

APPENDIX A: Local Unit of Government Water Quality Indicators	Page #
Appendix A: Introduction & CCR TABLE (65-71)	
A1 Ann Arbor Township; Map & Text	72
A2 Augusta Township; Map & Text	74
A3 Bridgewater Township; Map & Text	76
A4 Dexter Township; Map & Text	78
A5 Freedom Township; Map & Text	80
A6 Lima Township; Map & Text	82
A7 Lodi Township; Map & Text	84
A8 Lyndon Township; Map & Text	86
A9 Manchester Township; Map & Text	88
A10 Northfield Township; Map & Text	90
A11 Pittsfield Township; Map & Text	92
A12 Salem Township; Map & Text	94
A13 Saline Township; Map & Text	96
A14 Scio Township; Map & Text	98
A15 Sharon Township; Map & Text	100
A16 Superior Township; Map & Text	102
A17 Sylvan Township; Map & Text	104
A18 Webster Township; Map & Text	106
A19 York Township; Map & Text	108
A20 Ypsilanti Township; Map & Text	110
A21 Ann Arbor City; Map & Text	112
A22 Barton Hills Village; Map & Text	114
A23 Chelsea Village; Map & Text	116
A24 Dexter Village; Map & Text	118
A25 Manchester Village; Map & Text	120
A26 Milan City; Map & Text	122
A27 Saline City; Map & Text	124
A28 Ypsilanti City; Map & Text	126

APPENDIX A: Local Unit of Government Water Quality Indicators

Introduction:

This section is intended to provide information on sites that can be considered indicators of local water quality. For each municipal district in Washtenaw County, there is a Water Quality Indicator map and companion text. Included in the text is general information about the current state of the groundwater composition and a list of major *surface water features* with photographs. Information about drinking water sources and quality, including *consumer confidence report summaries* and *well information* is also included. The maps compile 11 indicator data sets and well first areas. *Local indicator data* is discussed for each governmental unit.

Surface Water Features

Surface water features include prominent lakes and large ponds. A list of the more significant water features as well as a photograph and a small description of recreational opportunities is provided for each governmental unit.

Drinking Water: Consumer Confidence Report Summaries

Included for each local unit of government is a summary of the information available in the Consumer Confidence Report (CCR) for that area's drinking water service provider. Drinking water treatment plants produce consumer confidence reports that contain information regarding the water sources, population served, additives, and trace chemical amounts. The CCRs present lists of the regulated contaminants that the CWS (Community Water System) detected in the treated water and the levels at which they were found for the preceding calendar year. Unregulated contaminants detected during monitoring are to be reported and their significance identified. A contact phone number for the service provider is included in this summary. CCR information is available for municipal water service areas and some smaller localized community water providers (See CCR Table pages 72-73).

Drinking Water: Well Information

Much of Washtenaw County gets its drinking water directly from the groundwater resource via on-site wells. To help understand the extent this resource is used, the report includes a total for the number of wells drilled between 1968 and 1992. Data about the number of new and replacement wells between the years 2000 and 2005 is also provided. The average well depth and the range of well depths are also included.

Local Indicator Data Totals

As mentioned earlier, the maps on the following pages contain compilation data for 11 kinds of sites that can help to indicate local water quality. On the following pages is a description of each of the indicators included on these maps. Due to space constraints and the density of data in certain areas, the individual sites have not been labeled. Rather, a total of the number of each data set for each jurisdiction has been tallied in the legend.

Local Indicator Data Descriptions:

Septage Disposal Sites:

Septage disposal sites are sites that accept waste that has been removed from septic tanks. There are three septage disposal sites in Washtenaw County, located in the townships of Dexter, Lyndon and Sylvan. The sites are 30, 107, and 50 acres respectively and all have a water table depth of at least five feet. All three are managed by private sanitation service providers. For more information about septage disposal issues see the *Time of Sale Regulation* (Activity #1) on page 7 and the *On-Site Sewage Regulation* (Activity #7) on page 9.

NPDES Storm Water Permit Holders:

National Pollution Discharge Elimination System (NPDES) storm water permit holders are facilities that are required to employ best management practices to ensure that harmful pollutants do not migrate off site during rain events. There are 78 such sites in Washtenaw County. Most of these sites are industrial facilities like automotive plants, and plating, milling, printing companies. Some of these sites are services that manage large vehicle fleets, transportation services, postal services or municipal services. For more information about NPDES storm water permit issues see the *Clean Water Act* (Activity #11) on page 36.

NPDES Point Source Discharge Permit Holders:

National Pollution Discharge Elimination System (NPDES) point source discharge permit holders are sites that have permits to discharge waste directly into surface waters. The permit will stipulate what kinds of waste are permitted as well as the quantity and/or rate of the waste that can be discharged. There are 47 such sites in Washtenaw County. Most of these sites are industrial facilities and municipal service providers. For more information about NPDES point source discharge permit issues see the *Clean Water Act* (Activity #11) on page 36 or *Point Sources Discharges* (Challenge #16) on page 58.

TMDL Sites:

Total Maximum Daily Load (TMDL) sites are water bodies that have been identified to exceed a water quality standard (WQS) established for any of Michigan's protected designated uses. Problems identified in Washtenaw County include mercury in fish tissue, PCB's, pathogens, poor species diversity, *E. coli*, Dissolved Oxygen (DO) and Phosphorus. There are 20 TMDL sites identified in Washtenaw County; however, only five have completed plans. Of the remainder, two have been removed because the issues have been resolved and 13 are scheduled to be developed between 2006 and 2011. The identified TMDLs often cover WQS exceedances of multiple ecological threats. For instance, a water body may have a TMDL that regulates phosphorus, *E. coli*, DO, and temperature. Due to lack of water quality monitoring, it is difficult to assess if the TMDL program is an effective indicator of actual WQS exceedances in the County. For more information about TMDL's see the *Clean Water Act* (Activity #11) on page 36.

AST Sites:

Above Ground Storage Tanks (AST) are sites that are permitted and registered by the MDEQ to maintain and operate a chemical storage tank located above the ground. In Washtenaw County there are AST's that contain the following substances: FL, CL, CNG, LPG, LP, JET-A, AVGAS, Diesel, Gasoline, Jet Fuel, and Oil. There are 116 AST sites in Washtenaw County. For more information about AST responses see the *Clean Water Act* (Activity #11) on page 36.

UST Sites:

Under Ground Storage Tanks (UST) are sites that are permitted and registered by the MDEQ to maintain and operate a chemical storage tank buried below the surface level. In Washtenaw County the great majority of UST sites are for vehicle fueling. Washtenaw County has 232 active facilities or locations where regulated underground storage tanks are operational. An additional 514 facilities or locations exist where regulated underground storage tanks have been properly closed. For more information about UST responses see the *Wellhead Protection* (Activity #5) on page 9.

LUST Sites:

Leaking Under Ground Storage Tanks (LUST) are sites that have been permitted and registered by the MDEQ to maintain and operate a chemical storage tank buried below the surface level, and a leak of the substance contained in the tank has caused an environmental impact. As the UST list would indicate, the majority of documented LUST sites have resulted from petroleum leaks. There are 153 LUST sites in Washtenaw County. For more information about LUST issues see *LUSTs* (Challenge #6) on page 24.

615 Sites:

Part 615, Supervisor of Wells and the Administrative Rules of 1996, outlines rules that govern the oil and gas industry. Specifically, Part 615 sets standards for the drilling, operation, maintenance and permitting of oil and gas wells. In Washtenaw County there are four Part 615 Sites, all in Salem Township. When spills occur at such sites they are reported. Between 1991 and 1996 there were four spills that occurred at these sites. For more information about Part 615 spill responses see the *Clean Water Act* (Activity #11) on page 36.

201 Sites:

Part 201 sites are sites that have identified environmental contamination above applicable cleanup criteria, excluding Leaking Underground Storage Tank sites. Washtenaw County has 63 listed 201 Sites. These sites are greatly concentrated in Washtenaw County's urbanized areas, including the cities of Ann Arbor, Chelsea, Ypsilanti, and the bordering townships of Ann Arbor, Pittsfield, Scio, and Ypsilanti, among others. For more information about Part 201 issues see *Part 201 Sites* (Challenge #4) on page 20.

115 Sites:

Part 115 outlines the rules and regulations for solid waste management for the State of Michigan. Part 115 Sites are permitted solid waste landfills that can legally accept household trash and other waste materials for landfill application. There is one open Type II landfill in Washtenaw County, the Veolia ES Arbor Hills facility, located in Salem Township. For more information on 115 responses see *Landfills* (Challenge # 5) on Page 22.

111 Sites:

Part 111 outlines the rules and regulations for hazardous waste management for the State of Michigan. Part 111 Sites are permitted to manage hazardous waste. These sites are frequently industrial facilities that create, or use, hazardous materials as a part of a manufacturing process. There are eight 111 Sites in Washtenaw County, located in the cities of Ann Arbor, Saline and Ypsilanti, as well as Scio Township. For more information on 111 responses see *Toxic Compounds* (Challenge # 11) on Page 52.

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CCR Table Page I

PARAMETER ¹	City of Ann Arbor, Ann Arbor Charter Township, and Scio Township ²	Barton Hills Village	City of Chelsea	Village of Dexter	Ellsworth Lake Homeowners Association	Harbor Cove Apartments	Loch Alpine Sanitary Authority	Village of Manchester	City of Milan
Source / Number of Wells	85% Huron River, 15% various wells	2 primary wells, 2 backup wells	5 wells	4 wells	2 wells	2 wells	3 wells	3 wells	4 wells
Population Served	124,945	400	4,200	3,507	88	288	1,590	2,163	6,610
Susceptibility Rating: A 2003 State assessment of the relative potential of contamination. Seven tiered scale from very low to very high.	Moderately High to High	Low	High	Very low	n/a	Moderate	Moderate	Moderately High	High
Water Quality Notice of Health Based Violation (2006/2007)	None	None	None	None	None	Arsenic, MCL Average	None	None	None
Arsenic (ppb): Naturally occurring inorganic contaminant. MCL= 0.010 ppm	0	5	1	6	10	0.013	ND	0.003	n/a
Barium (ppm): Naturally occurring inorganic contaminant. MCL= 2 ppm	0.024	0.2	0.19	0.43	0.145	0.42	0.115	0.204	0.235
Chlorine Residual (ppm): Water additive used to control microbes. MCL= 4 ppm	n/a ³	0.05	0.73	0.3	n/a	n/a	0.53	0.18	0.95
Fluoride (ppm): Naturally occurring and/or water additive to promote strong teeth. MCL= 4ppm	0.57-1.3	0.41	0.77	0.4	n/a	0.8	0.2	0.96	0.57
Sodium (ppm): Naturally occurring inorganic contaminant. MCL= none	59	17	9	45	n/a	167	8	28	19

NOTES: (1) Parts per million (ppm or mg/L), parts per billion (ppb or µg/L), maximum contaminant level (MCL): highest level of a contaminant that is allowed, ND = not detectable at testing limit, NR = not reported.

(2) 1,4-dioxane = 0 ppb, range = 0 ppb.

(3) Disinfection is completed using an alternative treatment process that is measured by level of monochloramine; Monochloramine = 2.4 ppm, range = 2.3-2.6 ppm, MCL=4 ppm

CCR Table continued

Northfield Estates	Northfield Place Nursing Home	Northfield Crossing	Orchard Groves Community	River Ridge MHC	City of Saline	Sylvan Township Water and Sewer Authority	St. Louis Center	Thomton Farms	Village at Eagle Garden	Westbrook Apartments	Ypsilanti Community Utilities Authority including Augusta, Pittsfield and Superior Townships
6 wells	2 wells	2 wells	2 wells	2 wells	5 wells	2 wells	2 wells	2 wells	2 wells	2 wells	Surface Water, Detroit Water System
1,620	190	1,920	725	720	8,940	200	93	600	193	330	114,332
Low	n/a	Moderately high to high	Low to Moderately Low	Moderate	Moderately high	Moderate	Moderate	n/a	Moderate	Moderate	High
None	Arsenic, MCL Average	None	None	None	None	None	Arsenic, MCL Average	None	None	None	None
0.008	0.01	0.002	3	n/a	1	1	10	2	n/a	0.0015	n/a
0.21	n/a	0.1	0.09	0.07	0.2	n/a	0.02	0.04	n/a	0.02	n/a
1.1	n/a	0.53	0.24	n/a	0.3	0.59	n/a	1.135	n/a	n/a	0.68
0.58	0.6	0.17	0.11	0.43	1.1	n/a	0.8	0.37	0.2	0.7	0.94
32	10	18	8	14	36	58	128	167	25	16	4.63