

NOTICE TO USERS

Ohio EPA incorporated biological criteria into the Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1) regulations in February 1990 (effective May 1990). These criteria consist of numeric values for the Index of Biotic Integrity (IBI) and Modified Index of Well-Being (MIwb), both of which are based on fish assemblage data, and the Invertebrate Community Index (ICI), which is based on macroinvertebrate assemblage data. Criteria for each index are specified for each of Ohio's five ecoregions (as described by Omernik and Gallant 1988), and are further organized by organism group, index, site type, and aquatic life use designation. These criteria, along with the existing chemical and whole effluent toxicity evaluation methods and criteria, figure prominently in the monitoring and assessment of Ohio's surface water resources.

The following documents support the use of biological criteria by outlining the rationale for using biological information, the methods by which the biocriteria were derived and calculated, the field methods by which sampling must be conducted, and the process for evaluating results:

Ohio Environmental Protection Agency. 1987a. Biological criteria for the protection of aquatic life: Volume I. The role of biological data in water quality assessment. Div. Water Qual. Monit. & Assess., Surface Water Section, Columbus, Ohio.

____. 1987b. Biological criteria for the protection of aquatic life: Volume II. Users manual for biological field assessment of Ohio surface waters. Div. Water Qual. Monit. & Assess., Surface Water Section, Columbus, Ohio.

____. 1989a. Addendum to Biological criteria for the protection of aquatic life: Volume II. Users manual for biological field assessment of Ohio surface waters. Div. Water Qual. Plan. & Assess., Ecological Assessment Section, Columbus, Ohio.

____. 1989b. Biological criteria for the protection of aquatic life: Volume III. Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities. Div. Water Quality Plan. & Assess., Ecol. Assess. Sect., Columbus, Ohio.

____. 1990. The use of biological criteria in the Ohio EPA surface water monitoring and assessment program. Div. Water Qual. Plan. & Assess., Ecol. Assess. Sect., Columbus, Ohio.

Rankin, E.T. 1989. The qualitative habitat evaluation index (QHEI): rationale, methods, and application. Div. Water Qual. Plan. & Assess., Ecol. Assess. Sect., Columbus, Ohio.

Since the publication of the preceding guidance documents, the following new publications by the Ohio EPA have become available. These publications should also be consulted as they represent the latest information and analyses used by the Ohio EPA to implement the biological criteria.

DeShon, J.E. 1995. Development and application of the invertebrate community index (ICI), pp. 217-243. in W.S. Davis and T. Simon (eds.). *Biological Assessment and Criteria: Tools for Risk-based Planning and Decision Making*. Lewis Publishers, Boca Raton, FL.

Ohio Environmental Protection Agency. 2006. Methods for assessing habitat in flowing waters: Using the Qualitative Habitat Evaluation Index (QHEI). Ohio EPA Tech. Bull. EAS/2006-06-1. Revised by the Midwest Biodiversity Institute for Div. of Surface Water, Ecol. Assess. Sect., Groveport, Ohio.

- _____. 2014a. 2014 Updates to Biological criteria for the protection of aquatic life: Volume II and Volume II Addendum. Users manual for biological field assessment of Ohio surface waters. Div. of Surface Water, Ecol. Assess. Sect., Columbus, Ohio.
- _____. 2014b. 2014 Updates to Biological criteria for the protection of aquatic life: Volume III. Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities. Div. of Surface Water, Ecol. Assess. Sect., Columbus, Ohio.
- Rankin, E. T. 1995. The use of habitat assessments in water resource management programs, pp. 181-208. in W. Davis and T. Simon (eds.). *Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making*. Lewis Publishers, Boca Raton, FL.
- Yoder, C.O. 1995. Policy issues and management applications for biological criteria, pp. 327-344. in W. Davis and T. Simon (eds.). *Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making*. Lewis Publishers, Boca Raton, FL.
- Yoder, C.O. and E.T. Rankin. 1995a. Biological criteria program development and implementation in Ohio, pp. 109-144. in W. Davis and T. Simon (eds.). *Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making*. Lewis Publishers, Boca Raton, FL.
- Yoder, C.O. and E.T. Rankin. 1995b. Biological response signatures and the area of degradation value: new tools for interpreting multimetric data, pp. 263-286. in W. Davis and T. Simon (eds.). *Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making*. Lewis Publishers, Boca Raton, FL.
- Yoder, C.O. and E.T. Rankin. 1995c. The role of biological criteria in water quality monitoring, assessment, and regulation. *Environmental Regulation in Ohio: How to Cope With the Regulatory Jungle*. Inst. of Business Law, Santa Monica, CA. 54 pp.
- Yoder, C.O. and M.A. Smith. 1999. Using fish assemblages in a State biological assessment and criteria program: essential concepts and considerations, pp. 17-63. in T. Simon (ed.). *Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities*. CRC Press, Boca Raton, FL.

These documents and this report may be obtained by contacting:

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FOREWORD

What is a Biological and Water Quality Survey?

A biological and water quality survey, or “biosurvey”, is an interdisciplinary monitoring effort coordinated on a waterbody specific or watershed scale. This effort may involve a relatively simple setting focusing on one or two small streams, one or two principal stressors, and a handful of sampling sites or a much more complex effort including entire drainage basins, multiple and overlapping stressors, and tens of sites. Each year the Ohio EPA conducts biosurveys in 4-5 watersheds study areas with an aggregate total of 250-300 sampling sites.

The Ohio EPA employs biological, chemical, and physical monitoring and assessment techniques in biosurveys in order to meet three major objectives: 1) determine the extent to which use designations assigned in the Ohio Water Quality Standards (WQS) are either attained or not attained; 2) determine if use designations assigned to a given water body are appropriate and attainable; and 3) determine if any changes in key ambient biological, chemical, or physical indicators have taken place over time, particularly before and after the implementation of point source pollution controls or best management practices. The data gathered by a biosurvey is processed, evaluated, and synthesized in a biological and water quality report. Each biological and water quality study contains a summary of major findings and recommendations for revisions to WQS, future monitoring needs, or other actions which may be needed to resolve existing impairment of designated uses. While the principal focus of a biosurvey is on the status of aquatic life uses, the status of other uses such as recreation and water supply, as well as human health concerns are also addressed.

The findings and conclusions of a biological and water quality study may factor into regulatory actions taken by the Ohio EPA (*e.g.*, NPDES permits, Director’s Orders, the Ohio Water Quality Standards [OAC 3745-1], Water Quality Permit Support Documents [WQPSDs]), and are eventually incorporated into State Water Quality Management Plans, the Ohio Nonpoint Source Assessment, and the biennial Integrated Water Quality Monitoring and Assessment Report (305[b] and 303[d]).

Hierarchy of Indicators

A carefully conceived ambient monitoring approach, using cost-effective indicators consisting of ecological, chemical, and toxicological measures, can ensure that all relevant pollution sources are judged objectively on the basis of environmental results. Ohio EPA relies on a tiered approach in attempting to link the results of administrative activities with true environmental measures. This integrated approach includes a hierarchical continuum from administrative to true environmental indicators (Figure 1). The six “levels” of indicators include: 1) actions taken by regulatory agencies (permitting, enforcement, grants); 2) responses by the regulated community (treatment works, pollution prevention); 3) changes in discharged quantities (pollutant loadings); 4) changes in ambient conditions (water quality, habitat); 5) changes in uptake and/or assimilation (tissue contamination, biomarkers, wasteload allocation); and, 6) changes in health, ecology, or other effects (ecological condition, pathogens). The results of administrative activities (levels 1 and 2) can be linked to efforts to improve water quality (levels 3, 4, and 5) which should translate into the environmental “results” (level 6). Thus, the aggregate effect of billions of dollars spent on water pollution control since the early 1970s can now be determined with quantifiable measures of environmental condition.

Superimposed on this hierarchy is the concept of stressor, exposure, and response indicators. *Stressor* indicators generally include activities which have the potential to degrade the aquatic environment such as pollutant discharges (permitted and unpermitted), land use effects, and habitat modifications. *Exposure* indicators are those which measure the effects of stressors and can include whole effluent toxicity tests, tissue residues, and biomarkers, each of which provides evidence of biological exposure to

a stressor or bioaccumulative agent. *Response* indicators are generally composite measures of the cumulative effects of stress and exposure and include the more direct measures of community and population response that are represented here by the biological indices which comprise Ohio's biological criteria. Other response indicators could include target assemblages, *i.e.*, rare, threatened, endangered, special status, and declining species or bacterial levels which serve as surrogates for the recreational uses. These indicators represent the essential technical elements for watershed-based management approaches. The key, however, is to use the different indicators *within* the roles which are most appropriate for each.

Describing the causes and sources associated with observed impairments revealed by the biological criteria and linking this with pollution sources involves an interpretation of multiple lines of evidence including water chemistry data, sediment data, habitat data, effluent data, biomonitoring results, land use data, and biological response signatures within the biological data itself. Thus the assignment of principal causes and sources of impairment represents the association of impairments (defined by response indicators) with stressor and exposure indicators. The principal reporting venue for this process on a watershed or subbasin scale is a biological and water quality report. These reports then provide the foundation for aggregated assessments such as the Integrated Report, the Ohio Nonpoint Source Assessment, and other technical bulletins.

Ohio Water Quality Standards: Designated Aquatic Life Use

The Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1) consist of designated uses and chemical, physical, and biological criteria designed to represent measurable properties of the environment that are consistent with the goals specified by each use designation. Use designations consist of two broad groups, aquatic life and non-aquatic life uses. In applications of the Ohio WQS to the management of water resource issues in Ohio's rivers and streams, the aquatic life use criteria frequently result in the most stringent protection and restoration requirements, hence their emphasis in biological and water quality reports. Also, an emphasis on protecting for aquatic life generally results in water quality suitable for all uses. The five different aquatic life uses currently defined in the Ohio WQS are described as follows:

- 1) *Warmwater Habitat (WWH)* - this use designation defines the "typical" warmwater assemblage of aquatic organisms for Ohio rivers and streams; *this use represents the principal restoration target for the majority of water resource management efforts in Ohio.*
- 2) *Exceptional Warmwater Habitat (EWH)* - this use designation is reserved for waters which support "unusual and exceptional" assemblages of aquatic organisms which are characterized by a high diversity of species, particularly those which are highly intolerant and/or rare, threatened, endangered, or special status (*i.e.*, declining species); *this designation represents a protection goal for water resource management efforts dealing with Ohio's best water resources.*
- 3) *Coldwater Habitat (CWH)* - this use is intended for waters which support assemblages of coldwater organisms and/or those which are stocked with salmonids with the intent of providing a put-and-take fishery on a year round basis which is further sanctioned by the Ohio DNR, Division of Wildlife; this use should not be confused with the Seasonal Salmonid Habitat (SSH) use which applies to the Lake Erie tributaries which support periodic "runs" of salmonids during the spring, summer, and/or fall.
- 4) *Modified Warmwater Habitat (MWH)* - this use applies to streams and rivers which have been subjected to extensive, maintained, and essentially permanent hydromodifications such that the biocriteria for the WWH use are not attainable *and where the activities have been sanctioned by state or federal law*; the representative aquatic assemblages are generally composed of species which are tolerant to low dissolved oxygen, silt, nutrient enrichment, and poor quality habitat.
- 5) *Limited Resource Water (LRW)* - this use applies to small streams (usually <3 mi² drainage area) and other water courses which have been irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported; such waterways generally include small streams in extensively urbanized areas, those which lie in watersheds with extensive drainage modifications, those which completely lack water on a recurring annual basis (*i.e.*, true ephemeral streams), or other irretrievably altered waterways.

Chemical, physical, and/or biological criteria are generally assigned to each use designation in accordance with the broad goals defined by each. As such the system of use designations employed in the Ohio WQS constitutes a "tiered" approach in that varying and graduated levels of protection are provided by each. This hierarchy is especially apparent for parameters such as dissolved oxygen, ammonia-nitrogen, temperature, and the biological criteria. For other parameters such as heavy metals,

the technology to construct an equally graduated set of criteria has been lacking, thus the same WQS criteria may apply to two or three different use designations.

Ohio Water Quality Standards: Non-Aquatic Life Uses

In addition to assessing the appropriateness and status of aquatic life uses, each biological and water quality survey also addresses non-aquatic life uses such as recreation, water supply, and human health concerns as appropriate. The recreation uses most applicable to rivers and streams are the Primary Contact Recreation (PCR) and Secondary Contact Recreation (SCR) uses. The criterion for designating the PCR use can be having a water depth of at least one meter over an area of at least 100 square feet or, lacking this, where frequent human contact is a reasonable expectation. If a water body does not meet either criterion, the SCR use applies. The attainment status of PCR and SCR is determined using bacterial indicators (*e.g.*, fecal coliform, *E. coli*) and the criteria for each are specified in the Ohio WQS.

Attainment of recreation uses are evaluated based on monitored bacteria levels. The Ohio Water Quality Standards state that all waters should be free from any public health nuisance associated with raw or poorly treated sewage (Administrative Code 3745-1-04, Part F). Additional criteria (Administrative Code 3745-1-07) apply to waters that are designated as suitable for full body contact such as swimming (PCR) or for partial body contact such as wading (SCR). These standards were developed to protect human health, because even though fecal coliform bacteria are relatively harmless in most cases, their presence indicates that the water has been contaminated with fecal matter.

Water supply uses include Public Water Supply (PWS), Agricultural Water Supply (AWS), and Industrial Water Supply (IWS). Public Water Supplies are simply defined as segments within 500 yards of a potable water supply or food processing industry intake. The Agricultural Water Supply (AWS) and Industrial Water Supply (IWS) use designations generally apply to all waters unless it can be clearly shown that they are not applicable. An example of this would be an urban area where livestock watering or pasturing does not take place, thus the AWS use would not apply. Chemical criteria are specified in the Ohio WQS for each use and attainment status is based primarily on chemical-specific indicators. Human health concerns are additionally addressed with fish tissue data, but any consumption advisories are issued by the Ohio Department of Health.

MECHANISMS FOR WATER QUALITY IMPAIRMENT

The following paragraphs are provided to present the varied causes of impairment that affect the resource quality of lotic systems in Ohio. While the various perturbations are presented under separate headings, it is important to remember that they are often interrelated and cumulative in terms of the detrimental impact that can result.

Habitat and Flow Alterations

Habitat alteration, such as channelization, negatively impacts biological communities directly by limiting the complexity of living spaces available to aquatic organisms. Consequently, fish and macroinvertebrate communities are not as diverse. Indirect impacts include the removal of riparian trees and field tiling to facilitate drainage. Following a rain event, most of the water is quickly removed from tilled fields rather than filtering through the soil, recharging ground water, and reaching the stream at a lower volume and more sustained rate. As a result, small streams more frequently go dry or become intermittent. Urbanization impacts include removal of riparian trees, influx of storm water runoff, straightening and piping of stream channels, and riparian vegetation removal.

Tree shade is important because it limits the energy input from the sun, moderates water temperature, and limits evaporation. Removal of the tree canopy further degrades conditions because it eliminates an important source of coarse organic matter essential for a balanced ecosystem. Riparian vegetation aids in nutrient uptake, may decrease runoff rate into streams, and helps keep soil in place. Erosion impacts channelized streams more severely due to the lack of a riparian buffer zone to slow runoff, trap sediment and stabilize banks. Additionally, deep trapezoidal channels lack a functioning flood plain and therefore cannot expel sediment as would occur during flood events along natural watercourses. The confinement of flow within an artificially deep channel accelerates the movement of water downstream, exacerbating flooding of neighboring properties.

The lack of water movement under low flow conditions can exacerbate impacts from organic loading and nutrient enrichment by limiting re-aeration of the stream. The amount of oxygen soluble in water decreases as temperature increases. This is one reason why tree shade is so important. The two main sources of oxygen in water are diffusion from the atmosphere and plant photosynthesis. Turbulence at the water surface is critical because it increases surface area and promotes diffusion, but channelization eliminates turbulence produced by riffles, meanders, and debris snags. Plant photosynthesis produces oxygen, but at night, respiration reverses the process and consumes oxygen. Conversely, oxygen concentrations can become supersaturated during the day, due to abnormally high amounts of photosynthesis, causing gas bubble stress to both fish and invertebrate communities. Oxygen is also used by bacteria that decay dead organic matter. Nutrient enrichment can promote the growth of nuisance algae that subsequently dies and serves as food for bacteria. Under these conditions, oxygen can be depleted unless it is replenished from the air.

Siltation and Sedimentation

Whenever the natural flow regime is altered to facilitate drainage, increased amounts of sediment are likely to enter streams either by overland transport or increased bank erosion. The removal of wooded riparian areas furthers the erosion process. Channelization keeps all but the highest flow events confined within the artificially high banks. As a result, areas that were formerly flood plains and allowed for the removal of sediment from the primary stream channel no longer serve this function. As water

levels fall following a rain event, interstitial spaces between larger rocks fill with sand and silt and the diversity of available habitat to support fish and macroinvertebrates is reduced. Silt also can clog the gills of both fish and macroinvertebrates, reduce visibility thereby excluding site feeding fish species, and smother the nests of lithophilic fishes. Lithophilic spawning fish require clean substrates with interstitial voids in which to deposit eggs. Conversely, pioneering species benefit. They are generalists and best suited for exploiting disturbed and less heterogeneous habitats. The net result is a lower diversity of aquatic species compared with a typical warmwater stream with natural habitats.

Sediment also impacts water quality, recreation, and drinking water. Nutrients absorbed to soil particles remain trapped in the watercourse. Likewise, bacteria, pathogens, and pesticides which also attach to suspended or bedload sediments become concentrated in waterways where the channel is functionally isolated from the landscape. Community drinking water systems address these issues with more costly advanced treatment technologies.

Nutrient Enrichment

The element of greatest concern is phosphorus because it is critical for plant growth and is often the limiting nutrient. The form that can be readily used by plants and therefore can stimulate nuisance algae blooms is orthophosphate (PO_4^{3-}). The amount of phosphorus tied up in the nucleic acids of food and waste is actually quite low. This organic material is eventually converted to orthophosphate by bacteria. The amount of orthophosphate contained in synthetic detergents is a great concern however. It was for this reason that the General Assembly of the State of Ohio enacted a law in 1990 to limit phosphorus content in household laundry detergents sold in the Lake Erie drainage basin to 0.5% by weight. Inputs of phosphorus originate from both point and nonpoint sources. Most of the phosphorus discharged by point sources is soluble. Another characteristic of point sources is they have a continuous impact and are human in origin, for instance, effluents from municipal sewage treatment plants. The contribution from failed on-lot septic systems can also be significant, especially if they are concentrated in a small area. The phosphorus concentration in raw waste water is generally 8-10 mg/l and after secondary treatment is generally 4-6 mg/l. Further removal requires the added cost of chemical addition. The most common methods use the addition of lime or alum to form a precipitate, so most phosphorus (80%) ends up in the sludge.

A characteristic of phosphorus discharged by nonpoint sources is that the impact is intermittent and associated with storm water runoff. Most of this phosphorus is bound tightly to soil particles and enters streams from erosion, although some comes from tile drainage. Urban storm water is more of a concern if combined sewer overflows are involved. The impact from rural storm water varies depending on land use and management practices and includes contributions from livestock feedlots and pastures and row crop agriculture. Crop fertilizer includes granular inorganic types and organic types such as manure or sewage sludge. Pasture land is especially a concern if the livestock have access to the stream. Large feedlots with manure storage lagoons create the potential for overflows and accidental spills. Land management is an issue because erosion is worse on streams without any riparian buffer zone to trap runoff. The impact is worse in streams that are channelized because they no longer have a functioning flood plain and cannot expel sediment during flooding. Oxygen levels must also be considered, because phosphorus is released from sediment at higher rates under anoxic conditions.

There is no numerical phosphorus criterion established in the Ohio Water Quality Standards, but there is a narrative criterion that states phosphorus should be limited to the extent necessary to prevent nuisance growths of algae and weeds (Administrative Code, 3745-1-04, Part E). Phosphorus loadings from large volume point source dischargers in the Lake Erie drainage basin are regulated by NPDES permit limits. The permit limit is a concentration of 1.0 mg/l in final effluent. Research conducted by the Ohio EPA indicates that a significant correlation exists between phosphorus and the health of aquatic communities (Miltner and Rankin, 1998). It was concluded that biological community performance in

headwater and wadeable streams was highest where phosphorus concentrations were lowest. It was also determined that the lowest phosphorus concentrations were associated with the highest quality habitats, supporting the notion that habitat is a critical component of stream function. The report recommends WWH total phosphorus targets of 0.08 mg/l in headwater streams (<20 mi² watershed size), 0.10 mg/l in wadeable streams (>20-200 mi²) and 0.17 mg/l in small rivers (>200-1000 mi²).

Organic Enrichment and Low Dissolved Oxygen

The amount of oxygen soluble in water is low and it decreases as temperature increases. This is one reason why tree shade is so important. The two main sources of oxygen in water are diffusion from the atmosphere and plant photosynthesis. Turbulence at the water surface is critical because it increases surface area and promotes diffusion. Drainage practices such as channelization eliminate turbulence produced by riffles, meanders, and debris snags. Although plant photosynthesis produces oxygen by day, it is consumed by the reverse process of respiration at night. Oxygen is also consumed by bacteria that decay organic matter, so it can be easily depleted unless it is replenished from the air. Sources of organic matter include poorly treated waste water, sewage bypasses, and dead plants and algae. Dissolved oxygen criteria are established in the Ohio Water Quality Standards to protect aquatic life. The minimum and average limits are tiered values and linked to use designations (Administrative Code 3745- 1-07, Table 7-1).

Ammonia

Ammonia enters streams as a component of fertilizer and manure run-off and wastewater effluent. Ammonia gas (NH₃) readily dissolves in water to form the compound ammonium hydroxide (NH₄OH). In aquatic ecosystems, an equilibrium is established as ammonia shifts from a gas to undissociated ammonium hydroxide to the dissociated ammonium ion (NH₄⁺). Under normal conditions (neutral pH 7.0 and temperature 25°C), almost none of the total ammonia is present as gas, only 0.55% is present as ammonium hydroxide, and the rest is ammonium ion. Alkaline pH shifts the equation toward gaseous ammonia production, so the amount of ammonium hydroxide increases. This is important because while the ammonium ion is almost harmless to aquatic life, ammonium hydroxide is very toxic and can reduce growth and reproduction or cause mortality.

The concentration of ammonia in raw sewage is high, sometimes as much as 20-30 mg/l. Treatment to remove ammonia involves gaseous stripping to the atmosphere, biological nitrification and denitrification, and assimilation into plant and animal biomass. The nitrification process requires a long detention time and aerobic conditions like that provided in extended aeration treatment plants. Under these conditions, bacteria first convert ammonia to nitrite (*Nitrosomonas*) and then to nitrate (*Nitrobacter*). Nitrate can then be reduced by the de-nitrification process (*Pseudomonas*) and nitrogen gas and carbon dioxide are produced as by-products.

Ammonia criteria are established in the Ohio Water Quality Standards to protect aquatic life. The maximum and average limits are tiered values based on sample pH and temperature and linked to use designations (Administrative Code 3745-1-07, Tables 7-2 through 7-8).

Metals

Metals can be toxic to aquatic life and hazardous to human health. Although they are naturally occurring elements many are extensively used in manufacturing and are byproducts of human activity. Certain metals like copper and zinc are essential in the human diet, but excessive levels are usually detrimental. Lead and mercury are of particular concern because they often trigger fish consumption advisories. Mercury is used in the production of chlorine gas and caustic soda and in the manufacture of batteries and fluorescent light bulbs. In the environment it forms inorganic salts, but bacteria convert these to methyl-mercury and this organic form builds up in the tissues of fish. Extended exposure can damage

the brain, kidneys, and developing fetus. The Ohio Department of Health (ODH) issued a statewide fish consumption advisory in 1997 advising women of child bearing age and children six and under not to eat more than one meal per week of any species of fish from waters of the state because of mercury. Lead is used in batteries, pipes, and paints and is emitted from burning fossil fuels. It affects the central nervous system and damages the kidneys and reproductive system. Copper is mined extensively and used to manufacture wire, sheet metal, and pipes. Ingesting large amounts can cause liver and kidney damage. Zinc is a by-product of mining, steel production, and coal burning and used in alloys such as brass and bronze. Ingesting large amounts can cause stomach cramps, nausea, and vomiting.

Metals criteria are established in the Ohio Water Quality Standards to protect human health, wildlife, and aquatic life. Three levels of aquatic life standards are established (Administrative Code 3745-1-07, Table 7-1) and limits for some elements are based on water hardness (Administrative Code 3745-1-07, Table 7-9). Human health and wildlife standards are linked to either the Lake Erie (Administrative Code 3745-1-33, Table 33- 2) or Ohio River (Administrative Code 3745-1-34, Table 34-1) drainage basins. The drainage basins also have limits for additional elements not established elsewhere that are identified as Tier I and Tier II values.

Bacteria

High concentrations of either fecal coliform bacteria or *Escherichia coli* (*E. coli*) in a lake or stream may indicate contamination with human pathogens. People can be exposed to contaminated water while wading, swimming, and fishing. Fecal coliform bacteria are relatively harmless in most cases, but their presence indicates that the water has been contaminated with feces from a warm-blooded animal. Although intestinal organisms eventually die off outside the body, some will remain virulent for a period of time and may be dangerous sources of infection. This is especially a problem if the feces contained pathogens or disease producing bacteria and viruses. Reactions to exposure can range from an isolated illness such as skin rash, sore throat, or ear infection to a more serious wide spread epidemic. Some types of bacteria that are a concern include *Escherichia*, which cause diarrhea and urinary tract infections, *Salmonella*, which cause typhoid fever and gastroenteritis (food poisoning), and *Shigella*, which cause severe gastroenteritis or bacterial dysentery. Some types of viruses that are a concern include polio, hepatitis A, and encephalitis. Disease causing microorganisms such as cryptosporidium and giardia are also a concern.

Since fecal coliform bacteria are associated with warm-blooded animals, there are both human and animal sources. Human sources, including effluent from sewage treatment plants or discharges by on-lot septic systems, are a more continuous problem. Bacterial contamination from combined sewer overflows are associated with wet weather events. Animal sources are usually more intermittent and are also associated with rainfall, except when domestic livestock have access to the water. Large livestock farms store manure in holding lagoons and this creates the potential for an accidental spill. Liquid manure applied as fertilizer is a runoff problem if not managed properly and it sometimes seeps into field tiles.

Bacteria criteria for the recreational use are established in the Ohio Water Quality Standards to protect human health. The maximum and average limits are tiered *E. coli* values and linked to use designation, but only apply during the May 1-October 15 recreation season (Administrative Code 3745-1-07, Table 7-13). The standards also state that streams must be free of any public health nuisance associated with raw or poorly treated sewage during dry weather conditions (Administrative Code 3745-1-04, Part F).

Sediment Contamination

Chemical quality of sediment is a concern because many pollutants bind strongly to soil particles and are persistent in the environment. Some of these compounds accumulate in the aquatic food chain and trigger fish consumption advisories, but others are simply a contact hazard because they cause skin cancer and tumors. The physical and chemical nature of sediment is determined by local geology, land use, and contribution from manmade sources. As some materials enter the water column they are attracted to the surface electrical charges associated with suspended silt and clay particles. Others simply sink to the bottom due to their high specific gravity. Sediment layers form as suspended particles settle, accumulate, and combine with other organic and inorganic materials. Sediment is the most physically, chemically, and biologically reactive at the water interface because this is where it is affected by sunlight, current, wave action, and benthic organisms. Assessment of the chemical nature of this layer can be used to predict ecological impact.

Sediment data are evaluated using Ohio Sediment Reference Values (SRVs; Ohio EPA 2008), along with guidelines established in *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems* (MacDonald *et al.* 2000), and *Ecological Screening Levels (ESLs)* (U.S. EPA 2003). The Ohio EPA system was derived from samples collected at ecoregional reference sites. Specific SRVs are site specific ecoregional based metals concentrations and are used to identify contaminated stream reaches. The MacDonald guidelines are consensus based using previously developed values. The system predicts that sediments below the threshold effect concentration (TEC) are absent of toxicity and those greater than the probable effect concentration (PEC) are toxic. ESL values, considered protective benchmarks, were derived by US EPA Region 5 using a variety of sources and methods.

Sediment samples collected by the Ohio EPA are measured for a number of physical and chemical properties. Physical attributes included percent particle size distribution (sand $\geq 60\mu$, silt 5-59 μ , clay $\leq 4\mu$), percent solids, and percent organic carbon. Most locations sampled had an abundance of sediment, and no difficulties were experienced in locating ample volumes of sediment for analysis. Fine grained sediments are deposited in flood plains of natural streams during periods of high flow. This scenario changes if the stream is impounded by a dam or channelized. Chemical attributes included metals, volatile and semi-volatile organic compounds, pesticides, and polychlorinated biphenyls (PCBs).

MATERIALS and METHODS

All biological, chemical, and physical habitat data collection, processing, and analysis methods and procedures adhere to those specified in the Surface Water Field Sampling Manual for water column chemistry, bacteria and flows (Ohio EPA 2013), Biological Criteria for the Protection of Aquatic Life, Volumes II - III (Ohio EPA 1987b, 1989a, 1989b, 2014a, 2014b), and The Qualitative Habitat Evaluation Index (QHEI): Rationale, Methods, and Application (Rankin 1989).

Determining Use Attainment Status

Use attainment status is a term describing the degree to which environmental indicators are either above or below criteria specified by the Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1). Assessing aquatic use attainment status involves a primary reliance on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-15). These are confined to ambient assessments and apply to rivers and streams outside of mixing zones. Numerical biological criteria are based on multimetric biological indices including the IBI and MIwb, indices measuring the response of the fish community, and the ICI, which indicates the response of the macroinvertebrate community. Three attainment status results are possible at each sampling location - full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices fails to meet the biocriteria. Non-attainment means that none of the applicable indices meet the

biocriteria or one of the organism groups reflects poor or very poor performance. An aquatic life use attainment table is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (*i.e.*, full, partial, or non), the Qualitative Habitat Evaluation Index (QHEI), and a sampling location description.

Habitat Assessment

Physical habitat was evaluated using the QHEI developed by the Ohio EPA for streams and rivers in Ohio (Rankin 1989 and 1995, Ohio EPA 2006). Various attributes of the habitat are scored based on the overall importance of each to the maintenance of viable, diverse, and functional aquatic faunas. The type(s) and quality of substrates, amount and quality of instream cover, channel morphology, extent and quality of riparian vegetation, pool, run, and riffle development and quality, and gradient are some of the habitat characteristics used to determine the QHEI score which generally ranges from 20 to less than 100. The QHEI is used to evaluate the characteristics of a stream segment, as opposed to the characteristics of a single sampling site. As such, individual sites may have poorer physical habitat due to a localized disturbance yet still support aquatic communities closely resembling those sampled at adjacent sites with better habitat, provided water quality conditions are similar. QHEI scores from hundreds of segments around the state have indicated that values greater than 60 are *generally* conducive to the existence of warmwater faunas whereas scores less than 45 generally cannot support a warmwater assemblage consistent with the WWH biological criteria. Scores greater than 75 frequently reflect habitat conditions which have the ability to support exceptional warmwater faunas.

Sediment and Surface Water Assessment

Fine grain sediment samples were collected in the upper 4 inches of bottom material at each location using decontaminated stainless steel scoops and excavated using nitrile gloves. Decontamination of sediment sampling equipment followed the procedures outlined in the Ohio EPA sediment sampling guidance manual (Ohio EPA 2012). Sediment grab samples were homogenized in stainless steel pans (material for VOC analysis was not homogenized), transferred into glass jars with teflon® lined lids, placed on ice (to maintain 4°C) in a cooler, and shipped to Ohio EPA Division of Environmental Services. Sediment data is reported on a dry weight basis. Surface water samples were collected, preserved and delivered in appropriate containers to Ohio EPA Division of Environmental Services. Surface water samples were evaluated using comparisons to Ohio Water Quality Standards criteria, reference conditions, or published literature. Sediment evaluations were conducted using guidelines established in MacDonald et al. (2000), U.S. EPA (2003) and Ohio EPA (2008).

Recreation Use Assessment

Recreation use attainment was determined using the criteria established in OAC 3745-1-41:

- 1) *E. coli* is the only indicator organism used to evaluate recreation.
- 2) The recreation season extends from May 1 – Oct. 31.
- 3) Geometric mean content is computed on a seasonal basis.
- 4) Geometric mean content is the sole basis of use attainment status when 2 or more samples are taken.
- 5) Primary Contact Recreation (PCR) includes three separate categories each with specific numerical criteria: Class A – high use paddling streams, Class B – most typical streams and Class C – historically channelized streams that drain < 3.1 mi².

Macroinvertebrate Community Assessment

Macroinvertebrates were collected from artificial substrates and from the natural habitats. The artificial substrate collection provided quantitative data and consisted of a composite sample of five modified Hester-Dendy multiple-plate samplers colonized for six weeks. At the time of the artificial substrate

collection, a qualitative multihabitat composite sample was also collected. This sampling effort consisted of an inventory of all observed macroinvertebrate taxa from the natural habitats at each site with no attempt to quantify populations other than notations on the predominance of specific taxa or taxa groups within major macrohabitat types (e.g., riffle, run, pool, margin). Detailed discussion of macroinvertebrate field and laboratory procedures is contained in Biological Criteria for the Protection of Aquatic Life: Volume III, Standardized Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities (Ohio EPA 1989b, 2014b).

Fish Community Assessment

Fish were sampled using pulsed DC electrofishing methods. Fish were processed in the field, and included identifying each individual to species, counting, weighing, and recording any external abnormalities. Discussion of the fish community assessment methodology used in this report is contained in Biological Criteria for the Protection of Aquatic Life: Volume III, Standardized Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities (Ohio EPA 1989b, 2014b).

Causal Associations

Using the results, conclusions, and recommendations of this report requires an understanding of the methodology used to determine the use attainment status and assigning probable causes and sources of impairment. The identification of impairment in rivers and streams is straightforward - the numerical biological criteria are used to judge aquatic life use attainment and impairment (partial and non-attainment). The rationale for using the biological criteria, within a weight of evidence framework, has been extensively discussed elsewhere (Karr *et al.* 1986; Karr 1991; Ohio EPA 1987a, Ohio EPA 1987b; Yoder 1989; Miner and Borton 1991; Yoder 1991; Yoder 1995). Describing the causes and sources associated with observed impairments relies on an interpretation of multiple lines of evidence including water chemistry data, sediment data, habitat data, effluent data, land use data, and biological results (Yoder and Rankin 1995a, 1995b, and 1995c). Thus the assignment of principal causes and sources of impairment in this report represent the association of impairments (based on response indicators) with stressor and exposure indicators. The reliability of the identification of probable causes and sources is increased where many such prior associations have been identified, or have been experimentally or statistically linked together. The ultimate measure of success in water resource management is the restoration of lost or damaged ecosystem attributes including aquatic community structure and function. While there have been criticisms of misapplying the metaphor of ecosystem “health” compared to human patient “health” (Suter 1993), in this document we are referring to the process for evaluating biological integrity and causes or sources associated with observed impairments, not whether human health and ecosystem health are analogous concepts.

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Appendix Table 1. Invertebrate Community Index (ICI) metrics and scores for samples collected with quantitative methods from the Tenmile Creek and Ottawa River study area, 2011.

River Mile	Drainage Area (sq mi)	Number of				Percent:					Qual. EPT	Eco-region	ICI
		Total Taxa	Mayfly Taxa	Caddisfly Taxa	Dipteran Taxa	Mayflies	Caddisflies	Tanytarsini	Other Dipt/NI	Tolerant Organisms			
Bear Creek (04-065)													
Year: 2011													
8.44	22.9	36(4)	7(6)	0(0)	21(6)	25.9(6)	0.0(0)	15.8(4)	50.5(2)	8.1(4)	12(6)	1	38
Ottawa River (04-300)													
Year: 2011													
19.50	124.6	30(4)	4(2)	3(4)	15(4)	42.0(6)	6.5(2)	2.6(2)	48.2(2)	4.1(6)	7(2)	1	34
16.90	127.6	33(4)	5(2)	1(2)	19(6)	36.7(6)	3.4(2)	13.5(2)	44.8(2)	9.8(2)	6(2)	1	30
14.42	131.6	37(4)	4(2)	2(2)	22(6)	30.8(4)	16.8(4)	5.4(2)	42.2(4)	20.4(0)	4(0)	1	28
12.21	133.0	33(4)	3(2)	2(2)	19(6)	1.6(2)	4.1(2)	24.5(4)	68.7(0)	4.5(6)	5(2)	1	30
11.80	133.0	32(4)	4(2)	3(4)	17(4)	6.7(2)	23.0(6)	20.7(4)	49.2(2)	2.0(6)	5(2)	1	36
11.60	154.0	36(4)	2(0)	1(2)	22(6)	0.7(2)	14.9(4)	21.2(4)	61.3(0)	14.7(0)	4(0)	1	22
11.10	154.0	36(4)	3(2)	3(4)	22(6)	6.6(2)	28.3(6)	12.8(2)	51.7(2)	14.7(0)	4(0)	1	28
10.90	155.0	33(4)	1(0)	0(0)	22(6)	0.2(2)	0.0(0)	18.0(4)	79.4(0)	26.6(0)	0(0)	1	16
9.40	155.6	29(4)	2(0)	2(2)	18(4)	3.1(2)	23.6(6)	19.3(4)	53.4(2)	13.7(0)	4(0)	1	24
Tenmile Creek (04-320)													
Year: 2011													
15.00	25.9	26(4)	2(0)	0(0)	17(4)	10.4(2)	0.0(0)	5.5(2)	81.8(0)	11.0(4)	11(4)	1	20
9.17	43.0	24(2)	4(2)	0(0)	15(4)	9.3(2)	0.0(0)	12.0(2)	76.0(0)	12.0(4)	18(6)	1	22
5.94	64.5	35(4)	2(0)	1(2)	18(4)	1.0(2)	0.1(2)	11.0(2)	86.6(0)	41.4(0)	8(2)	1	18
2.97	70.0	33(4)	3(2)	0(0)	18(4)	3.1(2)	0.0(0)	51.7(6)	43.0(4)	14.8(2)	9(2)	1	26
0.47	81.0	34(4)	4(2)	2(4)	22(6)	50.9(6)	3.2(2)	4.5(2)	38.0(4)	2.7(6)	8(2)	1	38

Appendix Table 2. Macroinvertebrate community data collected from sites in the Tenmile Creek and Ottawa River study area, 2011.

Collection Date: 07/27/2011 River Code: 04-065 RM: 12.98

Site: Bear Creek

Co. Rd. 10

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	78200	<i>Larsia sp</i>	+
03600	<i>Oligochaeta</i>	+	78655	<i>Procladius (Holotanypus) sp</i>	+
04666	<i>Helobdella papillata</i>	+	80410	<i>Cricotopus (C.) sp</i>	+
04686	<i>Placobdella papillifera</i>	+	80420	<i>Cricotopus (C.) bicinctus</i>	+
04935	<i>Erpobdella punctata punctata</i>	+	80430	<i>Cricotopus (C.) tremulus group</i>	+
05900	<i>Lirceus sp</i>	+	80510	<i>Cricotopus (Isocladius) sylvestris group</i>	+
08220	<i>Orconectes (Gremicambarus) immunis</i>	+	83040	<i>Dicrotendipes neomodestus</i>	+
08240	<i>Orconectes (Crockerinus) propinquus</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	+
08601	<i>Hydrachnidia</i>	+	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+
11020	<i>Acerpenna pygmaea</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
11200	<i>Callibaetis sp</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
12200	<i>Isonychia sp</i>	+	84700	<i>Stenochironomus sp</i>	+
13400	<i>Stenacron sp</i>	+	84750	<i>Stictochironomus sp</i>	+
13500	<i>Maccaffertium sp</i>	+	85500	<i>Paratanytarsus sp</i>	+
13521	<i>Stenonema femoratum</i>	+	85625	<i>Rheotanytarsus sp</i>	+
17200	<i>Caenis sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
18700	<i>Hexagenia sp</i>	+	94400	<i>Fossaria sp</i>	+
21300	<i>Hetaerina sp</i>	+	95100	<i>Physella sp</i>	+
22001	<i>Coenagrionidae</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+
22300	<i>Argia sp</i>	+	98600	<i>Sphaerium sp</i>	+
23704	<i>Anax junius</i>	+			
23909	<i>Boyeria vinosa</i>	+			
42700	<i>Belostoma sp</i>	+	No. Quantitative Taxa: 0	Total Taxa: 64	
43300	<i>Ranatra sp</i>	+	No. Qualitative Taxa: 64	ICI: G	
45300	<i>Sigara sp</i>	+	Number of Organisms: 0	Qual EPT: 15	
50315	<i>Chimarra obscura</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
52570	<i>Hydropsyche simulans</i>	+			
53800	<i>Hydroptila sp</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
60900	<i>Peltodytes sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
64050	<i>Liodessus sp</i>	+			
64800	<i>Uvarus sp</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			

Collection Date: 07/27/2011 River Code: 04-065 RM: 11.56

Site: Bear Creek
St. Rt. 120

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
03600	<i>Oligochaeta</i>	+	95100	<i>Physella sp</i>	+
04960	<i>Erpobdella sp (= Mooreobdella)</i>	+	98600	<i>Sphaerium sp</i>	+
08240	<i>Orconectes (Crockerinus) propinquus</i>	+			
08601	<i>Hydrachnidia</i>	+	No. Quantitative Taxa: 0		Total Taxa: 46
11130	<i>Baetis intercalaris</i>	+	No. Qualitative Taxa: 46		ICI: G
11200	<i>Callibaetis sp</i>	+	Number of Organisms: 0		Qual EPT: 11
12200	<i>Isonychia sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
24700	<i>Dromogomphus sp</i>	+			
42700	<i>Belostoma sp</i>	+			
45300	<i>Sigara sp</i>	+			
45900	<i>Notonecta sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53501	<i>Hydroptilidae</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
63900	<i>Laccophilus sp</i>	+			
64050	<i>Liodessus sp</i>	+			
65800	<i>Berosus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
80410	<i>Cricotopus (C.) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
80430	<i>Cricotopus (C.) tremulus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84750	<i>Stictochironomus sp</i>	+			
85230	<i>Cladotanytarsus mancus group</i>	+			
85625	<i>Rheotanytarsus sp</i>	+			

Collection Date: 08/16/2011 River Code: 04-065 RM: 8.44

Site: Bear Creek

Co. Rd. 7

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+
02960	<i>Paragordius sp</i>	+			
03600	<i>Oligochaeta</i>	6 +	83840	<i>Microtendipes pedellus group</i>	4
04682	<i>Placobdella montifera</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	28 +
05900	<i>Lirceus sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	12 +
08240	<i>Orconectes (Crockerinus) propinquus</i>	5 +	84460	<i>Polypedilum (P.) fallax group</i>	20
11020	<i>Acerpenna pygmaea</i>	4 +	84470	<i>Polypedilum (P.) illinoense</i>	8 +
11120	<i>Baetis flavistriga</i>	+	84520	<i>Polypedilum (Tripodura) halterale group</i>	4
11130	<i>Baetis intercalaris</i>	10 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	4 +
11600	<i>Paracloeodes fleeki</i>	+	84700	<i>Stenochironomus sp</i>	+
11651	<i>Procloeon sp (w/o hindwing pads)</i>	7 +	84800	<i>Tribelos jucundum</i>	4
11670	<i>Procloeon viridoculare</i>	+	85500	<i>Paratanytarsus sp</i>	64
13400	<i>Stenacron sp</i>	211 +	85625	<i>Rheotanytarsus sp</i>	16 +
13510	<i>Maccaffertium exiguum</i>	2 +	85800	<i>Tanytarsus sp</i>	+
13521	<i>Stenonema femoratum</i>	16 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	76 +
17200	<i>Caenis sp</i>	12 +	85840	<i>Tanytarsus sepp</i>	4 +
18708	<i>Hexagenia bilineata</i>	+	94400	<i>Fossaria sp</i>	+
21200	<i>Calopteryx sp</i>	11 +	95100	<i>Physella sp</i>	8 +
22001	<i>Coenagrionidae</i>	+	96900	<i>Ferrissia sp</i>	40 +
22300	<i>Argia sp</i>	43 +	98600	<i>Sphaerium sp</i>	+
43300	<i>Ranatra sp</i>	+	99100	<i>Pyganodon grandis</i>	+
45100	<i>Palmacorixa sp</i>	+			
45300	<i>Sigara sp</i>	+	No. Quantitative Taxa: 36		Total Taxa: 63
45400	<i>Trichocorixa sp</i>	+	No. Qualitative Taxa: 53		ICI: 38
52200	<i>Cheumatopsyche sp</i>	+	Number of Organisms: 1010		Qual EPT: 12
63300	<i>Hydroporini</i>	+			
63900	<i>Laccophilus sp</i>	+			
65800	<i>Berosus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68601	<i>Ancyronyx variegata</i>	4			
68708	<i>Dubiraphia vittata group</i>	20 +			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	2 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	12 +			
77800	<i>Helopelopia sp</i>	8			
78655	<i>Procladius (Holotanypus) sp</i>	8 +			
80370	<i>Corynoneura lobata</i>	293 +			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	12			
81250	<i>Nanocladius (N.) minimus</i>	4			
82885	<i>Cryptotendipes pseudotener</i>	8			
83040	<i>Dicrotendipes neomodestus</i>	20 +			

Collection Date: 07/25/2011 River Code: 04-067 RM: 4.88

Site: Halfway Creek
East State Line Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyalella azteca</i>	+			
06700	<i>Crangonyx sp</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11130	<i>Baetis intercalaris</i>	+			
13400	<i>Stenacron sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22300	<i>Argia sp</i>	+			
23600	<i>Aeshna sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	+			
68901	<i>Macronychus glabratus</i>	+			
74100	<i>Simulium sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
85625	<i>Rheotanytarsus sp</i>	+			
85840	<i>Tanytarsus sepp</i>	+			
95100	<i>Physella sp</i>	+			
96900	<i>Ferrissia sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 33
No. Qualitative Taxa: 33	ICI: F
Number of Organisms: 0	Qual EPT: 5

Collection Date: 07/26/2011 River Code: 04-068 RM: 3.10

Site: Shantee Creek
Lewis Ave.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
04510	<i>Hirudinida</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04680	<i>Placobdella sp</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05800	<i>Caecidotea sp</i>	+			
08220	<i>Orconectes (Gremicambarus) immunis</i>	+			
21604	<i>Archilestes grandis</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
28500	<i>Libellula sp</i>	+			
45300	<i>Sigara sp</i>	+			
45900	<i>Notonecta sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
64050	<i>Liodessus sp</i>	+			
66500	<i>Enochrus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68901	<i>Macronychus glabratus</i>	+			
72700	<i>Anopheles sp</i>	+			
72900	<i>Culex sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77250	<i>Alotanytus venustus</i>	+			
77500	<i>Conchapelopia sp</i>	+			
80510	<i>Cricotopus (Isocladius) sylvestris group</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
83051	<i>Dicrotendipes simpsoni</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
87400	<i>Stratiomys sp</i>	+			
95100	<i>Physella sp</i>	+			
98200	<i>Pisidium sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 32
 No. Qualitative Taxa: 32 ICI: VP
 Number of Organisms: 0 Qual EPT: 0

Collection Date: 07/25/2011 River Code: 04-068 RM: 0.70

Site: Shantee Creek
Stickney Ave.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04685	<i>Placobdella ornata</i>	+			
04960	<i>Erpobdella sp (= Mooreobdella)</i>	+			
05800	<i>Caecidotea sp</i>	+			
08220	<i>Orconectes (Gremicambarus) immunis</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11130	<i>Baetis intercalaris</i>	+			
11200	<i>Callibaetis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
23710	<i>Anax longipes</i>	+			
28500	<i>Libellula sp</i>	+			
42700	<i>Belostoma sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
61100	<i>Acilius sp</i>	+			
65800	<i>Berosus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
80510	<i>Cricotopus (Isocladius) sylvestris group</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
95100	<i>Physella sp</i>	+			
96200	<i>Planorbella sp</i>	+			
96900	<i>Ferrissia sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 36

No. Qualitative Taxa: 36 ICI: LF

Number of Organisms: 0 Qual EPT: 3

Collection Date: 07/26/2011 River Code: 04-069 RM: 4.44

Site: Silver Creek
Lewis Ave.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
08220	<i>Orconectes (Gremicambarus) immunis</i>	+			
08601	<i>Hydrachnidia</i>	+			
11120	<i>Baetis flavistriga</i>	+			
21604	<i>Archilestes grandis</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
28500	<i>Libellula sp</i>	+			
45900	<i>Notonecta sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
60900	<i>Peltodytes sp</i>	+			
64050	<i>Liodessus sp</i>	+			
68702	<i>Dubiraphia bivittata</i>	+			
72700	<i>Anopheles sp</i>	+			
77120	<i>Ablabesmyia mallochii</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78500	<i>Paramerina fragilis</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80410	<i>Cricotopus (C.) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
80430	<i>Cricotopus (C.) tremulus group</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84315	<i>Phaenopsectra flavipes</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
84750	<i>Stictochironomus sp</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
95100	<i>Physella sp</i>	+			
96280	<i>Planorbella (Pierosoma) trivolvis</i>	+			
96900	<i>Ferrissia sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 34
 No. Qualitative Taxa: 34 ICI: P
 Number of Organisms: 0 Qual EPT: 2

Collection Date: 07/25/2011 River Code: 04-069 RM: 1.70

Site: Silver Creek
Futura Drive

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
06810	<i>Gammarus fasciatus</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
29000	<i>Sympetrum sp</i>	+			
42700	<i>Belostoma sp</i>	+			
45300	<i>Sigara sp</i>	+			
45900	<i>Notonecta sp</i>	+			
60800	<i>Halipus sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
78680	<i>Procladius (Psilotanypus) bellus</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83158	<i>Endochironomus nigricans</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
95100	<i>Physella sp</i>	+			
96120	<i>Menetus (Micromenetus) dilatatus</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 21
No. Qualitative Taxa: 21	ICI: P
Number of Organisms: 0	Qual EPT: 0

Collection Date: 08/17/2011 River Code: 04-300 RM: 19.50

Site: Ottawa River
Harroun Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+			
01801	<i>Turbellaria</i>	24 +			
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	9			
04960	<i>Erpobdella sp (= Mooreobdella)</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11120	<i>Baetis flavistriga</i>	99 +			
11130	<i>Baetis intercalaris</i>	586 +			
13400	<i>Stenacron sp</i>	2 +			
13510	<i>Maccaffertium exiguum</i>	+			
13521	<i>Stenonema femoratum</i>	23 +			
22300	<i>Argia sp</i>	6 +			
42700	<i>Belostoma sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	89 +			
52530	<i>Hydropsyche depravata group</i>	17 +			
53501	<i>Hydroptilidae</i>	4			
68075	<i>Psephenus herricki</i>	+			
68201	<i>Scirtidae</i>	+			
68901	<i>Macronychus glabratus</i>	2 +			
69400	<i>Stenelmis sp</i>	3 +			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	95			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	7			
77800	<i>Helopelopia sp</i>	+			
78450	<i>Nilotanytus fimbriatus</i>	15			
80363	<i>Corynoneura sp 12</i>	40			
80370	<i>Corynoneura lobata</i>	12			
81270	<i>Nanocladius (N.) spinipennis</i>	7			
83840	<i>Microtendipes pedellus group</i>	22 +			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	462 +			
84460	<i>Polypedilum (P.) fallax group</i>	44			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	15 +			
84888	<i>Xenochironomus xenolabis</i>	+			
85625	<i>Rheotanytarsus sp</i>	7			
85800	<i>Tanytarsus sp</i>	22			
85821	<i>Tanytarsus glabrescens group sp 7</i>	15			
87510	<i>Neoplasta sp</i>	1			
87540	<i>Hemerodromia sp</i>	9 +			
93900	<i>Elimia sp</i>	32 +			
96900	<i>Ferrissia sp</i>	16			
98600	<i>Sphaerium sp</i>	4			

No. Quantitative Taxa: 30

Total Taxa: 43

No. Qualitative Taxa: 28

ICI: 34

Number of Organisms: 1689

Qual EPT: 7

Collection Date: 08/16/2011 River Code: 04-300 RM: 16.90

Site: Ottawa River
Sylvania Ave.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	85625	<i>Rheotanytarsus sp</i>	32
01801	<i>Turbellaria</i>	19 +	85800	<i>Tanytarsus sp</i>	97
03360	<i>Plumatella sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	225
03600	<i>Oligochaeta</i>	40 +	93900	<i>Elimia sp</i>	1 +
04960	<i>Erpobdella sp (= Mooreobdella)</i>	+	95100	<i>Physella sp</i>	1 +
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	96900	<i>Ferrissia sp</i>	38 +
11120	<i>Baetis flavistriga</i>	140 +			
11130	<i>Baetis intercalaris</i>	780 +	No. Quantitative Taxa: 33		Total Taxa: 49
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	14	No. Qualitative Taxa: 32		ICI: 30
13400	<i>Stenacron sp</i>	22 +	Number of Organisms: 2621		Qual EPT: 6
13521	<i>Stenonema femoratum</i>	5 +			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	32 +			
23909	<i>Boyeria vinosa</i>	+			
24107	<i>Nasiaeschna pentacantha</i>	+			
52200	<i>Cheumatopsyche sp</i>	88 +			
52530	<i>Hydropsyche depravata group</i>	+			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	8			
69400	<i>Stenelmis sp</i>	3 +			
77500	<i>Conchapelopia sp</i>	16			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	16			
77800	<i>Helopelopia sp</i>	16			
78450	<i>Nilotanytus fimbriatus</i>	80 +			
78655	<i>Procladius (Holotanytus) sp</i>	+			
80370	<i>Corynoneura lobata</i>	24			
81250	<i>Nanocladius (N.) minimus</i>	32			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	16			
82141	<i>Thienemanniella xena</i>	40			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	97 +			
83300	<i>Glyptotendipes (G.) sp</i>	32			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	16			
83840	<i>Microtendipes pedellus group</i>	32			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	402 +			
84460	<i>Polypedilum (P.) fallax group</i>	177			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	64 +			
84700	<i>Stenochironomus sp</i>	16			
84888	<i>Xenochironomus xenolabis</i>	+			

Collection Date: 08/17/2011 River Code: 04-300 RM: 14.42

Site: Ottawa River
Edgehill Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	8	85800	<i>Tanytarsus sp</i>	17
01801	<i>Turbellaria</i>	3 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	21 +
03600	<i>Oligochaeta</i>	3 +	87540	<i>Hemerodromia sp</i>	2
06700	<i>Crangonyx sp</i>	+	93900	<i>Elimia sp</i>	15 +
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	95100	<i>Physella sp</i>	15
11120	<i>Baetis flavistriga</i>	5	96900	<i>Ferrissia sp</i>	122 +
11130	<i>Baetis intercalaris</i>	301 +	98600	<i>Sphaerium sp</i>	+
13400	<i>Stenacron sp</i>	32 +			
13521	<i>Stenonema femoratum</i>	4 +	No. Quantitative Taxa: 37		Total Taxa: 51
21200	<i>Calopteryx sp</i>	+	No. Qualitative Taxa: 27		ICI: 28
22300	<i>Argia sp</i>	43 +	Number of Organisms: 1112		Qual EPT: 4
24107	<i>Nasiaeschna pentacantha</i>	+			
45400	<i>Trichocorixa sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	186 +			
52530	<i>Hydropsyche depravata group</i>	1			
68700	<i>Dubiraphia sp</i>	+			
68901	<i>Macronychus glabratus</i>	10 +			
69400	<i>Stenelmis sp</i>	1 +			
72700	<i>Anopheles sp</i>	+			
72900	<i>Culex sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	8			
77500	<i>Conchapelopia sp</i>	3			
78140	<i>Labrundinia pilosella</i>	3			
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	+			
78450	<i>Nilotanyus fimbriatus</i>	3			
78655	<i>Procladius (Holotanyus) sp</i>	+			
80370	<i>Corynoneura lobata</i>	6			
80410	<i>Cricotopus (C.) sp</i>	8			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	21			
82141	<i>Thienemanniella xena</i>	2			
82730	<i>Chironomus (C.) decorus group</i>	3			
82820	<i>Cryptochironomus sp</i>	+			
83003	<i>Dicrotendipes fumidus</i>	8			
83040	<i>Dicrotendipes neomodestus</i>	25			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	8			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	84			
84460	<i>Polypedilum (P.) fallax group</i>	81			
84470	<i>Polypedilum (P.) illinoense</i>	3			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	32 +			
84700	<i>Stenochironomus sp</i>	3			
85261	<i>Cladotanytarsus vanderwulpi</i>	+			
85500	<i>Paratanytarsus sp</i>	11			
85625	<i>Rheotanytarsus sp</i>	11			

Collection Date: 08/17/2011 River Code: 04-300 RM: 12.21

Site: Ottawa River
Bancroft St.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	60 +			
03360	<i>Plumatella sp</i>	4 +			
03600	<i>Oligochaeta</i>	32 +			
04960	<i>Erpobdella sp (= Mooreobdella)</i>	8 +			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11120	<i>Baetis flavistriga</i>	+			
11130	<i>Baetis intercalaris</i>	34 +			
13400	<i>Stenacron sp</i>	17 +			
13521	<i>Stenonema femoratum</i>	1			
22300	<i>Argia sp</i>	34 +			
42700	<i>Belostoma sp</i>	+			
43300	<i>Ranatra sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	125 +			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	9			
68201	<i>Scirtidae</i>	+			
68901	<i>Macronychus glabratus</i>	4			
69400	<i>Stenelmis sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	27			
77500	<i>Conchapelopia sp</i>	82 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	55			
78140	<i>Labrundinia pilosella</i>	27			
78450	<i>Nilotanytus fimbriatus</i>	27 +			
80370	<i>Corynoneura lobata</i>	208			
80430	<i>Cricotopus (C.) tremulus group</i>	55			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	27			
82141	<i>Thienemanniella xena</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	1042 +			
83300	<i>Glyptotendipes (G.) sp</i>	110			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	247 +			
84460	<i>Polypedilum (P.) fallax group</i>	82			
84470	<i>Polypedilum (P.) illinoense</i>	27 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	82 +			
85500	<i>Paratanytarsus sp</i>	219			
85625	<i>Rheotanytarsus sp</i>	27			
85800	<i>Tanytarsus sp</i>	55			
85821	<i>Tanytarsus glabrescens group sp 7</i>	494 +			
87540	<i>Hemerodromia sp</i>	16 +			
93900	<i>Elimia sp</i>	10 +			
95100	<i>Physella sp</i>	2			
96900	<i>Ferrissia sp</i>	2			

No. Quantitative Taxa: 33

Total Taxa: 43

No. Qualitative Taxa: 27

ICI: **30**

Number of Organisms: 3251

Qual EPT: 5

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	87540	<i>Hemerodromia sp</i>	64
01320	<i>Hydra sp</i>	72	93900	<i>Elimia sp</i>	3 +
01801	<i>Turbellaria</i>	146 +			
03360	<i>Plumatella sp</i>	2 +	No. Quantitative Taxa: 32		Total Taxa: 45
03600	<i>Oligochaeta</i>	96 +	No. Qualitative Taxa: 29		ICI: 36
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	Number of Organisms: 4794		Qual EPT: 5
11020	<i>Acerpenna pygmaea</i>	1			
11120	<i>Baetis flavistriga</i>	11 +			
11130	<i>Baetis intercalaris</i>	300 +			
13400	<i>Stenacron sp</i>	10 +			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	2			
52200	<i>Cheumatopsyche sp</i>	958 +			
52530	<i>Hydropsyche depravata group</i>	73 +			
53800	<i>Hydroptila sp</i>	70			
68901	<i>Macronychus glabratus</i>	2			
69400	<i>Stenelmis sp</i>	16 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	28 +			
77800	<i>Helopelopia sp</i>	+			
78450	<i>Nilotanytus fimbriatus</i>	110			
78655	<i>Procladius (Holotanytus) sp</i>	+			
80370	<i>Corynoneura lobata</i>	96			
80410	<i>Cricotopus (C.) sp</i>	83			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
80430	<i>Cricotopus (C.) tremulus group</i>	276			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	55 +			
82141	<i>Thienemanniella xena</i>	32			
82730	<i>Chironomus (C.) decorus group</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	414 +			
83300	<i>Glyptotendipes (G.) sp</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	55			
84040	<i>Parachironomus frequens</i>	28			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	634 +			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	165			
85500	<i>Paratanytarsus sp</i>	27			
85625	<i>Rheotanytarsus sp</i>	165			
85800	<i>Tanytarsus sp</i>	28 +			
85821	<i>Tanytarsus glabrescens group sp 7</i>	772 +			

Collection Date: 08/16/2011 River Code: 04-300 RM: 11.60

Site: Ottawa River
Secor Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	2			
03360	<i>Plumatella sp</i>	1			
03451	<i>Umatella gracilis</i>	4			
03600	<i>Oligochaeta</i>	122 +			
04664	<i>Helobdella stagnalis</i>	7 +			
04964	<i>Erpobdella microstoma</i>	3			
05800	<i>Caecidotea sp</i>	15 +			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
11130	<i>Baetis intercalaris</i>	8 +			
13400	<i>Stenacron sp</i>	1 +			
21200	<i>Calopteryx sp</i>	+			
22300	<i>Argia sp</i>	14 +			
43300	<i>Ranatra sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	182 +			
52530	<i>Hydropsyche depravata group</i>	+			
68901	<i>Macronychus glabratus</i>	5			
69400	<i>Stenelmis sp</i>	4 +			
77120	<i>Ablabesmyia mallochi</i>	36			
77130	<i>Ablabesmyia rhamphe group</i>	+			
77500	<i>Conchapelopia sp</i>	7			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	36 +			
78140	<i>Labrundinia pilosella</i>	7			
78450	<i>Nilotanypus fimbriatus</i>	36			
80370	<i>Corynoneura lobata</i>	52 +			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	36			
82820	<i>Cryptochironomus sp</i>	7 +			
83040	<i>Dicrotendipes neomodestus</i>	22 +			
83050	<i>Dicrotendipes lucifer</i>	7			
83300	<i>Glyptotendipes (G.) sp</i>	14 +			
83840	<i>Microtendipes pedellus group</i>	7			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	108 +			
84460	<i>Polypedilum (P.) fallax group</i>	51			
84470	<i>Polypedilum (P.) illinoense</i>	7			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	115 +			
84700	<i>Stenochironomus sp</i>	14 +			
85500	<i>Paratanytarsus sp</i>	7 +			
85625	<i>Rheotanytarsus sp</i>	29			
85800	<i>Tanytarsus sp</i>	29			
85821	<i>Tanytarsus glabrescens group sp 7</i>	195			
87540	<i>Hemerodromia sp</i>	32			
93900	<i>Elimia sp</i>	3 +			

No. Quantitative Taxa: 36

Total Taxa: 42

No. Qualitative Taxa: 24

ICI: 22

Number of Organisms: 1225

Qual EPT: 4

Collection Date: 08/16/2011 River Code: 04-300 RM: 11.10

Site: Ottawa River
Stadium Drive

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	85230	<i>Cladotanytarsus mancus group</i>	25
03360	<i>Plumatella sp</i>	3	85500	<i>Paratanytarsus sp</i>	125
03600	<i>Oligochaeta</i>	433 +	85625	<i>Rheotanytarsus sp</i>	100
04664	<i>Helobdella stagnalis</i>	1	85821	<i>Tanytarsus glabrescens group sp 7</i>	274 +
05800	<i>Caecidotea sp</i>	+	87540	<i>Hemerodromia sp</i>	1
06700	<i>Crangonyx sp</i>	+	89700	<i>Limnophora sp</i>	+
08200	<i>Orconectes sp</i>	+	93900	<i>Elimia sp</i>	1
08601	<i>Hydrachnidia</i>	+	96900	<i>Ferrissia sp</i>	19
11120	<i>Baetis flavistriga</i>	80 +			
11130	<i>Baetis intercalaris</i>	185 +	No. Quantitative Taxa: 36		Total Taxa: 51
13400	<i>Stenacron sp</i>	5 +	No. Qualitative Taxa: 25		ICI: 28
22300	<i>Argia sp</i>	1	Number of Organisms: 4082		Qual EPT: 4
44501	<i>Corixidae</i>	+			
52200	<i>Cheumatopsyche sp</i>	1067 +			
52530	<i>Hydropsyche depravata group</i>	48			
53800	<i>Hydroptila sp</i>	39			
60800	<i>Haliplus sp</i>	+			
64050	<i>Liodessus sp</i>	+			
65501	<i>Hydrophilidae</i>	+			
68901	<i>Macronychus glabratus</i>	20			
69400	<i>Stenelmis sp</i>	2			
77120	<i>Ablabesmyia mallochi</i>	25			
77500	<i>Conchapelopia sp</i>	50			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	25			
77800	<i>Helopelopia sp</i>	25			
78450	<i>Nilotanypus fimbriatus</i>	25			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80370	<i>Corynoneura lobata</i>	24			
80430	<i>Cricotopus (C.) tremulus group</i>	75			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	25			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	75			
82141	<i>Thienemanniella xena</i>	8			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	199			
83050	<i>Dicrotendipes lucifer</i>	25 +			
83300	<i>Glyptotendipes (G.) sp</i>	25			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	673 +			
84460	<i>Polypedilum (P.) fallax group</i>	50			
84470	<i>Polypedilum (P.) illinoense</i>	100 +			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	224 +			

Collection Date: 08/16/2011 River Code: 04-300 RM: 10.90

Site: Ottawa River
Douglas Ave.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	19			
01801	<i>Turbellaria</i>	5			
03360	<i>Plumatella sp</i>	2 +			
03451	<i>Urnatella gracilis</i>	4			
03600	<i>Oligochaeta</i>	173 +			
05800	<i>Caecidotea sp</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+			
13400	<i>Stenacron sp</i>	2			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	17 +			
23909	<i>Boyeria vinosa</i>	+			
68601	<i>Ancyronyx variegata</i>	4			
68901	<i>Macronychus glabratus</i>	4 +			
74501	<i>Ceratopogonidae</i>	3			
77120	<i>Ablabesmyia mallochi</i>	18			
77800	<i>Helopelopia sp</i>	6			
78655	<i>Procladius (Holotanypus) sp</i>	24 +			
80370	<i>Corynoneura lobata</i>	24			
81200	<i>Nanocladius sp</i>	6			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	6			
82730	<i>Chironomus (C.) decorus group</i>	12 +			
82820	<i>Cryptochironomus sp</i>	6 +			
83002	<i>Dicrotendipes modestus</i>	24			
83040	<i>Dicrotendipes neomodestus</i>	174			
83050	<i>Dicrotendipes lucifer</i>	30			
83051	<i>Dicrotendipes simpsoni</i>	36			
83300	<i>Glyptotendipes (G.) sp</i>	144 +			
84100	<i>Paracladopelma sp</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	6			
84460	<i>Polypedilum (P.) fallax group</i>	24			
84470	<i>Polypedilum (P.) illinoense</i>	18 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	30 +			
84800	<i>Tribelos jucundum</i>	12			
85500	<i>Paratanytarsus sp</i>	144			
85800	<i>Tanytarsus sp</i>	12			
85821	<i>Tanytarsus glabrescens group sp 7</i>	30			
96120	<i>Menetus (Micromenetus) dilatatus</i>	2			
96900	<i>Ferrissia sp</i>	11			

No. Quantitative Taxa: 33 Total Taxa: 39

No. Qualitative Taxa: 16 ICI: 16

Number of Organisms: 1032 Qual EPT: 0

Collection Date: 08/17/2011 River Code: 04-300 RM: 9.40

Site: Ottawa River
Monroe St.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+			
03360	<i>Plumatella sp</i>	1 +			
03600	<i>Oligochaeta</i>	128 +			
05800	<i>Caecidotea sp</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11130	<i>Baetis intercalaris</i>	80 +			
13400	<i>Stenacron sp</i>	1 +			
21200	<i>Calopteryx sp</i>	3			
22300	<i>Argia sp</i>	9 +			
52200	<i>Cheumatopsyche sp</i>	603 +			
52530	<i>Hydropsyche depravata group</i>	4 +			
68901	<i>Macronychus glabratus</i>	4			
69400	<i>Stenelmis sp</i>	+			
74100	<i>Simulium sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	64			
77500	<i>Conchapelopia sp</i>	16			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	80 +			
80370	<i>Corynoneura lobata</i>	104			
80430	<i>Cricotopus (C.) tremulus group</i>	16			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	96			
82141	<i>Thienemanniella xena</i>	8			
83040	<i>Dicrotendipes neomodestus</i>	48			
83300	<i>Glyptotendipes (G.) sp</i>	16			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	338 +			
84460	<i>Polypedilum (P.) fallax group</i>	177			
84470	<i>Polypedilum (P.) illinoense</i>	48			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	225 +			
85500	<i>Paratanytarsus sp</i>	193			
85625	<i>Rheotanytarsus sp</i>	16			
85800	<i>Tanytarsus sp</i>	16			
85821	<i>Tanytarsus glabrescens group sp 7</i>	273			
86100	<i>Chrysops sp</i>	+			
87540	<i>Hemerodromia sp</i>	8			
93900	<i>Elimia sp</i>	1 +			
96900	<i>Ferrissia sp</i>	1			

No. Quantitative Taxa: 29 Total Taxa: 36

No. Qualitative Taxa: 18 ICI: 24

Number of Organisms: 2577 Qual EPT: 4

Collection Date: 07/25/2011 River Code: 04-301 RM: 0.67

Site: Detwiler Ditch

Detwiler Park

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03360	<i>Plumatella sp</i>	+			
04660	<i>Helobdella sp</i>	+			
05800	<i>Caecidotea sp</i>	+			
06201	<i>Hyalella azteca</i>	+			
06700	<i>Crangonyx sp</i>	+			
08220	<i>Orconectes (Gremicambarus) immunis</i>	+			
11200	<i>Callibaetis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
42700	<i>Belostoma sp</i>	+			
43570	<i>Neoplea sp</i>	+			
45100	<i>Palmacorixa sp</i>	+			
45300	<i>Sigara sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
45900	<i>Notonecta sp</i>	+			
48200	<i>Chauliodes sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
63700	<i>Ilybius sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
66500	<i>Enochrus sp</i>	+			
67700	<i>Paracymus sp</i>	+			
68201	<i>Scirtidae</i>	+			
72600	<i>Aedes sp</i>	+			
72700	<i>Anopheles sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
78702	<i>Psectrotanypus dyari</i>	+			
79030	<i>Tanypus "punctipennis" (sensu Roback, 1977)</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82800	<i>Cladopelma sp</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	+			
84315	<i>Phaenopsectra flavipes</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
95100	<i>Physella sp</i>	+			
96900	<i>Ferrissia sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 38

No. Qualitative Taxa: 38 ICI: P

Number of Organisms: 0 Qual EPT: 1

Collection Date: 07/08/2011 River Code: 04-303 RM: 2.60

Site: Hill Ditch
Carriage Drive

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
74100	<i>Simulium sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84060	<i>Parachironomus pectinatellae</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
85800	<i>Tanytarsus sp</i>	+			
85814	<i>Tanytarsus glabrescens group</i>	+			
87540	<i>Hemerodromia sp</i>	+			
96900	<i>Ferrissia sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 19
No. Qualitative Taxa: 19	ICI: P
Number of Organisms: 0	Qual EPT: 2

Collection Date: 07/08/2011 River Code: 04-303 RM: 2.20

Site: Hill Ditch
Reynolds Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	+			
01801	<i>Turbellaria</i>	+			
03360	<i>Plumatella sp</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
06700	<i>Crangonyx sp</i>	+			
11130	<i>Baetis intercalaris</i>	+			
17200	<i>Caenis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
74100	<i>Simulium sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77130	<i>Ablabesmyia rhamphe group</i>	+			
77500	<i>Conchapelopia sp</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83002	<i>Dicrotendipes modestus</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83051	<i>Dicrotendipes simpsoni</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	+			
84040	<i>Parachironomus frequens</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84800	<i>Tribelos jucundum</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 24

No. Qualitative Taxa: 24 ICI: LF

Number of Organisms: 0 Qual EPT: 4

Collection Date: 07/07/2011 River Code: 04-304 RM: 0.70

Site: Zink Ditch
Dorr St.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05800	<i>Caecidotea sp</i>	+			
06700	<i>Crangonyx sp</i>	+			
07860	<i>Cambarus (Puncticambarus) robustus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11120	<i>Baetis flavistriga</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
27500	<i>Somatochlora sp</i>	+			
45300	<i>Sigara sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
53800	<i>Hydroptila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
67700	<i>Paracymus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
74100	<i>Simulium sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78350	<i>Meropelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			
82200	<i>Tvetenia bavarica group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84612	<i>Saetheria tylus</i>	+			
84700	<i>Stenochironomus sp</i>	+			
84750	<i>Stictochironomus sp</i>	+			
85625	<i>Rheotanytarsus sp</i>	+			
85800	<i>Tanytarsus sp</i>	+			
95100	<i>Physella sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 34
 No. Qualitative Taxa: 34 ICI: LF
 Number of Organisms: 0 Qual EPT: 3

Collection Date: 07/26/2011 River Code: 04-306 RM: 2.72

Site: Heldman Ditch
Hill Ave.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04964	<i>Erpobdella microstoma</i>	+			
05800	<i>Caecidotea sp</i>	+			
06700	<i>Crangonyx sp</i>	+			
08220	<i>Orconectes (Gremicambarus) immunis</i>	+			
08601	<i>Hydrachnidia</i>	+			
11120	<i>Baetis flavistriga</i>	+			
11130	<i>Baetis intercalaris</i>	+			
21001	<i>Calopterygidae</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
44501	<i>Corixidae</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
55300	<i>Ptilostomis sp</i>	+			
68901	<i>Macronychus glabratus</i>	+			
71700	<i>Pilaria sp</i>	+			
74100	<i>Simulium sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
82141	<i>Thienemanniella xena</i>	+			
82770	<i>Chironomus (C.) riparius group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84315	<i>Phaenopsectra flavipes</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
84612	<i>Saetheria tylus</i>	+			
84700	<i>Stenochironomus sp</i>	+			
94400	<i>Fossaria sp</i>	+			
95100	<i>Physella sp</i>	+			
96900	<i>Ferrissia sp</i>	+			
97601	<i>Corbicula fluminea</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 38
 No. Qualitative Taxa: 38 ICI: F
 Number of Organisms: 0 Qual EPT: 5

Collection Date: 07/26/2011 River Code: 04-306 RM: 0.15

Site: Heldman Ditch
Edgevale Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
05800	<i>Caecidotea sp</i>	+			
08601	<i>Hydrachnidia</i>	+			
11120	<i>Baetis flavistriga</i>	+			
11130	<i>Baetis intercalaris</i>	+			
21200	<i>Calopteryx sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
60900	<i>Peltodytes sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80410	<i>Cricotopus (C.) sp</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
84612	<i>Saetheria tylus</i>	+			
84750	<i>Stictochironomus sp</i>	+			
85800	<i>Tanytarsus sp</i>	+			
95100	<i>Physella sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 25

No. Qualitative Taxa: 25 ICI: F

Number of Organisms: 0 Qual EPT: 4

Collection Date: 08/15/2011 River Code: 04-320 RM: 18.25

Site: Tenmile Creek

Co. Rd. T

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
02600	<i>Nematomorpha</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
03600	<i>Oligochaeta</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
04685	<i>Placobdella ornata</i>	+	84700	<i>Stenochironomus sp</i>	+
05900	<i>Lirceus sp</i>	+	85230	<i>Cladotanytarsus mancus group</i>	+
06700	<i>Crangonyx sp</i>	+	94400	<i>Fossaria sp</i>	+
08220	<i>Orconectes (Gremicambarus) immunis</i>	+	95100	<i>Physella sp</i>	+
08601	<i>Hydrachnidia</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+
11200	<i>Callibaetis sp</i>	+	96900	<i>Ferrissia sp</i>	+
11651	<i>Proclotron sp (w/o hindwing pads)</i>	+	98600	<i>Sphaerium sp</i>	+
13400	<i>Stenacron sp</i>	+	99160	<i>Anodontoides ferussacianus</i>	+
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 55
18708	<i>Hexagenia bilineata</i>	+	No. Qualitative Taxa: 55		ICI: MG
22001	<i>Coenagrionidae</i>	+	Number of Organisms: 0		Qual EPT: 10
22300	<i>Argia sp</i>	+			
23600	<i>Aeshna sp</i>	+			
42700	<i>Belostoma sp</i>	+			
43570	<i>Neoplea sp</i>	+			
45300	<i>Sigara sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
59300	<i>Mystacides sp</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
59570	<i>Oecetis nocturna</i>	+			
60400	<i>Gyrinus sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
66500	<i>Enochrus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
72900	<i>Culex sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
77800	<i>Helopelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	96900	<i>Ferrissia sp</i>	+
03600	<i>Oligochaeta</i>	+	98600	<i>Sphaerium sp</i>	+
05900	<i>Lirceus sp</i>	+	99160	<i>Anodontoides ferussacianus</i>	+
06700	<i>Crangonyx sp</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	No. Quantitative Taxa: 0		Total Taxa: 47
08601	<i>Hydrachnidia</i>	+	No. Qualitative Taxa: 47		ICI: G
11120	<i>Baetis flavistriga</i>	+	Number of Organisms: 0		Qual EPT: 13
11130	<i>Baetis intercalaris</i>	+			
11200	<i>Callibaetis sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
18700	<i>Hexagenia sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
23909	<i>Boyeria vinosa</i>	+			
28500	<i>Libellula sp</i>	+			
43300	<i>Ranatra sp</i>	+			
45300	<i>Sigara sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53501	<i>Hydroptilidae</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77800	<i>Helopelopia sp</i>	+			
79020	<i>Tanypus neopunctipennis</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84750	<i>Stictochironomus sp</i>	+			
95100	<i>Physella sp</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	31 +	85230	<i>Cladotanytarsus mancus group</i>	4
03600	<i>Oligochaeta</i>	9 +	85500	<i>Paratanytarsus sp</i>	4
04685	<i>Placobdella ornata</i>	+	85800	<i>Tanytarsus sp</i>	8 +
04935	<i>Erpobdella punctata punctata</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	8
05900	<i>Lirceus sp</i>	+	85840	<i>Tanytarsus sepp</i>	4
06700	<i>Crangonyx sp</i>	+	95100	<i>Physella sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	1 +	96900	<i>Ferrissia sp</i>	1
08601	<i>Hydrachnidia</i>	2 +	98600	<i>Sphaerium sp</i>	+
11200	<i>Callibaetis sp</i>	+	99180	<i>Strophitus undulatus undulatus</i>	+
11651	<i>Proclaeon sp (w/o hindwing pads)</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	4 +			
17200	<i>Caenis sp</i>	49 +			
18750	<i>Hexagenia limbata</i>	+			
22001	<i>Coenagrionidae</i>	10 +			
23909	<i>Boyeria vinosa</i>	+			
45100	<i>Palmacorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
59570	<i>Oecetis nocturna</i>	+			
60900	<i>Peltodytes sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	2 +			
69275	<i>Optioservus trivittatus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	1 +			
77120	<i>Ablabesmyia mallochi</i>	42 +			
77130	<i>Ablabesmyia rhamphe group</i>	4			
78120	<i>Labrundinia longipalpis</i>	6			
78650	<i>Procladius sp</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	42			
82885	<i>Cryptotendipes pseudotener</i>	4			
83040	<i>Dicrotendipes neomodestus</i>	246 +			
83051	<i>Dicrotendipes simpsoni</i>	4			
83840	<i>Microtendipes pedellus group</i>	13 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	4 +			
84750	<i>Stictochironomus sp</i>	+			
84790	<i>Tribelos fuscicorne</i>	4			
84800	<i>Tribelos jucundum</i>	4			

No. Quantitative Taxa: 26

Total Taxa: 53

No. Qualitative Taxa: 41

ICI: 20 (G)

Number of Organisms: 511

Qual EPT: 11

Collection Date: 08/16/2011 River Code: 04-320 RM: 9.17

Site: Tenmile Creek
Kilburn Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	83040	<i>Dicrotendipes neomodestus</i>	92 +
03600	<i>Oligochaeta</i>	12	83051	<i>Dicrotendipes simpsoni</i>	7
05900	<i>Lirceus sp</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	7
06700	<i>Crangonyx sp</i>	+	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	83840	<i>Microtendipes pedellus group</i>	178 +
08601	<i>Hydrachnidia</i>	6 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	26 +
11020	<i>Acerpenna pygmaea</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
11120	<i>Baetis flavistriga</i>	+	84460	<i>Polypedilum (P.) fallax group</i>	7
11130	<i>Baetis intercalaris</i>	+	85800	<i>Tanytarsus sp</i>	7
11651	<i>Procloeon sp (w/o hindwing pads)</i>	51 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	46 +
11670	<i>Procloeon viridoculare</i>	+	85840	<i>Tanytarsus sepp</i>	26
13000	<i>Leucrocuta sp</i>	+	95100	<i>Physella sp</i>	+
13400	<i>Stenacron sp</i>	3 +	96900	<i>Ferrissia sp</i>	7 +
13510	<i>Maccaffertium exiguum</i>	+	99160	<i>Anodontoides ferussacianus</i>	+
13521	<i>Stenonema femoratum</i>	5 +			
17200	<i>Caenis sp</i>	2 +	No. Quantitative Taxa: 24		Total Taxa: 58
18700	<i>Hexagenia sp</i>	+	No. Qualitative Taxa: 50		ICI: 22 (G)
21200	<i>Calopteryx sp</i>	+	Number of Organisms: 659		Qual EPT: 18
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	16 +			
23600	<i>Aeshna sp</i>	+			
24900	<i>Gomphus sp</i>	+			
43300	<i>Ranatra sp</i>	+			
43570	<i>Neoplea sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
59730	<i>Triaenodes melaca</i>	+			
60900	<i>Peltodytes sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
66500	<i>Enochrus sp</i>	+			
67700	<i>Paracymus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	2 +			
69400	<i>Stenelmis sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	59 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	7 +			
77800	<i>Helopelopia sp</i>	26 +			
78655	<i>Procladius (Holotanypus) sp</i>	13 +			
80370	<i>Corynoneura lobata</i>	8			
82730	<i>Chironomus (C.) decorus group</i>	46			

Collection Date: 08/16/2011 River Code: 04-320 RM: 5.94

Site: Tenmile Creek
Herr Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	2	83040	<i>Dicrotendipes neomodestus</i>	258 +
01801	<i>Turbellaria</i>	104 +	83051	<i>Dicrotendipes simpsoni</i>	421 +
02600	<i>Nematomorpha</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	244 +
03360	<i>Plumatella sp</i>	+	83600	<i>Kiefferulus (K.) dux</i>	54
03600	<i>Oligochaeta</i>	378	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+
04685	<i>Placobdella ornata</i>	+	83840	<i>Microtendipes pedellus group</i>	27
05900	<i>Lirceus sp</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	27
06700	<i>Crangonyx sp</i>	1 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	14 +
08601	<i>Hydrachnidia</i>	4 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	27
11120	<i>Baetis flavistriga</i>	+	84750	<i>Stictochironomus sp</i>	+
11130	<i>Baetis intercalaris</i>	+	84800	<i>Tribelos jucundum</i>	+
13400	<i>Stenacron sp</i>	15 +	85500	<i>Paratanytarsus sp</i>	27
13521	<i>Stenonema femoratum</i>	+	85625	<i>Rheotanytarsus sp</i>	+
17200	<i>Caenis sp</i>	4 +	85800	<i>Tanytarsus sp</i>	41
18700	<i>Hexagenia sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	109
21200	<i>Calopteryx sp</i>	1	85840	<i>Tanytarsus sepp</i>	41
22001	<i>Coenagrionidae</i>	5 +	92613	<i>Cipangopaludina chinensis malleata</i>	+
22300	<i>Argia sp</i>	10 +	94400	<i>Fossaria sp</i>	+
23909	<i>Boyeria vinosa</i>	+	95100	<i>Physella sp</i>	2 +
28208	<i>Erythemis simplicicollis</i>	1 +	95907	<i>Gyraulus (Torquis) parvus</i>	17
42700	<i>Belostoma sp</i>	+	96120	<i>Menetus (Micromenetus) dilatatus</i>	4 +
45300	<i>Sigara sp</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+
45400	<i>Trichocorixa sp</i>	+	96900	<i>Ferrissia sp</i>	5 +
52200	<i>Cheumatopsyche sp</i>	+	98200	<i>Pisidium sp</i>	+
59500	<i>Oecetis sp</i>	1	98600	<i>Sphaerium sp</i>	+
59550	<i>Oecetis inconspicua complex sp A (sensu Floyd, 1995)</i>	+	99160	<i>Anodontoides ferussacianus</i>	+
60900	<i>Peltodytes sp</i>	+	99240	<i>Lasmigona complanata</i>	+
65700	<i>Anacaena sp</i>	+			
65800	<i>Berosus sp</i>	10 +	No. Quantitative Taxa: 35		Total Taxa: 72
67700	<i>Paracymus sp</i>	+	No. Qualitative Taxa: 55		ICI: 18
68201	<i>Scirtidae</i>	+	Number of Organisms: 1981		Qual EPT: 8
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
72900	<i>Culex sp</i>	+			
74501	<i>Ceratopogonidae</i>	4 +			
77120	<i>Ablabesmyia mallochi</i>	54			
77130	<i>Ablabesmyia rhamphe group</i>	14			
77140	<i>Ablabesmyia peleensis</i>	27			
77500	<i>Conchapelopia sp</i>	+			
78120	<i>Labrundinia longipalpis</i>	14			
78200	<i>Larsia sp</i>	14 +			
78655	<i>Procladius (Holotanypus) sp</i>	+			

Collection Date: 08/16/2011 River Code: 04-320 RM: 2.97

Site: Tenmile Creek
Brint Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	42	85230	<i>Cladotanytarsus mancus group</i>	46 +
01801	<i>Turbellaria</i>	4	85264	<i>Cladotanytarsus vanderwulpi group sp 4</i>	+
02600	<i>Nematomorpha</i>	+	85500	<i>Paratanytarsus sp</i>	46
03360	<i>Plumatella sp</i>	+	85720	<i>Stempellinella fimbriata</i>	+
03600	<i>Oligochaeta</i>	64 +	85800	<i>Tanytarsus sp</i>	93
05900	<i>Lirceus sp</i>	1 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	571
06700	<i>Crangonyx sp</i>	+	85840	<i>Tanytarsus sepp</i>	432
08250	<i>Orconectes (Procericambarus) rusticus</i>	2 +	86100	<i>Chrysops sp</i>	+
08601	<i>Hydrachnidia</i>	+	93900	<i>Elimia sp</i>	26 +
11120	<i>Baetis flavistriga</i>	+	95100	<i>Physella sp</i>	10 +
11130	<i>Baetis intercalaris</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	1
11651	<i>Proclaeon sp (w/o hindwing pads)</i>	47 +	96900	<i>Ferrissia sp</i>	204
13000	<i>Leucrocuta sp</i>	+	98200	<i>Pisidium sp</i>	+
13400	<i>Stenacron sp</i>	22 +	98600	<i>Sphaerium sp</i>	+
13521	<i>Stenonema femoratum</i>	+	99160	<i>Anodontoides ferussacianus</i>	+
17200	<i>Caenis sp</i>	3 +			
18700	<i>Hexagenia sp</i>	+	No. Quantitative Taxa: 33		Total Taxa: 59
21200	<i>Calopteryx sp</i>	24	No. Qualitative Taxa: 40		ICI: 26
22001	<i>Coenagrionidae</i>	+	Number of Organisms: 2298		Qual EPT: 9
22300	<i>Argia sp</i>	26 +			
23909	<i>Boyeria vinosa</i>	1			
27001	<i>Corduliidae</i>	+			
43570	<i>Neoplea sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	16 +			
77120	<i>Ablabesmyia mallochi</i>	46 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	108 +			
77800	<i>Helopelopia sp</i>	77			
78655	<i>Procladius (Holotanypus) sp</i>	15			
80370	<i>Corynoneura lobata</i>	24			
82141	<i>Thienemanniella xena</i>	8			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	93 +			
83300	<i>Glyptotendipes (G.) sp</i>	15			
83840	<i>Microtendipes pedellus group</i>	46			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	46			
84460	<i>Polypedilum (P.) fallax group</i>	62			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	77			

Collection Date: 08/17/2011 River Code: 04-320 RM: 0.47

Site: Tenmile Creek
Silica Drive

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	83040	<i>Dicrotendipes neomodestus</i>	5
01320	<i>Hydra sp</i>	+	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	5
01801	<i>Turbellaria</i>	205 +	83840	<i>Microtendipes pedellus group</i>	110 +
03360	<i>Plumatella sp</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	19 +
03600	<i>Oligochaeta</i>	24 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	81 +
05800	<i>Caecidotea sp</i>	+	84460	<i>Polypedilum (P.) fallax group</i>	38 +
06700	<i>Crangonyx sp</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	81
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84700	<i>Stenochironomus sp</i>	+
08601	<i>Hydrachnidia</i>	+	84750	<i>Stictochironomus sp</i>	+
11120	<i>Baetis flavistriga</i>	231 +	84800	<i>Tribelos jucundum</i>	+
11130	<i>Baetis intercalaris</i>	987 +	85400	<i>Micropsectra sp</i>	5
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	85500	<i>Paratanytarsus sp</i>	+
13400	<i>Stenacron sp</i>	17 +	85800	<i>Tanytarsus sp</i>	5
13521	<i>Stenonema femoratum</i>	9 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	86 +
21200	<i>Calopteryx sp</i>	+	85840	<i>Tanytarsus sepp</i>	14 +
22001	<i>Coenagrionidae</i>	+	87540	<i>Hemerodromia sp</i>	1
22300	<i>Argia sp</i>	45 +	93900	<i>Elimia sp</i>	155 +
23600	<i>Aeshna sp</i>	+	95100	<i>Physella sp</i>	+
23909	<i>Boyeria vinosa</i>	+	96120	<i>Menetus (Micromenetus) dilatatus</i>	+
43300	<i>Ranatra sp</i>	+	96900	<i>Ferrissia sp</i>	4 +
45300	<i>Sigara sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	65 +	No. Quantitative Taxa: 34		Total Taxa: 64
52530	<i>Hydropsyche depravata group</i>	12 +	No. Qualitative Taxa: 51		ICI: 38
53800	<i>Hydroptila sp</i>	+	Number of Organisms: 2444		Qual EPT: 8
68075	<i>Psephenus herricki</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	40 +			
71900	<i>Tipula sp</i>	1			
72700	<i>Anopheles sp</i>	+			
74100	<i>Simulium sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	29 +			
77800	<i>Helopelopia sp</i>	33 +			
78450	<i>Nilotanytus fimbriatus</i>	29			
80351	<i>Corynoneura caudicula</i>	20			
80370	<i>Corynoneura lobata</i>	35			
80410	<i>Cricotopus (C.) sp</i>	+			
80427	<i>Cricotopus (C.) politus</i>	10			
80430	<i>Cricotopus (C.) tremulus group</i>	14			
81270	<i>Nanocladius (N.) spiniplenus</i>	5			
82101	<i>Thienemanniella taurocapita</i>	24 +			
82820	<i>Cryptochironomus sp</i>	+			

Collection Date: 07/26/2011 River Code: 04-321 RM: 0.60

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+	95907	<i>Gyraulus (Torquis) parvus</i>	+
04664	<i>Helobdella stagnalis</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+
04687	<i>Placobdella parasitica</i>	+	96900	<i>Ferrissia sp</i>	+
04935	<i>Erpobdella punctata punctata</i>	+	98200	<i>Pisidium sp</i>	+
05900	<i>Lirceus sp</i>	+	98600	<i>Sphaerium sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
11295	<i>Cloeon dipterum</i>	+	No. Quantitative Taxa: 0		Total Taxa: 49
13000	<i>Leucrocuta sp</i>	+	No. Qualitative Taxa: 49		ICI: F
13400	<i>Stenacron sp</i>	+	Number of Organisms: 0		Qual EPT: 7
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
27500	<i>Somatochlora sp</i>	+			
43570	<i>Neoplea sp</i>	+			
45300	<i>Sigara sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
45900	<i>Notonecta sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
63300	<i>Hydroporini</i>	+			
63900	<i>Laccophilus sp</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68201	<i>Scirtidae</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
72900	<i>Culex sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84750	<i>Stictochironomus sp</i>	+			
86100	<i>Chrysops sp</i>	+			
94400	<i>Fossaria sp</i>	+			
94800	<i>Stagnicola sp</i>	+			
95100	<i>Physella sp</i>	+			

Collection Date: 07/07/2011 River Code: 04-322 RM: 1.41

Site: Prairie Ditch

Tupleo Way

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
04664	<i>Helobdella stagnalis</i>	+			
04666	<i>Helobdella papillata</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+	No. Quantitative Taxa: 0	Total Taxa: 43	
05900	<i>Lirceus sp</i>	+	No. Qualitative Taxa: 43	ICI: F	
06201	<i>Hyaella azteca</i>	+	Number of Organisms: 0	Qual EPT: 4	
08310	<i>Procambarus (Ortmannicus) acutus acutus</i>	+			
08601	<i>Hydrachnidia</i>	+			
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
18750	<i>Hexagenia limbata</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
27500	<i>Somatochlora sp</i>	+			
45300	<i>Sigara sp</i>	+			
47600	<i>Sialis sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
61201	<i>Agabetes acuductus</i>	+			
63300	<i>Hydroporini</i>	+			
66500	<i>Enochrus sp</i>	+			
66901	<i>Helocombus bifidus</i>	+			
67200	<i>Hydrochara sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
72900	<i>Culex sp</i>	+			
77355	<i>Clinotanypus pinguis</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
78680	<i>Procladius (Psilotanypus) bellus</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83051	<i>Dicrotendipes simpsoni</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			
84700	<i>Stenochironomus sp</i>	+			
84800	<i>Tribelos jucundum</i>	+			
92613	<i>Cipangopaludina chinensis malleata</i>	+			
94800	<i>Stagnicola sp</i>	+			
95100	<i>Physella sp</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			
98200	<i>Pisidium sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+			
03600	<i>Oligochaeta</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+	No. Quantitative Taxa: 0	Total Taxa: 42	
04964	<i>Erpobdella microstoma</i>	+	No. Qualitative Taxa: 42	ICI: F	
05800	<i>Caecidotea sp</i>	+	Number of Organisms: 0	Qual EPT: 5	
05900	<i>Lirceus sp</i>	+			
06700	<i>Crangonyx sp</i>	+			
08310	<i>Procambarus (Ortmannicus) acutus acutus</i>	+			
08601	<i>Hydrachnidia</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
18708	<i>Hexagenia bilineata</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
27500	<i>Somatochlora sp</i>	+			
43205	<i>Nepa apiculata</i>	+			
45400	<i>Trichocorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
59555	<i>Oecetis inconspicua complex sp F (sensu Floyd, 1995)</i>	+			
60400	<i>Gyrinus sp</i>	+			
63300	<i>Hydroporini</i>	+			
66500	<i>Enochrus sp</i>	+			
67000	<i>Helophorus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
72900	<i>Culex sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84700	<i>Stenochironomus sp</i>	+			
84800	<i>Tribelos jucundum</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
85800	<i>Tanytarsus sp</i>	+			
85814	<i>Tanytarsus glabrescens group</i>	+			
92613	<i>Cipangopaludina chinensis malleata</i>	+			
95100	<i>Physella sp</i>	+			
96120	<i>Menetus (Micromenetus) dilatatus</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			
98600	<i>Sphaerium sp</i>	+			

Appendix Table 3. Index of Biotic Integrity (IBI) metrics and scores for headwater site samples collected from the Tenmile Creek and Ottawa River study area, 2011.

River Mile	Type	Date	Drainage area (sq mi)	Number of						Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI	
				Total species	Minnow species	Headwater species	Sensitive species	Darter & Sculpin species	Simple Lithophils	Tolerant fishes	Omni- vores	Pioneering fishes	Insect- ivores	DELT anomalies			
<i>Bear Creek - (04-065)</i>																	
Year: 2011																	
13.00	E	06/28/2011	18.7	15(3)	8(5)	1(1)	1(1)	3(3)	4(3)	59(1)	54(1)	80(1)	38(3)	0.0(5)	1204(5)	32	
13.00	E	08/10/2011	18.7	13(3)	8(5)	1(1)	1(1)	3(3)	4(3)	68(1)	67(1)	93(1)	31(3)	0.0(5)	1714(5)	32	
<i>Shantee Creek - (04-068)</i>																	
Year: 2011																	
3.10	E	07/27/2011	7.7	1(1)	1(1)	0(1)	0(1)	0(1)	0(1)	100(1)	25(1)	75(1)	0(1)	0.0(1)	0(1) * *	12	
0.70	E	07/27/2011	9.1	10(3)	4(3)	0(1)	0(1)	0(1)	1(1)	77(1)	81(1)	30(5)	17(1)	0.0(5)	55(1)	24	
4.50	E	07/27/2011	4.6	3(1)	2(1)	0(1)	0(1)	0(1)	1(1)	100(1)	71(1)	96(1)	0(1)	0.0(5)	0(1)	16	
<i>Hill Ditch - (04-303)</i>																	
Year: 2011																	
2.60	E	07/08/2011	3.5	7(3)	4(3)	0(1)	0(1)	0(1)	1(1)	88(1)	78(1)	85(1)	2(1)	0.4(5)	120(3)	22	
2.20	E	07/08/2011	6.3	11(3)	5(3)	0(1)	0(1)	0(1)	1(1)	80(1)	54(1)	76(1)	24(3)	0.5(3)	450(3)	22	
<i>Zink Ditch - (04-304)</i>																	
Year: 2011																	
0.70	E	07/28/2011	3.5	8(3)	3(3)	0(1)	0(1)	2(3)	2(1)	28(5)	9(5)	24(5)	5(1)	0.0(5)	918(5)	38	
<i>Heldman Ditch - (04-306)</i>																	
Year: 2011																	
2.80	E	07/27/2011	8.4	12(3)	4(3)	0(1)	0(1)	1(1)	1(1)	83(1)	40(1)	79(1)	33(3)	0.0(5)	133(1)	22	
<i>Tenmile Creek - (04-320)</i>																	
Year: 2011																	
18.30	E	06/28/2011	9.5	12(3)	6(3)	0(1)	0(1)	4(5)	4(3)	77(1)	73(1)	83(1)	22(3)	0.0(5)	282(3)	30	
<i>Prairie Ditch - (04-322)</i>																	
Year: 2011																	
1.40	E	06/29/2011	16.9	8(1)	2(1)	0(1)	0(1)	2(1)	1(1)	88(1)	1(5)	15(5)	79(5)	0.0(5)	65(1)	28	
0.30	E	06/29/2011	17.3	4(1)	0(1)	0(1)	0(1)	0(1)	0(1)	88(1)	0(5)	2(5)	88(5)	0.0(5)	15(1) *	28	

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Appendix Table 4. Index of Biotic Integrity (IBI) metrics and scores for wading site samples collected from the Tenmile Creek and Ottawa River study area, 2011.

River Mile	Type	Date	Drainage area (sq mi)	Number of					Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI	Modified Iwb	
				Total species	Sunfish species	Sucker species	Intolerant species	Darter species	Simple Lithophils	Tolerant fishes	Omni- vores	Top carnivores	Insect- ivores				DELT anomalies
Bear Creek - (04065)																	
Year: 2011																	
11.60	E	06/28/2011	20	17(5)	2(3)	1(1)	0(1)	3(3)	18(1)	63(1)	52(1)	0.0(1)	31(3)	0.0(5)	996(5)	30	8.6
11.60	E	08/10/2011	20	14(3)	1(1)	1(1)	0(1)	3(3)	9(1)	49(3)	45(1)	0.0(1)	45(3)	0.0(5)	2442(5)	28	8.6
8.40	E	07/25/2011	22	16(3)	2(3)	1(1)	0(1)	3(3)	18(3)	65(1)	59(1)	0.2(1)	39(3)	0.0(5)	616(3)	28	7.8
Halfway Creek - (04067)																	
Year: 2011																	
5.10	E	07/27/2011	22	17(3)	4(5)	1(1)	0(1)	1(1)	19(3)	48(3)	32(3)	6.3(5)	32(3)	0.0(5)	335(3)	36	na
Ottawa River - (04300)																	
Year: 2011																	
19.50	E	07/05/2011	124	13(3)	2(3)	0(1)	0(1)	3(3)	46(5)	24(3)	13(5)	0.3(1)	52(3)	0.0(5)	384(3)	36	5.9
19.50	D	08/17/2011	124	14(3)	2(3)	1(1)	0(1)	4(3)	38(5)	23(3)	10(5)	0.0(1)	44(3)	0.1(5)	869(5)	38	6.7
16.90	D	07/07/2011	127	17(3)	2(3)	2(1)	0(1)	5(3)	13(1)	42(1)	34(3)	0.3(1)	29(3)	0.0(5)	647(3)	28	7.5
16.90	D	08/16/2011	127	14(3)	2(3)	1(1)	0(1)	3(3)	17(1)	40(1)	30(3)	0.5(1)	21(1)	0.0(5)	792(5)	28	7.5
14.40	D	07/05/2011	131	10(1)	1(1)	0(1)	0(1)	4(3)	37(5)	31(3)	3(5)	4.0(3)	69(5)	0.0(5)	78(1) *	34	5.5
14.40	D	08/17/2011	131	16(3)	2(3)	3(3)	0(1)	4(3)	32(3)	55(1)	17(5)	0.7(1)	70(5)	0.7(5)	98(1)	34	5.5
12.20	D	07/07/2011	133	16(3)	3(3)	1(1)	0(1)	4(3)	11(1)	27(3)	22(3)	0.8(1)	25(1)	0.2(3)	671(3)	28	8.1
12.20	D	08/17/2011	133	17(3)	3(3)	2(1)	0(1)	3(3)	12(1)	27(3)	18(5)	0.8(1)	27(3)	0.0(5)	732(3)	32	8.3
11.80	D	07/06/2011	133	12(3)	3(3)	0(1)	0(1)	3(3)	11(1)	12(5)	3(5)	0.8(1)	25(1)	0.0(5)	173(1) *	30	5.9
11.80	D	08/16/2011	133	16(3)	3(3)	1(1)	0(1)	4(3)	5(1)	26(3)	24(3)	0.9(1)	21(1)	0.0(5)	488(3)	28	7.8
11.60	D	07/06/2011	154	13(3)	3(3)	0(1)	0(1)	2(1)	8(1)	28(3)	18(5)	0.8(1)	29(3)	1.0(5)	141(1) *	28	3.8
11.60	D	08/16/2011	154	18(3)	3(3)	0(1)	0(1)	3(3)	1(1)	38(1)	28(3)	0.5(1)	20(1)	0.2(5)	372(3)	26	4.8
11.10	D	07/07/2011	154	18(3)	3(3)	3(3)	0(1)	2(1)	5(1)	23(3)	10(5)	0.3(1)	27(3)	0.0(5)	402(3)	32	6.8
11.10	D	08/16/2011	154	20(3)	3(3)	3(3)	0(1)	3(3)	8(1)	19(5)	12(5)	0.8(1)	24(1)	0.3(5)	461(3)	34	7.5
10.90	D	07/07/2011	155	14(3)	3(3)	3(3)	0(1)	3(3)	3(1)	18(5)	13(5)	0.4(1)	18(1)	1.1(3)	342(3)	32	5.7

na - Qualitative data, Modified Iwb not applicable.

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

River Mile	Type	Date	Drainage area (sq mi)	Number of					Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI	Modified Iwb	
				Total species	Sunfish species	Sucker species	Intolerant species	Darter species	Simple Lithophils	Tolerant fishes	Omni- vores	Top carnivores	Insect- ivores				DELT anomalies
10.90	D	08/16/2011	155	21(3)	4(5)	2(1)	0(1)	3(3)	4(1)	44(1)	39(1)	2.2(3)	25(1)	0.0(5)	302(3)	28	6.7
Heldman Ditch - (04306)																	
Year: 2011																	
0.10	E	08/09/2011	21	15(3)	3(3)	1(1)	0(1)	3(3)	5(1)	51(3)	21(3)	1.2(3)	25(3)	0.0(5)	383(3)	32	na
Tenmile Creek - (04320)																	
Year: 2011																	
16.00	E	06/28/2011	25	13(3)	1(1)	1(1)	0(1)	4(5)	39(5)	37(3)	25(3)	0.0(1)	62(5)	0.0(5)	1208(5)	38	8.6
16.00	E	08/10/2011	25	13(3)	1(1)	1(1)	0(1)	4(5)	19(3)	62(1)	51(1)	0.0(1)	37(3)	0.0(5)	592(3)	28	7.7
15.00	E	07/25/2011	25	13(3)	1(1)	1(1)	0(1)	4(5)	16(1)	63(1)	54(1)	0.0(1)	30(3)	0.0(5)	708(3)	26	7.7
15.00	E	08/22/2011	25	13(3)	1(1)	1(1)	0(1)	4(5)	10(1)	70(1)	67(1)	0.0(1)	26(1)	0.1(5)	904(5)	26	7.0
9.20	E	07/26/2011	43	14(3)	2(3)	1(1)	0(1)	4(3)	28(3)	50(1)	30(3)	0.0(1)	45(3)	0.0(5)	300(3)	30	7.1
9.20	E	08/22/2011	43	15(3)	2(3)	1(1)	0(1)	5(5)	29(3)	56(1)	20(3)	0.0(1)	36(3)	0.0(5)	236(3)	32	6.4
5.90	E	07/26/2011	64	17(3)	3(3)	1(1)	0(1)	3(3)	9(1)	67(1)	25(3)	4.0(3)	57(5)	0.0(5)	248(3)	32	7.4
5.90	E	08/22/2011	64	14(3)	4(5)	2(3)	0(1)	2(1)	14(1)	55(1)	13(5)	10.5(5)	55(5)	0.0(5)	78(1) *	36	6.5
3.00	E	07/26/2011	70	14(3)	2(3)	2(3)	0(1)	3(3)	33(3)	32(3)	2(5)	9.8(5)	84(5)	0.0(5)	180(1)	40	6.9
3.00	E	08/23/2011	70	9(1)	2(3)	0(1)	0(1)	3(3)	21(3)	55(1)	0(5)	12.2(5)	83(5)	0.0(5)	74(1) *	34	4.7
0.50	E	07/26/2011	78	14(3)	2(3)	2(3)	0(1)	3(3)	40(5)	39(3)	6(5)	0.4(1)	55(5)	0.0(5)	590(3)	40	7.6
0.50	E	08/23/2011	78	13(3)	2(3)	0(1)	0(1)	4(3)	47(5)	27(3)	6(5)	0.5(1)	64(5)	0.0(5)	290(3)	38	7.3
North Branch Tenmile - (04321)																	
Year: 2011																	
0.90	E	06/29/2011	42	16(3)	3(3)	1(1)	0(1)	4(3)	10(1)	63(1)	51(1)	1.2(3)	18(1)	0.0(5)	1004(5)	28	na

na - Qualitative data, Modified Iwb not applicable.

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Appendix Table 5. Index of Biotic Integrity (IBI) metrics and scores for boat site samples collected from the Tenmile Creek and Ottawa River study area, 2011.

River Mile	Type	Date	Drainage area (sq mi)	Number of				Percent of Individuals						DELTA anomalies	Rel.No. minus tolerants /(1.0 km)	Modified	
				Total species	Sunfish species	Sucker species	Intolerant species	Rnd-bodied suckers	Simple Lithophils	Tolerant fishes	Omni- vores	Top carnivores	Insect- ivores			IBI	lwb
Ottawa River - (04-300)																	
Year: 2011																	
9.40	A	07/05/2011	155	17(3)	2(3)	2(1)	0(1)	8(1)	32(3)	37(1)	45(1)	3(1)	30(3)	0.7(5)	184(1)	24	8.1
9.40	A	08/17/2011	155	21(5)	3(3)	2(1)	0(1)	2(1)	22(1)	38(1)	59(1)	3(1)	33(3)	0.0(5)	402(3)	26	8.7
Detwiler Ditch - (04-301)																	
Year: 2011																	
0.50	A	08/09/2011	6	10(3)	6(0)	0(0)	0(1)	0(0)	0(1)	16(5)	19(3)	3(0)	77(5)	0.0(5)	654(5)	28	7.2

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

Appendix Table 6. Fish community data collected from sites in the
Tenmile Creek and Ottawa River study area, 2011.

Species List

River Code: 04-065	Stream: Bear Creek	Sample Date: 2011
River Mile: 13.00	Location: Co. Rd. 10	Date Range: 06/28/2011
Time Fished: 3300 sec	Drainage: 18.7 sq mi	Thru: 08/10/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C T	2	2.00	0.05	0.05	0.52	22.50
Western Blacknose Dace	N	G	S T	38	38.00	0.92	0.12	1.39	3.16
Creek Chub	N	G	N T	29	29.00	0.70	0.31	3.59	10.69
Redfin Shiner	N	I	N	95	95.00	2.29	0.11	1.22	1.11
Common Shiner	N	I	S	71	71.00	1.71	0.23	2.70	3.28
Silverjaw Minnow	N	I	M	755	755.00	18.20	1.34	15.54	1.77
Fathead Minnow	N	O	C T	1,177	1,177.00	28.37	1.94	22.49	1.65
Bluntnose Minnow	N	O	C T	1,402	1,402.00	33.79	2.09	24.20	1.49
Central Stoneroller	N	H	N	105	105.00	2.53	0.75	8.64	7.10
Yellow Bullhead		I	C T	32	32.00	0.77	0.44	5.10	13.75
Green Sunfish	S	I	C T	10	10.00	0.24	0.29	3.36	29.00
Bluegill Sunfish	S	I	C P	3	3.00	0.07	0.06	0.70	20.00
Blackside Darter	D	I	S	19	19.00	0.46	0.08	0.87	3.95
Johnny Darter	D	I	C	295	295.00	7.11	0.45	5.16	1.51
Greenside Darter	D	I	S M	116	116.00	2.80	0.39	4.52	3.36
<i>Mile Total</i>				4,149	4,149.00		8.63		
<i>Number of Species</i>				15					
<i>Number of Hybrids</i>				0					

Species List

River Code: 04-065	Stream: Bear Creek	Sample Date: 2011
River Mile: 11.60	Location: St. Rt. 120	Date Range: 06/28/2011
Time Fished: 3000 sec	Drainage: 20.3 sq mi	Thru: 08/10/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C T	3	3.00	0.08	0.05	0.45	16.67
White Sucker	W	O	S T	8	8.00	0.21	0.16	1.43	19.75
Western Blacknose Dace	N	G	S T	118	118.00	3.15	0.35	3.13	2.93
Creek Chub	N	G	N T	79	79.00	2.11	1.39	12.51	17.53
Redfin Shiner	N	I	N	17	17.00	0.45	0.03	0.27	1.76
Common Shiner	N	I	S	125	125.00	3.34	0.84	7.54	6.68
Silverjaw Minnow	N	I	M	813	813.00	21.71	1.57	14.20	1.93
Fathead Minnow	N	O	C T	568	568.00	15.17	1.10	9.94	1.94
Bluntnose Minnow	N	O	C T	1,206	1,206.00	32.20	2.06	18.61	1.71
Central Stoneroller	N	H	N	272	272.00	7.26	1.69	15.27	6.21
Common Sh X Creek Chub				1	1.00	0.03	0.01	0.09	10.00
Yellow Bullhead		I	C T	35	35.00	0.93	0.57	5.11	16.14
Green Sunfish	S	I	C T	9	9.00	0.24	0.14	1.26	15.56
Bluegill Sunfish	S	I	C P	1	1.00	0.03	0.02	0.18	20.00
Green Sf X Bluegill Sf				2	2.00	0.05	0.06	0.54	30.00
Blackside Darter	D	I	S	33	33.00	0.88	0.13	1.17	3.94
Johnny Darter	D	I	C	296	296.00	7.90	0.41	3.67	1.37
Greenside Darter	D	I	S M	159	159.00	4.25	0.51	4.61	3.21
<i>Mile Total</i>				3,745	3,745.00		11.07		
<i>Number of Species</i>				16					
<i>Number of Hybrids</i>				2					

Species List

River Code: 04-065	Stream: Bear Creek	Sample Date: 2011
River Mile: 8.40	Location: Co. Rd. 7	Date Range: 07/25/2011
Time Fished: 1800 sec	Drainage: 22.9 sq mi	
Dist Fished: 0.15 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Pike	F	P	M	2	4.00	0.23	2.26	17.71	565.00
White Sucker	W	O	S T	46	92.00	5.24	4.70	36.84	51.09
Creek Chub	N	G	N T	6	12.00	0.68	0.04	0.31	3.33
Redfin Shiner	N	I	N	102	204.00	11.62	0.18	1.41	0.88
Common Shiner	N	I	S	59	118.00	6.72	0.72	5.64	6.10
Silverjaw Minnow	N	I	M	49	98.00	5.58	0.17	1.33	1.73
Fathead Minnow	N	O	C T	164	328.00	18.68	0.50	3.92	1.52
Bluntnose Minnow	N	O	C T	304	608.00	34.62	0.82	6.40	1.34
Central Stoneroller	N	H	N	10	20.00	1.14	0.05	0.39	2.50
Yellow Bullhead		I	C T	40	80.00	4.56	2.56	20.10	32.05
Green Sunfish	S	I	C T	10	20.00	1.14	0.35	2.74	17.50
Bluegill Sunfish	S	I	C P	1	2.00	0.11	0.05	0.39	25.00
Green Sf X Bluegill Sf				1	2.00	0.11	0.02	0.14	9.00
Yellow Perch			M	1	2.00	0.11	0.08	0.63	40.00
Blackside Darter	D	I	S	23	46.00	2.62	0.09	0.69	1.90
Johnny Darter	D	I	C	30	60.00	3.42	0.05	0.41	0.86
Greenside Darter	D	I	S M	30	60.00	3.42	0.12	0.94	2.00
<i>Mile Total</i>				878	1,756.00		12.76		
<i>Number of Species</i>				16					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-067	Stream: Halfway Creek	Sample Date: 2011
River Mile: 5.10	Location: upst. bridge, at apartments	Date Range: 07/27/2011
Time Fished: 1800 sec	Drainage: 22.1 sq mi	
Dist Fished: 0.12 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	6	15.00	2.34			
Redfin Pickerel		P	M P	6	15.00	2.34			
Northern Pike	F	P	M	1	2.50	0.39			
White Sucker	W	O	S T	47	117.50	18.36			
Goldfish	G	O	M T	5	12.50	1.95			
Creek Chub	N	G	N T	25	62.50	9.77			
Emerald Shiner	N	I	M	4	10.00	1.56			
Fathead Minnow	N	O	C T	2	5.00	0.78			
Bluntnose Minnow	N	O	C T	21	52.50	8.20			
Yellow Bullhead		I	C T	4	10.00	1.56			
Brown Bullhead		I	C T	6	15.00	2.34			
Black Bullhead		I	C P	1	2.50	0.39			
Rock Bass	S	C	C	7	17.50	2.73			
Largemouth Bass	F	C	C	2	5.00	0.78			
Green Sunfish	S	I	C T	12	30.00	4.69			
Bluegill Sunfish	S	I	C P	3	7.50	1.17			
Pumpkinseed Sunfish	S	I	C P	51	127.50	19.92			
Logperch	D	I	S M	2	5.00	0.78			
Round Goby	E			51	127.50	19.92			
<i>Mile Total</i>				256	640.00				
<i>Number of Species</i>				19					
<i>Number of Hybrids</i>				0					

Species List

River Code: 04-068 River Mile: 3.10 Time Fished: 600 sec Dist Fished: 0.10 km	Stream: Shantee Creek Location: Lewis Ave. Drainage: 7.7 sq mi Basin: Maumee River	Sample Date: 2011 Date Range: 07/27/2011 No of Passes: 1 Sampler Type: E
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Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Goldfish	G	O	M	T	1	3.00	25.00			
Creek Chub	N	G	N	T	3	9.00	75.00			
	<i>Mile Total</i>				4	12.00				
					<i>Number of Species</i>	2				
					<i>Number of Hybrids</i>	0				

Species List

River Code: 04-068	Stream: Shantee Creek	Sample Date: 2011
River Mile: 0.70	Location: Stickney Ave.	Date Range: 07/27/2011
Time Fished: 1500 sec	Drainage: 9.1 sq mi	
Dist Fished: 0.12 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M		17	42.50	18.09			
White Sucker	W	O	S	T	7	17.50	7.45			
Common Carp	G	O	M	T	3	7.50	3.19			
Goldfish	G	O	M	T	28	70.00	29.79			
Golden Shiner	N	I	M	T	1	2.50	1.06			
Creek Chub	N	G	N	T	2	5.00	2.13			
Emerald Shiner	N	I	M		3	7.50	3.19			
Fathead Minnow	N	O	C	T	21	52.50	22.34			
Yellow Bullhead		I	C	T	1	2.50	1.06			
Brown Bullhead		I	C	T	4	10.00	4.26			
Black Bullhead		I	C	P	2	5.00	2.13			
Green Sunfish	S	I	C	T	5	12.50	5.32			
<i>Mile Total</i>					94	235.00				
<i>Number of Species</i>					12					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-069	Stream: Silver Creek	Sample Date: 2011
River Mile: 4.50	Location: Lewis Ave.	Date Range: 07/27/2011
Time Fished: 1200 sec	Drainage: 4.6 sq mi	
Dist Fished: 0.12 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	12	30.00	4.04			
Common Carp	G	O	M	T	1	2.50	0.34			
Creek Chub	N	G	N	T	87	217.50	29.29			
Fathead Minnow	N	O	C	T	197	492.50	66.33			
<i>Mile Total</i>					297	742.50				
<i>Number of Species</i>					4					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-069	Stream: Silver Creek	Sample Date: 2011
River Mile: 1.10	Location: dst. Raintree Parkway	Date Range: 08/08/2011
Time Fished: 2700 sec	Drainage: 10.1 sq mi	
Dist Fished: 0.50 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	73	146.00	19.73	1.04	9.33	7.12
White Sucker	W	O	S T	18	36.00	4.86	1.20	10.76	33.33
Common Carp	G	O	M T	10	20.00	2.70	1.86	16.68	93.00
Goldfish	G	O	M T	34	68.00	9.19	4.48	40.18	65.88
Golden Shiner	N	I	M T	14	28.00	3.78	0.22	1.97	7.86
Emerald Shiner	N	I	M	48	96.00	12.97	0.23	2.02	2.34
Fathead Minnow	N	O	C T	136	272.00	36.76	0.16	1.44	0.59
Bluntnose Minnow	N	O	C T	25	50.00	6.76	0.11	0.98	2.17
Brown Bullhead		I	C T	2	4.00	0.54	0.08	0.72	20.00
Largemouth Bass	F	C	C	1	2.00	0.27	0.02	0.18	10.00
Bluegill Sunfish	S	I	C P	2	4.00	0.54	0.01	0.07	2.00
Orangespotted Sunfish	S	I	C	1	2.00	0.27	0.00	0.04	2.00
Pumpkinseed Sunfish	S	I	C P	5	10.00	1.35	0.04	0.39	4.40
Freshwater Drum			M P	1	2.00	0.27	1.70	15.25	850.00
<i>Mile Total</i>				370	740.00		11.15		
<i>Number of Species</i>				14					
<i>Number of Hybrids</i>				0					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 19.50	Location: Harroun Rd.	Date Range: 07/05/2011
Time Fished: 4764 sec	Drainage: 124.6 sq mi	Thru: 08/17/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: E D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C T	1	0.75	0.09	0.00	0.01	6.00
Northern Pike	F	P	M	1	0.75	0.09	0.31	0.69	412.00
White Sucker	W	O	S T	2	1.50	0.18	0.01	0.02	6.00
Common Carp	G	O	M T	23	17.25	2.11	39.18	87.53	2,271.30
Creek Chub	N	G	N T	96	72.00	8.79	1.24	2.78	17.27
Redfin Shiner	N	I	N	2	1.50	0.18	0.01	0.01	3.00
Striped Shiner	N	I	S	131	98.25	12.00	0.54	1.20	5.47
Common Shiner	N	I	S	1	0.75	0.09	0.01	0.02	12.00
Bluntnose Minnow	N	O	C T	93	69.75	8.52	0.20	0.44	2.85
Central Stoneroller	N	H	N	364	273.00	33.33	1.32	2.96	4.85
Yellow Bullhead		I	C T	4	3.00	0.37	0.16	0.35	52.50
Brown Bullhead		I	C T	3	2.25	0.27	0.56	1.25	249.33
Green Sunfish	S	I	C T	35	26.25	3.21	0.50	1.12	19.14
Bluegill Sunfish	S	I	C P	8	6.00	0.73	0.07	0.15	11.00
Green Sf X Bluegill Sf				5	3.75	0.46	0.16	0.35	42.00
Blackside Darter	D	I	S	118	88.50	10.81	0.23	0.51	2.59
Logperch	D	I	S M	1	0.75	0.09	0.01	0.02	12.00
Johnny Darter	D	I	C	18	13.50	1.65	0.03	0.07	2.33
Orangethroat Darter	D	I	S	186	139.50	17.03	0.23	0.51	1.64
<i>Mile Total</i>				1,092	819.00		44.76		
<i>Number of Species</i>				18					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 16.90	Location: Sylvania Ave.	Date Range: 07/07/2011
Time Fished: 4489 sec	Drainage: 127.6 sq mi	Thru: 08/16/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight	
Redfin Pickerel		P	M	P	5	3.75	0.31	0.08	1.69	20.60
Northern Pike	F	P	M		1	0.75	0.06	0.04	0.82	50.00
Golden Redhorse	R	I	S	M	5	3.75	0.31	0.13	2.81	34.20
White Sucker	W	O	S	T	52	39.00	3.18	0.13	2.83	3.32
Creek Chub	N	G	N	T	88	66.00	5.39	0.38	8.29	5.74
Emerald Shiner	N	I	M		2	1.50	0.12	0.01	0.26	8.00
Redfin Shiner	N	I	N		2	1.50	0.12	0.00	0.10	3.00
Striped Shiner	N	I	S		42	31.50	2.57	0.17	3.70	5.36
Fathead Minnow	N	O	C	T	1	0.75	0.06	0.00	0.02	1.00
Bluntnose Minnow	N	O	C	T	462	346.50	28.29	0.63	13.75	1.81
Central Stoneroller	N	H	N		620	465.00	37.97	1.25	27.29	2.68
Yellow Bullhead		I	C	T	1	0.75	0.06	0.02	0.48	29.00
Green Sunfish	S	I	C	T	70	52.50	4.29	1.11	24.26	21.13
Bluegill Sunfish	S	I	C	P	43	32.25	2.63	0.26	5.62	7.97
Green Sf X Bluegill Sf					2	1.50	0.12	0.05	1.07	32.50
Blackside Darter	D	I	S		118	88.50	7.23	0.15	3.36	1.73
Logperch	D	I	S	M	2	1.50	0.12	0.03	0.65	19.50
Johnny Darter	D	I	C		89	66.75	5.45	0.10	2.23	1.52
Orangethroat Darter	D	I	S		27	20.25	1.65	0.04	0.81	1.83
Least Darter [S]	D	I	N		1	0.75	0.06	0.00	0.02	1.00
<i>Mile Total</i>				1,633	1,224.75		4.57			
<i>Number of Species</i>				19						
<i>Number of Hybrids</i>				1						

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 14.40	Location: Edgehill Rd.	Date Range: 07/05/2011
Time Fished: 3650 sec	Drainage: 131.6 sq mi	Thru: 08/17/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C T	2	1.50	0.91	0.01	0.08	3.50
Redfin Pickerel		P	M P	4	3.00	1.82	0.06	0.80	18.25
Golden Redhorse	R	I	S M	6	4.50	2.73	0.23	3.27	50.00
Shorthead Redhorse	R	I	S M	1	0.75	0.45	0.02	0.22	20.00
White Sucker	W	O	S T	5	3.75	2.27	0.01	0.17	3.00
Common Carp	G	O	M T	2	1.50	0.91	5.14	74.71	3,425.00
Creek Chub	N	G	N T	28	21.00	12.73	0.19	2.73	8.93
Striped Shiner	N	I	S	6	4.50	2.73	0.02	0.32	4.83
Bluntnose Minnow	N	O	C T	19	14.25	8.64	0.02	0.33	1.58
Central Stoneroller	N	H	N	7	5.25	3.18	0.02	0.33	4.29
Yellow Bullhead		I	C T	5	3.75	2.27	0.33	4.86	89.00
Green Sunfish	S	I	C T	42	31.50	19.09	0.49	7.06	15.40
Bluegill Sunfish	S	I	C P	9	6.75	4.09	0.14	2.05	20.89
Green Sf X Bluegill Sf				1	0.75	0.45	0.03	0.39	35.00
Blackside Darter	D	I	S	36	27.00	16.36	0.08	1.14	2.90
Logperch	D	I	S M	6	4.50	2.73	0.05	0.67	10.17
Johnny Darter	D	I	C	26	19.50	11.82	0.03	0.40	1.38
Orangethroat Darter	D	I	S	14	10.50	6.36	0.02	0.29	1.86
Round Goby	E			1	0.75	0.45	0.02	0.24	22.00
<i>Mile Total</i>				220	165.00		6.88		
<i>Number of Species</i>				18					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 12.20	Location: Bancroft St.	Date Range: 07/07/2011
Time Fished: 5197 sec	Drainage: 133.0 sq mi	Thru: 08/17/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	1	0.75	0.08	0.01	0.17	12.00
Redfin Pickerel		P	M P	1	0.75	0.08	0.01	0.14	10.00
Northern Pike	F	P	M	2	1.50	0.16	0.12	2.19	77.50
Golden Redhorse	R	I	S M	3	2.25	0.23	0.13	2.44	57.67
White Sucker	W	O	S T	46	34.50	3.60	0.66	12.43	19.20
Creek Chub	N	G	N T	65	48.75	5.09	0.81	15.27	16.70
Emerald Shiner	N	I	M	47	35.25	3.68	0.13	2.38	3.61
Striped Shiner	N	I	S	3	2.25	0.23	0.02	0.34	8.00
Spotfin Shiner	N	I	M	13	9.75	1.02	0.04	0.75	4.08
Bluntnose Minnow	N	O	C T	205	153.75	16.04	0.28	5.18	1.80
Central Stoneroller	N	H	N	437	327.75	34.19	0.76	14.28	2.32
Brown Bullhead		I	C T	4	3.00	0.31	0.08	1.48	26.25
Largemouth Bass	F	C	C	7	5.25	0.55	0.29	5.37	54.43
Green Sunfish	S	I	C T	23	17.25	1.80	0.31	5.72	17.65
Bluegill Sunfish	S	I	C P	86	64.50	6.73	0.53	9.90	8.17
Pumpkinseed Sunfish	S	I	C P	20	15.00	1.56	0.24	4.44	15.75
Green Sf X Bluegill Sf				4	3.00	0.31	0.09	1.76	31.25
Blackside Darter	D	I	S	45	33.75	3.52	0.11	1.99	3.13
Logperch	D	I	S M	45	33.75	3.52	0.22	4.09	6.45
Johnny Darter	D	I	C	35	26.25	2.74	0.06	1.19	2.42
Orangethroat Darter	D	I	S	4	3.00	0.31	0.01	0.17	3.00
Round Goby	E			182	136.50	14.24	0.45	8.40	3.28
<i>Mile Total</i>				1,278	958.50		5.33		
<i>Number of Species</i>				21					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 11.80	Location: upst. old University of Toledo dam	Date Range: 07/06/2011
Time Fished: 3551 sec	Drainage: 133.0 sq mi	Thru: 08/16/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	46	34.50	8.10	0.43	12.62	12.39
Central Mudminnow		I	C T	1	0.75	0.18	0.00	0.03	1.00
White Sucker	W	O	S T	3	2.25	0.53	0.04	1.24	18.67
Creek Chub	N	G	N T	31	23.25	5.46	0.05	1.55	2.26
Emerald Shiner	N	I	M	3	2.25	0.53	0.01	0.35	5.33
Spotfin Shiner	N	I	M	1	0.75	0.18	0.00	0.09	4.00
Bluntnose Minnow	N	O	C T	61	45.75	10.74	0.12	3.54	2.63
Central Stoneroller	N	H	N	129	96.75	22.71	0.61	17.87	6.26
Yellow Bullhead		I	C T	3	2.25	0.53	0.12	3.50	52.67
Largemouth Bass	F	C	C	5	3.75	0.88	0.58	17.03	153.80
Green Sunfish	S	I	C T	29	21.75	5.11	0.34	10.08	15.69
Bluegill Sunfish	S	I	C P	40	30.00	7.04	0.28	8.23	9.30
Pumpkinseed Sunfish	S	I	C P	7	5.25	1.23	0.10	3.00	19.29
Green Sf X Pumpkinseed				1	0.75	0.18	0.06	1.73	78.00
Blackside Darter	D	I	S	11	8.25	1.94	0.03	0.97	4.00
Logperch	D	I	S M	23	17.25	4.05	0.17	5.00	9.83
Johnny Darter	D	I	C	4	3.00	0.70	0.01	0.16	1.75
Least Darter [S]	D	I	N	1	0.75	0.18	0.00	0.03	1.00
Round Goby	E			169	126.75	29.75	0.44	13.01	3.48
<i>Mile Total</i>				568	426.00		3.39		
<i>Number of Species</i>				18					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 11.60	Location: Secor Rd.	Date Range: 07/06/2011
Time Fished: 4543 sec	Drainage: 154.0 sq mi	Thru: 08/16/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Redfin Pickerel		P	M	P	1	0.75	0.19	0.03	0.10	40.00
Northern Pike	F	P	M		1	0.75	0.19	0.24	0.78	325.00
Common Carp	G	O	M	T	18	13.50	3.38	28.98	93.10	2,146.34
Golden Shiner	N	I	M	T	1	0.75	0.19	0.00	0.00	2.00
Creek Chub	N	G	N	T	3	2.25	0.56	0.02	0.05	6.67
Emerald Shiner	N	I	M		15	11.25	2.81	0.06	0.18	5.07
Spotfin Shiner	N	I	M		9	6.75	1.69	0.05	0.16	7.22
Fathead Minnow	N	O	C	T	5	3.75	0.94	0.01	0.02	1.60
Bluntnose Minnow	N	O	C	T	115	86.25	21.58	0.15	0.49	1.76
Central Stoneroller	N	H	N		21	15.75	3.94	0.05	0.15	3.03
Yellow Bullhead		I	C	T	2	1.50	0.38	0.05	0.17	35.50
Tadpole Madtom		I	C		1	0.75	0.19	0.02	0.07	30.00
Western Mosquitofish	E	I	N		2	1.50	0.38	0.00	0.01	1.50
Largemouth Bass	F	C	C		1	0.75	0.19	0.01	0.03	12.00
Green Sunfish	S	I	C	T	47	35.25	8.82	0.48	1.55	13.70
Bluegill Sunfish	S	I	C	P	16	12.00	3.00	0.10	0.31	7.94
Pumpkinseed Sunfish	S	I	C	P	3	2.25	0.56	0.06	0.21	28.33
Green Sf X Bluegill Sf					1	0.75	0.19	0.02	0.08	32.00
Yellow Perch			M		2	1.50	0.38	0.23	0.75	155.50
Logperch	D	I	S	M	13	9.75	2.44	0.08	0.25	7.85
Johnny Darter	D	I	C		5	3.75	0.94	0.01	0.03	2.20
Least Darter [S]	D	I	N		5	3.75	0.94	0.00	0.01	1.00
Round Goby	E				246	184.50	46.15	0.47	1.52	2.56
<i>Mile Total</i>					533	399.75		31.12		
<i>Number of Species</i>					22					
<i>Number of Hybrids</i>					1					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 11.10	Location: Stadium Drive	Date Range: 07/07/2011
Time Fished: 3741 sec	Drainage: 154.0 sq mi	Thru: 08/16/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	3	2.25	0.41	0.34	3.98	150.00
Northern Pike	F	P	M	2	1.50	0.28	0.09	1.06	60.00
Golden Redhorse	R	I	S M	8	6.00	1.10	0.36	4.26	60.25
White Sucker	W	O	S T	13	9.75	1.79	0.44	5.14	44.69
Spotted Sucker	R	I	S	8	6.00	1.10	1.22	14.38	203.38
Common Carp	G	O	M T	2	1.50	0.28	1.90	22.36	1,265.00
Goldfish	G	O	M T	1	0.75	0.14	0.32	3.80	430.00
Creek Chub	N	G	N T	5	3.75	0.69	0.04	0.51	11.60
Emerald Shiner	N	I	M	11	8.25	1.51	0.03	0.39	4.00
Spotfin Shiner	N	I	M	7	5.25	0.96	0.02	0.28	4.57
Fathead Minnow	N	O	C T	1	0.75	0.14	0.00	0.02	2.00
Bluntnose Minnow	N	O	C T	63	47.25	8.67	0.13	1.50	2.70
Central Stoneroller	N	H	N	31	23.25	4.26	0.14	1.61	5.90
Yellow Bullhead		I	C T	9	6.75	1.24	0.38	4.49	56.44
Brown Bullhead		I	C T	15	11.25	2.06	0.52	6.07	45.80
Black Bullhead		I	C P	2	1.50	0.28	0.19	2.21	125.00
Western Mosquitofish	E	I	N	1	0.75	0.14	0.00	0.02	2.00
Largemouth Bass	F	C	C	2	1.50	0.28	0.22	2.60	147.00
Green Sunfish	S	I	C T	43	32.25	5.91	0.47	5.48	14.42
Bluegill Sunfish	S	I	C P	44	33.00	6.05	0.26	3.03	7.80
Pumpkinseed Sunfish	S	I	C P	16	12.00	2.20	0.15	1.77	12.50
Yellow Perch			M	1	0.75	0.14	0.07	0.86	97.00
Blackside Darter	D	I	S	2	1.50	0.28	0.01	0.06	3.50
Logperch	D	I	S M	18	13.50	2.48	0.11	1.27	8.00
Johnny Darter	D	I	C	3	2.25	0.41	0.00	0.04	1.33
Round Goby	E			416	312.00	57.22	1.09	12.83	3.49
<i>Mile Total</i>				727	545.25		8.49		
<i>Number of Species</i>				26					
<i>Number of Hybrids</i>				0					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 10.90	Location: Douglas Ave.	Date Range: 07/07/2011
Time Fished: 3599 sec	Drainage: 155.0 sq mi	Thru: 08/16/2011
Dist Fished: 0.40 km	Basin: Ottawa River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	2	1.50	0.32	0.12	0.37	79.50
Central Mudminnow		I	C T	2	1.50	0.32	0.01	0.04	8.00
Northern Pike	F	P	M	4	3.00	0.63	1.29	4.01	431.25
Golden Redhorse	R	I	S M	4	3.00	0.63	0.14	0.44	47.50
White Sucker	W	O	S T	7	5.25	1.10	0.82	2.55	157.00
Spotted Sucker	R	I	S	1	0.75	0.16	0.34	1.04	448.00
Common Carp	G	O	M T	16	12.00	2.52	26.37	81.68	2,197.22
Creek Chub	N	G	N T	4	3.00	0.63	0.01	0.04	3.75
Emerald Shiner	N	I	M	38	28.50	5.99	0.10	0.31	3.53
Striped Shiner	N	I	S	1	0.75	0.16	0.01	0.03	12.00
Fathead Minnow	N	O	C T	1	0.75	0.16	0.00	0.01	4.00
Bluntnose Minnow	N	O	C T	149	111.75	23.50	0.28	0.87	2.51
Central Stoneroller	N	H	N	2	1.50	0.32	0.01	0.03	6.00
Brown Bullhead		I	C T	13	9.75	2.05	0.59	1.84	60.77
Largemouth Bass	F	C	C	5	3.75	0.79	0.35	1.10	94.40
Green Sunfish	S	I	C T	13	9.75	2.05	0.20	0.60	20.00
Bluegill Sunfish	S	I	C P	44	33.00	6.94	0.25	0.78	7.61
Orangespotted Sunfish	S	I	C	1	0.75	0.16	0.01	0.04	16.00
Pumpkinseed Sunfish	S	I	C P	9	6.75	1.42	0.13	0.41	19.44
Green Sf X Bluegill Sf				1	0.75	0.16	0.05	0.14	62.00
Yellow Perch			M	4	3.00	0.63	0.33	1.02	109.50
Blackside Darter	D	I	S	7	5.25	1.10	0.02	0.08	4.57
Logperch	D	I	S M	4	3.00	0.63	0.03	0.08	8.50
Johnny Darter	D	I	C	2	1.50	0.32	0.00	0.01	1.50
Round Goby	E			300	225.00	47.32	0.81	2.50	3.59
<i>Mile Total</i>				634	475.50		32.28		
<i>Number of Species</i>				24					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-300	Stream: Ottawa River	Sample Date: 2011
River Mile: 9.40	Location: Monroe St.	Date Range: 07/05/2011
Time Fished: 4862 sec	Drainage: 155.6 sq mi	Thru: 08/17/2011
Dist Fished: 1.00 km	Basin: Ottawa River	Sampler Type: A
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	95	95.00	20.13	5.64	12.28	59.37
Redfin Pickerel		P	M P	1	1.00	0.21	0.03	0.07	30.00
Northern Pike	F	P	M	4	4.00	0.85	2.60	5.66	650.00
Golden Redhorse	R	I	S M	18	18.00	3.81	1.75	3.81	97.11
White Sucker	W	O	S T	75	75.00	15.89	7.04	15.34	93.88
Common Carp	G	O	M T	16	16.00	3.39	21.02	45.78	1,313.75
Golden Shiner	N	I	M T	6	6.00	1.27	0.04	0.08	5.83
Creek Chub	N	G	N T	5	5.00	1.06	0.12	0.25	23.20
Emerald Shiner	N	I	M	64	64.00	13.56	0.19	0.40	2.89
Spottail Shiner	N	I	M P	1	1.00	0.21	0.01	0.02	10.00
Spotfin Shiner	N	I	M	13	13.00	2.75	0.08	0.18	6.26
Bluntnose Minnow	N	O	C T	72	72.00	15.25	0.26	0.56	3.60
Central Stoneroller	N	H	N	12	12.00	2.54	0.04	0.08	3.00
Yellow Bullhead		I	C T	1	1.00	0.21	0.39	0.85	388.00
Brown Bullhead		I	C T	3	3.00	0.64	0.89	1.95	297.67
Largemouth Bass	F	C	C	9	9.00	1.91	1.12	2.45	124.78
Green Sunfish	S	I	C T	1	1.00	0.21	0.05	0.10	45.00
Bluegill Sunfish	S	I	C P	7	7.00	1.48	0.08	0.18	11.57
Pumpkinseed Sunfish	S	I	C P	13	13.00	2.75	0.26	0.56	19.77
Green Sf X Bluegill Sf				1	1.00	0.21	0.03	0.06	28.00
Yellow Perch			M	19	19.00	4.03	2.98	6.48	156.58
Blackside Darter	D	I	S	4	4.00	0.85	0.02	0.04	5.00
Logperch	D	I	S M	19	19.00	4.03	0.13	0.29	7.00
Orangethroat Darter	D	I	S	1	1.00	0.21	0.01	0.01	5.00
Freshwater Drum			M P	2	2.00	0.42	1.10	2.39	549.50
Round Goby	E			10	10.00	2.12	0.06	0.14	6.30
<i>Mile Total</i>				472	472.00		45.91		
<i>Number of Species</i>				25					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-301	Stream: Detwiler Ditch	Sample Date: 2011
River Mile: 0.50	Location: Detwiler Park	Date Range: 08/09/2011
Time Fished: 2400 sec	Drainage: 6.2 sq mi	
Dist Fished: 0.35 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	21	60.00	7.75	5.09	4.32	84.76
Common Carp	G	O	M T	30	85.71	11.07	94.49	80.34	1,102.33
Goldfish	G	O	M T	1	2.86	0.37	0.15	0.13	54.00
Golden Shiner	N	I	M T	2	5.71	0.74	0.09	0.07	15.00
Black Bullhead		I	C P	2	5.71	0.74	0.91	0.78	160.00
White Crappie	S	I	C	4	11.43	1.48	1.66	1.41	145.00
Black Crappie	S	I	C	9	25.71	3.32	1.97	1.68	76.67
Largemouth Bass	F	C	C	7	20.00	2.58	4.31	3.67	215.71
Green Sunfish	S	I	C T	9	25.71	3.32	0.97	0.83	37.78
Bluegill Sunfish	S	I	C P	157	448.57	57.93	6.56	5.57	14.62
Orangespotted Sunfish	S	I	C	12	34.29	4.43	0.34	0.29	10.00
Pumpkinseed Sunfish	S	I	C P	15	42.86	5.54	1.03	0.87	24.00
Green Sf X Bluegill Sf				2	5.71	0.74	0.03	0.03	6.00
<i>Mile Total</i>				271	774.29		117.60		
<i>Number of Species</i>				12					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-303	Stream: Hill Ditch	Sample Date: 2011
River Mile: 2.60	Location: Carriage Drive	Date Range: 07/08/2011
Time Fished: 945 sec	Drainage: 3.5 sq mi	
Dist Fished: 0.08 km	Basin: Ottawa River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C	T	1	3.75	0.38			
White Sucker	W	O	S	T	5	18.75	1.92			
Common Carp	G	O	M	T	1	3.75	0.38			
Creek Chub	N	G	N	T	21	78.75	8.08			
Fathead Minnow	N	O	C	T	69	258.75	26.54			
Bluntnose Minnow	N	O	C	T	127	476.25	48.85			
Central Stoneroller	N	H	N		32	120.00	12.31			
Green Sunfish	S	I	C	T	4	15.00	1.54			
<i>Mile Total</i>					260	975.00				
<i>Number of Species</i>					8					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-303	Stream: Hill Ditch	Sample Date: 2011
River Mile: 2.20	Location: Reynolds Rd.	Date Range: 07/08/2011
Time Fished: 1307 sec	Drainage: 6.3 sq mi	
Dist Fished: 0.08 km	Basin: Ottawa River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	3	11.25	0.49			
Golden Shiner	N	I	M	T	12	45.00	1.98			
Creek Chub	N	G	N	T	54	202.50	8.90			
Fathead Minnow	N	O	C	T	19	71.25	3.13			
Bluntnose Minnow	N	O	C	T	308	1,155.00	50.74			
Central Stoneroller	N	H	N		16	60.00	2.64			
Yellow Bullhead		I	C	T	12	45.00	1.98			
Largemouth Bass	F	C	C		1	3.75	0.16			
Green Sunfish	S	I	C	T	79	296.25	13.01			
Bluegill Sunfish	S	I	C	P	7	26.25	1.15			
Pumpkinseed Sunfish	S	I	C	P	33	123.75	5.44			
Green Sf X Pumpkinseed					63	236.25	10.38			
<i>Mile Total</i>					607	2,276.25				
<i>Number of Species</i>					11					
<i>Number of Hybrids</i>					1					

Species List

River Code: 04-304	Stream: Zink Ditch	Sample Date: 2011
River Mile: 0.70	Location: Dorr St.	Date Range: 07/28/2011
Time Fished: 1800 sec	Drainage: 3.5 sq mi	
Dist Fished: 0.15 km	Basin: Ottawa River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	55	110.00	8.63			
Common Carp	G	O	M	T	2	4.00	0.31			
Creek Chub	N	G	N	T	117	234.00	18.37			
Bluntnose Minnow	N	O	C	T	1	2.00	0.16			
Central Stoneroller	N	H	N		414	828.00	64.99			
Largemouth Bass	F	C	C		14	28.00	2.20			
Green Sunfish	S	I	C	T	3	6.00	0.47			
Johnny Darter	D	I	C		26	52.00	4.08			
Orangethroat Darter	D	I	S		5	10.00	0.78			
<i>Mile Total</i>					637	1,274.00				
<i>Number of Species</i>					9					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-306	Stream: Heldman Ditch	Sample Date: 2011
River Mile: 2.80	Location:	Date Range: 07/27/2011
Time Fished: 1800 sec	Drainage:	
Dist Fished: 0.12 km	Basin: Ottawa River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C	T	27	67.50	8.68			
White Sucker	W	O	S	T	19	47.50	6.11			
Creek Chub	N	G	N	T	77	192.50	24.76			
Fathead Minnow	N	O	C	T	6	15.00	1.93			
Bluntnose Minnow	N	O	C	T	98	245.00	31.51			
Central Stoneroller	N	H	N		4	10.00	1.29			
Yellow Bullhead		I	C	T	7	17.50	2.25			
Largemouth Bass	F	C	C		3	7.50	0.96			
Green Sunfish	S	I	C	T	24	60.00	7.72			
Bluegill Sunfish	S	I	C	P	2	5.00	0.64			
Pumpkinseed Sunfish	S	I	C	P	4	10.00	1.29			
Johnny Darter	D	I	C		40	100.00	12.86			
<i>Mile Total</i>					311	777.50				
<i>Number of Species</i>					12					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-306	Stream: Heldman Ditch	Sample Date: 2011
River Mile: 0.10	Location: Edgevale Rd.	Date Range: 08/09/2011
Time Fished: 1500 sec	Drainage: 21.0 sq mi	
Dist Fished: 0.13 km	Basin: Ottawa River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	11	25.39	3.24			
Creek Chub	N	G	N	T	61	140.77	17.99			
Emerald Shiner	N	I	M		9	20.77	2.65			
Striped Shiner	N	I	S		2	4.62	0.59			
Fathead Minnow	N	O	C	T	4	9.23	1.18			
Bluntnose Minnow	N	O	C	T	55	126.92	16.22			
Central Stoneroller	N	H	N		65	150.00	19.17			
Yellow Bullhead		I	C	T	12	27.69	3.54			
Largemouth Bass	F	C	C		4	9.23	1.18			
Green Sunfish	S	I	C	T	30	69.23	8.85			
Bluegill Sunfish	S	I	C	P	24	55.39	7.08			
Pumpkinseed Sunfish	S	I	C	P	1	2.31	0.30			
Green Sf X Bluegill Sf					3	6.92	0.88			
Logperch	D	I	S	M	4	9.23	1.18			
Johnny Darter	D	I	C		1	2.31	0.30			
Least Darter [S]	D	I	N		2	4.62	0.59			
Round Goby	E				51	117.69	15.04			
<i>Mile Total</i>					339	782.31				
<i>Number of Species</i>					16					
<i>Number of Hybrids</i>					1					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 18.30	Location: Co. Rd. T	Date Range: 06/28/2011
Time Fished: 1500 sec	Drainage: 9.5 sq mi	
Dist Fished: 0.15 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	12	24.00	1.96			
Creek Chub	N	G	N	T	21	42.00	3.44			
Redfin Shiner	N	I	N		14	28.00	2.29			
Striped Shiner	N	I	S		8	16.00	1.31			
Fathead Minnow	N	O	C	T	111	222.00	18.17			
Bluntnose Minnow	N	O	C	T	324	648.00	53.03			
Central Stoneroller	N	H	N		7	14.00	1.15			
Green Sunfish	S	I	C	T	2	4.00	0.33			
Blackside Darter	D	I	S		1	2.00	0.16			
Johnny Darter	D	I	C		42	84.00	6.87			
Orangethroat Darter	D	I	S		4	8.00	0.65			
Least Darter [S]	D	I	N		65	130.00	10.64			
<i>Mile Total</i>					611	1,222.00				
<i>Number of Species</i>					12					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 16.00	Location: Fulton Co. Rd. 1 dst. Metamora WWTP	Date Range: 06/28/2011
Time Fished: 3600 sec	Drainage: 25.9 sq mi	Thru: 08/10/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	57	57.00	3.29	2.31	21.32	40.48
Creek Chub	N	G	N	T	157	157.00	9.06	2.48	22.92	15.80
Redfin Shiner	N	I	N		118	118.00	6.81	0.27	2.45	2.25
Striped Shiner	N	I	S		286	286.00	16.51	2.74	25.32	9.58
Fathead Minnow	N	O	C	T	86	86.00	4.97	0.10	0.92	1.16
Bluntnose Minnow	N	O	C	T	488	488.00	28.18	1.10	10.16	2.25
Central Stoneroller	N	H	N		71	71.00	4.10	0.42	3.84	5.85
Yellow Bullhead		I	C	T	30	30.00	1.73	0.48	4.39	15.83
Green Sunfish	S	I	C	T	14	14.00	0.81	0.27	2.49	19.29
Blackside Darter	D	I	S		57	57.00	3.29	0.17	1.57	2.98
Johnny Darter	D	I	C		175	175.00	10.10	0.30	2.73	1.69
Orangethroat Darter	D	I	S		121	121.00	6.99	0.16	1.47	1.32
Least Darter [S]	D	I	N		72	72.00	4.16	0.04	0.41	0.62
<i>Mile Total</i>					1,732	1,732.00		10.82		
<i>Number of Species</i>					13					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 15.00	Location: Fulton Co. Rd. 1 dst. Metamora WWTP	Date Range: 07/25/2011
Time Fished: 2400 sec	Drainage: 25.9 sq mi	Thru: 08/22/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	4	4.00	0.16	0.06	0.86	15.00
Common Carp	G	O	M	T	6	6.00	0.24	0.04	0.57	6.67
Creek Chub	N	G	N	T	130	130.00	5.22	0.94	13.40	7.19
Redfin Shiner	N	I	N		198	198.00	7.95	0.27	3.87	1.36
Striped Shiner	N	I	S		287	287.00	11.52	1.92	27.45	6.67
Fathead Minnow	N	O	C	T	236	236.00	9.47	0.32	4.51	1.33
Bluntnose Minnow	N	O	C	T	1,292	1,292.00	51.87	2.19	31.31	1.69
Central Stoneroller	N	H	N		142	142.00	5.70	0.60	8.65	4.25
Yellow Bullhead		I	C	T	9	9.00	0.36	0.30	4.30	33.33
Green Sunfish	S	I	C	T	8	8.00	0.32	0.10	1.43	12.50
Bluegill Sunfish	S	I	C	P	1	1.00	0.04	0.01	0.07	5.00
Blackside Darter	D	I	S		15	15.00	0.60	0.07	0.93	4.33
Johnny Darter	D	I	C		100	100.00	4.01	0.11	1.58	1.10
Orangethroat Darter	D	I	S		3	3.00	0.12	0.01	0.10	2.33
Least Darter [S]	D	I	N		60	60.00	2.41	0.07	0.96	1.12
<i>Mile Total</i>					2,491	2,491.00		6.98		
<i>Number of Species</i>					15					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 9.20	Location: Kilburn Rd.	Date Range: 07/26/2011
Time Fished: 2700 sec	Drainage: 43.0 sq mi	Thru: 08/22/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C T	1	1.00	0.18	0.00	0.05	3.00
White Sucker	W	O	S T	55	55.00	9.67	2.49	41.35	45.27
Creek Chub	N	G	N T	146	146.00	25.66	1.61	26.76	11.04
Redfin Shiner	N	I	N	46	46.00	8.08	0.08	1.39	1.81
Striped Shiner	N	I	S	80	80.00	14.06	0.54	8.88	6.69
Fathead Minnow	N	O	C T	4	4.00	0.70	0.01	0.13	2.00
Bluntnose Minnow	N	O	C T	85	85.00	14.94	0.15	2.41	1.71
Central Stoneroller	N	H	N	48	48.00	8.44	0.65	10.71	13.44
Yellow Bullhead		I	C T	2	2.00	0.35	0.04	0.58	17.50
Green Sunfish	S	I	C T	8	8.00	1.41	0.15	2.49	18.75
Bluegill Sunfish	S	I	C P	1	1.00	0.18	0.02	0.33	20.00
Pumpkinseed Sunfish	S	I	C P	1	1.00	0.18	0.03	0.50	30.00
Green Sf X Bluegill Sf				1	1.00	0.18	0.02	0.33	20.00
Blackside Darter	D	I	S	13	13.00	2.28	0.06	0.96	4.46
Logperch	D	I	S M	3	3.00	0.53	0.04	0.66	13.33
Johnny Darter	D	I	C	56	56.00	9.84	0.11	1.83	1.96
Orangethroat Darter	D	I	S	11	11.00	1.93	0.03	0.43	2.36
Least Darter [S]	D	I	N	8	8.00	1.41	0.01	0.20	1.50
<i>Mile Total</i>				569	569.00		6.02		
<i>Number of Species</i>				17					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 5.90	Location: Herr Rd.	Date Range: 07/26/2011
Time Fished: 3000 sec	Drainage: 64.5 sq mi	Thru: 08/22/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C T	38	38.00	8.19	0.10	2.51	2.50
Redfin Pickerel		P	M P	23	23.00	4.96	0.61	15.99	26.30
Northern Pike	F	P	M	1	1.00	0.22	0.03	0.79	30.00
White Sucker	W	O	S T	18	18.00	3.88	0.08	2.11	4.44
Spotted Sucker	R	I	S	2	2.00	0.43	0.05	1.32	25.00
Goldfish	G	O	M T	1	1.00	0.22	0.98	25.77	975.00
Creek Chub	N	G	N T	47	47.00	10.13	0.07	1.76	1.41
Redfin Shiner	N	I	N	7	7.00	1.51	0.02	0.53	2.86
Striped Shiner	N	I	S	13	13.00	2.80	0.02	0.56	1.62
Fathead Minnow	N	O	C T	3	3.00	0.65	0.01	0.26	3.33
Bluntnose Minnow	N	O	C T	84	84.00	18.10	0.15	3.83	1.73
Central Stoneroller	N	H	N	24	24.00	5.17	0.03	0.87	1.38
Yellow Bullhead		I	C T	10	10.00	2.16	0.19	5.14	19.44
White Crappie	S	I	C	1	1.00	0.22	0.08	2.11	80.00
Green Sunfish	S	I	C T	100	100.00	21.55	0.64	17.00	6.43
Bluegill Sunfish	S	I	C P	63	63.00	13.58	0.62	16.31	9.79
Pumpkinseed Sunfish	S	I	C P	3	3.00	0.65	0.03	0.87	11.00
Green Sf X Bluegill Sf				1	1.00	0.22	0.03	0.79	30.00
Blackside Darter	D	I	S	12	12.00	2.59	0.03	0.79	2.50
Johnny Darter	D	I	C	10	10.00	2.16	0.02	0.53	2.00
Orangethroat Darter	D	I	S	1	1.00	0.22	0.00	0.05	2.00
Least Darter [S]	D	I	N	2	2.00	0.43	0.00	0.08	1.50
<i>Mile Total</i>				464	464.00		3.78		
<i>Number of Species</i>				21					
<i>Number of Hybrids</i>				1					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 3.00	Location: Brint Rd.	Date Range: 07/26/2011
Time Fished: 2400 sec	Drainage: 70.0 sq mi	Thru: 08/23/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Redfin Pickerel		P	M	P	22	22.00	10.23	0.22	5.89	9.77
Northern Pike	F	P	M		1	1.00	0.47	0.70	19.19	700.00
Golden Redhorse	R	I	S	M	1	1.00	0.47	0.05	1.37	50.00
White Sucker	W	O	S	T	1	1.00	0.47	0.20	5.48	200.00
Common Carp	G	O	M	T	1	1.00	0.47	0.60	16.45	600.00
Creek Chub	N	G	N	T	3	3.00	1.40	0.01	0.22	2.67
Emerald Shiner	N	I	M		2	2.00	0.93	0.01	0.14	2.50
Redfin Shiner	N	I	N		6	6.00	2.79	0.01	0.40	2.42
Striped Shiner	N	I	S		44	44.00	20.47	0.64	17.40	14.43
Bluntnose Minnow	N	O	C	T	1	1.00	0.47	0.00	0.05	2.00
Green Sunfish	S	I	C	T	82	82.00	38.14	0.82	22.47	10.00
Bluegill Sunfish	S	I	C	P	17	17.00	7.91	0.15	4.18	8.97
Green Sf X Bluegill Sf					6	6.00	2.79	0.17	4.56	27.78
Blackside Darter	D	I	S		13	13.00	6.05	0.05	1.43	4.00
Johnny Darter	D	I	C		12	12.00	5.58	0.02	0.59	1.81
Orangethroat Darter	D	I	S		3	3.00	1.40	0.01	0.16	2.00
<i>Mile Total</i>					215	215.00		3.65		
<i>Number of Species</i>					15					
<i>Number of Hybrids</i>					1					

Species List

River Code: 04-320	Stream: Tenmile Creek	Sample Date: 2011
River Mile: 0.50	Location: Silica Drive	Date Range: 07/26/2011
Time Fished: 3300 sec	Drainage: 81.0 sq mi	Thru: 08/23/2011
Dist Fished: 0.30 km	Basin: Maumee River	Sampler Type: E
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C	T	1	1.00	0.15	0.03	0.33	30.00
Redfin Pickerel		P	M	P	2	2.00	0.29	0.04	0.44	20.00
Northern Pike	F	P	M		1	1.00	0.15	0.10	1.11	100.00
Golden Redhorse	R	I	S	M	2	2.00	0.29	0.08	0.88	40.00
White Sucker	W	O	S	T	15	15.00	2.19	0.70	7.74	46.67
Creek Chub	N	G	N	T	142	142.00	20.70	4.39	48.53	30.93
Striped Shiner	N	I	S		56	56.00	8.16	0.54	5.92	9.57
Bluntnose Minnow	N	O	C	T	24	24.00	3.50	0.12	1.27	4.79
Central Stoneroller	N	H	N		104	104.00	15.16	0.84	9.28	8.08
Yellow Bullhead		I	C	T	13	13.00	1.90	0.36	3.92	27.31
Green Sunfish	S	I	C	T	51	51.00	7.43	1.01	11.16	19.80
Bluegill Sunfish	S	I	C	P	20	20.00	2.92	0.17	1.88	8.50
Green Sf X Bluegill Sf					2	2.00	0.29	0.07	0.77	35.00
Blackside Darter	D	I	S		88	88.00	12.83	0.26	2.87	2.95
Logperch	D	I	S	M	1	1.00	0.15	0.03	0.33	30.00
Johnny Darter	D	I	C		36	36.00	5.25	0.08	0.91	2.28
Orangethroat Darter	D	I	S		128	128.00	18.66	0.24	2.65	1.88
<i>Mile Total</i>					686	686.00		9.05		
<i>Number of Species</i>					16					
<i>Number of Hybrids</i>					1					

Species List

River Code: 04-321	Stream: North Branch Tenmile Creek	Sample Date: 2011
River Mile: 0.90	Location: at Ohio/Michigan State line	Date Range: 06/29/2011
Time Fished: 1800 sec	Drainage: 42.0 sq mi	
Dist Fished: 0.15 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C	T	12	24.00	0.88			
Redfin Pickerel		P	M	P	16	32.00	1.17			
White Sucker	W	O	S	T	103	206.00	7.55			
Creek Chub	N	G	N	T	145	290.00	10.62			
Striped Shiner	N	I	S		9	18.00	0.66			
Fathead Minnow	N	O	C	T	6	12.00	0.44			
Bluntnose Minnow	N	O	C	T	585	1,170.00	42.86			
Central Stoneroller	N	H	N		256	512.00	18.75			
Striped Sh X Creek Chub		I			1	2.00	0.07			
Yellow Bullhead		I	C	T	4	8.00	0.29			
Green Sunfish	S	I	C	T	8	16.00	0.59			
Bluegill Sunfish	S	I	C	P	37	74.00	2.71			
Pumpkinseed Sunfish	S	I	C	P	2	4.00	0.15			
Green Sf X Bluegill Sf					3	6.00	0.22			
Blackside Darter	D	I	S		4	8.00	0.29			
Johnny Darter	D	I	C		12	24.00	0.88			
Orangethroat Darter	D	I	S		18	36.00	1.32			
Least Darter [S]	D	I	N		144	288.00	10.55			
<i>Mile Total</i>					1,365	2,730.00				
<i>Number of Species</i>					16					
<i>Number of Hybrids</i>					2					

Species List

River Code: 04-322 River Mile: 1.40 Time Fished: 1200 sec Dist Fished: 0.12 km	Stream: Prairie Ditch Location: Tupleo Way Drainage: 16.9 sq mi Basin: Maumee River	Sample Date: 2011 Date Range: 06/29/2011 No of Passes: 1 Sampler Type: E
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Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C	T	164	410.00	74.55			
Redfin Pickerel		P	M	P	22	55.00	10.00			
Creek Chub	N	G	N	T	21	52.50	9.55			
Bluntnose Minnow	N	O	C	T	3	7.50	1.36			
Green Sunfish	S	I	C	T	6	15.00	2.73			
Bluegill Sunfish	S	I	C	P	2	5.00	0.91			
Johnny Darter	D	I	C		1	2.50	0.45			
Orangethroat Darter	D	I	S		1	2.50	0.45			
<i>Mile Total</i>					220	550.00				
<i>Number of Species</i>					8					
<i>Number of Hybrids</i>					0					

Species List

River Code: 04-322	Stream: Prairie Ditch	Sample Date: 2011
River Mile: 0.30	Location: Central Ave.	Date Range: 06/29/2011
Time Fished: 1200 sec	Drainage: 17.3 sq mi	
Dist Fished: 0.12 km	Basin: Maumee River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Central Mudminnow		I	C	T	43	107.50	84.31			
Redfin Pickerel		P	M	P	6	15.00	11.76			
Yellow Bullhead		I	C	T	1	2.50	1.96			
Green Sunfish	S	I	C	T	1	2.50	1.96			
<i>Mile Total</i>					51	127.50				
<i>Number of Species</i>					4					
<i>Number of Hybrids</i>					0					

Appendix Table 7. Water quality and field data collected from sites in the Tenmile Creek and Ottawa River study area, 2011.

Station		Site Location: Bear Creek At CR 10				
P11S24		River Mile: 12.98				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	450	378	380	390	364
TSS	mg/L	7	12	14	5	10
Alkalinity	mg/L	195	162	149	173	164
Ammonia	mg/L	0.05 K	0.05 K	0.301	0.05 K	0.05 K
COD	mg/L	20	20 K	31	33	24
Chloride	mg/L	42.4	43.6	43	62	63.6
Conductivity	uS/cm	693	615	589	622	632
Nitrate+nitrite	mg/L	11.5	7.09	9.25	0.39	0.53
Nitrite	mg/L	0.158	0.102	0.216	0.05	0.039
Sulfate	mg/L	57.3	62.8	52.7	55.6	52.3
TKN	mg/L	0.9	0.89	1.85	1.19	0.65
TP	mg/L	0.025	0.017	0.072	0.028	0.02
Field Parameters						
Time	hhmmss	9:21:04	9:06:35	8:46:06	8:35:52	9:29:18
Temperature	°C	17.8	19.41	21.82	24.73	22.76
Dissolved Oxygen	mg/L	11.22	9.87	7.24	5.54	7.35
Dissolved Oxygen	%	118.2	107.5	82.6	66.8	85.5
pH	s.u.	8.23	8.07	7.69	7.83	7.96
Conductivity	uS/cm	587	539	546	614	599
Conductivity @ 25C	uS/cm	680	603	581	618	626

Station		Site Location: Bear Creek At SR 120				
P11S23		River Mile: 11.56				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	458	370	466	372	366
TSS	mg/L	6	5 K	10	5 K	5 K
Alkalinity	mg/L	193	156	149	128	153
Ammonia	mg/L	0.05 K	0.05 K	0.402	0.05 K	0.05 K
COD	mg/L	20	25	33	31	23
Chloride	mg/L	46	47.1	43.8	73.7	59.1
Conductivity	uS/cm	709	610	612	605	603
Nitrate+nitrite	mg/L	11.1	6.82	9.77	0.17	0.78
Nitrite	mg/L	0.147	0.087	0.212	0.033	0.034
Sulfate	mg/L	59.2	65.1	59.4	63.5	57.2
TKN	mg/L	0.99	0.9	2.15	1.37	0.96
TP	mg/L	0.03	0.017	0.069	0.043	0.052
Field Parameters						
Time	hhmm	9:36:05	9:18:51	8:56:51	8:45:01	9:39:38
Temperature	°C	18.36	19.69	22.05	24.9	23.11
Dissolved Oxygen	mg/L	10.1	9.79	7.77	6.3	8.62
Dissolved Oxygen	%	107.6	107.2	89.1	76.2	100.8
pH	s.u.	8.16	8.03	7.77	7.99	8.14
Conductivity	uS/cm	605	536	569	598	575
Conductivity @ 25C	uS/cm	693	597	603	600	596

Station		Site Location: Bear Creek at CR 7				
301452		River Mile: 8.44				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	422	364	384	396	340
TSS	mg/L	16	23	33	15	5
Alkalinity	mg/L	171	145	139	118	117
Ammonia	mg/L	0.05 K	0.059	0.503	0.08	0.05 K
COD	mg/L	20 K	22	20	27	26
Chloride	mg/L	42.2	48	47.5	64.7	74.1
Conductivity	uS/cm	658	582	601	592	590
Nitrate+nitrite	mg/L	10.4	5.98	9.18	0.43	0.1 K
Nitrite	mg/L	0.086	0.059	0.15	0.033	0.02 K
Sulfate	mg/L	57	62.1	66	81.3	54.3
TKN	mg/L	0.91	0.94	1.46	1.09	0.62
TP	mg/L	0.033	0.041	0.052	0.052	0.04
Field Parameters						
Time	hhmmss	9:48:06	9:30:56	9:08:33	8:55:46	9:51:09
Temperature	°C	17.98	20.15	22.08	24.66	23.04
Dissolved Oxygen	mg/L	8.43	7.8	7.66	5.47	6.73
Dissolved Oxygen	%	89.2	86.2	87.9	65.8	78.7
pH	s.u.	8.06	7.88	7.8	7.94	7.97
Conductivity	uS/cm	557	519	558	583	563
Conductivity @ 25C	uS/cm	643	572	591	587	585

Station		Site Location: Halfway Creek at East State Line				
301448		River Mile: 4.88				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	824	788	782	532	768
TSS	mg/L	12	10	9	21	5
Arsenic	µg/L	2 K	2 K	2 K	2 K	2 K
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	2 K	2 K	2 K	2.9	2 K
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	6.1	5.8	4.9	4	4.5
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	247	262	224	531	200 K
Barium	µg/L	148	167	177	118	151
Calcium	mg/L	147	154	159	104	142
Hardness	mg/L	548	578	599	391	544
Iron	mg/L	446	465	398	898	229
Magnesium	mg/L	44	47	49	32	46
Manganese	µg/L	50	63	69	82	36
Potassium	mg/L	3	3	3	2	3
Sodium	mg/L	36	28	27	23	34
Strontium	µg/L	9780	11200	12000	7580	10700
Zinc	µg/L	11	10 K	10 K	14	10 K
Alkalinity	mg/L	210	203	191	133	187
Ammonia	mg/L	0.05 K	0.05 K	0.05 K	0.23	0.05 K
COD	mg/L	20 K	20 K	20 K	20 K	20 K
Chloride	mg/L	79.1	60.3	62.3	53.1	75.4
Conductivity	uS/cm	1150	1120	1120	795	1110
Nitrate+nitrite	mg/L	0.77	0.51	0.43	0.64	0.31
Nitrite	mg/L	0.02 K	0.02 K	0.02 K	0.024	0.02 K
Sulfate	mg/L	302	321	326	210	307
TKN	mg/L	0.61	0.46	0.37	0.69	0.46
TP	mg/L	0.05	0.043	0.05	0.073	0.044
Field Parameters						
Time	hhmmss	9:32:55	8:59:53	9:03:59	8:46:12	12:07:10
Temperature	°C	17.03	19.85	20.61	23.78	20.24
Dissolved Oxygen	mg/L	9.06	7.66	7.78	6.17	9.44
Dissolved Oxygen	%	94.2	84.3	86.9	73.2	104.6
pH	s.u.	8.01	7.94	8.09	7.83	8.15
Conductivity	uS/cm	1219	999	1010	771	1001
Conductivity @ 25C	uS/cm	1438	1108	1102	789	1102

Station		Site Location: Shantee Creek At Lewis Avenue				
P11S96		River Mile: 3.10				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	1160	876	596	306	752
TSS	mg/L	17	5 K	5	8	6
Arsenic	µg/L	5.1	4.6	5.3	2.3	3.4
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	6.8	4.8	2.7	6.4	3.8
Lead	µg/L	3.1	2 K	2 K	4.4	2
Nickel	µg/L	4.7	3.8	2.9	2.1	3
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	211	200 K	200 K	323	200 K
Barium	µg/L	112	88	79	41	86
Calcium	mg/L	118	96	71	31	81
Hardness	mg/L	398	322	235	102	264
Iron	mg/L	802	640	1230	635	601
Magnesium	mg/L	25	20	14	6	15
Manganese	µg/L	341	475	879	88	141
Potassium	mg/L	4	5	7	3	4
Sodium	mg/L	264	196	119	61	176
Strontium	µg/L	1370	1160	1080	469	1190
Zinc	µg/L	19	10 K	10 K	41	10
Alkalinity	mg/L	257	197	174	61.5	163
Ammonia	mg/L	1.41	1.54	1.76	0.716	0.147
COD	mg/L	20 K	20 K	27	38	27
Chloride	mg/L	464	328	211	101	328
Conductivity	uS/cm	2080	1590	1050	526	1370
Nitrate+nitrite	mg/L	0.35	0.1 K	0.1	1.03	0.23
Nitrite	mg/L	0.142	0.089	0.02 K	0.092	0.141
Sulfate	mg/L	67.2	50.3	23.5	24.7	49.3
TKN	mg/L	2.48	2.81	2.84	1.72	1.03
TP	mg/L	0.249	0.321	0.619	0.175	0.192
Field Parameters						
Time	hhmmss	9:00:36	8:31:00	8:46:09	8:21:24	12:28:51
Temperature	°C	17.37	18.51	19.5	23.55	22.57
Dissolved Oxygen	mg/L	6.81	5.67	3.9	4.06	7.35
Dissolved Oxygen	%	71.4	60.8	42.6	47.9	85.4
pH	s.u.	7.86	7.54	7.55	7.64	7.65
Conductivity	uS/cm	1507	1381	931	505	1297
Conductivity @ 25C	uS/cm	1764	1577	1040	519	1360

Station		Site Location: Shantee Creek At Stickney Avenue				
P11S60		River Mile: 0.7				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	1030	960	644	456	936
TSS	mg/L	29	19	17	12	26
Arsenic	µg/L	4.1	4.8	5.4	2.5	4.9
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2	2	2 K	2 K	2
Copper	µg/L	9.1	9.6	5.8	7.4	8.4
Lead	µg/L	5.5	5.6	4.7	3.6	5.5
Nickel	µg/L	7	7	5.3	3.5	5.9
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	542	522	410	285	524
Barium	µg/L	118	112	108	61	123
Calcium	mg/L	118	92	71	44	81
Hardness	mg/L	398	329	243	151	285
Iron	mg/L	1270	1280	1260	622	1230
Magnesium	mg/L	25	24	16	10	20
Manganese	µg/L	139	174	268	149	165
Potassium	mg/L	5	5	5	3	5
Sodium	mg/L	204	217	128	100	225
Strontium	µg/L	1920	2030	1550	844	2020
Zinc	µg/L	24	19	18	39	20
Alkalinity	mg/L	248	196	149	76.6	159
Ammonia	mg/L	0.133	0.091	0.238	0.541	0.067
COD	mg/L	22	20 K	21	35	28
Chloride	mg/L	367	357	223	169	429
Conductivity	uS/cm	1800	1730	1120	793	1710
Nitrate+nitrite	mg/L	1.84	0.51	0.27	0.8	0.1 K
Nitrite	mg/L	0.068	0.031	0.026	0.047	0.02 K
Sulfate	mg/L	102	85	56.5	31.9	72.4
TKN	mg/L	0.94	0.99	1.05	1.52	1.07
TP	mg/L	0.06	0.053	0.076	0.071	0.053
Field Parameters						
Time	hhmm	9:51:48	9:25:30	9:20:53	8:56:31	9:43:33
Temperature	°C	18.58	21.44	22.66	24.35	21.19
Dissolved Oxygen	mg/L	8.58	5.02	4.31	5.46	6.75
Dissolved Oxygen	%	92	57.1	50.1	65.4	76.4
pH	s.u.	8.12	7.64	7.71	7.74	7.88
Conductivity	uS/cm	985	1610	1055	772	1568
Conductivity @ 25C	uS/cm	1122	1727	1104	782	1691

Station		Site Location: Silver Creek At Lewis Avenue				
P11S79		River Mile: 4.44				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	846	788	650	458	644
TSS	mg/L	5 K	10	15	21	14
Arsenic	µg/L	4	5.5	5.5	2.9	3.8
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	5.1	5.9	4.1	8.3	5.3
Lead	µg/L	2 K	2 K	2.1	3.4	2.3
Nickel	µg/L	4.4	4.2	3.3	2.7	3.9
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	200 K	228	359	417	265
Barium	µg/L	92	82	86	51	83
Calcium	mg/L	99	85	73	39	71
Hardness	mg/L	330	290	252	134	239
Iron	mg/L	391	606	959	905	688
Magnesium	mg/L	20	19	17	9	15
Manganese	µg/L	110	191	406	143	225
Potassium	mg/L	4	5	5	2	4
Sodium	mg/L	164	159	134	97	139
Strontium	µg/L	1130	1080	1180	759	1020
Zinc	µg/L	10 K	10 K	12	65	37
Alkalinity	mg/L	219	198	148	60.5	149
Ammonia	mg/L	0.113	0.128	0.196	0.655	0.055
COD	mg/L	20 K	20 K	22	33	20
Chloride	mg/L	296	283	243	173	267
Conductivity	uS/cm	1470	1400	1170	764	1170
Nitrate+nitrite	mg/L	1.78	0.91	0.46	1.24	0.36
Nitrite	mg/L	0.085	0.035	0.044	0.064	0.02 K
Sulfate	mg/L	67.9	57.7	45.6	30.2	50.1
TKN	mg/L	1.06	0.98	1.08	1.69	0.95
TP	mg/L	0.084	0.154	0.174	0.098	0.089
Field Parameters						
Time	hhmm	9:19:25	8:43:09	8:22:49	8:33:03	9:05:25
Temperature	°C	17.34	19.15	19.48	24.13	18.55
Dissolved Oxygen	mg/L	6.92	6.96	6.01	6.36	6.91
Dissolved Oxygen	%	72.6	75.5	65.6	75.9	74.1
pH	s.u.	7.73	7.76	7.77	7.71	7.8
Conductivity	uS/cm	1739	1235	991	751	1010
Conductivity @ 25C	uS/cm	2037	1390	1108	764	1152

Station		Site Location: Silver Creek At Futura Drive				
301449		River Mile: 1.74				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	1010	1180	390	386	766
TSS	mg/L	10	17	39	28	26
Arsenic	µg/L	5.3	5.1	5.3	2.6	4.1
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	3.8	2	2.4	2.4
Copper	µg/L	6.8	8.5	6.2	10	6.4
Lead	µg/L	2.5	2.9	4.6	6.8	3.3
Nickel	µg/L	5.9	6.9	4.8	4	5.2
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	260	307	453	511	447
Barium	µg/L	106	114	76	58	101
Calcium	mg/L	114	108	52	40	78
Hardness	mg/L	388	381	175	137	269
Iron	mg/L	597	717	1270	1060	1040
Magnesium	mg/L	25	27	11	9	18
Manganese	µg/L	100	206	588	141	168
Potassium	mg/L	5	5	4	2	4
Sodium	mg/L	198	260	72	73	174
Strontium	µg/L	1720	1870	886	906	1600
Zinc	µg/L	20	17	36	54	17
Alkalinity	mg/L	249	185	108	83.8	134
Ammonia	mg/L	0.106	0.05 K	0.265	0.449	0.103
COD	mg/L	20 K	20 K	37	30	24
Chloride	mg/L	353	437	108	126	329
Conductivity	uS/cm	1740	2000	663	661	1350
Nitrate+nitrite	mg/L	1.78	0.59	0.42	0.71	0.26
Nitrite	mg/L	0.066	0.022	0.074	0.043	0.02 K
Sulfate	mg/L	93.1	83.5	33.8	32.9	57.7
TKN	mg/L	1.02	0.98	1.28	1.02	1.2
TP	mg/L	0.068	0.048	0.127	0.085	0.091
Field Parameters						
Time	hhmmss	10:04:49	9:40:17	9:39:01	9:14:45	9:57:51
Temperature	°C	18.96	22.83	23.97	24.32	22.03
Dissolved Oxygen	mg/L	6.58	6.91	4.26	5.75	5.32
Dissolved Oxygen	%	71.2	80.7	50.7	68.8	61.1
pH	s.u.	7.92	7.85	7.71	7.68	7.7
Conductivity	uS/cm	1511	1930	640	640	1272
Conductivity @ 25C	uS/cm	1708	2013	653	648	1348

Station		Site Location: Ottawa River at Harroun Rd				
301440		River Mile: 19.50				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	728	862	800	898	762
TSS	mg/L	5 K	5 K	6	5 K	6
Arsenic	µg/L	2 K	2 K	2 K	2 K	2 K
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	3.1	3.4	3.1	2	3
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	6.9	6.4	5.6	5.6	7.3
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	200 K	200 K	200 K	200 K	200 K
Barium	µg/L	71	76	74	88	81
Calcium	mg/L	119	124	116	134	120
Hardness	mg/L	429	458	430	495	444
Iron	mg/L	169	143	221	126	192
Magnesium	mg/L	32	36	34	39	35
Manganese	µg/L	13	27	58	45	38
Potassium	mg/L	10	14	16	17	15
Sodium	mg/L	57	61	68	51	61
Strontium	µg/L	5360	7730	6900	7970	6820
Zinc	µg/L	10 K	10 K	10 K	10 K	16
Alkalinity	mg/L	197	195	152	173	156
Ammonia	mg/L	0.05 K	0.05 K	0.05	0.051	0.05 K
COD	mg/L	20 K	20 K	20 K	20 K	20
Chloride	mg/L	110	110	113	94.9	106
Conductivity	uS/cm	1130	1230	1140	1200	1170
Nitrate+nitrite	mg/L	2.41	0.55	0.86	0.72	1.57
Nitrite	mg/L	0.02 K	0.02 K	0.02 K	0.02 K	0.025
Sulfate	mg/L	213	280	254	320	256
TKN	mg/L	0.93	0.59	0.46	0.98	0.95
TP	mg/L	0.026	0.028	0.027	0.019	0.041
Field Parameters						
Time	hhmmss	9:49:20	9:21:54	9:08:07	9:14:43	9:30:12
Temperature	°C	18.15	21.25	22.79	23.52	21.57
Dissolved Oxygen	mg/L	9.55	7.87	6.08	6.56	6.67
Dissolved Oxygen	%	101.5	89	70.8	77.5	75.9
pH	s.u.	8.14	8.07	7.8	7.92	8.01
Conductivity	uS/cm	977	1128	1081	1163	1072
Conductivity @ 25C	uS/cm	1124	1215	1129	1197	1147

Station		Site Location: Ottawa River at Edgehill Rd				
301442		River Mile: 14.42				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	794	856	742	632	700
TSS	mg/L	7	6	5 K	5 K	5 K
Arsenic	µg/L	2.6	3.1	3.7	4.2	3
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	4.1	4.5	3.5	3.2	3.2
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	5.5	4.8	4.2	3.8	4.3
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	200 K	200 K	200 K	200 K	200 K
Barium	µg/L	84	86	92	69	82
Calcium	mg/L	115	108	103	77	97
Hardness	mg/L	402	385	368	262	345
Iron	mg/L	354	304	278	310	277
Magnesium	mg/L	28	28	27	17	25
Manganese	µg/L	43	65	180	103	79
Potassium	mg/L	8	9	11	6	10
Sodium	mg/L	115	116	94	103	94
Strontium	µg/L	3590	3960	4570	2530	4440
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K
Alkalinity	mg/L	204	199	153	159	155
Ammonia	mg/L	0.05 K	0.05	0.125	0.096	0.05 K
COD	mg/L	20 K	20 K	23	20 K	22
Chloride	mg/L	207	224	152	209	157
Conductivity	uS/cm	1310	1400	1160	1080	1160
Nitrate+nitrite	mg/L	2.19	0.75	0.75	0.76	0.61
Nitrite	mg/L	0.02 K	0.02 K	0.031	0.024	0.02 K
Sulfate	mg/L	151	179	182	84	162
TKN	mg/L	1.11	0.84	0.92	1.22	1.16
TP	mg/L	0.053	0.062	0.077	0.109	0.083
Field Parameters						
Time	hhmmss	10:59:46	10:21:16	10:28:57	10:20:55	11:09:29
Temperature	°C	18.99	21.71	23.21	24.54	23.14
Dissolved Oxygen	mg/L	8.38	7.09	4.59	5.34	6
Dissolved Oxygen	%	90.7	80.9	53.9	64.3	70.3
pH	s.u.	8.12	7.98	7.65	7.85	7.86
Conductivity	uS/cm	1155	1298	1105	1075	1114
Conductivity @ 25C	uS/cm	1304	1385	1144	1085	1155

Station		Site Location: Ottawa River at (UT) Stadium Drive (Sentinel)										
P11S74		River Mile: 11.15										
PARAMETER	UNITS	3/31/11	4/6/11	5/10/11	5/24/11	6/16/11	6/23/11	6/28/11	7/13/11	7/26/11	8/10/11	12/20/11
cBOD ₂₀	mg/L		3.8	3.2	4.0	3 K	6.0	3	6	3.5	4.1	
TDS	mg/L	704	662	690	582	792	702	854	660	494	550	502
TSS	mg/L	6	5 K	5 K	12	10	12	8	8	13	10	10
Arsenic	µg/L	2 K	2 K	2 K	2 K	2.7	2.7	3	3.9	3.6	3.1	
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	
Chromium	µg/L	2	2	2	2	2 K	2	2 K	2 K	2 K	2 K	
Copper	µg/L	2.6	3.6	2.9	4.1	4.4	5.6	4.4	4.1	2.8	5	
Lead	µg/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Nickel	µg/L	5.3	4.0	3.9	3.5	5.6	4.2	4.6	3.9	3.7	3.8	
Selenium	µg/L	2	2	2 K	2	2 K	2 K	2 K	2 K	2 K	2 K	
Aluminum	µg/L	200 K	200 K	211	200 K	215	200 K	200 K	226	273	200 K	
Barium	µg/L	71	69	74	63	90	86	97	89	70	69	
Calcium	mg/L	109	108	106	93	115	99	119	87	70	74	
Hardness	mg/L	367	369	359	310	394	338	412	304	241	255	
Iron	mg/L	318	346	398	599	440	432	354	512	639	378	
Magnesium	mg/L	23	24	23	19	26	22	28	21	16	17	
Manganese	µg/L	72	67	66	60	68	87	99	247	166	100	
Potassium	mg/L	4	5	4	4	6	7	8	8	5	7	
Sodium	mg/L	90	95	91	66	112	114	123	99	62	83	
Strontium	µg/L	1880	1890	1800	1360	2600	2570	3430	2640	2090	2700	
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10	
Alkalinity	mg/L	210				228		219	137	137	128	224
Ammonia	mg/L	0.05 K	0.05 K	0.05 K	0.070	0.051	0.149	0.05 K	0.156	0.098	0.05 K	0.065
COD	mg/L	20				36		21	27	20 K	21	
Chloride	mg/L	169	166	159	119	218	198	232	161	112	141	72.6
Conductivity	uS/cm	1190				1340		1430	1050	804	953	
Nitrate+nitrite	mg/L	4.78	4.19	3.48	5.33	1.86	1.01	0.66	0.62	0.66	0.58	5.98
Nitrite	mg/L	0.02 K	0.020	0.02 K	0.052	0.022	0.034	0.02 K	0.038	0.028	0.02 K	0.021
Orthophosphate	mg/L	0.01 K	0.01 K	0.010	0.025	0.031	0.036	0.042	0.057	0.074	0.17	0.039
Sulfate	mg/L	119	115	111	81.9	134	125	164	125	93.5	106	73.9
TKN	mg/L	0.87	0.71	0.97	1.19	1.36	1.14	0.83	1.05	0.82	0.85	0.85
TP	mg/L	0.023	0.026	0.029	0.052	0.066	0.073	0.078	0.082	0.088	0.206	0.045
Field Parameters												
Time	hhmmss					11:34:28		10:49:28	11:01:09	10:48:22	11:37:29	
Temperature	°C					18.93		21.43	24.33	25.06	23	
Dissolved Oxygen	mg/L					8.48		7.51	6.04	6.02	6.92	
Dissolved Oxygen	%					91.7		85.3	72.4	73	80.9	
pH	s.u.					8.06		8.02	7.76	7.8	7.89	
Conductivity	uS/cm					1188		1322	1028	811	915	
Conductivity @ 25C	uS/cm					1344		1419	1041	810	951	

Station		Site Location: Ottawa River at Monroe Street				
301444		River Mile: 9.25				
PARAMETER	UNITS	6/16/11		7/13/11	7/26/11	8/10/11
TDS	mg/L	788	844	690	480	598
TSS	mg/L	10	5 K	5 K	8	7
Arsenic	µg/L	3.2	3.2	3.5	3.4	3.2
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	4.6	4.5	4.1	2.6	3.6
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	5.7	4.6	3.8	3.4	3.9
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	260	200 K	200 K	200 K	200 K
Barium	µg/L	91	90	81	68	76
Calcium	mg/L	117	109	82	69	83
Hardness	mg/L	399	375	287	234	290
Iron	mg/L	512	242	273	461	329
Magnesium	mg/L	26	25	20	15	20
Manganese	µg/L	63	77	201	153	94
Potassium	mg/L	6	7	8	5	7
Sodium	mg/L	120	112	101	58	85
Strontium	µg/L	2690	3150	2660	1950	3090
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K
Alkalinity	mg/L	224	213	137	132	130
Ammonia	mg/L	0.05 K	0.05 K	0.197	0.097	0.05 K
COD	mg/L	20 K	20 K	26	20 K	21
Chloride	mg/L	218	219	167	108	143
Conductivity	uS/cm	1330	1370	1060	785	1010
Nitrate+nitrite	mg/L	1.87	0.66	0.61	0.68	0.53
Nitrite	mg/L	0.02	0.02 K	0.037	0.032	0.02 K
Sulfate	mg/L	127	163	123	93.7	129
TKN	mg/L	1.12	0.79	1.32	1.62	1.01
TP	mg/L	0.061	0.064	0.098	0.113	0.097
Field Parameters						
Time	hhmmss	12:02:27	11:17:57	11:32:51	11:14:50	12:04:12
Temperature	°C	19.34	22.37	24.05	25.73	24.01
Dissolved Oxygen	mg/L	7.86	7.82	4.25	4.85	6.54
Dissolved Oxygen	%	85.7	90.4	50.7	59.6	77.9
pH	s.u.	8.05	8.03	7.65	7.7	7.95
Conductivity	uS/cm	1182	1302	1033	795	991
Conductivity @ 25C	uS/cm	1325	1371	1052	784	1010

Station		Site Location: Detwiler Ditch at Detwiler Golf Course				
P11S84		River Mile: 0.50				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	832	484	286	432	542
TSS	mg/L	29	51	38	125	81
Arsenic	µg/L	4.8	4.7	6.2	5.4	5.1
Cadmium	µg/L	0.2 K	0.22	0.2 K	0.33	0.28
Chromium	µg/L	2 K	2.4	2 K	4.2	2.6
Copper	µg/L	4.4	5.6	4.4	8.4	5.9
Lead	µg/L	2.4	3.9	3	7.1	4.3
Nickel	µg/L	6.5	6.7	4.6	7.3	5.9
Selenium	µg/L	2.3	2 K	2 K	2 K	2
Aluminum	µg/L	535	1090	926	2450	1350
Barium	µg/L	88	69	42	78	81
Calcium	mg/L	106	71	46	62	81
Hardness	mg/L	425	268	160	225	297
Iron	mg/L	2360	3070	2280	6100	3450
Magnesium	mg/L	39	22	11	17	23
Manganese	µg/L	451	447	225	428	329
Potassium	mg/L	4	4	3	4	4
Sodium	mg/L	110	61	33	54	87
Strontium	µg/L	2160	1250	558	1180	2090
Zinc	µg/L	13	26	19	42	30
Alkalinity	mg/L	303	195	98.8	152	193
Ammonia	mg/L	0.386	0.696	0.373	0.854	0.288
COD	mg/L	43	30	23	35	24
Chloride	mg/L	210	99.1	61.3	93.1	141
Conductivity	uS/cm	1350	809	466	696	955
Nitrate+nitrite	mg/L	1.82	0.72	0.24	0.81	0.1
Nitrite	mg/L	0.105	0.075	0.037	0.057	0.02
Sulfate	mg/L	82.6	47.5	29.2	53	62.3
TKN	mg/L	2.13	1.6	0.97	2.06	1.45
TP	mg/L	0.214	0.234	0.276	0.372	0.258
Field Parameters						
Time	hhmmss	10:42:16	10:14:39	10:18:12	9:45:34	10:34:06
Temperature	°C	19.38	21.29	22.43	23.36	21.13
Dissolved Oxygen	mg/L	5.73	4.1	7.59	3.29	4.41
Dissolved Oxygen	%	62.5	46.3	87.7	38.7	49.7
pH	s.u.	7.66	7.52	7.81	7.48	7.6
Conductivity	uS/cm	1183	745	434	652	882
Conductivity @ 25C	uS/cm	1325	801	456	674	952

Station		Site Location: Hill Ditch at Reynolds Avenue				
P11K61		River Mile: 2.11				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	832	834	*	554	572
TSS	mg/L	17	50		33	9
Arsenic	µg/L	3.7	4.8		3.7	3
Cadmium	µg/L	0.2 K	0.2 K		0.2 K	0.2 K
Chromium	µg/L	2 K	2 K		2 K	2 K
Copper	µg/L	4.5	5.8		3.2	3.2
Lead	µg/L	2 K	2 K		2 K	2 K
Nickel	µg/L	5.2	5.3		3.8	3.4
Selenium	µg/L	2 K	2 K		2 K	2 K
Aluminum	µg/L	250	655		412	200 K
Barium	µg/L	162	166		128	140
Calcium	mg/L	113	103		67	76
Hardness	mg/L	369	335		217	247
Iron	mg/L	840	1760		1170	610
Magnesium	mg/L	21	19		12	14
Manganese	µg/L	166	255		209	140
Potassium	mg/L	4	4		3	3
Sodium	mg/L	164	154		100	110
Strontium	µg/L	1820	1670		1510	1760
Zinc	µg/L	13	12		10 K	10 K
Alkalinity	mg/L	251	233		163	153
Ammonia	mg/L	0.101	0.094		0.09	0.187
COD	mg/L	21	21		20 K	25
Chloride	mg/L	287	285		187	182
Conductivity	uS/cm	1480	1470		977	1020
Nitrate+nitrite	mg/L	1.42	0.99		0.66	0.69
Nitrite	mg/L	0.058	0.047		0.037	0.032
Sulfate	mg/L	71	67.3		43.6	46.6
TKN	mg/L	1.29	0.97		1.22	1.47
TP	mg/L	0.037	0.065		0.043	0.05
Field Parameters						
Time	hhmmss	10:47:01	10:08:35	10:14:30	10:08:47	10:54:33
Temperature	°C	19.21	22.14	23.89	25.39	23.6
Dissolved Oxygen	mg/L	8.37	7.26	4.04	6.43	5.25
Dissolved Oxygen	%	91	83.7	48	78.6	62.1
pH	s.u.	8.01	8.05	7.6	8	7.8
Conductivity	uS/cm	1309	1377	1010	985	993
Conductivity @ 25C	uS/cm	1472	1457	1032	978	1020

* 7/13/11 Samples collected but not analyzed due to field preservation error.

Station		Site Location: Zink Ditch at Dorr Street				
P11P37		River Mile: 0.70				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	514	512	516	460	484
TSS	mg/L	5 K	5 K	12	7	10
Alkalinity	mg/L	218	209	198	191	180
Ammonia	mg/L	0.08	0.207 J	0.112	0.104	0.05 K
COD	mg/L	22	22 J	26	23	26
Chloride	mg/L	106	104	117	109	104
Conductivity	uS/cm	856	847	840	788	797
Nitrate+nitrite	mg/L	1.01	0.1 K	0.61	0.42	0.47
Nitrite	mg/L	0.035	0.025	0.02 K	0.02 K	0.02 K
Sulfate	mg/L	49.7	50.5	46.5	39.9	40.9
TKN	mg/L	0.37	0.79 J	1.29	0.98	1.11
TP	mg/L	0.01 K	0.091 J	0.116	0.069	0.071
Field Parameters						
Time	hhmmss	10:29:06	9:51:46	9:49:14	9:51:54	10:00:51
Temperature	°C	17.3	19.94	21.48	22.69	20.35
Dissolved Oxygen	mg/L	9.08	7.91	8.15	7.68	7.42
Dissolved Oxygen	%	94.7	87.1	92.5	89.2	82.4
pH	s.u.	8.08	8.18	8.13	8.11	8.03
Conductivity	uS/cm	667	703	703	716	732
Conductivity @ 25C	uS/cm	782	778	754	749	804

Station		Site Location: Heldman Ditch at Hill Avenue				
P11S93		River Mile: 2.72				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	450	488	538	476	464
TSS	mg/L	5 K	5 K	6	5 K	5 K
Arsenic	µg/L	2.7	2.6	3	3.3	3.1
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	3.2	2.6	3.2	2.5	2.6
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	4.2	3.1	3.2	3.2	3.1
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	200 K	200 K	200 K	200 K	200 K
Barium	µg/L	117	111	126	124	128
Calcium	mg/L	84	77	81	73	78
Hardness	mg/L	267	250	264	240	252
Iron	mg/L	721	450	613	568	417
Magnesium	mg/L	14	14	15	14	14
Manganese	µg/L	72	45	78	62	52
Potassium	mg/L	3	3	4	3	3
Sodium	mg/L	57	55	64	56	60
Strontium	µg/L	987	921	1120	1080	1200
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K
Alkalinity	mg/L	205	203	174	193	177
Ammonia	mg/L	0.05 K	0.05 K	0.054	0.067	0.05 K
COD	mg/L	22	20 K	24	23	25
Chloride	mg/L	96.2	93.7	102	101	97.3
Conductivity	uS/cm	789	782	765	749	773
Nitrate+nitrite	mg/L	0.86	0.74	0.41	0.41	0.44
Nitrite	mg/L	0.029	0.022	0.02 K	0.02 K	0.02 K
Sulfate	mg/L	49.3	47.4	45.1	38.6	40.7
TKN	mg/L	0.86	0.64	0.7	1.12	0.91
TP	mg/L	0.049	0.043	0.102	0.036	0.048
Field Parameters						
Time	hhmmss	10:18:02	9:42:32	9:35:48	9:35:06	10:19:00
Temperature	°C	16.67	18.31	20.22	22.05	21.42
Dissolved Oxygen	mg/L	8.43	7.64	7.11	6.93	8.24
Dissolved Oxygen	%	86.8	81.4	78.8	79.5	93.3
pH	s.u.	7.86	7.94	7.88	7.97	8.2
Conductivity	uS/cm	703	737	744	748	705
Conductivity @ 25C	uS/cm	836	845	819	793	757

Station		Site Location: Heldman Ditch at Edgevale Rd.				
P11S85		River Mile: 0.15				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	810	850	694	650	634
TSS	mg/L	15	8	8	11	5 K
Arsenic	µg/L	3.9	4.2	4.5	3.9	3.6
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	4.5	4.8	3.5	2.9	3.3
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	5.3	4.5	4.1	4	3.7
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	339	208	209	200 K	200 K
Barium	µg/L	124	128	111	99	112
Calcium	mg/L	114	109	93	92	91
Hardness	mg/L	379	363	315	308	305
Iron	mg/L	676	440	480	451	223
Magnesium	mg/L	23	22	20	19	19
Manganese	µg/L	119	121	199	159	107
Potassium	mg/L	4	4	5	4	4
Sodium	mg/L	139	143	97	90	114
Strontium	µg/L	1530	1560	1520	1520	1760
Zinc	µg/L	12	10 K	10 K	10 K	10
Alkalinity	mg/L	254	248	167	189	167
Ammonia	mg/L	0.066	0.081	0.18	0.107	0.063
COD	mg/L	20	30	24	20 K	22
Chloride	mg/L	251	270	162	166	187
Conductivity	uS/cm	1390	1460	1050	1070	1120
Nitrate+nitrite	mg/L	1.25	0.69	0.52	0.83	0.57
Nitrite	mg/L	0.036	0.024	0.043	0.027	0.02 K
Sulfate	mg/L	84.6	89.2	101	103	85.1
TKN	mg/L	1.27	0.95	0.99	1.03	1.1
TP	mg/L	0.066	0.08	0.091	0.091	0.079
Field Parameters						
Time	hhmmss	11:19:06	10:35:29	10:46:03	10:34:39	11:23:40
Temperature	°C	18.28	21.19	22.56	23	21.81
Dissolved Oxygen	mg/L	8.83	7.77	7.04	7.17	7.54
Dissolved Oxygen	%	94.2	87.8	81.6	83.8	86.2
pH	s.u.	8.13	8.09	7.9	7.95	7.97
Conductivity	uS/cm	1209	1345	992	1027	1052
Conductivity @ 25C	uS/cm	1387	1451	1040	1067	1120

Station		Site Location: Mud Creek at Suder Avenue				
301451		River Mile: 0.42				
PARAMETER	UNITS	6/15/11	6/30/11	7/14/11	7/28/11	8/11/11
TDS	mg/L	366	224	190	642	308
TSS	mg/L	5	5 K	22	15	5 K
Arsenic	µg/L	2 K	2 K	2 K	2.9	2 K
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	2	2	2.2	4.4	2 K
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	2.4	2 K	2 K	3.7	2
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	521	200 K	419	355	200 K
Barium	µg/L	30	15 K	15	78	26
Calcium	mg/L	53	29	26	79	45
Hardness	mg/L	182	101	90	300	145
Iron	mg/L	196	109	554	974	203
Magnesium	mg/L	12	7	6	25	8
Manganese	µg/L	107	33	48	349	148
Potassium	mg/L	4	3	2	5	3
Sodium	mg/L	42	24	20	101	42
Strontium	µg/L	794	283	198	2540	804
Zinc	µg/L	10 K	10 K	10 K	13	10 K
Alkalinity	mg/L	97.8	50.5	37.6	179	81.7
Ammonia	mg/L	0.091	0.05 K	0.05 K	0.131	0.05 K
COD	mg/L	20 K	20 K	20 K	25	20 K
Chloride	mg/L	83	47.1	40.5	172	75.3
Conductivity	uS/cm	588	345	285	1080	517
Nitrate+nitrite	mg/L	2.67	2.01	0.96	0.71	0.16
Nitrite	mg/L	0.02 K	0.02 K	0.02 K	0.045	0.02 K
Sulfate	mg/L	51.9	31.8	26.7	97.1	46.3
TKN	mg/L	0.5	0.31	0.2	0.65	0.62
TP	mg/L	0.2	0.203	0.2	0.128	0.168
Field Parameters						
Time	hhmmss	10:19:34	9:55:00	9:53:42	9:25:48	10:14:57
Temperature	°C	18.35	20.49	22.18	22.13	22.57
Dissolved Oxygen	mg/L	9.06	8.72	8.62	6.74	7.98
Dissolved Oxygen	%	96.6	96.9	99	77.5	92.4
pH	s.u.	8.71	7.79	9.08	7.53	8.05
Conductivity	uS/cm	537	326	261	947	548
Conductivity @ 25C	uS/cm	615	357	276	1002	574

Station		Site Location: Tenmile Creek at CR T				
301445		River Mile: 18.25				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	346	284	334	318	314
TSS	mg/L	5 K	5	11	10	10
Alkalinity	mg/L	150	144	134	159	142
Ammonia	mg/L	0.05 K	0.05 K	0.23	0.127	0.05
COD	mg/L	20 K	24	22	36	31
Chloride	mg/L	41.2	47.9	42.1	61.1	75.2
Conductivity	uS/cm	539	467	501	505	559
Nitrate+nitrite	mg/L	6.38	0.16	2.87	0.1 K	0.1
Nitrite	mg/L	0.039	0.02 K	0.122	0.02 K	0.02
Sulfate	mg/L	39.6	28	47.1	6.3	15
TKN	mg/L	0.72	0.87	1.1	1.36	0.93
TP	mg/L	0.012	0.024	0.05	0.092	0.045
Field Parameters						
Time	hhmmss	10:07:20	9:43:58	9:21:57	9:08:25	10:09:04
Temperature	°C	18.44	19.76	21.99	23.88	22.84
Dissolved Oxygen	mg/L	8.84	7.25	7.01	3.47	6.14
Dissolved Oxygen	%	94.4	79.4	80.2	41.2	71.5
pH	s.u.	8.04	7.77	7.69	7.68	7.88
Conductivity	uS/cm	459	415	464	507	530
Conductivity @ 25C	uS/cm	524	461	493	518	553

Station		Site Location: Tenmile Creek at SR 64				
P11S15		River Mile: 16.03				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	344	306	368	428	336
TSS	mg/L	5 K	9	18	6	8
Alkalinity	mg/L	147	160	149	148	137
Ammonia	mg/L	0.05 K	0.051	0.157	0.117	0.13
COD	mg/L	20 K	25	31	23	23
Chloride	mg/L	40.6	48.1	49.3	101	72.2
Conductivity	uS/cm	529	511	556	681	591
Nitrate+nitrite	mg/L	6.45	0.31	3.2	0.13	0.27
Nitrite	mg/L	0.038	0.02	0.113	0.02 K	0.024
Sulfate	mg/L	41	32.3	49.3	40.3	33.7
TKN	mg/L	0.68	0.71	1.32	1.07	0.64
TP	mg/L	0.025	0.065	0.09	0.072	0.056
Field Parameters						
Time	hhmmss	10:18:34	10:01:03	9:32:57	9:22:26	10:29:29
Temperature	°C	18.64	20.41	22.7	26.25	23.26
Dissolved Oxygen	mg/L	8.08	5.97	6.28	3.71	4.01
Dissolved Oxygen	%	86.6	66.3	72.9	46	47.1
pH	s.u.	7.97	7.74	7.68	7.71	7.66
Conductivity	uS/cm	0.459	0.459	523	686	565
Conductivity @ 25C	uS/cm	0.522	0.503	547	670	585

Station		Site Location: Tenmile Creek At CR 1				
301446		River Mile: 15.0				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	364	332	332	314	328
TSS	mg/L	18	13	11	34	5 K
Alkalinity	mg/L	165	158	133	110	117
Ammonia	mg/L	0.058	0.064	0.05 K	0.167	0.05 K
COD	mg/L	20 K	27	31	29	20
Chloride	mg/L	43.9	58.5	47.6	78.6	74.5
Conductivity	uS/cm	560	542	482	498	557
Nitrate+nitrite	mg/L	6.17	0.1 K	2.01	0.1	0.1 K
Nitrite	mg/L	0.04	0.02 K	0.076	0.02 K	0.02 K
Sulfate	mg/L	41.7	36	32.8	23.1	32.5
TKN	mg/L	0.79	0.81	1.1	1.26	0.47
TP	mg/L	0.042	0.104	0.07	0.177	0.031
Field Parameters						
Time	hhmmss	10:32:25	10:13:08	9:43:20	9:42:21	10:42:47
Temperature	°C	19.97	20.76	23.56	26.78	24.24
Dissolved Oxygen	mg/L	8.81	6.88	6.16	5.23	4.28
Dissolved Oxygen	%	97	76.9	72.7	65.5	51.2
pH	s.u.	8.07	7.83	7.67	8.24	7.74
Conductivity	uS/cm	490	477	462	490	543
Conductivity @ 25C	uS/cm	542	519	475	474	551

Station		Site Location: Tenmile Creek At Kilburn Rd				
P11K65		River Mile: 9.17				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	392	306	324	288	290
TSS	mg/L	5 K	5 K	7	10	7
Alkalinity	mg/L	185	159	145	136	121
Ammonia	mg/L	0.05 K	0.05 K	0.073	0.05 K	0.067
COD	mg/L	20 K	20 K	22	23	23
Chloride	mg/L	42.8	52.4	62.6	60	61.6
Conductivity	uS/cm	593	519	541	483	503
Nitrate+nitrite	mg/L	6.31	0.23	0.1 K	0.1 K	0.57
Nitrite	mg/L	0.032	0.02 K	0.02 K	0.02 K	0.024
Sulfate	mg/L	42.1	35.1	32	20.5	25.5
TKN	mg/L	0.8	0.58	0.96	0.74	0.63
TP	mg/L	0.032	0.041	0.05	0.083	0.103
Field Parameters						
Time	hhmmss	10:49:17	10:28:53	9:57:36	10:01:06	10:56:25
Temperature	°C	19.08	21.26	24.06	25.86	23.43
Dissolved Oxygen	mg/L	8.57	7.99	5.3	4.79	5.96
Dissolved Oxygen	%	92.7	90.2	63.1	59	70.2
pH	s.u.	8.05	8.01	7.71	7.83	7.81
Conductivity	uS/cm	519	476	519	488	482
Conductivity @ 25C	uS/cm	585	512	528	480	497

Station		Site Location: Tenmile Creek at Herr Road (Sentinel)									
P11S76		River Mile: 5.94									
PARAMETER	UNITS	4/16/12	5/10/11	5/24/11	6/16/11	6/22/11	6/28/11	7/13/11	7/26/11	8/10/11	12/20/11
cBOD ₂₀	mg/L	5.8	4.3	3.1	3 K	3.5	3	3.7	4.7	3.6	
TDS	mg/L	470	414	392	362	336	362	408	410	372	400
TSS	mg/L	5 K	10	5	9	14	22	13	10	26	7
Arsenic	µg/L	2 K	2 K	2 K	2 K	2 K	2	4.1	5.9	3.9	
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Copper	µg/L	3.1	2.6	2.3	3.3	3.4	4.1	2.8	2.4	3.4	
Lead	µg/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Nickel	µg/L	3.4	3.4	2.8	4.3	3.7	4.2	4.8	4.2	4.4	
Selenium	µg/L	2.3	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Aluminum	µg/L	260	419	200 K	293	316	392	330	237	635	
Barium	mg/L	46	44	39	39	39	36	44	46	50	
Calcium	mg/L	94	83	85	73	69	59	67	60	52	
Hardness	mg/L	313	281	286	252	246	217	246	216	187	
Iron	mg/L	393	574	384	427	489	636	580	534	1110	
Magnesium	mg/L	19	18	18	17	18	17	19	16	14	
Manganese	µg/L	19	30	16	22	48	62	222	337	120	
Potassium	mg/L	3	3	2	2	2	3	4	4	6	
Sodium	mg/L	40	25	19	21	22	23	31	43	51	
Strontium	µg/L	722	538	494	483	505	478	575	1080	758	
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	
Alkalinity	mg/L				180		170	167	181	131	214
Ammonia	mg/L	0.05 K	0.05 K	0.05 K	0.05 K	0.060	0.05 K	0.092	0.091	0.05 K	0.05 K
COD	mg/L				20 K		20 K	26	28	29	
Chloride	mg/L	86.7	57.6	49.4	52.2	50.9	55.8	67.5	87.5	90.9	35.4
Conductivity	uS/cm				620		556	602	644	633	
Nitrate+nitrite	mg/L	6.71	6.86	8.80	5.04	1.93	0.39	0.15	0.11	0.22	7.83
Nitrite	mg/L	0.025	0.036	0.050	0.048	<0.020	0.02 K	0.02 K	0.02 K	0.02 K	<0.020
Orthophosphate	mg/L	0.014	0.012	0.013	0.022	0.026	0.026	0.043	0.113	0.042	0.038
Sulfate	mg/L	68.0	58.5	48.0	44.4	40.2	37.6	34.8	30.1	27.5	51.9
TKN	mg/L	0.71	0.79	0.98	1.18	0.77	0.7	0.81	1.19	1	0.84
TP	mg/L	0.025	0.033	0.029	0.044	0.054	0.069	0.069	0.159	0.101	0.052
Field Parameters											
Time	hhmmss				8:53:54		8:33:28	8:08:16	8:29:47	8:28:08	
Temperature	°C				18.2		21.42	22.18	22.33	21.88	
Dissolved Oxygen	mg/L				6.88		7.09	5.19	4.48	6.17	
Dissolved Oxygen	%				73.1		80.3	59.7	51.6	70.6	
pH	s.u.				7.8		7.96	7.67	7.7	7.93	
Conductivity	uS/cm				534		515	563	630	589	
Conductivity @ 25C	uS/cm				614		553	595	663	627	

Station		Site Location: Tenmile Creek at Brint Rd.				
P11K64		River Mile: 2.97				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	654	972	1060	978	716
TSS	mg/L	7	5 K	8	10	9
Arsenic	µg/L	2 K	2 K	2 K	2 K	2
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	3	2.9	2 K	2 K	3
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	7.7	9.7	11.4	10.7	7.9
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	200	200 K	202	200 K	200 K
Barium	µg/L	64	81	89	87	81
Calcium	mg/L	114	157	180	163	113
Hardness	mg/L	408	581	672	609	414
Iron	mg/L	337	257	341	355	421
Magnesium	mg/L	30	46	54	49	32
Manganese	µg/L	24	43	47	72	72
Potassium	mg/L	9	20	25	24	14
Sodium	mg/L	44	49	47	45	72
Strontium	µg/L	4590	9700	12000	11900	6150
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K
Alkalinity	mg/L	203	202	189	177	161
Ammonia	mg/L	0.053	0.104	0.111	0.058	0.253
COD	mg/L	20 K	20 K	20 K	20 K	20 K
Chloride	mg/L	87.8	82.6	83.3	82.4	117
Conductivity	uS/cm	1030	1310	1410	1300	1140
Nitrate+nitrite	mg/L	3.17	1.02	0.69	0.66	0.97
Nitrite	mg/L	0.02	0.037	0.045	0.02 K	0.036
Sulfate	mg/L	190	379	462	408	212
TKN	mg/L	0.9	0.74	0.25	0.46	1.25
TP	mg/L	0.028	0.02	0.01 K	0.01 K	0.035
Field Parameters						
Time	hhmmss	9:08:06	8:46:59	8:27:09	8:44:56	8:57:28
Temperature	°C	17.41	19.15	20.69	20.97	20.68
Dissolved Oxygen	mg/L	7.86	7.41	6.55	6.5	5.89
Dissolved Oxygen	%	82.2	80.5	73.3	73.2	65.8
pH	s.u.	7.86	7.86	7.75	7.8	7.87
Conductivity	uS/cm	871	1138	1274	1215	1029
Conductivity @ 25C	uS/cm	1018	1281	1388	1317	1122

Station		Site Location: Tenmile Creek at Silica Dr.				
P11K63		RM: 0.47				
PARAMETER	UNITS	6/16/11	6/28/11	7/13/11	7/26/11	8/10/11
TDS	mg/L	688	834	670	918	770
TSS	mg/L	5 K	5 K	5 K	5 K	5 K
Arsenic	µg/L	2 K	2 K	2 K	2 K	2 K
Cadmium	µg/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	µg/L	2 K	2 K	2 K	2 K	2 K
Copper	µg/L	2.7	2.7	2.6	2 K	2.4
Lead	µg/L	2 K	2 K	2 K	2 K	2 K
Nickel	µg/L	7	6.7	6.2	6.2	6.7
Selenium	µg/L	2 K	2 K	2 K	2 K	2 K
Aluminum	µg/L	200 K	200 K	200 K	200 K	200 K
Barium	µg/L	65	81	63	88	79
Calcium	mg/L	115	141	106	143	123
Hardness	mg/L	419	525	392	534	459
Iron	mg/L	153	168	126	139	121
Magnesium	mg/L	32	42	31	43	37
Manganese	µg/L	13	36	49	54	32
Potassium	mg/L	11	17	14	20	16
Sodium	mg/L	43	54	52	44	51
Strontium	µg/L	5540	7880	6380	9350	7260
Zinc	µg/L	10 K	10 K	10 K	10 K	10 K
Alkalinity	mg/L	196	192	144	170	160
Ammonia	mg/L	0.05 K	0.05 K	0.058	0.057	0.07
COD	mg/L	20 K	20 K	20 K	20 K	20 K
Chloride	mg/L	87.5	89.6	91.2	81	91
Conductivity	uS/cm	1060	1200	1010	1200	1160
Nitrate+nitrite	mg/L	2.31	0.46	0.64	0.66	2.02
Nitrite	mg/L	0.02 K	0.02 K	0.021	0.02 K	0.056
Sulfate	mg/L	218	301	224	355	279
TKN	mg/L	0.94	0.6	0.51	0.53	0.92
TP	mg/L	0.024	0.026	0.018	0.016	0.027
Field Parameters						
Time	hhmmss	9:22:06	9:02:27	8:46:26	8:59:19	9:12:13
Temperature	°C	18.28	21.08	22.66	23.57	21.7
Dissolved Oxygen	mg/L	9.15	8.01	6.36	6.72	7.37
Dissolved Oxygen	%	97.5	90.3	73.8	79.4	84
pH	s.u.	8.09	8.04	7.78	7.91	7.96
Conductivity	uS/cm	916	1095	953	1173	1066
Conductivity @ 25C	uS/cm	1051	1183	998	1206	1138

Station		Site Location: North Tenmile Creek at Monroe							
P11S77		River Mile: 0.12							
PARAMETER	UNITS	6/16/11	6/28/11						
TDS	mg/L	466	588						
TSS	mg/L	8	5 K						
Arsenic	µg/L	2 K	2.6						
Cadmium	µg/L	0.2 K	0.2 K						
Chromium	µg/L	2 K	2 K						
Copper	µg/L	3.8	4.5						
Lead	µg/L	2 K	2 K						
Nickel	µg/L	4.6	4.1						
Selenium	µg/L	2 K	2 K						
Aluminum	µg/L	200 K	200 K						
Barium	µg/L	40	47						
Calcium	mg/L	76	69						
Hardness	mg/L	268	251						
Iron	mg/L	205	291						
Magnesium	mg/L	19	19						
Manganese	µg/L	16	63						
Potassium	mg/L	2	3						
Sodium	mg/L	48	76						
Strontium	µg/L	987	2800						
Zinc	µg/L	10 K	10 K						
Alkalinity	mg/L	197	180						
Ammonia	mg/L	0.05 K	0.05 K						
COD	mg/L	21	22						
Chloride	mg/L	101	142						
Conductivity	uS/cm	803	940						
Nitrate+nitrite	mg/L	1.46	0.24						
Nitrite	mg/L	0.02 K	0.02 K						
Sulfate	mg/L	52.7	60.8						
TKN	mg/L	1.16	0.85						
TP	mg/L	0.084	0.105						
Field Parameters									
Time	hhmmss	9:34:12	9:14:09						
Temperature	°C	18.01	20.33						
Dissolved Oxygen	mg/L	8.77	6.86						
Dissolved Oxygen	%	92.9	76.1						
pH	s.u.	8.09	7.91						
Conductivity	uS/cm	689	841						
Conductivity @ 25C	uS/cm	796	924						

Station		Site Location: Prairie Ditch at Tupelo Way				
301447		River Mile: 1.41				
PARAMETER	UNITS	6/13/11	6/27/11	7/12/11	7/25/11	8/8/11
TDS	mg/L	474	466	286	244	570
TSS	mg/L	5 K	8	10	7	5 K
Alkalinity	mg/L	208	206	98	112	164
Ammonia	mg/L	0.05 K	0.059	0.219	0.38	0.078
COD	mg/L	25	32	37	27	34
Chloride	mg/L	85.4	108	47.9	29.8	185
Conductivity	uS/cm	747	794	435	391	1050
Nitrate+nitrite	mg/L	3.18	0.1	0.3	0.12	0.51
Nitrite	mg/L	0.037	0.02 K	0.043	0.02	0.031
Sulfate	mg/L	46	30.5	39.5	40.1	36.1
TKN	mg/L	0.84	1.07	1.32	1.14	1.34
TP	mg/L	0.061	0.159	0.295	0.398	0.174
Field Parameters						
Time	hhmmss	11:01:05	10:42:46	10:29:22	10:19:10	11:10:00
Temperature	°C	18.07	19.48	23.34	25.01	22.53
Dissolved Oxygen	mg/L	8.38	4.88	2.46	2.83	5.3
Dissolved Oxygen	%	88.8	53.2	28.9	34.3	61.4
pH	s.u.	8.01	7.58	7.41	7.58	7.73
Conductivity	uS/cm	624	698	418	386	990
Conductivity @ 25C	uS/cm	719	780	431	386	1039

Appendix Table 8. Organic water quality data collected from sites in the Tenmile Creek and Ottawa River study area, 2011.

Station P11S60

Shantee Creek @Stickney Avenue RM 0.70

Date Collected 7/14/2011

Parameter (BNA)	MDL (µg/l)	Result (µg/l)	Parameter (BNA)	MDL (µg/l)	Result (µg/l)
Acenaphthene	5.3	<5.3	Diethylphthalate	5.3	<5.3
Acenaphthylene	5.3	<5.3	2,4-Dimethylphenol	10.5	<10.5
Anthracene	2.1	<2.1	Dimethylphthalate	5.3	<5.3
Benzo[a]anthracene	2.1	<2.1	4,6-Dinitro-2-methylphenol	5.3	<5.3
Benzo[a]pyrene	2.1	<2.1	2,4-Dinitrophenol	21.1	<21.1
Benzo[b]fluoranthene	2.1	<2.1	2,6-Dinitrotoluene	2.1	<2.1
Benzo[g,h,i]perylene	2.1	<2.1	2,4-Dinitrotoluene	2.1	<2.1
Benzo[k]fluoranthene	2.1	<2.1	Fluoranthene	2.1	<2.1
bis(2-Chloroethoxy)methane	5.3	<5.3	Fluorene	2.1	<2.1
bis(2-Chloroethyl)ether	2.1	<2.1	Hexachlorobenzene	2.1	<2.1
bis(2-Chloroisopropyl)ether	2.1	<2.1	Hexachlorobutadiene	2.1	<2.1
bis(2-Ethylhexyl)phthalate	10.5	<10.5	Hexachlorocyclopentadiene	2.1	<2.1
4-Bromophenyl-phenylether	5.3	<5.3	Hexachloroethane	5.3	<5.3
Butylbenzylphthalate	2.1	<2.1	Indeno[1,2,3-cd]pyrene	2.1	<2.1
4-Chloro-3-methylphenol	10.5	<10.5	Isophorone	2.1	<2.1
2-Chloronaphthalene	5.3	<5.3	N-Nitroso-di-n-propylamine	2.1	<2.1
2-Chlorophenol	2.1	<2.1	N-Nitrosodiphenylamine	5.3	<5.3
4-Chlorophenyl-phenylether	2.1	<2.1	Naphthalene	2.1	<2.1
Chrysene	2.1	<2.1	Nitrobenzene	2.1	<2.1
Di-n-butylphthalate	5.3	<5.3	2-Nitrophenol	2.1	<2.1
Di-n-octylphthalate	2.1	<2.1	4-Nitrophenol	21.1	<21.1
Dibenz[a,h]anthracene	2.1	<2.1	Pentachlorophenol	10.5	<10.5
1,3-Dichlorobenzene	2.1	<2.1	Phenanthrene	2.1	<2.1
1,4-Dichlorobenzene	2.1	<2.1	Phenol	2.1	<2.1
1,2-Dichlorobenzene	2.1	<2.1	Pyrene	2.1	<2.1
2,4-Dichlorophenol	2.1	<2.1	1,2,4-Trichlorobenzene	2.1	<2.1
			2,4,6-Trichlorophenol	5.3	<5.3
Parameter (VOC)	MDL (µg/l)	Result (µg/l)	Parameter (VOC)	MDL (µg/l)	Result (µg/l)
Benzene	0.5	<0.50	1,2-Dichloropropane	0.5	<0.50
Bromobenzene	0.5	<0.50	1,3-Dichloropropane	0.5	<0.50
Bromochloromethane	0.5	<0.50	2,2-Dichloropropane	0.5	<0.50
Bromodichloromethane	0.5	<0.50	1,1-Dichloropropene	0.5	<0.50
Bromoform	0.5	<0.50	cis-1,3-Dichloropropene	0.5	<0.50
Bromomethane	0.5	<0.50	trans-1,3-Dichloropropene	0.5	<0.50
n-Butylbenzene	0.5	<0.50	Ethylbenzene	0.5	<0.50
sec-Butylbenzene	0.5	<0.50	Hexachlorobutadiene	0.5	<0.50
tert-Butylbenzene	0.5	<0.50	Isopropylbenzene	0.5	<0.50
Carbon tetrachloride	0.5	<0.50	4-Isopropyltoluene	0.5	<0.50
Chlorobenzene	0.5	<0.50	Methylene chloride	0.5	<0.50
Chloroethane	0.5	<0.50	Naphthalene	0.5	<0.50
Chloroform	0.5	<0.50	n-Propylbenzene	0.5	<0.50
Chloromethane	0.5	<0.50	Styrene	0.5	<0.50
2-Chlorotoluene	0.5	<0.50	1,1,1,2-Tetrachloroethane	0.5	<0.50
4-Chlorotoluene	0.5	<0.50	1,1,2,2-Tetrachloroethane	0.5	<0.50
Dibromochloromethane	0.5	<0.50	Tetrachloroethene	0.5	<0.50
1,2-Dibromo-3-chloropropane	0.5	<0.50	Toluene	0.5	<0.50
1,2-Dibromoethane	0.5	<0.50	1,2,3-Trichlorobenzene	0.5	<0.50
Dibromomethane	0.5	<0.50	1,2,4-Trichlorobenzene	0.5	<0.50
1,2-Dichlorobenzene	0.5	<0.50	1,1,1-Trichloroethane	0.5	<0.50
1,3-Dichlorobenzene	0.5	<0.50	1,1,2-Trichloroethane	0.5	<0.50
1,4-Dichlorobenzene	0.5	<0.50	Trichloroethene	0.5	<0.50
Dichlorodifluoromethane	0.5	<0.50	Trichlorofluoromethane	0.5	<0.50
1,1-Dichloroethane	0.5	<0.50	1,2,3-Trichloropropane	0.5	<0.50
1,2-Dichloroethane	0.5	<0.50	1,2,4-Trimethylbenzene	0.5	<0.50
1,1-Dichloroethene	0.5	<0.50	1,3,5-Trimethylbenzene	0.5	<0.50
cis-1,2-Dichloroethene	0.5	<0.50	Vinyl chloride	0.5	<0.50
trans-1,2-Dichloroethene	0.5	<0.50	o-Xylene	0.5	<0.50
			Total m&p-xylenes	0.5	<0.50

Station 301440

Ottawa River @ Harroun Road RM 19.50

Date Collected 7/13/2011

Parameter (BNA)	MDL (µg/l)	Result (µg/l)	Parameter (BNA)	MDL (µg/l)	Result (µg/l)
Acenaphthene	5.3	<5.3	Diethylphthalate	5.3	<5.3
Acenaphthylene	5.3	<5.3	2,4-Dimethylphenol	10.5	<10.5
Anthracene	2.1	<2.1	Dimethylphthalate	5.3	<5.3
Benzo[a]anthracene	2.1	<2.1	4,6-Dinitro-2-methylphenol	5.3	<5.3
Benzo[a]pyrene	2.1	<2.1	2,4-Dinitrophenol	21.1	<21.1
Benzo[b]fluoranthene	2.1	<2.1	2,6-Dinitrotoluene	2.1	<2.1
Benzo[g,h,i]perylene	2.1	<2.1	2,4-Dinitrotoluene	2.1	<2.1
Benzo[k]fluoranthene	2.1	<2.1	Fluoranthene	2.1	<2.1
bis(2-Chloroethoxy)methane	5.3	<5.3	Fluorene	2.1	<2.1
bis(2-Chloroethyl)ether	2.1	<2.1	Hexachlorobenzene	2.1	<2.1
bis(2-Chloroisopropyl)ether	2.1	<2.1	Hexachlorobutadiene	2.1	<2.1
bis(2-Ethylhexyl)phthalate	10.5	<10.5	Hexachlorocyclopentadiene	2.1	<2.1
4-Bromophenyl-phenylether	5.3	<5.3	Hexachloroethane	5.3	<5.3
Butylbenzylphthalate	2.1	<2.1	Indeno[1,2,3-cd]pyrene	2.1	<2.1
4-Chloro-3-methylphenol	10.5	<10.5	Isophorone	2.1	<2.1
2-Chloronaphthalene	5.3	<5.3	N-Nitroso-di-n-propylamine	2.1	<2.1
2-Chlorophenol	2.1	<2.1	N-Nitrosodiphenylamine	5.3	<5.3
4-Chlorophenyl-phenylether	2.1	<2.1	Naphthalene	2.1	<2.1
Chrysene	2.1	<2.1	Nitrobenzene	2.1	<2.1
Di-n-butylphthalate	5.3	<5.3	2-Nitrophenol	2.1	<2.1
Di-n-octylphthalate	2.1	<2.1	4-Nitrophenol	21.1	<21.1
Dibenz[a,h]anthracene	2.1	<2.1	Pentachlorophenol	10.5	<10.5
1,3-Dichlorobenzene	2.1	<2.1	Phenanthrene	2.1	<2.1
1,4-Dichlorobenzene	2.1	<2.1	Phenol	2.1	<2.1
1,2-Dichlorobenzene	2.1	<2.1	Pyrene	2.1	<2.1
2,4-Dichlorophenol	2.1	<2.1	1,2,4-Trichlorobenzene	2.1	<2.1
			2,4,6-Trichlorophenol	5.3	<5.3
Parameter (VOC)	MDL (µg/l)	Result (µg/l)	Parameter (VOC)	MDL (µg/l)	Result (µg/l)
Benzene	0.5	<0.50	1,2-Dichloropropane	0.5	<0.50
Bromobenzene	0.5	<0.50	1,3-Dichloropropane	0.5	<0.50
Bromochloromethane	0.5	<0.50	2,2-Dichloropropane	0.5	<0.50
Bromodichloromethane	0.5	<0.50	1,1-Dichloropropene	0.5	<0.50
Bromoform	0.5	<0.50	cis-1,3-Dichloropropene	0.5	<0.50
Bromomethane	0.5	<0.50	trans-1,3-Dichloropropene	0.5	<0.50
n-Butylbenzene	0.5	<0.50	Ethylbenzene	0.5	<0.50
sec-Butylbenzene	0.5	<0.50	Hexachlorobutadiene	0.5	<0.50
tert-Butylbenzene	0.5	<0.50	Isopropylbenzene	0.5	<0.50
Carbon tetrachloride	0.5	<0.50	4-Isopropyltoluene	0.5	<0.50
Chlorobenzene	0.5	<0.50	Methylene chloride	0.5	<0.50
Chloroethane	0.5	<0.50	Naphthalene	0.5	<0.50
Chloroform	0.5	<0.50	n-Propylbenzene	0.5	<0.50
Chloromethane	0.5	<0.50	Styrene	0.5	<0.50
2-Chlorotoluene	0.5	<0.50	1,1,1,2-Tetrachloroethane	0.5	<0.50
4-Chlorotoluene	0.5	<0.50	1,1,2,2-Tetrachloroethane	0.5	<0.50
Dibromochloromethane	0.5	<0.50	Tetrachloroethene	0.5	<0.50
1,2-Dibromo-3-chloropropane	0.5	<0.50	Toluene	0.5	<0.50
1,2-Dibromoethane	0.5	<0.50	1,2,3-Trichlorobenzene	0.5	<0.50
Dibromomethane	0.5	<0.50	1,2,4-Trichlorobenzene	0.5	<0.50
1,2-Dichlorobenzene	0.5	<0.50	1,1,1-Trichloroethane	0.5	<0.50
1,3-Dichlorobenzene	0.5	<0.50	1,1,2-Trichloroethane	0.5	<0.50
1,4-Dichlorobenzene	0.5	<0.50	Trichloroethene	0.5	<0.50
Dichlorodifluoromethane	0.5	<0.50	Trichlorofluoromethane	0.5	<0.50
1,1-Dichloroethane	0.5	<0.50	1,2,3-Trichloropropane	0.5	<0.50
1,2-Dichloroethane	0.5	<0.50	1,2,4-Trimethylbenzene	0.5	<0.50
1,1-Dichloroethene	0.5	<0.50	1,3,5-Trimethylbenzene	0.5	<0.50
cis-1,2-Dichloroethene	0.5	<0.50	Vinyl chloride	0.5	<0.50
trans-1,2-Dichloroethene	0.5	<0.50	o-Xylene	0.5	<0.50
			Total m&p-xylenes	0.5	<0.50

Station P11S74

Ottawa River @ Stadium Dr. (UT) RM 11.15

Date Collected 7/13/2011

Parameter (BNA)	MDL (µg/l)	Result (µg/l)	Parameter (BNA)	MDL (µg/l)	Result (µg/l)
Acenaphthene	5.3	<5.3	Diethylphthalate	5.3	<5.3
Acenaphthylene	5.3	<5.3	2,4-Dimethylphenol	10.5	<10.5
Anthracene	2.1	<2.1	Dimethylphthalate	5.3	<5.3
Benzo[a]anthracene	2.1	<2.1	4,6-Dinitro-2-methylphenol	5.3	<5.3
Benzo[a]pyrene	2.1	<2.1	2,4-Dinitrophenol	21.1	<21.1
Benzo[b]fluoranthene	2.1	<2.1	2,6-Dinitrotoluene	2.1	<2.1
Benzo[g,h,i]perylene	2.1	<2.1	2,4-Dinitrotoluene	2.1	<2.1
Benzo[k]fluoranthene	2.1	<2.1	Fluoranthene	2.1	<2.1
bis(2-Chloroethoxy)methane	5.3	<5.3	Fluorene	2.1	<2.1
bis(2-Chloroethyl)ether	2.1	<2.1	Hexachlorobenzene	2.1	<2.1
bis(2-Chloroisopropyl)ether	2.1	<2.1	Hexachlorobutadiene	2.1	<2.1
bis(2-Ethylhexyl)phthalate	10.5	16.3	Hexachlorocyclopentadiene	2.1	<2.1
4-Bromophenyl-phenylether	5.3	<5.3	Hexachloroethane	5.3	<5.3
Butylbenzylphthalate	2.1	<2.1	Indeno[1,2,3-cd]pyrene	2.1	<2.1
4-Chloro-3-methylphenol	10.5	<10.5	Isophorone	2.1	<2.1
2-Chloronaphthalene	5.3	<5.3	N-Nitroso-di-n-propylamine	2.1	<2.1
2-Chlorophenol	2.1	<2.1	N-Nitrosodiphenylamine	5.3	<5.3
4-Chlorophenyl-phenylether	2.1	<2.1	Naphthalene	2.1	<2.1
Chrysene	2.1	<2.1	Nitrobenzene	2.1	<2.1
Di-n-butylphthalate	5.3	<5.3	2-Nitrophenol	2.1	<2.1
Di-n-octylphthalate	2.1	<2.1	4-Nitrophenol	21.1	<21.1
Dibenz[a,h]anthracene	2.1	<2.1	Pentachlorophenol	10.5	<10.5
1,3-Dichlorobenzene	2.1	<2.1	Phenanthrene	2.1	<2.1
1,4-Dichlorobenzene	2.1	<2.1	Phenol	2.1	<2.1
1,2-Dichlorobenzene	2.1	<2.1	Pyrene	2.1	<2.1
2,4-Dichlorophenol	2.1	<2.1	1,2,4-Trichlorobenzene	2.1	<2.1
			2,4,6-Trichlorophenol	5.3	<5.3
Parameter (VOC)	MDL (µg/l)	Result (µg/l)	Parameter (VOC)	MDL (µg/l)	Result (µg/l)
Benzene	0.5	<0.50	1,2-Dichloropropane	0.5	<0.50
Bromobenzene	0.5	<0.50	1,3-Dichloropropane	0.5	<0.50
Bromochloromethane	0.5	<0.50	2,2-Dichloropropane	0.5	<0.50
Bromodichloromethane	0.5	<0.50	1,1-Dichloropropene	0.5	<0.50
Bromoform	0.5	<0.50	cis-1,3-Dichloropropene	0.5	<0.50
Bromomethane	0.5	<0.50	trans-1,3-Dichloropropene	0.5	<0.50
n-Butylbenzene	0.5	<0.50	Ethylbenzene	0.5	<0.50
sec-Butylbenzene	0.5	<0.50	Hexachlorobutadiene	0.5	<0.50
tert-Butylbenzene	0.5	<0.50	Isopropylbenzene	0.5	<0.50
Carbon tetrachloride	0.5	<0.50	4-Isopropyltoluene	0.5	<0.50
Chlorobenzene	0.5	<0.50	Methylene chloride	0.5	<0.50
Chloroethane	0.5	<0.50	Naphthalene	0.5	<0.50
Chloroform	0.5	<0.50	n-Propylbenzene	0.5	<0.50
Chloromethane	0.5	<0.50	Styrene	0.5	<0.50
2-Chlorotoluene	0.5	<0.50	1,1,1,2-Tetrachloroethane	0.5	<0.50
4-Chlorotoluene	0.5	<0.50	1,1,2,2-Tetrachloroethane	0.5	<0.50
Dibromochloromethane	0.5	<0.50	Tetrachloroethene	0.5	<0.50
1,2-Dibromo-3-chloropropane	0.5	<0.50	Toluene	0.5	<0.50
1,2-Dibromoethane	0.5	<0.50	1,2,3-Trichlorobenzene	0.5	<0.50
Dibromomethane	0.5	<0.50	1,2,4-Trichlorobenzene	0.5	<0.50
1,2-Dichlorobenzene	0.5	<0.50	1,1,1-Trichloroethane	0.5	<0.50
1,3-Dichlorobenzene	0.5	<0.50	1,1,2-Trichloroethane	0.5	<0.50
1,4-Dichlorobenzene	0.5	<0.50	Trichloroethene	0.5	<0.50
Dichlorodifluoromethane	0.5	<0.50	Trichlorofluoromethane	0.5	<0.50
1,1-Dichloroethane	0.5	<0.50	1,2,3-Trichloropropane	0.5	<0.50
1,2-Dichloroethane	0.5	<0.50	1,2,4-Trimethylbenzene	0.5	<0.50
1,1-Dichloroethene	0.5	<0.50	1,3,5-Trimethylbenzene	0.5	<0.50
cis-1,2-Dichloroethene	0.5	<0.50	Vinyl chloride	0.5	<0.50
trans-1,2-Dichloroethene	0.5	<0.50	o-Xylene	0.5	<0.50
			Total m&p-xylenes	0.5	<0.50

Station P11S84

Detwiler Ditch @ Detwiler Park RM 0.50

Date Collected 7/14/2011

Parameter (BNA)	MDL (µg/l)	Result (µg/l)	Parameter (BNA)	MDL (µg/l)	Result (µg/l)
Acenaphthene	5.4	<5.4	Diethylphthalate	5.4	<5.4
Acenaphthylene	5.4	<5.4	2,4-Dimethylphenol	10.8	<10.8
Anthracene	2.2	<2.2	Dimethylphthalate	5.4	<5.4
Benzo[a]anthracene	2.2	<2.2	4,6-Dinitro-2-methylphenol	5.4	<5.4
Benzo[a]pyrene	2.2	<2.2	2,4-Dinitrophenol	21.5	<21.5
Benzo[b]fluoranthene	2.2	<2.2	2,6-Dinitrotoluene	2.2	<2.2
Benzo[g,h,i]perylene	2.2	<2.2	2,4-Dinitrotoluene	2.2	<2.2
Benzo[k]fluoranthene	2.2	<2.2	Fluoranthene	2.2	<2.2
bis(2-Chloroethoxy)methane	5.4	<5.4	Fluorene	2.2	<2.2
bis(2-Chloroethyl)ether	2.2	<2.2	Hexachlorobenzene	2.2	<2.2
bis(2-Chloroisopropyl)ether	2.2	<2.2	Hexachlorobutadiene	2.2	<2.2
bis(2-Ethylhexyl)phthalate	10.8	<10.8	Hexachlorocyclopentadiene	2.2	<2.2
4-Bromophenyl-phenylether	5.4	<5.4	Hexachloroethane	5.4	<5.4
Butylbenzylphthalate	2.2	<2.2	Indeno[1,2,3-cd]pyrene	2.2	<2.2
4-Chloro-3-methylphenol	10.8	<10.8	Isophorone	2.2	<2.2
2-Chloronaphthalene	5.4	<5.4	N-Nitroso-di-n-propylamine	2.2	<2.2
2-Chlorophenol	2.2	<2.2	N-Nitrosodiphenylamine	5.4	<5.4
4-Chlorophenyl-phenylether	2.2	<2.2	Naphthalene	2.2	<2.2
Chrysene	2.2	<2.2	Nitrobenzene	2.2	<2.2
Di-n-butylphthalate	5.4	<5.4	2-Nitrophenol	2.2	<2.2
Di-n-octylphthalate	2.2	<2.2	4-Nitrophenol	21.5	<21.5
Dibenz[a,h]anthracene	2.2	<2.2	Pentachlorophenol	10.8	<10.8
1,3-Dichlorobenzene	2.2	<2.2	Phenanthrene	2.2	<2.2
1,4-Dichlorobenzene	2.2	<2.2	Phenol	2.2	<2.2
1,2-Dichlorobenzene	2.2	<2.2	Pyrene	2.2	<2.2
2,4-Dichlorophenol	2.2	<2.2	1,2,4-Trichlorobenzene	2.2	<2.2
			2,4,6-Trichlorophenol	5.4	<5.4
Parameter (VOC)	MDL (µg/l)	Result (µg/l)	Parameter (VOC)	MDL (µg/l)	Result (µg/l)
Benzene	0.5	<0.50	1,2-Dichloropropane	0.5	<0.50
Bromobenzene	0.5	<0.50	1,3-Dichloropropane	0.5	<0.50
Bromochloromethane	0.5	<0.50	2,2-Dichloropropane	0.5	<0.50
Bromodichloromethane	0.5	<0.50	1,1-Dichloropropene	0.5	<0.50
Bromoform	0.5	<0.50	cis-1,3-Dichloropropene	0.5	<0.50
Bromomethane	0.5	<0.50	trans-1,3-Dichloropropene	0.5	<0.50
n-Butylbenzene	0.5	<0.50	Ethylbenzene	0.5	<0.50
sec-Butylbenzene	0.5	<0.50	Hexachlorobutadiene	0.5	<0.50
tert-Butylbenzene	0.5	<0.50	Isopropylbenzene	0.5	<0.50
Carbon tetrachloride	0.5	<0.50	4-Isopropyltoluene	0.5	<0.50
Chlorobenzene	0.5	<0.50	Methylene chloride	0.5	<0.50
Chloroethane	0.5	<0.50	Naphthalene	0.5	<0.50
Chloroform	0.5	<0.50	n-Propylbenzene	0.5	<0.50
Chloromethane	0.5	<0.50	Styrene	0.5	<0.50
2-Chlorotoluene	0.5	<0.50	1,1,1,2-Tetrachloroethane	0.5	<0.50
4-Chlorotoluene	0.5	<0.50	1,1,2,2-Tetrachloroethane	0.5	<0.50
Dibromochloromethane	0.5	<0.50	Tetrachloroethene	0.5	<0.50
1,2-Dibromo-3-chloropropane	0.5	<0.50	Toluene	0.5	<0.50
1,2-Dibromoethane	0.5	<0.50	1,2,3-Trichlorobenzene	0.5	<0.50
Dibromomethane	0.5	<0.50	1,2,4-Trichlorobenzene	0.5	<0.50
1,2-Dichlorobenzene	0.5	<0.50	1,1,1-Trichloroethane	0.5	<0.50
1,3-Dichlorobenzene	0.5	<0.50	1,1,2-Trichloroethane	0.5	<0.50
1,4-Dichlorobenzene	0.5	<0.50	Trichloroethene	0.5	<0.50
Dichlorodifluoromethane	0.5	<0.50	Trichlorofluoromethane	0.5	<0.50
1,1-Dichloroethane	0.5	<0.50	1,2,3-Trichloropropane	0.5	<0.50
1,2-Dichloroethane	0.5	<0.50	1,2,4-Trimethylbenzene	0.5	<0.50
1,1-Dichloroethene	0.5	<0.50	1,3,5-Trimethylbenzene	0.5	<0.50
cis-1,2-Dichloroethene	0.5	<0.50	Vinyl chloride	0.5	<0.50
trans-1,2-Dichloroethene	0.5	<0.50	o-Xylene	0.5	<0.50
			Total m&p-xylenes	0.5	<0.50

Station P11K64

Tenmile Creek @ Brint Road RM 2.97

Date Collected 7/13/2011

Parameter (BNA)	MDL (µg/l)	Result (µg/l)	Parameter (BNA)	MDL (µg/l)	Result (µg/l)
Acenaphthene	5.4	<5.4	Diethylphthalate	5.4	<5.4
Acenaphthylene	5.4	<5.4	2,4-Dimethylphenol	10.8	<10.8
Anthracene	2.2	<2.2	Dimethylphthalate	5.4	<5.4
Benzo[a]anthracene	2.2	<2.2	4,6-Dinitro-2-methylphenol	5.4	<5.4
Benzo[a]pyrene	2.2	<2.2	2,4-Dinitrophenol	21.5	<21.5
Benzo[b]fluoranthene	2.2	<2.2	2,6-Dinitrotoluene	2.2	<2.2
Benzo[g,h,i]perylene	2.2	<2.2	2,4-Dinitrotoluene	2.2	<2.2
Benzo[k]fluoranthene	2.2	<2.2	Fluoranthene	2.2	<2.2
bis(2-Chloroethoxy)methane	5.4	<5.4	Fluorene	2.2	<2.2
bis(2-Chloroethyl)ether	2.2	<2.2	Hexachlorobenzene	2.2	<2.2
bis(2-Chloroisopropyl)ether	2.2	<2.2	Hexachlorobutadiene	2.2	<2.2
bis(2-Ethylhexyl)phthalate	10.8	<10.8	Hexachlorocyclopentadiene	2.2	<2.2
4-Bromophenyl-phenylether	5.4	<5.4	Hexachloroethane	5.4	<5.4
Butylbenzylphthalate	2.2	<2.2	Indeno[1,2,3-cd]pyrene	2.2	<2.2
4-Chloro-3-methylphenol	10.8	<10.8	Isophorone	2.2	<2.2
2-Chloronaphthalene	5.4	<5.4	N-Nitroso-di-n-propylamine	2.2	<2.2
2-Chlorophenol	2.2	<2.2	N-Nitrosodiphenylamine	5.4	<5.4
4-Chlorophenyl-phenylether	2.2	<2.2	Naphthalene	2.2	<2.2
Chrysene	2.2	<2.2	Nitrobenzene	2.2	<2.2
Di-n-butylphthalate	5.4	<5.4	2-Nitrophenol	2.2	<2.2
Di-n-octylphthalate	2.2	<2.2	4-Nitrophenol	21.5	<21.5
Dibenz[a,h]anthracene	2.2	<2.2	Pentachlorophenol	10.8	<10.8
1,3-Dichlorobenzene	2.2	<2.2	Phenanthrene	2.2	<2.2
1,4-Dichlorobenzene	2.2	<2.2	Phenol	2.2	<2.2
1,2-Dichlorobenzene	2.2	<2.2	Pyrene	2.2	<2.2
2,4-Dichlorophenol	2.2	<2.2	1,2,4-Trichlorobenzene	2.2	<2.2
			2,4,6-Trichlorophenol	5.4	<5.4
Parameter (VOC)	MDL (µg/l)	Result (µg/l)	Parameter (VOC)	MDL (µg/l)	Result (µg/l)
Benzene	0.5	<0.50	1,2-Dichloropropane	0.5	<0.50
Bromobenzene	0.5	<0.50	1,3-Dichloropropane	0.5	<0.50
Bromochloromethane	0.5	<0.50	2,2-Dichloropropane	0.5	<0.50
Bromodichloromethane	0.5	<0.50	1,1-Dichloropropene	0.5	<0.50
Bromoform	0.5	<0.50	cis-1,3-Dichloropropene	0.5	<0.50
Bromomethane	0.5	<0.50	trans-1,3-Dichloropropene	0.5	<0.50
n-Butylbenzene	0.5	<0.50	Ethylbenzene	0.5	<0.50
sec-Butylbenzene	0.5	<0.50	Hexachlorobutadiene	0.5	<0.50
tert-Butylbenzene	0.5	<0.50	Isopropylbenzene	0.5	<0.50
Carbon tetrachloride	0.5	<0.50	4-Isopropyltoluene	0.5	<0.50
Chlorobenzene	0.5	<0.50	Methylene chloride	0.5	<0.50
Chloroethane	0.5	<0.50	Naphthalene	0.5	<0.50
Chloroform	0.5	<0.50	n-Propylbenzene	0.5	<0.50
Chloromethane	0.5	<0.50	Styrene	0.5	<0.50
2-Chlorotoluene	0.5	<0.50	1,1,1,2-Tetrachloroethane	0.5	<0.50
4-Chlorotoluene	0.5	<0.50	1,1,2,2-Tetrachloroethane	0.5	<0.50
Dibromochloromethane	0.5	<0.50	Tetrachloroethene	0.5	<0.50
1,2-Dibromo-3-chloropropane	0.5	<0.50	Toluene	0.5	<0.50
1,2-Dibromoethane	0.5	<0.50	1,2,3-Trichlorobenzene	0.5	<0.50
Dibromomethane	0.5	<0.50	1,2,4-Trichlorobenzene	0.5	<0.50
1,2-Dichlorobenzene	0.5	<0.50	1,1,1-Trichloroethane	0.5	<0.50
1,3-Dichlorobenzene	0.5	<0.50	1,1,2-Trichloroethane	0.5	<0.50
1,4-Dichlorobenzene	0.5	<0.50	Trichloroethene	0.5	<0.50
Dichlorodifluoromethane	0.5	<0.50	Trichlorofluoromethane	0.5	<0.50
1,1-Dichloroethane	0.5	<0.50	1,2,3-Trichloropropane	0.5	<0.50
1,2-Dichloroethane	0.5	<0.50	1,2,4-Trimethylbenzene	0.5	<0.50
1,1-Dichloroethene	0.5	<0.50	1,3,5-Trimethylbenzene	0.5	<0.50
cis-1,2-Dichloroethene	0.5	<0.50	Vinyl chloride	0.5	<0.50
trans-1,2-Dichloroethene	0.5	<0.50	o-Xylene	0.5	<0.50
			Total m&p-xylenes	0.5	<0.50

Appendix Table 9. Concentrations of metals (mg/kg) in sediment collected from sites in the Tenmile Creek and Ottawa River study area, 2011.

Station 301448
Halfway Creek at East State Line Road (RM 4.88)
Date Collected - 8/30/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		48.0
TOC	0.1	3.0
Cadmium	0.157	0.565
Chromium	1.57	10.2
Copper	1.57	14.6
Lead	1.57	23.3
Nickel	1.57	9.27
Zinc	15.7	83.3
Mercury	0.047	0.059

Station P11S60
Shantee Creek at Stickney Ave (RM 0.70)
Date Collected - 8/30/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		54.2
TOC	0.1	4.1
Cadmium	0.139	1.43
Chromium	1.39	30.3
Copper	2.78	51.1
Lead	2.78	67.9
Nickel	1.39	21.5
Zinc	13.9	253
Mercury	ND	ND

Station 301449
Silver Creek at Futura Drive (RM 1.70)
Date Collected - 8/30/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		65.5
TOC	0.1	3.3
Cadmium	0.111	0.781
Chromium	1.11	15.0
Copper	1.11	16.6
Lead	1.11	17.2
Nickel	1.11	19.5
Zinc	11.1	77.4
Mercury	ND	ND

Station 301440
Ottawa River at Harroun Rd. (RM 19.50)
Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		68.2
TOC	0.1	1.9
Cadmium	0.113	0.456
Chromium	1.13	11.3
Copper	1.13	14.4
Lead	1.13	16.5
Nickel	1.13	9.25
Zinc	11.3	83.1
Mercury	0.026	0.040

Station 301441
Ottawa River at Sylvania Ave. (RM 16.84)
Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		54.6
TOC	0.1	1.9
Cadmium	0.144	0.365
Chromium	1.44	11.3
Copper	1.44	9.80
Lead	1.44	13.0
Nickel	1.44	7.82
Zinc	14.4	56.8
Mercury	0.034	0.043

Station P11P35
Ottawa River at Central Ave. (RM 15.05)
Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		58.3
TOC	0.1	2.3
Cadmium	0.123	0.401
Chromium	1.23	9.03
Copper	1.23	11.9
Lead	1.23	11.5
Nickel	1.23	9.40
Zinc	12.3	52.5
Mercury	0.03	0.056

Station 301442
Ottawa River at Edgehill Rd. (RM 14.42)
Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		58.7
TOC	0.1	1.3
Cadmium	0.124	0.322
Chromium	1.24	15.4
Copper	1.24	12.4
Lead	1.24	12.0
Nickel	1.24	9.59
Zinc	12.4	40.8
Mercury	0.037	<0.037

Station
Ottawa River at Talmadge Rd (RM 13.16)
Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
% Solids		68.1
TOC	0.1	0.8
Cadmium	0.109	0.237
Chromium	1.09	5.31
Copper	1.09	6.59
Lead	1.09	6.87
Nickel	1.09	5.75
Zinc	10.9	30.8
Mercury	0.032	0.035

Station 204346
Ottawa River at upst UT dam (RM 11.80)
Date Collected 1/11/2012

	MDL	Result
Parameter	(mg/kg)	(mg/kg)
% Solids		75.3
TOC	0.1	0.5
Cadmium	0.097	0.176
Chromium	0.97	4.36
Copper	0.97	4.86
Lead	0.97	5.62
Nickel	0.97	4.80
Zinc	9.7	17.4
Mercury	0.028	<0.028

Station 301443
Ottawa River at Douglas Rd. (RM 10.86)
Date Collected 1/11/2012

	MDL	Result
Parameter	(mg/kg)	(mg/kg)
% Solids		65.6
TOC	0.1	1.5
Cadmium	0.122	0.257
Chromium	1.22	5.96
Copper	1.22	6.07
Lead	1.22	9.62
Nickel	1.22	5.32
Zinc	12.2	28.5
Mercury	0.027	0.043

Station 301444
Ottawa River at Monroe St. (RM 9.25)
Date Collected 1/11/2012

	MDL	Result
Parameter	(mg/kg)	(mg/kg)
% Solids		63.6
TOC	0.1	1.1
Cadmium	0.121	0.245
Chromium	1.21	4.65
Copper	1.21	7.96
Lead	1.21	7.11
Nickel	1.21	5.62
Zinc	12.1	23.0
Mercury	0.038	0.042

Station P11S84
Detwiler Ditch at Detwiler Golf Course (RM 0.50)
Date Collected - 8/30/2011

	MDL	Result
Parameter	(mg/kg)	(mg/kg)
% Solids		31.0
TOC	0.1	7.0
Cadmium	0.253	4.65
Chromium	2.53	27.2
Copper	2.53	44.8
Lead	2.53	55.9
Nickel	2.53	32.6
Zinc	25.3	432
Mercury	ND	ND

Station P11K64
Tenmile Creek at Brint Road (RM 2.97)
Date Collected - 9/14/2011

	MDL	Result
Parameter	(mg/kg)	(mg/kg)
% Solids		67.2
TOC	0.1	1.7
Cadmium	0.112	0.249
Chromium	1.12	7.15
Copper	1.12	7.48
Lead	1.12	5.31
Nickel	1.12	9.19
Zinc	11.2	32.4
Mercury	0.029	0.044

Appendix Table 10. Concentrations of organic chemicals (mg/kg or $\mu\text{g/kg}$) in sediment collected from sites in the Tenmile Creek and Ottawa River study area, 2011.

Station 301448

Halfway Creek at East State Line Rd (RM 4.88)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.69	<0.69
Acenaphthylene	0.69	<0.69
Acetophenone	0.69	<0.69
2-Acetylaminofluorene	0.69	<0.69
Aniline	3.5	<3.5
Anthracene	0.69	<0.69
Benz[a]anthracene	0.69	1.81
Benzo[a]pyrene	0.69	2.31
Benzo[b]fluoranthene	0.69	2.69
Benzo[g,h,i]perylene	0.69	1.87
Benzo[k]fluoranthene	0.69	2.11
Benzyl alcohol	0.69	<0.69
bis(2-Chloroethoxy)methane	0.69	<0.69
bis(2-Chloroethyl)ether	0.69	<0.69
bis(2-Chloroisopropyl)ether	0.69	<0.69
bis(2-Ethylhexyl)phthalate	0.69	<0.69
4-Bromophenyl-phenylether	0.69	<0.69
Butylbenzylphthalate	0.69	<0.69
4-Chloro-3-methylphenol	0.69	<0.69
2-Chloronaphthalene	0.69	<0.69
2-Chlorophenol	0.69	<0.69
4-Chlorophenyl-phenylether	0.69	<0.69
Chrysene	0.69	3.03
Di-n-butylphthalate	0.69	<0.69
Di-n-octylphthalate	0.69	<0.69
Dibenz[a,h]anthracene	0.69	<0.69
Dibenzofuran	0.69	<0.69
1,3-Dichlorobenzene	0.69	<0.69
1,4-Dichlorobenzene	0.69	<0.69
1,2-Dichlorobenzene	0.69	<0.69
3,3'-Dichlorobenzidine	3.5	<3.5
2,6-Dichlorophenol	0.69	<0.69
2,4-Dichlorophenol	0.69	<0.69
Diethylphthalate	0.69	<0.69
p-Dimethylaminoazobenzene	0.69	<0.69
7,12-Dimethylbenz[a]anthracene	3.5	<3.5
2,4-Dimethylphenol	0.69	<0.69
Dimethylphthalate	0.69	<0.69
4,6-Dinitro-2-methylphenol	0.69	<0.69
1,3-Dinitrobenzene	0.69	<0.69
2,4-Dinitrophenol	3.5	<3.5
2,6-Dinitrotoluene	0.69	<0.69
2,4-Dinitrotoluene	0.69	<0.69
Dinoseb	0.69	<0.69
Diphenylamine	0.69	<0.69
Ethyl methanesulfonate	0.69	<0.69
Fluoranthene	0.69	6.21
Fluorene	0.69	<0.69
Hexachlorobenzene	0.69	<0.69
Hexachlorobutadiene	0.69	<0.69

Date Collected 8/30/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.69	<0.69
Hexachloroethane	0.69	<0.69
Hexachloropropene	0.69	<0.69
Indeno[1,2,3-cd]pyrene	0.69	1.71
Isophorone	0.69	<0.69
Methyl methanesulfonate	0.69	<0.69
3-Methylcholanthrene	0.69	<0.69
2-Methylnaphthalene	0.69	<0.69
3&4-Methylphenol	0.69	<0.69
2-Methylphenol	0.69	<0.69
N-Nitroso-di-n-butylamine	0.69	<0.69
N-Nitroso-di-n-propylamine	0.69	<0.69
N-Nitrosomorpholine	0.69	<0.69
N-Nitrosopiperidine	0.69	<0.69
N-Nitrosopyrrolidine	0.69	<0.69
Naphthalene	0.69	<0.69
1,4-Naphthoquinone	0.69	<0.69
2-Nitroaniline	0.69	<0.69
4-Nitroaniline	0.69	<0.69
Nitrobenzene	0.69	<0.69
4-Nitrophenol	3.5	<3.5
2-Nitrophenol	0.69	<0.69
Pentachlorobenzene	0.69	<0.69
Pentachlorophenol	0.69	<0.69
Phenacetin	0.69	<0.69
Phenanthrene	0.69	1.87
Phenol	0.69	<0.69
2-Picoline	0.69	<0.69
Pronamide	0.69	<0.69
Pyrene	0.69	4.63
Safrole	0.69	<0.69
1,2,4,5-Tetrachlorobenzene	0.69	<0.69
2,3,4,6-Tetrachlorophenol	0.69	<0.69
1,2,4-Trichlorobenzene	0.69	<0.69
2,4,6-Trichlorophenol	0.69	<0.69
2,4,5-Trichlorophenol	0.69	<0.69
Total PAH		28.24
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	34.8	<34.8
PCB-1221	34.8	<34.8
PCB-1232	34.8	<34.8
PCB-1242	34.8	<34.8
PCB-1248	34.8	<34.8
PCB-1254	34.8	<34.8
PCB-1260	34.8	<34.8
Total PCB		0

Station P11S60

Shantee Creek At Stickney Ave (RM 0.70)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.68	<0.68
Acenaphthylene	0.68	<0.68
Acetophenone	0.68	<0.68
2-Acetylaminofluorene	0.68	<0.68
Aniline	3.4	<3.4
Anthracene	0.68	<0.68
Benz[a]anthracene	0.68	1.87
Benzo[a]pyrene	0.68	2.32
Benzo[b]fluoranthene	0.68	2.81
Benzo[g,h,i]perylene	0.68	1.83
Benzo[k]fluoranthene	0.68	2.10
Benzyl alcohol	0.68	<0.68
bis(2-Chloroethoxy)methane	0.68	<0.68
bis(2-Chloroethyl)ether	0.68	<0.68
bis(2-Chloroisopropyl)ether	0.68	<0.68
bis(2-Ethylhexyl)phthalate	0.68	1.73
4-Bromophenyl-phenylether	0.68	<0.68
Butylbenzylphthalate	0.68	<0.68
4-Chloro-3-methylphenol	0.68	<0.68
2-Chloronaphthalene	0.68	<0.68
2-Chlorophenol	0.68	<0.68
4-Chlorophenyl-phenylether	0.68	<0.68
Chrysene	0.68	3.09
Di-n-butylphthalate	0.68	<0.68
Di-n-octylphthalate	0.68	<0.68
Dibenz[a,h]anthracene	0.68	<0.68
Dibenzofuran	0.68	<0.68
1,3-Dichlorobenzene	0.68	<0.68
1,4-Dichlorobenzene	0.68	<0.68
1,2-Dichlorobenzene	0.68	<0.68
3,3'-Dichlorobenzidine	3.4	<3.4
2,6-Dichlorophenol	0.68	<0.68
2,4-Dichlorophenol	0.68	<0.68
Diethylphthalate	0.68	<0.68
p-Dimethylaminoazobenzene	0.68	<0.68
7,12-Dimethylbenz[a]anthracene	3.4	<3.4
2,4-Dimethylphenol	0.68	<0.68
Dimethylphthalate	0.68	<0.68
4,6-Dinitro-2-methylphenol	0.68	<0.68
1,3-Dinitrobenzene	0.68	<0.68
2,4-Dinitrophenol	3.4	<3.4
2,6-Dinitrotoluene	0.68	<0.68
2,4-Dinitrotoluene	0.68	<0.68
Dinoseb	0.68	<0.68
Diphenylamine	0.68	<0.68
Ethyl methanesulfonate	0.68	<0.68
Fluoranthene	0.68	6.13
Fluorene	0.68	<0.68
Hexachlorobenzene	0.68	<0.68
Hexachlorobutadiene	0.68	<0.68

Date Collected 8/30/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.68	<0.68
Hexachloroethane	0.68	<0.68
Hexachloropropene	0.68	<0.68
Indeno[1,2,3-cd]pyrene	0.68	1.77
Isophorone	0.68	<0.68
Methyl methanesulfonate	0.68	<0.68
3-Methylcholanthrene	0.68	<0.68
2-Methylnaphthalene	0.68	<0.68
3&4-Methylphenol	0.68	<0.68
2-Methylphenol	0.68	<0.68
N-Nitroso-di-n-butylamine	0.68	<0.68
N-Nitroso-di-n-propylamine	0.68	<0.68
N-Nitrosomorpholine	0.68	<0.68
N-Nitrosopiperidine	0.68	<0.68
N-Nitrosopyrrolidine	0.68	<0.68
Naphthalene	0.68	<0.68
1,4-Naphthoquinone	0.68	<0.68
2-Nitroaniline	0.68	<0.68
4-Nitroaniline	0.68	<0.68
Nitrobenzene	0.68	<0.68
4-Nitrophenol	3.4	<3.4
2-Nitrophenol	0.68	<0.68
Pentachlorobenzene	0.68	<0.68
Pentachlorophenol	0.68	<0.68
Phenacetin	0.68	<0.68
Phenanthrene	0.68	2.46
Phenol	0.68	<0.68
2-Picoline	0.68	<0.68
Pronamide	0.68	<0.68
Pyrene	0.68	4.47
Safrole	0.68	<0.68
1,2,4,5-Tetrachlorobenzene	0.68	<0.68
2,3,4,6-Tetrachlorophenol	0.68	<0.68
1,2,4-Trichlorobenzene	0.68	<0.68
2,4,6-Trichlorophenol	0.68	<0.68
2,4,5-Trichlorophenol	0.68	<0.68
Total PAH		28.85
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	34.2	<34.2
PCB-1221	34.2	<34.2
PCB-1232	34.2	<34.2
PCB-1242	34.2	184
PCB-1248	34.2	<34.2
PCB-1254	34.2	<34.2
PCB-1260	34.2	129
Total PCB		313

Station 301449

Silver Creek at Futura Drive (RM 1.70)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.6	<0.60
Acenaphthylene	0.6	<0.60
Acetophenone	0.6	<0.60
2-Acetylaminofluorene	0.6	<0.60
Aniline	3	<3.0
Anthracene	0.6	<0.60
Benz[a]anthracene	0.6	0.63
Benzo[a]pyrene	0.6	<0.60
Benzo[b]fluoranthene	0.6	<0.60
Benzo[g,h,i]perylene	0.6	<0.60
Benzo[k]fluoranthene	0.6	<0.60
Benzyl alcohol	0.6	<0.60
bis(2-Chloroethoxy)methane	0.6	<0.60
bis(2-Chloroethyl)ether	0.6	<0.60
bis(2-Chloroisopropyl)ether	0.6	<0.60
bis(2-Ethylhexyl)phthalate	0.6	<0.60
4-Bromophenyl-phenylether	0.6	<0.60
Butylbenzylphthalate	0.6	<0.60
4-Chloro-3-methylphenol	0.6	<0.60
2-Chloronaphthalene	0.6	<0.60
2-Chlorophenol	0.6	<0.60
4-Chlorophenyl-phenylether	0.6	<0.60
Chrysene	0.6	0.84
Di-n-butylphthalate	0.6	<0.60
Di-n-octylphthalate	0.6	<0.60
Dibenz[a,h]anthracene	0.6	<0.60
Dibenzofuran	0.6	<0.60
1,3-Dichlorobenzene	0.6	<0.60
1,4-Dichlorobenzene	0.6	<0.60
1,2-Dichlorobenzene	0.6	<0.60
3,3'-Dichlorobenzidine	3	<3.0
2,6-Dichlorophenol	0.6	<0.60
2,4-Dichlorophenol	0.6	<0.60
Diethylphthalate	0.6	<0.60
p-Dimethylaminoazobenzene	0.6	<0.60
7,12-Dimethylbenz[a]anthracene	3	<3.0
2,4-Dimethylphenol	0.6	<0.60
Dimethylphthalate	0.6	<0.60
4,6-Dinitro-2-methylphenol	0.6	<0.60
1,3-Dinitrobenzene	0.6	<0.60
2,4-Dinitrophenol	3	<3.0
2,6-Dinitrotoluene	0.6	<0.60
2,4-Dinitrotoluene	0.6	<0.60
Dinoseb	0.6	<0.60
Diphenylamine	0.6	<0.60
Ethyl methanesulfonate	0.6	<0.60
Fluoranthene	0.6	1.65
Fluorene	0.6	<0.60
Hexachlorobenzene	0.6	<0.60
Hexachlorobutadiene	0.6	<0.60

Date Collected 8/30/20110

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.6	<0.60
Hexachloroethane	0.6	<0.60
Hexachloropropene	0.6	<0.60
Indeno[1,2,3-cd]pyrene	0.6	<0.60
Isophorone	0.6	<0.60
Methyl methanesulfonate	0.6	<0.60
3-Methylcholanthrene	0.6	<0.60
2-Methylnaphthalene	1.19	18.4
3&4-Methylphenol	0.6	<0.60
2-Methylphenol	0.6	<0.60
N-Nitroso-di-n-butylamine	0.6	<0.60
N-Nitroso-di-n-propylamine	0.6	<0.60
N-Nitrosomorpholine	0.6	<0.60
N-Nitrosopiperidine	0.6	<0.60
N-Nitrosopyrrolidine	0.6	<0.60
Naphthalene	0.6	<0.60
1,4-Naphthoquinone	0.6	<0.60
2-Nitroaniline	0.6	<0.60
4-Nitroaniline	0.6	<0.60
Nitrobenzene	0.6	<0.60
4-Nitrophenol	3	<3.0
2-Nitrophenol	0.6	<0.60
Pentachlorobenzene	0.6	<0.60
Pentachlorophenol	0.6	<0.60
Phenacetin	0.6	<0.60
Phenanthrene	0.6	7.06
Phenol	0.6	<0.60
2-Picoline	0.6	<0.60
Pronamide	0.6	<0.60
Pyrene	0.6	1.65
Safrole	0.6	<0.60
1,2,4,5-Tetrachlorobenzene	0.6	<0.60
2,3,4,6-Tetrachlorophenol	0.6	<0.60
1,2,4-Trichlorobenzene	0.6	<0.60
2,4,6-Trichlorophenol	0.6	<0.60
2,4,5-Trichlorophenol	0.6	<0.60
Total PAH		30.23
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	29.9	<29.9
PCB-1221	29.9	<29.9
PCB-1232	29.9	<29.9
PCB-1242	29.9	<29.9
PCB-1248	29.9	<29.9
PCB-1254	29.9	<29.9
PCB-1260	29.9	<29.9
Total PCB		0

Station 301440

Ottawa River at Harroun Rd. (RM 19.50)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.53	<0.53
Acenaphthylene	0.53	<0.53
Acetophenone	0.53	<0.53
2-Acetylaminofluorene	0.53	<0.53
Aniline	2.6	<2.6
Anthracene	0.53	<0.53
Benz[a]anthracene	0.53	0.85
Benzo[a]pyrene	0.53	0.96
Benzo[b]fluoranthene	0.53	1.04
Benzo[g,h,i]perylene	0.53	0.71
Benzo[k]fluoranthene	0.53	0.63
Benzyl alcohol	0.53	<0.53
bis(2-Chloroethoxy)methane	0.53	<0.53
bis(2-Chloroethyl)ether	0.53	<0.53
bis(2-Chloroisopropyl)ether	0.53	<0.53
bis(2-Ethylhexyl)phthalate	0.53	<0.53
4-Bromophenyl-phenylether	0.53	<0.53
Butylbenzylphthalate	0.53	<0.53
4-Chloro-3-methylphenol	0.53	<0.53
2-Chloronaphthalene	0.53	<0.53
2-Chlorophenol	0.53	<0.53
4-Chlorophenyl-phenylether	0.53	<0.53
Chrysene	0.53	1.08
Di-n-butylphthalate	0.53	<0.53
Di-n-octylphthalate	0.53	<0.53
Dibenz[a,h]anthracene	0.53	<0.53
Dibenzofuran	0.53	<0.53
1,3-Dichlorobenzene	0.53	<0.53
1,4-Dichlorobenzene	0.53	<0.53
1,2-Dichlorobenzene	0.53	<0.53
3,3'-Dichlorobenzidine	2.6	<2.6
2,6-Dichlorophenol	0.53	<0.53
2,4-Dichlorophenol	0.53	<0.53
Diethylphthalate	0.53	<0.53
p-Dimethylaminoazobenzene	0.53	<0.53
7,12-Dimethylbenz[a]anthracene	2.6	<2.6
2,4-Dimethylphenol	0.53	<0.53
Dimethylphthalate	0.53	<0.53
4,6-Dinitro-2-methylphenol	0.53	<0.53
1,3-Dinitrobenzene	0.53	<0.53
2,4-Dinitrophenol	2.6	<2.6
2,6-Dinitrotoluene	0.53	<0.53
2,4-Dinitrotoluene	0.53	<0.53
Dinoseb	0.53	<0.53
Diphenylamine	0.53	<0.53
Ethyl methanesulfonate	0.53	<0.53
Fluoranthene	0.53	2.52
Fluorene	0.53	<0.53
Hexachlorobenzene	0.53	<0.53
Hexachlorobutadiene	0.53	<0.53

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.53	<0.53
Hexachloroethane	0.53	<0.53
Hexachloropropene	0.53	<0.53
Indeno[1,2,3-cd]pyrene	0.53	0.67
Isophorone	0.53	<0.53
Methyl methanesulfonate	0.53	<0.53
3-Methylcholanthrene	0.53	<0.53
2-Methylnaphthalene	0.53	<0.53
3&4-Methylphenol	0.53	<0.53
2-Methylphenol	0.53	<0.53
N-Nitroso-di-n-butylamine	0.53	<0.53
N-Nitroso-di-n-propylamine	0.53	<0.53
N-Nitrosomorpholine	0.53	<0.53
N-Nitrosopiperidine	0.53	<0.53
N-Nitrosopyrrolidine	0.53	<0.53
Naphthalene	0.53	<0.53
1,4-Naphthoquinone	0.53	<0.53
2-Nitroaniline	0.53	<0.53
4-Nitroaniline	0.53	<0.53
Nitrobenzene	0.53	<0.53
4-Nitrophenol	2.6	<2.6
2-Nitrophenol	0.53	<0.53
Pentachlorobenzene	0.53	<0.53
Pentachlorophenol	0.53	<0.53
Phenacetin	0.53	<0.53
Phenanthrene	0.53	1.43
Phenol	0.53	<0.53
2-Picoline	0.53	<0.53
Pronamide	0.53	<0.53
Pyrene	0.53	1.88
Safrole	0.53	<0.53
1,2,4,5-Tetrachlorobenzene	0.53	<0.53
2,3,4,6-Tetrachlorophenol	0.53	<0.53
1,2,4-Trichlorobenzene	0.53	<0.53
2,4,6-Trichlorophenol	0.53	<0.53
2,4,5-Trichlorophenol	0.53	<0.53
Total PAH		11.77
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	26.5	<26.5
PCB-1221	26.5	<26.5
PCB-1232	26.5	<26.5
PCB-1242	26.5	<26.5
PCB-1248	26.5	<26.5
PCB-1254	26.5	<26.5
PCB-1260	26.5	<26.5
Total PCB		0

Station 301441

Ottawa River at Sylvania Ave. (RM 16.84)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.6	<0.60
Acenaphthylene	0.6	<0.60
Acetophenone	0.6	<0.60
2-Acetylaminofluorene	0.6	<0.60
Aniline	3	<3.0
Anthracene	0.6	<0.60
Benz[a]anthracene	0.6	<0.60
Benzo[a]pyrene	0.6	0.80
Benzo[b]fluoranthene	0.6	1.04
Benzo[g,h,i]perylene	0.6	0.67
Benzo[k]fluoranthene	0.6	0.60
Benzyl alcohol	0.6	<0.60
bis(2-Chloroethoxy)methane	0.6	<0.60
bis(2-Chloroethyl)ether	0.6	<0.60
bis(2-Chloroisopropyl)ether	0.6	<0.60
bis(2-Ethylhexyl)phthalate	0.6	<0.60
4-Bromophenyl-phenylether	0.6	<0.60
Butylbenzylphthalate	0.6	<0.60
4-Chloro-3-methylphenol	0.6	<0.60
2-Chloronaphthalene	0.6	<0.60
2-Chlorophenol	0.6	<0.60
4-Chlorophenyl-phenylether	0.6	<0.60
Chrysene	0.6	0.96
Di-n-butylphthalate	0.6	<0.60
Di-n-octylphthalate	0.6	<0.60
Dibenz[a,h]anthracene	0.6	<0.60
Dibenzofuran	0.6	<0.60
1,3-Dichlorobenzene	0.6	<0.60
1,4-Dichlorobenzene	0.6	<0.60
1,2-Dichlorobenzene	0.6	<0.60
3,3'-Dichlorobenzidine	3	<3.0
2,6-Dichlorophenol	0.6	<0.60
2,4-Dichlorophenol	0.6	<0.60
Diethylphthalate	0.6	<0.60
p-Dimethylaminoazobenzene	0.6	<0.60
7,12-Dimethylbenz[a]anthracene	3	<3.0
2,4-Dimethylphenol	0.6	<0.60
Dimethylphthalate	0.6	<0.60
4,6-Dinitro-2-methylphenol	0.6	<0.60
1,3-Dinitrobenzene	0.6	<0.60
2,4-Dinitrophenol	3	<3.0
2,6-Dinitrotoluene	0.6	<0.60
2,4-Dinitrotoluene	0.6	<0.60
Dinoseb	0.6	<0.60
Diphenylamine	0.6	<0.60
Ethyl methanesulfonate	0.6	<0.60
Fluoranthene	0.6	1.75
Fluorene	0.6	<0.60
Hexachlorobenzene	0.6	<0.60
Hexachlorobutadiene	0.6	<0.60

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.6	<0.60
Hexachloroethane	0.6	<0.60
Hexachloropropene	0.6	<0.60
Indeno[1,2,3-cd]pyrene	0.6	0.60
Isophorone	0.6	<0.60
Methyl methanesulfonate	0.6	<0.60
3-Methylcholanthrene	0.6	<0.60
2-Methylnaphthalene	0.6	<0.60
3&4-Methylphenol	0.6	<0.60
2-Methylphenol	0.6	<0.60
N-Nitroso-di-n-butylamine	0.6	<0.60
N-Nitroso-di-n-propylamine	0.6	<0.60
N-Nitrosomorpholine	0.6	<0.60
N-Nitrosopiperidine	0.6	<0.60
N-Nitrosopyrrolidine	0.6	<0.60
Naphthalene	0.6	<0.60
1,4-Naphthoquinone	0.6	<0.60
2-Nitroaniline	0.6	<0.60
4-Nitroaniline	0.6	<0.60
Nitrobenzene	0.6	<0.60
4-Nitrophenol	3	<3.0
2-Nitrophenol	0.6	<0.60
Pentachlorobenzene	0.6	<0.60
Pentachlorophenol	0.6	<0.60
Phenacetin	0.6	<0.60
Phenanthrene	0.6	0.62
Phenol	0.6	<0.60
2-Picoline	0.6	<0.60
Pronamide	0.6	<0.60
Pyrene	0.6	1.30
Safrole	0.6	<0.60
1,2,4,5-Tetrachlorobenzene	0.6	<0.60
2,3,4,6-Tetrachlorophenol	0.6	<0.60
1,2,4-Trichlorobenzene	0.6	<0.60
2,4,6-Trichlorophenol	0.6	<0.60
2,4,5-Trichlorophenol	0.6	<0.60
Total PAH		8.34
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	30	<30.0
PCB-1221	30	<30.0
PCB-1232	30	<30.0
PCB-1242	30	<30.0
PCB-1248	30	<30.0
PCB-1254	30	<30.0
PCB-1260	30	<30.0
Total PCB		0

Station P11P35

Ottawa River at Central Ave. (RM 15.05)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.63	<0.63
Acenaphthylene	0.63	<0.63
Acetophenone	0.63	<0.63
2-Acetylaminofluorene	0.63	<0.63
Aniline	3.2	<3.2
Anthracene	0.63	<0.63
Benz[a]anthracene	0.63	2.06
Benzo[a]pyrene	0.63	2.98
Benzo[b]fluoranthene	0.63	3.81
Benzo[g,h,i]perylene	0.63	2.59
Benzo[k]fluoranthene	0.63	2.22
Benzyl alcohol	0.63	<0.63
bis(2-Chloroethoxy)methane	0.63	<0.63
bis(2-Chloroethyl)ether	0.63	<0.63
bis(2-Chloroisopropyl)ether	0.63	<0.63
bis(2-Ethylhexyl)phthalate	0.63	<0.63
4-Bromophenyl-phenylether	0.63	<0.63
Butylbenzylphthalate	0.63	<0.63
4-Chloro-3-methylphenol	0.63	<0.63
2-Chloronaphthalene	0.63	<0.63
2-Chlorophenol	0.63	<0.63
4-Chlorophenyl-phenylether	0.63	<0.63
Chrysene	0.63	3.82
Di-n-butylphthalate	0.63	<0.63
Di-n-octylphthalate	0.63	<0.63
Dibenz[a,h]anthracene	0.63	<0.63
Dibenzofuran	0.63	<0.63
1,3-Dichlorobenzene	0.63	<0.63
1,4-Dichlorobenzene	0.63	<0.63
1,2-Dichlorobenzene	0.63	<0.63
3,3'-Dichlorobenzidine	3.2	<3.2
2,6-Dichlorophenol	0.63	<0.63
2,4-Dichlorophenol	0.63	<0.63
Diethylphthalate	0.63	<0.63
p-Dimethylaminoazobenzene	0.63	<0.63
7,12-Dimethylbenz[a]anthracene	3.2	<3.2
2,4-Dimethylphenol	0.63	<0.63
Dimethylphthalate	0.63	<0.63
4,6-Dinitro-2-methylphenol	0.63	<0.63
1,3-Dinitrobenzene	0.63	<0.63
2,4-Dinitrophenol	3.2	<3.2
2,6-Dinitrotoluene	0.63	<0.63
2,4-Dinitrotoluene	0.63	<0.63
Dinoseb	0.63	<0.63
Diphenylamine	0.63	<0.63
Ethyl methanesulfonate	0.63	<0.63
Fluoranthene	0.63	7.71
Fluorene	0.63	<0.63
Hexachlorobenzene	0.63	<0.63
Hexachlorobutadiene	0.63	<0.63

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.63	<0.63
Hexachloroethane	0.63	<0.63
Hexachloropropene	0.63	<0.63
Indeno[1,2,3-cd]pyrene	0.63	2.31
Isophorone	0.63	<0.63
Methyl methanesulfonate	0.63	<0.63
3-Methylcholanthrene	0.63	<0.63
2-Methylnaphthalene	0.63	<0.63
3&4-Methylphenol	0.63	<0.63
2-Methylphenol	0.63	<0.63
N-Nitroso-di-n-butylamine	0.63	<0.63
N-Nitroso-di-n-propylamine	0.63	<0.63
N-Nitrosomorpholine	0.63	<0.63
N-Nitrosopiperidine	0.63	<0.63
N-Nitrosopyrrolidine	0.63	<0.63
Naphthalene	0.63	<0.63
1,4-Naphthoquinone	0.63	<0.63
2-Nitroaniline	0.63	<0.63
4-Nitroaniline	0.63	<0.63
Nitrobenzene	0.63	<0.63
4-Nitrophenol	3.2	<3.2
2-Nitrophenol	0.63	<0.63
Pentachlorobenzene	0.63	<0.63
Pentachlorophenol	0.63	<0.63
Phenacetin	0.63	<0.63
Phenanthrene	0.63	2.51
Phenol	0.63	<0.63
2-Picoline	0.63	<0.63
Pronamide	0.63	<0.63
Pyrene	0.63	5.75
Safrole	0.63	<0.63
1,2,4,5-Tetrachlorobenzene	0.63	<0.63
2,3,4,6-Tetrachlorophenol	0.63	<0.63
1,2,4-Trichlorobenzene	0.63	<0.63
2,4,6-Trichlorophenol	0.63	<0.63
2,4,5-Trichlorophenol	0.63	<0.63
Total PAH		35.76
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	31.8	<31.8
PCB-1221	31.8	<31.8
PCB-1232	31.8	<31.8
PCB-1242	31.8	<31.8
PCB-1248	31.8	<31.8
PCB-1254	31.8	<31.8
PCB-1260	31.8	<31.8
Total PCB		0

Station 301442

Ottawa River at Edgehill Rd. (RM 14.42)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.57	<0.57
Acenaphthylene	0.57	<0.57
Acetophenone	0.57	<0.57
2-Acetylaminofluorene	0.57	<0.57
Aniline	2.8	<2.8
Anthracene	0.57	<0.57
Benz[a]anthracene	0.57	1.17
Benzo[a]pyrene	0.57	1.53
Benzo[b]fluoranthene	0.57	1.75
Benzo[g,h,i]perylene	0.57	1.17
Benzo[k]fluoranthene	0.57	1.19
Benzyl alcohol	0.57	<0.57
bis(2-Chloroethoxy)methane	0.57	<0.57
bis(2-Chloroethyl)ether	0.57	<0.57
bis(2-Chloroisopropyl)ether	0.57	<0.57
bis(2-Ethylhexyl)phthalate	0.57	<0.57
4-Bromophenyl-phenylether	0.57	<0.57
Butylbenzylphthalate	0.57	<0.57
4-Chloro-3-methylphenol	0.57	<0.57
2-Chloronaphthalene	0.57	<0.57
2-Chlorophenol	0.57	<0.57
4-Chlorophenyl-phenylether	0.57	<0.57
Chrysene	0.57	1.82
Di-n-butylphthalate	0.57	<0.57
Di-n-octylphthalate	0.57	<0.57
Dibenz[a,h]anthracene	0.57	<0.57
Dibenzofuran	0.57	<0.57
1,3-Dichlorobenzene	0.57	<0.57
1,4-Dichlorobenzene	0.57	<0.57
1,2-Dichlorobenzene	0.57	<0.57
3,3'-Dichlorobenzidine	2.8	<2.8
2,6-Dichlorophenol	0.57	<0.57
2,4-Dichlorophenol	0.57	<0.57
Diethylphthalate	0.57	<0.57
p-Dimethylaminoazobenzene	0.57	<0.57
7,12-Dimethylbenz[a]anthracene	2.8	<2.8
2,4-Dimethylphenol	0.57	<0.57
Dimethylphthalate	0.57	<0.57
4,6-Dinitro-2-methylphenol	0.57	<0.57
1,3-Dinitrobenzene	0.57	<0.57
2,4-Dinitrophenol	2.8	<2.8
2,6-Dinitrotoluene	0.57	<0.57
2,4-Dinitrotoluene	0.57	<0.57
Dinoseb	0.57	<0.57
Diphenylamine	0.57	<0.57
Ethyl methanesulfonate	0.57	<0.57
Fluoranthene	0.57	3.96
Fluorene	0.57	<0.57
Hexachlorobenzene	0.57	<0.57
Hexachlorobutadiene	0.57	<0.57

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.57	<0.57
Hexachloroethane	0.57	<0.57
Hexachloropropene	0.57	<0.57
Indeno[1,2,3-cd]pyrene	0.57	1.00
Isophorone	0.57	<0.57
Methyl methanesulfonate	0.57	<0.57
3-Methylcholanthrene	0.57	<0.57
2-Methylnaphthalene	0.57	<0.57
3&4-Methylphenol	0.57	<0.57
2-Methylphenol	0.57	<0.57
N-Nitroso-di-n-butylamine	0.57	<0.57
N-Nitroso-di-n-propylamine	0.57	<0.57
N-Nitrosomorpholine	0.57	<0.57
N-Nitrosopiperidine	0.57	<0.57
N-Nitrosopyrrolidine	0.57	<0.57
Naphthalene	0.57	<0.57
1,4-Naphthoquinone	0.57	<0.57
2-Nitroaniline	0.57	<0.57
4-Nitroaniline	0.57	<0.57
Nitrobenzene	0.57	<0.57
4-Nitrophenol	2.8	<2.8
2-Nitrophenol	0.57	<0.57
Pentachlorobenzene	0.57	<0.57
Pentachlorophenol	0.57	<0.57
Phenacetin	0.57	<0.57
Phenanthrene	0.57	1.77
Phenol	0.57	<0.57
2-Picoline	0.57	<0.57
Pronamide	0.57	<0.57
Pyrene	0.57	2.99
Safrole	0.57	<0.57
1,2,4,5-Tetrachlorobenzene	0.57	<0.57
2,3,4,6-Tetrachlorophenol	0.57	<0.57
1,2,4-Trichlorobenzene	0.57	<0.57
2,4,6-Trichlorophenol	0.57	<0.57
2,4,5-Trichlorophenol	0.57	<0.57
Total PAH		18.35
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	28.4	<28.4
PCB-1221	28.4	<28.4
PCB-1232	28.4	<28.4
PCB-1242	28.4	<28.4
PCB-1248	28.4	<28.4
PCB-1254	28.4	<28.4
PCB-1260	28.4	<28.4
Total PCB		0

Station

Ottawa River at Talmadge Rd (RM 13.16)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.51	<0.51
Acenaphthylene	0.51	<0.51
Acetophenone	0.51	<0.51
2-Acetylaminofluorene	0.51	<0.51
Aniline	2.6	<2.6
Anthracene	0.51	<0.51
Benz[a]anthracene	0.51	1.11
Benzo[a]pyrene	0.51	1.34
Benzo[b]fluoranthene	0.51	1.44
Benzo[g,h,i]perylene	0.51	0.89
Benzo[k]fluoranthene	0.51	0.94
Benzyl alcohol	0.51	<0.51
bis(2-Chloroethoxy)methane	0.51	<0.51
bis(2-Chloroethyl)ether	0.51	<0.51
bis(2-Chloroisopropyl)ether	0.51	<0.51
bis(2-Ethylhexyl)phthalate	0.51	<0.51
4-Bromophenyl-phenylether	0.51	<0.51
Butylbenzylphthalate	0.51	<0.51
4-Chloro-3-methylphenol	0.51	<0.51
2-Chloronaphthalene	0.51	<0.51
2-Chlorophenol	0.51	<0.51
4-Chlorophenyl-phenylether	0.51	<0.51
Chrysene	0.51	1.53
Di-n-butylphthalate	0.51	<0.51
Di-n-octylphthalate	0.51	<0.51
Dibenz[a,h]anthracene	0.51	<0.51
Dibenzofuran	0.51	<0.51
1,3-Dichlorobenzene	0.51	<0.51
1,4-Dichlorobenzene	0.51	<0.51
1,2-Dichlorobenzene	0.51	<0.51
3,3'-Dichlorobenzidine	2.6	<2.6
2,6-Dichlorophenol	0.51	<0.51
2,4-Dichlorophenol	0.51	<0.51
Diethylphthalate	0.51	<0.51
p-Dimethylaminoazobenzene	0.51	<0.51
7,12-Dimethylbenz[a]anthracene	2.6	<2.6
2,4-Dimethylphenol	0.51	<0.51
Dimethylphthalate	0.51	<0.51
4,6-Dinitro-2-methylphenol	0.51	<0.51
1,3-Dinitrobenzene	0.51	<0.51
2,4-Dinitrophenol	2.6	<2.6
2,6-Dinitrotoluene	0.51	<0.51
2,4-Dinitrotoluene	0.51	<0.51
Dinoseb	0.51	<0.51
Diphenylamine	0.51	<0.51
Ethyl methanesulfonate	0.51	<0.51
Fluoranthene	0.51	3.07
Fluorene	0.51	<0.51
Hexachlorobenzene	0.51	<0.51
Hexachlorobutadiene	0.51	<0.51

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.51	<0.51
Hexachloroethane	0.51	<0.51
Hexachloropropene	0.51	<0.51
Indeno[1,2,3-cd]pyrene	0.51	0.81
Isophorone	0.51	<0.51
Methyl methanesulfonate	0.51	<0.51
3-Methylcholanthrene	0.51	<0.51
2-Methylnaphthalene	0.51	<0.51
3&4-Methylphenol	0.51	<0.51
2-Methylphenol	0.51	<0.51
N-Nitroso-di-n-butylamine	0.51	<0.51
N-Nitroso-di-n-propylamine	0.51	<0.51
N-Nitrosomorpholine	0.51	<0.51
N-Nitrosopiperidine	0.51	<0.51
N-Nitrosopyrrolidine	0.51	<0.51
Naphthalene	0.51	<0.51
1,4-Naphthoquinone	0.51	<0.51
2-Nitroaniline	0.51	<0.51
4-Nitroaniline	0.51	<0.51
Nitrobenzene	0.51	<0.51
4-Nitrophenol	2.6	<2.6
2-Nitrophenol	0.51	<0.51
Pentachlorobenzene	0.51	<0.51
Pentachlorophenol	0.51	<0.51
Phenacetin	0.51	<0.51
Phenanthrene	0.51	1.17
Phenol	0.51	<0.51
2-Picoline	0.51	<0.51
Pronamide	0.51	<0.51
Pyrene	0.51	2.35
Safrole	0.51	<0.51
1,2,4,5-Tetrachlorobenzene	0.51	<0.51
2,3,4,6-Tetrachlorophenol	0.51	<0.51
1,2,4-Trichlorobenzene	0.51	<0.51
2,4,6-Trichlorophenol	0.51	<0.51
2,4,5-Trichlorophenol	0.51	<0.51
Total PAH		11.58
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	25.7	<25.7
PCB-1221	25.7	<25.7
PCB-1232	25.7	<25.7
PCB-1242	25.7	<25.7
PCB-1248	25.7	<25.7
PCB-1254	25.7	<25.7
PCB-1260	25.7	<25.7
Total PCB		0

Station 204346

Ottawa River upst UT dam (RM 11.80)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.51	<0.51
Acenaphthylene	0.51	<0.51
Acetophenone	0.51	<0.51
2-Acetylaminofluorene	0.51	<0.51
Aniline	2.6	<2.6
Anthracene	0.51	<0.51
Benz[a]anthracene	0.51	<0.51
Benzo[a]pyrene	0.51	<0.51
Benzo[b]fluoranthene	0.51	<0.51
Benzo[g,h,i]perylene	0.51	<0.51
Benzo[k]fluoranthene	0.51	<0.51
Benzyl alcohol	0.51	<0.51
bis(2-Chloroethoxy)methane	0.51	<0.51
bis(2-Chloroethyl)ether	0.51	<0.51
bis(2-Chloroisopropyl)ether	0.51	<0.51
bis(2-Ethylhexyl)phthalate	0.51	<0.51
4-Bromophenyl-phenylether	0.51	<0.51
Butylbenzylphthalate	0.51	<0.51
4-Chloro-3-methylphenol	0.51	<0.51
2-Chloronaphthalene	0.51	<0.51
2-Chlorophenol	0.51	<0.51
4-Chlorophenyl-phenylether	0.51	<0.51
Chrysene	0.51	<0.51
Di-n-butylphthalate	0.51	<0.51
Di-n-octylphthalate	0.51	<0.51
Dibenz[a,h]anthracene	0.51	<0.51
Dibenzofuran	0.51	<0.51
1,3-Dichlorobenzene	0.51	<0.51
1,4-Dichlorobenzene	0.51	<0.51
1,2-Dichlorobenzene	0.51	<0.51
3,3'-Dichlorobenzidine	2.6	<2.6
2,6-Dichlorophenol	0.51	<0.51
2,4-Dichlorophenol	0.51	<0.51
Diethylphthalate	0.51	<0.51
p-Dimethylaminoazobenzene	0.51	<0.51
7,12-Dimethylbenz[a]anthracene	2.6	<2.6
2,4-Dimethylphenol	0.51	<0.51
Dimethylphthalate	0.51	<0.51
4,6-Dinitro-2-methylphenol	0.51	<0.51
1,3-Dinitrobenzene	0.51	<0.51
2,4-Dinitrophenol	2.6	<2.6
2,6-Dinitrotoluene	0.51	<0.51
2,4-Dinitrotoluene	0.51	<0.51
Dinoseb	0.51	<0.51
Diphenylamine	0.51	<0.51
Ethyl methanesulfonate	0.51	<0.51
Fluoranthene	0.51	0.85
Fluorene	0.51	<0.51
Hexachlorobenzene	0.51	<0.51
Hexachlorobutadiene	0.51	<0.51

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.51	<0.51
Hexachloroethane	0.51	<0.51
Hexachloropropene	0.51	<0.51
Indeno[1,2,3-cd]pyrene	0.51	<0.51
Isophorone	0.51	<0.51
Methyl methanesulfonate	0.51	<0.51
3-Methylcholanthrene	0.51	<0.51
2-Methylnaphthalene	0.51	<0.51
3&4-Methylphenol	0.51	<0.51
2-Methylphenol	0.51	<0.51
N-Nitroso-di-n-butylamine	0.51	<0.51
N-Nitroso-di-n-propylamine	0.51	<0.51
N-Nitrosomorpholine	0.51	<0.51
N-Nitrosopiperidine	0.51	<0.51
N-Nitrosopyrrolidine	0.51	<0.51
Naphthalene	0.51	<0.51
1,4-Naphthoquinone	0.51	<0.51
2-Nitroaniline	0.51	<0.51
4-Nitroaniline	0.51	<0.51
Nitrobenzene	0.51	<0.51
4-Nitrophenol	2.6	<2.6
2-Nitrophenol	0.51	<0.51
Pentachlorobenzene	0.51	<0.51
Pentachlorophenol	0.51	<0.51
Phenacetin	0.51	<0.51
Phenanthrene	0.51	<0.51
Phenol	0.51	<0.51
2-Picoline	0.51	<0.51
Pronamide	0.51	<0.51
Pyrene	0.51	0.64
Safrole	0.51	<0.51
1,2,4,5-Tetrachlorobenzene	0.51	<0.51
2,3,4,6-Tetrachlorophenol	0.51	<0.51
1,2,4-Trichlorobenzene	0.51	<0.51
2,4,6-Trichlorophenol	0.51	<0.51
2,4,5-Trichlorophenol	0.51	<0.51
Total PAH		1.49
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	25.7	<25.7
PCB-1221	25.7	<25.7
PCB-1232	25.7	<25.7
PCB-1242	25.7	<25.7
PCB-1248	25.7	<25.7
PCB-1254	25.7	<25.7
PCB-1260	25.7	<25.7
Total PCB		0

Station 301443

Ottawa River at Douglas Rd. (RM 10.86)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.53	<0.53
Acenaphthylene	0.53	<0.53
Acetophenone	0.53	<0.53
2-Acetylaminofluorene	0.53	<0.53
Aniline	2.7	<2.7
Anthracene	0.53	<0.53
Benz[a]anthracene	0.53	0.89
Benzo[a]pyrene	0.53	1.39
Benzo[b]fluoranthene	0.53	1.68
Benzo[g,h,i]perylene	0.53	1.27
Benzo[k]fluoranthene	0.53	1.12
Benzyl alcohol	0.53	<0.53
bis(2-Chloroethoxy)methane	0.53	<0.53
bis(2-Chloroethyl)ether	0.53	<0.53
bis(2-Chloroisopropyl)ether	0.53	<0.53
bis(2-Ethylhexyl)phthalate	0.53	<0.53
4-Bromophenyl-phenylether	0.53	<0.53
Butylbenzylphthalate	0.53	<0.53
4-Chloro-3-methylphenol	0.53	<0.53
2-Chloronaphthalene	0.53	<0.53
2-Chlorophenol	0.53	<0.53
4-Chlorophenyl-phenylether	0.53	<0.53
Chrysene	0.53	1.67
Di-n-butylphthalate	0.53	<0.53
Di-n-octylphthalate	0.53	<0.53
Dibenz[a,h]anthracene	0.53	<0.53
Dibenzofuran	0.53	<0.53
1,3-Dichlorobenzene	0.53	<0.53
1,4-Dichlorobenzene	0.53	<0.53
1,2-Dichlorobenzene	0.53	<0.53
3,3'-Dichlorobenzidine	2.7	<2.7
2,6-Dichlorophenol	0.53	<0.53
2,4-Dichlorophenol	0.53	<0.53
Diethylphthalate	0.53	<0.53
p-Dimethylaminoazobenzene	0.53	<0.53
7,12-Dimethylbenz[a]anthracene	2.7	<2.7
2,4-Dimethylphenol	0.53	<0.53
Dimethylphthalate	0.53	<0.53
4,6-Dinitro-2-methylphenol	0.53	<0.53
1,3-Dinitrobenzene	0.53	<0.53
2,4-Dinitrophenol	2.7	<2.7
2,6-Dinitrotoluene	0.53	<0.53
2,4-Dinitrotoluene	0.53	<0.53
Dinoseb	0.53	<0.53
Diphenylamine	0.53	<0.53
Ethyl methanesulfonate	0.53	<0.53
Fluoranthene	0.53	3.17
Fluorene	0.53	<0.53
Hexachlorobenzene	0.53	<0.53
Hexachlorobutadiene	0.53	<0.53

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.53	<0.53
Hexachloroethane	0.53	<0.53
Hexachloropropene	0.53	<0.53
Indeno[1,2,3-cd]pyrene	0.53	1.12
Isophorone	0.53	<0.53
Methyl methanesulfonate	0.53	<0.53
3-Methylcholanthrene	0.53	<0.53
2-Methylnaphthalene	0.53	<0.53
3&4-Methylphenol	0.53	<0.53
2-Methylphenol	0.53	<0.53
N-Nitroso-di-n-butylamine	0.53	<0.53
N-Nitroso-di-n-propylamine	0.53	<0.53
N-Nitrosomorpholine	0.53	<0.53
N-Nitrosopiperidine	0.53	<0.53
N-Nitrosopyrrolidine	0.53	<0.53
Naphthalene	0.53	<0.53
1,4-Naphthoquinone	0.53	<0.53
2-Nitroaniline	0.53	<0.53
4-Nitroaniline	0.53	<0.53
Nitrobenzene	0.53	<0.53
4-Nitrophenol	2.7	<2.7
2-Nitrophenol	0.53	<0.53
Pentachlorobenzene	0.53	<0.53
Pentachlorophenol	0.53	<0.53
Phenacetin	0.53	<0.53
Phenanthrene	0.53	0.86
Phenol	0.53	<0.53
2-Picoline	0.53	<0.53
Pronamide	0.53	<0.53
Pyrene	0.53	2.41
Safrole	0.53	<0.53
1,2,4,5-Tetrachlorobenzene	0.53	<0.53
2,3,4,6-Tetrachlorophenol	0.53	<0.53
1,2,4-Trichlorobenzene	0.53	<0.53
2,4,6-Trichlorophenol	0.53	<0.53
2,4,5-Trichlorophenol	0.53	<0.53
Total PAH		15.58
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	26.7	<26.7
PCB-1221	26.7	<26.7
PCB-1232	26.7	<26.7
PCB-1242	26.7	<26.7
PCB-1248	26.7	<26.7
PCB-1254	26.7	<26.7
PCB-1260	26.7	<26.7
Total PCB		0

Station 301444

Ottawa River at Monroe St. (RM 9.25)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.54	<0.54
Acenaphthylene	0.54	<0.54
Acetophenone	0.54	<0.54
2-Acetylaminofluorene	0.54	<0.54
Aniline	2.7	<2.7
Anthracene	0.54	<0.54
Benz[a]anthracene	0.54	0.83
Benzo[a]pyrene	0.54	0.93
Benzo[b]fluoranthene	0.54	1.00
Benzo[g,h,i]perylene	0.54	0.64
Benzo[k]fluoranthene	0.54	0.71
Benzyl alcohol	0.54	<0.54
bis(2-Chloroethoxy)methane	0.54	<0.54
bis(2-Chloroethyl)ether	0.54	<0.54
bis(2-Chloroisopropyl)ether	0.54	<0.54
bis(2-Ethylhexyl)phthalate	0.54	<0.54
4-Bromophenyl-phenylether	0.54	<0.54
Butylbenzylphthalate	0.54	<0.54
4-Chloro-3-methylphenol	0.54	<0.54
2-Chloronaphthalene	0.54	<0.54
2-Chlorophenol	0.54	<0.54
4-Chlorophenyl-phenylether	0.54	<0.54
Chrysene	0.54	1.15
Di-n-butylphthalate	0.54	<0.54
Di-n-octylphthalate	0.54	<0.54
Dibenz[a,h]anthracene	0.54	<0.54
Dibenzofuran	0.54	<0.54
1,3-Dichlorobenzene	0.54	<0.54
1,4-Dichlorobenzene	0.54	<0.54
1,2-Dichlorobenzene	0.54	<0.54
3,3'-Dichlorobenzidine	2.7	<2.7
2,6-Dichlorophenol	0.54	<0.54
2,4-Dichlorophenol	0.54	<0.54
Diethylphthalate	0.54	<0.54
p-Dimethylaminoazobenzene	0.54	<0.54
7,12-Dimethylbenz[a]anthracene	2.7	<2.7
2,4-Dimethylphenol	0.54	<0.54
Dimethylphthalate	0.54	<0.54
4,6-Dinitro-2-methylphenol	0.54	<0.54
1,3-Dinitrobenzene	0.54	<0.54
2,4-Dinitrophenol	2.7	<2.7
2,6-Dinitrotoluene	0.54	<0.54
2,4-Dinitrotoluene	0.54	<0.54
Dinoseb	0.54	<0.54
Diphenylamine	0.54	<0.54
Ethyl methanesulfonate	0.54	<0.54
Fluoranthene	0.54	2.34
Fluorene	0.54	<0.54
Hexachlorobenzene	0.54	<0.54
Hexachlorobutadiene	0.54	<0.54

Date Collected 1/11/2012

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.54	<0.54
Hexachloroethane	0.54	<0.54
Hexachloropropene	0.54	<0.54
Indeno[1,2,3-cd]pyrene	0.54	0.61
Isophorone	0.54	<0.54
Methyl methanesulfonate	0.54	<0.54
3-Methylcholanthrene	0.54	<0.54
2-Methylnaphthalene	0.54	<0.54
3&4-Methylphenol	0.54	<0.54
2-Methylphenol	0.54	<0.54
N-Nitroso-di-n-butylamine	0.54	<0.54
N-Nitroso-di-n-propylamine	0.54	<0.54
N-Nitrosomorpholine	0.54	<0.54
N-Nitrosopiperidine	0.54	<0.54
N-Nitrosopyrrolidine	0.54	<0.54
Naphthalene	0.54	<0.54
1,4-Naphthoquinone	0.54	<0.54
2-Nitroaniline	0.54	<0.54
4-Nitroaniline	0.54	<0.54
Nitrobenzene	0.54	<0.54
4-Nitrophenol	2.7	<2.7
2-Nitrophenol	0.54	<0.54
Pentachlorobenzene	0.54	<0.54
Pentachlorophenol	0.54	<0.54
Phenacetin	0.54	<0.54
Phenanthrene	0.54	0.98
Phenol	0.54	<0.54
2-Picoline	0.54	<0.54
Pronamide	0.54	<0.54
Pyrene	0.54	1.72
Safrole	0.54	<0.54
1,2,4,5-Tetrachlorobenzene	0.54	<0.54
2,3,4,6-Tetrachlorophenol	0.54	<0.54
1,2,4-Trichlorobenzene	0.54	<0.54
2,4,6-Trichlorophenol	0.54	<0.54
2,4,5-Trichlorophenol	0.54	<0.54
Total PAH		10.91
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	27.1	<27.1
PCB-1221	27.1	<27.1
PCB-1232	27.1	<27.1
PCB-1242	27.1	<27.1
PCB-1248	27.1	<27.1
PCB-1254	27.1	<27.1
PCB-1260	27.1	<27.1
Total PCB		0

Station P11S84

Detwiler Ditch at Detwiler park (RM 0.50)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	1.11	<1.11
Acenaphthylene	1.11	<1.11
Acetophenone	1.11	<1.11
2-Acetylaminofluorene	1.11	<1.11
Aniline	5.5	<5.5
Anthracene	1.11	<1.11
Benz[a]anthracene	1.11	<1.11
Benzo[a]pyrene	1.11	<1.11
Benzo[b]fluoranthene	1.11	1.21
Benzo[g,h,i]perylene	1.11	<1.11
Benzo[k]fluoranthene	1.11	<1.11
Benzyl alcohol	1.11	<1.11
bis(2-Chloroethoxy)methane	1.11	<1.11
bis(2-Chloroethyl)ether	1.11	<1.11
bis(2-Chloroisopropyl)ether	1.11	<1.11
bis(2-Ethylhexyl)phthalate	1.11	<1.11
4-Bromophenyl-phenylether	1.11	<1.11
Butylbenzylphthalate	1.11	<1.11
4-Chloro-3-methylphenol	1.11	<1.11
2-Chloronaphthalene	1.11	<1.11
2-Chlorophenol	1.11	<1.11
4-Chlorophenyl-phenylether	1.11	<1.11
Chrysene	1.11	1.32
Di-n-butylphthalate	1.11	<1.11
Di-n-octylphthalate	1.11	<1.11
Dibenz[a,h]anthracene	1.11	<1.11
Dibenzofuran	1.11	<1.11
1,3-Dichlorobenzene	1.11	<1.11
1,4-Dichlorobenzene	1.11	<1.11
1,2-Dichlorobenzene	1.11	<1.11
3,3'-Dichlorobenzidine	5.5	<5.5
2,6-Dichlorophenol	1.11	<1.11
2,4-Dichlorophenol	1.11	<1.11
Diethylphthalate	1.11	<1.11
p-Dimethylaminoazobenzene	1.11	<1.11
7,12-Dimethylbenz[a]anthracene	5.5	<5.5
2,4-Dimethylphenol	1.11	<1.11
Dimethylphthalate	1.11	<1.11
4,6-Dinitro-2-methylphenol	1.11	<1.11
1,3-Dinitrobenzene	1.11	<1.11
2,4-Dinitrophenol	5.5	<5.5
2,6-Dinitrotoluene	1.11	<1.11
2,4-Dinitrotoluene	1.11	<1.11
Dinoseb	1.11	<1.11
Diphenylamine	1.11	<1.11
Ethyl methanesulfonate	1.11	<1.11
Fluoranthene	1.11	2.56
Fluorene	1.11	<1.11
Hexachlorobenzene	1.11	<1.11
Hexachlorobutadiene	1.11	<1.11

Date Collected 8/30/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	1.11	<1.11
Hexachloroethane	1.11	<1.11
Hexachloropropene	1.11	<1.11
Indeno[1,2,3-cd]pyrene	1.11	<1.11
Isophorone	1.11	<1.11
Methyl methanesulfonate	1.11	<1.11
3-Methylcholanthrene	1.11	<1.11
2-Methylnaphthalene	1.11	<1.11
3&4-Methylphenol	1.11	<1.11
2-Methylphenol	1.11	<1.11
N-Nitroso-di-n-butylamine	1.11	<1.11
N-Nitroso-di-n-propylamine	1.11	<1.11
N-Nitrosomorpholine	1.11	<1.11
N-Nitrosopiperidine	1.11	<1.11
N-Nitrosopyrrolidine	1.11	<1.11
Naphthalene	1.11	<1.11
1,4-Naphthoquinone	1.11	<1.11
2-Nitroaniline	1.11	<1.11
4-Nitroaniline	1.11	<1.11
Nitrobenzene	1.11	<1.11
4-Nitrophenol	5.5	<5.5
2-Nitrophenol	1.11	<1.11
Pentachlorobenzene	1.11	<1.11
Pentachlorophenol	1.11	<1.11
Phenacetin	1.11	<1.11
Phenanthrene	1.11	<1.11
Phenol	1.11	<1.11
2-Picoline	1.11	<1.11
Pronamide	1.11	<1.11
Pyrene	1.11	1.92
Safrole	1.11	<1.11
1,2,4,5-Tetrachlorobenzene	1.11	<1.11
2,3,4,6-Tetrachlorophenol	1.11	<1.11
1,2,4-Trichlorobenzene	1.11	<1.11
2,4,6-Trichlorophenol	1.11	<1.11
2,4,5-Trichlorophenol	1.11	<1.11
Total PAH		7.01
Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	55.5	<55.5
PCB-1221	55.5	<55.5
PCB-1232	55.5	<55.5
PCB-1242	55.5	<55.5
PCB-1248	55.5	<55.5
PCB-1254	55.5	<55.5
PCB-1260	55.5	61.4
Total PCB		61.4

Station P11K64

Tenmile Creek at Brint Road (RM 2.97)

Parameter	MDL (mg/kg)	Result (mg/kg)
Acenaphthene	0.56	<0.56
Acenaphthylene	0.56	<0.56
Acetophenone	0.56	<0.56
2-Acetylaminofluorene	0.56	<0.56
Aniline	2.8	<2.8
Anthracene	0.56	<0.56
Benz[a]anthracene	0.56	<0.56
Benzo[a]pyrene	0.56	<0.56
Benzo[b]fluoranthene	0.56	<0.56
Benzo[g,h,i]perylene	0.56	<0.56
Benzo[k]fluoranthene	0.56	<0.56
Benzyl alcohol	0.56	<0.56
bis(2-Chloroethoxy)methane	0.56	<0.56
bis(2-Chloroethyl)ether	0.56	<0.56
bis(2-Chloroisopropyl)ether	0.56	<0.56
bis(2-Ethylhexyl)phthalate	0.56	<0.56
4-Bromophenyl-phenylether	0.56	<0.56
Butylbenzylphthalate	0.56	<0.56
4-Chloro-3-methylphenol	0.56	<0.56
2-Chloronaphthalene	0.56	<0.56
2-Chlorophenol	0.56	<0.56
4-Chlorophenyl-phenylether	0.56	<0.56
Chrysene	0.56	<0.56
Di-n-butylphthalate	0.56	<0.56
Di-n-octylphthalate	0.56	<0.56
Dibenz[a,h]anthracene	0.56	<0.56
Dibenzofuran	0.56	<0.56
1,3-Dichlorobenzene	0.56	<0.56
1,4-Dichlorobenzene	0.56	<0.56
1,2-Dichlorobenzene	0.56	<0.56
3,3'-Dichlorobenzidine	2.8	<2.8
2,6-Dichlorophenol	0.56	<0.56
2,4-Dichlorophenol	0.56	<0.56
Diethylphthalate	0.56	<0.56
p-Dimethylaminoazobenzene	0.56	<0.56
7,12-Dimethylbenz[a]anthracene	2.8	<2.8
2,4-Dimethylphenol	0.56	<0.56
Dimethylphthalate	0.56	<0.56
4,6-Dinitro-2-methylphenol	0.56	<0.56
1,3-Dinitrobenzene	0.56	<0.56
2,4-Dinitrophenol	2.8	<2.8
2,6-Dinitrotoluene	0.56	<0.56
2,4-Dinitrotoluene	0.56	<0.56
Dinoseb	0.56	<0.56
Diphenylamine	0.56	<0.56
Ethyl methanesulfonate	0.56	<0.56
Fluoranthene	0.56	0.60
Fluorene	0.56	<0.56
Hexachlorobenzene	0.56	<0.56
Hexachlorobutadiene	0.56	<0.56

Date Collected 9/14/2011

Parameter	MDL (mg/kg)	Result (mg/kg)
Hexachlorocyclopentadiene	0.56	<0.56
Hexachloroethane	0.56	<0.56
Hexachloropropene	0.56	<0.56
Indeno[1,2,3-cd]pyrene	0.56	<0.56
Isophorone	0.56	<0.56
Methyl methanesulfonate	0.56	<0.56
3-Methylcholanthrene	0.56	<0.56
2-Methylnaphthalene	0.56	<0.56
3&4-Methylphenol	0.56	<0.56
2-Methylphenol	0.56	<0.56
N-Nitroso-di-n-butylamine	0.56	<0.56
N-Nitroso-di-n-propylamine	0.56	<0.56
N-Nitrosomorpholine	0.56	<0.56
N-Nitrosopiperidine	0.56	<0.56
N-Nitrosopyrrolidine	0.56	<0.56
Naphthalene	0.56	<0.56
1,4-Naphthoquinone	0.56	<0.56
2-Nitroaniline	0.56	<0.56
4-Nitroaniline	0.56	<0.56
Nitrobenzene	0.56	<0.56
4-Nitrophenol	2.8	<2.8
2-Nitrophenol	0.56	<0.56
Pentachlorobenzene	0.56	<0.56
Pentachlorophenol	0.56	<0.56
Phenacetin	0.56	<0.56
Phenanthrene	0.56	<0.56
Phenol	0.56	<0.56
2-Picoline	0.56	<0.56
Pronamide	0.56	<0.56
Pyrene	0.56	<0.56
Safrole	0.56	<0.56
1,2,4,5-Tetrachlorobenzene	0.56	<0.56
2,3,4,6-Tetrachlorophenol	0.56	<0.56
1,2,4-Trichlorobenzene	0.56	<0.56
2,4,6-Trichlorophenol	0.56	<0.56
2,4,5-Trichlorophenol	0.56	<0.56

Total PAH 0.6

Parameter	MDL (ug/kg)	Result (ug/kg)
PCB-1016	27.8	<27.8
PCB-1221	27.8	<27.8
PCB-1232	27.8	<27.8
PCB-1242	27.8	<27.8
PCB-1248	27.8	<27.8
PCB-1254	27.8	<27.8
PCB-1260	27.8	<27.8

Total PCB 0

Appendix Table 11. *E. coli* bacteria results (cfu/100 ml) collected from sites in the Tenmile Creek and Ottawa River study area, 2011.

Station I.D.	Sample Location	Geomean	5/10/11	5/24/11	6/7/11	6/16/11	6/22/11	6/28/11	7/13/11	7/18/11	7/26/11	8/10/11	8/16/11	9/7/11	9/14/11
301449	SILVER CREEK @ FUTURA DRIVE	704	630		5200					400			66	2000	
301448	HALFWAY CREEK @ EAST STATE LINE RD	287	110		430					1000			23	1800	
301447	PRAIRIE DITCH @ TUPELO WAY	190	230		490					240			18	510	
P11K65	TENMILE CREEK @ KILBURN RD.	416	250		580					1100			160	490	
P11S77	NORTH TENMILE CREEK @ MONROE ST.	168	62		250					270			19	1700	
P11S76	TENMILE CREEK @ HERR RD.	571			490	300	530	1400	2400	2700	680	142	54	1000	
P11K63	TENMILE CREEK @ SILICA DRIVE	316	320		320					1000			11	2800	
301440	OTTAWA R. @ HARROUN RD.	325	140		250					740			32	4400	
301441	OTTAWA R. @ SYLVANIA AVE.	315	260		260								72	2000	320
P11P35	OTTAWA R. @ CENTRAL AVE.	112	150		340					290			2	590	
P11S74	OTTAWA R. @ UT STADIUM DR.	682	220	1100	480	1100	5200	1400	1200	1200	370	180	19	6000	
P11S84	DETWILER DITCH @ DETWILER PARK	158	120		940					50			11	1600	
P11S23	BEAR CREEK @ ST. RT. 120	81	250		400					250			1	140	
301452	BEAR CREEK @ FULTON COUNTY RD. 7	450	290		520					150			580	1400	

E. coli result was reported as "Not detected". Method reporting level (RL) is 2 colonies per 100 ml.
 One half the RL is used to calculate the geometric mean.

Geometric mean exceedance of recreation criteria.

Appendix Table 12. Water quality and sediment data collected from Lake Olander, 2011 and 2012.

Lake Olander Surface Grab Samples											
Date		5/17/11	6/16/11	7/11/11	8/1/11	9/13/11	5/31/12	6/25/12	7/30/12	8/20/12	9/27/12
Sample Depth	m	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total Depth	m	6.8	6.6	6.5	6.5	6.2	6.5	6.4	6.3	6.2	6.1
Secchi Depth	m	2.73	2.9	2.3	1.9	2.75	2.8	1.8	2.8	3.5	2.3
Temperature	°C	15.37	22.98	28.07	29.28	22.18	23.63	26.4	27.38	24.03	18.37
Dissolved Oxygen	mg/L	10.13	9.72	9.18	8.96	8.79	8.51	9.82	8.05	7.61	8.74
Dissolved Oxygen	%	101.4	113.4	117.6	117.1	101	100.5	122	101.9	90.6	93.1
pH	s.u.	8.05	8.51	8.65	8.67	8.36	8.29	8.44	8.36	8.35	7.98
Conductivity	uS/cm	375.1	431.8	480.2	479.7	430.9	377.8	391.4	472.2	466.2	395.8
Specific Conductance	uS/cm	459.7	449.1	453.6	443.5	455.5	388	381.2	451.6	475.0	453.2
Ohio EPA Lab Number		131124	131938	132972	134384	136537	142448	142999	144779	145801	147806
Ohio EPA Lab Number		131126									
Contract Lab Number		AF96260	AF98566	AG00080	AG01665	AG04914	AG22222	AG23869	AG26373	AG27971	AG30687
Contract Lab Number		AF96261	AF98567	AG00081	AG01666	AG04915	AG22223	AG23870	AG26374	AG27972	AG30688
Escherichia coli. (L-1)	cfu/100 ml	10	5	5	3	11	2	3	2	5	18
Escherichia coli. (beach)	cfu/100 ml	13	16	56	44	68	42	26	5	56	42
Microcystins	ug/L	0.3 K	0.3 K				0.3 K				
Chlorophyll_a	ug/L	2.7	2	2.1	3.8	5.3	5	3.8	3.5	3.1	26.7
Pheophytin_a	ug/L	1.1	1.5	1.1	2.3	2.8	2	1.6	1.4	1.8	6.1
Total Volatile Solids	mg/L	58	76	58	66	54					
Total Dissolved Solids	mg/L	276	250	260	252	250	264	256	254	264	276
Total Suspended Solids	mg/L	5 K	5 K	5 K	5 K	5 K	5 K	5	5 K	5 K	5 K
Volatile Suspended Solids	mg/L							7	5 K		
TOC	mg/L	4.1	5	5.3	4.4	5.1	4.9	5.4	6.2	5.8	5.2
Total Solids	mg/L	272	276	276	252	268					
Turbidity	ntu						1.08	2.11	1.05	1 K	1.3
Alkalinity	mg/L						104	87.3	79.7	94.6	106
Bicarbonate	mg/L						104	87.3	79.7	94.6	106
Carbonate	mg/L						5 K	5 K	5 K	5 K	5 K
Chloride	mg/L						79	73.4	72.9	78.2	71.3
pH	s.u.	8.19	8.59	8.54	8.6	8.17					
Arsenic	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K
Cadmium	ug/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Chromium	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K
Copper	ug/L	5.7	12.4	8	6.2	4.4	14.8	17.4	33.3	14.1	7.2
Lead	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K
Nickel	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K
Selenium	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K
Aluminum	ug/L	200 K	200 K	200 K	200 K	200 K	200 K	200 K	285	200 K	200 K
Barium	ug/L	34	32	33	34	33	34	34	35	37	37
Calcium	mg/L	43	39	38	37	39	42	37	37	40	39
Hardness	mg/L	136	126	124	125	130	138	125	125	133	130
Iron	ug/L	50 K	50 K	50 K	50 K	50 K	50 K	50 K	50 K	50 K	50 K
Magnesium	mg/L	7	7	7	8	8	8	8	8	8	8
Manganese	ug/L	10	10 K	10 K	10 K	37	10 K	10 K	10 K	10 K	28
Potassium	mg/L	3	3	3	3	3	3	3	3	3	3
Sodium	mg/L	34	34	35	37	38	38	39	40	41	41
Strontium	ug/L	334	325	326	341	351	350	347	354	360	361
Zinc	ug/L	14	10 K	10 K	10 K	10 K	10 K	10 K	33	10 K	10 K
Ammonia	mg/L	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.053
Conductivity	uS/cm	453	450	457	444	453					
Nitrate+nitrite	mg/L	0.1 K	0.1 K	0.1	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.15
Nitrite	mg/L	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K
Orthophosphate	mg/L	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K
Sulfate	mg/L	19.9	19.9	20.3	20.6	20	19.7	11.6	22.9	21.9	14.9
TKN	mg/L	0.83	0.2 K	0.74	0.56	0.39	0.34	0.51	0.39	0.43	0.57
T-Phosphorus	mg/L	0.015	0.01 K	0.01 K	0.016	0.01 K	0.014	0.013	0.01 K	0.013	0.016
T-Nitrogen (calculated)	ug/L	880	150	840	610	440	390	560	440	480	720

Lake Olander Bottom Grab Samples												
Date		5/17/11	6/16/11	7/11/11	8/1/11	9/13/11	5/31/12	6/25/12	7/30/12	8/20/12	9/27/12	
Sample Depth	m	6.3	6.1	6	6	5.7	6	5.9	5.8	5.7	5.6	
Temperature	°C	12.13	14.55	16.87	18.37	21.39	13.58	15.18	17.94	22.32	18.34	
Dissolved Oxygen	mg/L	4.35	3.14	4	0.49	3.07	1.77	0.32	0.47	0.95	7.80	
Dissolved Oxygen	%	40.5	30.8	41.4	5.2	34.7	17.1	3.2	4.9	11.0	83.1	
pH	s.u.	6.66	6.89	6.94	6.76	7.66	6.6	7.56	7.53	7.69	7.76	
Conductivity	uS/cm	361.5	384	412.3	436.1	430.3	313.8	337.6	430.9	479.5	396.1	
Specific Conductance	uS/cm	479.3	479.7	488.1	499.3	462.1	401.3	415.5	498	505.4	453.8	
Ohio EPA Lab Number		131125	131939	132973	134385	136538	142449	143000	144780	145802	147807	
Total Volatile Solids	mg/L	52	104	52	66	76						
Total Dissolved Solids	mg/L	280	262	274	266	242	264	268	270	264	268	
Total Suspended Solids	mg/L	5 K	5 K	5 K	5 K	5 K	5 K	6	5 K	5 K	5 K	
Volatile Suspended Solids	mg/L							6	5 K			
TOC	mg/L	3.9	4.2	4.1	4.5	4.8	4.6	5.1	6.1	5.4	4.9	
Total Solids	mg/L	278	290	284	286	268						
Turbidity	ntu						1.3	3.78	1.78	1.05	1.22	
Alkalinity	mg/L						112	130	112	102	102	
Bicarbonate	mg/L						112	130	112	102	102	
Carbonate	mg/L						5 K	5 K	5 K	5 K	5 K	
Chloride	mg/L						77	71.8	70.1	77.6	71.6	
pH	s.u.	7.87	7.85	7.96	7.79	7.94						
Arsenic	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Cadmium	ug/L	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K	
Chromium	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Copper	ug/L	6.1	7.8	6.4	5.8	4.6	10.2	7.7	18.9	13.7	7.7	
Lead	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Nickel	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Selenium	ug/L	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	2 K	
Aluminum	ug/L	200 K	200 K	200 K	200 K	200 K	200 K	200 K	200 K	200 K	200 K	
Barium	ug/L	38	36	34	38	34	35	39	36	36	37	
Calcium	mg/L	48	48	47	50	39	46	48	45	41	39	
Hardness, Total	mg/L	149	149	146	158	130	148	153	145	135	130	
Iron	ug/L	62	50 K	50 K	50 K	50 K	50 K	80	64	61	61	
Magnesium	mg/L	7	7	7	8	8	8	8	8	8	8	
Manganese	ug/L	34	61	26	45	48	15	204	69	17	43	
Potassium	mg/L	3	3	3	3	3	3	3	3	3	3	
Sodium	mg/L	35	34	33	36	38	39	38	38	40	41	
Strontium	ug/L	354	352	339	370	348	362	367	359	354	361	
Zinc	ug/L	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	10 K	
Ammonia	mg/L	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.05 K	0.068	
Conductivity	uS/cm	472	486	487	484	456						
Nitrate+nitrite	mg/L	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	0.1 K	
Nitrite	mg/L	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	0.02 K	
Orthophosphate	mg/L	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	0.01 K	
Sulfate	mg/L	19	15.8	15	14.1	21.6	17	5 K	19.1	21.6	15	
TKN	mg/L	0.58	0.22	0.38	0.39	0.41	0.55	0.69	0.41	0.78	0.49	
Total Phosphorus	mg/L	0.012	0.012	0.01 K	0.019	0.01 K	0.015	0.044	0.017	0.492	0.011	

Lake Olander Field Parameter Profiles (2011)									epilimnion/water column		
Date	Time	Depth	Temp	SpCond	Cond	DO	DO	pH	Date	average	median
M/D/Y	hh:mm:ss	m	C	uS/cm	uS/cm	mg/L	%	SU	M/D/Y	mg/L	SU
5/17/2011	10:09:42	0.5	15.37	459.7	375.1	10.13	101.4	8.05	5/17/2011	10.23	7.49
5/17/2011	10:10:47	1.0	15.4	459.6	375.3	10.31	103.3	7.48			
5/17/2011	10:11:55	2.0	15.4	459.8	375.4	10.28	102.9	7.49			
5/17/2011	10:12:25	3.0	15.39	460	375.6	10.18	102	7.37			
5/17/2011	10:13:21	4.0	14.37	465.1	370.6	10.97	107.4	7.36			
5/17/2011	10:14:29	5.0	12.59	475.3	362.6	7.13	67.2	6.74			
5/17/2011	10:15:33	6.3	12.13	479.3	361.5	4.35	40.5	6.66			
6/16/2011	10:03:56	0.5	22.98	449.1	431.8	9.72	113.4	8.51	6/16/2011	9.48	8.46
6/16/2011	10:04:44	1.0	22.91	449.2	431.3	9.42	109.7	8.49			
6/16/2011	10:05:23	2.0	22.86	449.2	430.9	9.44	109.8	8.43			
6/16/2011	10:06:02	3.0	22.74	449.4	430	9.33	108.4	8.32			
6/16/2011	10:07:18	4.0	18.3	456.2	397.8	10.47	111.4	7.92			
6/16/2011	10:08:28	5.0	15.49	473.2	387.3	5.29	53.1	7.14			
6/16/2011	10:09:33	6.1	14.55	479.7	384	3.14	30.8	6.89			
7/11/2011	9:02:10	0.5	28.07	453.6	480.2	9.18	117.6	8.65	7/11/2011	9.20	8.62
7/11/2011	9:03:10	1.0	28.08	453.7	480.4	8.97	114.9	8.63			
7/11/2011	9:03:43	2.0	28.02	454	480.2	8.79	112.4	8.61			
7/11/2011	9:04:49	3.0	27.03	451.3	468.8	9.85	123.8	8.59			
7/11/2011	9:06:03	4.0	22.71	455.4	435.5	10.82	125.6	7.8			
7/11/2011	9:07:20	5.0	17.96	483	418.1	5.09	53.8	7.04			
7/11/2011	9:08:08	6.0	16.87	488.1	412.3	4	41.4	6.94			
8/1/2011	8:59:12	0.5	29.28	443.5	479.7	8.96	117.1	8.67	8/1/2011	8.71	8.66
8/1/2011	9:00:24	1.0	29.32	443.5	480	8.76	114.7	8.67			
8/1/2011	9:01:01	2.0	29.29	443.9	480.2	8.62	112.8	8.65			
8/1/2011	9:02:04	3.0	28.85	446	478.8	8.48	110.1	8.54			
8/1/2011	9:03:29	4.0	25.65	460.1	465.8	7.9	96.9	7.82			
8/1/2011	9:05:09	5.0	20.06	492.2	445.8	1.53	16.9	6.87			
8/1/2011	9:06:14	6.0	18.37	499.3	436.1	0.49	5.2	6.76			
9/13/2011	8:24:48	0.5	22.18	455.5	430.9	8.79	101	8.36	9/13/2011	7.16	8.34
9/13/2011	8:25:38	1.0	22.18	455.5	431	8.64	99.2	8.35			
9/13/2011	8:26:26	2.0	22.17	455.5	430.9	8.37	96.2	8.34			
9/13/2011	8:27:17	3.0	22.16	455.5	430.8	8.39	96.3	8.34			
9/13/2011	8:29:00	4.0	21.85	455.5	428.1	7.32	83.6	8.16			
9/13/2011	8:31:37	5.0	21.64	457.5	428.1	5.53	62.8	7.86			
9/13/2011	8:33:41	5.7	21.39	462.1	430.3	3.07	34.7	7.66			

Lake Olander Field Parameter Profiles (2012)									epilimnion/water column		
Date	Time	Depth	Temp	SpCond	Cond	DO	DO	pH	Date	average	median
M/D/Y	hh:mm:ss	m	C	uS/cm	uS/cm	mg/L	%	SU	M/D/Y	DO mg/L	pH SU
5/31/2012	9:58:50	0.5	23.63	388	377.8	8.51	100.5	8.29	5/31/2012	8.20	8.36
5/31/2012	9:59:42	1	23.63	389.2	379	8.4	99.2	8.31			
5/31/2012	10:00:53	1.5	23.63	389.3	379.1	8.22	97	8.34			
5/31/2012	10:01:46	2	23.63	389.3	379.1	7.96	94	8.38			
5/31/2012	10:02:31	2.5	23.61	389.4	379.1	8.12	95.8	8.38			
5/31/2012	10:03:25	3	23.49	389.5	378.2	7.97	93.9	8.37			
5/31/2012	10:04:54	3.5	20.95	392.8	362.4	7.97	89.4	8.14			
5/31/2012	10:06:02	4	18.7	391.4	344.3	8.24	88.4	8.07			
5/31/2012	10:07:28	4.5	16.6	392.3	329.3	7.24	74.4	7.88			
5/31/2012	10:09:20	5	15.13	396.6	321.9	4.79	47.7	6.96			
5/31/2012	10:10:41	5.5	14.22	399.2	317	3.42	33.4	6.75			
5/31/2012	10:11:47	6	13.58	401.3	313.8	1.77	17.1	6.6			
6/25/2012	9:46:03	0.5	26.4	381.2	391.4	9.82	122	8.44	6/25/2012	9.6925	8.51
6/25/2012	9:48:12	1	26.42	381.2	391.6	9.7	120.6	8.51			
6/25/2012	9:49:00	2	26.41	381.3	391.5	9.61	119.4	8.53			
6/25/2012	9:49:28	3	26.32	381.8	391.5	9.64	119.6	8.51			
6/25/2012	9:50:37	4	21.65	400.8	375.2	8.08	91.8	8.23			
6/25/2012	9:51:46	5	18.06	412.5	357.9	2.4	25.4	7.75			
6/25/2012	9:52:51	5.9	15.18	415.5	337.6	0.32	3.2	7.56			
7/30/2012	10:22:59	0.5	27.38	451.6	472.2	8.05	101.9	8.36	7/30/2012	7.89	8.36
7/30/2012	10:25:27	1.0	27.37	451.7	472.2	8.01	101.3	8.37			
7/30/2012	10:26:08	2.0	27.31	451.5	471.5	8.02	101.4	8.36			
7/30/2012	10:27:20	3.0	27.27	451.5	471.1	8.03	101.3	8.36			
7/30/2012	10:28:28	4.0	26.78	455.4	471.0	7.33	91.8	8.27			
7/30/2012	10:30:05	5.0	22.88	489.3	495.5	3.63	42.3	7.78			
7/30/2012	10:31:21	5.8	17.94	498.0	430.9	0.47	4.9	7.53			
8/20/2012	9:45:50	0.5	24.03	475.0	466.2	7.61	90.6	8.35	8/20/2012	7.42	8.32
8/20/2012	9:47:17	1.0	24.02	475.0	466.2	7.61	90.6	8.35			
8/20/2012	9:48:01	2.0	24.02	475.0	466.0	7.54	89.7	8.33			
8/20/2012	9:48:45	3.0	24.01	474.9	465.9	7.51	89.4	8.31			
8/20/2012	9:49:33	4.0	23.99	474.7	465.5	7.51	89.3	8.31			
8/20/2012	9:50:43	5.0	23.76	477.4	466.1	6.74	79.8	8.20			
8/20/2012	9:52:26	5.7	22.32	505.4	479.5	0.95	11.0	7.69			
9/27/2012	9:59:37	0.5	18.37	453.2	395.8	8.74	93.1	7.98	9/27/2012	8.14	7.83
9/27/2012	10:02:46	1.0	18.37	453.2	395.8	8.42	89.7	7.88			
9/27/2012	10:03:30	1.5	18.37	453.3	395.9	8.29	88.4	7.86			
9/27/2012	10:06:12	2.0	18.36	453.2	395.7	8.23	87.7	7.84			
9/27/2012	10:06:50	2.5	18.36	453.2	395.7	8.23	87.7	7.84			
9/27/2012	10:07:18	3.0	18.36	453.2	395.8	8.18	87.2	7.83			
9/27/2012	10:07:54	3.5	18.35	453.6	396.0	8.00	85.2	7.80			
9/27/2012	10:08:13	4.0	18.35	453.6	396.0	7.88	84.0	7.78			
9/27/2012	10:08:39	4.5	18.35	453.5	395.9	7.86	83.7	7.79			
9/27/2012	10:09:13	5.0	18.35	453.6	396.0	7.94	84.5	7.77			
9/27/2012	10:09:46	5.6	18.34	453.8	396.1	7.80	83.1	7.76			

Lake Olander Sediment Sample					
Inorganic Compounds				Semi-Volatile Organic Compounds (cont.)	
Ohio EPA Lab Number		135297		7,12-Dimethylbenz[a]anthracene	mg/kg 4.7 K
				2,4-Dimethylphenol	mg/kg 0.95 K
Solids	%	32		Dimethylphthalate	mg/kg 0.95 K
TOC	mg/kg	3.5		4,6-Dinitro-2-methylphenol	mg/kg 0.95 K
Phosphorus	mg/kg	674		1,3-Dinitrobenzene	mg/kg 0.95 K
Ammonia	mg/kg	350		2,4-Dinitrophenol	mg/kg 4.7 K
Chromium	mg/kg	11.8		2,6-Dinitrotoluene	mg/kg 0.95 K
Copper	mg/kg	586		2,4-Dinitrotoluene	mg/kg 0.95 K
Lead	mg/kg	24.3		Dinoseb	mg/kg 0.95 K
Zinc	mg/kg	65		Diphenylamine	mg/kg 0.95 K
Mercury	mg/kg	0.066		Ethyl methanesulfonate	mg/kg 0.95 K
				Fluoranthene	mg/kg 0.95 K
Semi-Volatile Organic Compounds				Fluorene	mg/kg 0.95 K
Ohio EPA Lab Number		135298		Hexachlorobenzene	mg/kg 0.95 K
				Hexachlorobutadiene	mg/kg 0.95 K
Solids	%	42		Hexachlorocyclopentadiene	mg/kg 0.95 K
Acenaphthene	mg/kg	0.95		Hexachloroethane	mg/kg 0.95 K
Acenaphthylene	mg/kg	0.95 K		Hexachloropropene	mg/kg 0.95 K
Acetophenone	mg/kg	0.95 K		Indeno[1,2,3-cd]pyrene	mg/kg 0.95 K
2-Acetylaminofluorene	mg/kg	0.95 K		Isophorone	mg/kg 0.95 K
Aniline	mg/kg	4.7 K		Methyl methanesulfonate	mg/kg 0.95 K
Anthracene	mg/kg	0.95 K		3-Methylcholanthrene	mg/kg 0.95 K
Benz[a]anthracene	mg/kg	0.95 K		2-Methylnaphthalene	mg/kg 0.95 K
Benzo[a]pyrene	mg/kg	0.95 K		3&4-Methylphenol	mg/kg 0.95 K
Benzo[b]fluoranthene	mg/kg	0.95 K		2-Methylphenol	mg/kg 0.95 K
Benzo[g,h,i]perylene	mg/kg	0.95 K		N-Nitroso-di-n-butylamine	mg/kg 0.95 K
Benzo[k]fluoranthene	mg/kg	0.95 K		N-Nitroso-di-n-propylamine	mg/kg 0.95 K
Benzyl alcohol	mg/kg	0.95 K		N-Nitrosomorpholine	mg/kg 0.95 K
bis(2-Chloroethoxy)methane	mg/kg	0.95 K		N-Nitrosopiperidine	mg/kg 0.95 K
bis(2-Chloroethyl)ether	mg/kg	0.95 K		N-Nitrosopyrrolidine	mg/kg 0.95 K
bis(2-Chloroisopropyl)ether	mg/kg	0.95 K		Naphthalene	mg/kg 0.95 K
bis(2-Ethylhexyl)phthalate	mg/kg	0.95 K		1,4-Naphthoquinone	mg/kg 0.95 K
4-Bromophenyl-phenylether	mg/kg	0.95 K		2-Nitroaniline	mg/kg 0.95 K
Butylbenzylphthalate	mg/kg	0.95 K		4-Nitroaniline	mg/kg 0.95 K
4-Chloro-3-methylphenol	mg/kg	0.95 K		Nitrobenzene	mg/kg 0.95 K
2-Chloronaphthalene	mg/kg	0.95 K		4-Nitrophenol	mg/kg 4.7 K
2-Chlorophenol	mg/kg	0.95 K		2-Nitrophenol	mg/kg 0.95 K
4-Chlorophenyl-phenylether	mg/kg	0.95 K		Pentachlorobenzene	mg/kg 0.95 K
Chrysene	mg/kg	0.95 K		Pentachlorophenol	mg/kg 0.95 K
Di-n-butylphthalate	mg/kg	0.95 K		Phenacetin	mg/kg 0.95 K
Di-n-octylphthalate	mg/kg	0.95 K		Phenanthrene	mg/kg 0.95 K
Dibenz[a,h]anthracene	mg/kg	0.95 K		Phenol	mg/kg 0.95 K
Dibenzofuran	mg/kg	0.95 K		2-Picoline	mg/kg 0.95 K
1,3-Dichlorobenzene	mg/kg	0.95 K		Pronamide	mg/kg 0.95 K
1,4-Dichlorobenzene	mg/kg	0.95 K		Pyrene	mg/kg 0.95 K
1,2-Dichlorobenzene	mg/kg	0.95 K		Safrole	mg/kg 0.95 K
3,3'-Dichlorobenzidine	mg/kg	4.7 K		1,2,4,5-Tetrachlorobenzene	mg/kg 0.95 K
2,6-Dichlorophenol	mg/kg	0.95 K		2,3,4,6-Tetrachlorophenol	mg/kg 0.95 K
2,4-Dichlorophenol	mg/kg	0.95 K		1,2,4-Trichlorobenzene	mg/kg 0.95 K
Diethylphthalate	mg/kg	0.95 K		2,4,6-Trichlorophenol	mg/kg 0.95 K
p-Dimethylaminoazobenzene	mg/kg	0.95 K		2,4,5-Trichlorophenol	mg/kg 0.95 K

Lake Olander Sediment Sample		
Polychlorinated biphenyls		
Arochlor 1016	µg/kg	47.3 K
Arochlor 1221	µg/kg	47.3 K
Arochlor 1232	µg/kg	47.3 K
Arochlor 1242	µg/kg	47.3 K
Arochlor 1248	µg/kg	47.3 K
Arochlor 1254	µg/kg	47.3 K
Arochlor 1260	µg/kg	47.3 K
Organochlorine Insecticides		
Aldrin	ug/kg	9.5 K
a-BHC	ug/kg	9.5 K
b-BHC	ug/kg	9.5 K
d-BHC	ug/kg	9.5 K
γ-BHC	ug/kg	9.5 K
4,4'-DDD	ug/kg	9.5 K
4,4'-DDE	ug/kg	19.1
4,4'-DDT	ug/kg	9.5 K
Dieldrin	ug/kg	9.5 K
Endosulfan I	ug/kg	9.5 K
Endosulfan II	ug/kg	9.5 K
Endosulfan sulfate	ug/kg	9.5 K
Endrin	ug/kg	9.5 K
Endrin aldehyde	ug/kg	9.5 K
Heptachlor	ug/kg	9.5 K
Heptachlor epoxide	ug/kg	9.5 K
Methoxychlor	ug/kg	9.5 K
Mirex	ug/kg	9.5 K
Hexachlorobenzene	ug/kg	9.5 K
Alpha-Chlordane	ug/kg	
Gamma-Chlordane	ug/kg	
Oxychlordane	ug/kg	
cis-Nonachlor	ug/kg	
trans-Nonachlor	ug/kg	
Toxaphene	ug/kg	