 miles east of Cline Ave.
	RO5882	RO5882	EBGCR I	Cline Ave. to Cline/I-90 Ramps	0-4	41.61313	-87.43127	0.09 miles east of Cline Ave.
	RO5869	RO5869	EBGCR I	Kennedy Ave. to Cline Ave.	0-0.3	41.61286	-87.43841	0.30 miles west of Cline Ave.
	RO5870	RO5870	EBGCR I	Kennedy Ave. to Cline Ave.	0-4	41.61286	-87.43841	0.30 miles west of Cline Ave.
	RO5871	RO5871	EBGCR I	Kennedy Ave. to Cline Ave.	0-0.3	41.61481	-87.46103	Kennedy Ave.
	RO5872	RO5872	EBGCR I	Kennedy Ave. to Cline Ave.	0-4	41.61481	-87.46103	Kennedy Ave.
	RO5863	RO5863	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-4	41.61380	-87.46250	0.07 miles west of Kennedy Ave.
	RO5864	RO5864	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.3	41.61380	-87.46250	0.07 miles west of Kennedy Ave.
	RO5865	RO5865	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.3	41.61545	-87.46727	0.30 miles west of Kennedy Ave.
	RO5866	RO5866	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-4	41.61545	-87.46727	0.30 miles west of Kennedy Ave.
	RO5867	RO5867	EBGCR I	EB & WB Confluence to Kennedy Ave.	0-0.3	41.61545	-87.46727	0.30 miles west of Kennedy Ave.
	RO5847	RO5847	WBGCR II	Indianapolis Blvd. to I-90	0-4	41.61485	-87.48179	0.08 miles west of Indianapolis Blvd.
	RO5848	RO5848	WBGCR II	Indianapolis Blvd. to I-90	0-0.5	41.61485	-87.48179	0.08 miles west of Indianapolis Blvd.
	RO5849	RO5849	WBGCR II	Indianapolis Blvd. to I-90	0-4	41.61440	-87.48096	0.04 miles west of Indianapolis Blvd.
	RO5850	RO5850	WBGCR II	Indianapolis Blvd. to I-90	0-0.3	41.61440	-87.48096	0.04 miles west of Indianapolis Blvd.
	RO5851	RO5851	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-4	41.61411	-87.47983	0.04 miles east of Indianapolis Blvd.
	RO5852	RO5852	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-0.3	41.61411	-87.47983	0.04 miles east of Indianapolis Blvd.
	RO5853	RO5853	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-4	41.61405	-87.47734	0.15 miles east of Indianapolis Blvd.
	RO5854	RO5854	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-0.3	41.61405	-87.47734	0.15 miles east of Indianapolis Blvd.
	RO5855	RO5855	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-4	41.61405	-87.47734	0.15 miles east of Indianapolis Blvd.
	RO5857	RO5857	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-4	41.61541	-87.47457	0.3 miles east of Indianapolis Blvd.
	RO5858	RO5858	WBGCR I	EB & WB Confluence to Indianapolis Blvd	0-0.3	41.61541	-87.47457	0.3 miles east of Indianapolis Blvd.
	RO5859	RO5859	IHC	EB & WB Confluence to 151st St.	0-1.5	41.62025	-87.47093	0.05 miles south of 151st St.
	RO5860	RO5860	IHC	EB & WB Confluence to 151st St.	0-0.3	41.62025	-87.47093	0.05 miles south of 151st St.
	RO5861	RO5861	IHC	151st St. to Chicago Ave.	0-3	41.62217	-87.47129	0.09 miles north of 151st St.
	RO5862	RO5862	IHC	151st St. to Chicago Ave.	0-0.3	41.62217	-87.47129	0.09 miles north of 151st St.
USEPA 1990	S19	S19	USC	Forks to Hwy. 912	Surface	41.64864	-87.46887	E.J. & E. Railroad
IND/0107	S20	S20	USC	Forks to Hwy. 912	Surface	41.64835	-87.4685	E.J. & E. Railroad
	S21	S21	USC	Forks to Hwy. 912	Surface	41.64932	-87.46815	0.04 miles north of Canal St.
	S22	S22	USC	Forks to Hwy. 912	Surface	41.65048	-87.46692	0.15 miles north of Canal St.
	D24	D24	USC	Hwy 912 to Dickey Rd.	Surface	41.65117	-87.4643	0.01 miles north of Highway 912
	D26	D26	USC	Hwy 912 to Dickey Rd.	Surface	41.65513	-87.46016	0.01 miles south of Dickey Road
	S23	S23	USC	Hwy 912 to Dickey Rd.	Surface	41.65201	-87.46304	0.13 miles north of Highway 912
	S24	S24	USC	Hwy 912 to Dickey Rd.	Surface	41.65117	-87.4643	0.01 miles north of Highway 912

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USEPA 1990	S25	S25	USC	Hwy 912 to Dickey Rd.	Surface	41.65236	-87.46248	0.01 miles north of Highway 912
IND/0107 (cont.)	S26	S26	USC	Hwy 912 to Dickey Rd.	Surface	41.65513	-87.46016	0.01 miles south of Dickey Road
	S27	S27	USC	Hwy 912 to Dickey Rd.	Surface	41.65497	-87.46034	0.01 miles south of Dickey Road
	S18	S18	USC	Dickey Rd. to B & O Railroad	Surface	41.6598	-87.45271	3-track railroad bridge
	S28	S28	USC	Dickey Rd. to B & O Railroad	Surface	41.65548	-87.45947	0.06 miles north of Dickey Road
	S29	S29	USC	Dickey Rd. to B & O Railroad	Surface	41.65724	-87.45583	Dickey Road
	S30	S30	USC	Dickey Rd. to B & O Railroad	Surface	41.65713	-87.45594	Dickey Road
	S31	S31	USC	Dickey Rd. to B & O Railroad	Surface	41.65771	-87.4563	0.25 miles north of Dickey Road
	S32	S32	USC	Dickey Rd. to B & O Railroad	Surface	41.65913	-87.45445	3-track railroad bridge
	S14	S14	USC	B & O Railroad to IH	Surface	41.66556	-87.44551	0.50 miles north of 3-track railroad bridge
	S15	S15	USC	B & O Railroad to IH	Surface	41.66051	-87.45173	3-track railroad bridge
	S16	S16	USC	B & O Railroad to IH	Surface	41.66073	-87.45093	0.02 miles north of 3-track railroad bridge
	S17	S17	USC	B & O Railroad to IH	Surface	41.66115	-87.45147	0.02 miles north of 3-track railroad bridge
	D02	D02	IH	Indiana Harbor	Surface	41.67142	-87.43669	IH - east of USC mouth
	D08	D08	IH	Indiana Harbor	Surface	41.66637	-87.43686	IH - east of USC mouth
	S01	S01	IH	Indiana Harbor	Surface	41.67322	-87.43889	Lower Indiana Harbor
	S02	S02	IH	Indiana Harbor	Surface	41.67142	-87.43669	IH - east of USC mouth
	S03	S03	IH	Indiana Harbor	Surface	41.67109	-87.43649	IH - east of USC mouth
	S04	S04	IH	Indiana Harbor	Surface	41.67028	-87.43586	IH - east of USC mouth
	S05	S05	IH	Indiana Harbor	Surface	41.66824	-87.43422	IH - east of USC mouth
	S06	S06	IH	Indiana Harbor	Surface	41.66799	-87.4362	IH - east of USC mouth
	S07	S07	IH	Indiana Harbor	Surface	41.6678	-87.43809	IH - east of USC mouth
	S08	S08	IH	Indiana Harbor	Surface	41.66637	-87.43686	IH - east of USC mouth
	S09	S09	IH	Indiana Harbor	Surface	41.66475	-87.43807	IH - east of USC mouth
	S10	S10	IH	Indiana Harbor	Surface	41.66492	-87.43824	IH - east of USC mouth
	S11	S11	IH	Indiana Harbor	Surface	41.66611	-87.43941	IH - east of USC mouth
	S12	S12	IH	Indiana Harbor	Surface	41.66566	-87.43878	IH - east of USC mouth
	S13	S13	IH	Indiana Harbor	Surface	41.66683	-87.44044	IH - east of USC mouth
	S33	S33	IH	Indiana Harbor	Surface	41.66999	-87.43954	Lower Indiana Harbor
	S34	S34	IH	Indiana Harbor	Surface	41.67282	-87.442	Lower Indiana Harbor
	S35	S35	IH	Indiana Harbor	Surface	41.66709	-87.43547	IH - east of USC mouth
USEPA 1991	S16	S16	USC	Forks to Hwy. 912	Surface	41.65104	-87.46642	0.01 miles south of Highway 912
IND/0108	S17	S17	USC	Forks to Hwy. 912	Surface	41.64856	-87.46892	E.J. & E. Railroad
	S18	S18	USC	Forks to Hwy. 912	Surface	41.64823	-87.46875	E.J. & E. Railroad
	S19	S19	USC	Forks to Hwy. 912	Surface	41.64979	-87.46766	0.08 miles north of E.J. & E. Railroad
	S12	S12	USC	Hwy 912 to Dickey Rd.	Surface	41.65481	-87.46023	0.04 miles south of Dickey Road

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Sediment Sampling Stations								
USEPA 1991	S13	S13	USC	Hwy 912 to Dickey Rd.	Surface	41.65377	-87.46056	0.10 miles south of Dickey Road
IND/0108 (cont.)	S14	S14	USC	Hwy 912 to Dickey Rd.	Surface	41.65304	-87.4618	0.23 miles north of Highway 912
	S15	S15	USC	Hwy 912 to Dickey Rd.	Surface	41.65206	-87.4631	0.13 miles north of Highway 912
	D11	D11	USC	Dickey Rd. to B & O Railroad	Surface	41.65554	-87.45943	0.01 miles north of Dickey Road
	S08	S08	USC	Dickey Rd. to B & O Railroad	Surface	41.65942	-87.45333	0.01 miles south of 3-track railroad bridge
	S09	S09	USC	Dickey Rd. to B & O Railroad	Surface	41.65883	-87.45407	0.03 miles south of 3-track railroad bridge
	S10	S10	USC	Dickey Rd. to B & O Railroad	Surface	41.65818	-87.45573	0.03 miles north of Dickey Road
	S11	S11	USC	Dickey Rd. to B & O Railroad	Surface	41.65554	-87.45943	0.01 miles north of Dickey Road
	D04	D04	IH	Indiana Harbor	Surface	41.66484	-87.438	IH - east of USC mouth
	S01	S01	IH	Indiana Harbor	Surface	41.66865	-87.43647	IH - east of USC mouth
	S02	S02	IH	Indiana Harbor	Surface	41.66617	-87.43829	IH - east of USC mouth
	S03	S03	IH	Indiana Harbor	Surface	41.66536	-87.43798	IH - east of USC mouth
	S04	S04	IH	Indiana Harbor	Surface	41.66484	-87.438	IH - east of USC mouth
	S05	S05	IH	Indiana Harbor	Surface	41.66567	-87.43906	IH - east of USC mouth
	S06	S06	IH	Indiana Harbor	Surface	41.66693	-87.44065	IH - east of USC mouth
	S07	S07	IH	Indiana Harbor	Surface	41.66886	-87.43814	IH - east of USC mouth
Benthic Macroinvertebrate Sampling Stations								
Polls *et al.* 1993 (1982 samples)	Mar-82	Mar-82	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.608	-87.3938	Kennedy Ave.
IND/0006-1	Feb-82	Feb-82	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61399	-87.46154	Clark St.
	Jan-82	Jan-82	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6256	-87.5202	0.16 miles west of Hohman Ave.
	Apr-82	Apr-82	IHC	Chicago Ave. to Columbus Dr.	Surface	41.63774	-87.47113	0.01 miles south of Columbus Drive
	May-82	May-82	USC	Hwy 912 to Dickey Rd.	Surface	41.65331	-87.46169	0.19 miles south of Dickey Road
	Jun-82	Jun-82	USC	B & O Railroad to IH	Surface	41.6621	-87.4498	0.21 miles north of 3-track railroad bridge
	Jul-82	Jul-82	IH	Indiana Harbor	Surface	41.6679	-87.442	USC mouth
	Aug-82	Aug-82	IH	Indiana Harbor	Surface	41.6745	-87.4405	Lower IH
	Sep-82	Sep-82	IH	Indiana Harbor	Surface	41.6788	-87.4421	Upper IH
	Oct-82	Oct-82	Lake Mich.	Lake Michigan	Surface	41.67527	-87.47085	1.50 miles NW of USC mouth
	Dec-82	Dec-82	Lake Mich.	Lake Michigan	Surface	41.69343	-87.44164	3.50 miles NW of USC mouth
	13-82	13-82	Lake Mich.	Lake Michigan	Surface	41.69962	-87.49506	3.50 miles NW of USC mouth
	14-82	14-82	Lake Mich.	Lake Michigan	Surface	41.70974	-87.48109	3.75 miles NW of USC mouth
	15-82	15-82	Lake Mich.	Lake Michigan	Surface	41.7185	-87.46841	5.50 miles NW of USC mouth
	16-82	16-82	Lake Mich.	Lake Michigan	Surface	41.72281	-87.52026	5.60 miles NW of USC mouth
	17-82	17-82	Lake Mich.	Lake Michigan	Surface	41.73371	-87.50659	5.65 miles NW of USC mouth
	18-82	18-82	Lake Mich.	Lake Michigan	Surface	41.73974	-87.49634	5.65 miles NW of USC mouth

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Benthic Macroinvertebrate Sampling Stations								
Polls *et al.* 1993 (1986 samples)	Mar-86	Mar-86	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.608	-87.3938	Kennedy Ave.
IND/0006-2	Feb-86	Feb-86	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.61399	-87.46154	Clark St.
	Jan-86	Jan-86	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6256	-87.5202	0.16 miles west of Hohman Ave.
	Apr-86	Apr-86	IHC	Chicago Ave. to Columbus Dr.	Surface	41.63774	-87.47113	0.01 miles south of Columbus Drive
	May-86	May-86	USC	Hwy 912 to Dickey Rd.	Surface	41.65331	-87.46169	0.19 miles south of Dickey Road
	Jun-86	Jun-86	USC	B & O Railroad to IH	Surface	41.6621	-87.4498	0.21 miles north of 3-track railroad bridge
	Jul-86	Jul-86	IH	Indiana Harbor	Surface	41.6679	-87.442	USC mouth
	Aug-86	Aug-86	IH	Indiana Harbor	Surface	41.6745	-87.4405	Lower IH
	Sep-86	Sep-86	IH	Indiana Harbor	Surface	41.6788	-87.4421	Upper IH
	Oct-86	Oct-86	Lake Mich.	Lake Michigan	Surface	41.67527	-87.47085	1.50 miles NW of USC mouth
	Nov-86	Nov-86	Lake Mich.	Lake Michigan	Surface	41.68486	-87.46128	1.75 miles north of USC mouth
	Dec-86	Dec-86	Lake Mich.	Lake Michigan	Surface	41.69343	-87.44164	3.50 miles NW of USC mouth
	13-86	13-86	Lake Mich.	Lake Michigan	Surface	41.69962	-87.49506	3.50 miles NW of USC mouth
	14-86	14-86	Lake Mich.	Lake Michigan	Surface	41.70974	-87.48109	3.75 miles NW of USC mouth
	15-86	15-86	Lake Mich.	Lake Michigan	Surface	41.7185	-87.46841	5.50 miles NW of USC mouth
	16-86	16-86	Lake Mich.	Lake Michigan	Surface	41.72281	-87.52026	5.60 miles NW of USC mouth
	17-86	17-86	Lake Mich.	Lake Michigan	Surface	41.73371	-87.50659	5.65 miles NW of USC mouth
	18-86	18-86	Lake Mich.	Lake Michigan	Surface	41.73974	-87.49634	5.65 miles NW of USC mouth
Risatti and Ross 1989	1	1	LGB	Indianapolis Blvd. to B & O Railroad	Surface	41.64684	-87.481	Indianapolis Blvd.
IND/0009	2	2	USC	Columbus Dr. to Forks	Surface	41.63963	-87.4711	Columbus Drive
	12/12A	12/12A	USC	Forks to Hwy. 912	Surface	41.64883	-87.4682	E.J. & E. Railroad
	3	3	USC	Dickey Rd. to B & O Railroad	Surface	41.65542	-87.4587	Dickey Road
	4	4	IH	Indiana Harbor	Surface	41.66527	-87.4383	IH-east of USC mouth
	5	5	IH	Indiana Harbor	Surface	41.67873	-87.442	Upper Indiana Harbor
	10	10	Lake Mich.	Lake Michigan	Surface	41.68878	-87.4314	1.60 miles north of USC mouth
	11/11A	11/11A	Lake Mich.	Lake Michigan	Surface	41.67649	-87.401	2.25 miles east of USC mouth
	6	6	Lake Mich.	Lake Michigan	Surface	41.68529	-87.4501	1.25 miles NW of USC mouth
	7	7	Lake Mich.	Lake Michigan	Surface	41.68936	-87.4683	2.00 miles NW of USC mouth
	8A	8A	Lake Mich.	Lake Michigan	Surface	41.69058	-87.4382	1.60 miles north of USC mouth
	9A	9A	Lake Mich.	Lake Michigan	Surface	41.67646	-87.4018	2.25 miles NE of USC mouth
Sobeich *et al.* 1994	Transect 16	Transect 16	EBGCR II	I-90 to Broadway	Surface	41.6079	-87.3385	0.05 miles west of Broadway
IND/0042	Transect 24	Transect 24	EBGCR II	Grant St. to I-90	Surface	41.6074	-87.3519	0.05 miles south of I-90
	Transect 32	Transect 32	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.6068	-87.37963	0.32 miles west of Wabash Railroad
	Transect 36	Transect 36	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.6097	-87.3867	0.05 miles east of ConRail Bridge
	Transect 5	Transect 5	EBGCR II	Tennessee St. to Lagoon Culvert	Surface	41.6082	-87.3144	0.42 miles east of Tennessee St.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Benthic Macroinvertebrate Sampling Stations								
Polls and Dennison 1984	E-1	E-1	USC	Indianapolis Blvd. to Forks	Surface	41.6467	-87.4804	0.47 miles west of Forks
IND/0044	E-2	E-2	USC	Indianapolis Blvd. to Forks	Surface	41.6467	-87.4804	0.47 miles west of Forks
	F-1	F-1	USC	Columbus Dr. to Forks	Surface	41.6767	-87.4427	0.6 miles west of Entrance to IH
	F-2	F-2	USC	Columbus Dr. to Forks	Surface	41.6767	-87.4427	0.6 miles west of Entrance to IH
	D-4	D-4	USC	Forks to Hwy. 912	Surface	41.6767	-87.4427	0.6 miles north of Entrance to IH
	D-3	D-3	USC	Dickey Rd. to B & O Railroad	Surface	41.6551	-87.459	0.02 miles NE of Dickey Road
	C-1	C-1	USC	B & O Railroad to IH	Surface	41.6767	-87.4427	0.6 miles north of Entrance to IH
	C-2	C-2	USC	B & O Railroad to IH	Surface	41.6767	-87.4427	0.6 miles north of Entrance to IH
	A-1	A-1	IH	Indiana Harbor	Surface	41.679	-87.4422	0.8 miles north of Entrance to IH
	A-2	A-2	IH	Indiana Harbor	Surface	41.679	-87.4422	0.8 miles north of Entrance to IH
	B-1	B-1	IH	Indiana Harbor	Surface	41.6751	-87.4405	0.52 miles north of Entrance to IH
	B-2	B-2	IH	Indiana Harbor	Surface	41.6751	-87.4405	0.52 miles north of Entrance to IH
	G-1	G-1	Lake Mich.	Lake Michigan	Surface	41.6542	-87.4336	Lake Michigan
	G-2	G-2	Lake Mich.	Lake Michigan	Surface	41.6546	-87.4313	Lake Michigan
	G-3	G-3	Lake Mich.	Lake Michigan	Surface	41.655	-87.4289	Lake Michigan
	H-1	H-1	Lake Mich.	Lake Michigan	Surface	41.6944	-87.5037	Lake Michigan
	H-2	H-2	Lake Mich.	Lake Michigan	Surface	41.6948	-87.502	Lake Michigan
	H-3	H-3	Lake Mich.	Lake Michigan	Surface	41.6955	-87.5002	Lake Michigan
USEPA 1996a	IH 01 07	IH 01 07	USC	Indianapolis Blvd. to Forks	Surface	41.64598	-87.47243	Entrance to IH
IND/0046-1	IH 01 08	IH 01 08	USC	Indianapolis Blvd. to Forks	Surface	41.64676	-87.48051	Indianapolis Blvd.
	IH 01 10	IH 01 10	USC	Columbus Dr. to Forks	Surface	41.63982	-87.47146	0.05 miles north of Columbus Drive
	IH 01 06	IH 01 06	USC	Hwy 912 to Dickey Rd.	Surface	41.65518	-87.45998	Dickey Road
	IH 01 05	IH 01 05	USC	B & O Railroad to IH	Surface	41.66085	-87.45175	0.06 miles NE of B & O Railroad
	IH 01 03	IH 01 03	IH	Indiana Harbor	Surface	41.67395	-87.43911	0.46 miles north of Entrance to IH
	IH 01 04	IH 01 04	IH	Indiana Harbor	Surface	41.66798	-87.4363	0.35 miles east of Entrance to IH
LTI 1984	IH-1A	IH-1A	IH	Indiana Harbor	Surface	41.6767	-87.4427	0.63 miles north of Entrance to IH
IND/0054	IH-2A	IH-2A	Lake Mich.	Lake Michigan	Surface	41.6814	-87.4408	1 miles north of Entrance to IH
	IH-3A	IH-3A	Lake Mich.	Lake Michigan	Surface	41.6832	-87.4451	1.1 miles north of Entrance to IH
	IH-4A	IH-4A	Lake Mich.	Lake Michigan	Surface	41.6859	-87.4417	1.25 miles north of Entrance to IH
	SB-10A	SB-10A	Lake Mich.	Lake Michigan	Surface	41.6846	-87.434	1.46 miles NE of Entrance to IH
	SB-11A	SB-11A	Lake Mich.	Lake Michigan	Surface	41.6862	-87.4346	1.46 miles NE of Entrance to IH
	SB-12A	SB-12A	Lake Mich.	Lake Michigan	Surface	41.6874	-87.4354	1.46 miles NE of Entrance to IH
	SB-1A	SB-1A	Lake Mich.	Lake Michigan	Surface	41.6823	-87.4381	1.46 miles NE of Entrance to IH
	SB-2A	SB-2A	Lake Mich.	Lake Michigan	Surface	41.6836	-87.439	1.46 miles NE of Entrance to IH
	SB-3A	SB-3A	Lake Mich.	Lake Michigan	Surface	41.685	-87.4397	1.46 miles NE of Entrance to IH

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Benthic Macroinvertebrate Sampling Stations								
LTI 1984	SB-4A	SB-4A	Lake Mich.	Lake Michigan	Surface	41.6831	-87.4367	1.46 miles NE of Entrance to IH
IND/0054 (cont.)	SB-5A	SB-5A	Lake Mich.	Lake Michigan	Surface	41.6846	-87.4375	1.46 miles NE of Entrance to IH
	SB-6A	SB-6A	Lake Mich.	Lake Michigan	Surface	41.6859	-87.4382	1.46 miles NE of Entrance to IH
	SB-7A	SB-7A	Lake Mich.	Lake Michigan	Surface	41.6837	-87.4352	1.46 miles NE of Entrance to IH
	SB-8A	SB-8A	Lake Mich.	Lake Michigan	Surface	41.6855	-87.436	1.46 miles NE of Entrance to IH
	SB-9A	SB-9A	Lake Mich.	Lake Michigan	Surface	41.6866	-87.4367	1.46 miles NE of Entrance to IH
	WS-10A	WS-10A	Lake Mich.	Lake Michigan	Surface	41.6862	-87.4896	within 0.26 miles north of Whiting Park
	WS-11A	WS-11A	Lake Mich.	Lake Michigan	Surface	41.6877	-87.489	within 0.26 miles north of Whiting Park
	WS-12A	WS-12A	Lake Mich.	Lake Michigan	Surface	41.6891	-87.4887	within 0.26 miles north of Whiting Park
	WS-1A	WS-1A	Lake Mich.	Lake Michigan	Surface	41.6847	-87.4838	within 0.26 miles north of Whiting Park
	WS-2A	WS-2A	Lake Mich.	Lake Michigan	Surface	41.6861	-87.4837	within 0.26 miles north of Whiting Park
	WS-3A	WS-3A	Lake Mich.	Lake Michigan	Surface	41.6874	-87.4832	within 0.26 miles north of Whiting Park
	WS-4A	WS-4A	Lake Mich.	Lake Michigan	Surface	41.6851	-87.4857	within 0.26 miles north of Whiting Park
	WS-5A	WS-5A	Lake Mich.	Lake Michigan	Surface	41.6865	-87.4853	within 0.26 miles north of Whiting Park
	WS-6A	WS-6A	Lake Mich.	Lake Michigan	Surface	41.6879	-87.4847	within 0.26 miles north of Whiting Park
	WS-7A	WS-7A	Lake Mich.	Lake Michigan	Surface	41.6857	-87.4877	within 0.26 miles north of Whiting Park
	WS-8A	WS-8A	Lake Mich.	Lake Michigan	Surface	41.6871	-87.4874	within 0.26 miles north of Whiting Park
	WS-9A	WS-9A	Lake Mich.	Lake Michigan	Surface	41.6883	-87.4868	within 0.26 miles north of Whiting Park
URS Greiner Woodward	A03	A03	WBGCR II	Roxana Marsh	Surface	41.6188	-87.4881	0.19 miles east of White Oak Ave.
Clyde 1999 IND/0075	C01	C01	WBGCR II	Roxana Marsh	Surface	41.6168	-87.4853	Roxana March (non-vegetated)
	C02	C02	WBGCR II	Roxana Marsh	Surface	41.6175	-87.4843	Roxana Marsh (vegetated)
ThermoRetec 1999	SD-98-17	SD-98-17	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6257	-87.5208	0.19 miles west of Hohman Ave.
IND/0079	SD-98-20	SD-98-20	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6253	-87.5193	0.11 miles west of Hohman Ave.
	SD-98-24	SD-98-24	WBGCR II	Hohman Ave. to State Line Ave.	Surface	41.6245	-87.5179	0.02 miles west of Hohman Ave.
Simon *et al.* 2000	1	1	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.609383	-87.3870972	ConRail Bridge
IND/0113	2	2	EBGCR I	Industrial Hwy to ConRail Bridge	Surface	41.608128	-87.3939111	Industrial Hwy
	3	3	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	Surface	41.610361	-87.4209278	0.63 miles east of Cline Ave.
	4	4	EBGCR I	Cline Ave. to Cline/I-90 Ramps	Surface	41.613264	-87.4327806	Cline Ave.
	5a	5a	EBGCR I	Kennedy Ave. to Cline Ave.	Surface	41.611642	-87.4492556	0.62 miles east of Kennedy Ave.
	7	7	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.614003	-87.4619	0.04 miles west of Kennedy Ave.
	9	9	WBGCR I	EB & WB Confluence to Indianapolis Blvd.	Surface	41.6143	-87.4802	Indianapolis Blvd.
	8	8	IHC	EB & WB Confluence to 151st St.	Surface	41.618172	-87.471125	EB & WB Confluence
	10	10	IHC	151st St. to Chicago Ave.	Surface	41.621114	-87.471025	0.1miles north of 151st St.
	11	11	IHC	Chicago Ave. to Columbus Dr.	Surface	41.629206	-87.4711083	Chicago Ave.

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Benthic Macroinvertebrate Sampling Stations								
Simon *et al.* 2000	12	12	IHC	Chicago Ave. to Columbus Dr.	Surface	41.639253	-87.4712389	Columbus Drive
IND/0113 (cont.)	14	14	LGB	B & O Railroad to headwaters	Surface	41.646614	-87.4888944	B & O Railroad
	15	15	LGB	B & O Railroad to headwaters	Surface	41.646542	-87.5016583	0.65 miles west of B & O Railroad
	15a	15a	LGB	B & O Railroad to headwaters	Surface	41.6464	-87.5078083	0.98 miles west of B & O Railroad
	13	13	USC	Indianapolis Blvd. to Forks	Surface	41.645622	-87.4723722	Forks
	16	16	USC	Dickey Rd. to B & O Railroad	Surface	41.655142	-87.4598361	Dickey Road
	17	17	IH	Indiana Harbor	Surface	41.665336	-87.4376611	0.29 miles SE of Entrance to IH
IDEM 2000a	Bridge St.	Bridge St.	EBGCR II	ConRail Bridge to Bridge St.	Surface	41.608889	-87.3725	Bridge St.
IND/0114	Cline Ave.	Cline Ave.	EGGCR I	Kennedy Ave. to Cline Ave.	Surface	41.613056	-87.4327778	Cline Ave.
	Kennedy Ave.	Kennedy Ave.	EBGCR I	EB & WB Confluence to Kennedy Ave.	Surface	41.614306	-87.4615278	Kennedy Ave.
	Sohl Ave.	Sohl Ave.	WBGCR II	Calumet Ave. to Hohman Ave.	Surface	41.622639	-87.5133333	Sohl Ave.
	Indianapolis Blvd.	Indianapolis Blvd.	WBGCR II	Indianapolis Blvd. to I-90	Surface	41.614306	-87.4808333	Indianapolis Blvd.
	129th St.	129th St.	USC	Dickey Rd. to B & O Railroad	Surface	41.654722	-87.4586111	129th St.
	Dickey Rd. (1994)	Dickey Rd. (1994)	USC	Dickey Rd. to B & O Railroad	Surface	41.654722	-87.4586111	Dickey Rd. (1994)
	Dickey Rd. (1996)	Dickey Rd. (1996)	USC	Dickey Rd. to B & O Railroad	Surface	41.655139	-87.4595833	Dickey Rd. (1996)
Rainbolt 1993	ST 5	ST 5	WBCGR II	Illinois Portion	Surface	41.6423	-87.5443	2.8 miles west of B & O Railroad
IND/0121	ST 4	ST 4	WBCGR II	Hohman Ave. to State Line Ave.	Surface	41.6243	-87.5176	Hohman Ave.
	ST 3	ST 3	WBCGR II	Calumet Ave. to Hohman Ave.	Surface	41.6203	-87.5085	Calumet Ave.
	ST 2	ST 2	WBCGR II	Columbia Ave. to Calumet Ave.	Surface	41.6189	-87.5001	Columbia Ave.
	ST 1	ST 1	WBCGR I	EB & WB Confluence to Indianapolis Blvd.	Surface	41.6143	-87.4804	Indianapolis Blvd.
Tissue Chemistry Sampling Stations								
	(same in study and IHDB)							
Risatti and Ross 1989	***Station ID***	***Sample ID***						
IND/0009	Q-ALE-1	Q-ALE-1	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-PACU-1	Q-PACU-1	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-GOLD-1	Q-GOLD-1	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-GOLD-2,3	Q-GOLD-2,3	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-PACU-2	Q-PACU-2	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-ALE-2	Q-ALE-2	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-CARP-6	Q-CARP-6	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-SHAD-7	Q-SHAD-7	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-SHAD-1	Q-SHAD-1	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-CARP-1	Q-CARP-1	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-CARP-2	Q-CARP-2	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Tissue Chemistry Sampling Stations								
Risatti and Ross 1989 IND/0009 (cont.)	Q-CARP-3	Q-CARP-3	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-CARP-4	Q-CARP-4	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-CARP-5	Q-CARP-5	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	PLANKTON-Q-5	PLANKTON-Q-5	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	Q-SUN-1,2,3	Q-SUN-1,2,3	USC	Indianapolis Blvd. to Forks	NA	41.645679	-87.472031	Forks
	R-ALE-3	R-ALE-3	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-3	R-SHAD-3	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-4,5	R-SHAD-4,5	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-6,11	R-SHAD-6,11	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-12	R-SHAD-12	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-13,14	R-SHAD-13,14	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-2	R-SHAD-2	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-ALE-2	R-ALE-2	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-ALE-4,5	R-ALE-4,5	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-ALE-6	R-ALE-6	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-OVIR-1	R-OVIR-1	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-OVIR-2	R-OVIR-2	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SUN-1,2,3	R-SUN-1,2,3	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	PERIPHYTON-R-925	PERIPHYTON-R-925	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-ALE-1	R-ALE-1	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-CARP-3	R-CARP-3	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
Risatti and Ross 1989 IND/0009 (cont.)	PERIPHYTON-R-926	PERIPHYTON-R-926	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	PERIPHYTON-R-935	PERIPHYTON-R-935	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	PERIPHYTON-R-929	PERIPHYTON-R-929	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	PLANKTON-R-8	PLANKTON-R-8	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-SHAD-1	R-SHAD-1	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-CARP-2	R-CARP-2	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	R-CARP-1	R-CARP-1	IH	Indiana Harbor	NA	41.667786	-87.439423	0.16 miles east of Entrance to IH
	S-PER-1-10	S-PER-1-10	Lake Mich.	Lake Michigan	NA	41.678841	-87.401932	Lake Michigan
	T-OVIR-1	T-OVIR-1	Lake Mich.	Lake Michigan	NA	41.683666	-87.442581	Lake Michigan
	S-ORUS-1	S-ORUS-1	Lake Mich.	Lake Michigan	NA	41.678841	-87.401932	Lake Michigan
	T-ALE-1	T-ALE-1	Lake Mich.	Lake Michigan	NA	41.683666	-87.442581	Lake Michigan
	PERIPHYTON-2B	PERIPHYTON-2B	NR	NR	NR	NR	NR	NR

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Tissue Chemistry Sampling Stations								
IDEM 1994	070-94	070-94	EBGCR II	Bridge St. to Grant St.	NA	41.60883	-87.3719	Bridge St.
IND/0051	80502411	80502411	EBGCR II	Bridge St. to Grant St.	NA	41.60883	-87.3719	Bridge St.
	80502410	80502410	EBGCR II	Bridge St. to Grant St.	NA	41.60883	-87.3719	Bridge St.
	80502404	80502404	EBGCR II	Bridge St. to Grant St.	NA	41.60883	-87.3719	Bridge St.
	071-94	071-94	EBGCR II	Bridge St. to Grant St.	NA	41.60883	-87.3719	Bridge St.
	072-94	072-94	EBGCR II	Bridge St. to Grant St.	NA	41.60883	-87.3719	Bridge St.
	074-94	074-94	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	075-94	075-94	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	076-94	076-94	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	80502399	80502399	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	073-94	073-94	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	80502408	80502408	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	80502406	80502406	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	80502407	80502407	EBGCR I	Cline Ave. to Cline/I-90 Ramps	NA	41.61289	-87.4321	Cline Ave.
	199	199	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	081-94	081-94	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	082-94	082-94	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	083-94	083-94	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	084-94	084-94	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	70602947	70602947	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	80502409	80502409	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	80502398	80502398	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.61409	-87.4614	Kennedy Ave.
	077-94	077-94	WBGCR II	Indianapolis Blvd. to I-90	NA	41.614449	-87.480553	Indianapolis Blvd.
	078-94	078-94	WBGCR II	Indianapolis Blvd. to I-90	NA	41.614449	-87.480553	Indianapolis Blvd.
	079-94	079-94	WBGCR II	Indianapolis Blvd. to I-90	NA	41.614449	-87.480553	Indianapolis Blvd.
	080-94	080-94	WBGCR II	Indianapolis Blvd. to I-90	NA	41.614449	-87.480553	Indianapolis Blvd.
	80502396	80502396	WBGCR II	Indianapolis Blvd. to I-90	NA	41.614449	-87.480553	Indianapolis Blvd.
	477	477	IHC	EB & WB Confluence to 151st St.	NA	41.61824	-87.47106	EB & WB Confluence
	478	478	IHC	EB & WB Confluence to 151st St.	NA	41.61824	-87.47106	EB & WB Confluence
	067-94	067-94	USC	Dickey Road to B & O Railroad	NA	41.65525	-87.4592	Dickey Road
	066-94	066-94	USC	Dickey Road to B & O Railroad	NA	41.65525	-87.4592	Dickey Road
	065-94	065-94	USC	Dickey Road to B & O Railroad	NA	41.65525	-87.4592	Dickey Road
Stewart *et al.* 1999	WL3-A	WL3-A	GCRL	West Lagoon	NA	41.6141	-87.2846	West Lagoon
IND/0088	WL5-B	WL5-B	GCRL	West Lagoon	NA	41.61176	-87.2931	West Lagoon
	WL3-B	WL3-B	GCRL	West Lagoon	NA	41.6141	-87.2846	West Lagoon
	WL5-A	WL5-A	GCRL	West Lagoon	NA	41.61176	-87.2931	West Lagoon

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Tissue Chemistry Sampling Stations								
Simon 2000 (GCRL data) IND/0104	***Composite ID (assigned)***	***Sample ID (in study)***						
	J	RO3526	GCRL	West Lagoon	NA	NA	NA	East Lagoon
	J	RO3527	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	J	RO3528	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	K	RO3529	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	K	RO3530	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	K	RO3531	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	L	RO3532	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	L	RO3533	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	L	RO3534	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	M	RO3535	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	M	RO3536	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	M	RO3537	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	N	RO3538	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	N	RO3539	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	N	RO3540	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	O	RO3541	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	O	RO3542	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	O	RO3543	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	P	RO3544	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	P	RO3545	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	P	RO3546	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	Q	RO3547	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	Q	RO3548	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	Q	RO3549	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	R	RO3610	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	R	RO3611	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	R	RO3612	GCRL	West Lagoon	NA	NA	NA	West Lagoon
	A	RO3499	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	A	RO3500	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	A	RO3501	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	B	RO3502	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	B	RO3503	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	B	RO3504	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	C	RO3505	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	C	RO3506	GCRL	East Lagoon	NA	NA	NA	East Lagoon

Appendix 6.1. Description of sampling locations in the Assessment Area.

Study Name	Station Number	Station Number Used in Study	Study Area	Study Area (River Segment)	Sample Depth	Latitude	Longitude	Station Location (distance from major bridges, etc.)
Tissue Chemistry Sampling Stations								
Simon 2000 (GCRL data)	C	RO3507	GCRL	East Lagoon	NA	NA	NA	East Lagoon
IND/0104 (cont.)	D	RO3508	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	D	RO3509	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	D	RO3510	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	E	RO3511	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	E	RO3512	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	E	RO3513	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	F	RO3514	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	F	RO3515	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	F	RO3516	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	G	RO3517	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	G	RO3518	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	G	RO3519	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	H	RO3520	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	H	RO3521	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	H	RO3522	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	I	RO3523	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	I	RO3524	GCRL	East Lagoon	NA	NA	NA	East Lagoon
	I	RO3525	GCRL	East Lagoon	NA	NA	NA	East Lagoon
USFWS 2000 (Corbicula data)	IHCOR02	IHCOR02	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	NA	41.6081	-87.3941	Industrial Hwy.
IND/0106	IHCOR01	IHCOR01	EBGCR I	Cline/I-90 Ramps to Industrial Hwy	NA	41.6081	-87.3941	Industrial Hwy.
	CACOR01	CACOR01	EBGCR I	Kennedy Ave. to Cline Ave.	NA	41.6131	-87.4329	Cline Ave.
	KACOR01	KACOR01	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.6145	-87.4613	Kennedy Ave.
	KACOR03	KACOR03	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.6145	-87.4613	Kennedy Ave.
	KACOR02	KACOR02	EBGCR I	EB & WB Confluence to Kennedy Ave.	NA	41.6145	-87.4613	Kennedy Ave.
	151COR02	151COR02	IHC	151st St. to Chicago Ave.	NA	41.6209	-87.4711	151st St.
	151COR01	151COR01	IHC	151st St. to Chicago Ave.	NA	41.6209	-87.4711	151st St.
	CDCOR02	CDCOR02	IHC	Chicago Ave. to Columbus Dr.	NA	41.6392	-87.4711	Columbus Dr.
	CDCOR01	CDCOR01	IHC	Chicago Ave. to Columbus Dr.	NA	41.6392	-87.4711	Columbus Dr.
	CHICOR01	CHICOR01	IHC	Chicago Ave. to Columbus Dr.	NA	41.6291	-87.4711	Chicago Ave.

NA = not applicable; NR = not reported

Appendix VII

Curriculum Vitae of Authors

Appendix 7. Curriculum Vitae of Authors

Donald D. MacDonald

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Education:

Bachelor of Science, Zoology
(Fisheries Biology; Environmental Physiology, Comparative Biochemistry)
University of British Columbia, 1982

Specialization:

Principal of MacDonald Environmental Sciences Limited, which was established to provide scientific consulting services in the fields of fisheries and aquatic resource management, stream ecology, environmental quality guidelines and policy development, environmental risk and hazard assessment, and information and technology transfer.

Specialist environmental toxicology and chemistry, ecosystem-based resource management, water quality/water use interactions, and sediment quality assessment.

Professional Memberships:

American Fisheries Society
Vice-President, Western Division; Past-President, Canadian Aquatic Resources Section; Nominations Committee; Chair, Wetlands Conservation Committee; Newsletter Committee; Membership Committee.

Aquaculture Association of Canada

Association of Professional Biologists of British Columbia

Canadian Association on Water Pollution Research and Control

International Association on Water Pollution Research and Control

Society of Environmental Toxicology and Chemistry

Experience:

AQUATIC BIOLOGIST - February 1989 to Present

MacDonald Environmental Sciences Limited
2376 Yellow Point Road, Nanaimo, B.C. V9X 1W5

Independent consulting on fisheries and aquatic resource management, environmental quality, stream ecology, computer data management, and information and technology transfer. Recent projects have been focussed on the development of water quality guidelines, sediment quality guidelines, tissue residue guidelines, environmental quality monitoring programs, fisheries co-management programs, and the assessment of environmental quality.

WATER QUALITY OBJECTIVES OFFICER - September 1984 to February 1989

Water Quality Branch, Inland Waters, Environment Canada
502 - 1001 West Pender Street, Vancouver, B.C. V6E 2M9

Compilation, management and statistical analysis of existing and new information generated to support the formulation of water quality objectives in waters of significant federal interest; generation of water quality criteria information through toxicological, water quality, and other studies; design and implementation of monitoring programs to assess compliance with water quality objectives; preparation of reports and other publications on information developed to formulate water quality objectives; organization of workshops and information exchange sessions on water quality guidelines and objectives; provision of information and advice to technical committees established to resolve the International Joint Commission reference on the Flathead River.

Supervisor: Dr. D. Valiela, Head Water Quality Objectives Division

TECHNICAL PLANNING COORDINATOR - November 1983 to September 1984

Water Quality Branch, Inland Waters, Environment Canada
502 - 1001 West Pender Street, Vancouver, B.C. V6E 2M9

Planning and development of regional water quality programs, including long- and short-term logistics and budgetary requirements and inter-project coordination; planning, organization, expedition, and supervision of special field studies and sampling projects for water quality analysis; pollution surveillance and sediment sampling; planning and implementation on national water quality monitoring programs to assess national trends and conditions.

Supervisor: Dr. W.E. Erlebach, Chief Water Quality Branch

Publications And Technical Reports:

Journal/Book Publications

Kemble, N.E., F.J. Dwyer, D.G. Hardesty, C.G. Ingersoll, B.T. Johnson, and D.D. MacDonald. In press. Evaluation of the toxicity and bioaccumulation of contaminants in sediment samples from Waukegan Harbor, Illinois. Archives of Environmental Contamination and Toxicology.

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MacDonald, D.D. 1989. An assessment of ambient water quality conditions in the Slave River basin, NWT. Report prepared for Indian and Northern Affairs Canada. Yellowknife, NWT. 94 pp.

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MacDonald, D.D. 1989. Development, implementation and use of site-specific water quality objectives: A conceptual model. Proceedings of the CCREM Workshop on the Development and Use of Water Quality Objectives. Environment Canada. Ottawa, Canada.

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Water Quality Criteria Task Force. 1987. Ambient water quality criteria for selected variables in the Canadian portion of the Flathead River. Report to the Flathead River International Study Board (International Joint Commission). 76 pp.

MacDonald, D.D. (ed.) 1985. Proceedings of the Flathead River Basin Bull Trout Biology and Population Dynamics Modelling Information Exchange. Fisheries Branch. Ministry of Environment. 104 pp.

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MacDonald, D.D. and D.D. MacKinlay. 1983. Stuart pilot operations, 1982-83. Internal Report. Enhancement Services Branch. Fisheries and Oceans Canada. 61 pp + appendices.

MacDonald, D.D. and B.G. Shepherd. 1983. Developmental timing of British Columbia salmon and steelhead trout. Enhancement Services Branch, Fisheries and Oceans Canada, Vancouver, B.C. 17 pp.

MacDonald, D.D. and B.G. Shepherd. 1983. A review of the Kitimat River watershed. Enhancement Services Branch, Fisheries and Oceans Canada, Vancouver, B.C. 166 pp.

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MacDonald, D.D. 1981. On the existence of, and salmonid interaction with, naturally occurring supersaturation. Internal Report. Enhancement Services Branch. Fisheries and Oceans Canada. 11 pp + appendices.

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Helm, R.K., D.D. MacDonald, B. Sinclair, G. Stuart, A. Chalmers and B.G. Shepherd. 1980. A review of the Quesnel River watershed. Enhancement Services Branch, Fisheries and Oceans Canada. 72 pp. + appendices.

Helm, R.K., D.D. MacDonald, B. Sinclair, D. Chan, T. Hetherington, A. Chalmers and B.G. Shepherd. 1980. A review of the Nechako River watershed. Enhancement Services Branch, Fisheries and Oceans Canada. 90 pp. + appendices.

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Education

1974-1975	Bemidji State University, Bemidji, MN
1975-1978	Miami University, Oxford, OH, B.S. Biology Education
1980-1982	Miami University, Oxford, OH, M.S. Zoology
1982-1986	University of Wyoming, Laramie, WY, Ph.D. Zoology and Physiology

Professional career

1977	Undergraduate Teaching Assistant, Vertebrate Zoology, Miami University, Oxford, OH
1978-1980	High School Biology Teacher, Milford Village Schools, Milford, OH
1980-1982	Graduate Teaching Assistant (Limnology, Animal Diversity), Department of Zoology, Miami University, Oxford, OH
1981-1982	Research Assistant with Dr. Robert W. Winner, Department of Zoology, Miami University, Oxford, OH
1982-1983	Graduate Teaching Assistant (Limnology, Lake and Field Ecology, and Human Anatomy and Physiology), Department of Zoology and Physiology, University of Wyoming, Laramie, WY
1983-1986	Research Assistant with Dr. Harold L. Bergman, Department of Zoology and Physiology, University of Wyoming, Laramie, WY
1986-1987	Leader, Invertebrate Toxicology Section, National Fisheries Contaminant Research Center, US Fish and Wildlife Service, Columbia, MO
1987-1996	Leader, Fish and Invertebrate Toxicology Section, National Fisheries Contaminant Research Center/Midwest Science Center/Environmental and Contaminants Research Center/Columbia Environmental Research Center, US Fish and Wildlife Service/National Biological Survey/National Biological Service/US Geological Survey, Columbia, MO
1988-	Research Associate, School of Forestry, Fisheries and Wildlife, University of Missouri, Columbia, MO
1996-	Chief, Aquatic Toxicology Branch, US Geological Survey, Columbia, MO

Professional society membership and committee activities

Society of Environmental Toxicology and Chemistry (SETAC)
- Nominating Committee
- Technical Committee (Chair)
- Short Course Committee
- Meeting Committee
- Publications Committee
- Guest editor for issue 13:12 (1994) of *Environmental Toxicology and Chemistry*
- Coordinating Editor of SETAC Books
- Editorial Board
- Board of Directors (National: 1992-1995)
- Board of Directors (Regional: 1987-1992)
- Liaison to ASTM

American Society for Testing and Materials (ASTM)
- Chair of Committee E47 on Environmental Fate and Effects of Contaminants (1996-)
- Chair Subcommittee E47.03 on Sediment Toxicology (1988-1996)
- Subcommittee E47.03 on Sediment Toxicology (Task Groups E1367, E1383, E1525, E1706)
- Subcommittee E47.01 on Aquatic Toxicology
- Subcommittee D19.17 on Sediments
- Committee on Standards (1999-)
- Subcommittee on the Form and Style Manual (1999-)

Archives of Environmental Contamination and Toxicology, Editorial Board (1997-)

Environmental Protection Agency Scientific Advisory Boards
- Environmental Effects and Fate Committee - Sediment Criteria Subcommittee member (1988-)
- ACQUIRE database review (1994)
- Ecological Risk Assessment colloquium (1994)
- Environmental Effects and Fate Committee - Ammonia Sulfate Subcommittee member (1995)
- National Sediment Inventory (1995-)
- Standard Methods Review (Series 835 and 850; 1997)

National Oceanic and Atmospheric Administration
- Cargo Sweeping advisory panel (1994)

Standard Methods
- Editorial Board (2000-)

Journal reviewer

American Society for Testing and Materials Aquatic Toxicology
Archives of Environmental Contamination and Toxicology (Editorial Board)
Canadian Journal of Fisheries and Aquatic Science
Chemosphere
Environmental Toxicology and Chemistry (Editorial Board)
Journal of Great Lakes Research
Journal of the Water Pollution Control Federation

Honors and distinctions

Eagle Scout (1971)
Magna Cum Laude, Miami University (1978)
Graduate Student Achievement Award, Miami University (1981)
Outstanding Graduate Student in Zoology (awarded by Department of Zoology, Miami University; 1982)
Outstanding Graduate Student (awarded by Phi Sigma, Miami University; 1982)
US Fish and Wildlife Service/National Biological Service Quality Performance Award (awarded for a level IV performance evaluation in 1987, 1989-1994); US Fish and Wildlife Service Special Achievement Award (awarded for a level V performance evaluation in 1988)
Exceptional Service Award, ASTM Committee E47 on Biological Effects and Environmental Fate (1992)
Award for distinguished service on the USEPA GLNPO ARCS project (1993)
Special recognition from SETAC for service as Chair of the Technical Committee 1992-1994 (1994)
Nominated for EPA gold medal for development of standard methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with invertebrates (1994)
Paper by Canfield et al. 1996 in the *Journal of Great Lakes Research* selected as the first runner up for the Chandler-Misener Award for the outstanding paper in the journal in a given year (1997)
Society of Technical Communications competition award of "Excellence" for the book by Ingersoll CG, Dillon T, Biddinger RG, editors. 1997. Ecological risk assessment of contaminated sediment. Pensacola FL: SETAC Press (1998)
USGS on the spot award for serving as an editor on book: Ingersoll CG, Dillon T, Biddinger RG, editors. 1997. Ecological risk assessment of contaminated sediment. Pensacola FL: SETAC Press (1998)
USGS on the spot award for coordinating research projects associated with the Toxicology Branch (1998)
USGS award for conducting a review of the USGS Water Resources Division NAWQA ecological study plans (1999)
EPA bronze metal for assistance in developing methods for assessing sediment contamination with freshwater invertebrates (1999)
EPA Office of Water team of the quarter (October to December of 1999) for contributions in the development of a methods manual for assessing sediment contamination with freshwater invertebrates (2000)
USGS star award for coordinating research projects associated with the Toxicology Branch (2000)

Research activity and support

1983-1986	Co-investigator, Fisheries and Lake Acidification Research Project (with the Electric Power Research Institute; $2,704,000 budget)
1986-1996	Leader, Fish and Invertebrate Toxicology Section (annual budget about $600,000)
1986-1988	Principal Investigator, Assessment of Selenium Toxicity to Aquatic Organisms (FWS base funding $50,000 budget).
1989-1990	Principal Investigator, Stillwater National Wildlife Refuge (SNWR) Drain Water Studies (with USFWS Region 1; $75,000 budget)
1989-1996	Principal Investigator, Assessment of Contaminated Sediments in the Great Lakes (with the Great Lakes National Program Office (GLNPO) of USEPA, Chicago, Illinois; $1,300,000 budget)

1990-1992 Principal Investigator, Hazard Evaluation of Contaminated Sediments in the Clark Fork River, Montana (with EPA Region VIII, Helena, Montana; $600,000 budget)

1992- Principal Investigator, Development of Long-term Sediment Toxicity and Bioaccumulation Tests with the Amphipod *Hyalella azteca*, the midge *Chironomus tentans*, and the oligochaete *Lumbriculus variegatus* (with USEPA Washington, DC; $1,300,000 budget)

1994-1996 Co-Investigator, Development of Sediment Toxicity Identification Procedures (with the US Army; $200,000 budget)

1996- Chief, Toxicology Branch, US Geological Survey (annual budget about $800,000)

1996- Principal Investigator, Assessing the Sensitivity of Endangered Species to Contaminants (with the state of New York; $96,000 budget)

1996- Principal Investigator, Evaluation of Sediment Contamination in Waukegan Harbor, IL (with USEPA GLNPO; $40,000 budget)

1996- Principal Investigator, Evaluating the Predictive Ability of Sediment Quality Guidelines (with USEPA GLNPO; $200,00 budget)

1996- Principal Investigator, Biological and Chemical Evaluation of Contaminants (with USEPA Office of Science and Technology, Washington, DC; $120,000 budget)

- Principal Investigator, Natural Resource Damage Assessment of the Indiana Harbor Canal (with the USFWS, Bloomington, Indiana; $60,000 budget)
- Co-investigator, Assessment of the Effectiveness of Wetlands in Remediating Contaminants (with the USEPA, Aida, OK; $270,000 budget)
- Principal Investigator, Development of a Guidance Manual for Sediment Assessment (with USEPA GLNPO; $96,000 budget)

Thesis and dissertation

Ingersoll CG. 1982. Effect on *Daphnia pulex* (De Geer) of daily pulse exposures to copper or cadmium. Master's thesis, Miami University, Oxford, OH. 22 p.

Ingersoll CG. 1986. The effects of pH, aluminum, and calcium on survival and growth of brook trout (*Salvelinus fontinalis*) early life stages. Ph.D. thesis, The University of Wyoming, Laramie, WY. 122 p.

Presentations

Ingersoll CG, Winner RW. The effect on *Daphnia pulex* of daily, short-term exposures to copper or cadmium. Presented at the 2nd annual meeting of SETAC, Arlington, VA, November 22-25, 1981.

Ingersoll CG, Hlohowskyj I, Mundahl ND. Movements and densities of fantail (*Etheostoma flabellare*), orangethroat (*E. spectabile*), and johnny *(E. nigrum*) darters during spring spawning. Presented at the 63rd annual meeting of the American Society of Ichthyologists and Herpetologists, Florida State University, Tallahassee, FL, June 1983.

Ingersoll CG, La Point TW, Bergman HL. An early life stage brook trout (*Salvelinus fontinalis*) bioassay testing the independent and combined effects of pH, calcium and aluminum in low conductivity water. Presented at the American Fisheries Society 1984 annual meeting, Cornell University, Ithaca, NY, August 13-16, 1984.

Meyer JS, Ingersoll CG, McDonald LL. Sensitivity analysis of population growth rates estimated from cladoceran chronic toxicity tests. Presented at the 5th annual meeting of SETAC, Arlington, VA, November 4-7, 1984.

Ingersoll CG, La Point TW, Bergman HL. The effects of pH, aluminum and calcium on brook trout (*Salvelinus fontinalis*) hatching, growth and survival. Presented at the 5th annual meeting of SETAC, Arlington, VA, November 4-7, 1984.

Marcus MD, Bergman HL, Ingersoll CG, Mattice JS. A brief summary of surface-water acidification effects on fish. Presented at the Acid Deposition Symposium, The Air Pollution Control Association, Rocky Mountain States Section, Boulder, CO, January 31, 1985.

Tietge J, Ingersoll CG, Johnson R. Histopathological analysis of brook trout *(Salvelinus fontinalis*) fry and adults exposed to pH, calcium and aluminum combinations in low conductivity water. Presented at the International Symposium on Acid precipitation, Muskoka Conference '85, Toronto, ONT, September 15-20, 1985.

Ingersoll CG, La Point TW, Fernandez J, Mount D. The long-term effects of pH, aluminum and calcium on early life stage and adult brook trout (*Salvelinus fontinalis*) survival, growth and reproduction. Presented at the International Symposium on Acid precipitation, Muskoka Conference '85, Toronto, ONT, September 15-20, 1985.

Bergman HL, Parkhurst B, Ingersoll CG, Marcus M, Mattice J. Effects of acidification on fish: Review of laboratory toxicity studies. Presented at the International Symposium on Acid precipitation, Muskoka Conference '85, Toronto, ONT, September 15-20, 1985.

Ingersoll CG, Mount DR, La Point TW, Bergman HL. A comparison of adult and early life stage brook trout (*Salvelinus fontinalis*) response to pH, calcium and aluminum exposure. Presented at the 6th annual meeting of SETAC, St. Louis, MO, November 10-13, 1985.

Breck JE, Ingersoll CG. Modeling the mortality of early life stages of brook trout in response to fluctuating levels of pH, calcium, and aluminum. Presented at the 6th annual meeting of SETAC, St. Louis, MO, November 10-13, 1985.

Ingersoll CG, Sanchez DA, Tietge J. The effects of pH, calcium and aluminum exposure of the epidermis of brook trout (*Salvelinus fontinalis*) fry. Presented at the 6th annual meeting of SETAC, St. Louis, MO, November 10-13, 1985.

Wood CM, McDonald DG, Tin GC, Ingersoll CG, Mount DR. Evaluation of acid/aluminum stress to early life stages of brook trout by instrumental neutron activation analysis (INAA). Presented at a Ontario Ministry of Natural Resources Seminar, Toronto, ONT, January 31, 1986.

Breck JE, Beauchamp JJ, Ingersoll CG. A microcomputer model for estimating the survival of brook trout early-life stages exposed to different combinations of pH, aluminum, and calcium. Presented at the American Fisheries Society 1986 annual meeting, Providence, RI, September 14-18, 1986.

Ingersoll CG, Mount DR, Hockett JR, Gulley D, Mueller ME, Bergman HL. Relative sensitivity of two brook trout strains exposed to combinations of acidity, aluminum, and calcium. Presented at the 7th annual meeting of SETAC, Arlington, VA, November 2-5, 1986.

Mueller ME, Sanchez DA, Ingersoll CG, Bergman HL. Effects of acid and aluminum on the gills of two strains of juvenile brook trout. Presented at the 8th annual meeting of SETAC, Pensacola, FL, November 9-12, 1987.

Ingersoll CG, Nelson MK, Burton GA, Stemmer K, Winks KE. Toxicity assessment of contaminants associated with sediments from lower Lake Michigan. I: A comparison of acute and chronic test methods with amphipods and midges. Presented at the 9th annual meeting of SETAC, Arlington, VA, November 13-17, 1988.

Nelson MK, Ingersoll CG, Dwyer FJ. Use of *Hyalella azteca* in estuarine sediment toxicity testing. Presented at the 9th annual meeting of SETAC, Arlington, VA, November 13-17, 1988.

Coyle JJ, Ingersoll CG, Buckler DR, May TW. Effects of dietary and waterborne selenium on the reproductive success of bluegill sunfish (*Lepomis macrochirus*). Presented at the 9th annual meeting of SETAC, Arlington, VA, November 13-17, 1988.

Cleveland L, Ingersoll CG, Buckler DR. Effects of simulated episodic pH depressions and aluminum on whole body ions of brook trout. Presented at the 9th annual meeting of SETAC, Arlington, VA. November 13-17, 1988.

Nelson MK, Ingersoll CG. Use of *Hyalella azteca* (Amphipoda) in fresh-and saltwater toxicity testing. Presented at the Midwest Pollution Control Biologist meeting, USEPA Region V, Chicago, IL, March 15-17, 1989.

Nelson MK, Ingersoll CG. Chronic sediment toxicity testing with *Hyalella azteca* (Amphipoda) and *Chironomus riparius* (Diptera). Presented at the 13th Symposium on Aquatic Toxicology and Risk Assessment, American Society of Testing and Materials, Atlanta, GA, April 16-18, 1989.

Burch SA, Ingersoll CG, Dwyer FJ, Nelson MK, Buckler DR. The toxicity of effluent and reconstituted drain waters from Stillwater National Wildlife Refuge, Nevada, to fish and aquatic invertebrates. Presented at the 4th annual meeting of the Ozark-Prairie Chapter of SETAC, Columbia, MO, April 29, 1989.

Ingersoll CG. Sediment toxicity test methods. Presented at the USEPA Sediment Steering Committee Meeting, Newport, OR, September, 1989.

Ingersoll CG, Dwyer FJ, Burch SA, Nelson MK, Buckler DR. Use of Fresh- and saltwater organisms for the separation of toxic effects of inorganic contaminants from the toxic effects of salinity. Presented at the 10th annual meeting of SETAC, Toronto, ONT, October 28-November 2, 1989.

Cleveland L, Little EE, Ingersoll CG, Wiedmeyer RH. Toxicity of Waterborne and dietary selenium to juvenile bluegill. Presented at the North American Lake Management Society Ninth International Symposium, Austin, TX, November 7-11, 1989.

Coyle JJ, Buckler DR, Ingersoll CG, Fairchild JF, May TW. Effects of dietary and waterborne selenium on the reproductive success of bluegill sunfish (*Lepomis macrochirus*). Presented at the 51st Midwest Fish and Wildlife Conference, Springfield, IL, December 3-6, 1989.

Ingersoll CG. Standardization of sediment toxicity testing methods. Presented at the USEPA Sediment Oversight Technical Committee, Vicksburg, MS, March 20-22, 1990.

Burch SA, Dwyer FJ, Ingersoll CG, Finger SE. Toxicity of waters associated with agricultural irrigation at Stillwater National Wildlife Refuge, Fallon, NV. Presented at Selenium V, San Francisco, CA, March 30-31, 1990.

Coyle JJ, Ingersoll CG. Factors influencing the composition and toxicity of sediment elutriate and pore-water preparations. Presented at the Midwest Pollution Control Biologist Meeting, Chicago, IL, April 10-13, 1990.

Dwyer FJ, Burch SA, Ingersoll CG, Nelson MK, Buckler DR. Toxicity of trace element and salinity mixtures to fresh- and saltwater organisms. Presented at the 14th Symposium on Aquatic Toxicology and Risk Assessment, ASTM, San Francisco, CA, April 22-24, 1990.

Burch SA, Dwyer FJ, Ingersoll CG. Effects on aquatic organisms of ground water associated with irrigation drainage entering Stillwater Wildlife Management Area, Nevada. Presented at the 5th annual meeting of the Ozark-Prairie SETAC regional chapter, Stillwater, OK, May 12, 1990.

Ross PE, Ankley GT, Burton GA, Crecelius E, Filkins JF, Giesy JP, Ingersoll CG, Landrum PF, Mac MJ, Murphy TJ, Rathbun J, Smith VE, Tatem H, Taylor RW. Assessment and remediation of contaminated sediments: Background and approach. Presented at the International Association for Great Lakes Research, Windsor, ONT, May 13-17, 1990.

Ingersoll CG, Buckler DR, Cleveland L, Coyle JJ, La Point TW, Mehrle PM Nelson MK. Assessment and remediation of contaminated sediment (ARCS). III: Development of sediment apparent effects threshold concentrations for selected Great Lakes areas of concern. Presented at the International Association for Great Lakes Research, Windsor, ONT, May 13-17, 1990.

Ingersoll CG. An Overview of sediment toxicity and bioaccumulation testing methods. Presented to the College of Engineering at the University of Wisconsin, Milwaukee, WI, September 11-13, 1990.

Ingersoll CG. Potential incorporation of sediment toxicity tests as a required tier component in pesticide registration. Presented to the USEPA Aquatic Effects Dialogue Committee, Washington, DC, October 19, 1990.

Ingersoll CG. Sediment quality concentrations for selected Great Lakes areas of concern. Presented at the 17th Aquatic Toxicity Workshop, Vancouver, BC, November 4-7, 1990.

Ingersoll CG, Nelson MK, Coyle JJ. Freshwater sediment toxicity testing procedures. A short-course presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Cleveland L, Buckler DR, Coyle JJ, Ingersoll CG, La Point TW, Nelson MK. Sediment apparent effects threshold concentrations for selected Great Lakes areas of concern. Presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Dwyer FJ, Burch SA, Ingersoll CG, La Point TW, Fairchild JF. Toxicity of linear alkylbenzene sulphonate to fathead minnows and *Hyalella azteca*. Presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Landrum, PF, Tsymbal VN, Nelson MK, Ingersoll CG, Cossiaux DC, Burton GA, Sasson-Brickson G. Sediment-associated contaminant toxicity: Assessment by dilution experiments. Presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Ingersoll CG, Cleveland L, Coyle JJ, King LB, Nelson MK. Acute and chronic effects of contaminated sediments on the amphipod *Hyalella azteca* and the midges *Chironomus riparius* and *Chironomus tentans*. Presented at the annual meeting of ASTM, Atlantic City, NJ, April 14-16, 1991.

Ingersoll CG. Activities of the ASTM subcommittee E47.03 on sediment toxicology and freshwater chronic sediment toxicity tests. USEPA Contaminated Sediment Assessment Workshop, Narragansett, RI, May 6, 1991.

Ingersoll CG, Burton GA, Cleveland L, Coyle JJ, Nelson MK. The acute and chronic effects of contaminated sediment on the amphipod *Hyalella azteca* and the midges *Chironomus riparius* and *Chironomus tentans*. Presented at the annual meeting of the International Association For Great Lakes Research, Buffalo, NY, June 2-6, 1991.

Lanchaster E, Vargo K, Tracy M, Tracy J, Rathbun J, Ingersoll CG, Burton GA, Henry M, Landrum PK. Predicting sediment toxicity in the Buffalo River from "indicator analyses". Presented at the annual meeting of the International Association For Great Lakes Research, Buffalo, NY, June 2-6, 1991.

Burton GA, Ingersoll CG, Ross P, Burnett L, Henry M, Klaine S, Landrum P, Swift M, Tuchman M. Sediment toxicity assessments: Optimal design considerations. Presented at the annual meeting of the International Association For Great Lakes Research, Buffalo, NY, June 2-6, 1991.

Ingersoll CG. Standardization of sediment toxicity testing methods. Presented to the USEPA Tiered Testing Work group, Washington, DC, September 23, 1991.

Cleveland L, Ingersoll CG, Coyle JJ, Nelson MK. Acute and chronic effects of contaminated sediment on the amphipod *Hyalella azteca* and the midges *Chironomus riparius* and *Chironomus tentans*. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Burton GA, Burnett L, Henry M, Hinman M, Ingersoll C, Klaine S, Landrum P, Nelson M, Ross P, Swift M, Tuchman M. Selecting appropriate test designs for sediment toxicity assessments. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Swift MC, Canfield TJ, La Point TW, Burton GA, Ingersoll CG. Artificial substrates vs. grab samples: Which is better in sediment toxicity assessments? Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Tracy, M, Lancaster E, Vargo K, Tracy J, Rathbun J, Ingersoll C, Burton A, Henry M, Landrum P. Predicting sediment toxicity in the Buffalo River from "indicator" analyses. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Nelson MK, Brunson EL, Ingersoll CG, Ellersieck MR. *Hyalella azteca* growth and development in laboratory culture and contaminated sediment. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Ingersoll CG. Short course on development of sediment criteria. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Ingersoll CG. Evaluating bioassay performance at Superfund sites. Panel discussion during the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Ingersoll CG. Biological assessment of contaminated sediments. Presented to the personnel at the US Fish and Wildlife Bay Estuary Program, Olympia, WA, November 8, 1991.

Ingersoll CG. Use of the apparent effects threshold (AET) approach for assessing aquatic effects of contaminated sediment. Presented to the College of Engineering at the University of Wisconsin, Madison, WI, November 19, 1991.

Ingersoll CG. Whole sediment toxicity testing. Presented at the 4th annual USEPA Superfund environmental evaluation workshop, San Antonio, TX, February 25-27, 1992.

Ingersoll CG. Assessment of contaminated sediment. Presented to the Biology Department at Southwest Missouri State University, Springfield, MO, March 13, 1992.

Ingersoll CG, Cleveland L, Coyle JJ, Dwyer FJ. A comparison of methods used to assess contaminated sediment. Presented at the North American Benthological Society, Louisville, KY, May 25-29, 1992.

Ingersoll CG. Summary of ASTM Activities on freshwater and marine sediment test methods. Presented at the USEPA Tiered Testing Workshop for Freshwater and Marine sediments, USEPA Office of Water and Office of R&D, Washington, DC, September 16, 1992.

Ingersoll CG. Overview of fisheries work group studies for the Milltown Endangerment Assessment Project. Fisheries work group meeting, Denver, CO, September 29, 1992.

Ingersoll CG. Great Lakes sediment toxicity studies. Presented to Drury College students, Columbia, MO, October 3, 1992.

Brumbaugh WG, Wiedmeyer RH, Ingersoll CG, Mount DR, Stubblefield WA. Milltown Reservoir-Clark Fork River, Montana: Chemical characterization of metals in sediments and pore Waters. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Canfield TJ, Fairchild FJ, Ingersoll CG, La Point TW. Milltown Reservoir-Clark Fork River, Montana: Assessing benthic invertebrate abundance and community structure in areas exposed to metals contaminated runoff. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Kemble NE, Ingersoll CG, Brunson EL, Dwyer FJ, Monda DP, Woodward DF. Milltown Reservoir-Clark Fork River, Montana: Assessing sediment toxicity to invertebrates and fish. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Besser JM, Brumbaugh WG, Kemble NE, Ingersoll CG. Milltown Reservoir-Clark Fork River, Montana: Factors affecting metal bioavailability in contaminated sediment. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Sappington LC, Buckler DR, Dwyer FJ, Ingersoll CG, Jones JR, Ellersieck MR, Mayer FL. Use of the surrogate species concept in assessing contaminant risk to endangered and threatened fishes. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Ingersoll CG. Overview of results of studies to develop standard sediment methods. Presented to the USEPA, Duluth, MN, January 3-4, 1993.

Ingersoll CG. Approaches for assessing contaminated sediment. Presented to Eastman Kodak, Rochester, NY, January 13, 1993.

Ingersoll CG. Data interpretation: Sediment quality guidelines. Presented to the College of Engineering at the University of Wisconsin, Madison, WI, April 14, 1993.

Dwyer FJ, Ingersoll CG. Critical issues in sediment toxicology: Chronic sediment toxicity testing. Presented at the annual meeting of ASTM, Atlanta, GA, April 25-28, 1993.

Ingersoll CG. Statistical analysis of sediment toxicity tests. Presented at USEPA Headquarters, Washington, DC, June 3, 1993.

Nelson MK, Cleveland L, Coyle JJ, King LB, Kemble NE, Crecelius EA, Ingersoll CG. Reliability of current sediment threshold concentrations and relative species sensitivity based on results of whole sediment exposures. Presented at the International Association for Great Lakes Research, Green Bay, WI, June, 6-10, 1993.

Burton GA, Ingersoll C, and Tuchman M. Evaluating the strengths and weakness of sediment toxicity tests for initial assessments of contamination. Presented at the International Association for Great Lakes Research, Green Bay, WI, June, 6-10, 1993.

Fox, RG, Crecelius E, Ingersoll C, Burton GA. Integrated sediment assessment of Saginaw Bay, Michigan for the ARCS program. Presented at the International Association on Water Pollution Research and Control, Milwaukee, WI, June 14-16, 1993.

Ingersoll CG. Overview of freshwater sediment assessment methods. Presented to the US Army Corps of Engineers, Denver, CO, June 18, 1993.

Ingersoll CG. Assessment of contaminated sediments. Short course presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Ingersoll CG, Ankley GT, Benoit DA, Burton GA, Dwyer FJ, Greer IE, Norberg-King TJ, Winger PV. Standardization of national USEPA methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Norberg-King, TJ, Ankley GT, Ingersoll CG, Burton GA, Hoke R, Kubiz NJ, Landrum PF. Choosing species and methods for standardized tests with freshwater sediments. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Burton GA, Ankley GT, Ingersoll CG, Norberg-King TJ, Winger PV. Evaluation of sediment toxicity test methods: Round robin testing design. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Burton GA, Jacher K, Rowland C, Ankley GT, Benoit D, Norberg-King TJ, Call D, Dawson T, Day K, Dwyer J, Ingersoll CG, England D, Kennedy P, Kubitz J, Giesy J, Smith M, Lazorchak J, Suedel B, Stinson M, Winger P. Round robin testing of the proposed USEPA toxicity test methods. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Dwyer FJ, Ingersoll CG, Kemble NE. Use of standardized formulated sediment in toxicity tests. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Brunson EL, Ankley GT, Burton GA, Dwyer FJ, Ingersoll CG, Landrum PF, Lee H, Phipps GL. Bioaccumulation kinetics and field-validation of whole-sediment exposures with the oligochaete, *Lumbriculus variegatus*. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Zumwalt DC, Dwyer FJ, Greer IE, Ingersoll CG. Demonstration of a water-renewal system that accurately delivers small volumes of water to exposure chambers. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

McNulty EW, Greer IE, Ingersoll CG, Rabeni CF. The utility of reference toxicity tests with *Hyalella azteca*. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Kemble NE, Canfield TJ, Ingersoll CG. Cost analysis comparisons of laboratory toxicity tests, benthic invertebrate community analyses, and chemical analyses for making integrated ecological risk assessments. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Dwyer FJ, Canfield TJ, Haverland PS, Ingersoll CG, Kemble NE. The use of the sediment quality triad approach for two freshwater systems. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Greer IE, McNulty EW, Ingersoll CG. A method for the collection of known-age *Hyalella azteca.* Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Ingersoll CG, Ankley GT, Benoit DA, Burton GA, Dwyer FJ, Greer IE, Norberg-King TJ, Winger PV. Standardization of national USEPA methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. Presented at the 6th International Symposium on the Interactions Between Sediment and Water, Santa Barbara, CA, December 5-8, 1993.

Burton GA, Ingersoll CG, Tuchman M. Selection of an optimal test battery for determining freshwater sediment toxicity. Presented at the 6th International Symposium on the Interactions Between Sediment and Water, Santa Barbara, CA, December 5-8, 1993.

Canfield TJ, Dwyer FJ, Haverland PS, Ingersoll CG, Kemble NE. Use of the sediment quality triad approach to assess contamination of Great Lakes sediments. Presented at the 55th annual Midwest Fish and Wildlife Conference, St. Louis, MO, December 11-15, 1993.

Armitage T, Ingersoll C. USEPA's national contaminated sediment management strategy. Presented at the 4th ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal Quebec, April 11-13, 1994.

Dwyer FJ, Ankley GT, Benoit DA, Brunson EL, Burton GA, Greer IE, Hoke RA, Ingersoll CG, Norberg-King TJ, Winger PV. USEPA's methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. Presented at the 4th ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal Quebec, April 11-13, 1994.

Schlekat C, Ingersoll CG. Measuring the toxicity and bioaccumulation of sediment-associated contaminants with estuarine and marine invertebrates: Methods employed by federal programs within the United States. Presented at the 4th ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal Quebec, April 11-13, 1994.

Ingersoll CG, Brunson EL, Canfield TJ, Dwyer FJ, Haverland PS, Henke CE, Kemble NE, Mount DR. Calculation of sediment effect concentrations (SECs) for *Hyalella azteca* and *Chironomus riparius*. Presented at the 4th ASTM Symposium on Environmental Toxicology and Risk Assessment, April 11-13, 1994, Montreal Quebec.

Besser JM, Kubitz JA, Giesy JP, Ingersoll CG. Relationship of metal bioaccumulation to toxicity in freshwater invertebrates. Presented at the North American Benthological Society meeting, Orlando, FL, May 23-27, 1994.

Kemble NE, Ingersoll CG, Brumbaugh WG, Dwyer FJ, Canfield TJ. Assessing sediment toxicity to invertebrates and fish. Presented at the North American Benthological Society meeting, Orlando, FL, May 23-27, 1994.

Canfield, TJ, Fairchild JF, Ingersoll CG, Kemble NE. Assessing benthic invertebrate abundance and structure exposed to metals contaminated sediment. Presented at the North American Benthological Society meeting, Orlando, FL, May 23-27, 1994.

Ingersoll CG. Short course on USEPA freshwater sediment toxicity and bioaccumulation methods. Presented at the 15th annual meeting of SETAC, Denver, CO, October 30, 1994.

Ingersoll CG, Brunson EL, Canfield TJ, Dwyer FJ, Haverland PS, Henke CE, Kemble NE, Mount DR. Evaluation of sediment effect concentrations (SECs) for *Hyalella azteca* and *Chironomus riparius*. Presented at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Haverland PS, Brunson NE, Canfield TJ, Dwyer FJ, Henke CE, Ingersoll CG, Kemble KE, Mount DR. Calculation of sediment effect concentrations (SECs) for *Hyalella azteca* and *Chironomus riparius*. Presented at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Canfield TJ, Kemble NE, Ingersoll CG. Assessing chironomid deformities in field- and laboratory-exposed organisms from organic- and metal-contaminated sediments. Presented at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Besser JM, Ingersoll CG, Giesy JP. Metal bioavailability in freshwater sediments: Influence of acid-volatile sulfide and organic matter. Presented at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Kemble NE, Dwyer FJ, Ingersoll CG. Development of a formulated control sediment for use in whole-sediment toxicity testing. Presented at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Canfield TJ, Dwyer FJ, Ingersoll CG, Mount DR. Using an integrated field and laboratory approach for assessing contaminated sediments. Presented at the North American Benthological Society meeting, Keystone, CO, May 30-June 3, 1995.

Haverland PS, Dwyer FJ, Henke CE, Ingersoll CG, Mount DR, Field J, MacDonald DD, Smith SL. Predictions of sediment toxicity using a database for *Hyalella azteca* and *Chironomus riparius*. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Ingersoll CG, Dwyer FJ, Ankley GT, Benoit DA, Norberg-King TJ, Swartz RC, Scott JK, Day KE, Scroggins R, McLeay DJ. Harmonization of standard methods used to conduct toxicity tests with sediment in North America. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Mount DR, Henke CE, Ingersoll CG, Besser JM, Ankley GT, Norberg-King TJ, West CW. Development of toxicity identification procedures for whole-sediment toxicity tests. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Kemble NE, Dwyer NE, Hardesty DK, Ingersoll CG. Formulated sediment for use in whole-sediment toxicity testing. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Brunson EL, Dwyer FJ, Ingersoll CG. Evaluation of reproduction as an endpoint in chronic toxicity tests with the amphipod *Hyalella azteca*. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Kemble NE, Brunson EL, Canfield TJ, Dwyer FJ, Ingersoll CG. Laboratory toxicity test with *Hyalella azteca* exposed to whole sediments from the Upper Mississippi River. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Brunson EL, Canfield TJ, Dwyer FJ, Ingersoll CG, Kemble NE. Sediment bioaccumulation test with upper Mississippi River sediments using the oligochaete *Lumbriculus variegatus*. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Canfield TJ, Brunson EL, Dwyer FJ, Ingersoll CG, Kemble NE. Assessing upper Mississippi river sediments using benthic invertebrates and the sediment quality triad. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Henke CE, Dwyer FJ, Ingersoll CG, Mount DR, Mayer FL. Evaluation and use of standard effluent toxicity tests for protection of endangered and threatened species. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Canfield TJ, Kemble NE, Ingersoll CG. Use of chironomid deformities in field and laboratory assessments of contaminated sediments. Presented at the 2nd SETAC World Congress, Vancouver, BC, November 5-9, 1995.

Ingersoll CG, Brunson EL, Dwyer FJ, Hardesty D, Kemble NE, Benoit DA, Sibley PK. Reproduction as an endpoint in sediment toxicity tests with the amphipod *Hyalella azteca* and the midge *Chironomus tentans*. Presented at the 6th ASTM symposium on Environmental Toxicology and Risk Assessment, Orlando, FL, April 15, 1996.

Ingersoll CG, Johns M, Kemble NE, Reish D, Ross P. ASTM standards for measuring the toxicity and bioaccumulation of sediment-associated contaminants with invertebrates. Short course presented at the 6th ASTM symposium on Environmental Toxicology and Risk Assessment, Orlando, FL, April 17, 1996.

Haverland PS, Canfield TJ, Dwyer FJ, Ehrhardt EA, Ingersoll CG, Kemble NE, Field LJ, Long ER, MacDonald DD, Smith SL. Use of sediment quality guidelines to interpret toxicity data for freshwater sediments. Presented at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Kemble NE, Dwyer FJ, Ingersoll CG. Evaluation of feeding levels on survival and reproduction of *Hyalella azteca* in a formulated sediment. Presented at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Besser J, Ingersoll C, Mount D. TIE methods for freshwater sediments: Effect of zeolite on porewater ammonia concentrations and toxicity. Presented at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Kemble NE, Brunson EL, Dwyer FJ, Ehrhardt EA, Hardesty DK, Haverland PS, Ingersoll CG. Use of sublethal endpoints in sediment toxicity testing with the amphipod *Hyalella azteca*. Presented at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Canfield TJ, Dwyer FJ, Ingersoll CG, Kemble NE. Comparisons of composite vs. individual sediment grabs for assessing benthic invertebrate communities from soft sediments. Presented at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Canfield TJ, Dwyer FJ, Ehrhardt EA, Haverland PS, Ingersoll CG, Kemble NE. Development of a sediment effect concentration database to evaluate benthic invertebrate community structure. Presented at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Papoulias D, Chapman D, Huckins J, Ingersoll C, Johnson B, Jones S, Petty J, Tillitt D, Buckler D. Bioindicators of contaminant exposure in the Rio Grande river. Presented at the 8th United States Mexico Conference on Recreation, Parks, and Wildlife, Hermosillo, Sonora, Mexico February 26-March 1, 1997.

Ingersoll CG. Use of numerical sediment quality guidelines for the USEPA National Sediment Quality Survey Report. USEPA meeting January 23, 1997, Arlington, VA.

Ingersoll CG, Besser JM, Dwyer FW. Development and application of methods for assessing the bioavailability of contaminants associated with sediments: I. Toxicity and the sediment quality triad. U.S. Geological Survey Workshop on Expanding USGS Sediment Research Capabilities in Today's USGS February 4-7, 1997 in Reston, VA and Harper's Ferry, WV.

Chris Ingersoll, John Besser, and Jim Dwyer, Midwest Science Center (MSC), Biological Resources Division, U.S. Geological Survey, Columbia, Missouri

Ingersoll CG, Canfield TJ, Dwyer FJ, Ehrhardt EA, Haverland PS, Kemble NE, MacDonald DD, Field LJ, Long ER. Predictions of sediment toxicity using sediment quality guidelines (SQGs). Presented at the 7th ASTM Symposium on Environmental Toxicology and Risk Assessment, St. Louis, MO. April 7-10, 1997.

Kemble NE, Johnson BT, Ingersoll CG. Whole-sediment toxicity assessments with bioluminescent *in vitro* bioassays: An evaluation. Presented at the 7th ASTM Symposium on Environmental Toxicology and Risk Assessment, St. Louis, MO, April 7-10, 1997.

Ingersoll CG, Dwyer FJ, Haverland PS, Kemble KE, MacDonald DD, Field LJ, Long ER. Use of sediment quality guidelines (SQGs) to predict the potential for sediment toxicity. Presented at the 12th annual conference on contaminated soils at the University of Massachusetts at Amherst, October 20-23, 1997.

DeWitt TH, Ingersoll CG, Berry WJ, Chapman GA, Lamberson JO. Foundations of ecologically-based toxicity tests for marine environments. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Johnson BT, Kemble NE, Ingersoll CG. Natural whole sediment assessments with the Microtox acute toxicity test system. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Kemble, NE, Dwyer FJ, Ingersoll CG. Evaluation of remediated sediments from Waukegan Harbor, Illinois using the amphipod *Hyalella azteca.* Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Kemble NE, Dwyer FJ, Ingersoll CG, Burton GA, Rowland C, Mount DR, Norberg-King TJ, Sibley P, Hall T. Round-robin testing of a proposed standard method for assessing sublethal effects of sediment contamination on the amphipod *Hyalella azteca*. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Norberg-King TJ, Mount DR, Sibley PK, Benoit DA, Burton GA, Rowland C, Ingersoll CG, Dwyer FJ, Kemble NE, Hall T. Development of life-cycle methods for freshwater sediments: Inter-laboratory evaluation of sediment tests. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Rowland, C, Burton GA, Norberg-King TJ, Mount DR, Kemble NE, Dwyer FJ, Ingersoll CG, Hall T, Stahl L, Tuchman M. Interlaboratory evaluation of the USEPA freshwater sediment acute toxicity tests. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Sibley PK, Benoit DA, Norberg-King TJ, Mount DR, Burton GA, Rowland C, Kemble NE, Ingersoll CG, Dwyer FJ, Hall T. Round-robin testing of a proposed standard method for assessing sublethal effects of sediment contamination on the midge *Chironomus tentans*. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Canfield TJ, Dwyer FJ, Hardesty DK, Henke CE, Ingersoll CG, Mayer FL, Tomasovic MJ, Whites DW. Assessing contaminant sensitivity of endangered and threatened species. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Chapman D, Papoulias D, Huckins J, Ingersoll C, Johnson B, Jones S, Petty J, Tillitt D, Buckler D. Bioindicators of contaminant exposure in the Rio Grande river. Presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Kemble NE, Dwyer FJ, Ingersoll CG. Comparison of length and weight as sublethal endpoints in chronic whole-sediment exposures with the amphipod *Hyalella azteca*. Presented at the 8th ASTM symposium on Environmental Toxicology and Risk Assessment, Atlanta, GA, April 20-23, 1998.

Whites DW, Brunson EL, Dwyer FJ, Hardesty DK, Ingersoll CG, Zumwalt D, O'Donnell LJ. A procedure for assessing the effects of sediment slurries on spring-dwelling organisms. Presented at the 8th ASTM symposium on Environmental Toxicology and Risk Assessment, Atlanta, GA, April 20-23, 1998.

Canfield TJ, Ingersoll CG, Kemble NE. Using chironomid deformities as developmental indicators of sediment contamination in field- and laboratory-exposed organisms. Presented at the 8th ASTM symposium on Environmental Toxicology and Risk Assessment, Atlanta, GA, April 20-23, 1998.

Ingersoll CG. Short course for the North Atlantic Chapter of SETAC dealing with "Using a weight of evidence approach to sediment assessment," Boston University, Boston, MA, June 16, 1998.

Ingersoll CG. Sediment toxicity testing. A presentation at a short course for the U.S. EPA Great Lakes National Research Program Office on "Collection analysis, and interpretation of sediment quality data", Chicago, IL, November 3-4, 1998.

Canfield TJ, Ingersoll CG. A case study on assessing sediment quality in the Great Lakes using the sediment quality triad. A presentation at a short course for the U.S. EPA Great Lakes National Research Program Office on "Collection analysis, and interpretation of sediment quality data", Chicago, IL, November 3-4, 1998.

MacDonald DD, Ingersoll CG, Crane J. An ecosystem-based framework for assessing sediment quality in the Great Lakes basin. A presentation at a short course for the U.S. EPA Great Lakes National Research Program Office on "Collection analysis, and interpretation of sediment quality data", Chicago, IL, November 3-4, 1998.

Berry WJ, Field LJ, Long ER, Hansen DJ, Ingersoll CG, Keating FJ, MacDonald DD, Mount DR. The best of both worlds: Improving sediment assessment by combining the use of empirically-derived and equilibrium partitioning approaches. Presented at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

Kemble NE, Dwyer, FJ, Ingersoll CG, Schuerenberg HD. Relative sensitivity of endpoints measured in long-term water-only exposures with the amphipod *Hyalella azteca* and the midge *Chironomus tentans.* Presented at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

Canfield TJ, Dwyer FJ, Ingersoll CG, Kemble NE. Use of the sediment quality triad approach to evaluate benthic invertebrate effects with toxicity tests and sediment chemistry. Presented at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

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Besser JM, Brumbaugh WG, Ingersoll CG, May TW. An evaluation of the role of organic matter in controlling bioavailability and toxicity of cadmium and copper in sediments. Presented at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

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Smorong D, Lindskoog R, MacDonald DD, Ingersoll CG, Sparks D, Smith J. Application of GIS-based tools in sediment quality assessment. To be presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

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DeForest DK, Brix KV, Dwyer FJ, Mayer FL, Buckler DR, Ingersoll CG, Sappington L, Adams W.J. Chemical risks to threatened and endangered fish species at concentrations below water quality criteria: Is it feasible to ensure protection of individuals? To be presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Hayward JMR, Jones JR, Whites DW, Ingersoll CG, Mount DR, Ireland DS. Storage effects on the toxicity of DDE-spiked sediment. To be presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Hayward JMR, Jones JR, Whites DW, Ingersoll CG, Mount DR, Ireland DS. Role of sediment type when usings colonization trays to assess macroinvertebrate assemblages. To be presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Sessions chaired

Sediment methods standardization. ASTM subcommittee E47.03, spring and fall meeting, 1987-1995.

Methods standardization. ASTM Committee E47, spring and fall meeting, 1996-.

Assessment of contaminated sediment. Platform session at the 11th annual meeting of SETAC, Arlington, VA, November 13, 1990.

Contaminated sediment: Quality assurance. Platform session at the 12th annual meeting of SETAC, Seattle, WA, November 5, 1991.

Milltown Reservoir-Clark Fork River endangerment assessment. Platform session at the 13th annual meeting of SETAC, Cincinnati, OH, November 10, 1992.

Workshop entitled: Managing contaminated sediment: Measurement, interpretation, and remediation, College of Engineering, University of Wisconsin, Madison, WI, April 14, 1993.

Critical issues in sediment toxicology. Platform session at the 3rd ASTM Symposium on Environmental Toxicology and Risk Assessment, Atlanta, GA, April 27, 1993.

Scientific and regulatory issues associated with sediment contamination. Session at the American Chemical Society, San Diego, CA, March 13, 1994.

International approaches to sediment toxicity assessment. Session at the 4th ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal, Quebec, April 11-13, 1994.

Development and use of formulated sediment in toxicity testing. Session at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Interpretation issues in sediment assessments. Session at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

Bioaccumulation short course presented at the 6th ASTM symposium on Environmental Toxicology and Risk Assessment, Orlando, FL, April 15, 1996.

Sediment quality guideline short course presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Tribute to Rick Swartz and Dave Hanson presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Sediment toxicity testing. Session at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

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Harmonization of standard methods. Session at the 19th ASTM symposium on Environmental Toxicology and Risk Assessment, Toronto, Ontario, April 10-12, 2000.

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