Polychlorinated dibenzo-\(p\)-dioxins (CDDs) and dibenzofurans (CDFs) in largemouth bass taken from Eighteenmile Creek, Niagara County, NY on July 7-8, 1992.

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<th>Parameter</th>
<th>Concentration (pg/g wet weight in standard fillet)</th>
<th>Below Burt Dam</th>
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<td>1.2 1.2</td>
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\(^1\) Computed 2,3,7,8-TCDD toxic equivalents (TEQs) used the World Health Organization’s toxicity equivalency factors for mammals and humans (Van den Berg et al., 1998). DL = detection limit; these limits are indicated by less than (<) signs within the table.
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NOTES:
1. STANDARD FILLETS WERE ANALYZED.
2. ANALYZED BY METHOD HG1.102.
3. LAB NUMBERS ENDING IN -H2 ARE DUPLICATE ANALYSES.
4. NEGATIVE NUMBERS INDICATE NEGATIVE RESULTS.
5. STORED IN FILE C:TSK292HG.DBF
6. ANALYTICAL RESULT = -9.999 INDICATES SAMPLE WAS NOT ANALYZED.
## HALE CREEK FIELD STATION
### MERCURY ANALYSIS REPORT

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<th>TAG NUMBER</th>
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<th>COLLECT. DATE</th>
<th>LOCATION</th>
<th>AGE SEX</th>
<th>LENGTH (MM)</th>
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| SPECIES = RB |
| 1570-92-H | 9T3067 | RB | 920708 | 18 MILE CR > | 143 | 57 | 0.062 |
| 1571-92-H | COMP A | RB | 920700 | 18 MILE CR > | -999 | -999 | 0.153 |
| -----------|--------|------|----------|----------|---------|-------------|---------------|----------|-----|----------------|
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| MAXIMUM | 143 | 57 | 0.153 |
| AVERAGE | -428 | -471 | 0.108 |
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| LOCATION = 18 MILE CR > |
| SPECIES = CBC |
| 1572-92-H | COMP A | CHC | 920700 | 18 MILE CR > | -999 | -999 | 0.155 |
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| MAXIMUM | -999 | -999 | 0.155 |
| AVERAGE | -999 | -999 | 0.155 |
| NUMBER | 1 |

## NOTES:
1. STANDARD FILLETS WERE ANALYZED.
2. ANALYZED BY METHOD Hg1.102.
3. LAB NUMBERS ENDING IN "H2 ARE DUPLICATE ANALYSES.
4. NEGATIVE NUMBERS INDICATE NEGATIVE RESULTS.
5. STORED IN FILE C:TSK925HG.DBF
6. ANALYTICAL RESULT = -9.999 INDICATES SAMPLE WAS NOT ANALYZED.
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<th>WEIGHT</th>
<th>Hg RUN</th>
<th>SAMPLE REMARKS</th>
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**SPECIES = WYE**

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**MINIMUM**

| 493          | 1105       | 0.215  |       |                |

**MAXIMUM**

| 493          | 1105       | 0.215  |       |                |

**AVERAGE**

| 493          | 1105       | 0.215  |       |                |

**NUMBER** 1

**LOCATION = 18 MILE CR <**

**SPECIES = SMB**

| 1574-92-H     | COMP A     | SMB    | 920706        | 18 MILE CR < | -999    | -999   | 0.245  |       |                |
| 1575-92-H     | COMP B     | SMB    | 920706        | 18 MILE CR < | -999    | -999   | 0.246  |       |                |

**MINIMUM**

| -999         | -999       | 0.245  |       |                |

**MAXIMUM**

| -999         | -999       | 0.246  |       |                |

**AVERAGE**

| -999         | -999       | 0.246  |       |                |

**NUMBER** 2

**LOCATION = 18 MILE CR <**

**SPECIES = LMB**

| 1576-92-H     | 9T3007     | LMB    | 920706        | 18 MILE CR < | 337     | 624    | 0.259  |       |                |
| 1577-92-H     | 9T3037     | LMB    | 920707        | 18 MILE CR < | 339     | 595    | 0.332  | 1     | DUPLICATE     |
| 1577-92-H     | 9T3037     | LMB    | 920707        | 18 MILE CR < | 339     | 595    | 0.344  | 2     | DUPLICATE     |
| 1578-92-H     | 9T3038     | LMB    | 920707        | 18 MILE CR < | 341     | 709    | 0.384  |       |                |
| 1579-92-H     | 9T3039     | LMB    | 920707        | 18 MILE CR < | 359     | 680    | 0.511  |       |                |
| 1580-92-H     | 9T3042     | LMB    | 920707        | 18 MILE CR < | 353     | 737    | 0.368  |       |                |
| 1581-92-H     | 9T3045     | LMB    | 920707        | 18 MILE CR < | 336     | 709    | 0.517  |       |                |
| 1582-92-H     | COMP A     | LMB    | 920707        | 18 MILE CR < | -999    | -999   | 0.228  |       |                |
| 1583-92-H     | COMP B     | LMB    | 920707        | 18 MILE CR < | -999    | -999   | 0.180  |       |                |

**MINIMUM**

| -999         | -999       | 0.180  |       |                |

**MAXIMUM**

| 359          | 737        | 0.517  |       |                |

**AVERAGE**

| 45           | 295        | 0.347  |       |                |

**NUMBER** 9

**NOTES:**

1. **STANDARD FILLETS WERE ANALYZED.**
2. **ANALYZED BY METHOD Hg1.102.**
3. **LAB NUMBERS ENDING IN -H2 ARE DUPLICATE ANALYSES.**
4. **NEGATIVE NUMBERS INDICATE NEGATIVE RESULTS.**
5. **STORED IN FILE C:TSM235HG.DBF**
6. **ANALYTICAL RESULT = -9.999 INDICATES SAMPLE WAS NOT ANALYZED.**
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<th>Hg RUN</th>
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**MINIMUM**
-999 -999 0.254

**MAXIMUM**
-999 -999 0.311

**AVERAGE**
-999 -999 0.279

**NUMBER** 3

LOCATION = 18 MILE CR <

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**MINIMUM**
-999 -999 0.188

**MAXIMUM**
700 4935 0.242

**AVERAGE**
-433 979 0.208

**NUMBER** 3

**NOTES:**
1. STANDARD FILLETS WERE ANALYZED.
2. ANALYZED BY METHOD Hg1.102.
3. LAB NUMBERS ENDING IN -Hz ARE DUPLICATE ANALYSES.
4. NEGATIVE NUMBERS INDICATE NEGATIVE RESULTS.
5. STORED IN FILE C:TSW929H.GBF
6. ANALYTICAL RESULT = -9.999 INDICATES SAMPLE WAS NOT ANALYZED.
### 1992 Region 9 - Compositing Information

**RIBS - Buffalo River near Ohio Street in City of Buffalo**

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<th>Species</th>
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<th>Composite</th>
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<td>Brown bullhead</td>
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<td>9T3108, 12, 14</td>
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<td>Pumpkinseed</td>
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<td>9T3086, 89, 90, 94, 96, 98, 100, 102</td>
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**TSMP - Eighteenmile Creek**

- above Burt Dam

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<td>9T3059, 61-63, 81-85</td>
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<td>White sucker</td>
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<td>9T3023, 28</td>
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<td>9T3020-22, 24, 26, 27, 29</td>
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<td>Largemouth bass</td>
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<td>9T3070 - subsample for PCDD/PCDF</td>
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<td>Northern pike</td>
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<td>Walleye</td>
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- below Burt Dam

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<tr>
<td>Species</td>
<td>Sample Numbers</td>
<td>Ind.</td>
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<td>9T3018, 57</td>
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MEMORANDUM

March 18, 1994

TO:        John Spagnoli
           Larry Nelson
           Steve Mooradian
           Bruce Shupp
           Bob Lange
           Gerry LeTendre
           Gary Neuderfer
           Gerry Mikol
           Peter Mack
           Frank Estabrooks
           Fred Luckey

FROM:      Lawrence C. Skinner

RE:        Eighteenmile Creek

Eighteenmile Creek in Niagara County is an Area of Concern designated by the International Joint Commission. Sampling of fish for chemical residue analyses was requested for above and below the Burt Dam in 1992 due to the lack of a substantial body of recent data and because of a need for such data in support of the Remedial Action Plan process.

The attached summary table provides data for PCB and organochlorine pesticides. Mercury is yet to be analyzed but must be delayed due to on-going work on an USEPA grant project. Largemouth bass will be subsampled and sent to the NYS Department of Health Laboratory for analysis of dioxins and furans.

The data shows the following points:

Above Burt Dam:

1. Substantial concentrations of PCB are found in virtually all seven fish species sampled. PCB exceeds the US Food and Drug Administration (FDA) tolerance of 2.0 ppm and exceeds the Great Lakes Water Quality Objective for PCB residues in fish necessary for wildlife protection (i.e. 0.1 ppm).

2. Residues of DDT and metabolites are below the US Environmental Protection Agency action limit of 5.0 ppm and the Great Lakes objective of 1.0 ppm. However, the Newell et al (1987) criteria of 0.2 ppm for protection of piscivorous wildlife is exceeded by most fish species.
3. Mirex is present in channel catfish at levels approximating the detection limit. The presence of any mirex causes a violation of Great Lakes water quality objectives. Mirex presence is likely a result of aerial transport from Lake Ontario or the Niagara Frontier. (see mirex below Burt Dam).

4. The remaining chemical compounds do not exceed any applicable action limit, standard, criteria, or objective.

Below Burt Dam

5. The influence of Lake Ontario and salmonid migrations is apparent for downstream of Burt Dam. This is most evident in the presence of mirex, photomirex and chlordane compounds that are present in significantly greater concentrations in fish below Burt Dam compared to fish above Burt Dam.

6. As with fish upstream, PCB concentrations substantially exceed the two guidelines of concern. In the only species for which comparisons can be made, largemouth bass in the lower reach contain significantly greater PCB concentrations than fish in the upper reach on a wet weight basis. However, this finding is an artifact of differing lipid concentrations thus suggesting that the principal PCB source is upstream of Burt Dam.

7. DDT residues downstream of the Burt dam are consistent with those upstream.

8. Reported concentrations of mirex residues (mirex plus photomirex) exceed the EPA action limit of 0.1 ppm total mirex in four samples. These samples are:

- Brown bullhead 0.138 ppm (1 composite of 3 fish)
- Largemouth bass 0.114 and 0.174 ppm (2 individual fish)
- Smallmouth bass 0.131 (1 composite of 4 fish)

As noted previously, the presence of any mirex in fish causes a violation of the Great Lakes water quality objective.

9. The remaining chemical compounds do not exceed any applicable action limit, standard, criteria, or objective. However, the continued presence of chlordane compounds in quantities greater than detection limits will be troublesome to some people.

These data are being provided to the NYS Department of Health for evaluation for human health advisory purposes. Since
PCB exceeds the FDA tolerance in most fish species at both locations sampled, it is likely that health advisories will be forthcoming.

Signature
Section Head
Environmental Monitoring Section

Attachment
LCS: cb
cc: J. Colquhoun
R. Sloan
S. Jackling
T. Forti
LS8.MEM/CB26
<table>
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<tr>
<th>Location</th>
<th>Species</th>
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Table 1: Concentrations of Chemicals in Fish from Geyser Creek, Yuba County, July 1993 Collection.
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<td>Mean-Max</td>
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Table (cont.)

Notes: (1) Weight, wt. weight, in standard units; (2) PCBs, polychlorinated biphenyls; (3) DDT, dichlorodiphenyltrichloroethane; (4) HCH, hexachlorocyclohexane; (5) DDE, dichlorodiphenyldichloroethylene; (6) DDD, dichlorodiphenyldichloroethylene; (7) Lindane, gamma-HCH; (8) Aldrin; (9) Dieldrin; (10) Chlordane; (11) DCPD, dieldrin, chlordane; (12) Mirex, pentachlorophenol; (13) P,p'-DDT; (14) DDTs, DDEs, and DDDs; (15) HCHs, HCHs, and DCPDs.