2008 Study Plan for the Upper Great Miami River Watershed
(Mercer, Auglaize, Hardin, Darke, Miami, Shelby, Logan, and Champaign Counties, OH)

Figure 1. Study area for the Upper GMR Watershed, 2008.

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Introduction

As part of the five-year basin approach for NPDES permitting and the TMDL process, an intensive ambient assessment will be conducted during the 2008 field sampling season within the Upper Great Miami River (Upper GMR) Watershed. The study area will include all tributaries having a drainage area approximately 8.0 miles$^2$ or greater and the Upper GMR mainstem, beginning upstream from the Indian Lake WWTP (RM 158.90) and extending downstream to Sidney (RM 129.99) (Fig. 1). A total of 83 sampling stations will be completed in the Upper GMR basin study area. Two additional GMR sites will be sampled further downstream as part of a state-wide, large river nutrient study. Table 1 contains a list of all the NPDES outfall facilities within the study area. These facilities, particularly the three major dischargers (i.e., >1 mgd), will be targeted for evaluation of their potential aquatic influences. Ambient biology, macrohabitat quality, and water column chemistry will be collected from each site except eight, which will be sampled for water column chemistry, Datasonde®, or WWTP effluent chemistry only. Bacteriological (Pathogen) sampling will be conducted at 26 of the survey sites and datasondes will be deployed at 23 locations. Fish tissue samples will be collected at 18 mainstem sites from RM 156.4 (dst. Russells Point WWTP) to RM 80.1 (dst. Wolf Creek) (Table 3).

A geometric site selection methodology was employed to derive the initial station list. This method has proved efficient in generating an objective and comprehensive collection of potential sampling sites where an assessment of an entire catchment is desired. However, a negative and unavoidable consequence of the geometric selection method includes substantial data gaps in lower or larger stream segments. It was therefore necessary to directly target these higher order segments (or tributaries) to ensure an even distribution of sampling effort. Lastly, many of the areas that have been previously sampled and
evaluated by the Ohio EPA will be revisited for the purposes of trends assessment. A list of field sampling stations can be found in Table 2.

**Sampling Objectives**

1. Systematically sample and assess the principal drainage networks of the Upper GMR and its tributaries in support of the TMDL process,
2. Gather ambient environmental information (biological, chemical, and physical) from designated water bodies, to assess current Beneficial Uses (e.g., aquatic life, recreational, water supply), Table 2,
3. Collect fish tissue samples at selected stations as listed in Table 3,
4. Verify the appropriateness of existing, unverified, Beneficial Use Designations,
5. Establish baseline ambient biological conditions at selected reference stations to evaluate the effectiveness of future pollution abatement efforts, and
6. Document any changes in biological, chemical, and physical conditions of the study areas where historical information exists, thus expanding the Ohio EPA data base for statewide trends analysis (e.g., 305[b]).

**Total Maximum Daily Load (TMDL)**

Information collected as part of this survey will support TMDL development for the study areas. The objectives of the TMDL process are to estimate pollutant loads from the various sources within the basin, define or characterize allowable loads to support the various beneficial uses, and to allocate pollutant loads among different pollutant sources through appropriate controls (e.g., NPDES permitting, storm water management, 319 proposals, NPS controls or other abatement strategies).

The components of the TMDL process supported by this survey are primarily the identification of impaired waters, verification (and redesignating if necessary) of beneficial use designations, and sources of use impairment.
These data are necessary precursors to the development of effective control or abatement strategies.

**Aquatic Life Use Designations**

Many of the streams contained within the study area are designated WWH (Warm Water Habitat). The exceptions are Ninemile Creek (from the headwaters to Co. Rd. 14 (RM 4.2), MWH (Modified Warmwater Habitat)), McKee Creek (EWH (Exceptional Warmwater Habitat)), and Spring Creek (EWH). Based upon historical sampling on the Miami Erie Canal it is recommended that it be designated MWH. This will be the first time Rennick Creek will be sampled and assessed. The Ohio EPA is obligated to review, evaluate, or recommend (where appropriate) Beneficial Uses prior to basing any permitting actions on existing, unverified designations, or entirely unclassified water bodies. Much of the sampling effort for this survey is allocated to fulfill this obligation.

**Study Planning Team: Assigned DSW Staff**

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- Laurie Moore (Resource/401) 937-285-6457

*Please contact Ben Rich (cc: Jack Freda) for any updates to this study plan*
### Table 1: Facilities regulated by the National Pollutant Discharge elimination system which discharge to the Upper GMR watershed.

<table>
<thead>
<tr>
<th>Permit #</th>
<th>Type</th>
<th>Facility</th>
<th>Receiving Stream</th>
<th>RM</th>
<th>Lat</th>
<th>Long</th>
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<td>1IN00253001</td>
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<td>BP Bellefontaine Bulk Plant</td>
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<td>1PB00040001</td>
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<td>Clay Creek</td>
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<td>1PT00039001</td>
<td>Minor</td>
<td>Dorothy Love Retirement Center</td>
<td>Ernst Ditch</td>
<td>2.3</td>
<td>40.31806</td>
<td>-84.2072</td>
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<td>1PP00021001</td>
<td>Minor</td>
<td>ODOT Rest Area 0729</td>
<td>Flat Branch</td>
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<td>1PK00002001</td>
<td>Major</td>
<td>Indian Lake WPCD</td>
<td>Great Miami River</td>
<td>158.05</td>
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<td>-83.8945</td>
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<td>1PB00036001</td>
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<td>Quincy-DeGraff STP</td>
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<td>1PZ00007001</td>
<td>Minor</td>
<td>Super Stop Petroleum Anna OH</td>
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<td>1PT00090001</td>
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<td>Fairlawn Elementary School *</td>
<td>Little Indian Creek</td>
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<td>40.20657</td>
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<td>Botkins STP</td>
<td>Loramie Creek</td>
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<td>1PH00028001</td>
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<td>Loramie Creek</td>
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<td>-84.3691</td>
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<td>BP Amoco Oil Corp Bulk Plant Minster *</td>
<td>Miami Erie Canal</td>
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<td>40.38816</td>
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<td>2IHW0004001</td>
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<td>Dannon Company Inc</td>
<td>Miami Erie Canal</td>
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<td>40.38559</td>
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<td>2GN00007001</td>
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<td>Minster Machine Co</td>
<td>Miami Erie Canal</td>
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<td>Ninemile Creek</td>
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<td>1PD00000001</td>
<td>Major</td>
<td>Bellefontaine WWTP</td>
<td>Opossum Run (BJ Cr. Trib @ 5.80)</td>
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<td>1II00125001</td>
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<td>Cherokee Run Landfill *</td>
<td>Trib. to Cherokee Run (4.15)</td>
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<td>1PB0000222</td>
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<td>Waynesfield WWTP</td>
<td>Trib. to Muchinippi Creek (12.66)</td>
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<td>40.58843</td>
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<td>1PS00012001</td>
<td>Minor</td>
<td>Russia WWTP</td>
<td>Trib. to Ninemile Creek (5.02)</td>
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<td>-83.3918</td>
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<td>1PG00021002</td>
<td>Minor</td>
<td>Shelby Co Sewer Dist Millcreek Subdiv STP</td>
<td>Trib. to Ninemile Creek (3.82)</td>
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<td>40.26833</td>
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<td>1PG00021001</td>
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<td>Shelby Co Sewer Dist Millcreek Subdiv STP</td>
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<td>1PV00115001</td>
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<td>Northbrook MHP</td>
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<td>Minor</td>
<td>Shelly Materials Inc Belle Center Quarry</td>
<td>Trib. to S. Fk. GMR (5.27)</td>
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<td>1PR0010001</td>
<td>Minor</td>
<td>Camp Wesley</td>
<td>Trib. to S. Fk. GMR (5.27)</td>
<td>Nr. 4.2</td>
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<td>Hardin Elementary School</td>
<td>Trib. to Turtle Creek (5.85)</td>
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<td>1IJ00046001</td>
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<td>Miami River Stone Co - Lehman Rd</td>
<td>Turtle Creek</td>
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<td>1IN00143001</td>
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<td>Honda of America Mfg Inc *</td>
<td>Unnamed stream</td>
<td>0.5</td>
<td>40.37861</td>
<td>-84.185</td>
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## Table 2. Upper GMR sample locations for the 2008 sampling season.

### 2008 Upper GMR Sampling Sites

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<tr>
<th>RM</th>
<th>Location Description</th>
<th>Mi²</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Sampling</th>
<th>Storet #</th>
<th>Type</th>
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<td>158.90**</td>
<td>Dst. Cher. Manns, ust.WPCD</td>
<td>122</td>
<td>40.463100</td>
<td>-83.887500</td>
<td>F, M, C, D, P, CO, S</td>
<td>H01W13</td>
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<td>158.05</td>
<td>Indian Lake WPCD</td>
<td>NA</td>
<td>40.45613</td>
<td>-83.8955</td>
<td>E, P, CO</td>
<td>H01W14</td>
<td>Effluent</td>
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<td>156.36</td>
<td>St. Rt. 274</td>
<td>133</td>
<td>40.439500</td>
<td>-83.910300</td>
<td>D</td>
<td>610100</td>
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<td>153.45</td>
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<td>247</td>
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<td>-83.9242</td>
<td>F, M</td>
<td>H01S03</td>
<td>H</td>
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<td>146.19</td>
<td>St. Rt. 235</td>
<td>296</td>
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<td><strong>Chem. at Great Miami River RM 158.2</strong></td>
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<td>143.20</td>
<td>Dst. Quincy Dam @ St. Rt. 235</td>
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<td>F, M, C, P, CO, S</td>
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<td>429</td>
<td>40.3353</td>
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<td>610020</td>
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<td>110.07</td>
<td>Eldean Road (Covered Bridge)</td>
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<td>40.0778</td>
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<td>F, M, C, D, Chlorophyll</td>
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<td>98.5</td>
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<td>39.9533</td>
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<tr>
<td>8.00</td>
<td>St. Rt. 638</td>
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<td>-83.742800</td>
<td>f, M, C, S</td>
<td>H01P01</td>
<td>RR</td>
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<td>7.23</td>
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<td>f, m, C</td>
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<td>5.80</td>
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<td>F, M, C</td>
<td>H01S12</td>
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<td><strong>Trib. to S. Fk. Great Miami R. (7.24) (14-800-002)</strong></td>
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<td>f, M, C, S</td>
<td>H01S15</td>
<td>MR</td>
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<td><strong>Liggit Ditch (14-800-003)</strong></td>
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<td>10.70</td>
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<td>F, M, C, S</td>
<td>H01P07</td>
<td>MR</td>
</tr>
<tr>
<td>0.32</td>
<td>Co. Rd. 60, @ mouth</td>
<td>88.0</td>
<td>40.417200</td>
<td>-83.925300</td>
<td>C, D</td>
<td>H01P08</td>
<td>Sent.</td>
</tr>
<tr>
<td><strong>Trib. to Muchinippi Creek (12.66) (14-700-001)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.32</td>
<td>St. Rt. 196</td>
<td>6.8</td>
<td>40.560700</td>
<td>-83.952500</td>
<td>f, m, C, P, CO, S</td>
<td>H01K17</td>
<td>G</td>
</tr>
<tr>
<td>Little Muchinippi Creek (14-703-000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.05 Wones Rd. 9.3 40.467900 -84.068900 f, m, C H01K13 G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.62 Gravel road near mouth 35.2 40.484200 -83.985100 F,M, C, D H01K12 G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Jackson Center Creek (14-705-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.90 Upst. 274 &amp; Jackson Center 1.1 40.439600 -84.052000 m,C H01K14 Ambient</td>
</tr>
<tr>
<td>1.80 Lock Two Rd, dst. Jck.Ctr. WWTP 3.0 40.454000 -84.044900 f, m, C H01P10 H</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Willow Creek (14-706-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.70 Dst. Wrestle Creek Rd. &amp; dst. trib. 8.1 40.541400 -84.030200 f, m, C H01K16 G</td>
</tr>
<tr>
<td>0.44 Idle Rd. 15.1 40.513400 -83.990200 f, m, C H01K15 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trib. to Great Miami R. (157.34) (14-001-021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.07 Via dirt path (?) off SR 235 7.6 40.454000 -83.967000 f, m, C H01W16 G</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Rennick Creek (14-001-022)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.34 St. Rt. 235 10.3 40.427400 -80.906900 f, m, C H01K02 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bokengehalas Creek (14-076-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.10 Twp. Rd. 31, ust Blue Jacket Cr. 21.0 40.370000 -83.847500 F,M, C H01S23 G, H</td>
</tr>
<tr>
<td>4.61 Twp. Rd. 209 36.3 40.347200 -83.891100 F,M, C H01P15 G, H</td>
</tr>
<tr>
<td>1.13 Miami St. in DeGraff 41.0 40.311606 -83.912129 F, M, C, D, P, CO, S H01K01 Sent.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blue Jacket Creek (14-077-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.31 Twp. Rd. 216 at Bellefontaine 3.00 40.350300 -83.7444 f,m,c H01P11 H</td>
</tr>
<tr>
<td>5.5 Co. Rd. 11, dst Bellfont. WWTP 7.80 40.348956 83.787544 f, m, C, D, P, CO, S H01P12 G, H</td>
</tr>
<tr>
<td>0.72 Twp. Rd. 31 13.7 40.363500 -83.850200 f, m, C H01P14 G, H</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opossum Run (14-077-001) (14-085 in ECOS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 Bellefontaine WWTP NA 40.35316 -83.7773 E, P, CO H01W07 Effluent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rum Creek (14-078-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.63 Wildermuth Rd. 8.2 40.402600 -84.025700 f, m, C H01K09 G</td>
</tr>
<tr>
<td>6.58 Meranda Rd. 15.3 40.390600 -83.999200 f, m, C H01K08 G</td>
</tr>
<tr>
<td>0.79 Co. Rd. 58 27.2 40.376600 -83.934600 F,M, C H01K07 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brandywine Creek (14-083-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.58 Notestine Rd. (upper crossing) 8.8 40.409900 -83.931800 f, m, C H01K10 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cherokee Mans Run (14-084-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.56 St. Rt. 117 8.5 40.414300 -83.801100 f, m, C H01K11 G</td>
</tr>
<tr>
<td>3.50 U.S. Rt. 33 14.6 40.45153 -83.8352 f, M, C, S H99Q04 G, RR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plum Creek (14-063-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 Meranda Rd. 7.8 40.380800 -84.121600 f, m, C H02K11 G</td>
</tr>
<tr>
<td>5.22 Fort Loramie-Port Jefferson Rd 14.7 40.346000 -84.163400 f, m, C H02K10 G</td>
</tr>
<tr>
<td>0.13 Canal Feeder Rd. 29.0 40.309500 -84.132900 F,M, C H02K09 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indian Creek (14-069-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 At mouth (access?) 15.9 40.318700 -84.015200 f, m, C H01K03 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stony Creek (14-072-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.45 Dst. St. Rt. 508 and trib. 35.4 40.287500 -83.898900 F,M, C H01S05 G, H</td>
</tr>
<tr>
<td>1.58 Twp. Rd. 65A 59.1 40.290800 -83.910000 F,M, C, D 600010 G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lee Creek (14-073-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.35 Friend Rd. 9.5 40.268300 -83.926700 f, m, C H01K04 G</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Graves Creek (14-074-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.48 Twp. Rd. 295 10.9 40.273600 -83.893200 f, m, C H01K05 G</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>McKees Creek (14-075-000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.50 Co. Rd. 1 (Ludlow Rd) 3.00 40.334200 -83.744400 f, m, C 201069 H</td>
</tr>
<tr>
<td>5.94 Twp. Rd. 32 8.7 40.299300 -83.777300 f, m, C H01K06 G</td>
</tr>
</tbody>
</table>
### Upper Great Miami River Watershed Study Plan 2008

**McKees Creek (continued)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.52</td>
<td>Co. Rd. 31</td>
<td>17.7</td>
<td>-83.85600</td>
<td>f, M, C, S</td>
<td>H01S06 G, RR</td>
</tr>
</tbody>
</table>

**Loramie Creek (14-600-000)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>36.84</td>
<td>Botkins Rd.</td>
<td>6.8</td>
<td>40.468100</td>
<td>f, m, C, P</td>
<td>H02S28 G, H</td>
</tr>
<tr>
<td>34.96</td>
<td>Lock Two Rd.</td>
<td>15.7</td>
<td>40.453100</td>
<td>f, m, C, P, CO, S</td>
<td>H02W02 G, H</td>
</tr>
<tr>
<td>30.42</td>
<td>Hardin-Wapakoneta Rd.</td>
<td>35.0</td>
<td>40.415000</td>
<td>F, M, C, D, P, CO, S</td>
<td>H02S27 G, H</td>
</tr>
<tr>
<td>22.10</td>
<td>@ Loramie Lake Dam</td>
<td>78.0</td>
<td>40.357500</td>
<td>F, M, C, P, D</td>
<td>H02S06 H</td>
</tr>
<tr>
<td>21.10</td>
<td>Lake Loramie SSD WWTP</td>
<td>NA</td>
<td>40.36198</td>
<td>E, P, CO</td>
<td>H02E01 Effluent</td>
</tr>
<tr>
<td>20.70</td>
<td>St. Rt. 66</td>
<td>82.0</td>
<td>40.359100</td>
<td>F, M, C, D</td>
<td>H02W44 G, H</td>
</tr>
</tbody>
</table>

**Miami-Erie Canal (14-600-002)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8</td>
<td>Minster WWTP</td>
<td>NA</td>
<td>40.38207</td>
<td>E, P, CO</td>
<td>H02E02 Effluent</td>
</tr>
<tr>
<td>0.10</td>
<td>Near mouth, upst. old lock</td>
<td>4.3</td>
<td>40.359900</td>
<td>f, M, C, S, D, P, CO</td>
<td>H02S14 MR</td>
</tr>
</tbody>
</table>

**Mile Creek (14-609-000)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.80</td>
<td>Goettemoeller Rd.</td>
<td>9.7</td>
<td>40.361100</td>
<td>f, m, C</td>
<td>H02K07 G</td>
</tr>
<tr>
<td>8.74</td>
<td>Clune Rd.</td>
<td>18.5</td>
<td>40.358300</td>
<td>f, m, C</td>
<td>H02K06 G</td>
</tr>
<tr>
<td>5.97</td>
<td>Kremer Rd.</td>
<td>34.7</td>
<td>40.358200</td>
<td>F, M, C</td>
<td>H02K05 G</td>
</tr>
<tr>
<td>0.50</td>
<td>St. Rt. 705</td>
<td>62.3</td>
<td>40.349200</td>
<td>F, M, C, D, P, CO, S</td>
<td>H02P04 G, Sent.</td>
</tr>
</tbody>
</table>

**Spring Creek (14-609-001)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.37</td>
<td>Baumer-Brandewie Rd.</td>
<td>8.8</td>
<td>40.3488</td>
<td>f, m, C</td>
<td>H02K08 G</td>
</tr>
</tbody>
</table>

**Loramie Creek (14-600-000)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.51</td>
<td>Cardo-Roman Rd</td>
<td>152</td>
<td>40.306900</td>
<td>C, D, P, CO, S</td>
<td>H02S24 H, Sent.</td>
</tr>
<tr>
<td>14.80</td>
<td>At Newport, SR 66</td>
<td>158</td>
<td>40.293100</td>
<td>F, M, C</td>
<td>201075 H</td>
</tr>
<tr>
<td>7.50</td>
<td>Loramie Washington Rd</td>
<td>205</td>
<td>40.261900</td>
<td>F, M, C</td>
<td>H02S23 H</td>
</tr>
</tbody>
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**Turtle Creek (14-603-000)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.42</td>
<td>Mason Rd.</td>
<td>8.4</td>
<td>40.330000</td>
<td>f, m, C</td>
<td>H02K02 G</td>
</tr>
<tr>
<td>5.66</td>
<td>Russell Rd.</td>
<td>17.3</td>
<td>40.300900</td>
<td>f, m, C</td>
<td>H02K01 G</td>
</tr>
<tr>
<td>0.43</td>
<td>Stangel Rd.</td>
<td>35.9</td>
<td>40.235800</td>
<td>F, M, C</td>
<td>H02P10 G</td>
</tr>
</tbody>
</table>

**Ninemile Creek (14-606-000)**

<table>
<thead>
<tr>
<th>Distance (mi)</th>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Field Code</th>
<th>Method Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.38</td>
<td>Miller Rd.</td>
<td>3.0</td>
<td>40.237500</td>
<td>f, M, C, S</td>
<td>H02S13 RR</td>
</tr>
<tr>
<td>4.18</td>
<td>Range Line Rd.</td>
<td>11.5</td>
<td>40.236400</td>
<td>f, M, C, S</td>
<td>H02S10 G, RR</td>
</tr>
<tr>
<td>0.23</td>
<td>Roeth Rd.</td>
<td>26.6</td>
<td>40.254200</td>
<td>F, M, C</td>
<td>H02K03 G</td>
</tr>
<tr>
<td>0.30</td>
<td>Gravel road along canal</td>
<td>10.0</td>
<td>40.280600</td>
<td>f, m, C</td>
<td>H02K04 G</td>
</tr>
</tbody>
</table>

---

**Sampling Methods Key**

- **F** = Fish Two Pass
- **f** = Fish One Pass
- **M** = Macrinovertebrate quantitative
- **m** = Macrinovertebrate qualitative
- **D** = Datasonde®
- **C** = Water Chemistry
- **CO** = Water Chemistry Organics
- **E** = WWTP Effluent Chemistry
- **S** = Sediment Chemistry
- **P** = Pathogen

**Site Type**

- **G** = Geo., **H** = Historical, **RR**, **MR**, = Reg. & Mod. Ref. Sites, **Sent.** = Sentinel Site, **N** = Nutrient
Table 3. Fish tissue sampling locations for the Upper GMR Watershed, 2008.

<table>
<thead>
<tr>
<th>Stream Name</th>
<th>River Mile</th>
<th>Landmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Miami R.</td>
<td>156.4</td>
<td>dst. Russells Point WWTP</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>148.4</td>
<td>near Logansville - dst. SR 47</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>143.8</td>
<td>ust. Quincy Dam</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>134.9</td>
<td>near Port Jefferson</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>117.5</td>
<td>at SR 66</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>114.1</td>
<td>at Piqua Dam</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>110</td>
<td>dst. Piqua - Eldean Rd.</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>98.9</td>
<td>at Tipp City - dst. SR 571</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>95.6</td>
<td>dst. Ross Rd.</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>92.8</td>
<td>ust. Taylorsville Dam</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>91.1</td>
<td>ust. Little York Rd.</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>90.1</td>
<td>Rip Rap Rd., ust. Powell Rd.</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>87</td>
<td>at Needmore Rd., dst. Powell Rd. Landfill</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>84.6</td>
<td>near Chessie RR</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>81.8</td>
<td>at Dayton - between Stillwater R and Mad River</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>81.3</td>
<td>dst. Mad R./Riverside dr.</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>80.4</td>
<td>ust Wolf Creek</td>
</tr>
<tr>
<td>Great Miami R.</td>
<td>80.1</td>
<td>dst. Wolf Creek</td>
</tr>
</tbody>
</table>