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Water Resources Data Michigan Water Year 2005

Water-Data Report MI-05-1

U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the State of Michigan and with other agencies

Calendar for Water Year 2005

2004

October

S	M	T	W	T	F	S
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2005

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U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Michigan Water Year 2005

By S.P. Blumer, C.R. Whited, J.M. Ellis, R.J. Minnerick, and R.L. LeuVoy

Water-Data Report MI-05-1

Prepared in cooperation with the
State of Michigan and with other agencies

U.S. DEPARTMENT OF THE INTERIOR

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2006

PREFACE

This volume of the annual hydrologic data report of Michigan is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each state, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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Water resources data for the 2005 water year for Michigan consists of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground-water wells. This report contains discharge records for 174 streamflow-gaging stations; stage only records for 2 stream-gaging stations and 25 lake-gaging stations; stage and contents for 1 reservoir; water-quality records for 50 streamflow-gaging stations; and water-level records for 45 ground-water wells. Also included are 30 crest-stage partial-record stations. Additional water data were collected at various sites not involved in the systematic data-collection program. Miscellaneous data were collected at 85 discharge measuring sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State, local, and Federal agencies in Michigan.

14. SUBJECT TERMS

*Michigan, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

Letters after station name designate type of data collected: (d) discharge, (b) biological, (c) chemical, (e) elevation, gage heights, or contents, (m) microbiological, (o) dissolved oxygen, (p) pH, (s) sediment, (t) water temperature, (sc) specific conductance.

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

DISCONTINUED SURFACE-WATER-DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Michigan have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number have had previous or subsequent operation as a crest-stage partial-record station. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only). Letter (a) before drainage area means approximately.]

Station name	Station number	Drainage area (mi^2)	Period of record
STREAMS TRIBUTARY TO LAKE SUPERIOR			
Washington Creek at Windigo, MI (d)	04001000	13.2	1965-03
Montreal River at Ironwood, MI (d)	04028000	63.0	1918-22, 1924-26, 1949-54
Montreal River near Saxon, WI (d)	04030000	262	1938-70
Black River at Ramsay, MI (d)	04030500	a82	1924-25
Presque Isle River at Marenisco, MI (d)	04031500	171	1945-82
Presque Isle River near Tula, MI (d)	04032000*	261	1945-73
Iron River near White Pine, MI (d)	04032500	98.1	1952-57
East Branch Ontonagon River near Mass, MI (d)	04035000	272	1942-79
Cisco Branch Ontonagon River near Watersmeet, MI (d)	04038000	62.2	1942-44
South Branch Ontonagon River at Ewen, MI (d)	04039500*	348	1942-71
Perch River near Sidnaw, MI (d)	04041000*	63.1	1913-15
Sturgeon River near Baraga, MI (d)	04042000	379	1927-31, 1943-47
Otter River near Elo, MI (d)	04042500*	162	1942-72
Sturgeon River near Arnheim, MI (d)	04043000	705	1942-74
Dead River near Negaunee, MI (d)	04043500	138	1902-03
Dead River at Forestville, MI (d)	04044000	158	1899-1902
Carp River near Negaunee, MI (d)	04044400	51.4	1961-87
Carp River near Marquette, MI (d)	04044500	a86	1902-04
Silver Lead Creek near Gwinn, MI (d)	040445315	a2.1	1997-99
Big Creek near Harvey, MI (d)	04044563	17.0	1979-81
Cedar Creek near Harvey, MI (d)	04044573	9.04	1979-81
Cherry Creek near Harvey, MI (d)	04044583	4.53	1965-70, 1979-81
Silver Creek at Harvey, MI (d)	04044595	8.58	1979-81
Sand River Wildlife Flooding at Sand River (e)	04044609	28.6	1984-02
Tahquamenon River at Newberry, MI (d)	04045000	a200	1934-36
STREAMS TRIBUTARY TO LAKE MICHIGAN			
South Manistique Lake Outlet at Curtis, MI (d)	04046500	a44	1942-44
North Manistique Lake Outlet at Helmer, MI (d)	04047000	a15	1942-44
Manistique Lake near Curtis, MI (e)	04047200	118	1942-91
Manistique River near Germfask, MI (d)	04047500	a120	1942-50
Fox River at Seney, MI (d)	04048000	107	1942-44
East Branch Fox River near Germfask, MI (d)	04048500	104	1942-44
Holland Creek near Seney, MI (d)	04049000	a13	1938-42
Manistique River at Germfask, MI (d)	04049500*	341	1938-70
Goose Pen Outlet at Germfask, MI (d)	04050000	--	1939-41
Grays Creek near Germfask, MI (d)	04050500	a36	1938-40
Pine Creek near Germfask, MI (d)	04051000	a11	1938-40
Sand Creek near Germfask, MI (d)	04051500	a6	1938-40
Driggs River near Seney, MI (d)	04052000	a70	1938-42
Walsh Creek near Seney, MI (d)	04052500	a12	1938-2004
Driggs River near C-3 Pool near Diversion Ditch near Seney, MI (d)	04052600	--	2002-03
Driggs River near Germfask, MI (d)	04053000	114	1938-41
Marsh Creek near Shingleton, MI (d)	04053500	a20	1938-42
Marsh Creek near Germfask, MI (d)	04054000	--	1938-41
Duck Creek near Blaney, MI (d)	04054500	a92	1938-54
Manistique River near Blaney, MI (d)	04055000*	704	1938-70

DISCONTINUED SURFACE-WATER-DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Period of record
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued			
Creighton River near Shingleton, MI (d)	04055500	a35	1938-42
West Branch Manistique River near Manistique, MI (d)	04056000	322	1938-56
Indian Lake near Manistique, MI (e)	04057000	302	1938-95
Indian River near Manistique, MI (d)	04057000*	302	1938-71, 1992-93
Manistique River above Manistique, MI (d)	04057004	a1,445	1994-96
Sturgeon River near St. Jacques, MI (d)	04057500	167	1950-52
Middle Branch Escanaba River near Greenwood, MI (d)	04057820*	73.3	1973-82
Black River near Republic, MI (d)	04057900*	34.4	1961-68
Middle Branch Escanaba River near Ishpeming, MI (d)	04058000	128	1954-75
Green Creek near Princeton, MI (d)	04058130	13.8	1977-82
Warner Creek near Palmer, MI (d)	04058300*	14.2	1961-68, 1972-78
Goose Lake Outlet near Sands Station, MI (d)	04058400*	37.5	1966-82
East Branch Escanaba River at Gwinn, MI (d)	04058500	124	1955-80
Tenmile Creek at Perronville, MI (d)	04059400*	38.4	1971-77
Iron River near Iron River, MI (d)	04060000	a65	1901-04
Paint River at Crystal Falls, MI (d)	04061500*	597	1944-96
Peshekee River near Michigamme, MI (d)	04062100	66.5	1961-68, 1993-95
Lake Michigamme near Champion, MI (e)	04062228	193	1942-91
Michigamme River near Michigamme, MI (d)	04062230	194	1969-82
Michigamme River near Champion, MI (d)	04062270	231	1964-69
Michigamme River at Republic, MI (d)	04062300*	240	1961-75
Michigamme River near Witch Lake, MI (d)	04062400*	316	1964-80
Menominee River near Iron Mountain, MI (d)	04065000	2,430	1898-99, 1903-14
West Branch Sturgeon River near Randville, MI (d)	04065300	56.1	1958-81
East Branch Sturgeon River below Skunk Creek near Felch, MI (d)	04065393	61.8	1974-84
East Branch Sturgeon River at Hardwood, MI (d)	04065397	90.8	1978-83
Sturgeon River near Foster City, MI (d)	04065500	237	1955-80
Pine Creek near Iron Mountain, MI (d)	04065600	16.8	1972-81
Galien River near New Troy, MI (d)	04095500	a47	1945-47
East Branch Galien River near New Troy, MI (d)	04096000	19.2	1945-47
Beebe Creek near Hillsdale, MI (d)	04096272*	42.4	1974-78
Sand Creek at Litchfield, MI (d)	04096312*	20.6	1974-77
Soap Creek near Litchfield, MI (d)	04096325	10.9	1975-77
St. Joseph River at Clarendon, MI (d)	04096340*	144	1974-77
Sauk (East Branch Coldwater) River at Coldwater, MI (d)	04096500	--	1938-62
Coldwater River near Hodunk, MI (d)	04096600	293	1963-89
Nottawa Creek near Athens, MI (d)	04096900	162	1967-97
St. Joseph River at Mendon, MI (d)	04097000	918	1903-05
Little Portage Creek near Fulton, MI (d)	04097060*	27.0	1965-67
Portage River near Vicksburg, MI (d)	04097170*	68.2	1946-51, 1965-80
Gourdneck Canal near Schoolcraft, MI (d)	04097195	--	1966-73, 1983-92
Gourdneck Creek near Schoolcraft, MI (d)	04097200	7.29	1964-73
Fawn River near White Pigeon, MI (d)	04098500*	192	1903-04, 1958-75
St. Joseph River at Berrien Springs, MI (d)	04102000*	4,081	1901-07, 1909-32, 1951-56
Paw Paw River near Paw Paw, MI (d)	04102320	195	1980-82

DISCONTINUED SURFACE-WATER-DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Period of record
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued			
Paw Paw River near Hartford, MI (d)	04102420	311	1980-82
St. Joseph River at St. Joseph, MI (d)	04102533	4,670	1994-96
South Branch Kalamazoo River near Albion, MI (d)	04102850	146	1972-76
Reed's Springs near Albion, MI (d)	04103000	--	1905-06
Battle Creek at Charlotte, MI (d)	04104000	a67	1948-54
Battle Creek at Bellevue, MI (d)	04104500	178	1948-53
Gull Creek near Galesburg, MI (d)	04105800*	38.1	1965-73
Portage Creek near Portage, MI (d)	04106190	18.6	1965-67
Portage Creek at Kalamazoo, MI (d)	04106500	46.8	1948-58, 1975-86
Gun River at dam near Shelbyville, MI (d)	04107000	a30	1946-47
Gun River near Martin, MI (d)	04107500	a35	1946-47
Kalamazoo River near Allegan, MI (d)	04108000	a1,470	1903-08
Kalamazoo River near Fennville, MI (d)	04108500	a 1,600	1929-36, 1938-93
Portage River below Little Portage Lake near Munith, MI (d)	04109500	a55	1944-56
Orchard Creek at Munith, MI (d)	04110000	a49	1944-56
Portage River near Munith, MI (d)	04110500	118	1944-46
Sycamore Creek near Holt, MI (d)	04112850	80.6	1975-80, 1989-90, 1995-98
Mud Lake Drain at Lansing, MI (d)	04112904	4.28	1975-76
Carrier Creek near Lansing, MI (d)	04113097	12.1	1975-80
Sebewa Creek near Sunfield, MI (d)	04113500	24.1	1954-56
Fish Creek near Carson City, MI (d)	04115500	145	1936-38
Flat River at Smyrna, MI (d)	04116500*	528	1951-86
Thornapple River near Caledonia, MI (d)	04118000*	773	1931-38, 1952-82, 1984-94
Grand River at Eastmanville, MI (d)	04119300	a5,230	1976-77
Crockery Creek at Slocums Grove, MI (d)	04120000	--	1903
Grand River at Grand Haven, MI (d)	04120250	5,518	1994-96
Higgins Lake Outlet (head of Muskegon River) near Roscommon, MI (d)	04120500	49.2	1942-50
Muskegon River near Merritt, MI (d)	04121000*	355	1947-74
Muskegon River at Big Rapids (d)	04121650	1,751	2000-02
Little Muskegon River near Morley, MI (d)	04121900	121	1967-96
Muskegon River at Newaygo, MI (d)	04122000	a2,350	1908-20, 1931-93
Muskegon River at Muskegon, MI (d)	04122150	2,680	1994-96
Big Sable River near Freesoil, MI (d)	04123000*	115	1942-74
Manistee River near Grayling, MI (d)	04123500*	123	1943-74
Pine River near Le Roy, MI (d)	04125000*	128	1952-63
Manistee River near Manistee, MI (d)	04126000	1,677	1952-93
Little Manistee River near Freesoil, MI (d)	04126200*	178	1957-75
Little Manistee River near Stronach, MI (d)	04126500	a196	1931
Boardman River near Mayfield, MI (d)	04127000	182	1952-89
Boardman River at Traverse City, MI (d)	04127500	--	1903-04
Intermediate River at Bellaire, MI (d)	04127565	146	1991
Elk Lake near Elk Rapids, MI (e)	445256085240001	a410	1952-95
STREAMS TRIBUTARY TO LAKE HURON			
Crooked Lake near Conway (e)	452600084472001	101	1942-04
Burt Lake at Indian River, MI (e)	04128500	598	1942-88
Indian River at Indian River, MI (d)	04128500	598	1942-82
Pigeon River at Afton, MI (d)	04129500	139	1942-81
Cheboygan River near Cheboygan, MI (d)	04130000	889	1943-82

DISCONTINUED SURFACE-WATER-DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Period of record
STREAMS TRIBUTARY TO LAKE HURON--Continued			
Mullett Lake near Cheboygan, MI (e)	04130000	889	1943-91
Black River near Tower, MI (d)	04130500	311	1943-00
Rainy River near Onaway, MI (d)	04131000	75.7	1942-52
Rainy River near Ocqueoc, MI (d)	04131500*	87.9	1953-79
Black River near Cheboygan, MI (d)	04132000*	558	1943-74
Cheboygan Pond at Cheboygan, MI (e)	04132052	a1,500	1943-91
Thunder Bay River near Hillman, MI (d)	04132500*	232	1945-73
Upper South Branch Thunder Bay River near Lachine, MI (d)	04133000	171	1945-54
North Branch Thunder Bay River near Bolton, MI (d)	04134000	184	1945-80
Lower South Branch Thunder Bay River near Hubbard Lake, MI (d)	04134500	146	1945-54
Thunder Bay River near Alpena, MI (d)	04135000	1,238	1901-09, 1980-93
Au Sable River at Grayling, MI (d)	04135500*	110	1943-93
East Branch Au Sable River at Grayling, MI (d)	04135600	76.0	1958-84
Au Sable River at Bamfield, MI (d)	04137000	--	1902-14
East Branch Au Gres River at McIvor, MI (d)	04138000*	a84	1951-74
Au Gres River near National City, MI (d)	04138500	154	1951-81
Houghton Creek near Lupton, MI (d)	04139000*	29.7	1950-73
Rifle River at "The Ranch" near Lupton, MI (d)	04139500	56.8	1950-71
Prior Creek near Selkirk, MI (d)	04140000*	21.4	1950-73
Rifle River at Selkirk, MI (d)	04140500*	117	1950-82
South Branch Shepards Creek near Selkirk, MI (d)	04141000*	1.15	1952-78
West Branch Rifle River near Selkirk, MI (d)	04141500*	a52	1952-63
Rifle River at Omer, MI (d)	04143000	364	1902-04
North Branch Kawkawlin River near Kawkawlin, MI (d)	04143500	101	1951-82
Shiawassee River at Linden, MI (d)	04143900	83.7	1968-94, 2001-03
Shiawassee River at Byron, MI (d)	04144000	365	1948-83
Bad River near Brant, MI (d)	04145500*	a89	1949-59
Flint River at Columbiaville, MI (d)	04146500	470	1932-33, 1948-52
Holloway Reservoir near Otisville, MI (e)	04147000	526	1954-91
Butternut Creek near Genesee, MI (d)	04147990	34.7	1970-84
Flint River at Genesee, MI (d)	04148000	a593	1931-52
Gilkey Creek near Flint, MI (d)	04148160	6.43	1970-84
Swartz Creek near Holly, MI (d)	04148200*	12.1	1956-75
Swartz Creek at Flint, MI (d)	04148300*	115	1970-84
Thread Creek near Flint, MI (d)	04148440*	54.4	1970-84
Brent Run near Montrose, MI (d)	04148720	20.8	1970-84
Flint River near Alicia, MI (e)	04149500	--	1949-84
South Branch Cass River near Cass City, MI (d)	04150000	238	1949-80
Cass River at Wahjamega, MI (d)	04150800	645	1969-94
Cass River at Vassar, MI (d)	04151000*	710	1910-28, 1949-70
Tobacco River at Beaverton, MI (d)	04152500	487	1948-82
Kinney Creek near Clare, MI (d)	04153000	a9	1935-36
Salt River near North Bradley, MI (d)	04153500	138	1934-71
Chippewa River near Midland, MI (d)	04154500*	597	1948-73
Tittabawassee River at Freeland, MI (d)	04156500	a2,530	1903-10, 1912-36
State Drain near Sebewaing, MI (d)	04157500	67.3	1940-54
Columbia Drain near Sebewaing, MI (d)	04158000	33.9	1940-54, 1988-90
Pigeon River near Owendale, MI (d)	04158500	53.2	1953-82
Pigeon River near Pigeon, MI (d)	04159000	93.3	1947-52
Pigeon River near Caseville, MI (d)	04159010	125	1987-93

DISCONTINUED SURFACE-WATER-DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Period of record
STREAMS TRIBUTARY TO ST. CLAIR RIVER			
Silver Creek near Jeddo, MI (d)	04159488	20.6	1978-82
Mill Creek near Abbottsford, MI (d)	04160000*	185	1947-64
Black River near Port Huron, MI (d)	04160050	684	1931, 1933-44
North Branch Belle River at Imlay City, MI (d)	04160570	18.0	1965-01
STREAMS TRIBUTARY TO LAKE ST. CLAIR			
Galloway Creek near Auburn Heights, MI (d)	04161100	17.9	1960-91
Paint Creek near Lake Orion, MI (d)	04161500*	38.5	1955-75, 1989-91
Red Run near Warren, MI (d)	04162010	--	1980-88
Bear Creek at Warren, MI (d)	04162500	17.3	1954-57
Big Beaver Creek near Warren, MI (d)	04162900	--	1959-88
Big Beaver Creek at Warren, MI (d)	04163000	25.2	1954-58
Plum Brook near Utica, MI (d)	04163500	22.9	1954-66
Red Run near Cady, MI (e)	04163900	--	1980-82
North Branch Clinton River at Almont, MI (d)	04164010*	9.56	1963-68
North Branch Clinton River near Romeo, MI (d)	04164050*	49.7	1965-69
North Branch Clinton River near Meade, MI (d)	04164150*	89.6	1968-72
Coon Creek near Armada, MI (d)	04164200*	10.0	1966-70
Tupper Brook at Ray Center, MI (d)	04164250*	8.62	1960-64
Highbank Creek near Armada, MI (d)	04164350*	14.9	1965-70
East Branch Coon Creek near New Haven, MI (d)	04164360*	36.1	1968-72
Deer Creek near Meade, MI (d)	04164400*	12.7	1960-65
McBride Drain near Macomb, MI (d)	04164450*	5.79	1960-64
Middle Branch Clinton River near Macomb, MI (d)	04164600*	22.2	1965-69
Middle Branch Clinton River at Macomb, MI (d)	04164800*	41.0	1963-68, 1970-82
Middle Branch Clinton River near Mount Clemens, MI (d)	04165000	a51	1947-49
Gloede Ditch near Waldenburg, MI (d)	04165200*	16.0	1959-64
Clinton River By-Pass below weir at Mount Clemens, MI (e)	04165556	--	1980-83
STREAMS TRIBUTARY TO DETROIT RIVER			
Lower River Rouge at Dearborn, MI (d)	04168500	91.9	1931-33
STREAMS TRIBUTARY TO LAKE ERIE			
Hayes Creek at Commerce, MI (d)	04169000	a8	1946-51
Huron River at Commerce, MI (d)	04169500*	57.3	1946-75
Davis Creek near Whitmore Lake, MI (d)	04171000	65.8	1953-54
South Ore Creek near Brighton, MI (d)	04171500	a31	1951-68
Portage River near Pinckney, MI (d)	04172500*	79.1	1945-71
Huron River near Dexter, MI (d)	04173000*	522	1904, 1946-72, 1976-77
Huron River at Dexter, MI (e)	04174000	--	1904-16
Huron River at Ypsilanti, MI (d)	04174800	807	1974-84, 1990-94
Willow Run near Rawsonville (d)	04174950	--	1986-97
Huron River at Flat Rock, MI (d)	04175100	851	1904-11
Huron River at Flat Rock, MI (e)	04175100	851	1912-22
Stony Creek at Oakville, MI (d)	04175340	68.0	1970-81, 2003
North Branch Amos Palmer Drain near Oakville, MI (d)	04175352	--	2002-03
River Raisin near Tecumseh, MI (d)	04175700	267	1956-80
South Branch River Raisin at Adrian, MI (d)	04175957	164	1992-95
Saline River near Saline, MI (d)	04176400*	94.6	1966-77

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following continuous-record surface-water-quality stations in Michigan have been discontinued. Daily records of temperature, specific conductance, or sediment were collected and published for the record shown for each station. Information regarding these stations may be obtained from the District office at the address given on the back side of the title page of this report.

[Type of record: Temp. (temperature), S.C. (specific conductance), D.O. (dissolved oxygen) Sed. (sediment). Letter (a) before drainage area means approximately.]

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
STREAMS TRIBUTARY TO LAKE SUPERIOR				
Washington Creek at Windigo, MI	04001000	13.2	Temp.	1965-91
Black River near Bessemer, MI	04031000	200	Temp.	1955-71
Ontonagon River near Rockland, MI	04040000	1,340	Temp., S.C.	1975-81
Sturgeon River near Chassell, MI	04043004	723	Temp., S.C.	1978-81
Trap Rock River near Lake Linden, MI	04043050	28.0	Temp.	1972-83
Salmon Trout River near Big Bay, MI	04043250	37.8	Temp.	1971-73
Tahquamenon River near Paradise, MI	04045500	790	Temp., S.C.	1975-81
STREAMS TRIBUTARY TO ST. MARYS RIVER				
St. Marys River above Sault Ste. Marie, MI	04045580	a80,900	Temp., S.C.	1974-81
STREAMS TRIBUTARY TO LAKE MICHIGAN				
Black River near Garnet, MI	04046000	a28	Temp.	1952-75 1977-78
Manistique River above Manistique, MI	04057004	a1,445	Temp., S.C.	1976-81
Manistique River at Manistique, MI	04057005	a1,450	Temp., S.C.	1975
Middle Branch Escanaba River at Humboldt, MI	04057800	46.0	Temp.	1973-78
Greenwood Afterbay near Greenwood, MI	04057812	67.4	Temp.	1973-86
Greenwood Diverson near Greenwood, MI	04057813	--	Temp.	1973-82
Greenwood Release near Greenwood, MI	04057814	67.4	Temp.	1973-82
Middle Branch Escanaba River near Greenwood, MI	04057820	73.3	Temp.	1973-78
Black River near Republic, MI	04057900	34.4	Sed.	1962-63, 1965,
			Temp.	1962-68
Middle Branch Escanaba River near Ishpeming, MI	04058000	128	Temp.	1962-75, 1977-82
Green Creek near Palmer, MI	04058120	8.42	Temp., Sed.	1965,
			Temp.	1979-80
Green Creek near Princeton, MI	04058130	13.8	Temp.	1977-81
Schweitzer Creek near Palmer, MI	04058200	23.6	Temp.	1962-71
Goose Lake Outlet near Sands Station, MI	04058400	37.5	Temp.	1977-81
East Branch Escanaba River at Gwinn, MI	04058500	124	Temp.	1955-64
			Sed.	1962-63
Ford River near Hyde, MI	04059500	450	Temp.	1956-81
			S.C.	1975-81
Paint River near Alpha, MI	04062000	631	Temp.	1953-54, 1956-57
Peshekee River near Champion, MI	04062200	133	Temp.	1962, 1964-78
Michigamme River near Witch Lake, MI	04062400	316	Temp., Sed.	1965-69
East Branch Sturgeon River at Hardwood, MI	04065397	90.8	Temp.	1978-83
Sturgeon River near Foster City, MI	04065500	237	Temp.	1957-80
Pine Creek near Iron Mountain, MI	04065600	16.8	Temp.	1972-81
Beebe Creek near Hillsdale, MI	04096272	42.4	Sed.	1975,
			Temp., Sed.	1976-77
Sand Creek at Litchfield, MI	04096312	20.6	Temp., Sed.	1975-76,
			Sed.	1977
Soap Creek near Litchfield, MI	04096325	10.9	Temp., Sed.	1975-76,
			Sed.	1977

DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued				
St. Joseph River at Clarendon, MI	04096340	144	Temp., Sed.	1975-76,
			Sed.	1977
St. Joseph River at Niles, MI	04101500	3,666	Temp., S.C.	1979-84
Paw Paw River near Paw Paw, MI	04102320	195	Temp., Sed.	1981-82
Paw Paw River near Hartford, MI	04102420	311	Sed.	1981-82
South Branch Black River near Bangor, MI	04102700	83.6	Temp., Sed.	1981-82
Kalamazoo River at Comstock, MI	04106000	a1,010	Temp.	1969-75
Portage Creek near Kalamazoo, MI	04106300	22.4	Temp., S.C.	1968-71
West Fork Portage Creek at Kalamazoo, MI	04106400	18.7	Temp., S.C.	1971,
			Temp.	1972-73
Portage Creek at Kalamazoo, MI	04106500	46.8	S.C.	1968,
			Temp., S.C.	1972-75,
			Temp.	1976-86
Kalamazoo River near Cooper Center, MI	04106770	1,248	Temp.	1968,
				1970,
			Temp., S.C.	1969,
				1971-75
Kalamazoo River at Saugatuck, MI	04108690	a2,020	S.C.	1974,
			Temp, S.C.	1975-81
Grand River near Eaton Rapids, MI	04111000	661	Temp.	1964-74,
				1976-77
Grand River at Lansing, MI	04113000	a1,230	Temp.	1964,
				1967-68,
				1970-73
Grand River at Portland, MI	04114000	1,385	Temp.	1964-68
Grand River at Eastmanville, MI	04119300	a5,230	Temp., S.C.	1979-83
Muskegon River at Evart, MI	04121500	a1,450	Temp.	1957-83
Little Muskegon River near Morley, MI	04121900	138	Temp.	1967-83
Muskegon River near Bridgeton, MI	04122030	a2,420	Temp., S.C.	1975-81
Pere Marquette River near Scottville, MI	04122500	681	Temp.	1968-83
Manistee River near Grayling, MI	04123500	123	Temp.	1957-77
East Branch Pine River near Tustin, MI	04124500	60	Temp.	1952-63
Pine River near LeRoy, MI	04125000	128	Temp.	1953-63
Pine River near Luther, MI	04125200	194	Sed.	1967-70
Silver Creek near Luther, MI	04125210	4.7	Sed.	1969-70
Poplar Creek near Hoxeyville, MI	04125350	--	Sed.	1969-70
Pine River near Dublin, MI	04125450	241	Sed.	1968-70
Pine River near Hoxeyville, MI	04125500	251	Temp.	1952-63
Pine River near Wellston, MI	04125510	265	Sed.	1967-70
Little Manistee River near Freesoil, MI	04126200	178	Temp.	1957-77
Manistee River at Manistee, MI	04126520	1,928	Temp., S.C.	1975-81
Boardman River at Brown Bridge Road nr Mayfield, MI	04126970	141	Temp., S.C.	1998
Boardman River near Mayfield, MI	04127000	182	Temp.	1962-77
Boardman River at Traverse City, MI	04127499	283	Temp., S.C.	1998
Jordan River near East Jordan, MI	04127800	67.9	Temp.	1967-83
STREAMS TRIBUTARY TO LAKE HURON				
Sturgeon River near Wolverine, MI	04128000	198	Temp.	1959-83
Pigeon River near Vanderbilt, MI	04129000	62.6	Temp.	1951-66
Cheboygan River at Cheboygan, MI	04132052	a1,500	Temp., S.C.	1975-81
Thunder Bay River near Alpena, MI	04135000	1,238	Temp., S.C.	1980-85
Thunder Bay River at Alpena, MI	04135020	a1,240	Temp., S.C.	1979

DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
STREAMS TRIBUTARY TO LAKE HURON--Continued				
Au Sable River at Grayling, MI	04135500	110	Temp.	1953-80
South Branch Au Sable River near Luzerne, MI	04135700	401	Temp.	1967-83
East Branch Au Gres River at McIvor, MI	04138000	a84	Temp.	1952-66
Au Gres River near National City, MI	04138500	154	Temp.	1952-59
Houghton Creek near Lupton, MI	04139000	29.7	Temp.	1950-68
Rifle River near Lupton, MI	04139500	56.8	Temp.	1950-71
Prior Creek near Selkirk, MI	04140000	21.4	Temp.	1951-68
Rifle River at Selkirk, MI	04140500	117	Temp.	1951-76
West Branch Rifle River near Selkirk, MI	04141500	a52	Temp.	1952-61
Rifle River near Sterling, MI	04142000	a320	Sed.	1966, 1970-72,
			Temp., S.C.	1975-81
Shiawassee River at Holly, MI	04143830	49.2	Temp., S.C.	2001-03
Shiawassee River at Byron, MI	04144000	365	Temp.	1962-81
Shiawassee River at Owosso, MI	04144500	538	Sed.	1966-72
Cass River at Frankenmuth, MI	04151500	841	Sed.	1966-72
Pigeon River near Caseville, MI	04159010	125	Temp., S.C.	1978-81
STREAMS TRIBUTARY TO ST. CLAIR RIVER				
St. Clair River at Port Huron, MI	04159130	a222,400	Temp., S.C.	1978-81
Black River at Fargo, MI	04159500	480	Sed.	1966,
			Temp.	1979-82
STREAMS TRIBUTARY TO LAKE ST. CLAIR				
Sashabaw Creek near Drayton Plains, MI	04160800	20.9	Temp., S.C.	2001-03
Clinton River at Yates, MI	04161810	299	Temp., S.C.	2001-04
Clinton River at Mount Clemens, MI	04165500	734	Temp., S.C.	1975-81
STREAMS TRIBUTARY TO DETROIT RIVER				
Detroit River at Detroit, MI	04165700	a228,800	Temp., S.C.	1974-81
Upper River Rouge at Clarenceville, MI	04166315	19.8	Temp., S.C.	2001-03
STREAMS TRIBUTARY TO LAKE ERIE				
Huron River at Milford, MI	04170000	132	Temp., S.C., D.O., pH	
Huron River at Ann Arbor, MI	04174500	729	Temp., D.O., S.C., pH	2000-03
Malletts Creek at Ann Arbor, MI	04174518	10.9	Temp., D.O., S.C., pH	2000-03
River Raisin near Manchester, MI	04175600	132	Temp.	1997
River Raisin near Monroe, MI	04176500	1,042	Temp., Sed.	1966-72
			Temp., S.C.	1978-81

WATER RESOURCES DATA - MICHIGAN, 2005

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Michigan each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Michigan."

This report includes records on both surface and ground water in the State. Specifically, it contains: (1) Discharge records for 174 streamflow-gaging stations, 30 crest-stage partial-record stations and 85 miscellaneous sites; (2) stage only records for 2 stream-gaging stations and 25 lake-gaging stations; (3) stage and content records for 1 reservoir; (4) water-quality records for 50 streamflow-gaging stations; (5) water-level records for 45 ground-water wells. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State, local, and Federal agencies in Michigan.

This series of annual reports for Michigan began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Michigan were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Part 4." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all states. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report MI-05-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the Director at the address given on the back of the title page or by telephone (517) 887-8903.

COOPERATION

The U.S. Geological Survey and agencies of the State of Michigan have had cooperative agreements for the collection of water-resource records since 1930. Organizations that assisted in collecting the data in this report through cooperative agreement with the Survey are:

Michigan Department of Environmental Quality, Steven E. Chester, Director.

Michigan Department of Natural Resources, Rebecca A. Humphries, Director.

Michigan Department of Transportation, Gloria J. Jeff, Director.

Assistance with funds or services was given by the U.S. Army Corps of Engineers in collecting records for 5 gaging stations published in this report. Assistance was also furnished by the National Weather Service, National Oceanic Atmospheric Administration, and U.S. Department of Commerce.

The following organizations aided in collecting records:

Alticor, Inc.; American Aggregates Co.; American Electric Power; Antrim County; Cliffs Mining Services Co.; Consumers Energy; Delta Township (Eaton County); Dow Chemical Co.; French Paper Co.; Hamburg Township (Washtenaw County); Huron County; Huron-Clinton Metropolitan Authority; Ann Arbor, Battle Creek, Cadillac, Coldwater, Dearborn Heights, Flint, Kalamazoo, Norway, Portage, Portland, and Sturgis; Kalamazoo County; Keweenaw Bay Indian Community; Lac Vieux Desert Band of Lake Superior Chippewa Indians; Lansing Board of Water and Light; Macomb County Board of Supervisors; Midland Cogeneration Venture; Negaunee; New Page Corporation; Oakland County Drain Commissioner; Otsego County; Pfizer; Roscommon County; STS Hydropower, Ltd; Saginaw Chippewa Indian Tribe of Michigan; Swift-Eckrich, Inc.; Upper Peninsula Power Co.; Washtenaw County Drain Commissioner; Wayne County; We Energies Co.; and White's Bridge Hydro Co.

Organizations that supplied data are acknowledged in the station descriptions.

WATER RESOURCES DATA - MICHIGAN, 2005

SUMMARY OF HYDROLOGIC CONDITIONS

Drainage patterns in Michigan differ from those in much of the United States, primarily because continental glaciers covered most of the state as recently as a few thousand years ago, as well as Michigan's proximity to the Great Lakes. As a result, many stream channels in Michigan are immature, lacking structural or bedrock control, and are largely superimposed on the post glacial land surface. In parts of the state, streams flow in approximately the same place as pre-glacial drainageways, while in other places, stream channels cut cross the historic drainageways. Unlike many other non-mountainous parts of the country where most basins flow to one or more large river system, some streams in Michigan draining parallel drainage basins flow in opposite directions. Only a few streams cross the state boundaries as most are intercepted by the Great Lakes. Some streams in the Upper and northern Lower Peninsulas are relatively high gradient, but most streams in Michigan are fairly low gradient, and slow moving. Many streams in Michigan are also adjusting to the effects of logging in the late 19th and early 20th centuries, primarily in the northern Lower and Upper Peninsulas, and urbanization, which rapidly escalated following World War II, primarily in the southern Lower Peninsula. Logging and urbanization have profoundly altered the flow characteristics and water quality of some streams in Michigan.

Generalized precipitation (including snowfall converted to water equivalent) during the current water year is shown in figure 1. Most of the eastern Upper Peninsula and the Lower Peninsula received at least 30 inches of precipitation during 2005, and large parts of the Lower Peninsula received at least 34 inches. Many river basins in the Lower Peninsula had new monthly mean maximum streamflows in January 2005. All of those basins are located in areas of the state that received at least 30 inches of precipitation, and most flow through areas that received at least 34 inches.

Drought conditions were prevalent throughout much of the summer and early fall in many parts of the Upper Peninsula. Precipitation in much of the western half of the peninsula, was only 22-26 inches during the year. In the Upper Peninsula as well as the Lower Peninsula, snowbelt areas typically received greater amounts of precipitation than adjacent, non-snowbelt areas.

Streamflow

In the western Upper Peninsula, monthly mean streamflow (discharge) of the Sturgeon River near Sidnaw (fig. 2) was below the long-term mean during the following months: October-December, March, and May-September. Air temperatures in October and November were several degrees Fahrenheit warmer than normal, accompanying below normal to near-normal precipitation. Streamflow in January and February was near the 50th percentile and was above the 10th percentile in April. Although May was abnormally cool, it was also dry in many places in the Upper Peninsula. Monthly mean air temperatures from June through October were some of the warmest ever recorded. Precipitation ranged from below to above normal throughout the same period. By the end of July, much of the western Upper Peninsula was experiencing a severe drought. Streamflow was lowest in August, when the monthly mean of 12 ft^3/s was less than 40 percent of the long term 90th percentile (31 ft^3/s). Annual mean streamflow for 2005 was 161 ft^3/s. In comparison, the annual mean streamflows for 1971-2000 and period of record (1931-2005) were 211 ft^3/s and 209 ft^3/s, respectively.

In the eastern Upper Peninsula, monthly mean streamflow of the Tahquamenon River near Paradise (fig. 1) was above the long-term mean from October through February, but was below the mean for the remainder of the year. Monthly precipitation measured at Sault Ste. Marie was 0.62 to 2.93 inches above average from October through December, but was 0.21 to 1.44 inches below average for the remaining months, except March, which was 0.89 inches above average. Monthly mean air temperatures measured at Sault Ste. Marie were 2.3 to 6.4 degrees Fahrenheit above normal in October, November, February, April, and June-September. Streamflow was highest in April, when the monthly mean of 2,650 ft^3/s considerably exceeded the long term 10th percentile (1,900 ft^3/s), but was still below the 1953-2005 April mean (2,735 ft^3/s). Streamflow was lowest in July, when the monthly mean of 183 ft^3/s was only about 60 percent of the long term 90th percentile (292 ft^3/s), and near the period of record monthly mean minimum of 167 ft^3/s measured in August 2000. Annual mean streamflow for 2005 was 783 ft^3/s. In comparison, the annual mean streamflows for 1971-2000 and period of record (1953-2005) were 917 ft^3/s and 905 ft^3/s, respectively.

New monthly mean minimum streamflow was recorded at 5 long-term sites (sites with at least 10 years of continuous record) in the Upper Peninsula during the summer and these are summarized in table 1. Indicative of the drought conditions prevalent across the Upper Peninsula during the summer months, a near period-of-record minimum streamflow of 19 ft^3/s was recorded at the Ford River near Hyde (50 years of record) on September 13.

Monthly mean streamflow of the Muskegon River at Evart (fig. 1) was above the long-term mean from December-February, and April, but was below the mean during the other months. Near normal to above normal precipitation was measured in Houghton Lake from October-March, but April-June and August were deficient by 0.61 to 1.47 inches per month. Monthly mean air temperatures measured in Houghton Lake were abnormally cool in March and May, but were 1.6 to 6.3 degrees Fahrenheit above

average from June through September. Streamflow was highest in April, when the monthly mean of 2,350 ft^3/s considerably exceeded the long term 10th percentile (1,970 ft^3/s) as well as the 1931-2005 April mean (2,190 ft^3/s). Streamflow was lowest in July, when the monthly mean of 452 ft^3/s was only slightly higher than the long term 90th percentile flow of 440 ft^3/s. Annual mean streamflow for 2005 was 1,000 ft^3/s, which is considerably less than the 2004 mean of 1,340 ft^3/s. The 2005 mean is 88 percent of the 1971-2000 annual mean of 1,140 ft^3/s, and about 95 percent of the annual mean for period of record (1931-2005) of 1,050 ft^3/s.

In the northern Lower Peninsula, new monthly mean maximum and minimum streamflows were established at 8 long-term sites (table 1), and 4 sites that have more than 5 but less than 10 years of record; Manistee River near Mesick, Manistee River near Wellston, Boardman River near Mayfield, and AuSable River near Curtisville. A period-of-record minimum streamflow of 0.94 ft^3/s was recorded at Bear Creek near Muskegon (39 years of record) in September and the monthly mean flow was below the 90th percentile from June-September.

Streamflow of the Red Cedar River at East Lansing (fig. 2) was near the 90th percentile in October, but remained above the 50th percentile from November-May. Streamflow less than the 10th percentile from January-March accompanied above-normal precipitation in January and February. Streamflow declined from May-September and was about the 90th percentile in August and September. Annual mean streamflow for 2005 was 238 ft^3/s, which is more than double the 2003 mean of 108 ft^3/s and similar to the 1971-2000 and period of record (1902-2005) annual mean streamflows of 241 ft^3/s and 216 ft^3/s, respectively.

In the southern Lower Peninsula, new period of record minimum streamflows were recorded during September at the Galien River near Sawyer, South Branch Black River near Bangor, Middle Branch Black River near South Haven, Macatawa River near Zeeland, Stony Creek near Romeo, and Malletts Creek at Ann Arbor, and in October at Clinton River near Drayton Plains. Wanadoga Creek near Battle Creek had a new period of record daily mean streamflow in September. New monthly mean maximum and minimum streamflows were established at 8 long-term sites (table 1), and 3 sites that have more than 5 but less than 10 years of record; Clinton River at Sterling Heights, Upper River Rouge at Detroit, and Middle River Rouge at Dearborn Heights.

Water Quality

Surface-water-quality data were collected at a number of sites in 2005. Continuous records of water temperature were collected at 5 stations in the Upper Peninsula. Daily records of specific conductance were collected at 2 of the same sites. In the Lower Peninsula, daily records of one or more water-quality parameters including specific conductance, pH, water temperature, and dissolved oxygen were collected at 40 stations. Sediment samples were collected at 4 sites in the Lower Peninsula, including 1 site where water-quality samples were also collected.

During the winter and spring in the northern Lower Peninsula at sites with 9 or more years of record, a previously established maximum dissolved-oxygen concentration was equalled at one site and exceeded at another site. New minimum dissolved-oxygen concentrations were measured during late summer at 5 of the sites in the northern Lower Peninsula.

Ground Water

Pleistocene glacial deposits cover most of the State. Outwash sand and gravel in these deposits form the most productive aquifers, although lacustrine sand aquifers are also productive. Till deposits formed of poorly-sorted, relatively impermeable mixtures of clay, silt, sand, and gravel tend to be poor aquifers; clay deposits generally yield little or no water. In most areas, glacial deposits are less than 200 ft thick, although deposits greater than 800 ft thick are found in some areas of the northern Lower Peninsula.

Sandstone, limestone, and dolomite are the principal bedrock aquifers. Where bedrock aquifers are hydraulically connected to overlying freshwater-bearing units, they yield freshwater. However, when bedrock aquifers are isolated from overlying freshwater-bearing units by impermeable deposits (confining units) such as till, clay, or shale, they typically yield brackish, saline, or briny water. Annual recharge to aquifers in Michigan, which ranges from 3 to 18 inches, is derived from precipitation that averages 31 inches annually.

Ground-water levels in the southern Lower Peninsula typically follow seasonal precipitation patterns with lowest levels occurring during the mid- to late-summer months followed by recovery in late winter and spring. Ground-water levels in wells in the northern Lower and Upper Peninsulas typically have lowest levels occurring in late winter as a result of little or no recharge occurring during the winter months followed by recovery in the spring and summer months.

Ground-water levels were measured at 45 wells statewide in 2005 (fig. 9); 38 wells are equipped with continuous-data recorders, and 7 wells are measured periodically. Wells equipped with continuous-data recorders primarily define localized ground-water conditions, while periodic measurements made at other wells located throughout the state typically define less per-

turbed aquifer conditions. Most periodically-measured wells are located far from major municipal, industrial, or agricultural ground-water users and, as a result, reflect regional ground-water conditions.

Although several of the wells have a fairly-short period of record, a decade or more of previous record is available for some of the wells for comparison purposes. During the 2005 water year, two wells located in Kalamazoo County, with 7 and 19 years of record, had period-of-record high ground-water levels. During the 2005 water year, a well located in Saginaw County and a well located in Kalamazoo County, with 20 and 36 years of record, respectively, had period-of-record low ground-water levels.

Great Lakes Basin

The following paragraph is summarized from information contained in monthly bulletins and yearly summaries of Great Lakes water levels from the U.S. Army Corps of Engineers. Monthly mean water levels of Lake Superior and Lakes Michigan and Huron were lower in September 2005 than they were in October 2004. Monthly mean water levels of Lakes St. Clair, Erie, and Ontario were nearly the same in September 2005 as they were in October 2004. Lower than average spring precipitation, especially in the Lakes Superior, Michigan and Huron basins led to the development of moderate to severe drought conditions basin-wide. Air temperatures were 2 to 4 degrees Fahrenheit above average through the summer months, resulting in warm surface water temperatures and increasing the chance for above average evaporation during the fall and early winter months.

In September 2005, Great Lakes water levels varied from long term (1918-2004) September mean levels as follows: Lake Superior was 0.69 ft lower; Lakes Michigan and Huron were 1.48 ft lower; Lake St. Clair was 0.62 ft lower; Lake Erie was 0.26 ft lower; and Lake Ontario was 0.13 ft lower. In September 2005, the water level in Lakes Michigan and Huron was 4.24 ft lower than record-high levels recorded in 1986, and 1.08 ft higher than the minimum-monthly level recorded in 1964. No new record high- or low-water levels were recorded on any of the Great Lakes during the 2005 water year.

Table 1: Gaging stations with at least 10 years of continuous record that had minimum or maximum monthly mean streamflows during 2005 water year. [R, regulation; NR, non-regulated; OR, occasional regulation]

Station number	Station name	Drainage area (mi^2)	Month(s)	New Monthly Mean	Regulation	Period of record
04057510	Sturgeon River near Nahma Junction	183	August	minimum	NR	1967-2005
04058200	Schweitzer Creek near Palmer	23.6	June	minimum	R	1961-2005
04059500	Ford River near Hyde	450	August	minimum	NR	1955-2005
04065722	Menominee River near Vulcan	2,900	August, September	minimum	R	1988-2005
04096015	Galien River near Sawyer	80.7	May-September	minimum	NR	1995-2005
04102700	South Branch Black River near Bangor	83.6	January	Maximum	NR	1966-2005
			August	minimum		
04102776	Middle Branch Black River near South Haven	83.0	January	Maximum	NR	1995-2005
			May-August	minimum		
04104945	Wanadoga Creek near Battle Creek	48.3	January	Maximum	NR	1995-2005
04106180	Portage Creek at Portage	16.5	January, February	Maximum	NR	1983-2005
04108801	Macatawa River near Zeeland	68.5	April, August	minimum	NR	1961-2005
04127918	Pine River near Rudyard	184	March	minimum	NR	1972-2005
04121944	Little Muskegon River near Oak Grove	345	January, April	Maximum	NR	1996-2005
04121970	Muskegon River near Croton	2,313	January, April	Maximum	R	1996-2005
04122100	Bear Creek near Muskegon	16.7	June-August	minimum	NR	1966-2005
04124500	East Branch Pine River near Tustin	60.0	January	Maximum	NR	1952-2005
			June	minimum		
04122200	White River near Whitehall	406	January	Maximum	NR	1957-2005
04127800	Jordan River near East Jordan	67.9	March	minimum	NR	1967-2005
04146063	South Branch Flint River near Columbiaville	221	January	Maximum	NR	1980-2005
04152238	South Branch Tobacco River near Beaverton	160	January	Maximum	NR	1987-2005
04160600	Belle River at Memphis	151	January	Maximum	NR	1962-2005
04161540	Paint River at Rochester	70.9	July	Maximum	OR	1959-2005

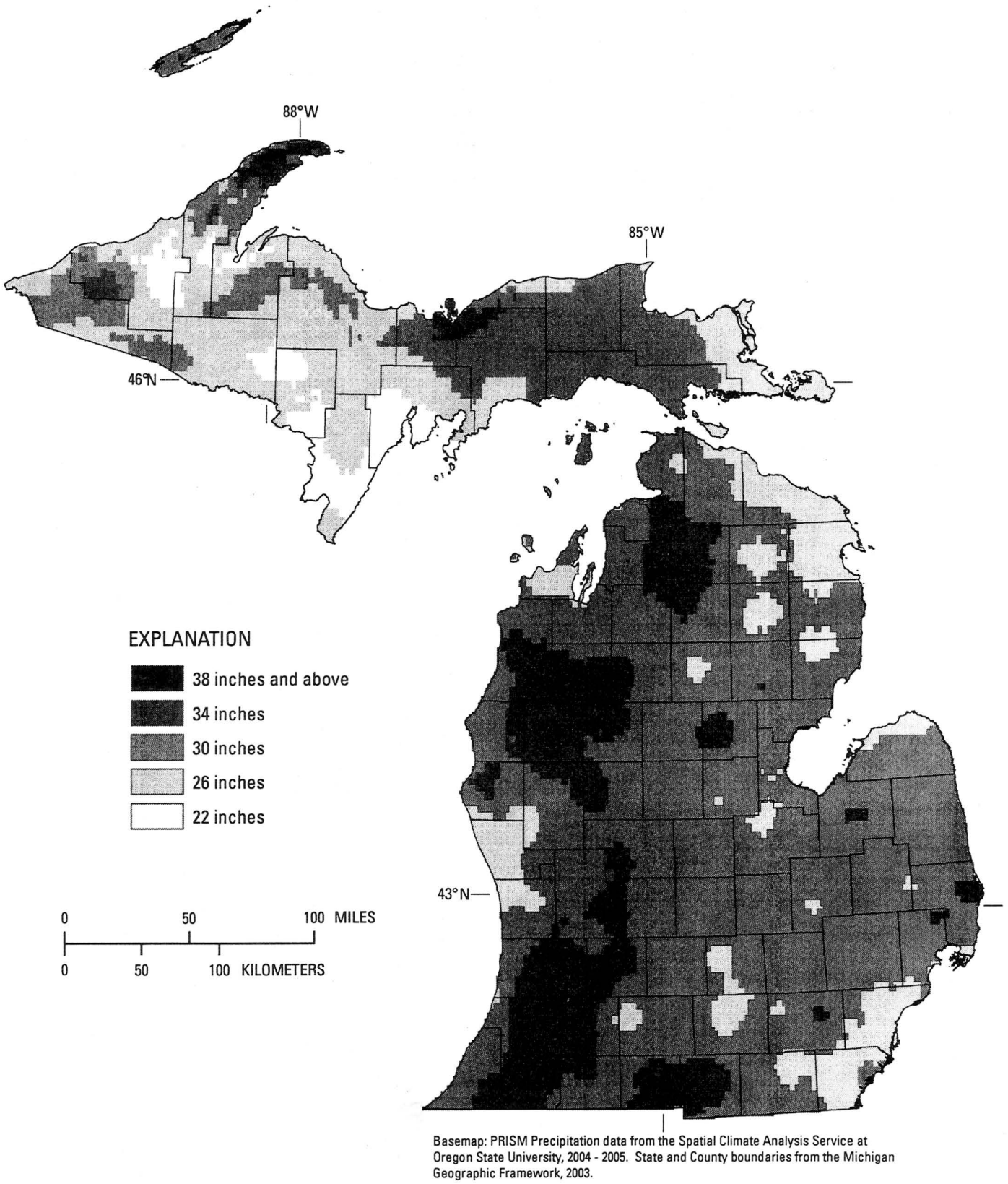


Figure 1. Generalized precipitation in Michigan during 2005 water year.

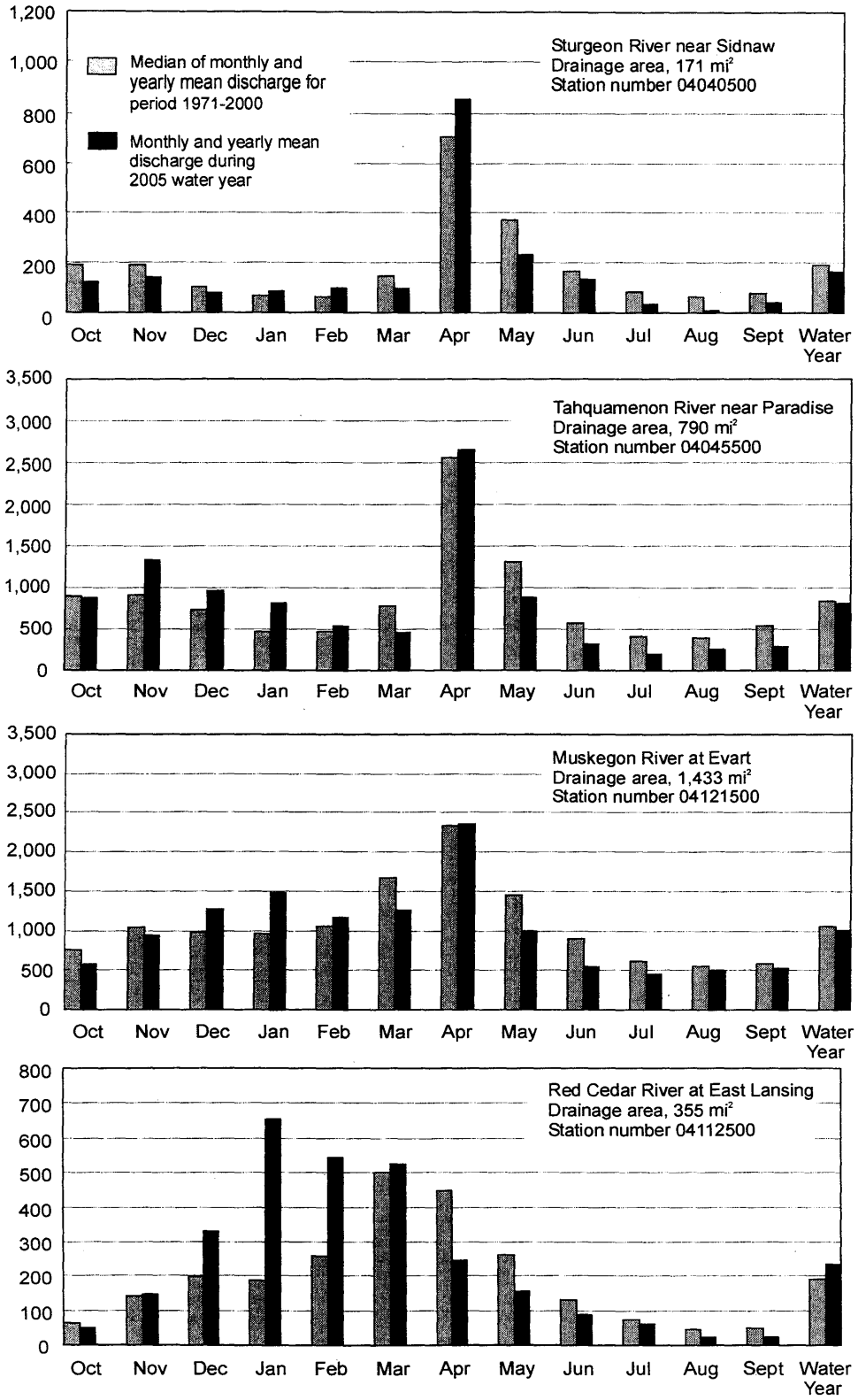


Figure 2. Discharge during 2005 water year compared with median discharge for period 1971-2000 for four representative stations.

The principal aquifers in Michigan are glacial outwash deposits and sandstone, limestone, and dolomite bedrock. The following table lists the aquifers and some of their characteristics.

Aquifer name and description	Well characteristics: Depth, in feet, Common range	Well characteristics: Yield, in gallons per minute, Common range	Remarks
Glacial aquifers:			
Outwash: Mostly sand and gravel.	25-200	1-1,000	Water generally hard; iron concentrations common; deep wells may produce salty water in places.
Lacustrine sand: Mostly sand, some gravel.	25-100	80-500	Used for domestic supply in Saginaw Bay and Detroit areas; is salty in places at depth
Till: Intermixed clay, silt, sand, gravel and boulders; abundant sand and gravel lenses in some areas.	25-200	5-200	Primary source of domestic supply in western Upper Peninsula.
Bedrock aquifers:			
Saginaw Formation: Sandstone, siltstone, some shale, limestone, and coal	25-300	100-300	One of Michigan's most important bedrock aquifers; water generally hard; salty in places at depth.
Marshall Formation: Sandstone and siltstone.	25-200	100-500	Another of Michigan's important bedrock aquifers; salty in places and at depth.
Silurian-Devonian rocks: Limestone and dolomite; some shale and sandstone.	25-150	10-300	Important aquifer in parts of eastern Upper Peninsula; water commonly hard.
Cambrian-Ordovician rocks: Sandstone, limestone, and dolomite.	25-150	10-100	Important aquifer in eastern Upper Peninsula; water commonly very hard; salty in places and at depth.
Precambrian sandstone: Sandstone interbedded with siltstone.	25-400	5-50	Important aquifer in western Upper Peninsula; salty in places.

Natural chemical characteristics of ground water in Michigan are determined primarily by the geologic environment through which the water flows. Natural ground water generally is suitable for human consumption and most other uses. Water from glacial deposits, at places, contains elevated concentrations of iron [2.5 to 5.0 mg/L (milligrams per liter)]; water from carbonate rocks is likely to be very hard (400 to 900 mg/L as calcium carbonate); and water from the Saginaw Formation in the Saginaw Bay-Thumb area commonly is highly mineralized (2,000 to 80,000 mg/L of dissolved solids). Throughout the State, salty water underlies and is in contact with freshwater at depths ranging from about 100 ft to about 900 ft. Average dissolved-solids concentration of water from bedrock (535 mg/L) is about twice as great as the average concentration from glacial deposits (241 mg/L) (Cummings, 1980).

REFERENCES CITED

Cummings, T.R., 1980, Chemical and physical characteristics of natural ground waters in Michigan--A preliminary report: U.S. Geological Survey Open-File Report 80-953, 34 p.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, hydrologic-station records in USGS reports have been listed in order of downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on

a tributary entering between two main-stream stations is listed between those stations. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is located with respect to the stream to which it is immediately tributary is indicated by an indention in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates which stations are on tributaries between any two stations and the rank of the tributary on which each station is located.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 09004100, which appears just to the left of the station name, includes a 2-digit part number "09" plus the 6-digit (or 8-digit) downstream order number "004100." In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as "01," "02," and so forth, would be assigned as one would for wells (see fig. 3). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

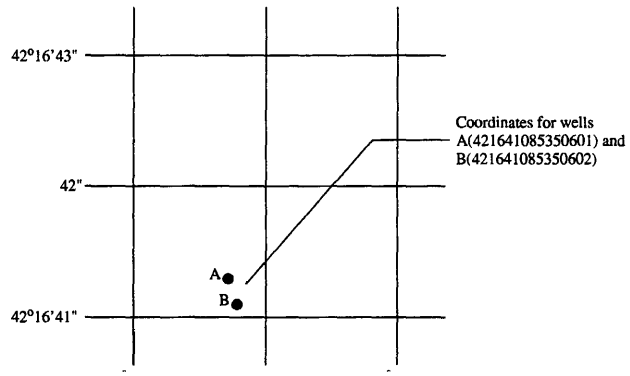


Figure 3. System for numbering wells (latitude and longitude).

In addition to the well number that is based on the latitude and longitude for each well, another well number may be provided which in many States is based on the Public Land Survey System, a set of rectangular surveys that is used to identify land parcels. This well number is familiar to the water users of Michigan and shows the location of the well by quadrant, township, range section, and position within the section (see fig. 3). The local well number indicates the location of wells within the rectangular subdivision of land with reference to the Michigan meridian and base line. The first two segments of the well number designate township and range, the third segment of the number designates the section and the letters A through D designate successively smaller subdivisions of the section as shown in figure 3. Thus, a well designated as 32N 6E 16CCCB would be located to the nearest 2.5 acres and would be within the shaded area in section 16. In the event that two or more wells are located in the same 2.5 acre tract, a sequential number designation follows the letter designations--for example, 16CCCB1, 16CCCB2, 16CCCB3, etc.

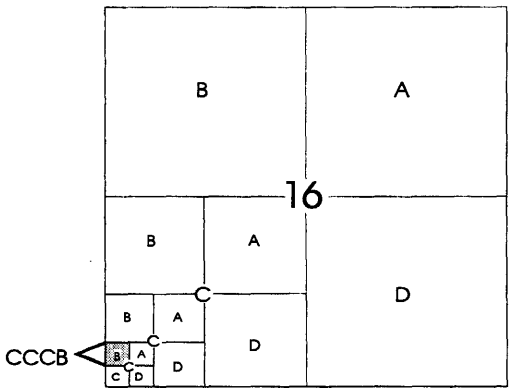


Figure 4. Local well numbering system in Michigan.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from *http://ny.cf.er.usgs.gov/hbn/*.

National Stream-Quality Accounting Network (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of five stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from *http://water.usgs.gov/nasqan/*.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a network of monitoring sites that provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

The USGS National Water-Quality Assessment (NAWQA) Program is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities for collaboration among the agencies. Additional information about the NAWQA Program may be accessed from *http://water.usgs.gov/nawqa/*.

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations (fig. 5, 6) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2, which may be accessed from *http://water.usgs.gov/pubs/twri/*. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standardization (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors that are based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations, and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, the stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.—Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.—This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its flow reasonably can be considered equivalent to flow at the present station.

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.—All periods of estimated daily discharge either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based national data system, NWISWeb (*http://water.usgs.gov/nwis/nwis*). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the USGS Water Science Center (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Peak Discharge Greater than Base Discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is expressed in cubic feet per second per square mile (line headed CFSM); or in inches (line headed IN); or in acre-feet (line headed AC-FT). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS __-__, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript,

occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.—The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.—The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.—The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.—The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.—The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.—The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

> Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.
>
> Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.
>
> Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table lists annual maximum stage and discharge at crest-stage stations, and the second table lists discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements

are often made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for a special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter "e" and noting in a table footnote, "e–Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. "Excellent" indicates that about 95 percent of the daily discharges are within 5 percent of the true value; "good" within 10 percent; and "fair," within 15 percent. "Poor" indicates that daily discharges have less than "fair" accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to three significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharge values listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as discharge measurements, gage-height records, and rating tables is available from the USGS Water Science Center. Also, most stream-gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the USGS Water Science Center (see address that is shown on the back of the title page of this report).

EXPLANATION OF PRECIPITATION RECORDS

Data Collection and Computation

Rainfall data generally are collected using electronic data loggers that measure the rainfall in 0.01-inch increments every 15 minutes using either a tipping-bucket rain gage or a collection well gage. Twenty-four hour rainfall totals are tabulated and presented. A 24-hour period extends from just past midnight of the previous day to midnight of the current day. Snowfall-affected data can result during cold weather when snow fills the rain-gage funnel and then melts as temperatures rise. Snowfall-affected data are subject to errors. Missing values are indicated by this symbol "---" in the table.

Data Presentation

Precipitation records collected at surface-water gaging stations are identified with the same station number and name as the stream-gaging station. Where a surface-water daily-record station is not available, the precipitation record is published with its own name and latitude-longitude identification number.

Information pertinent to the history of a precipitation station is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, period of record, and general remarks.

The following information is provided with each precipitation station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

INSTRUMENTATION.—Information on the type of rainfall collection system is given.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of records.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary considerably with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data are useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A *continuous-record station* is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A *partial-record station* is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A *miscellaneous sampling site* is a location other than a continuous- or partial-record station, where samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only

monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 7.

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating the accuracy of continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured field parameter	Ratings of accuracy (Based on combined fouling and calibration drift corrections applied to the record)			
	Excellent	Good	Fair	Poor
Water temperature	≤ ± 0.2 °C	> ± 0.2 – 0.5 °C	> ± 0.5 – 0.8 °C	> ± 0.8 °C
Specific conductance	≤ ± 3%	> ± 3 – 10%	> ± 10 – 15%	> ± 15%
Dissolved oxygen	≤ ± 0.3 mg/L or ≤ ± 5%, whichever is greater	> ± 0.3 – 0.5 mg/L or > ± 5 – 10%, whichever is greater	> ± 0.5 – 0.8 mg/L or > ± 10 – 15%, whichever is greater	> ± 0.8 mg/L or > ± 15%, whichever is greater
pH	≤ ± 0.2 units	> ± 0.2 – 0.5 units	> ± 0.5 – 0.8 units	> ± 0.8 units
Turbidity	≤ ± 0.5 turbidity units or ≤ ± 5%, whichever is greater	> ± 0.5 – 1.0 turbidity units or > ± 5 – 10%, whichever is greater	> ± 1.0 – 1.5 turbidity units or > ± 10 – 15%, whichever is greater	> ± 1.5 turbidity units or > ± 15%, whichever is greater

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made onsite when the samples are collected. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from http://water.usgs.gov/pubs/twri/. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS Water Science Center (see address that is shown on the back of title page in this report).

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the USGS Water Science Center.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration are computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. The TWRI publications may be accessed from *http://water.usgs.gov/pubs/twri/*. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—This indicates the time periods for which published water-quality records for the station are available. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.—Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based national data system, NWISWeb (*http://waterdata.usgs.gov/nwis*). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this section:

Printed Output	Remark
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a nondetection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte either was not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of "E." These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by a USGS Water Science Center are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so

that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the USGS Water Science Center.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected by this USGS Water Science Center are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs. (See NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES in this report for a detailed explanation),

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the Onsite Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The TWRI publications may be accessed from *http://water.usgs.gov/pubs/twri/*. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown and each well is identified by its local well or county well number on a map in this report (fig. 10).

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

AQUIFER.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may affect the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words "to current year" if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 5, Chapters A1, A3, and A4; and Book 9, Chapters A1-A6. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS Water Science Center (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed onsite. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2 and Book 5, Chapters A1, A3, and A4, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from *http://water.usgs.gov*.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each USGS Water Science Center. (See address that is shown on the back of the title page of this report.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from *http://water.usgs.gov/glossaries.html*.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

Adenosine triphosphate (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also "Biomass" and "Dry weight")

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Annual runoff is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that purposely is placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also "Substrate")

Ash mass is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also "Biomass" and "Dry mass")

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Bedload is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton"and "Periphyton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\ \pi r^3 \quad \text{cone } 1/3\ \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159....

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

Clostridium perfringens *(C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warm-blooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable bound-aries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure, as used in this report, is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "second-foot" sometimes is used synonymously with "cubic foot per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [$(ft^3/s)/d$]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also "Annual runoff")

Daily mean suspended-sediment concentration is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Sediment" and "Suspended-sediment concentration")

Daily record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

Diatoms *(Bacillariophyta)* are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton")

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment,

bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "dissolved" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4917 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n} \quad ,$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (See "Drainage area")

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also "Ash mass," "Biomass," and "Wet mass")

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also "Wet weight")

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also "Substrate embeddedness class")

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,* and their variants. (See also "Bacteria")

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL

preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

Euglenoids (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also "Phytoplankton")

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Filtered pertains to constituents in a water sample passed through a filter of specified pore diameter, most commonly 0.45 micrometer or less for inorganic analytes and 0.7 micrometer for organic analytes.

Filtered, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that has passed through a filter has been extracted. Complete recovery is not achieved by the extraction procedure and thus the analytical determination represents something less than 95 percent of the total constituent concentration in the sample. To achieve comparability of analytical data, equivalent extraction procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also "Phytoplankton")

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is exceeded. For example, the 90th percentile of river flow is the streamflow exceeded 90 percent of the time in the period of interest.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term "stage," although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae *(Chlorophyta)* are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating "moss" in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter (μm^3/cm^2). (See also "Phytoplankton" and "Periphyton")

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA Web site: *http://www.csc.noaa.gov/text/glossary.html* (see "High water")

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum \frac{(n)(a)}{N} \quad ,$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term 'non-detection value' (NDV).

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L} \quad ,$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_o} \quad .$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. See NOAA Website: *http://www.csc.noaa.gov/text/glossary.html* (see "Low water")

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration")

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also "Discharge")

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also "Datum")

Measuring point (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method code is a one-character code that identifies the analytical or field method used to determine a value stored in the National Water Information System (NWIS).

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) indicate the presence of detergents (anionic surfactants). The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. *See NOAA Web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See "North American Vertical Datum of 1988")

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

Nekton are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

Nonfilterable refers to the portion of the total residue retained by a filter.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They usually are microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and commonly are known as algae. (See also "Plankton")

Picocurie (PC, pCi) is one-trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method and is preferred for use with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable is the amount of a given constituent that is in solution after a representative water sample has been extracted or digested. Complete recovery is not achieved by the extraction or digestion and thus the determination represents something less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also "Bed material")

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

Salinity is the total quantity of dissolved salts, measured by weight in parts per thousand. Values in this report are calculated from specific conductance and temperature. Seawater has an average salinity of about 35 parts per thousand (for additional

information, refer to: Miller, R.L., Bradford, W.L., and Peters, N.E., 1988, Specific conductance: theoretical considerations and application to analytical quality control: U.S. Geological Survey Water-Supply Paper 2311, 16 p.)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See "Gage height")

Stage-discharge relation is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

Suspended is the amount (concentration) of undissolved material in a water-sediment mixture. Most commonly refers to that material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer filter has been extracted or digested. Complete recovery is not achieved by the extraction or digestion procedures and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also "Suspended")

Suspended sediment is sediment carried in suspension by the turbulent components of the fluid or by the Brownian movement (a law of physics). (See also "Sediment")

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also "Sediment")

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata,* is the following:

Kingdom:	Animal
Phylum:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also "Bedload," "Bedload discharge," "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also "Sediment," "Suspended-sediment load," and "Total load")

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is an expression of the optical properties of a liquid that causes light rays to be scattered and absorbed rather than transmitted in straight lines through water. Turbidity, which can make water appear cloudy or muddy, is caused by the presence of suspended and dissolved matter, such as clay, silt, finely divided organic matter, plankton and other microscopic organisms, organic acids, and dyes (ASTM International, 2003, D1889–00 Standard test method for turbidity of water, *in* ASTM International, Annual Book of ASTM Standards, Water and Environmental Technology, v. 11.01: West Conshohocken, Pennsylvania, 6 p.). The color of water, whether resulting from dissolved compounds or suspended particles, can affect a turbidity measurement. To ensure that USGS turbidity data can be understood and interpreted properly within the context of the instrument used and site conditions encountered, data from each instrument type are stored and reported in the National Water Informa-

tion System (NWIS) using parameter codes and measurement reporting units that are specific to the instrument type, with specific instruments designated by the method code. The respective measurement units, many of which also are in use internationally, fall into two categories: (1) the designations NTU, NTRU, BU, AU, and NTMU signify the use of a broad spectrum incident light in the wavelength range of 400-680 nanometers (nm), but having different light detection configurations; (2) The designations FNU, FNRU, FBU, FAU, and FNMU generally signify an incident light in the range between 780-900 nm, also with varying light detection configurations. These reporting units are equivalent when measuring a calibration solution (for example, formazin or polymer beads), but their respective instruments may not produce equivalent results for environmental samples. Specific reporting units are as follows:

NTU (Nephelometric Turbidity Units): white or broadband [400-680 nm] light source, 90 degree detection angle, one detector.

NTRU (Nephelometric Turbidity Ratio Units): white or broadband [400-680 nm] light source, 90 degree detection angle, multiple detectors with ratio compensation.

BU (Backscatter Units): white or broadband [400-680 nm] light source, 30 ± 15 degree detection angle (backscatter).

AU (Attenuation Units): white or broadband [400-680 nm] light source, 180 degree detection angle (attenuation).

NTMU (Nephelometric Turbidity Multibeam Units): white or broadband [400-680 nm] light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

FNU (Formazin Nephelometric Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, one detector.

FNRU (Formazin Nephelometric Ratio Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, multiple detectors, ratio compensation.

FBU (Formazin Backscatter Units): near infrared [780-900 nm] or monochrome light source, 30±15 degree detection angle.

FAU (Formazin Attenuation Units): near infrared [780-900 nm] light source, 180 degree detection angle.

FNMU (Formazin Nephelometric Multibeam Units): near infrared [780-900 nm] or monochrome light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

For more information please see http://water.usgs.gov/owq/FieldManual/Chapter6/6.7_contents.html.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See "Water-table aquifer")

Unfiltered pertains to the constituents in an unfiltered, representative water-suspended sediment sample.

Unfiltered, recoverable is the amount of a given constituent in a representative water-suspended sediment sample that has been extracted or digested. Complete recovery is not achieved by the extraction or digestion treatment and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

Vertical datum (See "Datum")

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2005, is called the "2005 water year."

Watershed (See "Drainage basin")

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.)

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be

found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

Wet mass is the mass of living matter plus contained water. (See also "Biomass" and "Dry mass")

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also "Dry weight")

WSP is used as an acronym for "Water-Supply Paper" in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also "Plankton")

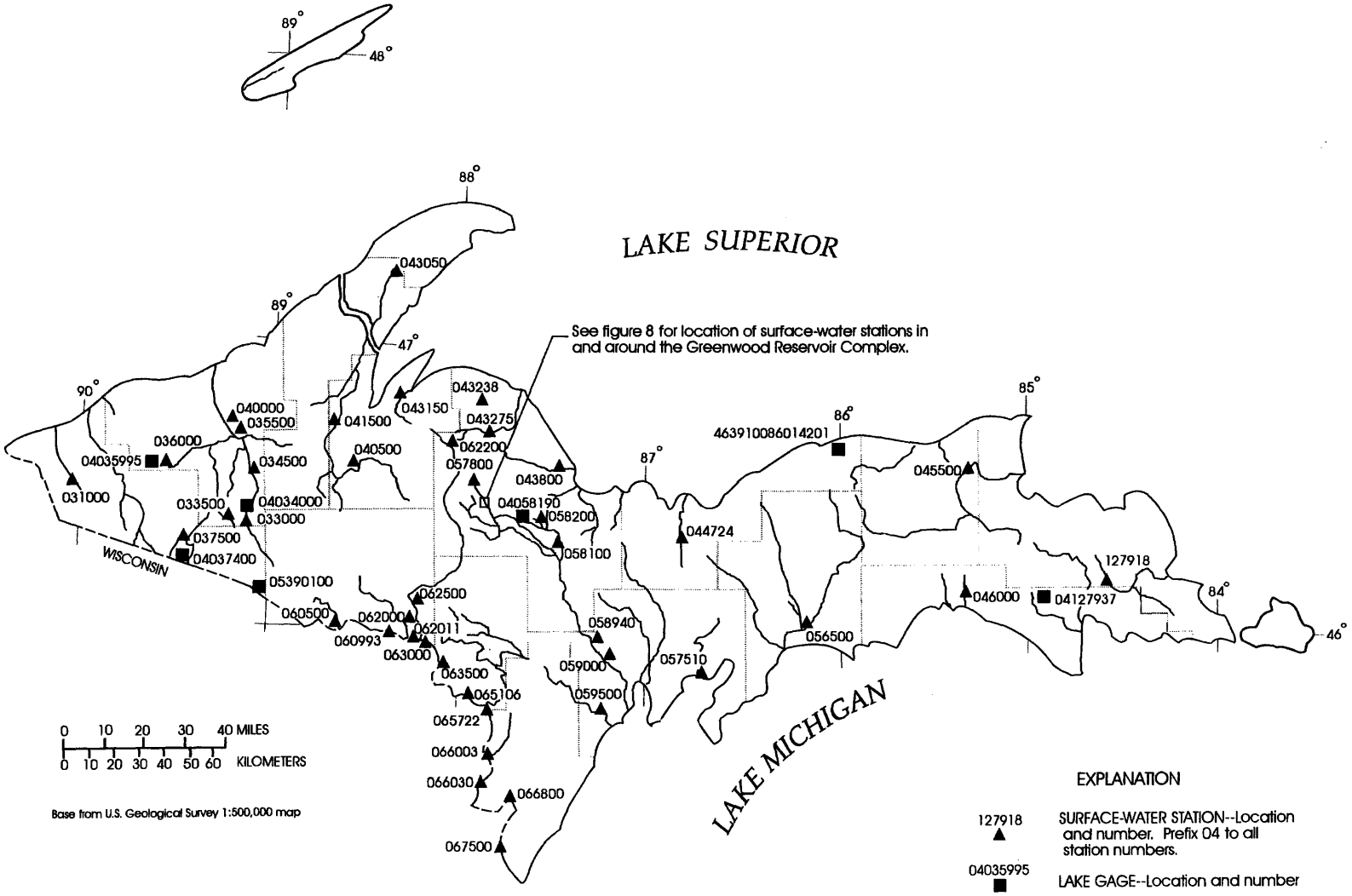


Figure 5. Identification number and location of active surface-water gaging stations in the Upper Peninsula of Michigan.

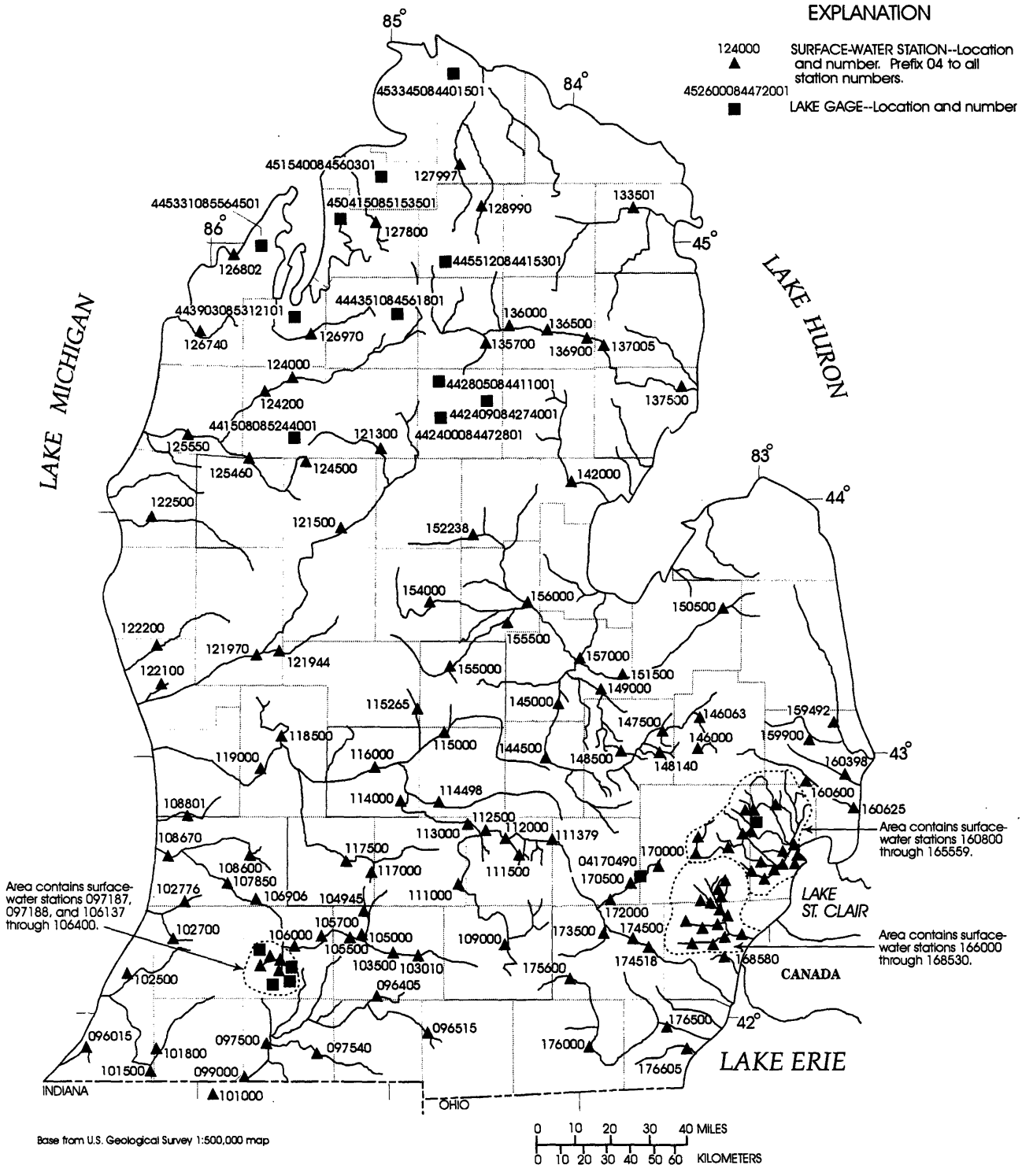


Figure 6. Identification number and location of active surface-water gaging stations in the Lower Peninsula of Michigan.

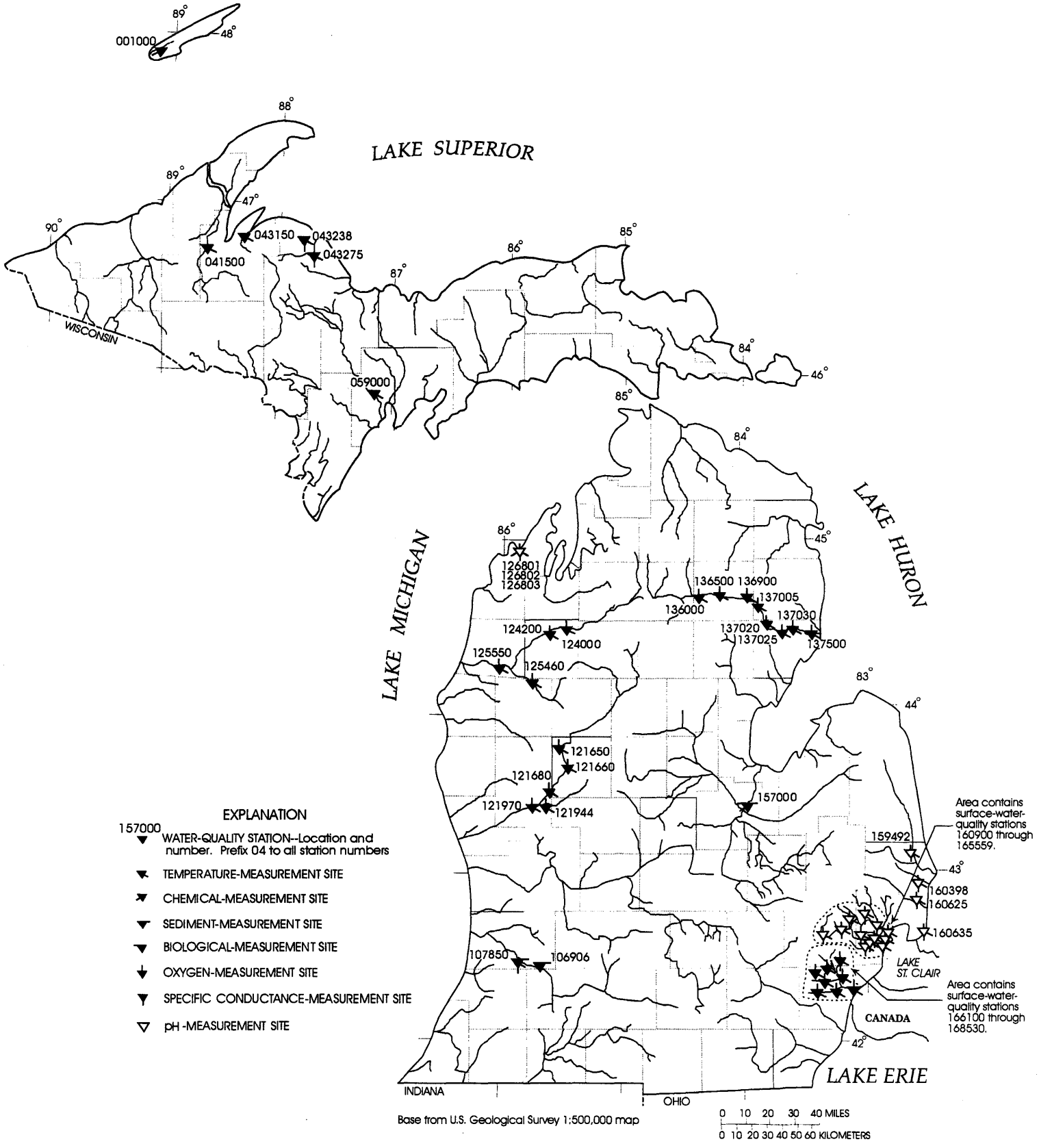


Figure 7. Identification number and location of active surface-water-quality stations in Michigan.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04001000 WASHINGTON CREEK AT WINDIGO, MI

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965-96, 2001, 2005.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1964 to September 1991.

INSTRUMENTATION.--Water-temperature recorder from Oct. 20, 1964 to Sept. 30, 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE (water years 1966-72, 1974-91): Maximum, 24.5°C, July 8, 1987; minimum, 0.0°C on many days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
AUG 09...	0930	.94	5.4	61	7.7	229	19.3	110	29.2	8.20	.58

Date	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
AUG 09...	5.71	10	7.54	<.1	14.4	3.8	151	.34	.36	<.04	<.06

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)
AUG 09...	<.008	<.02	.005	.011	10	<.20	.5	10	<.06	68	<.04

Date	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)
AUG 09...	<.8	.090	1.4	186	<.08	E.6	15.6	E.3	1.21	<.4	<.2

Date	Strontium, water, fltrd, ug/L (01080)	Thallium, water, fltrd, ug/L (01057)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	Aldrin, water, unfltrd ug/L (39330)	alpha-Endosulfan, water, unfltrd ug/L (39388)	Chlordane, technical, water, unfltrd ug/L (39350)	Dieldrin, water, unfltrd ug/L (39380)	Endrin, water, unfltrd ug/L (39390)	Heptachlor epoxide water unfltrd ug/L (39420)	Heptachlor, water, unfltrd ug/L (39410)
AUG 09...	56.7	<.04	1.5	1.2	<.001	<.001	<.1	<.001	<.002	<.001	<.001

Date	Lindane water, unfltrd ug/L (39340)	Mirex, water, unfltrd ug/L (39755)	p,p'-DDD, water, unfltrd ug/L (39360)	p,p'-DDE, water, unfltrd ug/L (39365)	p,p'-DDT, water, unfltrd ug/L (39370)	p,p'-Methoxychlor, water, unfltrd ug/L (39480)	PCBs, water, unfltrd ug/L (39516)	Toxaphene, water, unfltrd ug/L (39400)	Uranium natural water, fltrd, ug/L (22703)
AUG 09...	<.0020	<.001	<.002	<.002	<.002	<.003	<.1	<1	.10

STREAMS TRIBUTARY TO LAKE SUPERIOR

04031000 BLACK RIVER NEAR BESSEMER, MI

LOCATION.--Lat 46°30'41", long 90°04'28", in NE1/4 SE1/4 sec.32, T.48 N., R.46 W., Gogebic County, Hydrologic Unit 04020101, on right bank 450 ft downstream from bridge on county highway, 500 ft downstream from Powder Mill Creek, and 2.5 mi northwest of Bessemer.

DRAINAGE AREA.--200 mi^2.

PERIOD OF RECORD.--October 1954 to September 1982, October 2000 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,154.3 ft above sea level (levels by registered surveyor).

REMARKS.--Records good except for estimated daily discharges, which are fair. Prior to 1967, flow included some ground water pumped from mines at Bessemer. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	254	e76	e94	e50	e66	e1000	162	69	45	51	19
2	64	234	e76	e90	e50	e66	e1430	162	65	37	43	19
3	54	207	e76	e88	e50	e66	e1750	160	60	36	37	17
4	47	184	e76	e80	e53	e66	1870	156	51	e34	35	17
5	42	160	e76	e73	e57	e66	2000	146	60	e30	34	16
6	41	142	e76	e69	e62	e66	3240	140	79	29	29	18
7	37	133	e76	e67	e68	e66	3050	132	116	27	24	17
8	45	115	e76	e65	e75	e66	1980	139	106	26	22	15
9	47	104	e76	e63	e80	e66	1500	137	93	25	47	14
10	43	103	e76	e63	e81	e66	1140	147	85	23	131	15
11	41	95	e76	e61	e75	e66	877	142	96	22	100	15
12	39	84	e76	e61	e75	e65	681	132	86	20	79	15
13	38	81	e76	e60	e72	e65	503	145	77	19	56	36
14	42	71	e76	e60	e66	e64	384	182	146	17	45	82
15	43	64	e76	e60	e65	e63	269	214	314	17	37	82
16	66	63	e76	e58	e63	e60	223	231	240	32	32	82
17	101	65	e76	e57	e63	e60	210	195	204	24	44	66
18	106	67	e76	e54	e63	e60	217	222	168	25	55	55
19	110	67	e76	e54	e63	e59	297	223	138	25	45	62
20	99	93	e76	e54	e63	e59	648	213	112	23	39	90
21	94	109	e76	e54	e63	e58	493	170	92	20	34	96
22	89	100	e75	e53	e63	e58	316	161	73	17	29	91
23	117	96	e73	e52	e67	e58	224	150	62	16	26	74
24	162	78	e73	e50	e67	e59	202	150	52	49	26	67
25	144	70	e72	e50	e67	e61	198	133	40	160	25	66
26	128	77	e72	e50	e67	e69	180	125	34	159	24	109
27	105	78	e74	e50	e67	e77	187	114	34	121	24	122
28	97	e77	e75	e50	e67	e97	188	115	44	107	22	131
29	201	e77	e76	e50	---	e179	179	101	37	107	20	145
30	254	e76	e81	e50	---	e334	168	89	46	83	21	141
31	317	---	e92	e50	---	e556	---	78	---	67	20	---
TOTAL	2850	3224	2359	1890	1822	2887	25604	4766	2879	1442	1256	1794
MEAN	91.9	107	76.1	61.0	65.1	93.1	853	154	96.0	46.5	40.5	59.8
MAX	317	254	92	94	81	556	3240	231	314	160	131	145
MIN	37	63	72	50	50	58	168	78	34	16	20	14
CFSM	0.46	0.54	0.38	0.30	0.33	0.47	4.27	0.77	0.48	0.23	0.20	0.30
IN.	0.53	0.60	0.44	0.35	0.34	0.54	4.76	0.89	0.54	0.27	0.23	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2005, BY WATER YEAR (WY)

MEAN	192	212	107	62.9	55.4	205	1162	386	177	90.0	98.3	121
MAX	597	496	289	124	115	816	2148	810	475	362	590	553
(WY)	2003	1976	2002	1969	1981	1973	2002	2003	1974	1982	1972	1977
MIN	15.2	15.9	13.3	12.0	14.9	52.7	498	65.9	32.9	21.2	12.2	8.19
(WY)	1977	1977	1977	1977	1977	1964	1968	1977	1977	1963	1976	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1955 - 2005	
ANNUAL TOTAL	81580		52773			
ANNUAL MEAN	223		145		238	
HIGHEST ANNUAL MEAN					338	2002
LOWEST ANNUAL MEAN					145	2005
HIGHEST DAILY MEAN	4600	Apr 19	3240	Apr 6	12700	Apr 24 1960
LOWEST DAILY MEAN	16	Jul 28	14	Sep 9	6.8	(a)
ANNUAL SEVEN-DAY MINIMUM	20	Aug 2	16	Sep 6	7.2	Sep 28 1976
MAXIMUM PEAK FLOW			3970	Apr 6	(b)14800	Apr 24 1960
MAXIMUM PEAK STAGE			8.27	Apr 6	(c)14.27	Apr 24 1960
INSTANTANEOUS LOW FLOW			13	(d)		
ANNUAL RUNOFF (CFSM)	1.11		0.723		1.19	
ANNUAL RUNOFF (INCHES)	15.17		9.82		16.20	
10 PERCENT EXCEEDS	625		208		554	
50 PERCENT EXCEEDS	76		72		85	
90 PERCENT EXCEEDS	33		26		29	

(a) Sept. 25, Oct. 1-3, 1976.
(b) From rating curve extended above 5,300 ft^3/s on basis of slope-area measurement of peak flow.
(c) From floodmark.
(d) Sept. 9, 12.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04033000 MIDDLE BRANCH ONTONAGON RIVER NEAR PAULDING, MI

LOCATION.--Lat 46°21'25", long 89°04'38", in SE1/4 NE1/4 sec.29, T.46 N., R.38 W., Ontonagon County, Hydrologic Unit 04020102, Ottawa National Forest, on right bank 25 ft downstream from bridge on Forest Service Road 5250, 2.4 mi upstream from Bond Falls Reservoir, and 5.7 mi southeast of Paulding.

DRAINAGE AREA.--164 mi^2.

PERIOD OF RECORD.--June 1942 to September 1995, October 2000 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,485.66 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Sept. 28, 1942, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	180	e102	e138	e90	e90	e158	137	99	202	92	77
2	126	156	e100	e136	e91	e90	e180	138	96	170	88	74
3	125	141	e100	e128	e93	e90	e218	135	92	147	85	71
4	113	134	e100	e110	e94	e90	e288	131	90	129	84	70
5	103	128	e100	e104	e98	e90	423	124	103	121	80	70
6	99	123	e100	e103	e102	e92	524	122	129	120	77	70
7	95	120	e100	e100	e104	e95	644	119	125	114	73	70
8	95	115	e100	e99	e118	e92	632	118	117	108	71	69
9	99	112	e100	e98	e125	e91	561	117	111	103	85	69
10	95	112	e107	e97	e128	e92	475	123	103	98	99	69
11	93	118	e120	e97	e121	e91	409	132	110	93	97	71
12	90	116	e110	e97	e104	e91	358	137	125	88	91	75
13	89	111	e93	e97	e99	e89	308	132	126	85	83	101
14	91	107	e115	e96	e93	e87	267	158	190	83	79	110
15	97	106	e145	e96	e93	e87	237	164	301	80	76	103
16	111	105	e141	e95	e94	e86	217	164	286	78	74	94
17	115	107	e136	e95	e95	e86	204	150	239	76	72	89
18	111	109	e132	e95	e95	e85	195	140	180	77	78	84
19	108	107	e128	e95	e95	e85	186	144	149	76	103	94
20	104	120	e126	e93	e96	e85	200	151	130	75	114	115
21	102	130	e122	e93	e96	e85	189	139	118	74	105	111
22	104	123	e122	e92	e97	e85	174	135	112	72	95	100
23	134	120	e122	e90	e98	e86	163	142	106	71	88	97
24	194	119	e116	e90	e97	e88	153	137	101	78	85	94
25	171	e108	e106	e90	e97	e90	146	126	95	106	82	93
26	146	e101	e95	e89	e92	e93	146	120	91	120	81	116
27	134	e103	e96	e88	e91	e96	154	117	91	111	83	124
28	129	e112	e99	e88	e90	e104	150	115	244	104	82	116
29	150	e114	e108	e88	---	e116	143	113	296	104	82	122
30	185	e108	e124	e88	---	e126	139	109	236	103	80	116
31	202	---	e130	e88	---	e141	---	103	---	97	78	---
TOTAL	3698	3565	3495	3053	2786	2894	8241	4092	4391	3163	2642	2734
MEAN	119	119	113	98.5	99.5	93.4	275	132	146	102	85.2	91.1
MAX	202	180	145	138	128	141	644	164	301	202	114	124
MIN	88	101	93	88	90	85	139	103	90	71	71	69
CFSM	0.73	0.72	0.69	0.60	0.61	0.57	1.68	0.80	0.89	0.62	0.52	0.56
IN.	0.84	0.81	0.79	0.69	0.63	0.66	1.87	0.93	1.00	0.72	0.60	0.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	157	160	127	108	104	141	359	267	194	145	123	137
MAX	377	293	186	168	176	352	586	591	438	414	267	308
(WY)	1955	1989	1952	1969	1984	1973	2002	1965	1944	1953	1978	1951
MIN	76.5	92.2	81.9	78.4	73.9	82.7	152	114	89.4	80.7	69.8	76.4
(WY)	1949	1949	1964	2001	2001	1965	1987	1977	1948	1990	1990	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	55275		44754			
ANNUAL MEAN	151		123		168	
HIGHEST ANNUAL MEAN					226	1943
LOWEST ANNUAL MEAN					107	1948
HIGHEST DAILY MEAN	1080	Apr 20	644	Apr 7	2000	Apr 30 1951
LOWEST DAILY MEAN	70	Feb 11	69	Sep 8	57	Aug 8 1990
ANNUAL SEVEN-DAY MINIMUM	70	Feb 11	70	Sep 4	61	Aug 7 1990
MAXIMUM PEAK FLOW			650	Apr 7	(a)2050	Apr 30 1951
MAXIMUM PEAK STAGE			6.45	Apr 7	10.60	Apr 17 2002
INSTANTANEOUS LOW FLOW					(b)27	Nov 22 1946
ANNUAL RUNOFF (CFSM)	0.921		0.748		1.03	
ANNUAL RUNOFF (INCHES)	12.54		10.15		13.95	
10 PERCENT EXCEEDS	270		166		290	
50 PERCENT EXCEEDS	111		103		127	
90 PERCENT EXCEEDS	80		82		88	

(a) Gage height 10.0 ft, from floodmark.
(b) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04033500 BOND FALLS CANAL NEAR PAULDING, MI

LOCATION.--Lat 46°23'57", long 89°08'47", in SW1/4 NE1/4 sec.11, T.46 N., R.39 W., Ontonagon County, Hydrologic Unit 04020102, on right bank 40 ft upstream from intake to pipeline No. 2, 0.8 mi downstream from Bond Falls Reservoir on Middle Branch Ontonagon River, and 1.6 mi east of Paulding.

PERIOD OF RECORD.--July 1942 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,441.59 ft above sea level. Prior to Oct. 1, 1968, nonrecording gage at same site and at datum 3.00 ft higher.

REMARKS.--Records good except for daily discharges below 5.0 ft^3/s, which are poor. Canal diverts water from Bond Falls Reservoir (station 04034000) to South Branch Ontonagon River; water is used for power production at Victoria Dam near Rockland. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	1.1	28	28	28	27	28	27	24	32	71	121
2	116	0.40	28	28	28	27	28	27	24	28	71	120
3	116	0.40	28	28	28	27	28	27	27	57	71	120
4	113	0.40	28	28	28	27	29	27	30	91	71	124
5	104	0.30	28	28	28	28	29	26	30	122	71	134
6	98	0.40	28	28	28	28	31	24	30	160	80	140
7	98	0.30	28	28	28	28	30	32	30	159	89	140
8	98	0.30	28	28	28	28	30	39	31	159	89	149
9	98	0.30	28	28	28	28	31	39	31	158	94	157
10	98	0.40	28	28	28	28	31	39	31	158	99	157
11	98	0.40	28	28	28	28	19	39	31	157	87	156
12	98	0.20	28	28	28	28	4.5	39	31	157	49	156
13	99	0.10	28	28	28	28	3.6	33	31	156	20	134
14	99	0.10	28	27	28	28	1.9	27	32	156	24	107
15	99	16	28	e27	28	28	1.8	27	31	156	62	100
16	99	55	28	e27	28	28	1.6	27	30	155	105	89
17	98	32	28	e27	28	27	1.5	27	30	155	140	101
18	82	28	28	e27	28	27	1.7	27	30	142	159	121
19	53	28	28	27	28	27	14	27	31	126	158	132
20	37	28	28	27	28	27	77	27	31	122	151	133
21	30	28	28	27	28	27	53	27	44	122	135	89
22	26	28	28	e27	28	27	27	27	57	122	134	60
23	26	28	e28	e27	28	27	27	28	57	121	134	60
24	26	28	e28	e27	28	27	27	27	57	121	129	60
25	26	28	e28	27	28	27	27	28	57	85	124	60
26	15	28	e28	27	27	27	27	29	57	31	123	61
27	4.5	28	e28	e27	28	28	27	29	73	25	123	60
28	4.0	28	28	e27	27	28	27	29	91	45	122	61
29	3.7	28	28	27	---	28	27	29	91	71	122	60
30	2.6	28	28	27	---	28	27	29	67	71	121	60
31	0.90	---	28	28	---	28	---	27	---	71	121	---
TOTAL	2079.70	472.10	868	851	782	854	717.6	916	1247	3491	3149	3222
MEAN	67.1	15.7	28.0	27.5	27.9	27.5	23.9	29.5	41.6	113	102	107
MAX	116	55	28	28	28	28	77	39	91	160	159	157
MIN	0.90	0.10	28	27	27	27	1.5	24	24	25	20	60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	106	94.9	134	176	189	127	30.8	108	160	165	157	134
MAX	296	253	292	303	305	287	194	310	312	300	320	275
(WY)	1998	1972	1972	1986	1969	1984	1973	1986	1966	1997	1947	1944
MIN	0.00	6.24	8.68	27.5	27.9	2.21	0.33	0.92	3.37	14.5	2.98	1.37
(WY)	1965	1944	2001	2005	2005	1959	1962	1962	1943	1949	1966	1959

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	16559.50		18649.40			
ANNUAL MEAN	45.2		51.1		132	
HIGHEST ANNUAL MEAN					206	1983
LOWEST ANNUAL MEAN					44.2	2004
HIGHEST DAILY MEAN	129	Jul 30	160	Jul 6	368	May 5 1960
LOWEST DAILY MEAN	0.10	Nov 13	0.10	Nov 13	(a)	
ANNUAL SEVEN-DAY MINIMUM	0.26	Nov 8	0.26	Nov 8	(b)	
10 PERCENT EXCEEDS	99		123		293	
50 PERCENT EXCEEDS	32		28		125	
90 PERCENT EXCEEDS	27		26		5.5	

(a) No flow for several days in 1963-70, 1973-75, 1982, 1987, 1991, 1994, 2000.
(b) No flow in 1963-65, 1967, 1975, 1987, 1991.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04034000 BOND FALLS RESERVOIR NEAR PAULDING, MI

LOCATION.--Lat 46°24'29", long 89°07'42", in SW1/4 sec.1, T.46 N., R.39 W., Ontonagon County, Hydrologic Unit 04020102, at Bond Falls Dam on Middle Branch Ontonagon River, 2.5 mi east of Paulding.

DRAINAGE AREA.--190 mi^2.

PERIOD OF RECORD.--June 1942 to current year. Prior to October 1950, monthend contents only published in WSP 1307.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is 1,335.59 ft above sea level.

REMARKS.--Reservoir is formed by earthfill and concrete dam with one taintor gate; dam completed in 1937. Capacity of reservoir, 41,300 acre-ft between gage heights of 120 ft (maximum drawdown) and 141 ft (full pond). Dead storage unknown. Water diverted to South Branch Ontonagon River through Bond Falls Canal (station 04033500); water used for power production at Victoria Dam near Rockland.

COOPERATION.--Gage-height record provided by Upper Peninsula Power Co. and converted to acre-feet by U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD (SINCE 1947).--Maximum contents observed, 42,980 acre-ft, July 3, 1953, gage height, 141.7 ft, of which 1,680 acre-ft was uncontrolled storage; no usable storage at times; minimum gage height observed, 116.0 ft, Mar. 21, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 35,450 acre-ft, July 1, 5, 6, gage height, 138.5 ft; minimum observed, 17,600 acre-ft, Oct. 16-20, gage height, 130.0 ft.

MONTHEND GAGE HEIGHT AND CONTENTS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Change in contents (equivalent in ft^3/s)
Sept. 30	131.4	20,300		
Oct. 31	131.0	19,500	-800	-13.0
Nov. 30	131.6	20,700	+1,200	+20.2
Dec. 31	132.0	21,500	+800	+13.0
CAL YR 2004			-800	-1.1
Jan. 31	131.8	21,100	-400	-6.5
Feb. 29	131.8	21,100	0	0.0
Mar. 31	132.0	21,500	+400	+6.5
Apr. 30	137.1	32,230	+10,730	+180.0
May 31	137.5	33,150	+920	+15.0
June 30	138.4	35,220	+2,070	+34.8
July 31	136.0	29,800	-5,420	-88.1
Aug. 31	133.8	25,100	-4,700	-76.4
Sept. 30	132.0	21,500	-3,600	-60.5
WTR YR 2005			+1,200	+1.7

STREAMS TRIBUTARY TO LAKE SUPERIOR

04034500 MIDDLE BRANCH ONTONAGON RIVER NEAR TROUT CREEK, MI

LOCATION.--Lat 46°28'40", long 89°05'25", in SW1/4 sec.8, T.47 N., R.38 W., Ontonagon County, Hydrologic Unit 04020102, on right bank 0.1 mi upstream from State Highway 28, 3.8 mi west of village of Trout Creek, and 7.5 mi downstream from Bond Falls Reservoir.

DRAINAGE AREA.--203 mi^2.

PERIOD OF RECORD.--June 1942 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,132.03 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Nov. 4, 1942, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Bond Falls Reservoir (station 04034000) 7.5 mi upstream. Diversion to South Branch Ontonagon River 8.5 mi upstream by Bond Falls Canal (station 04033500). Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e91	e108	e98	86	104	102	147	126	92	77	63	64
2	e95	e102	e98	87	105	101	172	119	78	76	63	65
3	e95	e98	e90	84	104	e102	177	109	76	76	63	67
4	e95	e98	e84	83	104	103	173	101	75	76	64	66
5	e95	e98	e84	e84	105	102	161	97	72	76	63	64
6	e94	e98	e84	84	107	103	210	95	78	77	61	61
7	e94	e98	e84	85	106	103	167	88	86	76	62	55
8	e94	e98	e84	89	105	e105	142	75	83	75	62	55
9	e94	e98	e84	88	103	e105	139	83	80	76	69	55
10	e93	e98	e84	87	105	e105	138	98	78	76	63	53
11	e93	e98	e84	85	105	105	138	94	84	75	62	52
12	e93	e98	e86	e86	104	107	138	87	100	75	60	54
13	e93	e98	e88	e89	105	e105	138	91	100	74	60	59
14	e93	e98	e86	e89	105	104	139	91	110	74	60	54
15	e93	e98	e84	e89	103	103	139	93	103	74	61	54
16	e93	e98	e82	e89	e104	112	131	110	95	75	63	55
17	e75	e98	80	e89	107	103	129	127	88	75	63	55
18	e66	e98	e78	e89	103	e103	130	105	86	75	63	55
19	e67	e98	e80	e90	107	103	132	99	84	75	63	61
20	e67	e98	e70	e93	e106	103	129	112	82	74	62	57
21	e67	e98	84	93	106	103	110	140	79	74	62	55
22	e67	e98	92	e93	105	104	103	140	79	71	62	54
23	e75	e98	e86	89	108	103	98	137	78	65	61	53
24	e98	e98	e86	91	103	102	94	114	77	66	60	52
25	e101	e98	e86	93	102	102	100	98	78	64	60	54
26	e100	e98	e88	94	e103	103	107	93	77	65	60	57
27	e101	e98	e88	e103	104	104	105	96	80	64	60	53
28	e107	e98	91	104	104	108	102	107	87	67	60	55
29	e110	e98	89	105	---	115	116	104	80	65	61	53
30	e114	e98	89	104	---	131	127	103	82	64	64	52
31	e111	---	90	104	---	148	---	101	---	63	63	---
TOTAL	2824	2954	2661	2818	2932	3302	4031	3233	2527	2235	1923	1699
MEAN	91.1	98.5	85.8	90.9	105	107	134	104	84.2	72.1	62.0	56.6
MAX	114	108	98	105	108	148	210	140	110	77	69	67
MIN	66	98	70	83	102	101	94	75	72	63	60	52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	57.1	58.1	52.1	48.5	48.2	52.3	99.6	127	95.6	69.5	58.4	54.5
MAX	221	239	181	110	107	118	530	745	461	253	105	216
(WY)	1943	1943	2002	2004	2004	1943	2002	1996	1943	1953	1952	1942
MIN	41.2	33.1	32.0	31.7	31.0	32.4	36.5	38.8	50.1	49.3	42.6	43.2
(WY)	2000	1949	1949	1949	1949	1949	1949	1949	1998	1998	1944	1967

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	46341		33139			
ANNUAL MEAN	127		90.8		68.1	
HIGHEST ANNUAL MEAN					187	1943
LOWEST ANNUAL MEAN					42.4	1949
HIGHEST DAILY MEAN	617	Apr 22	210	Apr 6	(e)2030	Apr 19 2002
LOWEST DAILY MEAN	66	Oct 18	52	Sep 11	30	Dec 1 1948
ANNUAL SEVEN-DAY MINIMUM	69	Oct 17	54	Sep 24	31	Mar 6 1949
MAXIMUM PEAK FLOW			(a)253	Apr 6	2120	Apr 19 2002
MAXIMUM PEAK STAGE			(b)2.52	Jan 17	5.61	Apr 19 2002
INSTANTANEOUS LOW FLOW					14	(c)
10 PERCENT EXCEEDS	182		110		78	
50 PERCENT EXCEEDS	105		93		50	
90 PERCENT EXCEEDS	90		61		44	

(a) Gage height 2.28 ft.
(b) Backwater from ice.
(c) Sometime during period Jan. 23 to Feb. 13, 1947, result of ice jam upstream.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04035500 MIDDLE BRANCH ONTONAGON RIVER NEAR ROCKLAND, MI

LOCATION.--Lat 46°41'57", long 89°09'36", in SE1/4 sec.27, T.50 N., R.39 W., Ontonagon County, Hydrologic Unit 04020102, on left bank 10 ft upstream from bridge on U.S. Highway 45, 700 ft downstream from East Branch, and 2.8 mi southeast of Rockland.

DRAINAGE AREA.--671 mi^2.

PERIOD OF RECORD.--July 1942 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 661.1 ft above sea level. Prior to Apr. 1, 1959, nonrecording gage at site 400 ft upstream at same datum. Apr. 1, 1959, to Oct. 21, 1968, nonrecording gage at present site and datum.

REMARKS.--Records fair. Regulation by Bond Falls Reservoir (station 04034000) 30.0 mi upstream. Diversion to South Branch Ontonagon River by Bond Falls Canal (station 04033500) 31.0 mi upstream. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	e500	e239	e339	e161	e331	e1810	414	295	424	257	192
2	284	458	e235	e314	e167	338	e2310	430	264	332	248	182
3	287	405	e237	e312	e193	e346	e2550	414	246	283	230	184
4	269	371	e237	e310	e235	e346	e3140	382	242	259	235	185
5	259	343	e235	e307	e319	e344	3040	350	257	255	222	181
6	255	323	e235	e296	e377	350	6600	338	376	249	206	174
7	254	307	e233	e272	e412	e336	5080	332	379	241	195	186
8	258	289	e227	e262	e456	e342	2540	312	323	232	193	201
9	264	274	e226	e250	e477	e329	1910	306	289	226	199	203
10	263	272	e226	e221	e459	e331	1530	400	266	222	240	208
11	259	273	e222	e215	e448	e327	1230	419	267	217	240	210
12	258	263	e219	e209	e410	e321	1010	377	301	210	217	231
13	260	245	e217	e200	e389	e319	840	601	326	207	203	322
14	259	239	e215	e191	e377	e316	732	925	580	203	195	342
15	264	253	e214	e187	e361	e310	663	1200	2740	202	190	291
16	312	235	e212	e185	e352	306	610	1060	1460	202	190	263
17	442	235	e210	e179	e354	301	579	763	838	204	198	255
18	380	234	e210	e178	e347	310	560	583	599	207	217	253
19	340	225	e204	e175	343	301	615	628	442	202	228	273
20	322	280	e199	e169	e344	306	1030	670	336	198	222	374
21	300	354	e199	e167	332	306	814	562	295	196	212	371
22	284	304	e199	e166	344	304	638	655	269	194	204	324
23	295	269	e199	e165	e331	e314	559	951	253	184	198	305
24	568	244	e199	e165	e314	e316	501	758	240	251	194	299
25	594	221	e199	e163	e314	e321	450	549	226	251	194	307
26	454	218	e199	e162	e304	e370	446	431	218	222	194	e332
27	385	242	e199	e161	313	e503	435	375	229	215	194	e356
28	338	e275	e207	e161	322	e666	430	372	419	213	193	e389
29	e366	e266	e249	e161	---	e782	412	363	517	226	190	405
30	e583	e239	e365	e161	---	e1040	424	341	444	231	193	399
31	e650	---	e371	e161	---	e1330	---	316	---	228	194	---
TOTAL	10562	8656	7037	6564	9555	12762	43488	16577	13936	7186	6485	8197
MEAN	341	289	227	212	341	412	1450	535	465	232	209	273
MAX	650	500	371	339	477	1330	6600	1200	2740	424	257	405
MIN	254	218	199	161	161	301	412	306	218	184	190	174

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	429	445	319	262	274	588	1584	776	532	355	322	341
MAX	1068	1145	618	378	634	1652	3078	1974	1396	1181	1091	1224
(WY)	2003	1989	1983	1946	1984	1973	2002	1996	1944	1949	1953	1942
MIN	191	214	190	193	187	183	385	222	189	182	173	175
(WY)	1949	1949	2001	1995	1949	1965	1987	2000	1992	1988	1976	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	246887		151005			
ANNUAL MEAN	675		414		516	
HIGHEST ANNUAL MEAN					756	1943
LOWEST ANNUAL MEAN					331	1987
HIGHEST DAILY MEAN	11100	Apr 19	6600	Apr 6	16300	Aug 22 1942
LOWEST DAILY MEAN	199	Dec 20	161	Jan 27	145	Dec 3 1963
ANNUAL SEVEN-DAY MINIMUM	199	Dec 20	161	Jan 26	161	Jan 26 2005
MAXIMUM PEAK FLOW			(a)9080	Apr 6	(b)27000	Aug 22 1942
MAXIMUM PEAK STAGE			(c)11.35	Mar 31	(d)21.2	Aug 22 1942
INSTANTANEOUS LOW FLOW					(f)110	(g)
10 PERCENT EXCEEDS	1660		612		1000	
50 PERCENT EXCEEDS	289		289		288	
90 PERCENT EXCEEDS	230		194		207	

(a) Gage height 11.33 ft.
(b) From rating curve extended above 7,500 ft^3/s on basis of slope-area measurement of peak flow.
(c) Backwater from ice.
(d) From floodmark.
(e) Estimated.
(f) Result of freezeup.
(g) Dec. 2, 3, 2000.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04035995 LAKE GOGEBIC NEAR BERGLAND, MI

LOCATION.--Lat 46°35'19", long 89°32'52", in SW1/4 NW1/4 sec.3, T.48 N., R.42 W., Ontonagon County, Hydrologic Unit 04020102, at upstream side of dam on lake outlet, 1.0 mi southeast of Bergland, and 4.3 mi east of Merriweather.

DRAINAGE AREA.--162 mi^2.

PERIOD OF RECORD.--July 1958 to September 1959 (no winter record), February 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,292.70 ft above sea level. July 1958 to September 1959, nonrecording gage at mouth of Merriweather Creek at different datum. February 1969 to September 1988, at datum 1.00 ft higher.

REMARKS.--Lake Gogebic is used as a storage reservoir (capacity 35,200 acre-ft) by Upper Peninsula Power Co. for power production at Victoria Dam near Rockland. Lake level is controlled at the outlet by a concrete and steel dam with removable flash boards. Major inlets to Lake Gogebic are Slate River, Trout Brook, and Merriweather Creek. Streamflow records are currently collected at the outlet, West Branch Ontonagon River (station 04036000). Surface area of lake is 14,780 acres. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.10 ft, present datum, Apr. 19, 2002; minimum daily, 0.68 ft, present datum, Apr. 5, 6, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum daily gage height, 3.40 ft, June 19; minimum, 0.94 ft, Mar. 28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.25	2.30	2.20	2.31	1.72	1.37	1.52	3.28	3.16	3.20	2.78	2.43
2	2.31	2.33	2.20	2.34	1.70	1.35	1.65	3.26	3.16	3.21	2.79	2.34
3	2.26	2.34	2.22	2.34	1.67	1.33	1.79	3.27	3.16	3.22	2.77	2.31
4	2.19	2.34	2.21	2.32	1.65	1.32	1.91	3.28	3.16	3.15	2.79	2.30
5	2.25	2.37	2.21	2.31	1.64	1.30	2.05	3.29	3.20	3.10	2.73	2.33
6	2.20	2.32	2.20	2.30	1.61	1.29	2.31	3.26	3.26	3.10	2.73	2.32
7	2.20	2.28	2.20	2.29	1.60	1.27	2.59	3.28	3.19	3.10	2.70	2.26
8	2.19	2.28	2.21	2.27	1.59	1.26	2.73	3.30	3.19	3.10	2.72	2.26
9	2.16	2.33	2.20	2.26	1.59	1.25	2.80	3.32	3.20	3.09	2.68	2.26
10	2.14	2.29	2.20	2.23	1.58	1.23	2.84	3.33	3.20	3.07	2.70	2.27
11	2.14	2.29	2.21	2.19	1.57	1.23	2.85	3.28	3.21	3.07	2.69	2.29
12	2.14	2.28	2.25	2.17	1.55	1.22	2.84	3.31	3.23	3.04	2.69	2.27
13	2.10	2.28	2.30	2.17	1.53	1.22	2.82	3.35	3.19	3.01	2.64	2.37
14	2.09	2.26	2.31	2.16	1.54	1.19	2.85	3.35	3.26	2.99	2.61	2.35
15	2.10	2.22	2.31	2.14	1.53	1.18	2.92	3.35	3.31	2.99	2.60	2.33
16	2.14	2.24	2.29	2.11	1.51	1.17	2.94	3.35	3.35	2.97	2.56	2.31
17	2.13	2.22	2.29	2.06	1.50	1.16	2.96	3.35	3.36	3.00	2.56	2.30
18	2.12	2.21	2.29	2.02	1.50	1.14	3.01	3.35	3.39	3.02	2.57	2.27
19	2.13	2.19	2.31	2.01	1.48	1.13	3.04	3.35	3.40	2.96	2.59	2.27
20	2.14	2.26	2.30	1.99	1.48	1.12	3.12	3.34	3.39	2.95	2.60	2.32
21	2.14	2.27	2.32	1.96	1.47	1.11	3.18	3.35	3.36	2.89	2.55	2.30
22	2.17	2.25	2.32	1.95	1.45	1.09	3.14	3.35	3.35	2.88	2.49	2.25
23	2.19	2.23	2.31	1.94	1.43	1.08	3.14	3.31	3.39	2.88	2.48	2.25
24	2.22	2.18	2.31	1.91	1.41	1.08	3.17	3.31	3.32	2.90	2.49	2.26
25	2.21	2.17	2.30	1.88	1.38	1.06	3.21	3.32	3.26	2.86	2.48	2.21
26	2.17	2.17	2.30	1.86	1.37	1.04	3.25	3.33	3.25	2.81	2.47	2.28
27	2.17	2.17	2.30	1.83	1.37	1.04	3.26	3.25	3.28	2.82	2.45	2.29
28	2.24	2.22	2.30	1.81	1.37	1.02	3.27	3.23	3.26	2.83	2.45	2.26
29	2.24	2.26	2.28	1.79	---	1.05	3.27	3.20	3.25	2.80	2.40	2.29
30	2.32	2.25	2.28	1.76	---	1.11	3.27	3.17	3.35	2.81	2.38	2.30
31	2.29	---	2.31	1.74	---	1.32	---	3.15	---	2.79	2.38	---
MEAN	2.19	2.26	2.27	2.08	1.53	1.18	2.79	3.30	3.27	2.99	2.60	2.29
MAX	2.32	2.37	2.32	2.34	1.72	1.37	3.27	3.35	3.40	3.22	2.79	2.43
MIN	2.09	2.17	2.20	1.74	1.37	1.02	1.52	3.15	3.16	2.79	2.38	2.21

WTR YR 2005 MEAN 2.40 MAX 3.40 MIN 1.02

STREAMS TRIBUTARY TO LAKE SUPERIOR

04036000 WEST BRANCH ONTONAGON RIVER NEAR BERGLAND, MI

LOCATION.--Lat 46°35'15", long 89°32'30", in SW1/4 NE1/4 sec.3, T.48 N., R.42 W., Ontonagon County, Hydrologic Unit 04020102, on right bank 0.4 mi downstream from dam at outlet of Lake Gogebic, and 1.5 mi east of Bergland.

DRAINAGE AREA.--162 mi^2.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,290.81 ft above sea level. Prior to Nov. 5, 1942, nonrecording gage 0.4 mi upstream at different datum.

REMARKS.--Records good. Flow regulated by Lake Gogebic (station 04035995). Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	36	80	89	184	167	193	56	55	103	34	31
2	33	37	80	93	181	164	219	55	36	103	35	29
3	29	38	81	92	177	161	246	55	35	104	35	32
4	30	37	81	137	173	159	275	55	35	e89	35	34
5	32	38	79	159	170	157	307	56	39	e71	34	33
6	31	36	79	158	169	153	373	55	76	53	34	32
7	31	35	79	157	167	149	454	55	98	53	34	32
8	31	35	79	154	166	150	499	57	97	53	34	31
9	30	36	77	154	164	147	523	58	55	53	34	32
10	29	35	78	154	163	145	534	59	34	53	34	31
11	29	34	79	184	161	145	540	57	71	54	33	32
12	34	78	83	193	157	142	537	58	102	53	34	32
13	32	92	87	197	155	140	531	113	99	52	34	33
14	31	90	88	e194	157	137	245	208	107	46	33	33
15	32	87	87	188	155	136	59	206	112	38	33	32
16	32	87	87	187	152	134	50	207	118	35	34	32
17	31	84	86	186	152	132	48	205	77	34	33	32
18	30	84	86	207	151	129	47	205	61	33	31	32
19	30	82	88	232	148	127	44	205	52	33	31	32
20	31	88	89	229	146	127	50	204	48	33	35	31
21	31	89	90	225	146	125	54	206	98	33	36	33
22	33	88	90	224	144	123	53	209	120	34	35	34
23	33	86	90	223	163	121	53	201	129	35	35	33
24	33	79	90	218	174	120	56	200	117	35	35	33
25	33	78	90	212	170	117	44	202	107	35	35	32
26	32	78	90	208	166	116	38	206	107	34	35	33
27	32	76	90	205	168	115	47	190	112	34	34	33
28	34	82	88	201	167	113	52	187	108	34	34	32
29	35	86	86	195	---	115	66	182	106	34	33	31
30	37	85	87	191	---	125	67	177	127	34	32	31
31	36	---	91	187	---	160	---	114	---	34	32	---
TOTAL	990	1996	2635	5633	4546	4251	6304	4303	2538	1522	1050	963
MEAN	31.9	66.5	85.0	182	162	137	210	139	84.6	49.1	33.9	32.1
MAX	37	92	91	232	184	167	540	209	129	104	36	34
MIN	29	34	77	89	144	113	38	55	34	33	31	29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	128	150	167	165	155	149	342	298	207	132	75.2	75.2
MAX	698	489	346	360	257	327	789	995	550	578	550	408
(WY)	1986	1989	1968	1966	1969	1973	2002	1996	1954	1952	1972	1980
MIN	0.65	2.99	18.5	23.3	35.8	55.8	10.7	3.09	21.5	7.09	1.25	0.88
(WY)	1990	1999	1949	1949	1949	1949	1949	1987	1986	1988	1963	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	53834		36731			
ANNUAL MEAN	147		101		169	
HIGHEST ANNUAL MEAN					288	1952
LOWEST ANNUAL MEAN					70.1	1948
HIGHEST DAILY MEAN	811	Apr 22	540	Apr 11	1650	Apr 19 2002
LOWEST DAILY MEAN	29	Aug 16	29	Oct 3	0.38	Nov 16 1989
ANNUAL SEVEN-DAY MINIMUM	30	Oct 5	30	Oct 5	0.39	Nov 12 1989
MAXIMUM PEAK FLOW			555	Apr 11	1700	Apr 19 2002
MAXIMUM PEAK STAGE			4.08	Apr 11	6.06	Apr 19 2002
ANNUAL RUNOFF (CFSM)	0.908		0.621		1.05	
ANNUAL RUNOFF (INCHES)	12.36		8.43		14.21	
10 PERCENT EXCEEDS	429		200		361	
50 PERCENT EXCEEDS	84		79		125	
90 PERCENT EXCEEDS	31		32		8.8	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04037400 CISCO LAKE NEAR WATERSMEET, MI

LOCATION.--Lat 46°15'10", long 89°27'07", in NE1/4 sec.32, T.45 N., R.41 W., Gogebic County, Hydrologic Unit 04020102, on right bank at outlet, 100 ft upstream from dam, and 13 mi west of Watersmeet.

DRAINAGE AREA.--50.6 mi^2.

PERIOD OF RECORD.--July 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,679.53 ft above sea level (levels by Michigan Department of Natural Resources). July 15, 1942, to Oct. 28, 1969, nonrecording gage, and Oct. 28, 1969, to Oct. 23, 1989, water-stage recorder at site 90 ft downstream at same datum.

REMARKS.--Cisco Lake (capacity 15,600 acre-ft) is the downstream lake in a chain of lakes used as storage reservoirs by Upper Peninsula Power Company for power production at Victoria Dam near Rockland. Lake level is controlled at the outlet by a concrete dam with two bays and removable flash boards. The major inlet to Cisco Lake is the combined outlet from Lindsley Lake and Thousand Island Lake. Streamflow records are currently collected at the outlet, Cisco Branch Ontonagon River (station 04037500). The lake level is maintained at an elevation of approximately 1,683.5 ft, above sea level, during winter months and 1,684.0 ft, above sea level, during summer months. Surface area of lake is 506 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 4.69 ft, July 19, 1942; minimum, 1.72 ft, Mar. 20-22, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.10 ft, July 24; minimum, 3.75 ft, July 22.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.88	3.84	3.89	3.89	3.86	3.94	3.88	3.91	3.93	3.83	3.88	3.87
2	3.91	3.85	3.88	3.89	3.87	3.88	3.83	3.91	3.90	3.87	3.90	3.84
3	3.92	3.87	3.89	3.86	3.89	3.85	3.79	3.92	3.87	3.88	3.91	3.85
4	3.90	3.84	3.88	3.86	3.90	3.85	3.79	3.92	3.88	3.85	3.89	3.87
5	3.92	3.87	3.87	3.87	3.92	3.86	3.80	3.92	3.92	3.88	3.89	3.87
6	3.91	3.87	3.88	3.88	3.95	3.87	3.88	3.88	3.91	3.89	3.90	3.85
7	3.93	3.84	3.88	3.89	3.98	3.89	3.91	3.89	3.92	3.89	3.89	3.84
8	3.91	3.86	3.89	3.89	3.95	3.91	3.90	3.89	3.91	3.89	3.89	3.84
9	3.91	3.91	3.89	3.90	3.90	3.92	3.87	3.90	3.89	3.89	3.90	3.85
10	3.93	3.89	3.90	3.91	3.88	3.93	3.83	3.90	3.90	3.88	3.92	3.86
11	3.93	3.91	3.91	3.91	3.88	3.92	3.81	3.89	3.95	3.88	3.93	3.86
12	3.93	3.93	3.95	3.92	3.88	3.87	3.83	3.90	3.92	3.87	3.90	3.87
13	3.90	3.94	3.95	3.92	3.89	3.82	3.82	3.89	3.89	3.85	3.89	3.94
14	3.91	3.95	3.93	3.91	3.91	3.79	3.84	3.84	3.96	3.85	3.88	3.94
15	3.90	3.96	3.89	3.89	3.91	3.80	3.88	3.82	3.94	3.85	3.88	3.95
16	3.87	3.96	3.85	3.88	3.91	3.81	3.88	3.85	3.89	3.85	3.87	3.94
17	3.88	3.93	3.86	3.88	3.91	3.82	3.90	3.87	3.86	3.85	3.89	3.95
18	3.89	3.90	3.87	3.89	3.90	3.83	3.93	3.89	3.89	3.82	3.90	3.94
19	3.89	3.89	3.88	3.90	3.89	3.85	3.93	3.92	3.90	3.81	3.93	3.97
20	3.88	3.90	3.91	3.90	3.89	3.86	3.92	3.92	3.89	3.80	3.92	3.99
21	3.90	3.90	3.91	3.91	3.88	3.87	3.89	3.90	3.89	3.78	3.91	3.96
22	3.94	3.90	3.91	3.93	3.88	3.87	3.84	3.88	3.90	3.77	3.91	3.93
23	3.96	3.86	3.91	3.93	3.89	3.88	3.83	3.86	3.91	3.78	3.92	3.94
24	3.94	3.87	3.92	3.93	3.89	3.89	3.84	3.88	3.88	4.05	3.92	3.95
25	3.90	3.88	3.92	3.91	3.90	3.90	3.87	3.91	3.88	4.02	3.92	3.95
26	3.91	3.89	3.92	3.89	3.91	3.90	3.87	3.89	3.89	3.95	3.92	4.01
27	3.90	3.93	3.92	3.87	3.94	3.91	3.88	3.90	3.91	3.91	3.90	4.00
28	3.91	3.97	3.91	3.87	3.95	3.91	3.90	3.90	3.98	3.91	3.89	3.96
29	3.92	3.97	3.90	3.85	---	3.92	3.90	3.91	3.96	3.93	3.88	3.97
30	3.91	3.93	3.92	3.85	---	3.90	3.91	3.91	3.91	3.93	3.88	3.95
31	3.86	---	3.93	3.85	---	3.90	---	3.92	---	3.89	3.88	---
MEAN	3.91	3.90	3.90	3.89	3.90	3.87	3.87	3.89	3.91	3.87	3.90	3.92
MAX	3.96	3.97	3.95	3.93	3.98	3.94	3.93	3.92	3.98	4.05	3.93	4.01
MIN	3.86	3.84	3.85	3.85	3.86	3.79	3.79	3.82	3.86	3.77	3.87	3.84

CAL YR 2004 MEAN 3.90 MAX 4.30 MIN 3.77
WTR YR 2005 MEAN 3.89 MAX 4.05 MIN 3.77

STREAMS TRIBUTARY TO LAKE SUPERIOR

04037500 CISCO BRANCH ONTONAGON RIVER AT CISCO LAKE OUTLET, MI

LOCATION.--Lat 46°15'12", long 89°27'05", in NE1/4 sec.32, T.45 N., R.41 W., Gogebic County, Hydrologic Unit 04020102, on left bank 80 ft downstream from Cisco Lake Dam, 2.5 mi upstream from Langford Creek, 5.0 mi upstream from U.S. Highway 2, and 13 mi west of Watersmeet.

DRAINAGE AREA.--50.7 mi^2.

PERIOD OF RECORD.--October 1944 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,672.69 ft above sea level. Prior to Oct. 1, 1968, nonrecording gage at same site and at datum 4.00 ft higher.

REMARKS.--Records good except for daily discharges below 3.0 ft^3/s, which are poor. Flow regulated by Cisco Lake (station 04037400). Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.07	109	85	85	2.2	79	154	11	34	77	49	e0.07
2	e0.07	15	67	85	2.0	111	150	11	61	3.0	8.7	e0.07
3	e0.07	4.0	42	66	1.8	82	146	11	36	1.6	1.3	e0.07
4	e0.07	3.5	42	26	1.7	22	103	27	0.41	1.4	0.50	e0.07
5	e0.07	2.9	41	12	1.6	2.8	36	53	0.35	0.88	0.38	e0.07
6	e0.07	2.4	31	12	1.5	2.8	40	62	0.34	0.70	0.34	e0.07
7	e0.07	2.1	19	12	36	2.5	88	35	26	0.58	0.34	e0.07
8	e0.07	0.64	20	13	91	2.2	136	12	43	0.48	e0.07	e0.07
9	e0.07	0.47	20	13	113	2.1	156	26	27	0.45	e1.0	e0.07
10	e0.07	0.41	20	15	79	13	152	44	11	0.42	1.8	e0.07
11	e3.5	0.41	21	17	32	70	92	43	38	0.42	1.5	e0.07
12	12	0.34	23	25	15	111	20	52	99	0.40	1.1	e0.07
13	15	0.34	38	39	16	107	11	81	101	0.40	0.76	e0.10
14	15	0.34	85	45	20	58	3.1	106	98	0.41	0.51	e0.10
15	25	15	112	45	27	8.3	1.9	53	165	0.41	0.40	e0.10
16	36	78	82	44	30	1.9	1.3	7.0	159	0.41	e0.10	e0.10
17	36	116	25	31	38	1.8	1.0	1.5	80	0.40	e0.07	e0.10
18	27	112	12	20	47	1.7	0.75	1.1	4.3	0.38	e0.36	e0.10
19	15	95	12	21	46	1.7	22	20	2.2	0.37	0.43	e20
20	12	61	16	23	46	1.7	74	61	1.1	0.37	0.39	70
21	8.0	60	21	26	36	1.7	110	85	0.49	0.34	e0.10	52
22	13	61	21	27	22	1.7	47	85	0.41	e0.07	e0.10	22
23	19	39	21	27	16	1.6	1.6	48	0.36	e0.07	e0.07	10
24	50	15	21	34	11	4.3	1.4	6.8	0.34	e65	e0.07	2.0
25	58	11	21	56	4.5	11	1.3	0.90	0.34	142	e0.07	1.8
26	38	11	21	64	4.5	12	1.1	0.35	0.34	163	e0.07	16
27	46	12	32	53	4.5	12	1.1	0.34	0.37	136	e0.07	52
28	57	14	43	39	23	29	6.4	0.34	36	81	e0.07	66
29	87	47	43	34	---	61	10	e0.10	96	46	e0.07	67
30	135	88	44	33	---	111	11	e0.07	141	72	e0.07	48
31	153	---	66	19	---	144	---	5.3	---	86	e0.07	---
TOTAL	861.20	976.85	1167	1061	768.3	1071.8	1578.95	949.80	1262.35	881.96	69.88	428.24
MEAN	27.8	32.6	37.6	34.2	27.4	34.6	52.6	30.6	42.1	28.5	2.25	14.3
MAX	153	116	112	85	113	144	156	106	165	163	49	70
MIN	0.07	0.34	12	12	1.5	1.6	0.75	0.07	0.34	0.07	0.07	0.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2005, BY WATER YEAR (WY)

MEAN	65.6	64.5	46.6	38.4	34.7	44.1	64.4	49.3	44.2	31.6	24.4	35.5
MAX	151	116	84.1	62.6	81.0	92.1	156	160	123	113	99.7	104
(WY)	1986	1968	1961	1983	1945	1973	2002	1996	1953	1953	1978	1977
MIN	13.1	14.5	23.5	23.1	20.6	24.1	2.02	0.17	0.11	0.25	0.15	0.23
(WY)	1958	1945	1990	1959	1950	1956	1948	1977	1977	1977	1970	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1945 - 2005	
ANNUAL TOTAL	14530.13		11077.33			
ANNUAL MEAN	39.7		30.3		45.3	
HIGHEST ANNUAL MEAN					65.9	1973
LOWEST ANNUAL MEAN					25.2	1949
HIGHEST DAILY MEAN	219	Apr 21	165	Jun 15	288	May 1 1951
LOWEST DAILY MEAN	0.07	Aug 24	0.07	(a)	0.07	(b)
ANNUAL SEVEN-DAY MINIMUM	0.07	Aug 24	0.07	Oct 1	0.07	Aug 24 2004
MAXIMUM PEAK FLOW			171	Jul 25	288	May 1 1951
MAXIMUM PEAK STAGE			5.54	Jul 25	(c)6.10	May 1 1951
ANNUAL RUNOFF (CFSM)	0.783		0.599		0.893	
ANNUAL RUNOFF (INCHES)	10.66		8.13		12.14	
10 PERCENT EXCEEDS	112		87		103	
50 PERCENT EXCEEDS	21		14		36	
90 PERCENT EXCEEDS	0.37		0.09		0.88	

(a) On many days during the year.
(b) On many days in water years 2004, 2005.
(c) Present datum.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04040000 ONTONAGON RIVER NEAR ROCKLAND, MI

LOCATION.--Lat 46°43'15", long 89°12'25", in NE1/4 sec.20, T.50 N., R.39 W., Ontonagon County, Hydrologic Unit 04020102, on left bank 150 ft downstream from bridge on Victoria Road, 1.8 mi southwest of Rockland, and 2.4 mi downstream from confluence of Middle and West Branches.

DRAINAGE AREA.--1,340 mi^2.

PERIOD OF RECORD.--June 1942 to current year.

REVISED RECORDS.--WSP 1387: 1943, 1946-47. WSP 1911: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 638.72 ft above sea level. Prior to Nov. 23, 1943, nonrecording gage, and Nov. 23, 1943, to Oct. 17, 1967, water-stage recorder at site 50 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Victoria powerplant on West Branch 5 mi upstream; Bond Falls Reservoir (station 04034000) 34 mi upstream; Lake Gogebic (station 04035995); and Cisco Lake (station 04037400), in headwaters. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	465	1070	497	e1450	e748	e856	e6910	717	550	781	512	440
2	504	953	e496	e1450	e774	e836	e7710	726	505	824	537	435
3	510	905	e496	e1400	e792	e816	e7400	706	490	770	524	435
4	494	716	e508	e1370	e792	e816	6530	673	473	584	519	438
5	483	604	e508	e1370	e1020	e800	6790	625	500	508	485	434
6	475	584	e508	e1260	e1200	e800	12200	600	597	487	464	432
7	470	561	e508	e1260	e1300	e800	10600	595	689	471	453	435
8	472	578	e508	e1190	e1400	e800	7800	583	663	479	443	428
9	485	553	e508	e1090	e1500	e800	5920	579	592	482	442	424
10	484	525	e508	e969	e1500	e800	4490	704	528	536	479	425
11	475	539	e508	e942	e1400	e800	3550	952	e520	501	482	423
12	472	527	e508	e915	e1320	e800	3060	870	e520	492	462	438
13	472	487	e508	e889	e1320	e800	2450	1080	e540	495	452	544
14	463	475	e508	e889	e1280	e800	2070	1660	1100	475	444	562
15	471	510	e508	e815	e1250	e800	1420	2350	4150	489	440	504
16	531	487	e508	e792	e1190	e800	1240	2170	3000	460	437	464
17	642	499	e508	e770	e1100	e800	1120	1700	1900	457	440	441
18	637	517	e508	e770	e1080	e800	985	1350	1310	486	462	434
19	619	630	e495	e726	e1050	e800	1050	1210	990	444	484	447
20	592	754	e495	e726	e1030	e800	1790	1300	680	439	478	521
21	534	955	e495	e726	e1000	e800	1720	1120	620	436	462	534
22	501	822	e495	e726	e997	e800	1480	1200	555	432	457	505
23	507	685	e495	e726	e947	e800	1260	1620	521	425	452	518
24	696	700	e495	e726	e923	e800	1090	1580	520	474	448	480
25	743	567	e495	e726	e923	e800	871	1280	516	480	446	464
26	648	587	e495	e726	e923	e854	835	973	506	456	444	503
27	599	625	e509	e726	e899	e972	776	824	483	448	444	528
28	557	577	e555	e726	e877	e1360	767	802	605	446	443	516
29	593	574	e659	e726	---	e2110	750	791	734	472	439	553
30	907	549	e1220	e726	---	e3980	731	727	846	604	442	584
31	1210	---	e1410	e726	---	e5700	---	615	---	518	444	---
TOTAL	17711	19115	17422	29029	30535	35100	105365	32682	26203	15851	14360	14289
MEAN	571	637	562	936	1091	1132	3512	1054	873	511	463	476
MAX	1210	1070	1410	1450	1500	5700	12200	2350	4150	824	537	584
MIN	463	475	495	726	748	800	731	579	473	425	437	423

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	1110	1200	914	818	850	1549	4112	2045	1422	976	780	838
MAX	3767	3232	1683	1473	1525	4355	7707	5257	3309	2879	2563	2679
(WY)	1986	1989	1983	1969	1984	1973	2002	1996	1951	1952	1942	1942
MIN	333	400	410	396	413	667	922	404	431	314	359	312
(WY)	1949	1949	1949	1949	2002	1956	1987	1977	1988	1988	1976	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	469846		357662			
ANNUAL MEAN	1284		980		1377	
HIGHEST ANNUAL MEAN					1967	1996
LOWEST ANNUAL MEAN					774	1948
HIGHEST DAILY MEAN	19900	Apr 19	12200	Apr 6	31200	Aug 22 1942
LOWEST DAILY MEAN	391	Aug 17	423	Sep 11	170	(a)
ANNUAL SEVEN-DAY MINIMUM	437	Jul 18	429	Sep 5	246	Jul 25 1963
MAXIMUM PEAK FLOW			(b)15700	Apr 6	(c)42000	Aug 22 1942
MAXIMUM PEAK STAGE			(d)16.85	Mar 30	(f)28.6	Aug 22 1942
ANNUAL RUNOFF (CFSM)	0.958		0.731		1.03	
ANNUAL RUNOFF (INCHES)	13.04		9.93		13.96	
10 PERCENT EXCEEDS	2990		1400		2710	
50 PERCENT EXCEEDS	588		619		860	
90 PERCENT EXCEEDS	459		450		497	

(a) Aug. 13, 14, 1991.
(b) Gage height 16.00 ft.
(c) From rating curve extended above 14,000 ft^3/s on basis of slope-area measurement of peak flow.
(d) Backwater from ice.
(e) Estimated.
(f) From floodmark.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04040500 STURGEON RIVER NEAR SIDNAW, MI

LOCATION.--Lat 46°35'03", long 88°34'33", in NE1/4 SE1/4 sec.5, T.48 N., R.34 W., Baraga County, Hydrologic Unit 04020104, on right bank 30 ft downstream from highway bridge, 3.0 mi downstream from Rock River, 3.5 mi northwest of Covington, 6.5 mi upstream from Perch River, 8.5 mi northeast of Sidnaw, and at mile 71.

DRAINAGE AREA.--171 mi^2.

PERIOD OF RECORD.--October 1912 to September 1915, April 1943 to current year.

REVISED RECORDS.--WSP 1507: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,214.40 ft above sea level. October 1912 to September 1915, nonrecording gage at site 200 ft upstream at different datum. Apr. 2, 1943, to Oct. 1, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	316	e89	e148	e66	e76	e635	180	141	107	17	8.6
2	38	281	e86	e143	e65	e77	e773	184	118	91	16	8.3
3	49	243	e87	e134	e65	e79	e1030	182	100	77	16	8.1
4	51	213	e89	e126	e67	e79	1220	169	85	71	17	7.7
5	49	198	e89	e117	e71	e78	1310	153	98	63	17	7.3
6	46	180	e91	e114	e91	e78	2020	139	124	64	15	7.4
7	41	164	e88	e110	e123	e76	2380	129	135	55	13	7.3
8	38	146	e86	e106	e151	e76	2140	122	114	45	12	7.1
9	37	131	e85	e100	e158	e76	1880	117	95	39	12	6.8
10	37	124	e84	e95	e151	e76	1670	127	78	37	12	6.7
11	35	125	e84	e90	e145	e76	1490	125	67	33	12	6.7
12	33	118	e83	e87	e129	e75	1260	114	61	29	11	7.1
13	31	105	e82	e83	e114	e75	1050	136	57	27	11	34
14	30	97	e82	e83	e108	e72	856	202	120	24	10	92
15	33	93	e80	e75	e108	e71	709	274	536	22	8.9	84
16	68	87	e80	e71	e101	e70	597	343	502	21	8.2	60
17	112	87	e80	e69	e98	e71	514	308	363	22	9.2	43
18	113	89	e78	e68	e93	e68	453	251	232	28	15	32
19	117	91	e76	e68	e93	e70	416	268	163	22	14	36
20	128	123	e76	e66	e91	e70	494	389	124	18	17	131
21	137	167	e76	e66	e88	e71	470	346	98	16	15	134
22	133	158	e75	e66	e86	e71	424	322	79	14	14	102
23	187	141	e75	e66	e86	e68	356	440	67	13	13	71
24	328	115	e75	e66	e84	e70	301	415	58	23	12	54
25	342	102	e73	e66	e78	e67	264	339	48	27	11	47
26	312	94	e75	e67	e78	e70	235	269	41	24	11	57
27	251	98	e75	e66	e76	e71	218	229	38	20	10	70
28	203	100	e76	e67	e77	e91	217	246	117	20	9.9	70
29	221	108	e78	e66	---	e170	206	235	152	19	9.3	83
30	282	e96	e81	e67	---	e302	190	202	132	17	8.9	88
31	323	---	e123	e66	---	e478	---	169	---	17	8.8	---
TOTAL	3828	4190	2557	2682	2741	3018	25778	7124	4143	1105	386.2	1377.1
MEAN	123	140	82.5	86.5	97.9	97.4	859	230	138	35.6	12.5	45.9
MAX	342	316	123	148	158	478	2380	440	536	107	17	134
MIN	23	87	73	66	65	67	190	114	38	13	8.2	6.7
CFSM	0.72	0.82	0.48	0.51	0.57	0.57	5.02	1.34	0.81	0.21	0.07	0.27
IN.	0.83	0.91	0.56	0.58	0.60	0.66	5.61	1.55	0.90	0.24	0.08	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2005, BY WATER YEAR (WY)

MEAN	175	188	114	69.8	63.7	164	766	450	209	124	78.8	115
MAX	547	599	242	162	191	744	1321	1147	579	503	319	586
(WY)	1986	1989	1983	1969	1984	1973	1960	1965	1944	1968	1978	1968
MIN	11.5	17.3	16.0	15.5	15.4	39.8	266	33.8	24.4	8.00	7.86	4.63
(WY)	1977	1977	1977	1977	1977	1956	1946	1998	1988	1988	1976	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1913 - 2005	
ANNUAL TOTAL	74205		58929.3			
ANNUAL MEAN	203		161		209	
HIGHEST ANNUAL MEAN					311	1968
LOWEST ANNUAL MEAN					99.9	1998
HIGHEST DAILY MEAN	2990	Apr 20	2380	Apr 7	4820	Apr 17 2002
LOWEST DAILY MEAN	16	Aug 8	6.7	Sep 10	2.7	Sep 13 1976
ANNUAL SEVEN-DAY MINIMUM	20	Sep 8	7.0	Sep 6	3.2	Aug 28 1976
MAXIMUM PEAK FLOW			2490	Apr 7	(a)4990	Apr 17 2002
MAXIMUM PEAK STAGE			8.71	Apr 7	11.63	Apr 24 1960
INSTANTANEOUS LOW FLOW			6.3	Sep 12	2.7	Sep 13 1976
ANNUAL RUNOFF (CFSM)	1.19		0.944		1.22	
ANNUAL RUNOFF (INCHES)	16.14		12.82		16.58	
10 PERCENT EXCEEDS	557		322		505	
50 PERCENT EXCEEDS	90		83		96	
90 PERCENT EXCEEDS	31		15		31	

(a) Gage height 11.44 ft.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04041500 STURGEON RIVER NEAR ALSTON, MI

LOCATION.--Lat 46°43'35", long 88°39'43", in SE1/4 sec.15, T.50 N., R.35 W., Baraga County, Hydrologic Unit 04020104, on right bank in powerhouse of Upper Peninsula Power Co. at Prickett Dam, 4.0 mi upstream from Clear Creek, 5.0 mi southeast of Alston, and at mile 45.

DRAINAGE AREA.--346 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1932 to June 1941, October 1942 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 709.64 ft above sea level. Prior to Jan. 5, 1948, nonrecording gage, and Jan. 5, 1948 to Sept. 30, 1963, water-stage recorder at same site at datum 39.34 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplant at station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	379	238	e420	203	199	2110	384	300	297	125	107
2	147	374	225	e381	202	201	1690	343	244	268	131	106
3	148	314	225	e360	201	200	1670	305	214	290	148	106
4	157	290	223	e339	201	200	1700	322	196	273	160	104
5	160	269	224	e323	201	203	1840	346	190	235	156	113
6	148	256	223	e302	225	208	2850	340	284	190	136	116
7	163	240	224	e293	283	213	3740	331	291	170	113	109
8	158	222	234	e282	338	217	2900	329	225	174	105	109
9	157	199	269	e269	340	206	2470	302	235	176	103	108
10	151	175	283	e259	339	203	2140	279	231	167	103	108
11	148	144	282	e249	343	209	2050	291	239	157	103	107
12	146	163	305	e239	320	216	1650	328	231	152	111	112
13	143	160	310	e219	283	211	1320	363	208	152	114	126
14	141	159	234	215	268	204	1220	377	179	152	115	153
15	145	158	221	196	260	204	837	452	828	151	110	184
16	160	158	262	188	235	205	802	507	872	151	106	199
17	196	159	296	189	219	202	864	506	699	150	106	186
18	222	156	283	188	222	191	733	492	558	150	106	169
19	200	156	279	188	227	176	580	519	346	150	107	150
20	161	159	252	188	221	176	665	536	248	146	109	165
21	156	163	219	188	221	192	711	549	209	137	119	233
22	168	181	234	190	221	194	701	571	216	131	119	277
23	184	288	e232	194	219	191	618	576	220	128	113	245
24	243	304	e232	204	212	200	539	614	209	128	113	212
25	297	263	e233	e204	206	213	489	618	195	122	113	189
26	321	230	e232	e204	201	213	461	545	186	97	112	177
27	315	211	e232	e204	199	221	401	411	177	97	111	177
28	310	215	e232	203	200	229	372	306	223	109	111	184
29	320	243	e235	203	---	344	394	316	265	117	116	211
30	326	246	e261	202	---	1140	408	362	419	123	119	205
31	336	---	e333	202	---	2260	---	351	---	131	111	---
TOTAL	6163	6634	7767	7485	6810	9441	38925	12871	9137	5071	3624	4747
MEAN	199	221	251	241	243	305	1298	415	305	164	117	158
MAX	336	379	333	420	343	2260	3740	618	872	297	160	277
MIN	136	144	219	188	199	176	372	279	177	97	103	104
CFSM	0.57	0.64	0.72	0.70	0.70	0.88	3.75	1.20	0.88	0.47	0.34	0.46
IN.	0.66	0.71	0.84	0.80	0.73	1.02	4.18	1.38	0.98	0.55	0.39	0.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2005, BY WATER YEAR (WY)

MEAN	340	373	265	210	203	376	1181	786	435	297	224	261
MAX	973	1001	433	380	412	1255	2093	1799	973	894	595	1056
(WY)	1986	1989	1988	1969	1984	1973	1960	1996	1944	1968	1978	1968
MIN	99.4	120	101	111	133	164	420	146	138	94.2	100	70.9
(WY)	1949	1949	1977	1977	1964	1940	1987	1998	1988	1988	1976	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1932 - 2005	
ANNUAL TOTAL	151337		118675			
ANNUAL MEAN	413		325		414	
HIGHEST ANNUAL MEAN					582	1960
LOWEST ANNUAL MEAN					247	1948
HIGHEST DAILY MEAN	4230	Apr 20	3740	Apr 7	6820	Apr 25 1960
LOWEST DAILY MEAN	114	Aug 30	97	Jul 26	(a)1.0	(b)
ANNUAL SEVEN-DAY MINIMUM	130	Sep 9	107	Aug 7	1.1	Aug 14 1960
MAXIMUM PEAK FLOW			4470	Apr 6	7360	Apr 24 1960
MAXIMUM PEAK STAGE			9.62	Apr 6	(c)13.75	Apr 24 1960
ANNUAL RUNOFF (CFSM)	1.20		0.940		1.20	
ANNUAL RUNOFF (INCHES)	16.27		12.76		16.26	
10 PERCENT EXCEEDS	1000		537		843	
50 PERCENT EXCEEDS	230		215		262	
90 PERCENT EXCEEDS	146		116		138	

(a) Approximately; result of draining pond for dam repair.
(b) Aug. 14-19, 1960.
(c) Present datum.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04041500 STURGEON RIVER NEAR ALSTON, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1998 to current year.

INSTRUMENTATION.--Water temperature recorder with telemetry since Apr. 7, 1998.

REMARKS.--Records rated good. Records represent water temperature at sensor within 0.5°C, from Apr. 1 to Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 29.5°C, Aug. 7, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 28.5°C, July 17.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	1.5	1.0	1.5	9.5	9.0	9.0
2	---	---	---	---	---	---	1.0	1.0	1.0	9.0	9.0	9.0
3	---	---	---	---	---	---	1.0	1.0	1.0	9.5	8.5	9.0
4	---	---	---	---	---	---	1.0	1.0	1.0	10.5	9.0	9.5
5	---	---	---	---	---	---	1.5	1.0	1.5	10.5	9.5	10.0
6	---	---	---	---	---	---	2.0	1.5	2.0	11.5	9.5	10.5
7	---	---	---	---	---	---	3.0	2.0	2.5	10.0	9.5	9.5
8	---	---	---	---	---	---	3.0	2.5	3.0	11.0	9.5	11.0
9	---	---	---	---	---	---	3.5	3.0	3.0	13.0	11.0	12.0
10	---	---	---	---	---	---	4.5	3.5	4.0	13.0	12.5	13.0
11	---	---	---	---	---	---	6.5	4.5	5.5	12.5	9.5	11.0
12	---	---	---	---	---	---	7.5	6.5	7.0	11.0	10.5	11.0
13	---	---	---	---	---	---	7.5	7.5	7.5	11.0	11.0	11.0
14	---	---	---	---	---	---	8.0	7.5	8.0	11.0	11.0	11.0
15	---	---	---	---	---	---	10.0	8.0	9.0	11.0	10.5	11.0
16	---	---	---	---	---	---	10.0	9.0	9.5	11.0	10.5	10.5
17	---	---	---	---	---	---	10.5	9.0	9.5	10.5	10.0	10.5
18	---	---	---	---	---	---	11.5	9.0	10.5	12.0	10.0	11.0
19	---	---	---	---	---	---	12.5	10.5	11.5	12.0	11.0	11.5
20	---	---	---	---	---	---	10.5	9.0	9.5	12.0	11.0	11.0
21	---	---	---	---	---	---	11.5	10.5	10.5	14.5	11.0	12.5
22	---	---	---	---	---	---	11.0	10.0	10.5	15.0	14.0	14.5
23	---	---	---	---	---	---	10.0	9.5	9.5	14.0	12.0	13.0
24	---	---	---	---	---	---	10.0	9.5	10.0	14.5	13.0	14.0
25	---	---	---	---	---	---	10.5	9.5	10.0	17.5	14.0	16.0
26	---	---	---	---	---	---	10.0	9.5	9.5	17.0	17.0	17.0
27	---	---	---	---	---	---	10.0	9.5	9.5	17.0	16.0	16.5
28	---	---	---	---	---	---	9.5	9.5	9.5	16.5	16.0	16.0
29	---	---	---	---	---	---	9.5	9.5	9.5	17.0	15.5	16.0
30	---	---	---	---	---	---	9.5	9.0	9.5	16.0	15.0	15.5
31	---	---	---	---	---	---	---	---	---	16.5	15.0	15.5
MONTH	---	---	---	---	---	---	12.5	1.0	6.9	17.5	8.5	12.2

STREAMS TRIBUTARY TO LAKE SUPERIOR

04041500 STURGEON RIVER NEAR ALSTON, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.5	15.5	16.0	22.0	22.0	22.0	23.0	22.5	22.5	21.0	20.0	20.5
2	20.0	16.0	18.0	23.0	21.5	22.0	25.5	22.5	23.5	20.5	20.0	20.0
3	19.5	17.0	18.0	22.5	22.0	22.0	26.5	23.5	25.0	20.0	19.5	19.5
4	21.0	17.5	19.5	23.0	21.5	22.0	26.5	23.5	25.5	20.5	19.0	20.0
5	22.0	20.5	21.0	22.0	21.0	21.0	25.5	24.0	24.5	21.5	20.0	21.0
6	21.5	20.5	21.5	21.0	20.5	20.5	25.5	24.0	25.0	21.5	21.0	21.0
7	20.5	17.5	19.5	21.0	20.0	20.5	25.5	24.5	25.0	21.5	21.0	21.0
8	18.5	17.5	18.5	24.0	20.5	22.0	26.5	24.0	25.5	21.0	20.0	20.5
9	21.0	18.5	19.5	26.0	22.5	24.0	25.5	24.5	25.0	21.0	20.0	20.5
10	20.0	18.5	19.5	27.0	23.0	25.0	24.5	24.0	24.5	22.0	20.5	21.5
11	20.5	19.5	19.5	27.5	23.0	24.5	24.5	24.0	24.0	22.5	21.5	22.0
12	23.0	20.5	22.0	24.5	22.5	23.5	24.0	23.5	24.0	22.5	22.0	22.0
13	22.0	20.0	21.5	25.5	21.0	23.5	24.0	23.0	23.5	22.5	22.0	22.0
14	21.0	19.5	20.5	24.5	21.5	23.0	23.5	22.5	23.0	22.0	21.5	21.5
15	20.0	18.0	19.5	25.0	23.5	24.5	23.5	22.0	23.0	21.5	20.5	21.0
16	20.0	19.0	19.5	25.5	24.0	25.0	23.0	22.0	22.5	21.0	20.5	21.0
17	19.5	18.5	19.0	28.5	24.0	26.5	22.0	21.5	22.0	21.5	21.0	21.0
18	20.0	18.5	19.0	28.0	27.0	27.5	21.5	21.0	21.0	21.5	20.0	21.0
19	23.0	18.5	21.0	27.0	25.0	26.0	21.5	20.5	21.0	20.5	20.0	20.0
20	23.0	21.5	22.5	27.0	25.0	26.0	23.0	21.5	22.0	20.5	19.5	20.0
21	22.0	20.0	21.0	25.5	23.5	24.5	22.5	21.0	21.5	20.5	19.5	20.0
22	25.0	20.5	23.0	25.0	24.0	24.5	21.0	19.5	20.0	20.0	19.0	19.5
23	26.0	23.5	24.5	25.0	24.0	24.5	20.0	20.0	20.0	19.0	18.5	19.0
24	25.5	24.0	25.0	26.0	24.5	25.0	21.0	19.5	20.0	18.5	18.0	18.5
25	24.5	22.5	23.5	25.0	24.0	24.5	21.5	20.5	21.0	18.5	18.0	18.0
26	25.0	22.0	23.5	24.0	22.5	23.5	22.0	21.0	21.5	18.0	17.5	18.0
27	25.5	24.0	25.0	24.5	23.0	23.5	22.5	21.0	21.5	18.0	17.5	17.5
28	25.0	23.0	24.5	24.5	23.5	23.5	22.0	21.5	21.5	17.5	17.0	17.5
29	23.0	22.0	22.5	23.5	22.0	22.5	21.5	20.5	21.0	17.0	16.5	17.0
30	22.5	22.0	22.5	22.5	22.0	22.0	20.5	20.0	20.5	16.5	16.0	16.5
31	---	---	---	23.5	22.0	22.5	20.5	20.0	20.0	---	---	---
MONTH	26.0	15.5	21.0	28.5	20.0	23.6	26.5	19.5	22.6	22.5	16.0	19.9

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043050 TRAP ROCK RIVER NEAR LAKE LINDEN, MI

LOCATION.--Lat 47°13'43", long 88°23'07", in SE1/4 SE1/4 sec.20, T.56 N., R.32 W., Houghton County, Hydrologic Unit 04020103, on right bank 20 ft upstream from bridge on county highway, 2.0 mi northeast of Lake Linden, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 621.7 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e35	20	e56	19	22	315	37	22	45	16	8.8
2	15	e32	18	e54	19	21	326	36	20	33	13	8.4
3	14	29	26	e49	20	e22	286	35	19	27	13	8.5
4	13	26	21	43	21	21	283	33	18	24	12	8.4
5	12	25	e21	37	22	22	328	31	18	21	11	8.4
6	12	24	22	33	26	22	440	30	20	19	11	8.3
7	11	22	22	30	33	22	433	29	19	17	11	8.2
8	12	21	22	29	e37	e22	429	75	40	17	11	8.1
9	17	19	23	27	e37	e22	427	77	41	16	11	8.1
10	16	19	27	26	e33	22	437	75	31	15	12	8.9
11	14	19	27	25	27	e22	351	68	61	15	11	8.4
12	13	18	25	25	25	e22	305	54	49	14	10	8.4
13	13	18	e25	25	e28	21	237	78	35	13	9.9	11
14	12	17	25	e24	24	e21	200	114	53	13	9.8	11
15	13	17	24	23	24	e21	177	124	135	13	9.5	9.5
16	25	17	23	e23	e23	21	165	82	75	13	9.3	8.8
17	43	17	22	e23	e23	e21	157	63	48	13	9.4	8.6
18	31	17	21	e22	22	e21	132	53	35	13	11	8.5
19	28	17	e22	e22	22	e21	112	47	28	13	11	9.2
20	30	19	22	e22	21	21	93	44	23	12	11	11
21	29	21	22	22	e21	21	70	38	20	12	9.9	10
22	25	19	21	22	e21	22	60	61	18	12	9.6	9.3
23	33	18	19	21	21	22	53	91	29	12	9.4	9.1
24	53	17	19	21	21	24	49	64	34	12	9.2	8.9
25	37	17	20	21	21	23	48	49	22	12	9.1	8.8
26	29	16	21	20	20	24	48	46	18	11	9.1	9.2
27	28	18	21	19	21	26	50	41	17	11	9.0	8.8
28	27	26	20	18	22	31	47	36	83	11	8.7	8.9
29	e30	24	20	19	---	46	42	31	54	11	8.8	9.6
30	e33	22	20	19	---	72	38	28	51	15	8.9	9.4
31	e36	---	e45	19	---	200	---	25	---	27	8.9	---
TOTAL	716	626	706	839	674	941	6138	1695	1136	512	323.5	270.5
MEAN	23.1	20.9	22.8	27.1	24.1	30.4	205	54.7	37.9	16.5	10.4	9.02
MAX	53	35	45	56	37	200	440	124	135	45	16	11
MIN	11	16	18	18	19	21	38	25	17	11	8.7	8.1
CFSM	0.82	0.75	0.81	0.97	0.86	1.08	7.31	1.95	1.35	0.59	0.37	0.32
IN.	0.95	0.83	0.94	1.11	0.90	1.25	8.15	2.25	1.51	0.68	0.43	0.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2005, BY WATER YEAR (WY)

MEAN	30.3	37.4	25.9	20.5	20.2	43.4	178	76.8	36.5	21.1	16.7	20.6
MAX	94.6	134	43.9	33.2	42.8	112	288	223	117	63.5	70.2	92.5
(WY)	1986	1989	1988	1969	1984	1973	2001	1972	1968	1968	1988	1968
MIN	8.71	9.66	9.28	9.03	9.00	16.1	63.5	16.5	11.7	11.4	9.34	7.84
(WY)	1977	1977	1977	1977	1977	1972	1998	1998	1977	1967	2000	1998

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1967 - 2005	
ANNUAL TOTAL	14590.1		14577.0			
ANNUAL MEAN	39.9		39.9		43.9	
HIGHEST ANNUAL MEAN					62.6	1979
LOWEST ANNUAL MEAN					26.8	1998
HIGHEST DAILY MEAN	786	Apr 19	440	Apr 6	1120	May 10 1979
LOWEST DAILY MEAN	8.2	Aug 7	8.1	Sep 8	6.5	Sep 11 1998
ANNUAL SEVEN-DAY MINIMUM	9.9	Aug 2	8.3	Sep 3	6.8	Sep 7 1998
MAXIMUM PEAK FLOW			543	Apr 10	1590	May 10 1979
MAXIMUM PEAK STAGE			8.12	Apr 10	10.72	May 10 1979
INSTANTANEOUS LOW FLOW			7.5	Sep 11	(a)1.7	Jan 18 1990
ANNUAL RUNOFF (CFSM)	1.42		1.43		1.57	
ANNUAL RUNOFF (INCHES)	19.38		19.37		21.31	
10 PERCENT EXCEEDS	72		63		87	
50 PERCENT EXCEEDS	20		22		21	
90 PERCENT EXCEEDS	12		9.5		12	

(a) Result of ice jam upstream.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043150 SILVER RIVER NEAR L'ANSE, MI

LOCATION.--Lat 46°48'15", long 88°19'01", in SW1/4 NW1/4 sec.24, T.51 N., R.32 W., Baraga County, Hydrologic Unit 04020105, on left bank, 30 ft upstream from bridge on Skanee Road, 2.0 mi upstream from mouth, and 7.5 mi northeast of L'Anse.

DRAINAGE AREA.--64.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2001 to current year.

REVISED RECORDS.--WDR MI-03-1: 2002(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 630 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	104	e40	e46	e19	e21	639	73	40	27	22	9.0
2	33	82	e35	e50	e21	e21	462	81	36	22	18	8.8
3	26	71	e34	e47	e21	e21	403	81	32	19	16	8.8
4	24	63	e31	e43	e21	e21	397	72	29	16	17	8.7
5	22	60	e30	e44	e22	e22	461	64	32	15	18	8.3
6	20	55	e31	e41	e26	e23	900	60	59	15	13	7.9
7	19	49	e31	e41	e34	e23	810	56	53	14	12	8.0
8	18	45	e31	e39	e38	e23	563	54	47	13	11	7.7
9	22	41	e31	e35	e38	e23	493	54	39	12	11	7.6
10	22	40	e31	e33	e37	e23	510	59	32	11	12	7.5
11	20	42	e31	e32	e32	e23	424	59	29	11	11	7.2
12	19	39	e31	e31	e27	e23	361	53	27	10	11	7.6
13	18	36	e31	e31	e27	e23	274	88	24	10	10	39
14	21	35	e27	e28	e26	e23	216	116	36	9.8	10	40
15	30	34	e30	e28	e26	e22	185	156	160	9.6	9.7	27
16	69	34	e31	e25	e24	e22	167	162	129	16	9.3	21
17	79	35	e28	e25	e24	e22	154	120	79	21	9.5	17
18	62	35	e27	e25	e24	e22	139	95	53	13	16	15
19	58	34	e27	e25	e24	e22	136	110	38	11	15	33
20	61	50	e27	e25	e22	e22	215	132	30	10	14	92
21	64	60	e27	e22	e22	e22	160	101	25	9.9	12	59
22	58	54	e27	e22	e21	e22	126	106	21	9.5	11	40
23	81	48	e27	e22	e21	e22	110	153	21	9.4	11	29
24	134	41	e27	e22	e21	e22	96	124	20	16	9.8	22
25	116	37	e27	e22	e21	e22	87	92	17	17	9.4	22
26	83	39	e25	e21	e21	e25	81	75	15	14	9.1	34
27	66	38	e25	e21	e21	e41	83	72	14	13	9.0	31
28	55	42	e25	e20	e21	e85	91	75	57	12	8.9	31
29	56	44	e25	e19	---	e204	84	62	40	14	9.1	57
30	68	45	e29	e19	---	e443	76	54	33	21	9.3	41
31	107	---	e39	e19	---	e741	---	47	---	34	9.2	---
TOTAL	1546	1432	918	923	702	2094	8903	2706	1267	455.2	373.3	747.1
MEAN	49.9	47.7	29.6	29.8	25.1	67.5	297	87.3	42.2	14.7	12.0	24.9
MAX	134	104	40	50	38	741	900	162	160	34	22	92
MIN	15	34	25	19	19	21	76	47	14	9.4	8.9	7.2
CFSM	0.78	0.75	0.46	0.47	0.39	1.06	4.64	1.36	0.66	0.23	0.19	0.39
IN.	0.90	0.83	0.53	0.54	0.41	1.22	5.17	1.57	0.74	0.26	0.22	0.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2005, BY WATER YEAR (WY)

MEAN	70.8	60.0	48.7	32.6	27.3	101	369	148	72.7	32.0	23.0	26.5
MAX	167	82.4	61.0	43.3	32.1	150	522	258	90.7	60.0	36.7	41.6
(WY)	2003	2004	2002	2004	2004	2004	2002	2003	2004	2004	2004	2002
MIN	26.7	33.7	29.6	27.0	25.1	36.1	285	87.3	42.2	14.7	12.0	19.6
(WY)	2002	2002	2005	2002	2005	2002	2003	2005	2005	2005	2005	2004

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2002 - 2005	
ANNUAL TOTAL	32249		22066.6			
ANNUAL MEAN	88.1		60.5		84.2	
HIGHEST ANNUAL MEAN					99.1	2003
LOWEST ANNUAL MEAN					60.5	2005
HIGHEST DAILY MEAN	2010	Apr 19	900	Apr 6	2660	May 12 2003
LOWEST DAILY MEAN	11	Aug 7	7.2	Sep 11	7.2	Sep 11 2005
ANNUAL SEVEN-DAY MINIMUM	13	Sep 8	7.6	Sep 6	7.6	Sep 6 2005
MAXIMUM PEAK FLOW			1270	Apr 6	(a)3180	May 12 2003
MAXIMUM PEAK STAGE			10.40	Apr 6	15.18	May 12 2003
INSTANTANEOUS LOW FLOW			6.8	(b)	6.8	(c)
ANNUAL RUNOFF (CFSM)	1.38		0.945		1.32	
ANNUAL RUNOFF (INCHES)	18.74		12.83		17.87	
10 PERCENT EXCEEDS	190		112		166	
50 PERCENT EXCEEDS	40		29		38	
90 PERCENT EXCEEDS	18		11		15	

(a) Result of dam failure.
(b) Sept. 10, 11, 12.
(c) Sept. 10, 11, 12, 2005.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043150 SILVER RIVER NEAR L'ANSE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: May 2002 to current year.

INSTRUMENTATION.--Water temperature recorder with telemetry since May 23, 2002.

REMARKS.--Records rated excellent. Records represent water temperature at sensor within 0.5°C.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.5°C, July 12, 2005; minimum, -0.5°C, on many days during period November 2003 to March 2004.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 27.5°C, July 12; minimum, 0.0°C, on many days during winter period.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	10.5	11.5	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
2	10.5	9.0	9.5	6.5	6.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0
3	10.0	8.5	9.0	6.0	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
4	9.0	6.5	8.0	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
5	7.5	5.5	6.5	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
6	10.5	7.5	9.0	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
7	12.5	10.0	11.0	5.0	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
8	13.5	12.0	12.5	3.5	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
9	12.0	10.5	11.5	2.5	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
10	10.5	8.5	9.5	4.5	2.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
11	9.5	7.5	8.5	4.0	1.5	2.5	0.5	0.0	0.0	0.0	0.0	0.0
12	10.0	7.5	9.0	1.5	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
13	9.5	8.0	9.0	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
14	8.5	7.5	8.0	1.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
15	7.5	7.0	7.5	2.5	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
16	7.0	5.0	6.0	4.0	1.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
17	5.0	4.0	4.5	5.5	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
18	5.0	4.0	4.5	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
19	5.5	4.5	5.0	5.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
20	7.0	5.5	6.0	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
21	7.0	5.0	6.0	4.5	2.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
22	8.5	6.5	7.5	2.5	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
23	10.5	8.5	9.5	2.0	1.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0
24	10.0	9.0	9.5	1.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
25	9.0	7.5	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	7.5	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	7.5	6.5	7.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	8.0	7.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	9.5	8.0	9.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	11.0	9.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	10.0	7.5	8.5	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	13.5	4.0	8.3	7.5	0.0	2.7	0.5	0.0	0.0	0.0	0.0	0.0

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043150 SILVER RIVER NEAR L'ANSE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	1.0	6.5	5.0	5.5
2	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	1.5	5.5	4.0	5.0
3	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.5	2.0	8.0	3.0	5.5
4	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.5	2.5	10.0	4.5	7.5
5	0.0	0.0	0.0	0.0	0.0	0.0	5.0	2.0	3.5	11.5	7.0	9.5
6	0.0	0.0	0.0	0.0	0.0	0.0	3.5	2.0	2.0	14.5	10.0	12.0
7	0.0	0.0	0.0	0.0	0.0	0.0	5.5	1.5	3.0	14.0	9.5	12.0
8	0.0	0.0	0.0	0.0	0.0	0.0	6.0	2.0	4.0	13.0	11.5	12.5
9	0.0	0.0	0.0	0.0	0.0	0.0	7.5	3.5	5.5	16.0	11.5	13.5
10	0.0	0.0	0.0	0.0	0.0	0.0	7.0	4.5	6.0	15.5	13.0	14.5
11	0.0	0.0	0.0	0.0	0.0	0.0	7.0	5.0	6.0	13.0	8.0	10.5
12	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.5	6.5	8.5	5.5	7.5
13	0.0	0.0	0.0	0.0	0.0	0.0	8.0	4.5	6.5	8.0	7.0	7.5
14	0.0	0.0	0.0	0.0	0.0	0.0	8.5	5.0	7.0	8.0	7.0	7.5
15	0.0	0.0	0.0	0.0	0.0	0.0	10.0	5.5	8.0	7.0	6.5	6.5
16	0.0	0.0	0.0	0.0	0.0	0.0	10.5	8.5	9.5	8.5	5.5	7.0
17	0.0	0.0	0.0	0.0	0.0	0.0	12.5	8.5	10.0	10.5	6.5	8.5
18	0.0	0.0	0.0	0.0	0.0	0.0	13.0	9.0	11.0	12.0	8.0	10.0
19	0.0	0.0	0.0	0.0	0.0	0.0	13.5	11.5	12.5	12.0	11.0	11.0
20	0.0	0.0	0.0	0.0	0.0	0.0	12.5	8.5	10.0	14.5	9.5	11.5
21	0.0	0.0	0.0	0.0	0.0	0.0	10.5	6.0	8.0	16.5	11.5	14.0
22	0.0	0.0	0.0	0.0	0.0	0.0	9.0	5.5	7.0	15.5	14.0	14.5
23	0.0	0.0	0.0	0.0	0.0	0.0	6.5	4.0	5.0	16.0	12.5	14.0
24	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.0	5.5	17.0	12.5	15.0
25	0.0	0.0	0.0	0.0	0.0	0.0	8.5	4.0	6.5	16.5	13.5	15.0
26	0.0	0.0	0.0	0.0	0.0	0.0	7.5	6.0	6.5	16.0	14.5	15.0
27	0.0	0.0	0.0	0.0	0.0	0.0	6.0	5.0	5.5	14.5	12.0	13.5
28	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.0	5.0	15.0	11.5	13.5
29	---	---	---	1.0	0.0	0.5	7.0	4.5	6.0	16.0	11.5	13.5
30	---	---	---	1.0	0.0	0.5	6.5	4.5	5.5	15.5	12.0	13.5
31	---	---	---	0.5	0.5	0.5	---	---	---	17.0	11.5	14.5
MONTH	0.0	0.0	0.0	1.0	0.0	0.0	13.5	0.0	6.0	17.0	3.0	11.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.0	13.0	15.5	19.5	16.5	18.0	23.5	19.5	21.0	18.5	16.0	17.5
2	19.5	14.0	16.5	20.5	15.0	17.5	24.0	20.5	22.0	18.0	16.0	17.0
3	20.0	15.5	18.0	21.0	17.5	19.0	24.5	22.0	23.0	18.0	14.5	16.5
4	18.0	16.0	17.5	23.0	19.0	20.5	24.5	21.5	23.0	18.5	13.5	16.0
5	21.5	17.0	19.0	20.5	16.0	18.0	23.0	19.0	21.0	20.5	16.0	18.0
6	19.5	17.5	18.5	20.0	14.0	17.0	23.0	17.5	20.0	21.0	18.5	19.5
7	17.5	15.0	16.5	22.0	16.0	18.5	24.5	19.0	21.5	20.0	17.0	18.5
8	16.0	14.0	15.0	23.0	17.0	19.5	25.5	20.0	22.5	18.0	14.0	16.0
9	18.0	13.5	16.0	24.5	19.0	21.5	23.5	20.5	22.0	17.5	13.5	16.0
10	20.5	15.5	18.0	26.0	20.5	23.0	23.0	19.0	21.0	21.0	17.0	19.0
11	20.0	17.0	18.5	27.0	21.5	24.0	21.0	18.0	19.5	22.5	19.5	21.0
12	22.5	18.0	20.0	27.5	21.5	24.5	22.0	18.5	20.0	22.5	20.5	21.5
13	21.5	18.0	20.0	26.5	21.5	24.0	21.0	17.0	19.0	21.5	19.5	20.0
14	19.5	15.5	17.5	25.5	20.5	22.5	20.0	15.5	17.5	19.5	16.0	17.5
15	16.0	14.0	15.0	26.0	18.5	22.0	20.5	14.5	17.5	16.0	13.0	14.5
16	17.0	13.0	15.0	24.5	21.5	22.5	20.5	16.5	18.5	17.0	14.5	15.5
17	18.0	14.5	16.0	26.5	21.5	23.5	18.5	15.0	17.0	17.0	14.5	16.0
18	18.5	13.5	16.0	25.5	22.5	24.0	18.0	15.5	17.0	18.5	16.0	17.0
19	21.0	15.0	18.0	24.5	19.5	22.0	19.5	17.5	18.5	17.0	15.0	16.0
20	22.5	18.0	20.0	25.0	20.0	22.0	21.0	18.0	19.0	16.5	14.0	15.5
21	23.5	19.5	21.0	25.0	20.0	22.5	18.5	16.0	17.0	16.5	13.5	15.0
22	22.5	17.5	20.0	24.5	18.5	21.5	19.0	15.5	17.0	16.5	14.5	15.5
23	23.5	19.0	21.0	21.0	18.0	20.0	19.0	14.0	16.5	14.5	11.5	13.0
24	24.0	21.0	22.5	24.0	19.5	21.0	18.5	13.5	16.0	13.5	11.0	12.5
25	23.5	18.5	21.0	22.5	20.0	21.0	20.5	15.5	17.5	14.0	13.5	14.0
26	22.5	18.0	20.5	21.0	18.0	20.0	20.0	17.5	19.0	14.0	12.5	13.0
27	26.0	20.5	22.5	21.0	16.0	18.0	21.5	18.0	19.5	13.5	11.0	12.5
28	22.5	20.0	21.5	19.0	17.5	18.0	19.5	17.0	18.0	13.5	11.5	13.0
29	20.0	17.5	19.0	20.5	15.5	17.5	17.5	16.0	17.0	11.5	9.5	10.5
30	21.0	18.0	19.5	18.0	16.0	17.0	17.5	14.5	16.0	12.0	10.0	11.0
31	---	---	---	21.5	16.5	19.0	19.5	14.5	16.5	---	---	---
MONTH	26.0	13.0	18.5	27.5	14.0	20.6	25.5	13.5	19.0	22.5	9.5	15.9

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043238 SALMON TROUT RIVER NEAR BIG BAY, MI

LOCATION.--Lat 46°46'56", long 87°52'39", in SE1/4 SE1/4 sec.29, T.51 N., R.28 W., Marquette County, Hydrologic Unit 04020105, on right bank 50 ft downstream from bridge on Northwestern Road, 0.6 mi upstream from West Branch Salmon Trout River, and 7.5 mi southwest of Big Bay.

DRAINAGE AREA.--6.74 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 2004 to September 2005.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,080 ft above sea level, from topographic map.

REMARKS.--Records fair. Satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period December to September, 33 ft^3/s, Apr. 9, gage height, 1.95 ft; maximum gage height, 2.17 ft, Mar. 30, backwater from ice; minimum daily discharge, 3.5 ft^3/s, Aug. 28, 29, 31, Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e5.2	e12	e3.9	e4.4	e12	5.9	4.5	5.0	5.0	3.7
2	---	---	e5.4	e12	e3.9	e4.3	e13	6.2	4.5	4.8	4.7	4.2
3	---	---	e5.5	e12	e3.9	e4.4	e15	6.2	4.4	4.5	4.3	4.3
4	---	---	e5.7	e12	e3.9	e4.4	e18	6.0	4.3	4.3	4.0	4.3
5	---	---	e5.7	e11	e4.1	e4.4	e20	5.9	4.5	4.0	3.9	4.3
6	---	---	e5.7	e11	e5.6	e4.4	e22	5.8	4.7	4.1	3.8	4.4
7	---	---	e5.7	e10	e7.3	e4.4	23	5.8	4.5	4.0	3.8	4.3
8	---	---	e5.7	e10	e7.7	e4.4	21	5.8	4.5	4.0	3.7	4.3
9	---	---	e5.7	e9.2	e8.3	e4.4	22	5.7	4.2	e4.0	3.8	4.3
10	---	---	e5.7	e8.6	e8.0	e4.5	20	5.5	4.2	e4.0	3.9	5.0
11	---	---	e5.8	e8.3	e7.4	e4.5	17	5.5	9.2	e4.0	3.9	4.7
12	---	---	e5.8	e7.6	e6.7	e4.5	15	5.4	9.5	e4.0	3.9	5.4
13	---	---	e5.9	e7.1	e6.2	e4.5	12	6.4	5.7	e4.0	3.9	e11
14	---	---	e6.1	e6.8	e5.4	e4.5	10	6.5	6.9	e4.0	3.8	e8.0
15	---	---	e6.2	e6.4	e4.9	e4.5	9.3	7.4	17	e4.0	3.7	5.8
16	---	---	e6.4	e6.0	e4.9	e4.5	9.1	7.1	9.0	e4.0	3.6	4.9
17	---	---	e6.7	e5.7	e4.9	e4.5	8.3	6.3	6.8	e4.0	4.7	4.0
18	---	---	e6.7	e5.2	e4.9	e4.5	7.3	5.8	5.8	e4.0	5.4	3.8
19	---	---	e7.1	e4.9	e4.8	e4.5	7.4	5.8	5.4	e4.0	4.9	9.9
20	---	---	e7.6	e4.6	e4.8	e4.5	7.8	5.7	5.0	e4.0	4.5	11
21	---	---	e7.6	e4.4	e4.6	e4.6	6.3	5.3	4.6	e4.0	4.1	5.2
22	---	---	e7.9	e4.4	e4.5	e4.7	5.8	6.4	4.4	e4.0	4.0	4.1
23	---	---	e7.9	e4.1	e4.4	e4.8	5.7	8.9	5.3	e4.0	3.8	3.8
24	---	---	e7.7	e4.1	e4.4	e5.0	5.7	6.5	5.0	6.1	3.7	3.5
25	---	---	e7.7	e4.1	e4.5	e5.1	5.8	5.4	4.4	4.9	3.6	3.8
26	---	---	e7.7	e3.9	e4.5	e5.2	5.8	5.0	4.0	4.5	3.6	5.0
27	---	---	e7.9	e3.9	e4.5	e5.9	6.0	5.0	4.0	4.3	3.8	4.2
28	---	---	e7.9	e3.9	e4.5	e6.3	5.9	5.1	12	4.8	3.5	4.6
29	---	---	e7.9	e3.9	---	e6.9	5.7	4.6	6.1	6.0	3.5	5.2
30	---	---	e9.0	e3.9	---	e8.5	5.7	4.7	5.3	7.4	3.6	4.2
31	---	---	e11	e3.9	---	e10	---	4.6	---	6.9	3.5	---
TOTAL	---	---	210.5	214.9	147.4	156.0	347.6	182.2	179.7	139.6	123.9	155.2
MEAN	---	---	6.79	6.93	5.26	5.03	11.6	5.88	5.99	4.50	4.00	5.17
MAX	---	---	11	12	8.3	10	23	8.9	17	7.4	5.4	11
MIN	---	---	5.2	3.9	3.9	4.3	5.7	4.6	4.0	4.0	3.5	3.5
CFSM	---	---	1.01	1.03	0.78	0.75	1.72	0.87	0.89	0.67	0.59	0.77
IN.	---	---	1.16	1.19	0.81	0.86	1.92	1.01	0.99	0.77	0.68	0.86

(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043238 SALMON TROUT RIVER NEAR BIG BAY, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2004 to September 2005 (discontinued).
WATER TEMPERATURE: December 2004 to September 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 1 hour measurement interval.

REMARKS.--Interruptions in the water quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Dec. 1-6, 13-19, Dec. 22 to Jan. 10, Jan. 17 to Feb. 1, Aug. 8 to Sept. 1, rated good; Dec.7-12, 20, 21, Jan. 11-16, Feb. 16, 17, May 5, 6, rated fair; and Feb. 15, Feb. 18 to Mar. 13, Mar. 19-23, Apr. 7-21, May 1-4, 7-10, June 6-19, July 20-28, Sept. 21-30, rated poor. Water temperature records rated excellent except for the following period: July 9-12, rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 485 microsiemens, Apr. 8, but may have been higher during period Mar. 30 to Apr. 1; minimum, 36 microsiemens, Apr. 5, 6, 7.
WATER TEMPERATURE: Maximum, 20.0°C, June 27; minimum, 0.0°C, on several days during winter period.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	90	86	87
2	---	---	---	---	---	---	80	56	65	93	88	90
3	---	---	---	---	---	---	77	59	68	94	91	93
4	---	---	---	---	---	---	82	62	71	99	94	95
5	---	---	---	---	---	---	87	69	80	96	94	95
6	---	---	---	---	---	---	89	74	85	96	94	95
7	---	---	---	---	---	---	88	76	86	98	95	96
8	---	---	---	---	---	---	86	72	81	96	95	96
9	---	---	---	---	---	---	86	70	80	96	95	96
10	---	---	---	---	---	---	84	71	79	97	96	96
11	---	---	---	---	---	---	82	72	79	106	97	102
12	---	---	---	---	---	---	82	70	77	108	97	103
13	---	---	---	---	---	---	82	78	81	104	97	100
14	---	---	---	---	---	---	87	81	84	107	100	104
15	---	---	---	---	---	---	90	77	87	107	101	104
16	---	---	---	---	---	---	93	90	92	108	102	104
17	---	---	---	---	---	---	94	93	93	102	101	102
18	---	---	---	---	---	---	101	94	97	103	102	103
19	---	---	---	---	---	---	103	84	94	102	101	101
20	---	---	---	---	---	---	87	85	86	102	101	101
21	---	---	---	---	---	---	88	86	87	103	101	102
22	---	---	---	---	---	---	89	88	89	103	101	102
23	---	---	---	---	---	---	90	88	89	102	101	101
24	---	---	---	---	---	---	91	89	90	102	101	101
25	---	---	---	---	---	---	94	90	92	101	100	101
26	---	---	---	---	---	---	91	89	90	102	101	101
27	---	---	---	---	---	---	91	90	90	103	102	102
28	---	---	---	---	---	---	90	89	90	103	102	103
29	---	---	---	---	---	---	95	89	91	103	102	103
30	---	---	---	---	---	---	95	86	91	102	101	102
31	---	---	---	---	---	---	89	85	86	103	101	102
MONTH	---	---	---	---	---	---	---	---	---	108	86	99

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043238 SALMON TROUT RIVER NEAR BIG BAY, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	102	98	100	89	87	88	---	---	---	67	58	63
2	---	---	---	93	87	89	64	59	62	81	60	70
3	---	---	---	96	87	91	316	62	90	81	73	77
4	---	---	---	94	90	91	475	61	127	85	77	81
5	---	---	---	91	88	90	61	36	57	87	80	85
6	---	---	---	91	89	89	53	36	48	89	70	83
7	---	---	---	90	87	89	94	36	48	91	78	85
8	---	---	---	93	88	91	485	50	92	89	77	85
9	---	---	---	95	89	93	58	38	53	92	68	85
10	---	---	---	91	79	88	56	39	49	91	83	86
11	---	---	---	90	83	88	58	42	49	85	83	84
12	---	---	---	91	85	89	62	45	52	86	83	85
13	---	---	---	93	84	89	66	50	58	86	83	84
14	---	---	---	---	---	---	66	54	58	84	82	83
15	88	77	82	---	---	---	105	56	61	84	78	82
16	91	72	82	---	---	---	67	58	63	79	77	78
17	84	75	80	---	---	---	68	62	65	82	79	80
18	88	75	82	---	---	---	163	66	77	85	82	83
19	90	78	86	93	88	91	81	66	72	87	85	86
20	94	84	90	92	89	91	114	70	74	88	86	86
21	93	86	90	92	91	91	76	71	73	91	88	89
22	101	93	97	96	90	92	76	67	75	92	86	90
23	106	89	97	116	92	93	77	75	76	86	81	83
24	98	92	94	94	92	93	76	68	72	87	82	84
25	94	90	92	94	93	94	71	57	63	90	86	87
26	95	85	89	95	92	94	60	54	59	---	---	---
27	87	84	85	94	90	93	---	---	---	---	---	---
28	88	83	85	91	83	88	---	---	---	---	---	---
29	---	---	---	86	71	81	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	92	86	89	84	82	83	96	94	95
2	---	---	---	102	92	98	86	83	85	97	94	96
3	---	---	---	---	---	---	87	85	86	98	94	96
4	---	---	---	---	---	---	88	84	86	97	95	96
5	---	---	---	---	---	---	86	84	85	98	96	97
6	90	77	85	---	---	---	87	86	87	99	98	99
7	90	74	84	---	---	---	88	87	88	100	98	99
8	100	86	92	---	---	---	90	88	89	100	99	100
9	102	86	93	---	---	---	91	89	90	102	100	101
10	107	75	93	---	---	---	89	88	89	101	100	101
11	131	87	106	---	---	---	89	89	89	104	101	103
12	111	83	94	---	---	---	90	89	90	104	88	102
13	84	69	74	98	96	97	91	90	90	---	---	---
14	73	71	72	98	97	98	90	89	90	---	---	---
15	120	62	84	99	98	99	90	88	90	---	---	---
16	79	69	74	101	99	100	91	90	90	---	---	---
17	71	67	69	103	100	101	92	85	90	---	---	---
18	76	70	74	105	99	102	95	86	91	---	---	---
19	80	75	77	107	99	102	95	94	95	---	---	---
20	---	---	---	112	105	108	96	93	95	---	---	---
21	---	---	---	111	104	106	94	93	93	87	82	85
22	---	---	---	114	106	109	94	93	94	89	87	89
23	92	85	89	111	104	106	94	93	94	89	86	88
24	92	87	90	106	99	103	94	92	93	87	81	84
25	94	92	93	121	106	112	98	93	94	84	77	82
26	96	94	95	125	109	115	100	95	97	79	73	75
27	98	92	97	110	103	107	97	91	94	78	76	77
28	92	77	80	103	89	95	93	91	92	79	77	78
29	83	78	81	93	89	91	94	93	93	77	76	77
30	88	83	86	96	73	88	96	93	95	80	77	79
31	---	---	---	82	76	79	96	95	95	---	---	---
MONTH	---	---	---	---	---	---	100	82	91	---	---	---

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043238 SALMON TROUT RIVER NEAR BIG BAY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	0.5	0.0	0.0
2	---	---	---	---	---	---	0.5	0.0	0.0	0.5	0.0	0.5
3	---	---	---	---	---	---	0.0	0.0	0.0	0.5	0.0	0.0
4	---	---	---	---	---	---	1.5	0.0	0.5	0.0	0.0	0.0
5	---	---	---	---	---	---	1.0	0.0	0.0	0.0	0.0	0.0
6	---	---	---	---	---	---	1.5	0.0	0.5	0.0	0.0	0.0
7	---	---	---	---	---	---	2.5	1.5	2.0	0.0	0.0	0.0
8	---	---	---	---	---	---	2.5	2.0	2.5	0.0	0.0	0.0
9	---	---	---	---	---	---	3.0	2.0	2.5	0.5	0.0	0.5
10	---	---	---	---	---	---	3.0	1.5	2.0	0.5	0.0	0.5
11	---	---	---	---	---	---	2.0	1.0	1.5	1.0	0.0	0.5
12	---	---	---	---	---	---	1.0	0.0	0.5	2.0	1.0	1.5
13	---	---	---	---	---	---	0.0	0.0	0.0	2.0	0.0	1.0
14	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
15	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
16	---	---	---	---	---	---	0.5	0.0	0.0	0.0	0.0	0.0
17	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
18	---	---	---	---	---	---	0.5	0.0	0.0	0.0	0.0	0.0
19	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
20	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
21	---	---	---	---	---	---	0.0	0.0	0.0	0.5	0.0	0.0
22	---	---	---	---	---	---	0.0	0.0	0.0	0.5	0.0	0.5
23	---	---	---	---	---	---	0.0	0.0	0.0	0.5	0.5	0.5
24	---	---	---	---	---	---	0.0	0.0	0.0	1.0	0.5	1.0
25	---	---	---	---	---	---	0.0	0.0	0.0	1.0	0.5	1.0
26	---	---	---	---	---	---	0.0	0.0	0.0	1.0	0.5	0.5
27	---	---	---	---	---	---	0.0	0.0	0.0	0.5	0.0	0.5
28	---	---	---	---	---	---	0.5	0.0	0.5	0.5	0.0	0.5
29	---	---	---	---	---	---	1.5	0.5	1.0	1.5	0.5	1.0
30	---	---	---	---	---	---	1.0	0.0	0.5	1.5	1.5	1.5
31	---	---	---	---	---	---	0.5	0.0	0.5	2.0	1.5	1.5
MONTH	---	---	---	---	---	---	---	---	---	2.0	0.0	0.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.0	1.5	2.0	0.0	0.0	0.0	3.0	0.5	1.5	6.5	4.0	5.0
2	2.0	1.5	2.0	0.0	0.0	0.0	4.0	1.0	2.0	5.0	3.5	4.0
3	2.0	1.5	2.0	0.0	0.0	0.0	5.0	1.0	2.5	9.0	2.5	5.0
4	2.0	1.5	2.0	0.5	0.0	0.0	5.0	1.0	2.5	11.0	3.5	7.0
5	2.0	1.0	1.5	1.5	0.0	1.0	5.0	2.0	3.0	10.5	5.5	8.0
6	1.5	0.5	1.0	1.5	1.5	1.5	2.0	1.0	1.5	12.5	8.0	10.0
7	1.0	0.0	0.5	1.5	0.0	0.5	5.5	1.0	3.0	13.5	7.0	9.5
8	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.0	4.0	12.0	9.0	11.0
9	0.5	0.0	0.0	0.0	0.0	0.0	7.5	3.0	5.0	16.0	10.5	12.5
10	0.5	0.0	0.0	0.0	0.0	0.0	7.0	4.0	5.5	13.5	10.0	12.5
11	2.0	0.5	1.0	0.0	0.0	0.0	8.5	4.0	6.0	10.0	5.5	8.0
12	1.5	0.5	1.0	0.0	0.0	0.0	8.5	4.0	6.0	8.0	3.5	5.5
13	1.0	0.0	0.5	0.0	0.0	0.0	8.5	3.0	5.5	7.0	5.5	6.0
14	1.5	0.0	1.0	1.0	0.0	0.5	9.0	3.5	6.0	8.0	6.5	7.0
15	1.5	0.0	1.0	1.0	0.5	1.0	10.5	4.5	7.0	6.5	5.5	6.0
16	0.0	0.0	0.0	1.0	0.5	1.0	9.5	6.0	8.0	7.5	4.5	6.0
17	0.0	0.0	0.0	1.0	0.0	0.5	12.0	6.0	9.0	11.5	5.0	7.5
18	0.0	0.0	0.0	0.5	0.0	0.0	12.0	7.5	9.5	13.0	7.5	10.0
19	0.0	0.0	0.0	1.0	0.5	1.0	12.0	9.0	10.5	11.0	9.5	10.5
20	0.0	0.0	0.0	1.0	0.5	1.0	10.0	5.5	7.5	14.5	7.5	11.0
21	0.0	0.0	0.0	1.5	1.0	1.5	10.0	3.5	6.5	15.5	9.5	12.5
22	0.0	0.0	0.0	1.5	0.0	0.5	7.5	3.5	5.0	13.5	11.5	12.5
23	0.0	0.0	0.0	2.0	0.5	1.0	4.0	2.5	3.5	14.0	10.5	12.5
24	0.0	0.0	0.0	2.0	1.0	1.5	7.0	2.5	4.5	16.0	10.0	12.5
25	0.0	0.0	0.0	2.0	1.0	1.5	8.5	3.5	5.5	14.5	10.5	12.5
26	0.0	0.0	0.0	2.0	0.0	1.0	6.5	4.5	5.5	13.0	11.5	12.5
27	0.0	0.0	0.0	2.5	1.0	1.5	6.0	4.0	5.0	12.0	9.5	11.0
28	0.0	0.0	0.0	2.5	1.0	1.5	6.0	3.5	4.5	14.0	9.5	11.5
29	---	---	---	2.5	0.5	1.5	7.0	4.0	5.5	13.0	9.0	11.0
30	---	---	---	1.5	0.5	1.0	6.0	3.5	5.0	13.5	9.0	11.0
31	---	---	---	1.0	0.5	0.5	---	---	---	15.0	8.5	11.5
MONTH	2.0	0.0	0.6	2.5	0.0	0.7	12.0	0.5	5.2	16.0	2.5	9.5

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043238 SALMON TROUT RIVER NEAR BIG BAY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	10.0	12.5	16.0	13.0	14.0	17.0	14.5	15.5	14.0	12.5	13.0
2	16.5	11.5	13.5	16.0	12.0	13.5	17.5	15.0	16.0	14.0	12.0	13.0
3	16.5	11.5	14.0	17.0	13.5	15.0	18.5	16.0	17.0	13.5	11.5	12.5
4	15.5	13.5	14.5	16.5	14.5	15.5	17.5	16.0	16.5	14.0	10.0	12.0
5	18.0	13.5	15.5	15.5	12.0	13.0	16.5	13.5	15.0	16.0	12.5	14.0
6	16.0	14.0	15.0	14.5	10.0	12.0	16.5	13.0	14.5	15.5	14.5	15.0
7	14.0	11.5	13.0	15.5	11.5	13.5	17.0	14.0	15.5	14.5	12.0	13.5
8	14.0	10.0	12.0	16.5	12.5	14.0	18.5	14.5	16.5	13.0	10.0	11.5
9	16.0	12.5	14.0	16.5	14.5	15.5	17.5	14.5	16.0	13.5	10.5	12.0
10	17.0	12.0	14.5	18.5	15.0	16.5	16.5	14.0	15.0	16.0	13.0	14.5
11	18.5	14.0	16.0	18.0	15.5	17.0	14.5	12.5	13.5	17.5	14.5	16.0
12	19.0	16.5	17.5	18.0	15.5	17.0	15.5	14.0	14.5	17.0	15.0	16.0
13	17.5	14.0	16.0	18.0	15.0	16.5	14.5	12.5	13.5	---	---	---
14	16.0	13.5	14.0	17.0	14.0	15.5	14.0	11.0	12.5	---	---	---
15	15.0	12.5	13.5	16.5	12.5	14.5	14.0	11.0	12.5	13.0	10.5	11.5
16	14.5	12.0	13.5	17.0	15.0	16.0	14.5	12.5	13.5	13.5	11.5	12.5
17	14.5	12.0	13.0	19.0	15.5	17.0	13.0	11.0	12.0	14.0	11.5	12.5
18	15.0	10.5	12.5	18.5	16.5	17.5	14.5	12.5	13.5	14.5	12.5	13.5
19	17.0	12.0	14.5	16.5	13.5	15.0	15.0	13.5	14.0	15.0	12.5	13.0
20	18.0	14.5	16.0	17.5	14.5	15.5	16.0	13.5	14.5	14.5	13.0	14.0
21	17.5	15.0	16.0	16.5	14.0	15.5	14.0	12.0	13.0	14.0	11.5	13.0
22	16.5	11.5	14.0	16.0	12.5	14.0	13.0	11.5	12.0	14.0	11.5	13.0
23	18.5	14.0	16.0	15.0	12.5	14.0	13.0	10.0	11.5	11.5	9.0	10.0
24	18.5	16.5	17.5	18.0	14.5	16.0	13.5	10.0	11.5	12.0	9.0	10.5
25	17.5	14.0	15.5	17.0	15.5	16.0	14.5	11.5	13.0	12.0	11.5	11.5
26	17.0	13.0	15.0	16.0	13.0	14.5	15.0	13.0	14.0	12.0	10.5	11.0
27	20.0	16.0	17.5	14.5	11.0	13.0	15.5	13.5	14.0	12.0	10.0	11.0
28	19.0	16.5	18.0	14.0	12.5	13.5	14.0	12.5	13.5	11.5	9.5	11.0
29	16.5	14.0	15.0	14.5	12.0	13.0	13.0	12.0	12.5	10.0	8.5	9.0
30	17.5	14.5	16.0	13.5	12.0	12.5	13.5	11.5	12.5	11.0	9.0	10.0
31	---	---	---	16.5	13.5	15.0	14.0	11.5	12.5	---	---	---
MONTH	20.0	10.0	14.8	19.0	10.0	14.9	18.5	10.0	13.9	---	---	---

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043275 YELLOW DOG RIVER NEAR BIG BAY, MI

LOCATION.--Lat 46°42'49", long 87°50'26", in NW1/4 SW1/4 sec.20, T.50 N., R.28 W., Marquette County, Hydrologic Unit 04020105, on left bank at end of unnamed road, 1.1 mi downstream from Wylie Falls, and 9.1 mi southwest of Big Bay.

DRAINAGE AREA.--31.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 2004 to September 2005.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,370 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period December to September, 366 ft^3/s, Apr. 7, gage height, 5.92 ft; minimum, 4.8 ft^3/s, Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e20	e38	e9.9	e11	e119	39	24	30	18	5.7
2	---	---	e20	e36	e9.9	e11	e147	38	21	25	13	5.5
3	---	---	e20	e34	e9.9	e11	e150	37	20	21	10	5.6
4	---	---	e20	e34	e9.9	e11	e164	33	18	19	9.5	5.6
5	---	---	e20	e30	e11	e11	e183	31	19	18	9.5	5.6
6	---	---	e20	e29	e14	e11	e261	30	21	16	8.5	5.6
7	---	---	e20	e27	e19	e11	e318	29	21	e15	7.5	7.8
8	---	---	e20	e26	e20	e11	e268	27	18	e14	6.9	9.3
9	---	---	e20	e23	e21	e11	e233	27	17	e13	6.6	8.4
10	---	---	e20	e22	e20	e11	e229	27	16	e12	7.3	12
11	---	---	e20	e21	e19	e11	e211	28	36	e10	7.1	14
12	---	---	e20	e19	e17	e11	e205	25	52	e9.8	6.5	12
13	---	---	e20	e18	e16	e11	e185	27	30	9.6	6.2	32
14	---	---	e20	e17	e13	e11	e168	32	29	9.0	5.8	23
15	---	---	e20	e16	e12	e11	e151	38	70	8.2	5.8	16
16	---	---	e20	e16	e12	e11	e146	49	73	7.9	5.5	11
17	---	---	e20	e14	e12	e11	e138	40	44	8.7	5.5	8.3
18	---	---	e20	e13	e12	e11	e126	35	34	8.0	11	7.3
19	---	---	e20	e13	e12	e11	e123	33	29	7.5	10	14
20	---	---	e20	e12	e12	e11	e119	36	25	6.9	9.0	54
21	---	---	e20	e11	e11	e12	e115	32	22	6.4	7.8	33
22	---	---	e20	e11	e11	e12	e95	33	19	6.2	7.3	21
23	---	---	e20	e10	e11	e12	76	54	20	5.7	7.1	17
24	---	---	e20	e10	e11	e13	64	53	22	11	6.1	13
25	---	---	e20	e10	e11	e13	57	43	18	13	5.8	13
26	---	---	e20	e10	e11	e13	52	37	16	8.8	5.6	18
27	---	---	e20	e10	e11	e15	51	34	16	7.6	6.0	18
28	---	---	e20	e10	e11	e20	50	33	53	7.4	6.1	16
29	---	---	e20	e9.9	---	e31	45	31	49	9.2	5.6	22
30	---	---	e26	e9.9	---	e54	41	28	36	13	5.5	18
31	---	---	e33	e9.9	---	e91	---	26	---	32	5.7	---
TOTAL	---	---	639	569.7	369.6	506	4290	1065	888	388.9	237.8	451.7
MEAN	---	---	20.6	18.4	13.2	16.3	143	34.4	29.6	12.5	7.67	15.1
MAX	---	---	33	38	21	91	318	54	73	32	18	54
MIN	---	---	20	9.9	9.9	11	41	25	16	5.7	5.5	5.5
CFSM	---	---	0.65	0.58	0.42	0.51	4.50	1.08	0.93	0.39	0.24	0.47
IN.	---	---	0.75	0.67	0.43	0.59	5.02	1.25	1.04	0.45	0.28	0.53

(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043275 YELLOW DOG RIVER NEAR BIG BAY, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2004 to September 2005.
WATER TEMPERATURE: December 2004 to September 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 1 hour measurement interval.

REMARKS.--Interruptions in the water quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Apr. 1-20, Apr. 23 to June 22, and June 25 to July 7, rated good. Water temperature records rated excellent except for the following periods: May 22 to June 5, June 25-28, July 1-3, 10-12, rated good; June 6-19, 29, 30, rated fair; June 20-22, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 92 microsiemens, Sept. 5-12; minimum, 19 microsiemens, Apr. 6-12.
WATER TEMPERATURE: Maximum, 25.5°C, July 17; minimum, 0.0°C, on several days during winter period.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	49	43	46
2	---	---	---	---	---	---	---	---	---	43	41	42
3	---	---	---	---	---	---	---	---	---	41	39	40
4	---	---	---	---	---	---	---	---	---	42	39	41
5	---	---	---	---	---	---	---	---	---	42	41	42
6	---	---	---	---	---	---	---	---	---	43	42	43
7	---	---	---	---	---	---	---	---	---	45	43	44
8	---	---	---	---	---	---	---	---	---	47	45	46
9	---	---	---	---	---	---	---	---	---	48	47	47
10	---	---	---	---	---	---	---	---	---	50	47	49
11	---	---	---	---	---	---	---	---	---	50	50	50
12	---	---	---	---	---	---	---	---	---	51	50	50
13	---	---	---	---	---	---	---	---	---	52	50	51
14	---	---	---	---	---	---	---	---	---	54	52	53
15	---	---	---	---	---	---	---	---	---	55	54	55
16	---	---	---	---	---	---	---	---	---	57	55	56
17	---	---	---	---	---	---	---	---	---	58	57	58
18	---	---	---	---	---	---	---	---	---	59	58	59
19	---	---	---	---	---	---	---	---	---	59	59	59
20	---	---	---	---	---	---	---	---	---	59	59	59
21	---	---	---	---	---	---	---	---	---	59	58	58
22	---	---	---	---	---	---	53	53	53	58	58	58
23	---	---	---	---	---	---	53	53	53	59	58	58
24	---	---	---	---	---	---	54	53	54	58	58	58
25	---	---	---	---	---	---	55	54	55	58	58	58
26	---	---	---	---	---	---	56	55	55	59	58	58
27	---	---	---	---	---	---	56	56	56	59	58	59
28	---	---	---	---	---	---	56	55	56	59	58	59
29	---	---	---	---	---	---	56	55	55	60	59	59
30	---	---	---	---	---	---	56	55	56	60	59	60
31	---	---	---	---	---	---	55	49	53	60	60	60
MONTH	---	---	---	---	---	---	---	---	---	60	39	53

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043275 YELLOW DOG RIVER NEAR BIG BAY, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	62	60	60	61	60	61	29	28	28	38	37	37
2	---	---	---	60	59	59	28	26	27	38	38	38
3	---	---	---	59	58	58	26	25	26	39	38	39
4	---	---	---	59	58	59	26	25	25	41	39	40
5	---	---	---	59	59	59	25	22	24	43	41	42
6	60	54	58	60	59	59	22	19	20	46	43	43
7	54	44	50	60	59	59	20	19	19	46	44	45
8	46	39	43	61	60	60	19	19	19	48	46	47
9	47	43	45	64	60	61	19	19	19	49	48	48
10	48	47	47	64	61	61	19	19	19	50	49	49
11	49	48	49	62	61	62	19	19	19	49	49	49
12	50	49	50	62	62	62	20	19	19	50	49	49
13	54	50	52	62	62	62	20	20	20	50	49	49
14	53	51	53	63	62	62	21	20	21	49	45	47
15	53	53	53	63	62	63	22	21	22	45	42	44
16	54	53	54	63	63	63	23	22	23	42	36	39
17	55	54	55	64	63	63	24	23	23	36	36	36
18	57	55	56	65	64	64	25	24	25	38	36	37
19	57	56	57	66	64	65	26	25	26	40	38	39
20	58	57	57	67	64	65	27	25	26	41	40	40
21	58	58	58	65	64	64	---	---	---	43	41	42
22	59	58	58	65	63	63	---	---	---	44	43	44
23	59	58	58	67	63	64	29	28	28	44	37	41
24	60	59	59	63	62	63	30	29	29	37	36	36
25	61	60	60	64	62	62	31	30	31	37	36	36
26	61	61	61	64	61	62	33	31	32	40	37	38
27	62	61	61	62	60	61	33	33	33	42	40	41
28	62	61	62	62	54	58	34	33	34	43	42	43
29	---	---	---	54	45	50	35	34	35	45	43	44
30	---	---	---	45	34	40	37	35	36	47	45	46
31	---	---	---	34	29	31	---	---	---	50	47	49
MONTH	---	---	---	67	29	60	---	---	---	50	36	42

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	52	49	50	47	44	46	63	60	61	91	87	90
2	55	52	53	51	47	49	69	63	66	90	89	89
3	58	55	56	54	51	52	73	69	71	90	89	90
4	61	58	59	58	54	56	76	73	75	91	90	90
5	63	61	62	60	58	59	79	76	77	92	90	91
6	63	62	63	64	60	62	79	75	77	92	91	92
7	63	62	62	67	64	65	77	76	76	92	90	91
8	64	62	63	69	67	68	80	77	78	92	90	91
9	66	64	65	70	69	69	80	78	80	92	90	91
10	68	66	67	73	70	71	81	80	80	92	87	90
11	69	35	55	74	73	73	83	81	82	92	88	90
12	47	37	42	74	72	73	84	83	83	92	76	88
13	53	47	50	76	74	75	85	84	84	87	77	83
14	55	53	54	78	76	77	85	84	85	81	73	76
15	55	35	44	81	78	79	86	85	85	74	72	73
16	35	33	34	82	80	80	86	85	86	77	74	76
17	38	34	36	82	79	80	86	83	85	79	77	78
18	42	38	39	82	81	81	87	84	86	82	79	80
19	45	42	43	83	81	82	87	85	86	82	69	79
20	50	45	47	83	81	82	85	84	84	72	57	64
21	54	50	52	84	82	83	84	83	84	62	56	58
22	58	54	56	84	82	83	84	84	84	66	61	62
23	58	56	57	84	83	84	86	84	85	65	64	64
24	60	57	58	85	74	82	85	84	85	67	65	66
25	61	60	60	85	82	83	86	84	85	68	66	67
26	64	61	63	82	77	79	87	85	86	68	66	68
27	65	62	64	81	78	79	88	84	87	69	67	68
28	62	43	52	81	76	79	89	87	88	68	64	66
29	43	40	41	80	78	79	90	88	89	65	63	64
30	44	41	42	80	71	78	90	89	90	65	62	63
31	---	---	---	77	60	66	91	89	90	---	---	---
MONTH	69	33	53	85	44	73	91	60	82	92	56	78

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043275 YELLOW DOG RIVER NEAR BIG BAY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
2	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
3	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
4	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
5	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
6	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
7	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
8	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
9	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
10	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
11	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
12	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
13	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
14	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
15	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
16	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
17	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
18	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
19	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
20	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0
21	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
22	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
23	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
24	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
25	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
26	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
27	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
28	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
29	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
30	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
31	---	---	---	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	---	---	---	---	---	---	---	---	---	0.0	0.0	0.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	6.0	5.0	5.5
2	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	6.0	4.5	5.0
3	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	1.0	7.5	3.5	5.5
4	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.5	1.5	10.0	5.5	7.5
5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.0	2.0	11.0	7.5	9.0
6	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	12.0	9.5	10.5
7	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	1.0	13.0	9.5	11.5
8	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.5	2.5	13.5	11.0	12.5
9	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.5	4.5	15.5	12.5	14.0
10	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.0	5.0	15.0	13.5	14.5
11	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.0	5.5	13.5	9.5	11.5
12	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.0	6.0	9.5	7.0	8.5
13	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.0	6.0	8.0	7.0	7.5
14	0.0	0.0	0.0	0.0	0.0	0.0	8.0	4.5	6.5	8.0	7.0	7.5
15	0.0	0.0	0.0	0.0	0.0	0.0	9.0	5.5	7.5	7.1	6.2	6.6
16	0.0	0.0	0.0	0.0	0.0	0.0	9.0	7.5	8.5	7.0	5.5	6.0
17	0.0	0.0	0.0	0.0	0.0	0.0	11.5	7.5	9.5	9.5	6.0	7.5
18	0.0	0.0	0.0	0.0	0.0	0.0	11.0	9.5	10.5	12.0	8.0	10.0
19	0.0	0.0	0.0	0.0	0.0	0.0	12.5	10.5	11.5	12.0	11.0	11.5
20	0.0	0.0	0.0	0.0	0.0	0.0	12.0	7.5	9.5	14.0	10.5	12.0
21	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	16.0	12.0	14.0
22	0.0	0.0	0.0	0.0	0.0	0.0	---	---	---	16.0	14.0	15.0
23	0.0	0.0	0.0	0.0	0.0	0.0	5.5	3.5	4.0	15.5	13.5	14.5
24	0.0	0.0	0.0	0.0	0.0	0.0	5.5	3.0	4.0	17.0	13.5	15.0
25	0.0	0.0	0.0	0.0	0.0	0.0	7.5	4.5	6.0	17.0	14.5	16.0
26	0.0	0.0	0.0	0.0	0.0	0.0	7.0	6.0	6.5	16.0	15.0	15.5
27	0.0	0.0	0.0	0.0	0.0	0.0	6.0	5.0	5.5	15.5	14.0	14.5
28	0.0	0.0	0.0	0.0	0.0	0.0	5.5	4.5	5.0	14.5	12.5	13.5
29	---	---	---	0.0	0.0	0.0	6.0	4.5	5.5	14.5	11.5	13.0
30	---	---	---	1.5	0.0	0.5	6.0	4.5	5.5	15.5	12.0	13.5
31	---	---	---	1.0	0.0	0.5	---	---	---	17.0	12.0	15.0
MONTH	0.0	0.0	0.0	1.5	0.0	0.0	---	---	---	17.0	3.5	11.1

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043275 YELLOW DOG RIVER NEAR BIG BAY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.5	14.0	16.5	18.0	16.0	17.0	20.0	17.0	18.5	19.0	16.0	17.0
2	20.0	15.5	18.0	18.5	14.5	16.5	22.0	18.5	20.0	18.0	15.5	16.5
3	20.5	16.5	18.5	19.0	16.0	17.5	24.0	20.5	22.0	17.5	14.5	16.0
4	20.5	18.0	19.0	19.5	17.5	18.5	23.5	20.0	22.0	18.0	14.0	16.0
5	22.5	18.0	20.0	18.5	15.5	17.0	22.0	18.5	20.0	19.5	15.0	17.0
6	20.5	19.0	19.5	17.5	13.5	15.5	22.0	18.0	20.0	19.5	17.0	18.5
7	19.5	16.5	18.0	19.5	15.0	17.0	23.0	18.5	20.5	19.0	16.0	17.5
8	18.5	15.5	17.0	20.5	16.0	18.0	24.0	19.5	21.5	18.0	13.5	15.5
9	20.5	16.5	18.5	21.0	17.5	19.5	22.0	20.0	21.0	18.0	13.5	16.0
10	21.5	17.0	19.0	24.0	19.0	21.5	22.0	19.0	20.5	19.5	16.0	17.5
11	21.0	19.0	20.0	24.0	20.5	22.5	20.0	17.0	18.5	21.0	18.0	19.5
12	21.5	18.5	20.0	24.5	20.5	22.5	20.5	18.0	19.0	21.5	19.0	20.5
13	21.5	18.0	20.0	25.0	20.0	22.5	20.0	17.0	18.5	20.5	19.5	20.0
14	20.0	17.0	18.5	23.5	19.5	21.5	19.0	15.5	17.0	19.5	16.5	18.0
15	17.0	15.0	16.0	23.5	18.0	21.0	20.0	15.0	17.0	16.5	14.0	15.5
16	16.0	14.5	15.0	24.0	20.5	22.0	19.5	16.5	18.0	17.0	15.0	15.5
17	16.5	14.5	15.5	25.5	20.5	23.0	18.5	14.5	16.5	17.5	14.5	16.0
18	18.0	14.0	16.0	24.5	21.0	22.5	18.5	15.5	17.0	17.5	16.0	16.5
19	20.0	15.5	17.5	23.0	18.5	20.5	18.5	17.0	17.5	16.5	15.0	16.0
20	22.0	18.0	20.0	23.5	19.0	21.0	20.0	17.5	18.5	15.5	14.0	15.0
21	23.0	20.0	21.5	23.5	19.0	21.0	17.5	15.5	16.5	15.5	13.5	15.0
22	21.0	18.0	20.0	23.0	18.0	20.0	17.5	15.0	16.0	16.0	14.5	15.5
23	21.5	18.0	20.0	21.5	17.5	19.0	17.5	13.5	15.5	14.5	12.0	13.0
24	22.0	19.5	20.5	22.5	18.5	20.0	18.0	13.5	15.5	14.0	12.0	13.0
25	21.5	18.0	20.0	22.0	19.0	20.5	18.5	15.0	16.5	13.5	13.0	13.5
26	21.5	17.5	19.5	20.5	17.0	19.0	20.0	16.5	18.0	13.0	12.0	12.5
27	23.5	19.0	21.0	20.0	15.5	17.5	20.5	17.5	19.0	14.0	12.0	13.0
28	21.0	18.5	20.0	19.0	17.0	17.5	19.0	17.0	18.0	13.5	11.5	12.5
29	18.5	17.0	18.0	18.5	15.5	17.0	18.0	16.0	17.0	11.5	10.0	11.0
30	19.5	16.5	18.0	16.5	15.5	16.0	18.0	15.0	16.5	11.5	10.0	10.5
31	---	---	---	18.0	15.0	16.5	18.5	15.5	16.5	---	---	---
MONTH	23.5	14.0	18.7	25.5	13.5	19.4	24.0	13.5	18.3	21.5	10.0	15.7

STREAMS TRIBUTARY TO LAKE SUPERIOR

04043800 McCLURE STORAGE BASIN RELEASE NEAR MARQUETTE, MI

LOCATION.--Lat 46°34'19", long 87°28'35", in SW1/4 NE1/4 sec.7, T.48 N., R.25 W., Marquette County, Hydrologic Unit 04020105, on left bank in powerhouse of Upper Peninsula Power Co., 600 ft upstream from Reany Creek, 2.5 mi downstream from McClure Dam, and 4.3 mi northwest of Marquette.

PERIOD OF RECORD.--April 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 785 ft above sea level, from topographic map.

REMARKS.--Records good. Flow completely regulated by powerplant at station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAYOCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	109	114	113	72	97	98	351	179	125	313	94	69
2	117	106	112	88	97	97	349	179	98	242	100	68
3	113	105	113	98	97	97	348	179	91	134	102	66
4	107	110	113	97	97	97	348	179	90	96	102	67
5	107	112	111	97	97	96	349	177	90	85	97	68
6	106	111	109	97	97	96	e349	176	90	84	96	71
7	108	111	85	97	98	96	e350	168	90	84	96	70
8	112	110	73	97	101	96	e350	152	90	87	96	68
9	112	109	74	97	102	96	e350	149	90	86	98	70
10	111	109	74	97	100	98	e350	147	89	83	98	67
11	111	109	73	97	96	100	351	143	88	82	96	70
12	110	109	68	97	95	103	349	119	94	81	95	70
13	109	109	68	97	96	103	347	108	146	82	90	70
14	109	109	69	97	96	104	347	108	220	84	90	70
15	109	109	69	97	96	103	346	108	320	82	82	66
16	111	109	67	96	96	103	345	108	340	81	77	67
17	111	109	66	97	96	100	346	127	338	83	69	68
18	110	109	66	97	96	97	345	140	338	79	60	69
19	110	105	67	97	96	97	346	140	234	84	58	65
20	109	102	68	98	96	98	346	167	205	81	63	65
21	109	102	68	97	96	99	346	180	144	82	65	66
22	109	102	68	97	96	97	344	181	103	84	66	66
23	105	102	68	97	96	96	345	181	100	83	66	64
24	113	105	68	97	96	97	345	288	e98	82	67	69
25	115	108	68	97	96	100	265	242	e96	79	70	71
26	107	106	68	97	95	104	180	173	e94	84	71	70
27	110	105	67	97	96	108	180	173	e90	85	76	71
28	112	110	67	97	97	107	180	173	e90	86	74	72
29	115	115	67	97	---	235	176	174	94	88	70	72
30	116	115	67	97	---	349	177	173	192	85	69	79
31	116	---	70	97	---	351	---	164	---	84	69	---
TOTAL	3428	3246	2404	2974	2710	3718	9500	5055	4367	3035	2522	2064
MEAN	111	108	77.5	95.9	96.8	120	317	163	146	97.9	81.4	68.8
MAX	117	115	113	98	102	351	351	288	340	313	102	79
MIN	105	102	66	72	95	96	176	108	88	79	58	64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2005, BY WATER YEAR (WY)

MEAN	118	148	157	154	161	215	287	261	209	147	115	106
MAX	213	295	304	279	337	334	348	355	347	323	267	194
(WY)	1991	1991	1992	2004	1997	1998	1998	1996	1996	2002	2000	1997
MIN	78.6	2.53	57.5	52.4	66.8	120	195	99.6	73.7	14.9	6.29	57.3
(WY)	1999	2000	2001	2001	2001	2005	1995	2000	1991	1997	1997	1993

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1990 - 2005	
ANNUAL TOTAL	70552		45023			
ANNUAL MEAN	193		123		174	
HIGHEST ANNUAL MEAN					234	1996
LOWEST ANNUAL MEAN					123	2005
HIGHEST DAILY MEAN	355	Aug 17	351	Mar 31	(e)370	May 20 1996
LOWEST DAILY MEAN	66	Dec 17	58	Aug 19	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	67	Dec 16	64	Aug 18	0.00	Nov 2 1999
10 PERCENT EXCEEDS	340		234		339	
50 PERCENT EXCEEDS	146		97		164	
90 PERCENT EXCEEDS	105		68		66	

(a) On several days in water years 1992, 1994, 1998, 1999, 2000, 2004.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE SUPERIOR

04044724 AU TRAIN RIVER AT FOREST LAKE, MI

LOCATION.--Lat 46°20'27", long 86°51'00", in SE1/4 NE1/4 sec.31, T.46N., R.20W., Alger County, Hydrologic Unit 04020201, on left bank 800 ft downstream from Upper Peninsula Power Co. powerhouse, 0.6 mi downstream from Au Train Dam, and 0.6 mi northwest of Forest Lake.

DRAINAGE AREA.--81 mi^2, approximately.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 650 ft above sea level, from topographic map.

REMARKS.--Records good. Flow regulated by powerplant 800 ft upstream and by Au Train Basin, capacity 12,342 acre-ft, 0.6 mi upstream. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	68	143	108	72	74	138	135	70	70	66	62
2	72	68	143	120	72	74	138	135	70	70	66	62
3	71	68	142	137	72	74	138	135	70	70	66	62
4	72	68	140	137	72	74	138	136	70	71	66	62
5	71	68	140	132	72	74	138	129	70	71	66	62
6	70	67	140	137	73	74	138	118	70	70	65	62
7	69	68	139	137	96	74	143	110	70	69	65	62
8	70	70	129	137	114	74	238	110	70	69	65	62
9	69	69	116	137	114	74	339	112	70	69	65	61
10	69	69	110	137	113	74	371	104	70	69	65	62
11	69	68	110	137	112	74	372	85	70	69	65	61
12	69	68	109	137	112	74	351	70	69	58	65	61
13	69	68	81	137	112	74	315	72	69	68	65	62
14	69	68	96	137	112	74	287	74	70	68	65	62
15	69	68	117	137	92	74	269	74	70	68	65	55
16	69	68	111	137	74	74	237	90	69	68	65	51
17	69	68	108	129	74	74	217	102	69	68	65	51
18	69	68	107	117	74	74	207	102	69	67	65	51
19	69	68	108	116	74	74	189	102	69	67	65	52
20	68	68	107	116	74	74	181	102	34	67	64	52
21	68	68	107	107	74	94	193	102	50	67	64	52
22	68	72	107	98	74	107	171	111	69	67	64	51
23	70	75	110	97	74	104	151	113	68	67	64	51
24	69	74	110	96	74	104	148	100	69	68	64	51
25	68	75	109	83	74	104	153	93	69	67	63	51
26	69	75	109	73	74	104	147	94	69	68	63	52
27	69	75	110	74	74	104	140	84	69	67	64	51
28	68	77	109	74	74	105	138	77	70	68	63	52
29	68	108	108	73	---	123	135	77	70	67	63	51
30	69	139	109	73	---	138	135	75	70	67	63	52
31	68	---	109	73	---	138	---	71	---	66	62	---
TOTAL	2148	2201	3593	3540	2372	2705	6055	3094	2031	2105	2001	1691
MEAN	69.3	73.4	116	114	84.7	87.3	202	99.8	67.7	67.9	64.5	56.4
MAX	72	139	143	137	114	138	372	136	70	71	66	62
MIN	68	67	81	73	72	74	135	70	34	58	62	51
CFSM	0.86	0.91	1.43	1.41	1.05	1.08	2.49	1.23	0.84	0.84	0.80	0.70
IN.	0.99	1.01	1.65	1.63	1.09	1.24	2.78	1.42	0.93	0.97	0.92	0.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2005, BY WATER YEAR (WY)

MEAN	71.6	78.9	78.7	85.0	88.7	109	184	156	86.0	66.9	78.3	73.5
MAX	142	136	120	124	127	133	281	428	151	96.9	192	109
(WY)	2003	1994	2002	2002	1996	1999	2001	1996	2002	2004	2002	1998
MIN	35.0	25.4	27.4	48.6	57.8	84.4	82.6	46.5	51.3	30.7	45.5	53.0
(WY)	1995	1995	1999	1999	1995	1995	1994	2000	1994	1998	1994	1995

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1994 - 2005	
ANNUAL TOTAL	42285		33536			
ANNUAL MEAN	116		91.9		96.3	
HIGHEST ANNUAL MEAN					131	2002
LOWEST ANNUAL MEAN					65.8	1995
HIGHEST DAILY MEAN	572	Apr 21	372	Apr 11	670	May 11 1996
LOWEST DAILY MEAN	67	Feb 15	34	Jun 20	2.5	Oct 26 2000
ANNUAL SEVEN-DAY MINIMUM	68	Feb 14	51	Sep 21	22	Jul 14 1998
MAXIMUM PEAK FLOW			381	Apr 10	686	May 11 1996
MAXIMUM PEAK STAGE			4.83	Apr 10	6.08	May 11 1996
ANNUAL RUNOFF (CFSM)	1.43		1.13		1.19	
ANNUAL RUNOFF (INCHES)	19.42		15.40		16.16	
10 PERCENT EXCEEDS	162		138		142	
50 PERCENT EXCEEDS	92		72		74	
90 PERCENT EXCEEDS	69		63		44	

STREAMS TRIBUTARY TO LAKE SUPERIOR

463910086014201 GRAND SABLE LAKE NEAR GRAND MARAIS, MI

LOCATION.--Lat 46°39'10", long 86°01'42", in SW1/4 SW1/4 sec.11, T.49 N., R.14 W., Alger County, Hydrologic Unit 04020201, at National Park Service Public Access Site, 2.5 mi southwest of Grand Marais.

DRAINAGE AREA.--15 mi^2, approximately.

PERIOD OF RECORD.--October 1944 to September 1950, June 1979 to September 1982, October 1992 to current year.

GAGE.--Nonrecording gage. Datum of gage is 743.44 ft above sea level. Oct. 18, 1944 to Sept. 23, 1950, nonrecording gage at different site and datum.

REMARKS.--Staff gage read by observer. Intermittent record only for some periods. Inlets are Rhody Creek, DeMull Creek, and Towes Creek. The outlet is Sable Creek. Partial-record site at outlet 1979-82. Surface area of lake is 628 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 3.38 ft, Apr. 16, 2002; minimum observed, 0.55 ft, Sept. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 2.28 ft, Oct. 31; minimum observed, 0.92 ft, Aug. 23-25.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.48	2.26	---	---	---	---	---	2.08	1.70	1.30	1.08	1.14
2	1.48	2.22	---	---	---	---	---	2.00	1.68	1.30	1.08	1.16
3	1.48	2.22	---	---	---	---	---	1.96	1.68	1.28	1.10	1.18
4	1.48	2.22	---	---	---	---	---	1.92	1.68	1.28	1.08	1.18
5	1.48	2.20	---	---	---	---	---	1.90	1.68	1.26	1.08	1.18
6	1.48	2.14	---	---	---	---	---	1.90	1.66	1.26	1.08	1.18
7	1.50	2.14	2.02	---	---	---	---	1.90	1.62	1.24	1.08	1.18
8	1.50	2.12	---	---	---	---	---	1.90	1.60	1.22	1.08	1.20
9	1.60	---	---	---	---	1.74	---	1.90	1.58	1.20	1.06	1.24
10	1.60	---	---	---	---	---	---	1.86	1.54	1.20	1.06	1.26
11	1.60	---	---	---	---	---	---	1.80	1.54	1.20	1.04	1.26
12	1.60	---	---	---	---	---	---	1.80	1.50	1.18	1.02	1.28
13	1.60	---	---	---	---	---	---	1.80	1.50	---	1.00	1.30
14	1.60	---	---	---	---	---	---	1.80	1.48	1.14	1.00	1.32
15	1.72	---	---	---	---	---	---	1.82	1.52	1.12	1.00	1.34
16	1.78	---	---	---	---	---	---	1.80	1.52	1.12	0.98	1.34
17	1.82	---	---	---	---	---	---	1.78	1.50	1.10	0.98	1.34
18	1.90	---	---	---	---	---	---	1.78	1.48	1.10	0.98	1.32
19	1.92	---	---	1.98	---	---	---	1.76	1.44	1.06	0.96	1.32
20	1.91	---	---	---	---	---	---	1.74	1.42	1.04	0.96	1.34
21	---	---	---	---	---	---	---	1.74	1.42	1.02	0.94	---
22	2.08	---	---	---	---	---	---	1.78	1.42	1.00	0.94	1.50
23	2.08	---	---	---	---	---	---	1.82	1.42	1.00	0.92	1.52
24	2.10	---	---	---	---	---	---	1.84	1.42	1.00	0.92	1.52
25	2.14	---	---	---	---	---	---	1.84	1.42	1.04	0.92	1.52
26	2.14	---	---	---	---	---	---	1.82	1.40	1.06	---	1.52
27	2.14	---	---	---	---	---	---	1.80	1.40	1.02	1.08	1.52
28	2.14	---	---	---	---	---	---	1.82	1.38	---	1.12	1.56
29	2.12	---	---	---	---	---	2.09	1.80	1.36	1.06	1.12	1.58
30	2.14	---	---	---	---	---	---	1.78	1.34	1.08	1.14	1.56
31	2.28	---	---	---	---	---	---	1.74	---	1.08	1.14	---

STREAMS TRIBUTARY TO LAKE SUPERIOR

04045500 TAHQUAMENON RIVER NEAR PARADISE, MI

LOCATION.--Lat 46°34'30", long 85°16'10", in NE1/4 sec.11, T.48 N., R.8 W., Luce County, Hydrologic Unit 04020202, on left bank 0.7 mi upstream from Tahquamenon Falls (upper), 11.5 mi west of Paradise, and 19 mi northeast of Newberry.

DRAINAGE AREA.--790 mi^2.

PERIOD OF RECORD.--August 1953 to current year. Prior to October 1989, published as "near Tahquamenon Paradise".

GAGE.--Water-stage recorder. Datum of gage is 698.03 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295	1930	1260	882	452	420	1470	1290	e444	197	218	276
2	311	1910	1250	1000	452	419	1830	1250	e428	205	230	265
3	337	1860	1180	1080	456	419	2270	1210	e407	202	232	256
4	353	1770	1200	1140	459	412	2570	1180	e388	198	232	255
5	373	1700	1230	1170	464	405	2930	1110	e377	196	239	249
6	366	1600	1220	1200	476	402	3330	1030	e363	202	244	244
7	363	1480	1210	1210	520	402	3790	958	e355	199	232	229
8	376	1410	1210	1190	576	407	4040	907	e345	195	226	227
9	433	1330	1210	1150	617	407	4150	841	e337	194	218	225
10	521	1280	1220	1110	643	405	4150	777	e330	186	243	229
11	575	1320	1220	1050	655	403	4100	738	e320	185	274	242
12	594	1360	1150	993	653	403	3980	e759	e309	180	280	250
13	580	1380	1070	943	644	402	3830	e780	e303	175	277	251
14	550	1370	1010	899	632	399	3660	e815	e292	175	277	259
15	534	1350	984	858	614	395	3470	e885	e286	177	275	289
16	561	1310	965	796	591	392	3250	e1000	e282	174	260	298
17	712	1250	932	728	572	389	3010	1080	e277	175	248	289
18	883	1190	899	672	554	388	2790	1080	e268	175	235	273
19	964	1130	841	617	531	387	2570	1030	e262	173	223	267
20	1010	1100	798	576	512	388	2320	950	e252	179	234	285
21	1020	1110	757	549	497	388	2140	886	249	165	249	307
22	1010	1120	721	528	478	389	1920	799	254	163	258	312
23	1030	1110	697	513	468	394	1710	729	254	165	259	306
24	1230	1080	688	494	460	400	1550	679	243	166	252	300
25	1400	1040	665	482	449	406	1520	647	240	164	242	286
26	1550	1000	638	478	440	414	1490	597	240	168	230	288
27	1660	957	621	475	435	425	1450	552	237	174	236	306
28	1710	1030	602	468	427	456	1430	524	218	181	261	315
29	1710	1170	585	459	---	541	1400	e514	216	186	275	400
30	1840	1230	575	453	---	736	1340	e502	220	194	277	498
31	1900	---	705	452	---	1110	---	e474	---	206	276	---
TOTAL	26751	39877	29313	24615	14727	13703	79460	26573	8996	5674	7712	8476
MEAN	863	1329	946	794	526	442	2649	857	300	183	249	283
MAX	1900	1930	1260	1210	655	1110	4150	1290	444	206	280	498
MIN	295	957	575	452	427	387	1340	474	216	163	218	225
CFSM	1.09	1.68	1.20	1.01	0.67	0.56	3.35	1.09	0.38	0.23	0.31	0.36
IN.	1.26	1.88	1.38	1.16	0.69	0.65	3.74	1.25	0.42	0.27	0.36	0.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

MEAN	852	1008	774	497	478	757	2735	1623	672	478	414	579
MAX	1792	2284	1756	983	894	2517	4575	4511	1736	1081	1126	1623
(WY)	2002	1989	1967	1983	1999	2000	1976	1960	1974	1956	1973	1970
MIN	256	373	317	303	279	335	1259	323	244	183	167	220
(WY)	1964	2001	2001	1963	1963	1956	2000	1998	1988	2005	2000	2000

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005	
ANNUAL TOTAL	359464		285877			
ANNUAL MEAN	982		783		905	
HIGHEST ANNUAL MEAN					1294	1971
LOWEST ANNUAL MEAN					600	1998
HIGHEST DAILY MEAN	3710	Apr 6	4150	Apr 9	6820	May 10 1960
LOWEST DAILY MEAN	237	Aug 9	163	Jul 22	143	Aug 26 2000
ANNUAL SEVEN-DAY MINIMUM	252	Aug 6	166	Jul 21	147	Aug 23 2000
MAXIMUM PEAK FLOW			4180	Apr 9	6990	May 10 1960
MAXIMUM PEAK STAGE			8.37	Apr 9	10.26	May 10 1960
INSTANTANEOUS LOW FLOW			156	(a)	136	Aug 29 2000
ANNUAL RUNOFF (CFSM)	1.24		0.991		1.15	
ANNUAL RUNOFF (INCHES)	16.93		13.46		15.57	
10 PERCENT EXCEEDS	2190		1500		1900	
50 PERCENT EXCEEDS	664		502		570	
90 PERCENT EXCEEDS	290		222		292	

(a) July 21, 22.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04046000 BLACK RIVER NEAR GARNET, MI

LOCATION.--Lat 46°07'05", long 85°21'55", in SE1/4 sec.13, T.43 N., R.9 W., Mackinac County, Hydrologic Unit 04060107, on right bank 20 ft upstream from footbridge, 15 ft downstream from Peters Creek, 3.5 mi upstream from mouth, and 3.7 mi southwest of Garnet.

DRAINAGE AREA.--28 mi^2, approximately.

PERIOD OF RECORD.--September 1951 to September 1978, October 1978 to September 1994 (operated as a crest-stage partial-record station), October 1994 to current year.

REVISED RECORDS.--WSP 1707: 1959.

GAGE.--Water-stage recorder. Datum of gage is 629.7 ft above sea level. Oct. 1, 1978 to Sept. 30, 1994, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	48	51	49	e13	e11	47	29	14	8.3	8.6	6.8
2	9.0	43	43	47	e14	e11	54	29	14	8.3	7.6	6.8
3	8.2	38	40	44	e14	e11	71	27	13	8.3	7.1	6.9
4	8.0	35	55	40	14	e11	94	26	13	8.8	8.9	6.9
5	8.0	35	55	37	14	e12	121	25	12	8.9	8.3	6.8
6	7.9	32	44	e34	15	e12	143	24	12	8.4	7.2	6.8
7	7.7	29	42	31	18	e12	158	24	12	8.3	7.0	6.8
8	12	28	42	29	19	e12	145	23	11	8.3	6.9	6.6
9	17	26	42	28	e17	e11	125	22	11	8.0	7.8	6.7
10	16	43	43	27	e16	e11	109	23	11	8.0	8.5	8.0
11	15	63	38	25	e16	e11	99	22	11	8.0	7.4	7.9
12	15	48	35	25	e15	e11	84	21	11	7.8	7.3	6.8
13	14	41	34	e26	e15	e11	71	25	10	7.7	7.0	8.3
14	14	36	32	e22	e15	e13	62	35	10	7.6	6.8	17
15	15	33	30	e20	e14	11	54	32	10	7.6	6.8	10
16	18	32	29	e18	e14	11	48	30	9.9	7.5	6.6	8.8
17	26	31	27	e16	e14	11	47	27	9.8	7.4	6.4	8.1
18	24	30	26	e14	e14	10	43	24	9.6	7.9	6.5	7.8
19	22	28	e25	e14	e13	10	40	22	9.5	7.6	9.0	9.8
20	20	36	e25	e13	e13	11	44	21	9.4	7.4	9.1	14
21	20	38	25	e13	e13	11	40	20	9.4	7.4	8.4	11
22	19	34	24	e13	e13	11	36	20	9.3	7.1	7.7	10
23	44	31	23	e13	e13	11	33	23	9.6	6.9	7.2	9.5
24	92	28	e23	e13	e13	11	32	21	9.7	7.7	6.9	8.8
25	63	26	22	e13	e13	11	39	19	9.3	7.5	6.9	9.2
26	51	24	21	e13	e12	11	41	18	9.2	9.2	6.9	10
27	58	30	21	e12	e11	11	38	17	9.0	8.2	7.5	9.9
28	51	97	20	e11	e11	12	35	17	8.8	7.6	7.4	11
29	46	78	20	e11	---	15	32	20	8.6	7.8	8.8	17
30	68	62	20	e12	---	25	30	17	8.3	7.4	7.7	15
31	60	---	51	e13	---	40	---	16	---	9.7	7.0	---
TOTAL	856.4	1183	1028	696	396	393	2015	719	314.4	246.6	233.2	279.0
MEAN	27.6	39.4	33.2	22.5	14.1	12.7	67.2	23.2	10.5	7.95	7.52	9.30
MAX	92	97	55	49	19	40	158	35	14	9.7	9.1	17
MIN	7.6	24	20	11	11	10	30	16	8.3	6.9	6.4	6.6
CFSM	0.99	1.41	1.18	0.80	0.51	0.45	2.40	0.83	0.37	0.28	0.27	0.33
IN.	1.14	1.57	1.37	0.92	0.53	0.52	2.68	0.96	0.42	0.33	0.31	0.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	24.0	29.8	23.7	15.0	13.0	21.8	86.3	45.0	23.9	17.0	13.8	17.8
MAX	68.0	69.9	60.0	26.0	24.7	61.7	168	141	75.3	38.6	38.7	65.5
(WY)	1960	1978	1971	1967	1966	1953	1971	1960	1974	1952	1973	1970
MIN	6.06	7.12	6.46	5.65	5.98	7.43	28.4	11.2	10.1	7.64	5.38	5.94
(WY)	1964	1977	2001	2001	2003	1956	2000	1998	2000	1998	2000	2000

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	11456.1		8359.6			
ANNUAL MEAN	31.3		22.9		27.6	
HIGHEST ANNUAL MEAN					49.9	1971
LOWEST ANNUAL MEAN					14.2	1998
HIGHEST DAILY MEAN	162	Apr 3	158	Apr 7	752	May 7 1960
LOWEST DAILY MEAN	7.5	Sep 29	6.4	Aug 17	3.6	Mar 5 2003
ANNUAL SEVEN-DAY MINIMUM	7.9	Sep 25	6.8	Aug 12	3.6	Mar 5 2003
MAXIMUM PEAK FLOW			169	Apr 6	(a)860	May 7 1960
MAXIMUM PEAK STAGE			4.72	Apr 6	8.55	May 7 1960
INSTANTANEOUS LOW FLOW			6.3	(b)	3.6	(c)
ANNUAL RUNOFF (CFSM)	1.12		0.818		0.984	
ANNUAL RUNOFF (INCHES)	15.22		11.11		13.38	
10 PERCENT EXCEEDS	75		46		56	
50 PERCENT EXCEEDS	21		14		16	
90 PERCENT EXCEEDS	9.4		7.5		8.3	

(a) From rating curve extended above 400 ft^3/s.
(b) Aug. 16, 17, 18.
(c) Mar. 4-16, 2003.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04056500 MANISTIQUE RIVER NEAR MANISTIQUE, MI

LOCATION.--Lat 46°01'50", long 86°09'40", in SE1/4 sec.15, T.42 N., R.15 W., Schoolcraft County, Hydrologic Unit 04060106, on left bank 1.0 mi downstream from West Branch, 6.0 mi northeast of Manistique, and at mile 19.5.

DRAINAGE AREA.--1,100 mi^2, approximately.

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--WSP 1387: 1940-42(M), 1943, 1945. WSP 1627, 1727: 1938, 1939.

GAGE.--Water-stage recorder. Datum of gage is 608.46 ft above sea level. Prior to July 15, 1939, non-recording gage at site 1,600 ft upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Since July 1948, slight regulation by dam on outlet of Manistique Lake. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	550	3010	2530	e1470	e895	e978	2690	1690	1040	571	587	493
2	598	2810	2470	e1650	e899	e982	3280	1640	970	555	636	472
3	647	2630	2310	e1750	e903	e982	3850	1580	921	546	627	457
4	689	e2470	e2210	e1820	e913	e976	4450	1520	883	546	640	448
5	700	e2330	e2150	e1860	e931	e960	5260	1470	855	543	623	444
6	685	2210	e2140	e1890	e968	e952	6000	1380	834	541	577	437
7	668	2100	e2090	e1890	e1010	e940	6300	1270	810	550	541	431
8	667	1990	2050	e1890	e1080	e940	6490	1250	792	545	512	422
9	707	1900	2000	e1840	e1140	e940	6550	1240	775	528	502	418
10	761	1900	2020	e1780	e1200	e940	6300	1200	758	517	521	427
11	817	2120	e1990	e1700	e1280	e940	5800	1160	737	508	550	446
12	829	2340	e1920	e1640	e1340	e940	5260	1120	718	499	563	479
13	793	2410	e1830	e1600	e1370	e940	4800	1130	703	493	543	519
14	757	2390	e1760	e1550	e1350	e940	4350	1170	687	485	517	516
15	737	2290	e1720	e1490	e1310	e940	4000	1230	679	476	500	491
16	743	2160	e1680	e1420	e1270	e940	3680	1270	672	469	486	476
17	818	2050	e1650	e1330	e1220	e940	3370	1270	671	462	472	464
18	1050	1990	e1590	e1240	e1170	e934	3100	1250	665	457	462	452
19	1290	1910	e1510	e1160	e1140	e934	2850	1200	650	452	467	449
20	1440	1890	e1460	e1100	e1110	e934	2650	1140	638	445	478	468
21	1490	1980	e1400	e1060	e1090	e928	2490	1090	628	448	485	485
22	1460	2070	e1340	e1030	e1070	e922	2350	1050	610	443	479	519
23	1510	2090	e1300	e991	e1050	e922	2230	1060	612	437	471	520
24	2290	2040	e1290	e961	e1040	e922	2100	1180	634	468	461	492
25	2990	1940	e1260	e943	e1020	e928	1980	1260	647	521	452	482
26	3290	1840	e1210	e931	e1000	e940	1890	1240	652	531	441	482
27	3440	1790	e1180	e927	e996	e976	1860	1180	627	521	449	487
28	3490	2010	e1150	e911	e987	e1070	1860	1160	607	509	493	515
29	3450	2370	e1120	e907	---	e1320	1830	1160	589	513	533	591
30	3330	2550	e1120	e899	---	e1810	1770	1150	577	512	550	661
31	3190	---	e1290	e895	---	2280	---	1100	---	537	524	---
TOTAL	45876	65580	52740	42525	30752	31990	111390	38810	21641	15628	16142	14443
MEAN	1480	2186	1701	1372	1098	1032	3713	1252	721	504	521	481
MAX	3490	3010	2530	1890	1370	2280	6550	1690	1040	571	640	661
MIN	550	1790	1120	895	895	922	1770	1050	577	437	441	418
CFSM	1.35	1.99	1.55	1.25	1.00	0.94	3.38	1.14	0.66	0.46	0.47	0.44
IN.	1.55	2.22	1.78	1.44	1.04	1.08	3.77	1.31	0.73	0.53	0.55	0.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2005, BY WATER YEAR (WY)

MEAN	1153	1511	1258	947	866	1339	4020	2305	1301	879	696	790
MAX	2720	3777	2569	1777	1516	3358	6401	6963	4531	1783	1733	2657
(WY)	1979	1989	1966	1966	1966	1946	1976	1960	1943	1993	1996	1978
MIN	386	606	480	469	480	547	1926	789	602	402	384	350
(WY)	1949	1977	1977	1977	1963	1963	2000	2000	1988	1955	1963	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1938 - 2005	
ANNUAL TOTAL	648705		487517			
ANNUAL MEAN	1772		1336		1421	
HIGHEST ANNUAL MEAN					2229	1960
LOWEST ANNUAL MEAN					806	1948
HIGHEST DAILY MEAN	7270	Apr 4	6550	Apr 9	16500	May 11 1960
LOWEST DAILY MEAN	550	Oct 1	418	Sep 9	290	Oct 4 1948
ANNUAL SEVEN-DAY MINIMUM	569	Sep 26	432	Sep 5	294	Sep 30 1948
MAXIMUM PEAK FLOW			6640	Apr 9	16900	May 11 1960
MAXIMUM PEAK STAGE			10.61	Apr 9	12.85	May 11 1960
INSTANTANEOUS LOW FLOW			415	(a)	288	Oct 4 1948
ANNUAL RUNOFF (CFSM)	1.61		1.21		1.29	
ANNUAL RUNOFF (INCHES)	21.94		16.49		17.55	
10 PERCENT EXCEEDS	3500		2400		2720	
50 PERCENT EXCEEDS	1340		1000		1000	
90 PERCENT EXCEEDS	684		481		560	

(a) Sept. 9, 10.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04057510 STURGEON RIVER NEAR NAHMA JUNCTION, MI

LOCATION.--Lat 45°56'35", long 86°42'20", in SW1/4 SE1/4 sec.17, T.41 N., R.19 W., Delta County, Hydrologic Unit 04030112, Hiawatha National Forest, on left bank 30 ft upstream from bridge on Forest Service Road 2231, 500 ft downstream from Mormon Creek, 0.1 mi east of Federal Forest Highway 13, and 3.2 mi north of Nahma Junction.

DRAINAGE AREA.--183 mi^2.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 610.99 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	391	294	e267	e107	e97	e304	187	130	56	48	e43
2	102	341	279	e283	e107	e90	e388	184	118	55	51	40
3	104	305	244	e283	e107	e95	e460	180	108	55	50	38
4	101	277	250	e267	e107	e90	e622	175	101	55	61	37
5	106	260	229	e237	e107	e90	731	171	98	55	55	37
6	96	242	233	e202	e120	e90	842	167	96	55	46	35
7	87	228	222	e198	e132	e90	965	174	92	54	44	36
8	122	216	222	e194	e146	e90	983	177	88	52	41	e37
9	176	200	221	e194	e152	e90	918	170	84	50	42	e37
10	158	221	242	e194	e152	e90	836	165	80	49	54	e38
11	137	340	248	e176	e128	e90	761	162	77	48	50	e40
12	122	316	224	e166	e124	e90	677	153	75	47	51	e40
13	111	278	206	e158	e124	e90	595	145	75	45	49	e44
14	103	251	203	e152	e124	e90	e507	170	73	45	46	e47
15	103	232	e210	e145	e124	e90	e480	178	73	44	44	46
16	114	218	e210	e145	e124	e90	e389	177	79	43	42	44
17	131	228	e210	e144	e124	e92	e374	167	76	41	40	42
18	132	251	e210	e146	e122	e94	e321	157	73	41	39	40
19	128	233	e206	e146	e122	e102	e315	150	71	39	41	44
20	119	308	e206	e143	e117	e103	e315	156	68	38	44	55
21	140	367	e206	e133	e115	e103	e327	147	67	38	46	54
22	131	323	e206	e128	e113	e100	e303	144	64	36	45	52
23	255	288	e206	e125	e113	e98	e255	154	64	36	44	51
24	646	261	e206	e116	e113	e98	e227	147	70	40	42	48
25	553	235	e206	e116	e109	e98	e198	136	67	41	40	49
26	422	216	e206	e116	e101	e98	213	131	64	45	38	55
27	435	236	e206	e114	e97	e106	234	135	62	45	44	56
28	465	381	e206	e107	e97	e125	230	167	60	45	48	64
29	433	382	e206	e107	---	e143	216	173	57	48	48	105
30	433	319	e206	e107	---	e183	196	162	56	47	46	100
31	443	---	e228	e107	---	e242	---	148	---	47	45	---
TOTAL	6663	8344	6857	5116	3328	3237	14182	5009	2366	1435	1424	1454
MEAN	215	278	221	165	119	104	473	162	78.9	46.3	45.9	48.5
MAX	646	391	294	283	152	242	983	187	130	56	61	105
MIN	55	200	203	107	97	90	196	131	56	36	38	35
CFSM	1.17	1.52	1.21	0.90	0.65	0.57	2.58	0.88	0.43	0.25	0.25	0.26
IN.	1.35	1.70	1.39	1.04	0.68	0.66	2.88	1.02	0.48	0.29	0.29	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2005, BY WATER YEAR (WY)

MEAN	179	218	165	107	97.2	180	548	284	178	115	105	120
MAX	365	532	369	198	181	396	847	590	411	254	330	354
(WY)	2003	1978	1971	1997	1984	2000	1979	1996	1979	1968	1978	1978
MIN	55.5	64.4	49.8	50.0	54.2	72.6	219	88.4	50.3	45.7	45.9	40.7
(WY)	1977	1977	1977	1977	1977	1994	2000	1998	1988	1988	2005	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1967 - 2005	
ANNUAL TOTAL	85260		59415			
ANNUAL MEAN	233		163		191	
HIGHEST ANNUAL MEAN					289	1978
LOWEST ANNUAL MEAN					121	1987
HIGHEST DAILY MEAN	1190	Apr 20	983	Apr 8	2030	Apr 21 1985
LOWEST DAILY MEAN	54	Sep 30	35	Sep 6	32	Aug 5 1998
ANNUAL SEVEN-DAY MINIMUM	57	Sep 25	37	Sep 3	34	Jul 31 1998
MAXIMUM PEAK FLOW			998	Apr 7	2120	Apr 21 1985
MAXIMUM PEAK STAGE			8.23	Apr 7	11.50	Apr 21 1985
INSTANTANEOUS LOW FLOW			35	(a)	32	(b)
ANNUAL RUNOFF (CFSM)	1.27		0.890		1.04	
ANNUAL RUNOFF (INCHES)	17.33		12.08		14.19	
10 PERCENT EXCEEDS	558		315		388	
50 PERCENT EXCEEDS	150		120		127	
90 PERCENT EXCEEDS	80		44		64	

(a) Sept. 6, 7.
(b) July 8, 1988, Aug. 5-7, 1998.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04057800 MIDDLE BRANCH ESCANABA RIVER AT HUMBOLDT, MI

LOCATION.--Lat 46°29'57", long 87°53'11", in SW1/4 sec.1, T.47 N., R.29 W., Marquette County, Hydrologic Unit 04030110, on left bank 15 ft upstream from county road FX, 1.5 mi downstream from Halfway Creek, and 0.3 mi north of Humboldt.

DRAINAGE AREA.--46.0 mi^2.

PERIOD OF RECORD.--June 1959 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. V-notch sharp-crested weir since Oct. 3, 1960. Datum of gage is 1,521.20 ft above sea level (Cleveland-Cliffs Iron Co. bench mark). Prior to Sept. 1, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair. From July 1960 to June 1972, some diversion 100 ft upstream by industry for iron ore processing; figures of runoff adjusted. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	36	22	e33	20	e19	147	62	42	131	12	6.0
2	13	33	21	e35	20	e19	182	62	36	85	12	5.6
3	11	31	e21	e37	19	e19	208	59	31	61	11	5.4
4	10	28	e20	e37	19	e19	242	54	28	49	10	5.2
5	9.8	27	e20	e36	18	19	272	49	36	46	9.5	5.3
6	9.4	25	e20	e35	22	19	327	46	58	38	8.9	5.2
7	9.0	22	e20	e34	29	e18	454	43	53	32	8.3	5.0
8	9.7	21	e20	e33	33	e18	504	41	43	29	7.5	5.0
9	13	19	e20	e30	32	e18	465	40	38	26	7.6	4.8
10	11	19	e20	29	32	e18	428	41	32	22	8.7	4.9
11	11	20	e21	27	29	18	406	39	41	20	7.9	4.8
12	9.7	19	22	26	27	18	364	36	97	18	7.4	4.9
13	9.5	17	e23	25	26	18	316	40	82	16	7.1	7.8
14	9.6	16	e23	e25	25	17	258	50	93	15	6.9	8.5
15	12	16	e24	e24	25	17	212	53	132	14	6.6	6.8
16	16	16	e24	e23	e24	17	175	57	113	13	6.3	6.1
17	18	16	e24	e22	24	17	153	51	80	12	6.2	5.7
18	17	16	e24	e21	23	16	140	45	61	12	6.6	5.6
19	18	16	e24	e22	22	16	132	48	49	14	6.8	13
20	17	25	e24	e22	21	16	165	63	40	14	7.1	22
21	16	30	e24	e21	21	16	171	54	35	13	6.9	12
22	14	25	e24	e21	21	16	135	59	29	12	6.7	9.8
23	36	23	e24	e21	20	16	111	100	25	12	6.3	8.4
24	70	21	23	e21	19	16	95	94	23	14	6.2	7.6
25	57	18	22	e21	19	17	84	73	21	12	6.1	7.7
26	46	17	22	e21	19	18	76	59	18	12	5.8	11
27	37	18	e22	e21	18	19	77	52	18	11	7.4	9.7
28	31	27	e22	e21	e19	23	77	57	139	10	7.3	15
29	34	27	e22	e21	---	37	70	60	195	11	6.8	21
30	40	26	e23	e21	---	66	65	59	144	11	6.5	16
31	40	---	e28	e21	---	117	---	51	---	13	6.5	---
TOTAL	662.6	670	693	807	646	717	6511	1697	1832	798	236.9	255.8
MEAN	21.4	22.3	22.4	26.0	23.1	23.1	217	54.7	61.1	25.7	7.64	8.53
MAX	70	36	28	37	33	117	504	100	195	131	12	22
MIN	7.9	16	20	21	18	16	65	36	18	10	5.8	4.8
CFSM	0.46	0.49	0.49	0.57	0.50	0.50	4.72	1.19	1.33	0.56	0.17	0.19
IN.	0.54	0.54	0.56	0.65	0.52	0.58	5.27	1.37	1.48	0.65	0.19	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

MEAN	51.8	54.4	36.3	23.3	20.5	40.6	202	120	60.1	32.3	25.4	33.7
MAX	191	198	77.5	41.5	55.9	149	423	326	153	89.9	76.5	184
(WY)	1986	1989	1992	1966	1984	1973	1985	1972	1989	1968	1978	1978
MIN	5.87	5.97	5.57	5.30	6.00	11.5	74.9	21.1	13.3	7.57	5.80	4.91
(WY)	1977	1977	1977	1977	1977	1964	1987	1998	1988	1988	1976	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005	
ANNUAL TOTAL	20198.4		15526.3			
ANNUAL MEAN	55.2		42.5		58.2	
HIGHEST ANNUAL MEAN					95.3	1960
LOWEST ANNUAL MEAN					30.7	1998
HIGHEST DAILY MEAN	851	Apr 20	504	Apr 8	1830	Apr 20 1985
LOWEST DAILY MEAN	7.2	Sep 30	4.8	Sep 9	4.2	Sep 12 1976
ANNUAL SEVEN-DAY MINIMUM	7.6	Sep 25	4.9	Sep 6	4.5	Sep 7 1976
MAXIMUM PEAK FLOW			517	Apr 8	1930	Apr 20 1985
MAXIMUM PEAK STAGE			5.52	Apr 8	9.21	Apr 20 1985
INSTANTANEOUS LOW FLOW			4.7	(a)	3.5	Aug 22 1998
ANNUAL RUNOFF (CFSM)	1.20		0.925		1.27	
ANNUAL RUNOFF (INCHES)	16.33		12.56		17.19	
10 PERCENT EXCEEDS	149		84		128	
50 PERCENT EXCEEDS	22		21		30	
90 PERCENT EXCEEDS	11		7.5		12	

(a) Part of each day Sept. 8-12.
(e) Estimated.

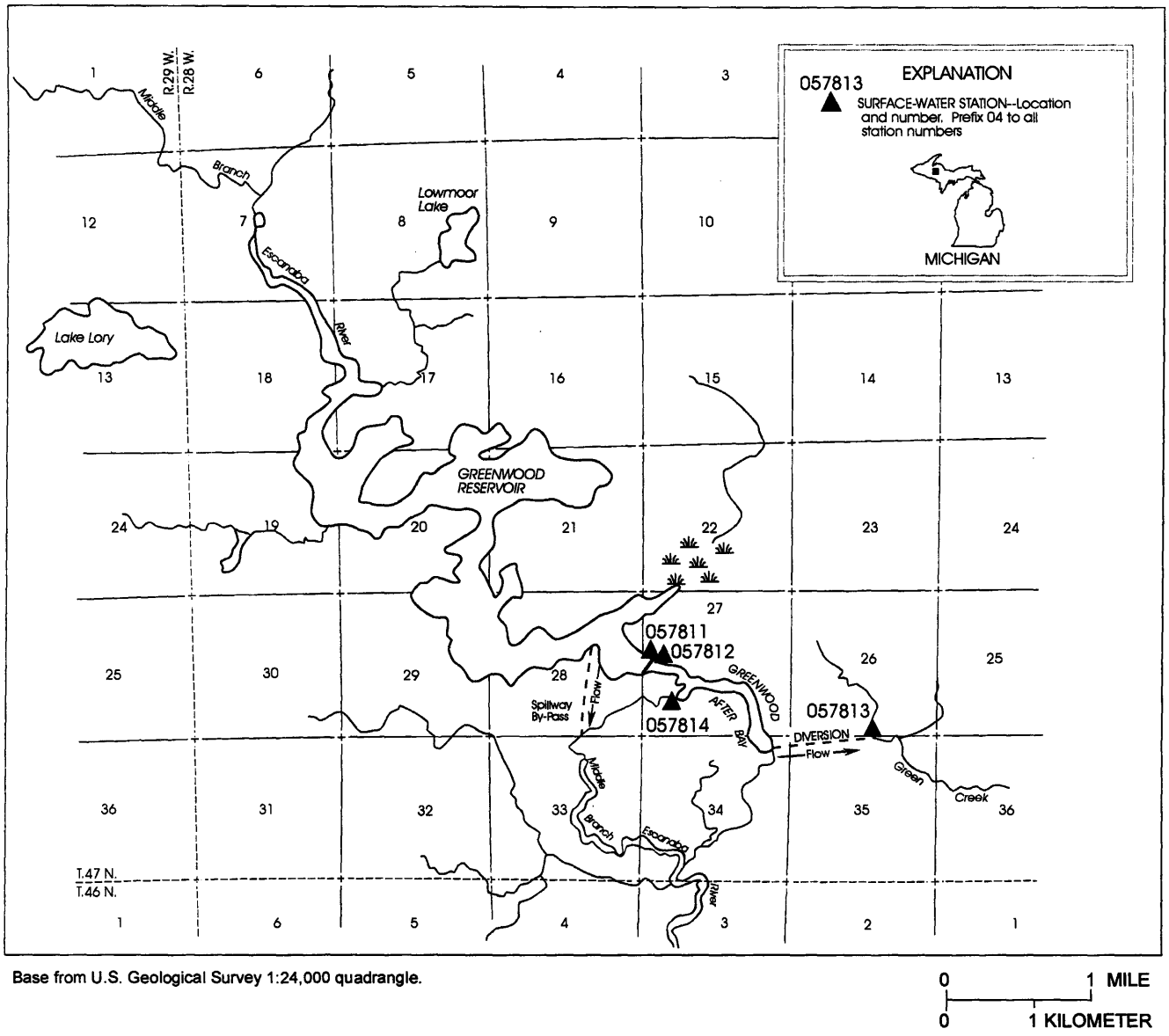


Figure 8. Identification number and location of active surface-water gaging stations in and around the Greenwood Reservoir Complex.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04057811 GREENWOOD RESERVOIR NEAR GREENWOOD, MI

LOCATION.--Lat 46°26'32", long 87°48'02", in NW1/4 SW1/4 sec.27, T.47 N., R.28 W., Marquette County, Hydrologic Unit 04030110, at control structure on Middle Branch Escanaba River, 3.7 mi southwest of Greenwood.

DRAINAGE AREA.--67.4 mi^2.

PERIOD OF RECORD.--December 1972 to current year. Prior to October 1997, monthend elevations and contents only.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above sea level (levels by Cleveland-Cliffs Iron Co.); EXTREMES reported below have been converted to sea level elevations. Prior to Feb. 20, 1973, nonrecording gage at same site and datum.

REMARKS.--The reservoir is formed by an earth/rockfill main dam and several earthen dikes surrounding the storage area. Storage began Dec. 22, 1972. The fixed-crest concrete spillway was completed in September 1973. Capacity of reservoir, 23,300 acre-ft at spillway elevation 1,515 ft. Above elevation 1,515 ft, water flows over concrete spillway into Middle Branch Escanaba River approximately 2,000 ft downstream from Greenwood Release (station 04057814). The main dam is equipped with an outlet structure with 4 valves to control flow to Greenwood Afterbay (station 04057812) which has a capacity of 420 acre-ft at elevation 1,480 ft. Two outlet systems from the afterbay provide for diversion and release flow. Diverted flow to Green Creek gaged at Greenwood Diversion (station 04057813); released flow to Middle Branch Escanaba River gaged at Greenwood Release (station 04057814). Reservoir impounds water for diversion to Schweitzer Reservoir (station 04058190), for use in iron ore processing. Satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,517.3 ft, Apr. 21, 22, 23, 1985; minimum since first filling, 1,491.1 ft, Mar. 12, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,515.45 ft, Apr. 22; minimum, 1,504.91 ft, Mar. 28, 29.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110.31	109.35	108.57	107.68	106.73	106.10	105.77	115.17	115.02	115.02	113.57	111.03
2	110.29	109.37	108.54	107.71	106.68	106.07	106.20	115.16	114.98	115.02	113.47	110.95
3	110.22	109.37	108.51	107.72	106.64	106.02	106.68	115.15	114.95	114.99	113.36	110.85
4	110.14	109.37	108.48	107.72	106.60	105.99	107.22	115.13	114.93	114.95	113.27	110.76
5	110.05	109.37	108.44	107.72	106.56	105.95	107.85	115.11	114.94	114.94	113.17	110.67
6	109.97	109.36	108.41	107.72	106.53	105.91	108.61	115.10	115.04	114.92	113.09	110.58
7	109.89	109.35	108.37	107.71	106.55	105.89	109.56	115.09	115.04	114.89	113.00	110.49
8	109.83	109.33	108.33	107.70	106.55	105.85	110.62	115.08	115.02	114.85	112.91	110.40
9	109.78	109.29	108.30	107.68	106.55	105.81	111.60	115.06	115.01	114.81	112.85	110.31
10	109.70	109.27	108.27	107.66	106.54	105.77	112.44	115.05	114.97	114.77	112.79	110.20
11	109.62	109.24	108.25	107.63	106.53	105.73	113.17	115.03	114.97	114.73	112.72	110.11
12	109.54	109.20	108.26	107.62	106.53	105.69	113.80	115.00	115.01	114.68	112.64	110.01
13	109.46	109.15	108.27	107.59	106.51	105.64	114.33	115.00	115.05	114.63	112.55	109.99
14	109.38	109.10	108.23	107.55	106.52	105.59	114.76	115.02	115.11	114.57	112.46	109.95
15	109.33	109.06	108.20	107.50	106.51	105.55	115.09	115.04	115.16	114.51	112.38	109.86
16	109.29	109.02	108.17	107.45	106.49	105.50	115.28	115.05	115.16	114.45	112.30	109.76
17	109.22	108.97	108.14	107.39	106.47	105.45	115.35	115.04	115.13	114.40	112.20	109.70
18	109.15	108.92	108.12	107.34	106.45	105.39	115.37	115.02	115.07	114.34	112.11	109.62
19	109.09	108.87	---	107.31	106.42	105.35	115.38	115.04	115.03	114.26	112.03	109.60
20	109.04	108.87	---	107.26	106.39	105.31	115.41	115.07	115.00	114.20	111.97	109.65
21	109.00	108.85	108.06	107.21	106.37	105.25	115.42	115.06	114.95	114.14	111.90	109.64
22	108.95	108.82	108.02	107.18	106.34	105.20	115.42	115.07	114.89	114.08	---	109.61
23	109.00	108.79	107.97	107.14	106.29	105.15	115.37	115.13	114.84	114.02	---	109.55
24	109.12	108.75	107.92	107.09	106.25	105.09	115.33	115.16	114.80	114.02	---	109.50
25	109.19	108.70	107.87	107.06	106.21	105.04	115.28	115.15	114.75	113.98	---	109.46
26	109.22	108.65	107.83	107.02	106.16	104.99	115.24	115.12	114.68	113.93	---	109.46
27	109.24	108.64	107.78	106.97	106.14	104.94	115.23	115.10	114.63	113.85	---	109.42
28	109.24	108.67	107.73	106.92	106.12	104.91	115.22	115.09	114.64	113.79	---	109.41
29	109.26	108.63	107.68	106.88	---	104.93	115.20	115.08	114.77	113.72	---	109.43
30	109.30	108.60	107.65	106.83	---	105.07	115.19	115.06	114.95	113.66	111.20	109.42
31	109.33	---	107.68	106.78	---	105.40	---	115.04	---	113.62	111.12	---
MEAN	109.49	109.03	---	107.38	106.45	105.50	112.91	115.08	114.95	114.41	---	109.98
MAX	110.31	109.37	---	107.72	106.73	106.10	115.42	115.17	115.16	115.02	---	111.03
MIN	108.95	108.60	---	106.78	106.12	104.91	105.77	115.00	114.63	113.62	---	109.41

STREAMS TRIBUTARY TO LAKE MICHIGAN

04057812 GREENWOOD AFTERBAY NEAR GREENWOOD, MI

LOCATION.--Lat 46°26'32", long 87°48'02", in NW1/4 SW1/4 sec.27, T.47 N., R.28 W., Marquette County, Hydrologic Unit 04030110, at control structure on Middle Branch Escanaba River, 3.7 mi southwest of Greenwood.

DRAINAGE AREA.--67.4 mi^2.

PERIOD OF RECORD.--March 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above sea level (levels by Cleveland-Cliffs Iron Co.).

REMARKS.--Flow completely regulated by four valve outlet structure from Greenwood Reservoir (station 04057811) immediately upstream. Capacity of afterbay, 420 acre-ft at elevation 1,480 ft. Two outlet systems provide for diversion for use in iron ore processing and for release flow. Diverted flow to Green Creek gaged at Greenwood Diversion (station 04057813); released flow to Middle Branch Escanaba River gaged at Greenwood Release (station 04057814). Satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 81.61 ft, Apr. 17, 2002; minimum daily, 79.22 ft, Sept. 21, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 80.87 ft, Oct. 20; minimum, 79.96 ft, Feb. 21, Apr. 24.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80.14	80.42	80.15	80.41	80.16	80.18	80.39	80.29	80.59	80.49	80.78	80.63
2	80.26	80.37	80.15	80.38	80.16	80.18	80.45	80.26	80.54	80.44	80.75	80.58
3	80.27	80.31	80.14	80.37	80.16	80.17	80.51	80.23	80.50	80.38	80.75	80.56
4	80.30	80.24	80.14	80.46	80.17	80.17	80.53	80.21	80.45	80.35	80.73	80.53
5	80.30	80.17	80.13	80.50	80.18	80.17	80.43	80.20	80.43	80.33	80.69	80.42
6	80.31	80.12	80.13	80.40	80.19	80.17	80.44	80.19	80.47	80.32	80.67	80.31
7	80.32	80.07	80.12	80.40	80.23	80.17	80.50	80.14	80.42	80.39	80.65	80.22
8	80.36	80.04	80.11	80.33	80.24	80.15	80.47	80.12	80.38	80.45	80.62	80.19
9	80.37	80.07	80.10	80.26	80.24	80.14	80.45	80.14	80.34	80.51	80.62	80.18
10	80.35	80.12	80.11	80.21	80.32	80.13	80.44	80.29	80.33	80.56	80.64	80.20
11	80.34	80.18	80.11	80.16	80.46	80.14	80.43	80.33	80.47	80.59	80.61	80.22
12	80.35	80.22	80.14	80.14	80.45	80.14	80.42	80.34	80.59	80.60	80.59	80.23
13	80.33	80.19	80.17	80.12	80.43	80.12	80.41	80.28	80.63	80.61	80.57	80.30
14	80.33	80.16	80.15	80.09	80.44	80.11	80.41	80.22	80.61	80.61	80.54	80.35
15	80.36	80.13	80.11	80.12	80.43	80.11	80.42	80.17	80.53	80.61	80.51	80.32
16	80.38	80.13	80.10	80.14	80.40	80.11	80.42	80.14	80.43	80.63	80.49	80.33
17	80.41	80.18	80.08	80.16	80.32	80.11	80.44	80.17	80.36	80.64	80.48	80.23
18	80.45	80.18	80.07	80.18	80.23	80.10	80.44	80.26	80.29	80.63	80.52	80.20
19	80.66	80.16	80.06	80.21	80.12	80.11	80.47	80.36	80.23	80.64	80.58	---
20	80.79	80.20	80.06	80.21	80.03	80.14	80.53	80.44	80.24	80.67	80.62	---
21	80.63	80.19	80.05	80.21	80.00	80.13	80.36	80.46	80.35	80.67	80.62	80.22
22	80.49	80.17	80.06	80.23	80.04	80.11	80.17	80.52	80.47	80.68	---	80.22
23	80.50	80.16	80.13	80.23	80.07	80.10	80.06	80.54	80.54	80.69	---	80.27
24	80.50	80.14	80.20	80.22	80.09	80.09	80.03	80.35	80.61	80.77	---	80.34
25	80.46	80.13	80.26	80.21	80.10	80.09	80.23	80.17	80.64	80.77	---	80.41
26	80.42	80.13	80.32	80.22	80.11	80.07	80.43	80.08	80.67	80.76	---	80.49
27	80.45	80.17	80.35	80.20	80.15	80.08	80.56	80.16	80.70	80.74	---	80.52
28	80.50	80.21	80.37	80.19	80.17	80.11	80.47	80.34	80.73	80.74	---	80.57
29	80.59	80.19	80.38	80.18	---	80.21	80.37	80.47	80.63	80.72	---	80.55
30	80.56	80.16	80.45	80.18	---	80.30	80.32	80.57	80.57	80.73	80.74	80.49
31	80.49	---	80.46	80.17	---	80.37	---	80.63	---	80.74	80.68	---
MEAN	80.42	80.18	80.17	80.24	80.22	80.14	80.40	80.29	80.49	80.60	---	---
MAX	80.79	80.42	80.46	80.50	80.46	80.37	80.56	80.63	80.73	80.77	---	---
MIN	80.14	80.04	80.05	80.09	80.00	80.07	80.03	80.08	80.23	80.32	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04057813 GREENWOOD DIVERSION NEAR GREENWOOD, MI

LOCATION.--Lat 46°26'04", long 87°46'10", in NW1/4 NE1/4 sec.35, T.47 N., R.28 W., Marquette County, Hydrologic Unit 04030110, on left bank at downstream end of pipeline, 200 ft upstream from Green Creek, 0.7 mi downstream from Greenwood Afterbay, and 3.6 mi south of Greenwood.

PERIOD OF RECORD.--January 1973 to current year.

GAGE.--Water-stage recorder and concrete flume. Datum of gage is 1,454.57 ft above sea level (Cleveland-Cliffs Iron Co. bench mark). Prior to Aug. 22, 1973, nonrecording gage at same site and datum.

REMARKS.--Records good except for daily discharges below 1 ft^3/s, which are poor. Flow completely regulated; diversion began January 7, 1973. A pipeline, 0.7 mi long, diverts water from Greenwood Afterbay (station 04057812), which regulates released flow from Greenwood Reservoir (station 04057811), into Green Creek, tributary to Schweitzer Reservoir (station 04058190). Water is used for iron ore processing, some returned to Middle Branch Escanaba River 27 mi downstream via another Green Creek, some returned 31 mi downstream via Goose Lake Outlet and East Branch Escanaba River. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	e6.5	19	15	15	12	1.6	14	17	24	e24	24
2	23	e6.5	19	15	15	12	0.20	14	17	24	e24	24
3	24	6.5	19	14	13	12	0.20	14	17	24	e24	24
4	24	6.3	19	13	12	12	0.20	14	17	24	24	24
5	24	6.3	19	11	12	12	0.20	15	17	24	24	23
6	24	6.3	19	9.4	12	12	0.20	17	17	24	24	23
7	24	6.3	19	11	12	12	0.20	17	15	24	24	23
8	e24	8.2	19	12	12	12	0.20	17	13	24	24	23
9	e24	9.2	19	12	12	12	0.20	17	13	24	24	23
10	e24	11	19	12	9.5	12	0.20	20	13	24	24	23
11	e24	13	19	12	8.3	12	0.20	21	13	24	24	23
12	e24	14	19	13	8.3	12	0.20	21	13	24	24	23
13	e24	15	19	15	8.3	12	0.20	21	15	24	24	23
14	e24	15	19	15	8.3	12	0.20	20	17	24	24	23
15	23	15	19	15	8.3	13	0.20	20	17	24	24	23
16	23	16	19	15	9.0	15	0.20	19	17	24	24	23
17	23	19	19	15	9.7	15	0.20	20	17	24	24	23
18	21	19	19	15	11	15	0.20	22	17	24	24	23
19	18	19	19	15	12	15	0.20	22	17	24	24	22
20	16	19	19	15	12	15	1.9	22	18	24	24	19
21	14	19	19	15	12	15	3.9	22	20	24	24	17
22	e12	19	19	15	12	15	3.8	22	23	24	24	17
23	e12	19	19	15	12	15	3.8	20	24	e24	24	17
24	e12	19	19	15	12	15	4.8	18	24	e24	24	17
25	e12	19	19	15	12	14	11	17	24	e24	24	17
26	e10	19	19	15	12	14	14	15	24	e24	24	17
27	e10	19	19	15	12	14	14	14	24	e24	24	17
28	e8.0	19	19	15	12	11	14	15	24	e24	24	16
29	e6.5	19	16	15	---	9.0	14	15	24	e24	24	14
30	e6.5	19	16	15	---	5.8	14	15	24	e24	24	14
31	e6.5	---	16	15	---	4.2	---	16	---	e24	24	---
TOTAL	567.5	427.1	580	434.4	315.7	388.0	104.40	556	552	744	744	622
MEAN	18.3	14.2	18.7	14.0	11.3	12.5	3.48	17.9	18.4	24.0	24.0	20.7
MAX	24	19	19	15	15	15	14	22	24	24	24	24
MIN	6.5	6.3	16	9.4	8.3	4.2	0.20	14	13	24	24	14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2005, BY WATER YEAR (WY)

MEAN	14.9	12.9	14.4	17.3	16.8	12.8	6.18	9.52	12.3	17.3	17.4	16.9
MAX	26.5	26.4	25.5	26.0	26.0	25.8	17.2	24.2	26.0	26.1	28.5	28.1
(WY)	1995	1995	1995	1994	1995	1982	1980	1998	1977	1988	1994	1994
MIN	0.05	0.37	0.19	0.19	0.28	0.31	0.11	0.22	0.28	1.63	1.20	0.39
(WY)	1978	1974	1974	1974	1974	1974	1977	1973	1974	1982	1977	1977

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1973 - 2005	
ANNUAL TOTAL	5581.1		6035.10			
ANNUAL MEAN	15.2		16.5		14.1	
HIGHEST ANNUAL MEAN					22.4	1995
LOWEST ANNUAL MEAN					4.06	1974
HIGHEST DAILY MEAN	25	Jul 19	24	Oct 3	30	(a)
LOWEST DAILY MEAN	1.5	Apr 6	0.20	Apr 2	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	1.5	Apr 9	0.20	Apr 2	0.00	Apr 7 1998
10 PERCENT EXCEEDS	24		24		26	
50 PERCENT EXCEEDS	16		17		14	
90 PERCENT EXCEEDS	4.2		7.4		1.6	

(a) June 25-28, 1977, Nov. 9, 1979.
(b) Apr. 8-13, 1998; result of shutdown of flume for maintenance.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04057814 GREENWOOD RELEASE NEAR GREENWOOD, MI

LOCATION.--Lat 46°26'22", long 87°47'52", in NW1/4 SW1/4 sec.27, T.47 N., R.28 W., Marquette County, Hydrologic Unit 04030110, on left bank at outlet of Greenwood Afterbay releasing to Middle Branch Escanaba River, 2.6 mi upstream from Bell Creek, and 3.8 mi southwest of Greenwood.

DRAINAGE AREA.--67.4 mi^2.

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder and concrete flume. Datum of gage is 1,473.77 ft above sea level (Cleveland-Cliffs Iron Co. bench mark). Prior to Nov. 7, 1973, nonrecording gage at same site and different datum.

REMARKS.--Records good. Since December 1972, flow from Greenwood Reservoir (station 04057811) below spillway elevation 1,515 ft is completely regulated by Greenwood Afterbay release structure (station 04057812) into the Middle Branch Escanaba River. Since January 1973, water diverted immediately upstream from station via Greenwood Diversion (station 04057813) to Green Creek for iron ore processing and some returned to Middle Branch Escanaba River 27 mi downstream via another Green Creek. Since October 1979, some of the diversion returned 31 mi downstream via Goose Lake Outlet and East Branch Escanaba River. Overflow from reservoir spillway bypasses and returns to the Middle Branch Escanaba River 0.5 mi downstream from station. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	24	24	25	24	24	25	24	24	25	24	24
2	24	24	24	25	24	24	25	24	24	25	24	24
3	24	24	24	25	24	24	25	24	24	25	24	23
4	24	25	24	25	24	24	25	24	25	24	24	24
5	24	24	24	25	24	24	25	24	25	24	24	26
6	24	24	24	25	24	24	25	24	25	24	24	25
7	24	24	24	25	24	24	25	24	25	24	24	25
8	24	24	24	25	24	24	25	24	25	25	24	24
9	24	24	24	25	25	24	25	24	24	25	24	24
10	24	24	24	25	25	24	25	24	24	25	24	24
11	24	24	24	24	25	24	25	24	25	25	24	24
12	24	25	24	24	25	24	25	24	25	25	24	24
13	24	25	25	24	25	24	25	24	25	25	24	24
14	24	24	24	24	25	24	25	24	25	25	24	24
15	24	24	24	24	25	24	25	24	25	25	24	24
16	24	24	24	24	25	24	25	23	25	25	24	e18
17	24	25	24	24	25	24	25	24	25	25	24	e16
18	24	25	24	24	25	24	25	24	24	25	24	e15
19	25	24	24	24	24	24	25	24	24	24	24	e15
20	25	25	24	24	24	24	25	24	24	24	24	14
21	25	25	24	25	24	24	25	24	25	24	24	12
22	24	25	24	25	24	24	24	24	25	24	24	12
23	24	24	24	25	24	24	24	24	25	24	24	12
24	24	24	24	25	24	24	24	24	25	24	24	12
25	24	24	24	25	24	24	24	23	25	24	24	12
26	24	24	24	25	24	24	25	23	25	24	24	12
27	24	24	25	24	24	24	25	23	25	24	24	12
28	24	25	25	24	24	24	25	24	25	24	25	12
29	24	25	25	24	---	24	25	24	25	24	24	12
30	24	25	25	24	---	25	24	24	25	24	24	12
31	24	---	25	24	---	25	---	24	---	24	24	---
TOTAL	747	731	750	760	682	746	745	740	742	758	745	561
MEAN	24.1	24.4	24.2	24.5	24.4	24.1	24.8	23.9	24.7	24.5	24.0	18.7
MAX	25	25	25	25	25	25	25	24	25	25	25	26
MIN	24	24	24	24	24	24	24	23	24	24	24	12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2005, BY WATER YEAR (WY)

MEAN	28.9	28.2	25.6	25.3	26.1	27.9	27.3	26.5	26.6	26.0	25.5	25.3
MAX	141	122	35.6	32.6	35.9	56.3	44.9	40.3	42.2	42.2	30.6	30.2
(WY)	1973	1973	1974	1974	1986	1989	1989	1976	1975	1974	1997	1984
MIN	21.7	14.1	13.0	18.9	22.0	22.0	12.1	17.3	21.7	20.3	21.8	18.7
(WY)	1996	1999	1999	1973	1973	1973	1998	1999	1995	1973	1995	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1973 - 2005	
ANNUAL TOTAL	8953		8707			
ANNUAL MEAN	24.5		23.9		26.6	
HIGHEST ANNUAL MEAN					44.8	1973
LOWEST ANNUAL MEAN					21.0	1999
HIGHEST DAILY MEAN	28	Apr 22	26	Sep 5	(a)290	Oct 1 1972
LOWEST DAILY MEAN	23	Mar 25	12	Sep 21	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	23	Jun 23	12	Sep 21	0.00	Apr 15 1998
10 PERCENT EXCEEDS	25		25		29	
50 PERCENT EXCEEDS	24		24		25	
90 PERCENT EXCEEDS	24		24		24	

(a) Prior to regulation; since regulation began, 63 ft^3/s, July 10, 11, 1974.
(b) Apr. 15-29, 1998; result of shutdown of flume for maintenance.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04058100 MIDDLE BRANCH ESCANABA RIVER NEAR PRINCETON, MI

LOCATION.--Lat 46°19'02", long 87°30'07", in NW1/4 sec.12, T.45 N., R.26 W., Marquette County, Hydrologic Unit 04030110, on right bank 400 ft downstream from powerplant, 0.3 mi upstream from Green Creek, and 2.2 mi northwest of Princeton.

DRAINAGE AREA.--210 mi^2.

PERIOD OF RECORD.--July 1961 to September 1982, October 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,102.68 ft above sea level.

REMARKS.--Records good. Flow regulated by powerplant 400 ft upstream from station. Since December 1972, additional regulation 27 mi upstream by Greenwood Release (station 04057814). Since January 1973, some flow diverted to Green Creek via Greenwood Diversion (station 04057813) 27 mi upstream by industry for iron ore processing and some returned 0.3 mi downstream via another Green Creek. Since October 1979, some of the diversion returned 5.0 mi downstream via Goose Lake Outlet and East Branch Escanaba River. From 1973 to 1991 annual mean discharge and runoff figures adjusted for diversion and change in contents in Greenwood Reservoir (station 04057811). Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 22, 1985, reached a stage of 11.84 ft, from floodmark, discharge, 4,200 ft^3/s, from rating curve extended above 2,400 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	179	141	183	108	104	353	238	196	166	81	83
2	140	154	147	159	106	105	388	229	155	193	88	82
3	130	150	125	146	105	105	418	229	157	201	83	82
4	102	145	125	142	105	104	446	212	140	168	78	85
5	97	131	134	138	105	104	499	200	130	146	77	88
6	97	136	121	129	113	110	595	181	222	132	77	83
7	94	142	126	121	141	112	712	178	214	132	77	82
8	127	129	126	120	138	104	791	179	270	118	77	81
9	121	118	116	118	127	105	752	170	199	107	77	80
10	113	132	134	119	122	104	662	165	163	95	110	80
11	107	124	134	110	122	104	577	161	160	89	103	80
12	101	114	127	110	127	104	507	159	164	89	84	79
13	101	115	117	132	114	96	448	156	195	89	84	80
14	101	116	130	112	116	90	398	165	220	87	84	80
15	107	114	132	105	120	113	355	175	300	85	80	80
16	121	114	139	101	111	100	322	175	358	80	76	80
17	106	114	142	104	119	95	365	165	345	76	74	79
18	103	114	125	93	112	98	385	156	315	76	92	79
19	119	114	121	88	105	101	372	170	221	76	87	80
20	117	153	116	104	106	103	427	206	220	76	85	109
21	116	143	116	111	106	101	470	232	189	77	84	103
22	103	145	122	107	110	99	462	233	141	77	84	84
23	138	140	122	106	105	101	436	241	130	77	84	84
24	253	140	116	105	103	108	405	294	124	77	83	84
25	191	121	114	108	104	106	341	315	104	83	84	84
26	200	105	109	112	104	106	311	288	87	112	83	83
27	190	132	108	108	104	110	268	238	110	95	83	83
28	153	185	108	105	103	139	289	224	101	83	124	83
29	149	174	109	103	---	160	288	224	104	82	106	84
30	177	118	117	103	---	237	265	235	113	81	84	84
31	202	---	164	104	---	356	---	219	---	80	84	---
TOTAL	4066	4011	3883	3606	3161	3684	13307	6412	5547	3205	2657	2508
MEAN	131	134	125	116	113	119	444	207	185	103	85.7	83.6
MAX	253	185	164	183	141	356	791	315	358	201	124	109
MIN	90	105	108	88	103	90	265	156	87	76	74	79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

MEAN	171	173	135	106	100	148	514	420	240	152	126	144
MAX	422	349	235	196	162	348	917	1056	518	318	319	566
(WY)	2003	1973	1992	1969	1969	1973	1976	1972	1968	1968	2002	1978
MIN	54.4	70.0	79.4	61.0	56.1	71.0	179	97.4	101	63.5	53.0	60.4
(WY)	1964	1977	1977	1964	1963	1964	1990	1998	1977	1965	1963	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	73822		56047			
ANNUAL MEAN	202		154		203	
HIGHEST ANNUAL MEAN					296	1979
LOWEST ANNUAL MEAN					122	1998
HIGHEST DAILY MEAN	1550	Apr 22	791	Apr 8	2880	Apr 19 2002
LOWEST DAILY MEAN	83	Sep 14	74	Aug 17	4.1	Feb 4 1967
ANNUAL SEVEN-DAY MINIMUM	89	Sep 24	76	Jul 17	28	Aug 29 1961
MAXIMUM PEAK FLOW			801	Apr 8	2980	Apr 18 2002
MAXIMUM PEAK STAGE			4.26	Apr 8	9.52	Apr 18 2002
INSTANTANEOUS LOW FLOW			18	Mar 8	2.2	Oct 5 1964
10 PERCENT EXCEEDS	446		277		404	
50 PERCENT EXCEEDS	121		116		126	
90 PERCENT EXCEEDS	97		82		82	

STREAMS TRIBUTARY TO LAKE MICHIGAN

04058190 SCHWEITZER RESERVOIR NEAR PALMER, MI

LOCATION.--Lat 46°25'00", long 87°38'48", in SE1/4 NW1/4 sec.2, T.46 N., R.27 W., Marquette County, Hydrologic Unit 04030110, on left bank 120 ft upstream from dam on Schweitzer Creek, 3.0 mi southwest of Palmer.

DRAINAGE AREA.--23.1 mi^2.

PERIOD OF RECORD.--January 1963 to current year. Prior to October 1997 monthend elevations and contents only.

GAGE.--Water-stage recorder. Datum of gage is 1,300.00 ft above sea level (Cleveland-Cliffs Iron Co. reference mark); EXTREMES reported below have been converted to sea level elevations. Prior to Oct. 25, 1967, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earthfill dam with fixed crest concrete spillway completed in 1963. Capacity of reservoir, 5,300 acre-ft at spillway elevation, 1,338.00 ft. The dam includes a discharge pipe equipped with valve to control release flow to Schweitzer Creek (station 04058200). An average of 48 ft^3/s (figure furnished by Cleveland Cliffs Iron Co.) was diverted from reservoir for iron ore processing, some returned to Middle Branch Escanaba River via Green Creek and some returned to the East Branch Escanaba River via Goose Lake Outlet. Since January 1973, controlled diversion from Greenwood Reservoir (station 04057811) via Greenwood Diversion (station 04057813) into Schweitzer Reservoir. Controlled inflow averaged 16 ft^3/s for the year. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 1,339.5 ft, May 31, 1970, Apr. 20, 1985; minimum recorded since first filling, 1,329.7 ft, Apr. 10, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,338.65 ft, Apr. 7; minimum, 1,335.98 ft, July 27.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.93	37.76	37.40	37.96	37.73	37.18	38.06	37.60	37.02	36.96	36.45	36.90
2	37.03	37.71	37.43	38.03	37.72	37.14	38.25	37.56	36.94	36.88	36.49	36.89
3	37.07	37.67	37.42	38.11	37.71	37.08	38.29	37.51	36.85	36.79	36.52	36.88
4	37.10	37.61	37.43	38.15	37.69	37.04	38.31	37.46	36.76	36.70	36.58	36.87
5	37.12	37.54	37.44	38.18	37.66	37.01	38.33	37.40	36.75	36.63	36.60	36.87
6	37.15	37.47	37.46	38.16	37.65	36.97	---	37.36	36.91	36.63	36.63	36.88
7	37.16	37.40	37.46	38.12	37.73	36.96	---	37.32	37.01	36.60	36.67	36.86
8	37.24	37.31	37.42	38.09	37.76	36.94	---	37.28	37.04	36.59	36.69	36.78
9	37.33	37.24	37.42	38.06	37.78	36.92	38.31	37.24	37.04	36.59	36.70	36.70
10	37.38	37.19	37.46	38.03	37.77	36.89	38.24	37.25	37.01	36.59	36.74	36.68
11	37.42	37.16	37.52	38.00	37.73	36.88	38.17	37.23	36.97	36.58	36.72	36.68
12	37.45	37.12	37.59	37.98	37.69	36.86	38.13	37.19	36.91	36.57	36.70	36.66
13	37.48	37.09	37.69	37.99	37.63	36.81	38.08	37.19	36.83	36.49	36.66	36.59
14	37.51	37.05	37.74	37.95	37.60	36.78	38.05	37.22	36.82	36.46	36.59	36.64
15	37.54	36.99	37.76	37.93	37.55	36.74	38.01	37.23	37.02	36.38	36.52	36.58
16	37.61	36.95	37.74	37.90	37.49	36.72	37.99	37.21	37.10	36.36	36.48	36.59
17	37.66	36.93	37.69	37.86	37.45	36.71	37.97	37.11	37.14	36.36	36.54	36.61
18	37.70	36.94	37.63	37.84	37.39	36.70	37.96	36.99	37.15	36.35	36.59	36.63
19	37.72	---	37.58	37.86	37.36	36.71	37.95	36.92	37.14	36.33	36.62	36.71
20	37.71	---	37.60	37.84	37.33	36.74	37.99	36.95	37.13	36.34	36.64	36.87
21	37.69	---	37.66	37.82	37.32	36.74	37.99	36.99	37.11	36.31	36.63	36.88
22	37.65	---	37.69	37.83	37.30	36.72	37.95	37.04	37.10	36.22	36.62	36.86
23	37.70	---	37.69	37.84	37.28	36.70	37.89	37.20	37.11	36.19	36.61	36.82
24	37.85	37.03	37.69	37.82	37.25	36.68	37.81	37.33	37.12	36.17	36.61	36.80
25	37.90	37.04	37.69	37.81	37.22	36.67	37.73	37.35	37.06	36.11	36.60	36.79
26	37.91	37.02	37.72	37.81	37.20	36.66	37.69	37.33	37.03	36.04	36.60	36.82
27	37.88	37.07	37.75	37.79	37.19	36.68	37.69	37.29	37.04	36.00	36.77	36.81
28	37.86	37.21	37.77	37.76	37.18	36.73	37.69	37.26	37.08	36.09	36.87	36.85
29	37.84	37.28	37.77	37.73	---	36.84	37.67	37.23	37.06	36.13	36.89	36.92
30	37.83	37.35	37.78	37.71	---	37.09	37.64	37.18	37.02	36.19	36.90	36.92
31	37.81	---	37.87	37.71	---	37.58	---	37.10	---	36.34	36.90	---
MEAN	37.52	---	37.61	37.92	37.51	36.87	---	37.24	37.01	36.42	36.65	36.78
MAX	37.91	---	37.87	38.18	37.78	37.58	---	37.60	37.15	36.96	36.90	36.92
MIN	36.93	---	37.40	37.71	37.18	36.66	---	36.92	36.75	36.00	36.45	36.58

STREAMS TRIBUTARY TO LAKE MICHIGAN

04058200 SCHWEITZER CREEK NEAR PALMER, MI

LOCATION.--Lat 46°24'40", long 87°37'27", in SW1/4 sec.1, T.46 N., R.27 W., Marquette County, Hydrologic Unit 04030110, on right bank 10 ft upstream from bridge on County Road PFS, 1.0 mi downstream from Schweitzer Reservoir, and 2.5 mi southwest of Palmer.

DRAINAGE AREA.--23.6 mi^2.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1963. Datum of gage is 1,268.28 ft above sea level (Cleveland-Cliffs Iron Co. bench mark). Prior to Aug. 21, 1961, nonrecording gage at same site and datum.

REMARKS.--Records fair. Since August 1962, flow completely regulated by Schweitzer Reservoir (station 04058190) 1.0 mi upstream. Prior to June 1994, some diversion from headwaters of basin for municipal supply and the effluent discharged to the Carp River basin. An average of 48 ft^3/s (figure furnished by Cleveland Cliffs Iron Co.) was diverted from Schweitzer Reservoir by industry for iron ore processing, some returned to the Middle Branch Escanaba River via Green Creek and some returned via Goose Lake Outlet and East Branch Escanaba River. Diversion into Schweitzer Reservoir from Greenwood Reservoir (station 04057811) via Greenwood Diversion (station 04057813). Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	5.8	5.0	4.2	3.9	3.8	16	3.6	4.0	3.9	3.8	4.3
2	6.1	5.8	4.8	4.2	3.9	3.7	53	3.8	4.0	3.9	3.8	4.3
3	5.8	5.8	4.3	4.1	3.9	3.8	62	3.7	4.0	3.9	3.8	4.3
4	5.8	5.8	5.0	4.1	3.9	3.7	68	3.6	4.1	3.9	3.8	4.3
5	5.8	5.8	5.3	e3.8	3.9	3.8	71	3.6	4.4	4.0	3.8	4.3
6	5.8	5.6	5.3	e4.0	4.1	3.8	104	3.7	4.4	3.9	3.8	4.3
7	5.8	5.3	4.9	e4.2	4.2	3.8	157	3.9	4.2	3.9	3.8	4.4
8	6.1	5.3	4.1	e4.2	4.0	3.7	121	3.9	4.2	3.8	3.8	4.2
9	5.8	5.5	4.0	e4.2	3.9	e3.8	84	3.8	4.1	3.8	5.6	4.2
10	5.7	6.0	4.2	e4.2	3.9	e3.8	63	3.9	4.1	3.7	4.2	e4.1
11	5.8	5.5	4.1	4.1	3.9	e3.8	47	3.9	4.0	3.7	4.1	e4.1
12	5.8	5.0	4.2	4.0	3.9	e3.8	35	3.9	3.8	3.8	4.1	e4.1
13	5.7	4.9	4.2	4.0	3.8	e3.8	26	4.2	4.0	3.8	4.1	e4.1
14	5.7	4.9	4.0	e4.0	3.9	e3.7	19	4.1	4.2	3.9	4.1	e4.2
15	6.0	5.0	4.2	e4.0	3.8	3.6	14	4.0	4.0	4.0	4.1	e4.2
16	6.0	4.9	4.0	e4.0	3.8	3.6	11	3.9	3.9	3.9	4.1	e4.2
17	6.0	5.0	4.0	e4.0	4.0	3.6	8.7	3.8	3.9	3.9	4.1	e4.2
18	5.9	4.9	3.9	e4.0	e4.1	3.6	7.2	3.8	3.9	3.9	4.1	e4.1
19	5.8	4.9	e4.0	e4.0	e3.8	3.6	6.2	4.5	3.9	4.0	4.1	e4.9
20	5.8	5.2	e4.0	e4.0	4.0	3.7	10	4.0	3.8	3.8	4.1	e5.2
21	5.8	5.1	4.0	e4.0	3.8	3.6	8.6	3.8	3.8	3.9	4.2	e4.6
22	5.9	5.0	4.0	4.1	e3.8	3.6	6.1	4.2	3.8	4.0	4.2	e4.2
23	6.9	4.9	e4.0	3.9	e3.8	3.5	4.5	4.4	3.9	3.9	4.2	e4.2
24	6.3	4.9	e4.0	3.9	e3.8	3.5	3.9	4.3	3.8	4.2	4.1	e4.2
25	6.0	4.9	e4.0	3.9	e3.8	3.5	3.6	4.1	3.7	3.8	4.2	e4.2
26	5.9	4.9	e4.0	3.9	e3.8	3.6	3.6	3.9	3.7	3.9	4.2	e4.2
27	6.0	5.5	3.9	3.9	3.8	3.6	4.3	4.1	3.8	3.8	4.7	e4.2
28	6.0	5.4	4.0	3.9	3.8	4.1	3.9	4.0	3.8	3.8	4.3	e4.3
29	6.0	5.1	4.0	3.9	---	4.7	3.7	3.9	3.9	3.8	4.3	e4.5
30	6.1	5.1	4.4	3.9	---	5.9	3.6	3.7	4.1	4.0	4.3	e4.2
31	6.0	---	4.6	3.9	---	5.6	---	3.9	---	3.9	4.5	---
TOTAL	183.8	157.7	132.4	124.5	109.0	119.7	1028.9	121.9	119.2	120.4	128.4	128.8
MEAN	5.93	5.26	4.27	4.02	3.89	3.86	34.3	3.93	3.97	3.88	4.14	4.29
MAX	6.9	6.0	5.3	4.2	4.2	5.9	157	4.5	4.4	4.2	5.6	5.2
MIN	5.7	4.9	3.9	3.8	3.8	3.5	3.6	3.6	3.7	3.7	3.8	4.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

MEAN	10.6	11.0	7.40	5.46	4.99	7.30	47.0	26.7	15.2	7.89	7.08	8.34
MAX	41.8	41.3	24.0	13.5	9.98	35.3	115	98.1	55.8	24.2	28.9	56.5
(WY)	1986	1989	1966	1966	1961	1966	1985	1972	1968	1979	1973	1978
MIN	2.85	3.02	2.90	2.15	1.92	2.40	1.45	1.69	3.97	3.80	3.46	3.62
(WY)	2000	1999	1999	1963	1963	1963	1963	1963	2005	1999	1963	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	4751.7		2474.7			
ANNUAL MEAN	13.0		6.78		13.2	
HIGHEST ANNUAL MEAN					26.4	1966
LOWEST ANNUAL MEAN					4.64	1987
HIGHEST DAILY MEAN	161	Apr 20	157	Apr 7	699	Apr 20 1985
LOWEST DAILY MEAN	3.8	Aug 14	3.5	Mar 23	1.0	(a)
ANNUAL SEVEN-DAY MINIMUM	3.9	Aug 11	3.6	Mar 21	1.0	Apr 9 1963
MAXIMUM PEAK FLOW			173	Apr 7	860	May 31 1970
MAXIMUM PEAK STAGE			4.31	Apr 7	6.50	May 31 1970
INSTANTANEOUS LOW FLOW					0.40	Sep 6 1962
10 PERCENT EXCEEDS	35		5.9		29	
50 PERCENT EXCEEDS	5.2		4.1		5.2	
90 PERCENT EXCEEDS	4.2		3.8		3.9	

(a) Apr. 9-18, May 5, 6, 1963.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04058940 ESCANABA RIVER NEAR ST. NICHOLAS, MI

LOCATION.--Lat 45°58'45", long 87°16'13", in SW1/4 NE1/4 sec.2, T.41 N., R.24 W., Delta County, Hydrologic Unit 04030110, on right bank 600 ft downstream from Boney Falls Dam, 2.1 mi west of St. Nicholas, and 23 mi upstream from mouth.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--December 1987 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 854.03 ft above sea level.

REMARKS.--Diurnal fluctuation caused by hydroelectric plant 600 ft upstream. Some regulation by Schweitzer Reservoir (station 04058190) approximately 40 mi upstream and Greenwood Reservoir (station 04057811) approximately 50 mi upstream. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 7.12 ft, Apr. 19, 2002; minimum daily, 1.81 ft, July 26, 27, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.31 ft, Apr. 9; minimum daily, 1.83 ft, Aug. 7, 8, Sept. 3, 8, 9.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.02	2.97	2.58	2.71	2.22	2.22	3.64	2.76	2.54	2.17	1.85	1.96
2	2.12	2.83	2.58	2.70	2.22	2.21	3.77	2.72	2.46	2.29	1.90	1.91
3	2.31	2.72	2.35	2.69	2.23	2.23	4.13	2.68	2.36	2.31	1.94	1.83
4	2.23	2.61	2.51	2.62	2.24	2.23	4.37	2.66	2.36	2.31	1.93	1.86
5	2.12	2.58	2.42	2.55	2.26	2.23	4.30	2.58	2.26	2.21	1.85	1.92
6	2.11	2.49	2.42	2.53	2.27	2.24	4.58	2.61	2.53	2.17	1.87	1.93
7	2.08	2.48	2.51	2.46	2.33	2.24	4.94	2.66	2.71	2.20	1.83	1.90
8	2.17	2.44	2.45	2.41	2.41	2.23	5.06	2.63	2.64	2.11	1.83	1.83
9	2.32	2.38	2.46	2.39	2.41	2.19	5.04	2.58	2.57	2.11	1.86	1.83
10	2.28	2.39	2.44	2.37	2.41	2.20	4.81	2.54	2.41	2.09	1.85	1.84
11	2.25	2.48	2.48	2.36	2.39	2.22	4.50	2.52	2.39	2.04	2.03	1.86
12	2.16	2.43	2.38	2.34	2.41	2.22	4.14	2.46	2.36	2.02	1.95	1.86
13	2.14	2.36	2.22	2.35	2.40	2.22	3.91	2.48	2.41	1.95	1.89	1.85
14	2.12	2.35	2.31	2.32	2.35	2.19	3.72	2.62	2.58	1.96	1.92	1.92
15	2.15	2.37	2.34	2.26	2.34	2.20	3.55	2.68	2.90	2.02	1.89	1.94
16	2.22	2.33	2.44	2.25	2.33	2.22	3.40	2.63	2.95	1.98	1.89	1.93
17	2.25	2.33	2.38	2.13	2.31	2.19	3.34	2.59	2.90	1.93	1.90	1.84
18	2.22	2.35	2.35	2.16	2.31	2.18	3.37	2.54	2.78	1.93	1.89	1.89
19	2.20	2.34	2.18	2.13	2.28	2.19	3.29	2.54	2.61	1.96	1.90	1.93
20	2.21	2.44	2.20	2.13	2.27	2.18	3.45	2.77	2.47	1.97	1.93	2.02
21	2.19	2.68	2.28	2.12	2.25	2.19	3.70	2.82	2.48	1.88	1.97	2.20
22	2.18	2.58	2.33	2.19	2.26	2.20	3.66	2.79	2.34	1.95	1.93	2.29
23	2.31	2.54	2.29	2.19	2.26	2.20	3.46	2.86	2.27	1.94	1.93	2.20
24	2.76	2.49	2.29	2.19	2.25	2.23	3.17	2.86	2.26	1.90	1.86	2.12
25	2.93	2.38	2.27	2.21	2.25	2.23	3.03	2.82	2.27	1.91	1.84	2.04
26	2.76	2.35	2.28	2.21	2.24	2.19	2.87	2.72	2.16	2.03	1.89	2.01
27	2.78	2.42	2.26	2.22	2.24	2.24	2.83	2.69	2.12	1.98	1.95	2.03
28	2.72	2.78	2.29	2.21	2.22	2.32	2.85	2.69	2.10	1.92	1.97	2.08
29	2.71	2.93	2.30	2.21	---	2.49	2.89	2.72	2.13	1.95	2.14	2.13
30	2.80	2.69	2.30	2.21	---	2.83	2.80	2.68	2.14	1.92	1.97	2.21
31	2.95	---	2.50	2.21	---	3.45	---	2.63	---	1.98	1.93	---
MEAN	2.35	2.52	2.37	2.32	2.30	2.28	3.75	2.66	2.45	2.04	1.91	1.97
MAX	2.95	2.97	2.58	2.71	2.41	3.45	5.06	2.86	2.95	2.31	2.14	2.29
MIN	2.02	2.33	2.18	2.12	2.22	2.18	2.80	2.46	2.10	1.88	1.83	1.83

WTR YR 2005 MEAN 2.41 MAX 5.06 MIN 1.83

STREAMS TRIBUTARY TO LAKE MICHIGAN

04059000 ESCANABA RIVER AT CORNELL, MI

LOCATION.--Lat 45°54'31", long 87°12'49", in NW1/4 sec.32, T.41 N., R.23 W., Delta County, Hydrologic Unit 04030110, on right bank 50 ft downstream from bridge on County Road 519, 0.4 mi downstream from Bobs Creek, 0.7 mi northeast of Cornell, and 16 mi upstream from mouth.

DRAINAGE AREA.--870 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1903 to December 1912, January 1913 to November 1915 (gage heights only), October 1950 to current year. Monthly discharge only for some periods, published in WSP 1307. Published as "near Escanaba" 1903-15.

REVISED RECORDS.--WSP 1387: 1904. WDR MI-85-1: 1970 (M).

GAGE.--Water-stage recorder. Datum of gage is 749.26 ft above sea level (levels by Michigan Department of Natural Resources). August 1903 to November 1915, nonrecording gage at site 10 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Since 1950, diurnal fluctuation and slight regulation by Boney Falls powerplant 7 mi upstream. Since August 1962, some regulation by Schweitzer Reservoir (station 04058190) approximately 50 mi upstream. Since December 1972, some regulation by Greenwood Reservoir (station 04057811) approximately 60 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	242	1040	903	e779	e441	e453	e1950	870	636	269	189	209
2	291	917	786	e779	e441	e453	e2310	840	565	316	184	206
3	416	800	568	e779	e441	e453	e3100	808	479	319	212	161
4	370	725	685	e779	e441	e453	3500	767	466	349	209	172
5	305	660	602	e779	e441	e453	3230	697	428	285	170	193
6	291	616	611	e761	e472	e453	3640	735	517	283	175	203
7	276	579	632	e691	e517	e453	4280	823	718	295	170	191
8	322	554	589	e691	e567	e453	4420	811	645	254	172	166
9	416	490	593	e643	e636	e453	4000	749	599	257	173	161
10	412	521	590	e643	e567	e453	3440	702	465	246	199	161
11	379	585	623	e584	e567	e453	2940	666	440	224	251	174
12	334	551	567	e570	e567	e453	2520	617	421	214	237	173
13	316	487	478	e570	e567	e453	2170	647	431	196	209	176
14	296	462	599	e557	e567	e453	1880	772	543	172	184	202
15	321	471	627	e518	e567	e453	1650	814	851	211	191	216
16	361	444	773	e482	e567	e453	1460	771	894	201	178	216
17	380	446	704	e428	e517	e453	1380	718	841	172	184	162
18	363	457	742	e398	e494	e443	1390	663	712	172	175	184
19	346	454	e506	e379	e472	e443	1320	708	599	182	171	224
20	352	610	e531	e379	e451	e443	1550	922	470	207	195	231
21	337	735	e570	e379	e451	e443	1750	952	449	137	210	327
22	330	701	e518	e379	e483	e443	1690	972	379	196	196	254
23	611	612	e494	e379	e472	e443	1480	1030	335	193	188	191
24	840	588	e494	e379	e472	e452	1270	999	317	171	168	249
25	987	506	e494	e398	e472	e474	1150	929	328	167	162	223
26	850	480	e494	e408	e472	e464	1000	838	264	232	182	205
27	913	607	e494	e408	e472	e464	969	853	251	214	234	232
28	857	959	e494	e418	e453	e496	982	887	234	203	234	281
29	871	1070	e494	e418	---	e636	992	868	246	187	299	289
30	912	986	e494	e430	---	e1020	899	814	251	193	249	329
31	1060	---	e643	e441	---	e1610	---	736	---	235	208	---
TOTAL	15357	19113	18392	16626	14047	15975	64312	24978	14774	6952	6158	6361
MEAN	495	637	593	536	502	515	2144	806	492	224	199	212
MAX	1060	1070	903	779	636	1610	4420	1030	894	349	299	329
MIN	242	444	478	379	441	443	899	617	234	137	162	161
CFSM	0.57	0.73	0.68	0.62	0.58	0.59	2.46	0.93	0.57	0.26	0.23	0.24
IN.	0.66	0.82	0.79	0.71	0.60	0.68	2.75	1.07	0.63	0.30	0.26	0.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2005, BY WATER YEAR (WY)

MEAN	702	763	535	368	345	595	2555	1640	928	584	487	587
MAX	1736	2230	945	720	959	1879	4329	4388	2172	1859	2014	1874
(WY)	2003	1989	1907	1969	1984	2000	1951	1907	1968	1951	1911	1978
MIN	196	218	230	190	185	227	830	312	255	193	191	194
(WY)	1964	1977	1977	1964	1959	1964	1990	1998	1988	1998	1998	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1903 - 2005	
ANNUAL TOTAL	301176		223045			
ANNUAL MEAN	823		611		(a)815	
HIGHEST ANNUAL MEAN					1385	1960
LOWEST ANNUAL MEAN					506	1963
HIGHEST DAILY MEAN	5210	Apr 21	4420	Apr 8	10400	Apr 22 1985
LOWEST DAILY MEAN	229	Sep 30	137	Jul 21	(b)90	Jul 5 1910
ANNUAL SEVEN-DAY MINIMUM	235	Sep 25	172	Sep 7	131	Jul 23 1998
MAXIMUM PEAK FLOW			(c)4620	Apr 8	(d)10700	Apr 26 1979
MAXIMUM PEAK STAGE			(f)4.96	Mar 31	(f)6.40	Apr 9 1971
INSTANTANEOUS LOW FLOW			119	Aug 9	90	Jul 5 1910
ANNUAL RUNOFF (CFSM)	0.946		0.702		0.937	
ANNUAL RUNOFF (INCHES)	12.88		9.54		12.73	
10 PERCENT EXCEEDS	2420		984		1730	
50 PERCENT EXCEEDS	458		465		481	
90 PERCENT EXCEEDS	270		191		250	

(a) Does not include water years 1904-12.
(b) Observed; site and datum then in use, but may have been less during extended periods of no gage-height record during winter periods of 1903-12, or periods of ice effect in 1959.
(c) Gage height 3.59 ft.
(d) Gage height 5.00 ft.
(e) Estimated.
(f) Backwater from ice.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04059000 ESCANABA RIVER AT CORNELL, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967, 1969-73, 1975-94, 1998 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1975 to September 1981.
WATER TEMPERATURE: February 1975 to September 1981, April 1998 to current year.

INSTRUMENTATION.--Water-quality monitor from Oct. 15, 1975 to Sept. 30, 1981. Water-temperature recorder with telemetry since Apr. 14, 1998.

REMARKS.--Records rated excellent. Records represent water temperature at sensor within 0.5°C, from Apr. 1 to Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975, 1978-81): Maximum daily recorded (more than 20 percent missing record), 360 microsiemens, Sept. 10, 1975; minimum measured, 114 microsiemens, Apr. 15, 1981.
WATER TEMPERATURE (water years 1975, 1977-81, 1998 to current year): Maximum daily recorded (more than 20 percent missing record), 35.0°C, July 31, 1975; minimum, -0.5°C, Apr. 1-6, 2004.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--A specific conductance of 72 microsiemens was measured Apr. 24, 1985.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 33.5°C, July 16.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	0.5	0.0	0.0	8.5	5.5	6.5
2	---	---	---	---	---	---	0.5	0.0	0.0	7.5	5.0	6.0
3	---	---	---	---	---	---	0.5	0.0	0.0	10.0	4.0	6.5
4	---	---	---	---	---	---	1.5	0.0	0.5	12.0	4.0	7.5
5	---	---	---	---	---	---	2.5	0.0	1.0	13.5	6.0	9.0
6	---	---	---	---	---	---	2.0	1.5	1.5	13.0	8.5	10.0
7	---	---	---	---	---	---	4.0	1.0	2.5	14.5	9.0	11.0
8	---	---	---	---	---	---	5.0	2.0	3.5	16.0	10.0	12.5
9	---	---	---	---	---	---	6.0	3.0	4.5	17.5	11.5	14.0
10	---	---	---	---	---	---	6.5	4.0	5.5	17.5	13.0	15.0
11	---	---	---	---	---	---	7.0	5.0	6.0	13.5	8.5	11.5
12	---	---	---	---	---	---	7.5	5.0	6.0	13.0	7.0	9.5
13	---	---	---	---	---	---	8.0	5.0	6.5	8.5	7.5	8.0
14	---	---	---	---	---	---	9.0	5.0	7.0	9.5	7.5	8.5
15	---	---	---	---	---	---	9.5	6.0	7.5	10.5	7.5	8.5
16	---	---	---	---	---	---	8.0	6.0	7.0	10.5	6.5	8.5
17	---	---	---	---	---	---	11.5	7.0	9.0	11.5	7.0	9.0
18	---	---	---	---	---	---	12.5	8.0	10.0	14.5	7.5	11.0
19	---	---	---	---	---	---	14.0	9.5	12.0	11.0	10.0	10.5
20	---	---	---	---	---	---	12.0	8.5	10.5	15.0	8.5	11.5
21	---	---	---	---	---	---	10.5	7.0	9.0	17.0	10.5	13.5
22	---	---	---	---	---	---	10.5	7.0	8.5	14.5	12.5	13.5
23	---	---	---	---	---	---	7.0	4.0	5.5	14.5	12.0	13.0
24	---	---	---	---	---	---	7.0	3.0	4.5	18.0	12.0	15.0
25	---	---	---	---	---	---	9.5	4.0	6.5	19.5	13.5	16.0
26	---	---	---	---	---	---	8.5	5.5	7.0	19.0	14.5	16.5
27	---	---	---	---	---	---	8.5	6.0	7.0	17.0	14.0	15.0
28	---	---	---	---	---	---	7.5	5.0	6.5	17.0	13.0	14.5
29	---	---	---	---	---	---	8.5	5.0	6.5	17.0	12.0	14.0
30	---	---	---	---	---	---	8.5	4.5	6.5	18.0	11.5	14.5
31	---	---	---	---	---	---	---	---	---	20.0	13.0	16.0
MONTH	---	---	---	---	---	---	14.0	0.0	5.6	20.0	4.0	11.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

04059000 ESCANABA RIVER AT CORNELL, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	13.5	17.0	23.0	17.0	20.0	32.5	21.0	26.0	26.5	17.5	21.0
2	22.5	14.0	18.0	27.5	15.0	20.0	31.5	21.0	25.5	23.5	16.5	19.5
3	23.5	15.0	19.0	27.0	16.5	21.0	30.5	21.5	25.5	26.0	14.5	19.5
4	22.5	17.5	19.5	25.5	19.5	22.0	29.5	21.0	24.5	24.0	14.5	19.0
5	24.5	17.5	20.5	25.0	17.5	20.5	30.5	17.5	23.5	26.5	14.5	20.0
6	24.0	18.0	20.5	25.5	16.0	20.5	29.5	17.0	23.0	24.5	17.5	21.0
7	24.5	17.5	20.5	28.0	15.5	21.5	31.0	18.0	24.0	25.0	18.0	21.0
8	23.0	17.5	20.0	29.0	15.5	21.5	31.0	19.5	24.5	24.0	14.0	18.5
9	27.5	18.0	22.0	28.0	16.5	22.0	25.5	22.0	23.0	25.0	13.0	19.0
10	28.0	19.0	23.0	31.0	19.5	25.0	31.0	20.5	24.5	25.5	17.5	20.5
11	27.5	20.0	23.0	32.0	20.5	26.0	23.5	18.0	21.0	28.0	18.0	22.5
12	28.5	20.0	24.0	33.0	20.0	26.0	28.5	20.5	23.5	27.5	19.0	23.0
13	29.5	19.0	23.5	32.5	21.0	26.0	28.0	17.5	22.5	28.5	20.0	23.5
14	25.0	21.0	22.5	32.0	20.0	25.0	27.5	16.0	21.5	25.5	17.0	21.0
15	21.0	17.0	19.0	33.0	18.5	25.5	29.0	16.5	22.0	25.0	14.0	19.0
16	19.5	16.0	17.5	33.5	20.5	26.0	27.0	16.5	21.5	25.5	13.0	19.0
17	19.5	15.5	17.5	33.0	21.0	26.5	26.5	17.0	21.0	25.0	14.0	19.0
18	20.5	16.0	17.5	30.0	22.5	25.5	24.5	18.5	21.0	26.0	16.5	20.5
19	24.5	14.5	19.0	31.5	19.0	24.0	24.5	19.5	21.5	19.0	15.5	17.5
20	27.5	16.0	21.5	27.5	19.0	23.5	28.5	19.5	23.0	24.5	13.5	18.5
21	27.5	19.0	22.5	31.5	20.5	25.0	22.0	15.5	19.0	23.0	14.5	18.5
22	27.5	16.5	21.5	29.5	18.0	23.0	25.0	16.0	19.5	21.0	15.0	18.0
23	26.0	17.0	21.0	26.0	18.0	22.5	25.5	14.0	19.5	22.0	11.5	16.0
24	30.0	20.0	24.5	31.5	21.0	25.0	25.5	14.0	19.5	20.0	11.5	16.0
25	27.0	19.5	22.5	30.0	19.5	24.5	25.5	15.0	20.0	18.0	15.0	16.5
26	29.0	17.5	23.0	23.0	18.0	21.0	26.5	16.5	21.5	21.0	13.5	16.5
27	31.0	20.0	25.0	28.5	16.0	21.5	28.5	19.0	23.0	21.5	11.0	15.5
28	32.0	20.5	25.5	24.5	17.0	20.5	27.0	17.5	21.5	15.5	11.5	13.5
29	28.0	18.0	22.5	27.0	15.5	21.0	24.0	16.5	20.0	17.0	8.5	12.5
30	30.5	20.0	24.0	23.0	15.5	19.0	23.5	16.5	20.0	16.0	10.0	13.0
31	---	---	---	28.5	18.5	23.5	26.5	16.0	20.5	---	---	---
MONTH	32.0	13.5	21.2	33.5	15.0	23.0	32.5	14.0	22.1	28.5	8.5	18.6

STREAMS TRIBUTARY TO LAKE MICHIGAN

04059500 FORD RIVER NEAR HYDE, MI

LOCATION.--Lat 45°45'20", long 87°12'05", in SW1/4 sec.19, T.39 N., R.23 W., Delta County, Hydrologic Unit 04030109, on right bank 40 ft downstream from bridge on County Road 533, 1.4 mi downstream from Tenmile Creek, and 1.5 mi north of Hyde.

DRAINAGE AREA.--450 mi^2.

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 681.77 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	626	460	e260	e124	e107	e1010	414	302	59	32	53
2	67	623	434	e283	e124	e107	e1200	411	261	57	29	46
3	69	603	328	e288	e124	e107	e1370	393	226	54	28	41
4	86	534	322	e288	e124	e107	e1470	364	197	55	30	35
5	102	454	372	e288	e124	e107	e1600	332	183	53	29	30
6	102	388	346	e288	e124	e101	e1870	315	178	49	25	29
7	96	339	335	e239	e126	e97	2040	346	177	49	24	26
8	100	302	358	e239	e143	e97	1920	347	206	49	24	23
9	108	272	341	e220	e198	e97	1750	339	234	49	22	21
10	126	255	e293	e216	e175	e97	1620	321	209	47	27	20
11	136	269	e270	e192	e175	e96	1480	301	174	43	23	21
12	129	272	e250	e185	e175	e96	1320	280	154	38	28	20
13	121	259	e237	e178	e178	e96	1160	285	137	36	34	20
14	112	233	e228	e170	e176	e93	1020	317	147	33	33	23
15	111	227	e215	e158	e177	e94	888	349	195	30	30	24
16	111	221	e251	e148	e180	e92	764	357	317	29	27	24
17	114	215	e256	e127	e165	e92	691	344	363	27	25	37
18	115	212	e256	e109	e148	e89	638	319	390	26	23	36
19	117	209	e246	e107	e140	e91	596	323	389	24	25	37
20	115	254	e219	e107	e131	e89	680	415	316	23	24	39
21	111	311	e219	e102	e125	e89	768	427	243	22	22	34
22	108	330	e219	e102	e139	e89	795	457	176	21	23	38
23	156	343	e211	e102	e142	e89	802	514	141	20	23	43
24	254	330	e162	e98	e138	e91	803	518	121	25	23	44
25	350	248	e162	e102	e132	e95	734	474	106	23	24	46
26	394	244	e162	e113	e127	e95	630	424	92	24	22	49
27	449	320	e174	e115	e124	e94	533	382	83	25	43	44
28	493	538	e174	e115	e111	e134	508	379	75	26	33	52
29	532	580	e174	e115	---	e190	477	395	69	33	30	72
30	568	504	e174	e117	---	e368	444	387	64	36	38	68
31	603	---	e212	e124	---	e666	---	345	---	35	60	---
TOTAL	6111	10515	8060	5295	4069	3952	31581	11574	5925	1120	883	1095
MEAN	197	350	260	171	145	127	1053	373	198	36.1	28.5	36.5
MAX	603	626	460	288	198	666	2040	518	390	59	60	72
MIN	56	209	162	98	111	89	444	280	64	20	22	20
CFSM	0.44	0.78	0.58	0.38	0.32	0.28	2.34	0.83	0.44	0.08	0.06	0.08
IN.	0.51	0.87	0.67	0.44	0.34	0.33	2.61	0.96	0.49	0.09	0.07	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2005, BY WATER YEAR (WY)

MEAN	300	367	203	112	102	270	1316	774	399	198	158	231
MAX	1053	1246	589	346	493	1078	2353	2483	1006	793	713	1013
(WY)	2003	1986	1966	1966	1984	1973	1979	1960	1966	1968	1978	1978
MIN	39.9	42.5	27.7	26.5	29.6	48.5	345	99.7	52.4	34.7	28.5	26.2
(WY)	1977	1977	1977	1977	1977	1964	1990	1998	1988	1988	2005	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1955 - 2005	
ANNUAL TOTAL	151037		90180		369	
ANNUAL MEAN	413		247		640	1960
HIGHEST ANNUAL MEAN					183	1963
LOWEST ANNUAL MEAN					6850	May 8 1960
HIGHEST DAILY MEAN	2870	Apr 9	2040	Apr 7	19	Aug 30 1976
LOWEST DAILY MEAN	54	Feb 11	20	Jul 23	21	Sep 8 2005
ANNUAL SEVEN-DAY MINIMUM	54	Feb 11	21	Sep 8	7590	May 7 1960
MAXIMUM PEAK FLOW			(a)2050	Apr 7	8.27	May 7 1960
MAXIMUM PEAK STAGE			(b)7.05	Apr 1	18	(c)
INSTANTANEOUS LOW FLOW			19	Sep 13	0.820	
ANNUAL RUNOFF (CFSM)	0.917		0.549		11.14	
ANNUAL RUNOFF (INCHES)	12.49		7.45		912	
10 PERCENT EXCEEDS	1470		532		170	
50 PERCENT EXCEEDS	141		142		54	
90 PERCENT EXCEEDS	56		27			

(a) Gage height 4.97 ft.
(b) Backwater from ice.
(c) Aug. 30, 1976, July 7, 8, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04060500 IRON RIVER AT CASPIAN, MI

LOCATION.--Lat 46°03'31", long 88°37'38", in SE1/4 SW1/4 sec.1, T.42 N., R.35 W., Iron County, Hydrologic Unit 04030106, on right bank 10 ft downstream from bridge on County Highway 424 in Caspian, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--92.1 mi^2.

PERIOD OF RECORD.--March 1948 to September 1980, October 2004 to September 2005.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,438.70 ft above sea level. Prior to Sept. 25, 1969, nonrecording gage, and Sept. 26, 1969 to Sept. 30, 1980, water-stage recorder at datum 0.08 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Prior to August 1978, the average flow includes mine pumpage and sewage effluent. Several observations of water temperature were made during the year. Satellite telemetry at station..

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e51	80	63	63	53	e55	224	73	59	54	52	47
2	e67	73	64	62	53	e55	200	72	57	51	51	46
3	e70	69	68	e62	55	e56	194	70	56	51	52	46
4	e60	67	65	e60	56	e56	195	68	57	53	52	46
5	56	65	62	e58	57	61	185	65	64	53	52	45
6	55	66	63	57	62	60	215	65	67	51	51	45
7	57	63	64	e57	63	60	268	64	61	50	49	45
8	66	60	64	56	60	61	213	64	60	49	47	46
9	58	60	64	55	59	e60	164	67	59	49	49	44
10	55	63	69	55	58	e60	142	77	58	49	52	45
11	56	63	69	54	56	e60	126	71	59	47	48	45
12	58	63	69	55	56	e60	112	67	60	44	47	46
13	55	60	66	55	55	e60	102	73	60	44	46	53
14	54	60	73	e55	56	59	95	75	78	45	45	64
15	58	61	81	e55	56	57	89	72	108	43	45	53
16	62	61	66	e55	e55	e57	85	69	85	44	46	49
17	59	62	e66	e55	e55	e56	96	67	74	44	44	50
18	57	61	e65	e55	e55	e56	91	68	65	45	50	47
19	56	61	e65	e53	e55	56	86	75	61	45	55	58
20	56	68	e65	e53	e55	57	95	77	59	44	94	56
21	57	67	e66	e53	56	57	91	70	57	43	60	52
22	58	65	e66	e52	e55	57	85	75	55	42	56	55
23	89	64	e65	e54	e55	57	79	80	54	41	50	51
24	86	62	e63	e54	e55	58	77	75	53	194	49	49
25	73	60	e63	e54	e55	58	75	69	52	86	48	50
26	68	61	e62	53	e55	59	75	66	51	69	48	63
27	73	64	e63	e54	e55	62	74	65	54	58	57	57
28	75	66	e62	e54	e55	70	74	64	59	57	53	60
29	92	65	62	e54	---	88	72	65	54	59	50	63
30	109	63	60	52	---	134	70	61	56	55	49	57
31	98	---	68	53	---	211	---	59	---	52	48	---
TOTAL	2044	1923	2031	1717	1571	2073	3749	2148	1852	1711	1595	1533
MEAN	65.9	64.1	65.5	55.4	56.1	66.9	125	69.3	61.7	55.2	51.5	51.1
MAX	109	80	81	63	63	211	268	80	108	194	94	64
MIN	51	60	60	52	53	55	70	59	51	41	44	44
CFSM	0.72	0.70	0.71	0.60	0.61	0.73	1.36	0.75	0.67	0.60	0.56	0.55
IN.	0.83	0.78	0.82	0.69	0.63	0.84	1.51	0.87	0.75	0.69	0.64	0.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

MEAN	73.0	73.0	66.3	62.7	60.9	76.6	176	122	91.0	82.4	73.7	74.2
MAX	134	148	90.6	92.7	83.6	251	316	251	173	242	191	145
(WY)	1973	1973	1973	1973	1973	1973	1967	1965	1953	1953	1972	1980
MIN	40.3	47.3	43.8	43.9	45.9	46.3	75.9	62.8	52.6	46.4	47.8	43.1
(WY)	1964	1959	1959	1959	1959	1960	1949	1957	1948	1964	1958	1963

SUMMARY STATISTICS	FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	23947			
ANNUAL MEAN	65.6		86.6	
HIGHEST ANNUAL MEAN			137	1973
LOWEST ANNUAL MEAN			57.7	1949
HIGHEST DAILY MEAN	268	Apr 7	1270	Jul 2 1953
LOWEST DAILY MEAN	41	Jul 23	36	Oct 2 1963
ANNUAL SEVEN-DAY MINIMUM	43	Jul 17	38	Oct 6 1963
MAXIMUM PEAK FLOW	349	Jul 24	1430	Jul 2 1953
MAXIMUM PEAK STAGE	6.74	Jul 24	10.20	Jul 2 1953
INSTANTANEOUS LOW FLOW			(a)25	Mar 29 1969
ANNUAL RUNOFF (CFSM)	0.712			
ANNUAL RUNOFF (INCHES)	9.67			
10 PERCENT EXCEEDS	80		129	
50 PERCENT EXCEEDS	59		69	
90 PERCENT EXCEEDS	48		50	

(a) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04060993 BRULE RIVER NEAR FLORENCE, WI

LOCATION.--Lat 45°57'39", long 88°18'57", in NW1/4 SE1/4 sec.9, T.41 N., R.32 W., Michigan Meridian, Iron County, Hydrologic Unit 04030106, on left bank 30 ft upstream from bridge on U.S. Highway 2, 4.0 mi upstream from Paint River, 4.0 mi northwest of Florence, WI, and 8.0 mi upstream from confluence with Michigamme River.

DRAINAGE AREA.--366 mi^2, approximately.

PERIOD OF RECORD.--January 1914 to February 1916, June 1944 to current year.

REVISED RECORDS.--WSP 1387: 1914-16. WDR MI-92-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,240 ft above sea level, from topographic map. Prior to Aug. 29, 1944, nonrecording gage, and Aug. 29, 1944 to Apr. 4, 1994, water-stage recorder at site 3.0 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Discharge includes some mine pumpage prior to August 1977. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	379	238	e229	e212	e222	e551	276	215	196	201	171
2	269	328	250	e231	e213	e219	e589	278	209	190	192	165
3	259	302	225	e226	e212	e218	726	282	202	181	184	163
4	233	284	e214	e218	e211	e217	747	270	199	193	182	162
5	221	274	e211	e209	e219	e217	739	258	224	190	176	160
6	213	269	e228	e205	e224	e217	799	255	253	188	171	160
7	209	259	e228	e204	e228	e226	904	251	242	179	164	161
8	229	250	e228	e199	e232	e236	844	245	223	172	164	162
9	242	240	e231	e204	e233	e241	716	244	214	168	165	161
10	223	247	e235	e204	e233	e242	623	281	208	166	186	160
11	216	252	e248	e203	e230	e237	554	303	209	163	183	160
12	218	238	e249	e207	e226	e225	494	275	218	159	176	158
13	215	237	e230	e208	e222	e219	446	271	223	159	168	174
14	211	243	e190	e209	e219	e215	408	304	437	161	162	206
15	221	247	e185	e207	e216	e213	378	309	593	157	157	219
16	242	239	e198	e201	e216	e210	356	297	493	153	155	209
17	236	243	e212	e199	e216	e210	398	276	361	152	152	190
18	227	245	e217	e196	e217	e210	402	264	299	151	156	181
19	221	243	e195	e196	e220	e209	377	281	266	153	200	186
20	219	288	e188	e196	e225	e209	404	339	246	151	292	216
21	219	300	e191	e197	e238	e209	421	317	229	151	317	199
22	221	271	e205	e199	e254	e209	372	308	215	148	289	193
23	304	263	e220	e201	e259	e210	347	321	204	147	233	191
24	411	246	e212	e203	e260	e211	327	302	197	519	202	185
25	339	233	e206	e204	e251	e215	311	274	192	543	188	180
26	291	239	e204	e206	e240	e220	301	253	187	447	182	213
27	308	270	e205	e206	e228	e225	301	244	183	334	237	224
28	309	278	e209	e207	e226	e245	299	242	207	260	213	218
29	342	268	e212	e210	---	e250	290	244	210	260	192	260
30	402	275	e218	e209	---	e283	279	234	205	239	182	233
31	439	---	e225	e209	---	e381	---	225	---	214	178	---
TOTAL	8117	7950	6707	6402	6380	7070	14703	8523	7563	6644	5999	5620
MEAN	262	265	216	207	228	228	490	275	252	214	194	187
MAX	439	379	250	231	260	381	904	339	593	543	317	260
MIN	208	233	185	196	211	209	279	225	183	147	152	158
CFSM	0.72	0.72	0.59	0.56	0.62	0.62	1.34	0.75	0.69	0.59	0.53	0.51
IN.	0.83	0.81	0.68	0.65	0.65	0.72	1.49	0.87	0.77	0.68	0.61	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2005, BY WATER YEAR (WY)

MEAN	321	329	272	247	242	317	656	493	388	332	284	303
MAX	612	600	424	369	406	833	1235	1104	712	983	604	582
(WY)	1986	1916	1986	1986	1984	1973	1967	1965	1981	1953	1972	1959
MIN	179	202	175	156	163	178	235	242	194	185	186	182
(WY)	1949	1990	1990	1995	1995	1965	1990	1998	1988	1989	1948	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1914 - 2005	
ANNUAL TOTAL	116644		91678			
ANNUAL MEAN	319		251		347	
HIGHEST ANNUAL MEAN					512	1973
LOWEST ANNUAL MEAN					221	1990
HIGHEST DAILY MEAN	2090	Apr 21	904	Apr 7	4420	Jul 2 1953
LOWEST DAILY MEAN	165	Feb 4	147	Jul 23	130	Dec 2 1963
ANNUAL SEVEN-DAY MINIMUM	165	Feb 4	150	Jul 17	140	Jan 2 1995
MAXIMUM PEAK FLOW			(a)921	Apr 7	4700	Jul 2 1953
MAXIMUM PEAK STAGE			(b)6.05	Dec 17	(c)8.41	Jul 15 1999
INSTANTANEOUS LOW FLOW			144	(d)	(f)95	Dec 17 1999
ANNUAL RUNOFF (CFSM)	0.871		0.686		0.949	
ANNUAL RUNOFF (INCHES)	11.86		9.32		12.90	
10 PERCENT EXCEEDS	597		340		546	
50 PERCENT EXCEEDS	244		221		283	
90 PERCENT EXCEEDS	170		171		202	

(a) Gage height 4.90 ft.
(b) Backwater from ice.
(c) Present site and datum; peak stage at previous site and datum, 8.60 ft, Dec. 20, 1983, backwater from ice.
(d) July 22, 23.
(e) Estimated.
(f) Result of freezeup.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04062000 PAINT RIVER NEAR ALPHA, MI

LOCATION.--Lat 46°00'40", long 88°15'30", in NW1/4 NW1/4 sec.25, T.42 N., R.32 W., Iron County, Hydrologic Unit 04030106, on right bank 0.6 mi downstream from Lower Paint Dam, 5.5 mi upstream from Brule River, and 6.0 mi southeast of Alpha.

DRAINAGE AREA.--631 mi^2.

PERIOD OF RECORD.--June 1952 to current year.

REVISED RECORDS.--WSP 1727: Drainage area, WDR MI-96-1: 1985 (M).

GAGE.--Water-stage recorder. Elevation of gage is 1,260 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow completely regulated by powerplant and Lower Paint Dam, 0.6 mi upstream. Records not adjusted for diversion to Michigamme River by Paint River Diversion Canal.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	281	280	258	e183	e188	e184	351	349	315	290	280	283
2	280	279	212	e183	e188	e182	553	349	314	291	281	268
3	280	276	195	e182	e188	e184	549	349	312	290	280	280
4	280	276	185	e181	e188	e184	458	349	312	289	280	280
5	280	276	187	e181	e188	e184	424	349	313	289	280	279
6	280	276	183	e181	e188	e184	886	350	314	290	280	275
7	280	207	184	e182	e188	e184	1860	349	315	288	280	276
8	280	203	183	e182	e188	e184	2180	349	316	288	280	276
9	279	239	183	e184	e188	e182	1870	349	315	288	277	276
10	280	280	184	e184	e188	e182	1210	349	316	288	276	276
11	280	280	184	e184	e188	e182	691	349	316	283	278	276
12	280	279	186	e184	e188	e182	458	351	316	271	278	276
13	278	276	e185	e184	e188	e180	375	354	318	273	278	276
14	278	276	e184	e184	e188	e180	361	353	324	272	277	276
15	280	276	e184	e186	e189	e180	350	353	324	273	276	276
16	279	276	e183	e186	e189	e180	349	326	306	272	276	276
17	276	276	e183	e186	e189	e180	346	303	292	272	276	276
18	277	276	e183	e186	e189	e180	345	303	289	272	276	276
19	276	277	e183	e186	e189	e180	345	311	288	273	272	278
20	276	279	e183	e186	e189	e180	348	316	288	276	275	277
21	277	280	e183	e186	e189	e180	351	316	283	274	276	276
22	279	280	e183	e186	e189	e180	353	317	280	275	276	276
23	280	280	e183	e186	e185	e180	353	316	280	276	276	276
24	280	280	e183	e186	e185	e180	349	316	282	278	276	276
25	280	280	e183	e186	e183	e180	349	316	284	276	276	276
26	280	280	e183	e186	e183	e180	349	316	284	280	276	275
27	280	281	e183	e188	e183	e180	349	316	282	280	277	274
28	280	280	e183	e188	e184	182	349	315	282	280	276	273
29	280	280	e183	e188	---	179	350	314	283	280	278	272
30	278	280	e183	e188	---	182	350	313	287	280	276	271
31	278	---	e183	e188	---	191	---	314	---	280	276	---
TOTAL	8652	8164	5805	5731	5247	5632	17811	10279	9030	8687	8595	8277
MEAN	279	272	187	185	187	182	594	332	301	280	277	276
MAX	281	281	258	188	189	191	2180	354	324	291	281	283
MIN	276	203	183	181	183	179	345	303	280	271	272	268

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	134	124	100	97.8	100	111	517	389	207	147	114	124
MAX	554	383	250	241	240	487	2512	1921	937	969	349	305
(WY)	1986	1989	2003	2003	2003	1973	2002	1996	1983	1953	2002	1980
MIN	81.5	81.3	81.3	71.4	76.8	84.0	81.4	83.5	85.4	82.0	81.7	66.8
(WY)	2000	2002	2001	1955	2001	1956	1990	1992	1975	1998	2001	1962

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	127952		101910			
ANNUAL MEAN	350		279		180	
HIGHEST ANNUAL MEAN					427	2002
LOWEST ANNUAL MEAN					87.9	2000
HIGHEST DAILY MEAN	4030	Apr 21	2180	Apr 8	(e)12100	Apr 17 2002
LOWEST DAILY MEAN	180	Mar 21	179	Mar 29	62	(a)
ANNUAL SEVEN-DAY MINIMUM	180	Mar 21	180	Mar 13	65	Jan 9 1955
MAXIMUM PEAK FLOW			2190	Apr 8	(b)12300	Apr 17 2002
MAXIMUM PEAK STAGE			6.46	Apr 8	(c)11.44	Apr 17 2002
10 PERCENT EXCEEDS	379		349		258	
50 PERCENT EXCEEDS	276		276		92	
90 PERCENT EXCEEDS	185		183		85	

(a) Mar. 22, 1963, Apr. 22, 2001.
(b) From rating curve extended above 6,000 ft^3/s.
(c) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04062011 BRULE RIVER NEAR COMMONWEALTH, WI

LOCATION.--Lat 45°56'51", long 88°12'55", in NW1/4 sec. 14, T.40 N., R.18 E., Wisconsin Meridian, Florence County, Hydrologic Unit 04030106, on right bank 900 ft downstream from Brule Island Dam, 1.5 mi upstream from confluence with Michigamme River, and 2.8 mi north of Commonwealth, WI.

DRAINAGE AREA.--1,020 mi^2.

PERIOD OF RECORD.--October 1989 to current year.

REVISED RECORDS.--WDR MI-91-1: 1990(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,130 ft above sea level, from topographic map.

REMARKS.--Records excellent. Flow regulated by powerplant 900 ft upstream and by Lower Paint Dam 8.2 mi upstream. Records not adjusted for diversion to Michigamme River by Paint River Diversion Canal. Gage-height telemeter at station.

COOPERATION.--Gage-height record was provided by We Energies, under general supervision of the Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	549	691	486	456	432	426	1120	628	486	496	490	460
2	517	624	446	460	448	426	1320	666	527	453	481	427
3	535	535	397	479	427	424	1250	646	527	452	465	439
4	514	561	436	449	425	418	1280	608	523	484	476	443
5	495	557	470	429	480	419	1190	608	545	485	452	448
6	479	554	455	418	435	427	1710	635	572	466	453	438
7	477	494	443	421	513	486	2560	598	570	714	448	457
8	477	442	443	417	479	570	2860	577	574	769	455	452
9	563	467	475	417	485	523	2420	586	513	669	453	436
10	481	579	499	417	453	526	1720	661	557	665	461	444
11	527	514	550	420	449	481	1230	699	534	641	450	442
12	484	532	520	434	474	449	969	628	535	594	319	425
13	517	490	375	426	454	401	804	587	529	572	249	461
14	487	506	386	450	441	426	768	689	832	561	259	471
15	497	549	350	396	468	423	715	686	957	451	264	471
16	535	540	473	396	435	404	750	677	888	440	256	500
17	489	525	484	395	438	398	790	613	653	441	258	468
18	496	500	402	389	430	431	743	531	585	433	297	461
19	545	531	421	390	462	418	783	606	560	435	482	475
20	487	609	364	401	440	423	775	675	523	438	496	493
21	494	635	393	400	533	431	774	687	510	442	597	455
22	506	590	460	411	576	412	744	673	492	423	547	481
23	569	548	417	418	530	411	740	655	462	440	390	453
24	768	512	436	410	521	407	661	657	495	797	420	456
25	656	506	415	423	480	419	621	603	491	884	454	469
26	534	495	408	405	425	440	671	542	472	765	451	502
27	596	559	413	419	440	459	687	621	460	639	548	510
28	597	569	436	434	414	477	674	528	494	548	487	487
29	679	571	431	413	---	549	669	574	518	529	471	533
30	643	541	437	417	---	803	578	549	490	519	469	527
31	701	---	495	413	---	1090	---	550	---	489	465	---
TOTAL	16894	16326	13616	13023	12987	14797	32576	19243	16874	17134	13263	13984
MEAN	545	544	439	420	464	477	1086	621	562	553	428	466
MAX	768	691	550	479	576	1090	2860	699	957	884	597	533
MIN	477	442	350	389	414	398	578	528	460	423	249	425

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2005, BY WATER YEAR (WY)

MEAN	453	424	376	356	366	453	1222	869	536	478	402	399
MAX	923	603	545	476	497	634	3128	2757	855	887	680	569
(WY)	2003	2003	2002	2003	2003	1998	2002	1996	2004	1999	2002	2002
MIN	276	307	270	259	270	327	322	355	334	272	296	285
(WY)	1990	1990	1990	1991	1991	2001	1990	1998	1992	1990	1990	1998

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1990 - 2005	
ANNUAL TOTAL	252965		200717			
ANNUAL MEAN	691		550		528	
HIGHEST ANNUAL MEAN					810	1996
LOWEST ANNUAL MEAN					325	1990
HIGHEST DAILY MEAN	6050	Apr 21	2860	Apr 8	10500	Apr 17 2002
LOWEST DAILY MEAN	349	Jan 6	249	Aug 13	182	Feb 11 1994
ANNUAL SEVEN-DAY MINIMUM	381	Jan 4	272	Aug 12	202	Mar 26 1990
MAXIMUM PEAK FLOW			3020	Apr 7	11200	Apr 17 2002
MAXIMUM PEAK STAGE			9.63	Apr 7	15.67	Apr 17 2002
10 PERCENT EXCEEDS	1000		694		751	
50 PERCENT EXCEEDS	506		487		403	
90 PERCENT EXCEEDS	423		415		290	

STREAMS TRIBUTARY TO LAKE MICHIGAN

04062200 PESHEKEE RIVER NEAR CHAMPION, MI

LOCATION.--Lat 46°33'25", long 88°00'09", in NW1/4 sec.13, T.48 N., R.30 W., Marquette County, Hydrologic Unit 04030107, on left bank 10 ft downstream from bridge on County Road 607, 0.6 mi downstream from West Branch, and 3.5 mi northwest of Champion.

DRAINAGE AREA.--133 mi^2.

PERIOD OF RECORD.--July 1961 to September 1978, October 1979 to September 1982 (operated as a crest-stage partial-record station), October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,557.49 ft above sea level. Prior to Aug. 15, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e20	250	e80	e125	e57	e68	e459	218	143	214	35	6.2
2	e30	238	e78	e125	e57	e68	e581	216	120	163	33	5.2
3	e33	209	e76	e125	e57	e68	e723	216	105	123	27	5.2
4	e35	184	e76	e111	e60	e68	e916	203	92	98	22	4.8
5	e40	167	e76	e109	e67	e67	e1050	184	95	81	19	4.4
6	e38	152	e76	e105	e89	e71	e1340	164	123	70	16	4.1
7	e35	137	e79	e91	e119	e68	1720	151	122	61	13	3.9
8	33	123	e79	e86	e133	e68	1860	141	111	51	12	3.5
9	33	110	e79	e85	e133	e68	1820	136	98	44	11	3.2
10	32	104	e79	e85	e133	e68	1830	140	84	39	11	2.9
11	31	106	e74	e82	e124	e64	1750	142	115	34	9.5	2.8
12	29	100	e74	e77	e109	e64	1660	135	239	31	8.8	3.1
13	27	100	e74	e73	e98	e64	1470	136	153	28	7.9	20
14	27	89	e74	e72	e96	e64	1230	175	189	24	7.2	24
15	31	80	e74	e67	e94	e64	1050	231	391	21	6.4	28
16	51	77	e74	e64	e86	e64	941	319	378	18	5.6	31
17	84	75	e70	e60	e86	e64	883	311	288	22	5.1	26
18	98	77	e69	e60	e83	e64	826	262	212	19	9.4	20
19	101	77	e69	e60	e79	e64	781	232	164	17	9.4	33
20	112	95	e69	e60	e77	e64	861	259	136	15	11	139
21	e130	122	e68	e60	e77	e64	774	239	107	13	11	171
22	e131	125	e67	e60	e77	e64	637	258	86	11	12	144
23	e192	115	e67	e59	e77	e64	527	481	70	10	12	106
24	e298	111	e66	e59	e73	e64	434	463	62	16	9.6	73
25	375	e94	e66	e59	e72	e62	360	367	56	19	8.2	61
26	322	e96	e66	e59	e72	e64	313	289	47	18	7.2	76
27	255	e96	e66	e59	e72	e64	286	240	42	18	7.9	91
28	203	e91	e66	e59	e69	e65	275	227	223	17	7.3	99
29	190	e91	e66	e59	---	e92	258	220	255	17	6.7	111
30	209	e88	e88	e57	---	e149	239	198	229	18	6.3	100
31	231	---	e109	e57	---	e280	---	167	---	30	5.9	---
TOTAL	3456	3579	2294	2369	2426	2354	27854	7120	4535	1360	373.4	1402.3
MEAN	111	119	74.0	76.4	86.6	75.9	928	230	151	43.9	12.0	46.7
MAX	375	250	109	125	133	280	1860	481	391	214	35	171
MIN	20	75	66	57	57	62	239	135	42	10	5.1	2.8
CFSM	0.84	0.90	0.56	0.57	0.65	0.57	6.98	1.73	1.14	0.33	0.09	0.35
IN.	0.97	1.00	0.64	0.66	0.68	0.66	7.79	1.99	1.27	0.38	0.10	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

MEAN	154	171	118	69.2	55.6	126	833	512	195	81.7	54.6	106
MAX	475	327	226	150	112	512	1303	1253	463	339	238	539
(WY)	2003	1968	1976	1969	1969	1973	1976	1965	1967	1968	1978	1968
MIN	5.53	10.3	11.2	10.1	10.1	42.9	280	105	39.1	8.26	2.13	1.90
(WY)	1977	1977	1977	1977	1977	1970	1972	1977	1977	1976	1976	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	73316		59122.7			
ANNUAL MEAN	200		162		207	
HIGHEST ANNUAL MEAN					273	1968
LOWEST ANNUAL MEAN					136	1977
HIGHEST DAILY MEAN	3230	Apr 20	1860	Apr 8	5860	Apr 18 2002
LOWEST DAILY MEAN	13	Sep 14	2.8	Sep 11	0.71	Sep 11 1976
ANNUAL SEVEN-DAY MINIMUM	17	Sep 9	3.4	Sep 6	0.83	Sep 7 1976
MAXIMUM PEAK FLOW			(a)1960	Apr 8	6740	Apr 18 2002
MAXIMUM PEAK STAGE			(b)6.11	Apr 4	10.73	Apr 18 2002
INSTANTANEOUS LOW FLOW			2.4	Sep 12	0.70	(c)
ANNUAL RUNOFF (CFSM)	1.51		1.22		1.55	
ANNUAL RUNOFF (INCHES)	20.51		16.54		21.12	
10 PERCENT EXCEEDS	546		293		468	
50 PERCENT EXCEEDS	79		77		90	
90 PERCENT EXCEEDS	28		12		20	

(a) Gage height 6.08 ft.
(b) Backwater from ice.
(c) Sept. 7, 8, 9, 10, 11, 1976.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04062500 MICHIGAMME RIVER NEAR CRYSTAL FALLS, MI

LOCATION.--Lat 46°06'50", long 88°12'57", in NW1/4 sec.20, T.43 N., R.31 W., Iron County, Hydrologic Unit 04030107, on right bank 400 ft upstream from highway bridge, 5.0 mi downstream from Michigamme Reservoir, 6.0 mi east of Crystal Falls, and 15 mi upstream from confluence with Brule River.

DRAINAGE AREA.--656 mi^2.

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,300 ft above sea level, from topographic map.

REMARKS.--Records good. Flow regulated by powerplant and by Michigamme Reservoir, capacity, 119,950 acre-ft, 5 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	280	386	701	889	793	375	732	727	711	398	294
2	203	276	385	703	887	610	373	731	730	416	400	292
3	204	274	384	737	886	571	378	730	727	391	400	292
4	203	275	386	829	883	518	378	731	724	393	398	292
5	211	273	383	828	882	517	383	731	734	392	395	292
6	216	273	399	827	882	448	402	732	735	390	394	291
7	205	273	444	826	881	428	408	728	734	410	392	290
8	216	272	461	826	923	344	561	728	730	480	391	289
9	219	271	462	826	1010	302	701	728	730	480	392	289
10	222	277	466	823	1020	304	703	732	614	477	390	289
11	238	275	464	822	1030	304	723	637	531	480	387	288
12	254	292	468	823	1030	304	711	531	533	480	387	307
13	255	285	460	819	1020	305	722	515	541	480	386	297
14	255	273	461	815	1020	306	713	516	554	478	385	293
15	264	271	462	813	1020	306	714	514	529	479	384	297
16	263	272	462	811	1010	306	720	513	516	480	383	239
17	262	275	461	850	1010	306	726	512	513	478	380	184
18	263	273	462	884	1020	306	727	512	524	477	383	131
19	263	273	481	886	1020	308	734	518	673	453	381	119
20	266	283	590	887	1020	307	883	520	628	409	383	116
21	263	281	659	900	1040	307	1120	517	626	408	378	149
22	263	280	687	906	1060	306	1300	527	625	406	350	229
23	279	279	693	904	1050	306	1440	788	738	404	300	208
24	279	279	695	903	1050	307	1440	977	812	408	299	168
25	274	279	695	901	e1050	308	1330	969	828	403	299	168
26	268	278	693	898	1040	308	1130	965	867	406	299	172
27	272	287	693	897	1040	310	1010	960	965	402	306	168
28	273	287	698	896	1030	314	941	960	1060	405	299	175
29	280	284	696	894	---	320	819	959	1040	401	297	186
30	285	282	700	892	---	341	733	955	998	405	295	212
31	281	---	703	891	---	369	---	846	---	402	294	---
TOTAL	7676	8332	16539	26218	27703	11389	23298	22014	21286	13684	11205	7016
MEAN	248	278	534	846	989	367	777	710	710	441	361	234
MAX	285	292	703	906	1060	793	1440	977	1060	711	400	307
MIN	177	271	383	701	881	302	373	512	513	390	294	116

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2005, BY WATER YEAR (WY)

MEAN	491	533	763	863	837	517	674	1085	807	659	583	502
MAX	1220	1432	1427	1274	1252	819	1705	2865	1650	1461	1035	1325
(WY)	1952	1989	1989	1983	1983	1971	2002	1960	1983	1953	1987	1968
MIN	151	88.3	238	390	350	160	142	130	257	261	292	157
(WY)	1970	1949	1949	1977	1948	1977	1987	1987	1987	1959	1977	1975

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1944 - 2005	
ANNUAL TOTAL	245318		196360			
ANNUAL MEAN	670		538		693	
HIGHEST ANNUAL MEAN					1049	1960
LOWEST ANNUAL MEAN					382	1977
HIGHEST DAILY MEAN	3220	Apr 23	1440	Apr 23	6940	Apr 27 1960
LOWEST DAILY MEAN	177	Oct 1	116	Sep 20	71	Nov 26 1950
ANNUAL SEVEN-DAY MINIMUM	200	Sep 30	160	Sep 18	83	Mar 21 1968
MAXIMUM PEAK FLOW			1480	Apr 22	7260	Apr 28 1960
MAXIMUM PEAK STAGE			5.29	Apr 22	10.73	Apr 28 1960
10 PERCENT EXCEEDS	1210		959		1170	
50 PERCENT EXCEEDS	520		461		642	
90 PERCENT EXCEEDS	263		265		180	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04063000 MENOMINEE RIVER NEAR FLORENCE, WI

LOCATION.--Lat 45°57'05", long 88°11'21", in SE1/4 sec.12, T.41 N., R.18 E., Wisconsin Meridian, Florence County, Hydrologic Unit 04030108, on right bank 0.4 mi downstream from confluence of Brule and Michigamme Rivers, 3.5 mi northeast of Florence, WI, and at mile 117.

DRAINAGE AREA.--1,760 mi^2.

PERIOD OF RECORD.--January 1914 to current year. Published as "at Twin Falls near Iron Mountain, MI", January 1914 to June 1950, October 1996 to September 1998. Records published for both sites July 1950 to September 1957, October 1989 to September 1996, October 1998 to current year.

REVISED RECORDS.--WSP 1707: 1953(M). WDR MI-92-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,119.23 ft above sea level (levels by Owen Ayres Associates). Prior to July 5, 1950, headwater and tailwater gages and generation data entered hourly in daily log sheets by company employees at the We Energies Twin Falls Powerplant, 10.4 mi downstream. July 5, 1950 to Oct. 19, 2000, water-stage recorder at site 500 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Prior to July 1950, discharge determined from powerplant records computed on basis of load-discharge rating of hydroelectric units and rating for tailwater gage during periods of spill; ratings developed by U.S. Geological Survey. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	721	1490	921	1310	1260	e1580	2060	1620	e1230	1270	840	773
2	787	1460	1110	1400	1330	e1540	2290	1550	e1310	1220	868	715
3	834	1220	1120	1200	1330	e1590	2290	1480	e1260	1180	1030	729
4	832	1070	1050	e1380	1320	e1450	2340	1430	e1260	1180	968	738
5	794	1100	1010	e1470	1300	e1600	2270	1430	e1260	1230	848	740
6	784	1060	896	e1440	1260	e1570	2810	1490	e1280	1150	903	732
7	776	1120	1120	e1420	1310	e1700	3980	1430	e1280	1400	792	735
8	756	1110	1110	e1500	e1440	e1700	4210	1450	e1370	1180	768	730
9	820	942	1140	1410	1420	e1620	3930	1430	1410	1110	756	716
10	741	1120	1230	1360	1570	e1550	3290	e1380	1350	1130	763	729
11	783	1090	1260	1420	1720	e1550	3020	e1140	1230	1150	822	728
12	734	1250	1270	e1380	1640	e1590	2340	e1140	1240	1050	679	702
13	770	994	e1110	e1430	e1790	e1600	2130	e1220	1200	1020	712	738
14	684	1020	e1090	e1450	1650	e1420	2280	1320	1470	936	670	743
15	698	915	e1080	e1490	1750	e1320	1990	1240	1920	848	813	630
16	876	916	1010	e1420	e1700	e1480	1960	1270	2150	895	850	619
17	587	845	1080	e1410	e1620	e1420	1990	1240	1940	960	667	607
18	737	833	e998	e1470	e1550	e1420	1830	1320	1850	812	637	597
19	830	913	e1270	e1390	e1600	e1480	1820	1520	1660	760	801	614
20	769	947	e1390	1380	e1560	e1440	1830	1560	1560	750	812	708
21	782	1000	1330	1400	e1530	e1410	1930	1540	1360	768	926	736
22	763	978	e1290	1310	e1600	1010	2290	1560	1430	738	814	756
23	802	1010	e1340	1370	e1670	1530	2580	1700	1450	761	668	720
24	1400	977	e1330	1320	e1550	1250	2580	1830	1490	1130	691	722
25	1400	945	e1380	1380	e1620	1390	2350	1820	1590	1170	725	735
26	1340	980	e1380	1250	e1620	1400	1840	e1850	1550	1070	724	759
27	1260	1010	e1310	1360	e1620	1260	1830	e1770	1640	1090	824	782
28	1210	1140	1370	1610	e1550	1200	1760	e1740	1630	898	763	762
29	1370	1060	1280	1270	---	1370	1690	e1770	1450	914	751	804
30	1310	1050	1410	1400	---	1790	1600	e1700	1330	859	747	841
31	1450	---	1440	1240	---	1860	---	e1460	---	823	783	---
TOTAL	28400	31565	37125	43040	42880	46090	71110	46400	44150	31452	24415	21640
MEAN	916	1052	1198	1388	1531	1487	2370	1497	1472	1015	788	721
MAX	1450	1490	1440	1610	1790	1860	4210	1850	2150	1400	1030	841
MIN	587	833	896	1200	1260	1010	1600	1140	1200	738	637	597

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2005, BY WATER YEAR (WY)

MEAN	1452	1563	1437	1398	1389	1596	3159	3004	2101	1574	1285	1368
MAX	3537	3465	2640	2253	2514	3544	8159	6319	5035	4253	2359	3149
(WY)	1986	1986	1984	1983	1984	1973	1916	1960	1916	1953	1972	1968
MIN	726	725	765	691	647	692	735	595	799	721	545	718
(WY)	1949	1964	1925	1924	1926	1914	1990	1987	1988	1925	1925	1925

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1914 - 2005	
ANNUAL TOTAL	611293		468267			
ANNUAL MEAN	1670		1283		1777	
HIGHEST ANNUAL MEAN					3069	1916
LOWEST ANNUAL MEAN					922	1925
HIGHEST DAILY MEAN	9470	Apr 21	4210	Apr 8	18800	Jul 2 1953
LOWEST DAILY MEAN	587	Oct 17	587	Oct 17	57	Sep 26 1975
ANNUAL SEVEN-DAY MINIMUM	727	Oct 12	644	Sep 15	277	Oct 18 1975
MAXIMUM PEAK FLOW			4620	Apr 8	19500	Apr 26 1960
MAXIMUM PEAK STAGE			6.75	Apr 8	14.15	Apr 26 1960
INSTANTANEOUS LOW FLOW					38	(a)
10 PERCENT EXCEEDS	2910		1790		2980	
50 PERCENT EXCEEDS	1380		1270		1460	
90 PERCENT EXCEEDS	846		738		846	

(a) Aug. 21, 1962, Sept. 26, 1975.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04063500 MENOMINEE RIVER AT TWIN FALLS NEAR IRON MOUNTAIN, MI

LOCATION.--Lat 45°52'17", long 88°04'12", in NE1/4 SE1/4 sec. 12, T.40 N., R.31 W., Michigan Meridian, Dickinson County, Hydrologic Unit 04030108, on left bank 150 ft downstream from We Energies powerhouse at Twin Falls Dam, 3.6 mi north of Iron Mountain, and at mile 106.6.

DRAINAGE AREA.--1,800 mi^2.

PERIOD OF RECORD.--January 1914 to current year. Published as "near Florence, WI", October 1957 to September 1989. Records published for both sites July 1950 to September 1957, October 1989 to September 1996, October 1998 to current year.

REVISED RECORDS.--WDR MI-91-1: 1990(M). WDR MI-92-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,062 ft above sea level (levels by We Energies). Prior to September 1957, headwater and tailwater gages and generation data entered hourly in daily log sheets by company employees. October 1957 to September 1989, water-stage recorder at site 10.4 mi upstream at different datum. November 1989 to July 1993, water-stage recorder at site 150 ft upstream at same datum.

REMARKS.--Records good. Prior to September 1957, discharge determined from powerplant records computed on basis of load-discharge rating of hydroelectric units and rating for tailwater gage during periods of spill; ratings developed by U.S. Geological Survey. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

COOPERATION.--Gage-height record was provided by We Energies, under general supervision of the Geological Survey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	737	e1560	1060	1320	1330	1580	2130	1570	1270	1240	937	796
2	841	e1500	1140	1430	1460	1540	2330	1500	1330	1290	940	698
3	893	e1260	1120	1300	1420	1590	2410	1450	1310	1220	951	789
4	882	e1120	1120	1410	1430	1460	2330	1410	1260	1160	983	767
5	884	e1130	1090	1460	1370	1600	2350	1350	1290	1250	909	721
6	786	e1090	970	1450	1470	1570	2750	1480	1330	1150	889	776
7	857	e1150	1090	1420	e1380	1680	4020	1340	1280	1400	836	785
8	747	e1150	1150	1520	e1470	1700	4520	1400	1370	1120	858	773
9	897	e980	1220	1460	e1500	1600	4200	1340	1370	1190	841	767
10	820	e1160	1240	1370	e1560	1550	3270	1420	1250	1020	755	747
11	834	e1130	1290	1470	e1750	1510	3120	1180	1200	1160	862	792
12	770	e1140	1380	1440	e1690	1620	2440	1150	1220	1070	851	708
13	802	e1090	1210	1470	e1810	1590	2120	1260	1240	993	764	746
14	784	e1050	1290	1480	e1630	1380	2250	1240	1410	1010	717	753
15	811	e919	1110	1490	e1630	1310	2040	1240	1970	901	720	765
16	796	e939	1120	1430	1710	1450	2050	1250	2160	e928	848	675
17	788	e875	1140	1400	1680	1450	1950	1230	2070	e998	770	679
18	756	e855	1110	1500	1570	1380	1940	1310	1850	e833	726	678
19	829	e944	1230	1390	1650	1470	1870	1370	1700	e796	705	607
20	822	e987	1330	1430	1570	1460	1840	1670	1570	803	785	645
21	830	e1030	1350	1430	1520	1380	2020	1520	1310	837	880	742
22	782	e1020	1320	1320	1570	1150	2300	1550	1330	853	1130	767
23	857	e1030	1360	1410	1660	1350	2510	1630	1420	800	666	776
24	1370	e996	1330	1390	1580	1250	2620	1860	1530	1010	736	726
25	e1430	e979	1380	1460	1620	1320	2330	1850	1570	1230	773	812
26	e1380	e1010	1380	1420	1580	1310	1900	1880	1560	1160	801	815
27	e1320	e1040	1350	1440	1620	1280	1870	1870	1610	1180	924	819
28	e1270	e1140	1360	1470	1560	1260	1830	1770	1580	933	854	805
29	e1400	e1090	1300	1420	---	1400	1720	1780	1420	865	809	878
30	e1370	e1070	1360	1430	---	1690	1590	1760	1380	929	861	926
31	e1520	---	1520	1390	---	2020	---	1510	---	927	863	---
TOTAL	29865	32434	38420	44220	43790	45900	72620	46140	44160	32256	25944	22733
MEAN	963	1081	1239	1426	1564	1481	2421	1488	1472	1041	837	758
MAX	1520	1560	1520	1520	1810	2020	4520	1880	2160	1400	1130	926
MIN	737	855	970	1300	1330	1150	1590	1150	1200	796	666	607

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2005, BY WATER YEAR (WY)

MEAN	1464	1577	1447	1407	1396	1610	3183	3022	2120	1589	1300	1382
MAX	3537	3465	2640	2253	2514	3544	8159	6319	5035	4309	2359	3149
(WY)	1986	1986	1984	1983	1984	1973	1916	1960	1916	1953	1972	1968
MIN	726	725	765	691	647	692	707	595	799	721	545	718
(WY)	1949	1964	1925	1924	1926	1914	1990	1987	1988	1925	1925	1925

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1914 - 2005	
ANNUAL TOTAL	648361		478482			
ANNUAL MEAN	1771		1311		1791	
HIGHEST ANNUAL MEAN					3069	1916
LOWEST ANNUAL MEAN					922	1925
HIGHEST DAILY MEAN	9980	Apr 21	4520	Apr 8	18100	Apr 26 1960
LOWEST DAILY MEAN	737	Oct 1	607	Sep 19	57	Sep 26 1975
ANNUAL SEVEN-DAY MINIMUM	787	Oct 12	684	Sep 15	277	Oct 18 1975
MAXIMUM PEAK FLOW			4870	Apr 7	(a)19500	Apr 26 1960
MAXIMUM PEAK STAGE			9.30	Apr 7	(b)13.88	Apr 17 2002
10 PERCENT EXCEEDS	3190		1830		3000	
50 PERCENT EXCEEDS	1430		1310		1470	
90 PERCENT EXCEEDS	924		785		857	

(a) Gage height 14.15 ft, site and datum then in use.
(b) Present site and datum.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04065106 MENOMINEE RIVER AT NIAGARA, WI

LOCATION.--Lat 45°46'04", long 87°58'50", in NE 1/4 NE 1/4 sec.15, T.38 N., R.20 E., Wisconsin Meridian, Marinette County, Hydrologic Unit 04030108, on right bank 0.7 mi downstream from Little Quinnesec Falls Dam, at Niagara, WI.

DRAINAGE AREA.--2,470 mi^2.

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 880 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	2450	1440	e1720	e1710	e1870	3630	2060	1670	1390	1220	875
2	1100	2320	1470	e1810	e1680	e1850	3530	2050	1750	1230	1130	906
3	1180	2010	1450	e1720	e1810	e1850	3870	1950	1670	1290	1020	811
4	1240	1730	1530	e1640	e1700	e1880	3740	1950	1610	1250	1170	780
5	1160	1580	1510	e1820	e1740	e1820	3760	1720	1640	1350	1040	793
6	1090	1720	1550	e1760	e1750	e1840	3920	1950	1820	1250	1020	789
7	1220	1590	1380	e1710	e1850	e1980	5170	1850	1780	1340	899	783
8	1080	1590	1490	e1780	e1720	e2060	6110	1870	1750	1300	893	788
9	1150	1480	1550	e1720	e1900	e2030	5830	1820	1820	1180	1020	843
10	1150	1570	1670	e1660	e1950	e1860	4200	1850	1750	1060	925	850
11	1150	1630	1800	e1750	e2100	e1910	4520	1890	1640	1190	989	839
12	1120	1650	1730	e1740	e2180	e1870	3570	1620	1600	1080	958	810
13	1130	1590	1720	e1780	e2100	e1850	3050	1730	1700	953	882	782
14	1080	1440	1570	e1860	e2090	e1670	3020	1810	2040	1110	864	781
15	1110	1290	1490	e1740	e1990	e1620	2910	1820	3260	1030	866	801
16	1110	1240	1470	e1700	e2040	e1640	2610	1910	3260	1020	856	787
17	1090	1290	e1560	e1640	e2000	e1740	2680	1810	2910	1040	827	754
18	1080	1290	e1480	e1720	e1910	e1710	e2600	1920	2220	980	818	765
19	1140	1290	e1530	e1680	e1870	e1760	e2580	1860	2030	871	830	710
20	1090	1340	e1640	e1670	e1910	e1780	2610	2350	1800	852	862	769
21	1090	1530	e1620	e1610	e1950	e1660	2840	2300	1540	896	973	701
22	1060	1740	e1550	e1630	e1860	e1530	3100	2190	1560	925	1310	873
23	1270	1470	e1630	e1650	e1890	e1630	3260	2280	1550	921	876	823
24	1800	1430	e1590	e1610	e1930	1610	3190	2380	1580	1180	807	751
25	2060	1400	e1680	e1640	e1900	1640	3000	2360	1570	1590	779	897
26	1910	1450	e1550	e1700	e1960	1570	2470	2380	1640	1560	782	960
27	1860	1470	e1630	e1680	e1840	1600	2480	2350	1600	1620	978	970
28	1830	1690	e1540	e1700	e1930	1620	2380	2280	1660	1190	1040	966
29	1890	1620	e1570	e1680	---	1930	2220	2150	1440	1310	1030	1090
30	2140	1590	e1660	e1660	---	2100	2140	2180	1470	1070	948	1070
31	2450	---	e1760	e1650	---	3330	---	2000	---	1040	953	---
TOTAL	41890	47480	48810	52830	53260	56810	100990	62640	55330	36068	29565	25117
MEAN	1351	1583	1575	1704	1902	1833	3366	2021	1844	1163	954	837
MAX	2450	2450	1800	1860	2180	3330	6110	2380	3260	1620	1310	1090
MIN	1060	1240	1380	1610	1680	1530	2140	1620	1440	852	779	701

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2005, BY WATER YEAR (WY)

MEAN	1745	1713	1681	1710	1846	2063	3982	3547	2508	1956	1587	1517
MAX	3689	2531	2458	2258	2286	2800	7476	7555	4184	3547	2290	2225
(WY)	2003	1993	1993	1993	1997	2000	2002	1996	1993	1999	1996	1994
MIN	1151	1245	1161	1369	1391	1553	1953	1175	1587	1163	954	837
(WY)	2001	2001	2001	1995	1995	2001	1994	1998	1998	2005	2005	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1993 - 2005	
ANNUAL TOTAL	817840		610790			
ANNUAL MEAN	2235		1673		2154	
HIGHEST ANNUAL MEAN					3135	1996
LOWEST ANNUAL MEAN					1673	2005
HIGHEST DAILY MEAN	12100	Apr 21	6110	Apr 8	18400	Apr 19 2002
LOWEST DAILY MEAN	1040	Sep 13	701	Sep 21	701	Sep 21 2005
ANNUAL SEVEN-DAY MINIMUM	1090	Oct 16	755	Sep 15	755	Sep 15 2005
MAXIMUM PEAK FLOW			6330	Apr 8	18900	Apr 18 2002
MAXIMUM PEAK STAGE			9.95	Apr 8	16.22	Apr 18 2002
10 PERCENT EXCEEDS	4000		2370		3460	
50 PERCENT EXCEEDS	1700		1640		1760	
90 PERCENT EXCEEDS	1240		880		1180	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04065722 MENOMINEE RIVER NEAR VULCAN, MI

LOCATION.--Lat 45°44'12", long 87°51'48", sec.34, T.39 N., R.29 W., Michigan Meridian, Dickinson County, Hydrologic Unit 04030108, on left bank 0.35 mi downstream from Sturgeon Falls Dam, 3.0 mi south of Vulcan, and at mile 78.7.

DRAINAGE AREA.--2,900 mi^2.

PERIOD OF RECORD.--December 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 820 ft above sea level, from topographic map.

REMARKS.--Records good. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by smaller reservoirs upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	2900	1820	1930	1740	2010	4570	2080	1820	1580	1290	1060
2	1220	2840	1690	1860	1770	1890	5210	2090	1710	1500	1390	1080
3	1230	2120	1740	1940	1800	1870	5520	2160	1930	1500	1250	1070
4	1440	2010	1630	1930	1840	1910	5700	2060	1690	1490	1320	975
5	1200	1730	1800	1930	1730	1850	5160	1890	1670	1580	1320	958
6	1230	1950	1660	1900	1750	1880	5310	1870	1770	1460	1150	961
7	1260	1800	1630	1860	1880	1930	6350	2060	1900	1550	1120	962
8	1330	1710	1640	1830	1830	2060	7540	2130	1930	1520	1060	962
9	1240	1560	1740	1870	1970	2030	7370	2000	1820	1390	1080	984
10	1310	1720	1810	1750	1970	1980	5660	1900	1780	1410	1220	1040
11	1400	1830	1980	1820	2080	1830	5770	2030	1790	1200	1120	1050
12	1300	1700	1950	1830	2170	2000	4420	1850	1790	1430	1220	1050
13	1160	1690	1830	1830	2160	1900	3600	1720	1720	1100	1050	1000
14	1290	1740	1820	1970	2050	1850	3540	2010	1870	1150	1050	978
15	1140	1370	1620	1870	2060	1630	3420	2060	3320	1280	1060	980
16	1220	1370	1560	e1900	2040	1760	3080	1970	3880	1240	990	983
17	1270	1510	1650	1770	2080	1790	2970	2020	3320	1210	1030	984
18	1210	1400	1760	e1800	2020	1730	2950	e2060	2850	1220	1010	958
19	1230	1430	1690	e1800	1840	1830	3040	e2370	2300	1070	1000	941
20	1250	1580	1680	1860	2020	1810	2980	e2600	2230	1020	1010	936
21	1190	1680	1990	1810	1900	1750	3310	2840	1950	1010	1070	937
22	1160	1910	1640	1780	2020	1590	3670	2400	1680	1010	1490	935
23	1410	1690	1720	1750	1880	1640	3730	2310	1890	1070	1190	1030
24	1940	1610	1790	1730	1950	1710	3730	2770	1960	1370	989	1010
25	2570	1560	e1800	1770	2010	1700	3490	2540	1720	1760	934	966
26	2250	1680	1810	1790	1960	1710	2620	2520	1910	1780	937	1240
27	2030	1530	1750	1740	1990	1670	2460	2360	1850	1700	1130	1140
28	2130	1930	1880	1750	1820	1690	2490	2310	1810	e1350	1220	1160
29	2090	1930	1690	1830	---	2010	2470	2330	1830	e1410	1300	1470
30	2510	1940	1730	1720	---	2430	2290	2290	1610	1470	1180	1250
31	2810	---	1940	1710	---	4430	---	2140	---	1210	1110	---
TOTAL	47200	53420	54440	56630	54330	59870	124420	67740	61300	42040	35290	31050
MEAN	1523	1781	1756	1827	1940	1931	4147	2185	2043	1356	1138	1035
MAX	2810	2900	1990	1970	2170	4430	7540	2840	3880	1780	1490	1470
MIN	1140	1370	1560	1710	1730	1590	2290	1720	1610	1010	934	935

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2005, BY WATER YEAR (WY)

MEAN	1973	2136	2037	1959	2017	2473	4748	3874	2866	2105	1669	1731
MAX	4574	4412	3008	2533	2548	3701	9292	8850	4832	4196	2598	2456
(WY)	2003	1989	1989	1993	1997	2000	2002	1996	1993	1999	1996	1994
MIN	1081	1382	1376	1489	1442	1855	1356	1344	1062	1100	1138	1035
(WY)	1990	1990	2001	1995	1995	2001	1990	1998	1988	1988	2005	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1988 - 2005	
ANNUAL TOTAL	955950		687730			
ANNUAL MEAN	2612		1884		2496	
HIGHEST ANNUAL MEAN					3781	1996
LOWEST ANNUAL MEAN					1864	1990
HIGHEST DAILY MEAN	13500	Apr 22	7540	Apr 8	22800	Apr 19 2002
LOWEST DAILY MEAN	1080	Sep 14	934	Aug 25	846	Aug 3 1988
ANNUAL SEVEN-DAY MINIMUM	1180	Sep 25	953	Sep 16	932	Oct 1 1989
MAXIMUM PEAK FLOW			7940	Apr 8	23000	Apr 19 2002
MAXIMUM PEAK STAGE			10.71	Apr 8	17.72	Apr 19 2002
INSTANTANEOUS LOW FLOW			590	Aug 9	414	Nov 13 2003
10 PERCENT EXCEEDS	5410		2610		4180	
50 PERCENT EXCEEDS	1860		1770		2000	
90 PERCENT EXCEEDS	1370		1060		1300	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04066003 MENOMINEE RIVER BELOW PEMENE CREEK NEAR PEMBINE, WI

LOCATION.--Lat 45°34'46", long 87°47'13", in NE 1/4 , sec.29, T. 37 N., R.28 W., Michigan Meridian, Menominee County, Hydrologic Unit 04030108, on left bank 40 ft downstream from County Trunk Z bridge, 0.9 mi downstream from Pemene Creek, 3.9 mi west of Nathan, 10.6 mi southeast of Pembine, WI, and at mile 64.3.

DRAINAGE AREA.--3,140 mi^2.

PERIOD OF RECORD.--October 1949 to current year. Published as "near Pembine" (04066000) prior to August 1982. Monthly discharges for some periods published in WSP 1307.

GAGE.--Water-stage recorder. Elevation of gage is 740 ft above sea level, from topographic map. October 1949 to Oct. 27, 1972, water-stage recorder at site 1.0 mi upstream at elevation 745, from river-profile map, and Oct. 28, 1972, to August 1982, water-stage recorder at site 1.5 mi upstream at elevation 770, from river-profile map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1280	3560	2150	e2270	e1930	e2140	5070	2570	2140	1690	1130	1020
2	1340	3380	1980	e2300	e2030	e2140	5770	2440	1860	1540	1270	1000
3	1310	2770	e1930	e2300	e2070	e2140	6050	2570	2100	1420	1250	1040
4	1500	2480	1840	e2270	e2030	e2110	6290	2460	1950	1430	1140	998
5	1410	2120	2030	e2190	e2050	e2090	5590	2300	1810	1470	1380	929
6	1240	2180	1970	e2140	e2020	e2150	5730	2100	1920	1500	1090	938
7	1390	2200	1820	e2100	e2070	e2200	6430	2360	2050	1390	1070	956
8	1430	1980	1790	e2050	e2140	e2260	7740	2520	2250	1540	1010	967
9	1410	1820	1980	e2040	e2230	e2300	7730	2440	2050	1410	1020	946
10	1350	1880	2020	e2010	e2290	e2260	6140	2210	1940	1320	1170	980
11	1490	2140	2340	e2020	e2380	e2120	5940	2380	1990	1120	1060	1020
12	1470	1940	2360	e2110	e2460	e2090	5120	2260	1970	1270	1130	1010
13	1300	1940	2140	e1990	e2510	e2170	4050	1960	1910	1210	1080	979
14	1280	2010	e2040	e1780	e2530	e2050	3900	2250	1910	1010	1010	959
15	1330	1610	e1880	e1770	e2450	e1860	3900	2570	3140	1190	1040	954
16	1250	1420	e1930	e1920	e2350	e1820	3500	2340	4260	1180	982	973
17	1420	1710	e1890	e1800	e2250	e1990	3410	2380	3650	1170	956	986
18	1300	1530	e1890	e1690	e2200	e1910	3380	2310	3330	1130	1020	965
19	1310	1590	e1730	e1980	e2180	e1880	3470	2390	2660	1070	1000	947
20	1370	1730	e1800	e1880	e2200	e2000	3480	2830	2540	997	999	930
21	1320	1870	e1980	e1750	e2240	e1930	3610	3410	2250	998	985	931
22	1290	2190	e1870	e1740	e2250	1800	4160	3090	1710	994	1280	929
23	1390	2090	e1740	e1780	e2270	1680	4040	2780	2110	1020	1330	974
24	2040	1840	e1890	e1850	e2180	1950	4110	3180	1950	1230	983	1010
25	2720	1780	e2000	e1870	e2200	1870	3920	3080	1850	1640	927	965
26	2710	1850	e2090	e1800	e2260	1830	3310	2960	1990	1870	918	1100
27	2340	1800	e1980	e1890	e2280	1810	2970	2890	1960	1710	991	1160
28	2420	2240	e1930	e1950	e2200	1820	2990	2730	1880	1540	1190	1150
29	2540	2470	e2000	e1980	---	2230	2990	2770	1890	1220	1180	1430
30	2950	2390	e2080	e2010	---	2940	2840	2730	1580	1530	1180	1340
31	3270	---	e2170	e1910	---	4650	---	2590	---	1150	1030	---
TOTAL	52170	62510	61240	61140	62250	66190	137630	79850	66600	40959	33801	30486
MEAN	1683	2084	1975	1972	2223	2135	4588	2576	2220	1321	1090	1016
MAX	3270	3560	2360	2300	2530	4650	7740	3410	4260	1870	1380	1430
MIN	1240	1420	1730	1690	1930	1680	2840	1960	1580	994	918	929

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2005, BY WATER YEAR (WY)

MEAN	2438	2555	2256	2103	2099	2620	5623	4745	3345	2485	2049	2228
MAX	5660	5766	3939	3035	3810	7461	10000	12100	6118	6523	3505	5335
(WY)	1986	1986	1986	1986	1984	1973	1967	1960	1953	1953	1952	1968
MIN	1028	1043	1167	1080	1201	1461	1432	1341	1152	1201	1003	1009
(WY)	1977	1977	1977	1977	1964	1964	1990	1987	1988	1988	1977	1976

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1950 - 2005	
ANNUAL TOTAL	1026230		754826			
ANNUAL MEAN	2804		2068		2879	
HIGHEST ANNUAL MEAN					4318	1960
LOWEST ANNUAL MEAN					1778	1977
HIGHEST DAILY MEAN	14200	Apr 22	7740	Apr 8	26700	May 8 1960
LOWEST DAILY MEAN	1170	Sep 29	918	Aug 26	840	Aug 14 1977
ANNUAL SEVEN-DAY MINIMUM	1260	Sep 25	952	Sep 16	914	Aug 8 1977
MAXIMUM PEAK FLOW			(a)8110	Apr 8	(b)26900	May 8 1960
MAXIMUM PEAK STAGE			(c)12.36	Jan 19	(c)18.94	Dec 17 1985
10 PERCENT EXCEEDS	5830		3110		4900	
50 PERCENT EXCEEDS	1980		1950		2280	
90 PERCENT EXCEEDS	1420		1010		1420	

(a) Gage height, 11.16 ft.
(b) Gage height, 13.90 ft, site and datum then in use.
(c) Backwater from ice.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04066030 MENOMINEE RIVER AT WHITE RAPIDS DAM NEAR BANAT, MI

LOCATION.--Lat 45°28'55", long 87°48'08", in SE 1/4 SE 1/4 , sec.30, T. 36 N., R.28 W., Michigan Meridian, Menominee County, Hydrologic Unit 04030108, on left bank at powerplant at White Rapids Dam, 5.7 mi southwest of Banat.

DRAINAGE AREA.--3,190 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 680.00 ft above sea level (levels by We Energies).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on the Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1200	3880	2320	e2350	e1940	e2170	5220	2850	2500	1860	1260	1050
2	1360	3330	2170	e2290	e2070	e2330	6070	2410	1920	1790	1230	1000
3	1340	2980	2150	e2390	e2160	e2140	6090	2720	2100	1510	1570	973
4	1390	2590	1900	e2360	e2090	e2140	6460	2570	2290	1640	1260	994
5	1570	2370	2070	e2190	e2070	e2130	5770	2510	1870	1570	1350	1010
6	1090	2130	2300	e2270	e2070	e2210	5920	2250	2110	1610	1300	866
7	1540	2320	1990	e2140	e2040	e2250	6450	2370	2140	1610	1130	907
8	1240	2000	1920	e2100	e2190	e2290	7760	2820	2540	1640	1080	935
9	1530	2170	1950	e2170	e2310	e2390	7790	2490	2440	1610	959	958
10	1460	1850	2200	e2060	e2330	e2370	6350	2330	1930	1410	1130	977
11	1370	2210	2390	e2090	e2450	e2260	5900	2350	2190	1440	1220	974
12	1570	2150	2610	e2200	e2480	e2060	5270	2480	2290	1240	1240	1050
13	1360	1930	2430	e2180	e2590	e2290	4190	2210	2100	1480	1110	1110
14	1290	2180	1920	e1860	e2590	e2270	4050	2170	2080	1090	972	1080
15	1390	1880	1920	e1760	e2430	e1870	4270	2820	3350	1060	1050	829
16	1180	1390	1900	e1950	e2400	e1880	3620	2440	4360	1230	1150	936
17	1460	1790	1940	e2140	e2360	e2080	3670	2430	3980	1270	893	926
18	1300	1890	1970	e1500	e2170	e2100	3250	2460	3370	1240	827	908
19	1350	1400	1820	e2130	e2280	e1820	3680	2520	2910	1200	1110	982
20	1390	1990	1600	e2140	e2280	e2110	3790	3060	2770	953	1150	981
21	1340	1880	1920	e1770	e2290	e2130	3540	3470	2470	949	1030	962
22	1340	2240	2370	e1810	e2310	e1880	4460	3390	1970	1030	1260	940
23	1720	2520	1460	e1860	e2430	e1620	3990	2910	2050	1050	1680	916
24	2090	1840	e2090	e1970	e2250	e1740	4310	3200	2300	1430	1060	982
25	2860	1800	e1960	e2010	e2170	e2100	4040	3360	2180	1710	982	1060
26	2770	1880	e2250	e1800	e2400	e1990	3530	3050	1960	2330	903	1090
27	2560	2220	e2000	e1940	e2440	e1840	2980	2950	2200	1970	859	1160
28	2490	2190	e1980	e2000	e2180	e1950	3190	2950	2240	1820	1230	1340
29	2760	2740	e2090	e2050	---	2290	3070	2850	1980	1500	1350	1440
30	3070	2540	e2100	e2110	---	3180	2960	2900	1800	1390	1390	1680
31	3390	---	e2210	e1960	---	4810	---	2680	---	1560	1110	---
TOTAL	53770	66280	63900	63550	63770	68690	141640	83970	72390	45192	35845	31016
MEAN	1735	2209	2061	2050	2278	2216	4721	2709	2413	1458	1156	1034
MAX	3390	3880	2610	2390	2590	4810	7790	3470	4360	2330	1680	1680
MIN	1090	1390	1460	1500	1940	1620	2960	2170	1800	949	827	829

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2005, BY WATER YEAR (WY)

MEAN	2032	2008	1876	1933	2171	2772	5714	4255	3094	2327	1842	1618
MAX	4909	2882	2619	2068	2345	4118	9373	6120	4278	4584	2674	2237
(WY)	2003	2003	2002	2002	1999	2000	2002	2002	2004	1999	2002	2000
MIN	1417	1659	1493	1774	1948	2065	3147	2156	2087	1395	1156	1034
(WY)	2001	1999	2001	1999	2004	2001	2000	2000	2000	2003	2005	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1999 - 2005	
ANNUAL TOTAL	1061380		790013			
ANNUAL MEAN	2900		2164		2635	
HIGHEST ANNUAL MEAN					3244	2002
LOWEST ANNUAL MEAN					2164	2005
HIGHEST DAILY MEAN	13800	Apr 22	7790	Apr 9	20800	Apr 19 2002
LOWEST DAILY MEAN	1090	Oct 6	827	Aug 18	827	Aug 18 2005
ANNUAL SEVEN-DAY MINIMUM	1250	Sep 25	932	Sep 15	932	Sep 15 2005
MAXIMUM PEAK FLOW			8120	Apr 8	22200	Apr 18 2002
MAXIMUM PEAK STAGE			10.35	Apr 8	14.98	Apr 18 2002
10 PERCENT EXCEEDS	5960		3280		4470	
50 PERCENT EXCEEDS	2100		2080		2090	
90 PERCENT EXCEEDS	1450		1060		1350	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04066800 MENOMINEE RIVER AT KOSS, MI

LOCATION.--Lat 45°23'14", long 87°42'07", in NE 1/4 , sec.36, T. 35 N., R.28 W., Michigan Meridian, Menominee County, Hydrologic Unit 04030108, on left upstream bank 30 ft from river and 18 ft west of County Trunk JJ (Koss) bridge, 0.3 mi southeast of Koss and 3.4 mi upstream of Grand Rapids Dam.

DRAINAGE AREA.--3,700 mi^2.

PERIOD OF RECORD.--July 1907 to March 1909 monthly discharge only (published as "at Koss"), July 1913 to September 1981 (published as 04067000 Menominee River below Koss, MI), June 1998 to current year. Records prior to October 1913 published in WSP 244, 264, and 384.

REVISED RECORDS.--WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 665 ft above sea level, from topographic map. June 1913 to September 1981, headwater and tailwater gages and generation data entered hourly in daily log sheet by Wisconsin Public Service Corp. employees at powerplant 4 mi downstream. Records of daily discharge furnished by Wisconsin Public Service Corp. Prior to June 1913, chain gage on railroad bridge at Koss.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplants by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft, on Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	3910	2700	e2550	e2070	e2360	e7660	3350	2690	1500	1320	1210
2	1390	3990	2470	e2600	e2120	e2490	6930	3060	2220	1860	1260	1120
3	1440	3710	e2310	e2660	e2290	e2440	7260	2810	2060	1530	1320	1200
4	1480	3060	e2380	e2680	e2340	e2360	7570	2920	2390	1580	1450	1160
5	1570	2990	2210	e2550	e2320	e2350	7210	2630	2180	1510	1250	1200
6	1520	2570	2410	e2420	e2340	e2410	6860	2600	2110	1500	1330	1000
7	1400	2830	2400	e2490	e2340	e2480	7040	2410	2260	1610	1270	723
8	1520	2640	2080	e2380	e2400	e2490	8050	2800	2480	1530	1240	1030
9	1470	2680	e2120	e2360	e2530	e2590	8830	2830	2830	1540	1050	1110
10	1600	2440	e2290	e2360	e2600	e2770	8280	2580	2460	1460	829	1140
11	1530	2730	e2480	e2340	e2620	e2620	6690	2590	2250	1320	1200	1070
12	1570	2680	e2720	e2390	e2680	e2410	6610	2600	2530	1260	1240	1090
13	1660	2260	e2710	e2390	e2780	e2430	5290	2550	2450	1280	1190	1170
14	1570	2100	e2130	e2190	e2830	e2520	4530	2420	2320	1260	1140	1130
15	1480	2400	e1700	e1920	e2750	e2380	4410	2700	2910	863	1090	1070
16	1530	1730	e2010	e1920	e2690	e2120	4210	2850	4320	1010	1120	969
17	1400	1420	e1930	e2090	e2630	e2200	4050	2620	4640	1220	1140	997
18	1450	2120	e1960	e2000	e2590	e2400	3830	2590	3940	1230	1010	772
19	1350	1780	e1830	e1730	e2450	e2240	3770	2670	3600	1290	1120	722
20	1420	1700	e1720	e2190	e2550	e2160	4180	3190	3060	1140	1200	1040
21	1410	2280	e1700	e2000	e2570	e2440	4080	3680	2980	937	1140	907
22	1420	2190	e2260	e1890	e2570	e2330	4570	4210	2570	1130	1100	1110
23	1620	2610	e2140	e1890	e2600	e2110	4640	3370	1860	1160	1550	1070
24	2300	2460	e1830	e1970	e2570	e2000	4550	3240	2460	1200	1390	1150
25	2700	1820	e2140	e2090	e2500	e2070	4580	3580	2190	1660	892	1130
26	3210	2000	e2070	e2010	e2490	e2330	4220	3400	1940	1990	1090	1120
27	2990	2210	e2320	e1930	e2690	e2220	3760	3090	2040	2100	1040	1150
28	2830	2540	e2200	e2050	e2650	e2270	3570	3110	2140	1810	839	1230
29	2970	2830	e2300	e2090	---	e2680	3660	2980	1970	1660	1350	1390
30	3380	2940	e2380	e2160	---	e3850	3480	3030	1860	1320	1300	1710
31	3610	---	e2460	e2130	---	e6070	---	2920	---	1570	1300	---
TOTAL	58160	75620	68360	68420	70560	78590	164370	91380	77710	44030	36760	32890
MEAN	1876	2521	2205	2207	2520	2535	5479	2948	2590	1420	1186	1096
MAX	3610	3990	2720	2680	2830	6070	8830	4210	4640	2100	1550	1710
MIN	1350	1420	1700	1730	2070	2000	3480	2410	1860	863	829	722

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2005, BY WATER YEAR (WY)

MEAN	2547	2791	2194	1989	1904	2732	6666	5674	3863	2724	2137	2378
MAX	6178	5597	3588	3174	3176	7973	13650	13180	10780	6159	3800	5538
(WY)	1929	1917	1919	1969	1969	1973	1916	1960	1916	1953	1972	1928
MIN	1131	1170	1166	989	864	1199	2479	2220	1708	1111	731	1013
(WY)	1977	1977	1931	1926	1926	1934	1964	1977	1977	1934	1934	1933

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1913 - 2005	
ANNUAL TOTAL	1246880		866850			
ANNUAL MEAN	3407		2375		3138	
HIGHEST ANNUAL MEAN					5262	1916
LOWEST ANNUAL MEAN					1642	1931
HIGHEST DAILY MEAN	15700	Apr 23	8830	Apr 9	33000	May 10 1960
LOWEST DAILY MEAN	1350	Oct 19	722	Sep 19	162	Sep 15 1931
ANNUAL SEVEN-DAY MINIMUM	1420	Sep 27	925	Sep 15	402	Sep 9 1931
MAXIMUM PEAK FLOW			(a)8910	Apr 9		
MAXIMUM PEAK STAGE			(b)13.87	Apr 1		
10 PERCENT EXCEEDS	7830		3690		5920	
50 PERCENT EXCEEDS	2300		2260		2330	
90 PERCENT EXCEEDS	1570		1140		1390	

(a) Gage height 13.06 ft.
(b) Backwater from ice.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04067500 MENOMINEE RIVER NEAR McALLISTER, WI

LOCATION.--Lat 45°19'33", long 87°39'48", in SW 1/4 SE 1/4 sec.17, T.33 N., R.23 E., Wisconsin Meridian, Marinette County, Hydrologic Unit 04030108, on right bank 85 ft downstream from bridge on County Highway JJ, 2.9 mi downstream from Grand Rapids Dam, 2.6 mi east of McAllister, WI, 1.9 mi downstream from Little Cedar River, and at mile 22.6.

DRAINAGE AREA.--3,930 mi^2.

PERIOD OF RECORD.--March 1945 to September 1961; October 1961 to September 1979, miscellaneous measurements and peaks only; October 1979 to September 1986; October 1986 to March 1987, crest-stage partial-record station; April 1988 to September 1990; April 1993 to September 1995; October 1997 to current year.

REVISED RECORDS.--WDR WI-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 622.20 ft above sea level (Michigan Department of Transportation reference mark). Prior to May 15, 1945, nonrecording gage 1,400 ft downstream at same datum; May 16, 1945 to September 1961, water-stage recorder 1,000 ft downstream at same datum; October 1961 to September 1979, crest- stage gage 1,100 ft downstream at same datum; October 1979 to September 1986, water-stage recorder at same site and datum; October 1986 to March 1987, crest-stage gage at same site and datum. April 1988 to September 1990, and April 1993 to September 1995, water-stage recorder at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplants, by Michigamme Reservoir, capacity, 119,950 acre-ft, by Peavy Pond, capacity, 33,860 acre-ft on Michigamme River, and by many smaller reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	4130	3000	e2790	e2320	e2540	9250	3430	2940	1740	1510	1170
2	1470	4300	2740	e2840	e2420	e2680	7730	3260	2520	1990	1330	1100
3	1560	3900	2570	e2890	e2460	e2660	7820	3020	2130	1740	1370	1070
4	1620	3070	2720	e2830	e2530	e2590	7980	3240	2470	1710	1580	1070
5	1720	3090	2340	e2750	e2490	e2570	7710	2900	2310	1710	1310	1070
6	1770	2440	2590	e2650	e2510	e2640	7250	2920	2190	1660	1450	1110
7	1430	2690	2640	e2640	e2540	e2710	7360	2620	2270	1740	1260	978
8	1710	2460	2340	e2640	e2570	e2760	8140	2970	2590	1670	1170	937
9	1570	2440	2330	e2600	e2670	e2810	8860	3120	2970	1760	1170	1030
10	1810	2240	2490	e2580	e2840	e2910	8460	2810	2660	1650	1100	1040
11	1660	2370	2710	e2570	e2910	e2740	7030	2790	2310	1510	1200	1090
12	1640	2700	2930	e2570	e2960	e2600	6850	2800	2580	1430	1310	1050
13	1750	2410	3010	e2500	e3010	e2620	5780	2820	2550	1370	1270	1200
14	1600	2230	e2200	e2340	e3030	e2680	4980	2640	2370	1490	1120	1200
15	1560	2500	e1920	e2140	e2950	e2570	4820	2890	2810	1220	1080	1110
16	1640	2020	e2210	e2160	e2900	e2340	4660	3160	4190	1120	1140	976
17	1480	1770	e2120	e2270	e2860	e2430	4370	2910	4640	1350	1140	1090
18	1760	2240	e2060	e2160	e2780	e2480	4160	2830	3950	1330	955	1020
19	1500	2030	e2000	e1950	e2690	e2420	4030	2930	3560	1270	994	1030
20	1580	2000	e1890	e2370	e2690	e2350	4500	3490	3000	1250	1260	1020
21	1590	2460	e1860	e2190	e2730	e2540	4420	4070	2910	1060	1160	1100
22	1510	2350	e2430	e2100	e2780	e2470	4730	4480	2640	1030	1120	1050
23	1680	2790	e2250	e2130	e2780	e2290	4990	3800	1950	1140	1430	999
24	2200	2700	e2040	e2210	e2800	e2210	4770	3580	2540	1240	1600	1010
25	2570	2110	e2330	e2280	e2680	e2250	4840	3890	2370	1660	1100	1150
26	3320	2200	e2370	e2220	e2690	e2520	4530	3740	2110	2030	1050	1200
27	3160	2370	e2550	e2150	e2810	e2460	4020	3330	2180	2260	1100	1260
28	3010	2860	e2430	e2240	e2880	e2510	3710	3350	2350	1980	1030	1400
29	3050	3070	e2510	e2300	---	e2950	3890	3230	2160	1860	1350	1540
30	3560	3310	e2600	e2370	---	e4010	3670	3240	2020	1500	1380	1690
31	3810	---	e2690	e2340	---	6260	---	3190	---	1640	1410	---
TOTAL	61720	79250	74870	74770	76280	84570	175310	99450	80240	48110	38449	33760
MEAN	1991	2642	2415	2412	2724	2728	5844	3208	2675	1552	1240	1125
MAX	3810	4300	3010	2890	3030	6260	9250	4480	4640	2260	1600	1690
MIN	1430	1770	1860	1950	2320	2210	3670	2620	1950	1030	955	937

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2005, BY WATER YEAR (WY)

MEAN	2861	3102	2532	2358	2400	3100	6669	5269	3899	3058	2311	2527
MAX	6755	7332	4561	3777	4710	5687	12800	15930	6958	7127	4056	5952
(WY)	1986	1986	1986	1983	1984	1983	1951	1960	1993	1951	1952	1959
MIN	1195	1753	1532	1621	1245	1897	1869	1636	1296	1374	1240	1125
(WY)	1949	1990	1990	1949	1948	1956	1990	1998	1988	1988	2005	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1945 - 2005	
ANNUAL TOTAL	1299750		926779			
ANNUAL MEAN	3551		2539		3348	
HIGHEST ANNUAL MEAN					5496	1960
LOWEST ANNUAL MEAN					2118	1948
HIGHEST DAILY MEAN	15500	Apr 23	9250	Apr 1	31800	May 9 1960
LOWEST DAILY MEAN	1430	Oct 1	937	Sep 8	810	Oct 26 1948
ANNUAL SEVEN-DAY MINIMUM	1480	Sep 26	1030	Sep 18	952	Oct 24 1948
MAXIMUM PEAK FLOW			11200	Apr 1	32500	May 9 1960
MAXIMUM PEAK STAGE			14.30	Apr 1	(a)20.00	May 9 1960
INSTANTANEOUS LOW FLOW					(b)538	Oct 6 1946
10 PERCENT EXCEEDS	8120		3920		5930	
50 PERCENT EXCEEDS	2400		2420		2550	
90 PERCENT EXCEEDS	1690		1140		1620	

(a) From graph based on gage readings.
(b) Observed.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04096015 GALIEN RIVER NEAR SAWYER, MI

LOCATION.--Lat 41°52'25", long 86°34'30", in SW1/4 SE1/4 sec.12, T.7 S., R.20 W., Berrien County, Hydrologic Unit 04040001, on right bank 10 ft downstream from bridge on Minnich Road, 1.3 mi southeast of Sawyer.

DRAINAGE AREA.--80.7 mi^2.

PERIOD OF RECORD.--July 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 600.92 ft above sea level (levels by Fishbeck, Thompson, Carr & Huber, Inc.).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	47	329	90	64	118	72	42	28	20	19	12
2	21	81	252	136	63	109	69	42	27	19	19	12
3	20	62	143	207	61	103	65	41	29	19	18	11
4	18	77	109	369	60	100	63	40	28	19	21	12
5	18	95	91	191	60	139	61	38	30	19	20	12
6	18	66	88	140	67	312	60	37	35	17	18	11
7	17	57	168	121	138	447	59	37	31	17	17	10
8	18	50	279	109	379	251	57	36	36	17	17	10
9	22	47	156	102	254	151	55	36	34	18	15	10
10	21	44	119	104	163	124	54	36	32	17	16	10
11	20	42	112	143	129	114	51	37	33	17	16	9.6
12	21	40	107	518	122	110	50	37	32	17	17	9.4
13	21	37	92	1170	164	97	49	36	32	20	17	9.1
14	22	35	82	1070	640	92	47	39	30	18	20	11
15	26	35	76	503	596	89	46	37	28	19	18	12
16	33	35	73	317	679	96	45	35	28	18	17	24
17	33	35	73	221	360	117	46	33	27	17	15	18
18	32	35	71	171	208	121	47	32	26	19	15	15
19	32	39	69	147	150	153	45	38	26	21	15	15
20	33	48	e66	130	135	153	43	43	25	20	17	16
21	33	45	e62	117	175	116	43	36	24	35	16	14
22	34	40	59	e105	183	101	48	34	24	26	15	14
23	43	38	58	e100	152	94	52	33	23	22	14	17
24	49	39	e55	e95	144	86	55	33	22	21	14	15
25	43	48	e53	93	134	88	60	32	21	20	14	16
26	41	54	e50	87	126	108	54	31	21	21	14	18
27	40	139	e49	79	110	97	50	31	20	30	13	17
28	39	293	e49	e75	109	88	48	30	22	23	13	17
29	42	153	e50	e72	---	80	46	29	22	21	12	27
30	46	112	53	69	---	75	44	29	21	20	12	21
31	46	---	94	66	---	75	---	28	---	19	12	---
TOTAL	919	1968	3187	6917	5625	4004	1584	1098	817	626	496	425.1
MEAN	29.6	65.6	103	223	201	129	52.8	35.4	27.2	20.2	16.0	14.2
MAX	49	293	329	1170	679	447	72	43	36	35	21	27
MIN	17	35	49	66	60	75	43	28	20	17	12	9.1
CFSM	0.37	0.81	1.27	2.76	2.49	1.60	0.65	0.44	0.34	0.25	0.20	0.18
IN.	0.42	0.91	1.47	3.19	2.59	1.85	0.73	0.51	0.38	0.29	0.23	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

MEAN	49.0	72.4	73.8	113	132	117	100	124	82.1	46.7	30.4	23.1
MAX	201	134	174	229	292	228	196	449	213	127	51.5	38.5
(WY)	2002	1997	1997	1998	1997	1998	1999	1996	1996	1996	1995	1997
MIN	17.5	20.7	34.0	27.5	29.5	44.1	48.2	35.4	27.2	20.2	16.0	14.2
(WY)	2000	2000	2000	2003	2003	2000	2004	2005	2005	2005	2005	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	23800		27666.1			
ANNUAL MEAN	65.0		75.8		80.0	
HIGHEST ANNUAL MEAN					119	1996
LOWEST ANNUAL MEAN					44.5	2000
HIGHEST DAILY MEAN	642	Mar 5	1170	Jan 13	2640	May 10 1996
LOWEST DAILY MEAN	17	Oct 1	9.1	Sep 13	9.1	Sep 13 2005
ANNUAL SEVEN-DAY MINIMUM	18	Sep 25	9.7	Sep 7	9.7	Sep 7 2005
MAXIMUM PEAK FLOW			1450	Jan 13	3440	May 10 1996
MAXIMUM PEAK STAGE			12.15	Jan 13	14.13	May 10 1996
INSTANTANEOUS LOW FLOW			8.9	(a)	8.9	(a)
ANNUAL RUNOFF (CFSM)	0.806		0.939		0.991	
ANNUAL RUNOFF (INCHES)	10.97		12.75		13.47	
10 PERCENT EXCEEDS	119		148		148	
50 PERCENT EXCEEDS	44		40		46	
90 PERCENT EXCEEDS	21		16		20	

(a) Sept. 11, 13, 14, 2005.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04096405 ST. JOSEPH RIVER AT BURLINGTON, MI

LOCATION.--Lat 42°06'11", long 85°04'48", in SE1/4 SE1/4 sec.23, T.4 S., R.7 W., Calhoun County, Hydrologic Unit 04050001, on right bank 10 ft downstream from bridge on Elevenmile Road in Burlington, 4.1 mi upstream from Burnett Creek, 6.7 mi downstream from Tekonsha Creek, and at mile 161.

DRAINAGE AREA.--206 mi^2.

PERIOD OF RECORD.--October 1962 to current year. Published as "near Burlington" prior to October 1991.

GAGE.--Water-stage recorder. Elevation of gage is 905 ft above sea level, from topographic map. October 1962 to September 1990 water-stage recorder and October 1990 to September 1991 nonrecording gage at site 2.7 mi upstream at different datum (station 04096400).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	86	279	227	e280	331	274	158	104	69	73	27
2	54	98	296	245	e260	305	262	152	100	81	66	25
3	51	103	286	266	e245	285	248	147	98	85	66	25
4	49	126	274	305	e240	284	231	143	96	80	58	25
5	48	156	266	313	240	299	210	138	92	83	52	24
6	46	149	259	294	240	284	197	134	96	84	46	23
7	46	138	267	268	251	337	190	132	92	79	44	22
8	45	127	300	276	296	403	187	128	89	71	40	21
9	50	116	293	287	326	382	183	125	e85	67	35	20
10	48	106	298	272	326	327	178	123	81	59	36	19
11	49	99	319	259	290	361	173	124	83	53	37	18
12	48	94	327	283	325	379	167	124	105	49	39	18
13	47	89	324	490	348	352	162	122	137	52	41	17
14	46	85	310	708	439	348	156	126	162	55	45	17
15	43	83	288	e700	573	315	151	129	161	57	52	18
16	49	83	252	e620	639	292	147	141	149	69	50	33
17	55	87	253	e560	625	278	147	151	135	71	44	39
18	57	93	226	e570	531	267	145	153	124	74	38	45
19	56	94	200	e550	556	278	143	155	115	75	38	41
20	53	101	e180	e530	604	320	143	173	107	73	50	36
21	51	106	e175	e510	596	327	143	174	101	82	54	34
22	49	108	e170	e485	565	322	145	181	94	80	52	34
23	49	105	e170	e465	503	326	147	189	89	80	48	34
24	56	104	e165	e435	489	322	157	181	83	86	44	32
25	58	113	e165	e410	445	319	165	169	78	85	41	32
26	59	118	e165	e390	395	317	169	156	78	85	38	37
27	58	153	e165	e370	356	311	177	146	76	89	36	37
28	56	242	e165	e350	365	306	177	137	71	91	33	39
29	57	258	e165	e335	---	305	172	128	67	92	32	43
30	66	255	164	e315	---	297	166	118	68	86	29	41
31	77	---	189	e300	---	287	---	110	---	80	28	---
TOTAL	1634	3675	7355	12388	11348	9866	5312	4467	3016	2322	1385	876
MEAN	52.7	122	237	400	405	318	177	144	101	74.9	44.7	29.2
MAX	77	258	327	708	639	403	274	189	162	92	73	45
MIN	43	83	164	227	240	267	143	110	67	49	28	17
CFSM	0.26	0.59	1.15	1.94	1.97	1.54	0.86	0.70	0.49	0.36	0.22	0.14
IN.	0.30	0.66	1.33	2.24	2.05	1.78	0.96	0.81	0.54	0.42	0.25	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2005, BY WATER YEAR (WY)

MEAN	102	137	177	186	214	303	299	231	190	112	84.3	81.8
MAX	357	378	308	508	510	668	567	426	640	308	270	237
(WY)	1987	1993	1983	1993	2001	1982	1982	1983	1989	1968	1981	1981
MIN	16.4	26.3	26.7	34.6	36.0	74.0	140	96.4	48.9	23.8	16.2	14.5
(WY)	1964	1965	1964	1977	1963	1964	1964	1971	1964	1988	1964	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1963 - 2005	
ANNUAL TOTAL	59323		63644			
ANNUAL MEAN	162		174		176	
HIGHEST ANNUAL MEAN					270	1993
LOWEST ANNUAL MEAN					47.6	1964
HIGHEST DAILY MEAN	474	Jun 18	708	Jan 14	1330	(a)
LOWEST DAILY MEAN	36	Sep 27	17	Sep 13	8.0	Aug 9 1964
ANNUAL SEVEN-DAY MINIMUM	38	Sep 22	18	Sep 9	9.4	Aug 5 1964
MAXIMUM PEAK FLOW			(b)738	Jan 14	(c)1390	Jun 5 1989
MAXIMUM PEAK STAGE			(d)6.22	Jan 19	(f)6.64	Feb 11 2001
INSTANTANEOUS LOW FLOW			16	(g)	8.0	(h)
ANNUAL RUNOFF (CFSM)	0.787		0.846		0.855	
ANNUAL RUNOFF (INCHES)	10.71		11.49		11.61	
10 PERCENT EXCEEDS	297		349		350	
50 PERCENT EXCEEDS	140		132		143	
90 PERCENT EXCEEDS	54		39		45	

(a) Mar. 21, 1982, June 1, 5, 1989.
(b) Gage height 6.04 ft.
(c) Gage height 5.82 ft, site and datum then in use.
(d) Backwater from ice.
(e) Estimated.
(f) Present site and datum, backwater from ice.
(g) Sept. 13, 14.
(h) Aug. 9, 10, 11, 1964.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04096515 SOUTH BRANCH HOG CREEK NEAR ALLEN, MI

LOCATION.--Lat 41°56'55", long 84°49'40", in NE1/4 SE1/4 sec.13, T.6 S., R.5 W., Branch County, Hydrologic Unit 04050001, on left bank 12 ft downstream from bridge on U.S. Highway 12, 1.0 mi downstream from Little Hog Creek, and 3.1 mi west of Allen.

DRAINAGE AREA.--48.7 mi^2.

PERIOD OF RECORD.--October 1969 to current year. Prior to October 1987, published as Hog Creek near Allen.

GAGE.--Water-stage recorder. Elevation of gage is 1,010 ft above sea level, from topographic map. Prior to May 23, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	17	96	74	e52	74	64	32	23	26	12	2.5
2	12	29	98	72	e49	e72	60	31	21	19	10	2.3
3	9.2	28	95	78	e46	e68	55	29	20	16	9.0	2.3
4	7.0	26	85	95	e44	e65	51	28	19	14	8.1	2.2
5	6.3	29	74	109	e42	62	48	26	18	18	7.3	2.2
6	5.7	24	66	e105	e43	66	46	25	18	16	6.6	2.1
7	5.7	21	71	e100	54	89	44	25	17	14	5.9	2.0
8	6.4	18	98	92	89	116	43	24	15	13	5.3	2.0
9	10	16	117	80	111	127	40	22	14	11	4.9	1.9
10	9.3	15	119	71	e110	123	39	21	13	9.4	4.8	1.8
11	8.3	14	115	68	e105	101	37	21	14	8.4	5.1	1.6
12	7.7	12	110	81	e92	91	34	23	31	7.6	5.1	1.6
13	7.8	11	101	172	87	84	32	23	49	7.8	5.5	1.5
14	7.7	10	89	350	111	74	30	38	71	7.1	7.2	1.7
15	9.8	10	e74	e385	166	67	29	41	71	10	6.5	2.1
16	14	12	e65	e320	225	63	29	39	61	11	5.6	5.9
17	13	13	60	e265	e250	62	28	36	49	15	5.2	4.8
18	12	14	55	e215	e235	61	28	33	41	18	4.7	3.6
19	e11	18	e51	e175	e210	66	28	35	36	24	4.3	3.4
20	e10	23	e48	e140	169	82	28	57	32	20	4.9	5.1
21	12	20	e44	e120	146	89	25	63	28	18	6.0	3.9
22	9.9	17	e40	e120	131	87	27	59	25	26	4.8	3.5
23	9.4	16	e36	e115	120	85	37	54	21	26	4.4	3.6
24	e13	19	e34	e110	109	81	39	48	19	22	4.1	3.5
25	14	33	e33	e94	98	78	41	41	17	19	3.7	3.5
26	12	35	e32	e85	90	76	39	37	16	18	3.6	6.8
27	e11	49	e32	e67	83	75	40	33	31	27	3.3	6.5
28	9.7	83	e34	e66	75	72	39	30	23	26	3.1	5.3
29	13	102	e38	e63	---	70	37	28	18	21	2.8	6.6
30	23	98	e42	e59	---	66	35	26	18	17	2.6	6.0
31	21	---	62	e55	---	64	---	24	---	14	2.7	---
TOTAL	326.6	832	2114	4001	3142	2456	1152	1052	849	519.3	169.1	101.8
MEAN	10.5	27.7	68.2	129	112	79.2	38.4	33.9	28.3	16.8	5.45	3.39
MAX	23	102	119	385	250	127	64	63	71	27	12	6.8
MIN	5.7	10	32	55	42	61	25	21	13	7.1	2.6	1.5
CFSM	0.22	0.57	1.40	2.65	2.30	1.63	0.79	0.70	0.58	0.34	0.11	0.07
IN.	0.25	0.64	1.61	3.06	2.40	1.88	0.88	0.80	0.65	0.40	0.13	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2005, BY WATER YEAR (WY)

MEAN	22.0	32.5	42.7	48.9	57.0	84.0	77.4	55.0	47.1	21.4	17.8	16.8
MAX	75.0	110	80.2	159	155	220	163	114	159	62.4	67.9	60.3
(WY)	1987	1993	1991	1993	2001	1982	1978	1983	1989	1981	1981	1981
MIN	2.40	4.53	7.53	6.55	5.79	22.7	34.3	20.1	4.18	1.55	1.86	1.93
(WY)	2003	2000	2003	2003	2003	2000	1971	1971	1988	1988	1988	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1970 - 2005	
ANNUAL TOTAL	16134.2		16714.8			
ANNUAL MEAN	44.1		45.8		43.5	
HIGHEST ANNUAL MEAN					67.4	1993
LOWEST ANNUAL MEAN					21.1	2003
HIGHEST DAILY MEAN	194	Jun 14	385	Jan 15	629	Feb 25 1985
LOWEST DAILY MEAN	3.3	Sep 27	1.5	Sep 13	0.58	Aug 4 1988
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 22	1.7	Sep 8	0.84	Aug 3 1988
MAXIMUM PEAK FLOW			(e)390	Jan 15	(a)664	Feb 25 1985
MAXIMUM PEAK STAGE			(b)5.53	Jan 15	6.20	Jun 1 1989
INSTANTANEOUS LOW FLOW			1.4	(c)	0.48	Aug 5 1988
ANNUAL RUNOFF (CFSM)	0.905		0.940		0.892	
ANNUAL RUNOFF (INCHES)	12.32		12.77		12.13	
10 PERCENT EXCEEDS	94		101		93	
50 PERCENT EXCEEDS	34		28		30	
90 PERCENT EXCEEDS	9.8		4.9		6.6	

(a) Gage height 6.0 ft, from floodmark.
(b) Backwater from ice.
(c) Sept. 12, 13.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04097187 LONG LAKE NEAR KALAMAZOO, MI

LOCATION.--Lat 42°11'45", long 85°31'03", in SW1/4 NE1/4 sec. 19, T.3 S., R.10 W., Kalamazoo County, Hydrologic Unit 04050001, on east side of lake, 1.7 mi southeast of Portage, and 5 mi south of Kalamazoo.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD. --April 1958 to March 1963, December 1963 to December 1970, September 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 847.59 ft above sea level (City of Portage bench mark). Prior to March 2000, nonrecording gage at different datums.

REMARKS.--The channel connecting Long Lake and Austin Lake is both an inlet and an outlet, depending on relative lake levels. Under natural conditions with fairly high water levels, flow will be from Long to Austin Lake. In recent years, the levels of Austin and West Lakes have been raised by water diverted from Gourdneck Creek plus water piped to Austin Lake from the nearby Pfizer recharge ponds. Under these conditions flow has been from Austin to Long Lake. During the drought years of 1963-64, the channel was dry.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 8.92 ft, June 12, 13, 2005; minimum, 2.63 ft, Apr. 7, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.91 ft, Feb. 20, 21; minimum, 7.61 ft, Sept. 28, 30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.03	8.04	8.08	8.39	---	8.80	---	8.33	8.29	8.40	8.37	8.02
2	8.03	8.11	8.07	8.42	8.75	---	---	8.33	8.28	8.35	8.36	8.00
3	8.01	8.09	8.07	8.44	---	---	---	8.31	8.26	8.32	8.34	7.97
4	7.99	8.13	8.06	8.47	---	---	---	8.30	8.27	8.31	8.33	7.95
5	7.97	8.13	8.05	8.48	---	---	---	8.30	8.27	8.31	8.28	7.94
6	7.95	8.11	8.06	8.50	8.70	8.75	---	8.30	8.28	8.28	8.27	7.91
7	7.94	8.09	8.09	8.50	8.70	8.76	---	8.31	8.27	8.25	8.25	7.89
8	7.93	8.07	8.14	8.50	8.71	8.75	---	8.30	8.52	8.24	8.21	7.87
9	7.95	8.06	8.17	8.49	---	8.74	8.57	8.30	8.53	8.23	8.20	7.85
10	7.94	8.04	8.23	8.49	8.72	---	8.57	8.31	8.53	8.21	8.22	7.83
11	7.93	8.02	8.28	8.51	---	---	8.55	8.31	8.53	8.20	8.21	7.81
12	7.91	8.00	8.31	8.55	---	---	8.52	8.29	8.51	8.17	8.21	7.79
13	7.90	7.99	8.35	8.72	8.74	---	8.50	8.30	8.68	8.20	8.19	7.78
14	7.90	7.97	8.37	8.78	8.82	---	8.48	8.35	8.73	8.19	8.19	7.75
15	7.90	7.96	8.37	---	8.85	---	8.47	8.33	8.70	8.20	8.17	7.72
16	7.96	7.96	8.37	---	8.89	---	8.46	8.32	8.68	8.28	8.16	7.77
17	7.96	7.96	8.38	---	8.89	---	8.45	8.30	8.64	8.38	8.15	7.76
18	7.95	7.95	8.38	---	8.89	8.68	8.44	8.30	8.63	8.40	8.13	7.75
19	7.94	7.97	8.38	---	---	8.69	8.45	8.33	8.62	8.43	8.13	7.74
20	7.92	7.98	---	---	8.88	8.71	8.45	8.38	8.61	8.45	8.19	7.73
21	7.92	7.97	---	---	8.89	8.71	8.41	8.38	8.59	8.50	8.21	7.71
22	7.91	7.95	---	---	8.88	8.70	8.38	8.38	8.58	8.52	8.17	7.71
23	7.92	7.94	---	---	---	8.69	8.39	8.39	8.54	8.49	8.16	7.68
24	7.94	7.95	---	---	8.86	8.68	8.39	8.38	8.53	8.53	8.15	7.65
25	7.94	7.97	---	---	8.84	8.68	8.38	8.37	8.52	8.50	8.13	7.65
26	7.93	7.96	---	---	---	8.66	8.38	8.36	8.50	8.49	8.12	7.67
27	7.93	7.99	---	---	8.81	8.66	8.37	8.36	8.48	8.48	8.13	7.64
28	7.92	8.02	---	---	8.80	8.65	8.36	8.34	8.47	8.45	8.11	7.64
29	8.01	8.02	---	---	---	8.65	8.34	8.33	8.44	8.42	8.08	7.66
30	8.06	8.02	8.37	---	---	8.64	8.33	8.32	8.44	8.40	8.06	7.64
31	8.04	---	8.39	---	---	---	---	8.30	---	8.39	8.04	---
MEAN	7.95	8.01	---	---	---	---	---	8.33	8.50	8.35	8.19	7.78
MAX	8.06	8.13	---	---	---	---	---	8.39	8.73	8.53	8.37	8.02
MIN	7.90	7.94	---	---	---	---	---	8.29	8.26	8.17	8.04	7.64

STREAMS TRIBUTARY TO LAKE MICHIGAN

04097188 AUSTIN LAKE NEAR KALAMAZOO, MI

LOCATION.--Lat 42°11'27", long 85°33'03", in NE1/4 SE1/4 sec. 23, T.3 S., R 11 W., Kalamazoo County, Hydrologic Unit 04050001, at outlet of discharge pipe from Pfizer recharge ponds, 1.3 mi southeast of Portage, and 5.0 mi south of Kalamazoo.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--July 1944 to July 1950, April 1958 to March 1963, December 1963 to September 1979, September 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 850.15 ft above sea level (City of Portage bench mark). Prior to May 31, 2002, nonrecording gage at different datums.

REMARKS.--The principal inlet is the diversion canal from Gourdneck Creek which flows through West Lake into the northwest side of Austin Lake. At times, depending on relative lake levels, water will flow through a connecting channel from Long Lake into the northeast side of Austin Lake. At other times the flow will be reversed, or if both lake levels are low, there will be no flow. Inflow to Austin Lake is also supplemented at times by water discharge from the nearby Pfizer recharge ponds. The outlet leaves the southeast end of the lake and flows south about 1.5 mi to Gourdneck Creek. Surface area is 1,050 acres. Established legal level is 855.64 ft above sea level.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.72 ft, May 2-4, 1950, present datum; minimum observed, 2.23 ft, Oct. 20, Dec. 10, 1964, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 6.43 ft, Feb. 16; minimum, 5.31 ft, Sept. 15.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.63	5.72	6.08	5.95	---	6.30	6.18	5.90	5.88	5.93	5.90	5.59
2	5.61	5.80	6.09	5.98	---	6.29	6.15	5.90	5.86	5.90	5.89	5.56
3	5.61	5.80	6.09	6.00	---	6.28	6.16	5.89	5.86	5.87	5.87	5.54
4	5.56	5.85	6.10	6.02	---	6.27	6.16	5.89	5.86	5.86	5.86	5.52
5	5.55	5.88	6.09	6.04	---	6.26	6.16	5.88	5.86	5.85	5.84	5.50
6	5.54	5.88	6.09	6.07	---	6.26	6.16	5.87	5.87	5.83	5.82	5.48
7	5.54	5.86	6.14	6.06	6.24	6.26	6.16	5.89	5.86	5.81	5.81	5.47
8	5.55	5.85	6.14	6.06	6.24	6.26	6.16	5.89	6.07	5.79	5.80	5.45
9	5.56	5.85	6.13	6.06	6.26	6.24	6.14	5.88	6.07	5.77	5.78	5.44
10	5.55	5.84	6.13	6.05	6.27	6.24	6.13	5.86	6.06	5.75	5.79	5.42
11	5.54	5.82	6.14	6.07	6.28	6.25	6.12	5.85	6.07	5.73	5.79	5.41
12	5.54	5.81	6.14	6.11	6.28	6.26	6.09	5.84	6.05	5.70	5.78	5.39
13	5.53	5.80	6.13	6.27	6.29	6.25	6.06	5.86	6.24	5.71	5.77	5.38
14	5.53	5.80	6.12	6.31	6.35	6.24	6.05	5.90	6.28	5.72	5.76	5.35
15	5.54	5.80	6.12	6.31	6.38	6.23	6.03	5.90	6.24	5.76	5.75	5.33
16	5.59	5.80	6.10	6.31	6.41	6.22	6.03	5.88	6.21	5.84	---	5.40
17	5.60	5.82	6.08	6.33	6.39	6.22	6.02	5.88	6.18	5.92	---	5.40
18	5.58	5.83	6.08	6.32	6.38	6.21	6.01	5.88	6.17	5.94	5.71	5.40
19	5.57	5.86	6.06	6.33	6.36	6.23	6.01	5.91	6.15	5.97	---	5.40
20	5.57	5.88	6.05	6.32	6.36	6.24	5.99	5.96	6.14	5.97	5.75	5.38
21	5.57	5.87	6.03	6.32	6.38	6.23	5.97	5.96	6.13	6.01	5.76	5.38
22	5.57	5.88	6.02	6.36	6.36	6.22	5.94	5.96	6.10	6.02	5.74	5.37
23	5.60	5.87	6.02	6.36	6.35	6.21	5.92	5.96	6.08	6.01	5.72	5.35
24	5.62	5.87	---	---	6.33	6.20	5.91	5.95	6.06	6.03	5.71	5.34
25	5.61	5.93	---	---	6.32	6.20	5.92	5.95	6.04	6.01	5.69	5.36
26	5.60	5.93	---	---	6.31	6.19	5.92	5.94	6.03	5.99	5.68	5.37
27	5.60	5.98	---	---	6.30	6.19	5.90	5.94	6.01	5.99	5.68	5.37
28	5.60	6.00	---	---	6.29	6.19	5.90	5.92	6.00	5.98	5.67	5.37
29	5.69	6.00	---	---	---	6.18	5.90	5.91	5.97	5.95	5.64	5.39
30	5.76	6.01	---	---	---	6.19	5.90	5.90	5.97	5.93	5.62	5.39
31	5.71	---	5.96	---	---	6.20	---	5.89	---	5.92	5.60	---
MEAN	5.59	5.86	---	---	---	6.23	6.04	5.90	6.05	5.89	---	5.42
MAX	5.76	6.01	---	---	---	6.30	6.18	5.96	6.28	6.03	---	5.59
MIN	5.53	5.72	---	---	---	6.18	5.90	5.84	5.86	5.70	---	5.33

STREAMS TRIBUTARY TO LAKE MICHIGAN

04097500 ST. JOSEPH RIVER AT THREE RIVERS, MI

LOCATION.--Lat 41°56'25", long 85°37'58", in SW1/4 SE1/4 sec.18, T.6 S., R.11 W., St. Joseph County, Hydrologic Unit 04050001, on right bank in Scidmore Park at Three Rivers, 250 ft downstream from Rocky River, and at mile 112.

DRAINAGE AREA.--1,350 mi^2.

PERIOD OF RECORD.--May 1953 to September 1983, October 1992 to current year.

REVISED RECORDS.--WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 781.34 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good. Flow regulated by powerplant upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1918, 8,260 ft^3/s, Apr. 27, 1950.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	425	656	1700	1340	1940	2320	1960	1050	746	472	675	241
2	443	683	1850	1500	2000	2170	1920	1010	727	453	532	241
3	460	864	1790	1630	1750	2240	1730	1000	710	462	556	243
4	451	935	1870	1830	1710	2190	1720	955	698	439	523	251
5	432	1050	1830	1940	1650	2060	1720	938	601	450	503	300
6	423	1030	1780	2020	1630	2110	1700	924	684	476	436	373
7	422	997	1760	2100	1690	2120	1590	1040	697	481	352	321
8	426	1050	1830	2220	1760	2540	1480	984	668	471	273	237
9	441	1030	1830	1990	1880	2520	1390	899	735	457	255	281
10	435	839	1960	1870	1980	2580	1410	887	727	390	254	283
11	475	671	1970	1880	2120	2610	1370	883	709	361	254	213
12	463	831	2000	2000	2160	2370	1320	892	690	367	286	262
13	457	757	2060	2610	2110	2210	1230	893	773	387	403	315
14	463	756	2050	3380	2390	2300	1130	909	880	397	391	223
15	456	760	1950	4070	2970	2230	1210	916	981	404	353	224
16	493	763	1910	4500	3600	1990	1180	933	969	467	343	342
17	488	767	1850	4280	4180	1940	1130	986	947	549	338	468
18	501	769	1610	3620	4250	1860	1090	944	898	650	335	390
19	497	773	1530	3650	4040	1930	1100	966	847	664	331	345
20	491	791	1230	3670	3920	2070	1020	1090	804	722	351	341
21	501	789	1130	3400	3730	2220	987	1230	762	797	377	341
22	507	790	1190	3110	3560	2460	970	1280	688	973	451	376
23	473	779	1170	2990	3300	2360	1000	1300	641	887	434	462
24	550	768	1110	2930	3200	2270	1040	1240	548	813	418	329
25	519	800	e1100	2730	3050	2240	1070	1120	427	764	387	409
26	516	829	e1050	2540	2870	2260	1070	1100	429	721	384	461
27	525	924	866	2450	2570	2200	1100	1020	527	732	375	467
28	480	1010	939	2370	2620	2190	1120	965	515	792	368	430
29	494	1300	1200	2150	---	1990	1120	907	508	821	365	424
30	525	1520	1220	2050	---	1950	1100	832	514	661	302	439
31	573	---	1290	1920	---	2110	---	674	---	610	240	---
TOTAL	14805	26281	48625	80740	74630	68610	38977	30767	21050	18090	11845	10032
MEAN	478	876	1569	2605	2665	2213	1299	992	702	584	382	334
MAX	573	1520	2060	4500	4250	2610	1960	1300	981	973	675	468
MIN	422	656	866	1340	1630	1860	970	674	427	361	240	213
CFSM	0.35	0.65	1.16	1.93	1.97	1.64	0.96	0.74	0.52	0.43	0.28	0.25
IN.	0.41	0.72	1.34	2.22	2.06	1.89	1.07	0.85	0.58	0.50	0.33	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

MEAN	740	936	1123	1230	1391	1949	1977	1616	1196	791	637	620
MAX	2081	2582	2053	3493	3148	3969	3320	2870	2587	1780	1639	1628
(WY)	2002	1993	1983	1993	2001	1982	1982	1983	1980	1978	1981	1980
MIN	218	294	288	328	328	488	793	650	286	243	187	199
(WY)	1964	1965	1964	1963	1963	1964	1964	1964	1964	1964	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005	
ANNUAL TOTAL	446405		444452			
ANNUAL MEAN	1220		1218		1186	
HIGHEST ANNUAL MEAN					1850	1993
LOWEST ANNUAL MEAN					365	1964
HIGHEST DAILY MEAN	3250	Jun 17	4500	Jan 16	7810	Mar 21 1982
LOWEST DAILY MEAN	418	Sep 26	213	Sep 11	78	Sep 12 1964
ANNUAL SEVEN-DAY MINIMUM	427	Sep 25	257	Sep 9	126	Sep 2 1964
MAXIMUM PEAK FLOW			4630	Jan 16	8180	Mar 21 1982
MAXIMUM PEAK STAGE			7.99	Jan 16	10.69	Mar 21 1982
INSTANTANEOUS LOW FLOW			212	(a)		
ANNUAL RUNOFF (CFSM)	0.903		0.902		0.878	
ANNUAL RUNOFF (INCHES)	12.30		12.25		11.94	
10 PERCENT EXCEEDS	2070		2370		2290	
50 PERCENT EXCEEDS	1050		933		972	
90 PERCENT EXCEEDS	482		368		410	

(a) Sept. 10, 11, 12.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04097540 PRAIRIE RIVER NEAR NOTTAWA, MI

LOCATION.--Lat 41°53'18", long 85°24'34", in NW1/4 SW1/4 sec.6, T.7 S., R.9 W., St. Joseph County, Hydrologic Unit 04050001, on left bank 10 ft upstream from bridge on State Highway 66, 3.0 mi upstream from unnamed tributary, and 3.0 mi southeast of Nottawa.

DRAINAGE AREA.--106 mi^2.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 850 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Since 1987, some diversion by pumping for sprinkler irrigation. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	58	156	122	128	183	151	97	58	30	55	22
2	47	68	161	131	124	179	150	94	57	30	51	20
3	47	67	158	141	120	173	146	93	54	29	47	20
4	47	78	152	154	116	168	142	91	54	28	43	21
5	46	90	145	163	114	166	141	88	55	29	40	21
6	45	88	142	166	114	168	139	85	60	29	36	20
7	43	81	146	160	121	181	135	84	60	28	33	20
8	43	76	155	154	143	198	132	81	58	25	31	21
9	47	70	160	148	169	207	128	80	56	23	28	21
10	45	66	163	142	178	201	124	80	52	22	25	20
11	43	63	168	142	173	189	120	79	49	19	25	21
12	42	60	167	155	164	182	115	79	50	19	26	22
13	42	58	163	244	163	173	110	78	56	24	29	23
14	42	56	157	397	205	166	107	80	57	26	34	25
15	43	55	150	464	269	158	103	78	57	28	37	27
16	48	59	142	435	359	154	100	76	55	31	38	35
17	48	60	136	e380	385	152	98	73	53	32	37	35
18	47	60	132	e330	360	152	97	70	51	37	35	35
19	46	62	127	e280	305	156	96	74	49	43	35	35
20	45	62	117	e250	269	166	95	85	48	44	37	38
21	44	60	111	e230	254	175	94	87	46	51	36	37
22	43	59	122	e215	241	176	96	84	43	64	36	39
23	45	59	e119	e200	232	174	101	81	40	70	35	42
24	51	59	e114	e190	222	169	107	78	36	71	34	40
25	53	65	e108	e180	212	167	109	74	35	66	32	39
26	51	66	e104	e170	203	167	108	71	33	61	29	44
27	49	82	e102	e160	194	165	111	69	33	63	27	44
28	49	112	e101	e150	185	161	109	67	31	64	26	43
29	52	130	101	e143	---	158	104	65	29	63	25	47
30	58	141	100	139	---	155	99	63	29	60	24	46
31	57	---	112	132	---	151	---	60	---	58	22	---
TOTAL	1454	2170	4191	6467	5722	5290	3467	2444	1444	1267	1048	923
MEAN	46.9	72.3	135	209	204	171	116	78.8	48.1	40.9	33.8	30.8
MAX	58	141	168	464	385	207	151	97	60	71	55	47
MIN	42	55	100	122	114	151	94	60	29	19	22	20
CFSM	0.44	0.68	1.28	1.97	1.93	1.61	1.09	0.74	0.45	0.39	0.32	0.29
IN.	0.51	0.76	1.47	2.27	2.01	1.86	1.22	0.86	0.51	0.44	0.37	0.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2005, BY WATER YEAR (WY)

MEAN	64.4	82.3	104	108	118	151	153	122	100	64.9	52.9	53.6
MAX	150	222	177	258	240	336	259	226	254	144	148	135
(WY)	1987	1993	1983	1993	2001	1982	1978	1983	1989	1986	1981	1997
MIN	17.2	22.9	25.2	29.7	29.1	47.2	75.6	58.7	32.9	13.3	15.8	14.1
(WY)	1965	1965	1964	1963	1963	1964	1964	1963	1964	1988	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1963 - 2005	
ANNUAL TOTAL	36974		35887			
ANNUAL MEAN	101		98.3		97.8	
HIGHEST ANNUAL MEAN					153	1993
LOWEST ANNUAL MEAN					33.5	1964
HIGHEST DAILY MEAN	375	Jun 14	464	Jan 15	782	Feb 26 1985
LOWEST DAILY MEAN	42	Sep 24	19	Jul 11	5.7	Aug 5 1988
ANNUAL SEVEN-DAY MINIMUM	43	Sep 22	20	Sep 2	7.9	Jul 31 1988
MAXIMUM PEAK FLOW			467	Jan 15	797	Feb 26 1985
MAXIMUM PEAK STAGE			5.44	Jan 15	6.30	Feb 26 1985
INSTANTANEOUS LOW FLOW			16	Jul 12	5.4	(a)
ANNUAL RUNOFF (CFSM)	0.953		0.928		0.923	
ANNUAL RUNOFF (INCHES)	12.98		12.59		12.54	
10 PERCENT EXCEEDS	159		178		174	
50 PERCENT EXCEEDS	93		74		84	
90 PERCENT EXCEEDS	47		29		36	

(a) Aug. 4, 5, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04099000 ST. JOSEPH RIVER AT MOTTVILLE, MI

LOCATION.--Lat 41°48'03", long 85°45'22", in SW1/4 sec.6, T.8 S., R.12 W., St. Joseph County, Hydrologic Unit 04050001, on right bank 575 ft upstream from bridge on U.S. Highway 12 in Mottville, 0.4 mi downstream from American Electric Power Co. hydroelectric plant, 4 mi upstream from Pigeon River, and at mile 96.

DRAINAGE AREA.--1,866 mi^2.

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1387: 1930, 1932, 1938, 1940-42, 1945. WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 755.3 ft above sea level (American Electric Power Co. bench mark). Prior to Oct. 1, 1951, at site 0.4 mi upstream at datum 4.2 ft higher.

REMARKS.--Records good. Flow regulated by powerplants upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	764	942	2270	1920	e2720	3430	2710	1570	1090	752	1090	462
2	790	919	2560	1990	e2770	3030	2620	1540	1080	715	995	457
3	784	1180	2500	2190	e2600	3080	2530	1480	1060	726	938	468
4	814	1340	2530	2400	2480	3070	2400	1470	1030	743	908	468
5	765	1520	2530	2550	2450	2930	2400	1380	1040	722	868	517
6	769	1520	2500	2590	2400	2940	2400	1350	1020	754	789	647
7	771	1500	2460	2650	2360	2970	2280	1570	1070	771	696	585
8	789	1670	2540	2830	2420	3230	2200	1460	994	730	558	478
9	872	1640	2560	2640	2500	3370	2010	1340	1050	693	511	538
10	755	1320	2640	2480	2610	3350	2040	1330	1050	655	502	510
11	819	1100	2650	2470	2730	3470	1990	1370	1030	574	506	426
12	808	1230	2640	2600	2840	3300	1850	1290	1030	573	542	448
13	820	1090	2780	3290	2860	3050	1720	1360	1220	597	773	497
14	908	1060	2790	4190	3120	3000	1590	1320	1290	632	857	406
15	1030	1080	2640	5030	3720	3020	1650	1350	1420	640	849	444
16	1010	1080	2600	5520	4580	2850	1710	1360	1370	774	765	606
17	1050	1100	2550	5330	5170	2720	1650	1410	1370	832	879	765
18	1010	1110	2330	5150	5490	2640	1570	1360	1300	1140	764	635
19	980	1160	2080	4550	5340	2690	1560	1480	1260	1070	709	588
20	941	1160	e1750	4710	5230	2760	1510	1570	1180	1180	804	581
21	885	1200	1670	e4600	5060	2900	1420	1730	1110	1440	789	588
22	876	1190	1730	4030	4800	3090	1500	1820	963	1650	745	701
23	836	1210	1680	3800	4560	3160	1530	1800	912	1530	612	758
24	963	1250	e1650	e3650	4340	3020	1610	1770	805	1400	681	683
25	903	1210	e1550	3520	4150	2990	1620	1600	696	1340	729	749
26	882	1260	e1500	e3500	3960	3010	1650	1560	684	1300	723	811
27	897	1420	e1450	e3400	3620	2950	1690	1450	855	1280	685	805
28	899	1650	1390	e3200	3530	2930	1700	1400	838	1340	697	742
29	786	1810	1640	3090	---	2840	1670	1300	841	1400	598	713
30	760	2070	1700	2960	---	2610	1630	1240	807	1240	576	736
31	941	---	1860	e2770	---	2840	---	1010	---	1170	486	---
TOTAL	26877	38991	67720	105600	100410	93240	56410	45040	31465	30363	22624	17812
MEAN	867	1300	2185	3406	3586	3008	1880	1453	1049	979	730	594
MAX	1050	2070	2790	5520	5490	3470	2710	1820	1420	1650	1090	811
MIN	755	919	1390	1920	2360	2610	1420	1010	684	573	486	406
CFSM	0.46	0.70	1.17	1.83	1.92	1.61	1.01	0.78	0.56	0.52	0.39	0.32
IN.	0.54	0.78	1.35	2.11	2.00	1.86	1.12	0.90	0.63	0.61	0.45	0.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2005, BY WATER YEAR (WY)

MEAN	1109	1350	1575	1753	1907	2557	2651	2144	1699	1168	952	952
MAX	3290	3378	4065	4589	3956	5335	7646	5009	5004	2953	2413	2286
(WY)	1987	1993	1928	1993	2001	1982	1950	1943	1989	1937	1981	1980
MIN	372	483	507	531	505	751	904	786	509	407	335	357
(WY)	1964	1965	1964	1963	1963	1964	1931	1931	1964	1988	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1924 - 2005	
ANNUAL TOTAL	648854		636552			
ANNUAL MEAN	1773		1744		(a)1652	
HIGHEST ANNUAL MEAN					2856	1950
LOWEST ANNUAL MEAN					580	1964
HIGHEST DAILY MEAN	4400	Jun 18	5520	Jan 16	10700	Jun 4 1989
LOWEST DAILY MEAN	719	Sep 22	406	Sep 14	39	Oct 19 1963
ANNUAL SEVEN-DAY MINIMUM	748	Sep 22	467	Sep 9	278	Aug 1 1964
MAXIMUM PEAK FLOW			5880	Feb 19	(b)11400	Jun 4 1989
MAXIMUM PEAK STAGE			(c)7.16	Feb 19	(d)10.76	Apr 27 1950
INSTANTANEOUS LOW FLOW			305	Sep 14		
ANNUAL RUNOFF (CFSM)	0.950		0.935		0.885	
ANNUAL RUNOFF (INCHES)	12.94		12.69		12.03	
10 PERCENT EXCEEDS	2790		3180		3020	
50 PERCENT EXCEEDS	1600		1390		1400	
90 PERCENT EXCEEDS	866		682		645	

(a) Does not include water year 1924.
(b) Gage height 10.41 ft.
(c) Result of regulation.
(d) Present datum.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04101000 ST. JOSEPH RIVER AT ELKHART, IN

LOCATION.--Lat 41°41'30", long 85°58'30", in SW1/4 NE1/4 sec.5, T.37 N., R.5 E., Elkhart County, Hydrologic Unit 04050001, on left bank 200 ft downstream from Elkhart River, 200 ft upstream from Main Street bridge in Elkhart, IN, 2,000 ft downstream from Christiana Creek, 0.5 mi downstream from Elkhart Hydroelectric Plant, and at mile 76.5.

DRAINAGE AREA.--3,370 mi^2.

PERIOD OF RECORD.--August 1947 to current year. Gage heights at site 0.8 mi downstream at different datum from September 1924 to March 1926 are available from the Indiana District Office.

REVISED RECORDS.--WSP 2111: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 700.00 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by Elkhart Hydroelectric Plant.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1460	1740	3880	3490	e4500	6390	4550	2880	2150	1420	1910	961
2	1520	1840	4440	3490	e4400	5920	4390	2840	2120	1370	1890	971
3	1500	2020	4410	3740	e4300	5700	4330	2750	2120	1350	1660	936
4	1500	2220	4350	4570	e4200	5600	4100	2720	2070	1330	1660	935
5	1470	2480	4240	4850	4180	5460	4060	2630	2050	1420	1600	951
6	1450	2470	4220	4800	4120	5610	4030	2500	1900	1360	1520	1050
7	1440	2390	4440	4720	4150	5860	3900	2780	2130	1390	1420	1080
8	1440	2470	4900	4750	4790	5870	3780	2630	1930	1320	1280	952
9	1480	2400	4830	4680	5150	5910	3590	2520	1960	1250	1240	1020
10	1520	2310	4780	4530	5070	5740	3530	2460	1930	1220	1200	1020
11	1480	1910	4770	4520	4990	5820	3460	2500	1880	1100	1160	886
12	1530	2040	4760	5180	5010	5700	3300	2430	1880	1140	1190	857
13	1450	1930	4790	8040	5140	5380	3190	2430	2280	1180	1420	933
14	1540	1900	4690	11000	6510	5090	3020	2470	2230	1160	1730	912
15	1700	1900	4480	10100	8310	5090	3020	2550	2370	1250	1690	921
16	1680	1920	4300	9440	9120	4900	3030	2550	2350	1310	1570	1170
17	1730	1930	4160	e8700	9400	4730	2980	2570	2240	1530	1520	1340
18	1690	1940	3960	e8100	9190	4750	2910	2560	2190	1740	1520	1330
19	1710	2050	3730	e7700	8680	4830	2860	2660	2130	1910	1380	1200
20	1720	2060	e2900	e7300	8750	5030	2830	2850	2060	1910	1560	1200
21	1560	2100	e2800	e6900	8730	5020	2700	2960	1960	2060	1510	1140
22	1600	2060	e2680	e6600	8560	5100	2820	3040	1800	2350	1470	1250
23	1670	2090	e2540	e6300	8300	5230	2930	3040	1690	2300	1310	1310
24	1730	2150	e2450	e6000	7800	5040	3010	3000	1580	2140	1190	1340
25	1680	2200	e2400	e5800	7480	5000	3000	2800	1460	2060	1350	1380
26	1650	2280	e2340	e5500	7170	5050	3010	2750	1340	2080	1240	1570
27	1660	2540	e2320	e5300	6750	5020	3050	2660	1520	2230	1230	1610
28	1660	3150	e2300	e5100	6430	4940	3020	2570	1530	2250	1210	1460
29	1580	3260	e2500	e4900	---	4830	3010	2480	1520	2260	1140	1580
30	1480	3400	e3000	e4700	---	4520	2930	2390	1470	2150	1130	1490
31	1700	---	3600	e4600	---	4650	---	2170	---	1940	1000	---
TOTAL	48980	67150	115960	185400	181180	163780	100340	82140	57840	51480	43900	34755
MEAN	1580	2238	3741	5981	6471	5283	3345	2650	1928	1661	1416	1158
MAX	1730	3400	4900	11000	9400	6390	4550	3040	2370	2350	1910	1610
MIN	1440	1740	2300	3490	4120	4520	2700	2170	1340	1100	1000	857
CFSM	0.47	0.66	1.11	1.77	1.92	1.57	0.99	0.79	0.57	0.49	0.42	0.34
IN.	0.54	0.74	1.28	2.05	2.00	1.81	1.11	0.91	0.64	0.57	0.48	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

MEAN	2184	2616	3180	3584	3911	5027	5083	4096	3275	2353	1948	1868
MAX	5752	5883	5795	9270	7039	10760	12690	7725	7535	4409	4180	3855
(WY)	1987	1993	1991	1993	1968	1982	1950	1956	1989	1968	1981	1981
MIN	791	856	958	1127	1120	1679	2633	1911	1280	898	737	721
(WY)	1964	1965	1964	1964	1963	1964	1958	1958	1988	1988	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	1133030		1132905			
ANNUAL MEAN	3096		3104		3256	
HIGHEST ANNUAL MEAN					5264	1950
LOWEST ANNUAL MEAN					1283	1964
HIGHEST DAILY MEAN	8990	Jun 13	11000	Jan 14	18500	Mar 21 1982
LOWEST DAILY MEAN	1390	Sep 27	857	Sep 12	336	Aug 5 1964
ANNUAL SEVEN-DAY MINIMUM	1420	Sep 22	936	Sep 9	561	Aug 2 1964
MAXIMUM PEAK FLOW			11700	Jan 14	18800	Feb 27 1985
MAXIMUM PEAK STAGE			24.35	Jan 14	27.91	Mar 21 1982
ANNUAL RUNOFF (CFSM)	0.919		0.921		0.966	
ANNUAL RUNOFF (INCHES)	12.51		12.51		13.13	
10 PERCENT EXCEEDS	4720		5700		5780	
50 PERCENT EXCEEDS	2820		2430		2780	
90 PERCENT EXCEEDS	1590		1250		1380	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04101500 ST. JOSEPH RIVER AT NILES, MI

LOCATION.--Lat 41°49'45", long 86°15'35", in SW1/4 sec.26, T.7 S., R.17 W., Berrien County, Hydrologic Unit 04050001, on right bank 100 ft upstream from Main Street Bridge in Niles, 0.6 mi downstream from dam at French Paper Co., 1.3 mi upstream from Dowagiac River, and at mile 44.

DRAINAGE AREA.--3,666 mi^2.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1387: 1931, 1933-36, 1940-43, 1945-46(M). WSP 1911: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 633.02 ft above sea level. Prior to Oct. 1, 1968, at datum 2.00 ft higher. Oct. 1, 1930 to Feb. 11, 1931, nonrecording gage on Main Street Bridge, and Feb. 12 to June 30, 1931, nonrecording gage 50 ft upstream from present site (gage heights referred to sea level datum). Oct. 1, 1943 to Apr. 12, 1970, auxiliary gage was headwater gage at hydroelectric plant at Buchanan Dam, 8 mi downstream from base gage at different datum. Since Apr. 13, 1970, auxiliary water-stage recorder at sewage-treatment plant, 1.1 mi downstream from base gage at same datum.

REMARKS.--Records good. Flow regulated by powerplants upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1690	2130	4470	4330	5340	7310	5280	3340	2470	1450	2230	1080
2	1520	2450	4950	4100	5190	6880	5070	3290	2530	1590	2240	1050
3	1950	2320	4900	4480	5080	6390	4970	3250	2450	1460	1950	1160
4	1690	2750	4670	5570	4950	6440	4780	3130	2420	1900	1900	980
5	1630	2880	4710	5760	4780	6340	4680	3080	2390	1480	1750	960
6	1600	2930	4550	5520	4660	6380	4590	3040	2460	1450	1780	1120
7	1610	2810	4800	5310	4700	7130	4570	3020	2360	1630	1540	1130
8	1660	2790	5460	5300	5440	6960	4310	3090	2360	1540	1530	1120
9	1670	2830	5340	5220	5990	6720	4260	3030	2260	1400	1300	1200
10	1750	2720	5130	5050	5810	6480	4080	2880	2260	1450	1400	1120
11	1720	2530	5160	5170	5630	6540	4080	2910	2270	1170	1310	1090
12	1740	2150	5090	6220	5640	6480	3910	2940	2210	1240	1310	931
13	1660	2220	5280	10600	5790	6160	3770	2630	3050	1560	1680	828
14	1660	2140	5260	14600	7610	5740	3600	2840	3030	1420	1840	1090
15	1890	2110	5110	12900	10100	5670	3470	2870	2870	1120	1980	934
16	1910	2210	4870	11200	11100	5560	3600	3200	2850	1740	1790	1820
17	1960	2220	4710	10100	11100	5340	3500	2980	2630	1700	1730	1470
18	1950	2200	4580	9060	10700	5460	3470	2990	2670	2000	1780	1380
19	1920	2360	4360	8550	9870	5460	3410	3170	2550	2390	1540	1430
20	2000	2390	3340	9040	9930	5810	3300	3260	2520	2230	1870	1260
21	1900	2450	3410	8810	10000	5700	3330	3240	2120	2360	1820	1260
22	1840	2370	3620	7960	9930	5770	3380	3490	2150	2790	1630	1220
23	1940	2370	3360	7200	9540	5830	3390	3420	1930	2780	1690	1510
24	1920	2440	3290	6580	9010	5730	3430	3410	1860	2640	1250	1400
25	2000	2540	e3120	7160	8610	5650	3470	3350	1480	2480	1440	1360
26	1970	2700	e3030	7180	8220	5690	3500	3060	1600	2420	1480	1890
27	1860	2950	e2950	6590	7810	5760	3540	3090	1590	2830	1570	1590
28	1970	3810	e2890	6070	7290	5630	3500	2920	1740	2680	1210	1750
29	1910	3890	3280	6060	---	5530	3500	2900	1710	2720	1380	1820
30	1770	3870	3650	5910	---	5230	3420	2750	1680	2520	1020	1570
31	1830	---	4100	5610	---	5240	---	2660	---	2260	1170	---
TOTAL	56090	78530	133440	223210	209820	187010	117160	95230	68470	60400	50110	38523
MEAN	1809	2618	4305	7200	7494	6033	3905	3072	2282	1948	1616	1284
MAX	2000	3890	5460	14600	11100	7310	5280	3490	3050	2830	2240	1890
MIN	1520	2110	2890	4100	4660	5230	3300	2630	1480	1120	1020	828
CFSM	0.49	0.71	1.17	1.96	2.04	1.65	1.07	0.84	0.62	0.53	0.44	0.35
IN.	0.57	0.80	1.35	2.26	2.13	1.90	1.19	0.97	0.69	0.61	0.51	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	2355	2762	3194	3633	4024	5239	5396	4435	3538	2543	2124	2046
MAX	6217	6564	6689	9810	7765	11560	13590	10760	8176	4989	4497	4103
(WY)	1987	1993	1991	1993	2001	1982	1950	1943	1989	1981	1981	1981
MIN	1056	932	1131	1239	1196	1857	2164	1579	1254	1033	828	885
(WY)	1964	1965	1964	1964	1964	1964	1931	1931	1934	1934	1941	1941

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	1308350		1317993			
ANNUAL MEAN	3575		3611		3436	
HIGHEST ANNUAL MEAN					5718	1950
LOWEST ANNUAL MEAN					1464	1964
HIGHEST DAILY MEAN	11800	Jun 13	14600	Jan 14	19800	Mar 21 1982
LOWEST DAILY MEAN	1500	Sep 30	828	Sep 13	420	Aug 30 1931
ANNUAL SEVEN-DAY MINIMUM	1630	Sep 24	1030	Sep 9	728	Aug 26 1941
MAXIMUM PEAK FLOW			15300	Jan 14	20200	Apr 5 1950
MAXIMUM PEAK STAGE			12.76	Jan 14	(a)15.10	Apr 5 1950
ANNUAL RUNOFF (CFSM)	0.975		0.985		0.937	
ANNUAL RUNOFF (INCHES)	13.28		13.37		12.74	
10 PERCENT EXCEEDS	5280		6500		6140	
50 PERCENT EXCEEDS	3240		2890		2850	
90 PERCENT EXCEEDS	1910		1440		1500	

(a) Present datum.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04101800 DOWAGIAC RIVER AT SUMNERVILLE, MI

LOCATION.--Lat 41°54'48", long 86°12'47", in SE1/4 sec.30, T.6 S., R.16 W., Cass County, Hydrologic Unit 04050001, on right bank 30 ft upstream from bridge on Indian Lake Road, 0.3 mi west of Sumnerville.

DRAINAGE AREA.--255 mi^2.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 692.62 ft above sea level.

REMARKS.--Records good. Flow regulated by millpond and lake-level control dam upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	195	499	418	315	391	322	238	191	162	187	114
2	158	321	520	432	309	380	317	235	188	155	171	112
3	159	318	461	485	305	367	303	232	188	147	162	113
4	155	330	408	548	301	358	296	229	188	146	159	114
5	151	362	378	493	303	369	291	227	203	152	157	116
6	151	322	368	433	315	415	287	223	273	146	149	114
7	150	285	414	393	373	514	284	222	231	141	140	113
8	150	256	493	367	499	489	281	221	247	136	138	115
9	163	242	446	349	497	421	275	218	229	130	131	116
10	162	234	408	341	446	378	272	213	211	126	129	112
11	160	226	435	351	401	367	265	215	200	125	129	110
12	159	217	415	485	373	365	256	226	198	123	135	108
13	159	210	384	1000	383	351	251	225	442	130	137	106
14	158	205	374	1210	589	342	247	247	509	136	148	109
15	159	204	360	1000	722	336	247	241	385	145	172	114
16	195	208	345	700	823	338	244	229	326	202	147	175
17	208	215	335	560	691	351	242	220	282	198	139	181
18	201	221	325	466	559	349	247	215	256	215	136	167
19	196	236	317	449	483	401	244	235	242	244	139	158
20	189	267	281	434	456	444	238	297	230	242	163	155
21	185	255	285	413	496	411	234	261	218	449	197	149
22	181	240	275	381	501	388	245	243	205	397	171	158
23	191	229	269	356	469	375	267	245	195	322	159	164
24	232	225	260	402	445	355	278	231	186	277	151	152
25	221	249	233	383	429	349	296	222	175	247	147	151
26	209	253	267	376	412	352	280	214	166	229	143	165
27	200	347	234	352	392	342	269	210	168	264	136	160
28	194	525	262	320	388	333	260	208	159	238	133	156
29	194	474	254	347	---	322	253	204	157	220	130	197
30	196	420	255	332	---	316	246	202	157	208	121	189
31	191	---	380	323	---	326	---	197	---	197	116	---
TOTAL	5529	8291	10940	14899	12675	11595	8037	7045	7005	6249	4572	4163
MEAN	178	276	353	481	453	374	268	227	234	202	147	139
MAX	232	525	520	1210	823	514	322	297	509	449	197	197
MIN	150	195	233	320	301	316	234	197	157	123	116	106
CFSM	0.70	1.08	1.38	1.88	1.78	1.47	1.05	0.89	0.92	0.79	0.58	0.54
IN.	0.81	1.21	1.60	2.17	1.85	1.69	1.17	1.03	1.02	0.91	0.67	0.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

MEAN	252	303	323	315	336	400	389	329	271	217	192	204
MAX	530	490	513	548	508	629	552	490	414	333	326	401
(WY)	1987	1991	1992	1993	1985	1985	1993	1981	1996	1978	1992	1993
MIN	132	166	179	166	177	225	235	205	142	133	101	112
(WY)	1964	2000	1964	1963	1963	2000	2004	1964	1964	1988	1964	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	98473		101000			
ANNUAL MEAN	269		277		294	
HIGHEST ANNUAL MEAN					401	1993
LOWEST ANNUAL MEAN					177	1964
HIGHEST DAILY MEAN	912	Jun 13	1210	Jan 14	1550	Feb 25 1985
LOWEST DAILY MEAN	145	Aug 24	106	Sep 13	87	Sep 8 1964
ANNUAL SEVEN-DAY MINIMUM	150	Sep 22	111	Sep 9	89	Aug 3 1964
MAXIMUM PEAK FLOW			1230	Jan 14	1590	Feb 24 1985
MAXIMUM PEAK STAGE			8.54	Jan 14	9.26	Feb 24 1985
INSTANTANEOUS LOW FLOW			105	Sep 14	(a)70	Jan 2 1999
ANNUAL RUNOFF (CFSM)	1.06		1.09		1.15	
ANNUAL RUNOFF (INCHES)	14.37		14.73		15.66	
10 PERCENT EXCEEDS	414		444		450	
50 PERCENT EXCEEDS	234		242		272	
90 PERCENT EXCEEDS	163		140		161	

(a) Result of regulation.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04102500 PAW PAW RIVER AT RIVERSIDE, MI

LOCATION (REVISED).--Lat 42°11'11", long 86°22'08", in SW1/4 SE1/4 sec.23, T.3 S., R.18 W., Berrien County, Hydrologic Unit 04050001, on left bank 40 ft upstream from bridge on Coloma Road, 0.8 mi east of Riverside.

DRAINAGE AREA.--390 mi^2.

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1337: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 588.80 ft above sea level. May 10, 1966 to July 11, 1967, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuation, principally during low flow, caused by paper mill upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	223	430	734	574	550	588	511	358	294	269	245	191
2	230	455	876	627	542	564	503	344	288	256	241	201
3	226	497	952	714	528	541	489	343	285	244	248	188
4	226	547	906	829	532	528	479	345	283	237	234	186
5	236	552	849	899	499	526	466	337	295	234	211	193
6	231	569	806	904	465	531	454	333	302	234	213	197
7	220	573	804	888	478	584	442	332	313	239	239	189
8	217	558	832	858	563	684	432	330	340	239	202	185
9	227	534	849	799	667	696	430	328	366	230	198	176
10	235	502	805	715	662	703	423	326	309	215	210	172
11	241	466	803	633	649	745	409	328	290	210	195	175
12	245	429	831	649	654	752	398	333	306	209	202	181
13	242	396	833	1030	663	679	395	335	283	231	211	184
14	239	374	802	1570	762	590	387	346	307	229	225	188
15	245	358	775	1450	1020	544	371	370	363	248	214	190
16	273	347	748	2140	1120	522	366	356	372	249	219	221
17	292	348	702	2380	1150	508	361	351	388	256	220	249
18	309	359	643	1970	e1200	496	359	349	396	293	209	240
19	333	373	592	e1650	e1210	509	358	338	372	331	205	251
20	339	402	e540	1370	1180	568	358	343	332	345	250	239
21	331	420	e500	e1130	1050	621	356	358	305	345	263	224
22	313	419	e470	e990	939	623	351	377	293	358	258	219
23	324	415	e460	e900	834	647	360	386	281	358	264	222
24	349	412	e450	e820	758	668	372	372	264	358	261	220
25	347	412	e440	e770	720	648	387	359	260	344	237	209
26	349	411	e435	e730	690	622	395	358	252	330	219	213
27	348	433	e430	679	647	600	396	343	250	307	223	217
28	339	522	e435	586	612	573	390	320	269	305	220	228
29	342	657	e440	662	---	545	379	317	256	283	214	273
30	383	673	e450	639	---	525	370	314	264	294	209	257
31	417	---	e490	568	---	512	---	304	---	264	202	---
TOTAL	8871	13843	20682	31123	21344	18442	12147	10633	9178	8544	6961	6278
MEAN	286	461	667	1004	762	595	405	343	306	276	225	209
MAX	417	673	952	2380	1210	752	511	386	396	358	264	273
MIN	217	347	430	568	465	496	351	304	250	209	195	172
CFSM	0.73	1.18	1.71	2.57	1.95	1.53	1.04	0.88	0.78	0.71	0.58	0.54
IN.	0.85	1.32	1.97	2.97	2.04	1.76	1.16	1.01	0.88	0.81	0.66	0.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	373	440	499	509	540	663	627	504	400	313	280	295
MAX	1217	826	906	1038	1004	1234	961	799	686	581	557	569
(WY)	1987	1989	1991	1952	1997	1979	1985	1974	1969	1982	1980	1975
MIN	178	223	232	226	256	336	361	287	200	180	163	158
(WY)	1964	1954	1959	1959	1963	2000	1958	1958	1964	1963	1964	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	161041		168046			
ANNUAL MEAN	440		460		453	
HIGHEST ANNUAL MEAN					606	1991
LOWEST ANNUAL MEAN					273	1964
HIGHEST DAILY MEAN	1550	Mar 6	2380	Jan 17	3460	Oct 4 1986
LOWEST DAILY MEAN	210	Sep 29	172	Sep 10	120	Sep 8 1964
ANNUAL SEVEN-DAY MINIMUM	220	Sep 24	180	Sep 8	134	Sep 7 1964
MAXIMUM PEAK FLOW			2590	Jan 16	3580	Oct 4 1986
MAXIMUM PEAK STAGE			10.18	Jan 16	10.90	Oct 4 1986
INSTANTANEOUS LOW FLOW			170	Sep 10	99	Jul 5 1964
ANNUAL RUNOFF (CFSM)	1.13		1.18		1.16	
ANNUAL RUNOFF (INCHES)	15.36		16.03		15.79	
10 PERCENT EXCEEDS	764		804		745	
50 PERCENT EXCEEDS	373		361		398	
90 PERCENT EXCEEDS	250		218		230	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04102700 SOUTH BRANCH BLACK RIVER NEAR BANGOR, MI

LOCATION.--Lat 42°21'15", long 86°11'15", in NW1/4 sec.28, T.1 S., R.16 W., Van Buren County, Hydrologic Unit 04050002, on left bank 50 ft upstream from bridge on 66th Street, 4.9 mi northwest of Bangor.

DRAINAGE AREA.--83.6 mi^2.

PERIOD OF RECORD.--June 1966 to current year. Prior to October 1981, published as Black River near Bangor.

REVISED RECORDS.--WDR MI-81-1: 1973-75(M), 1979(M).

GAGE.--Water-stage recorder. Elevation of gage is 610 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Occasional regulation caused by mills upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	63	193	186	e100	e110	120	51	40	26	24	19
2	28	86	235	200	e95	e100	115	49	38	25	23	18
3	28	95	203	269	e92	e98	104	48	36	24	22	18
4	39	119	169	294	e89	e96	95	45	35	24	21	18
5	38	139	142	266	e86	102	89	48	37	26	22	18
6	34	113	126	214	e90	115	85	46	50	26	19	18
7	30	92	157	176	e110	241	81	45	49	25	19	17
8	30	79	256	150	e195	308	78	47	45	24	20	17
9	29	70	225	133	e205	234	75	42	41	23	20	17
10	29	64	194	124	e175	176	72	39	37	21	19	17
11	28	59	211	124	150	145	69	41	34	22	20	17
12	27	55	202	244	133	131	69	48	34	22	23	17
13	27	51	174	823	133	121	67	45	39	29	24	18
14	27	47	153	931	313	112	64	53	43	26	24	21
15	27	45	136	585	516	108	60	57	48	25	23	21
16	39	45	124	e460	583	104	57	52	43	25	22	33
17	48	48	e112	e325	463	103	55	47	37	26	21	30
18	42	53	e99	e249	e325	100	54	45	34	33	21	26
19	43	59	e87	e211	e260	123	53	50	32	33	22	24
20	39	78	e77	e188	217	203	53	65	31	33	24	23
21	37	78	e74	e173	192	203	51	63	29	44	24	23
22	35	71	e74	e156	188	176	50	59	28	42	23	26
23	38	65	e73	e144	173	165	42	68	27	38	22	33
24	59	62	e70	e140	157	155	56	67	27	36	22	27
25	51	65	e67	e144	145	140	64	62	25	32	20	26
26	46	71	e70	e135	133	132	62	58	24	31	19	26
27	41	120	e68	e124	122	123	59	54	24	34	19	25
28	38	252	e71	e114	e115	116	57	50	26	31	19	25
29	41	232	e69	e112	---	109	59	47	27	28	e20	42
30	63	183	e73	e109	---	104	53	44	27	26	e20	35
31	67	---	139	e105	---	110	---	42	---	25	20	---
TOTAL	1174	2659	4123	7608	5555	4363	2068	1577	1047	885	661	695
MEAN	37.9	88.6	133	245	198	141	68.9	50.9	34.9	28.5	21.3	23.2
MAX	67	252	256	931	583	308	120	68	50	44	24	42
MIN	26	45	67	105	86	96	42	39	24	21	19	17
CFSM	0.45	1.06	1.59	2.94	2.37	1.68	0.82	0.61	0.42	0.34	0.26	0.28
IN.	0.52	1.18	1.83	3.39	2.47	1.94	0.92	0.70	0.47	0.39	0.29	0.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

MEAN	66.9	93.5	123	122	141	179	156	107	84.4	55.3	43.1	54.7
MAX	362	282	272	245	377	389	327	206	261	181	141	329
(WY)	1987	1991	1983	2005	1997	1979	1975	2000	1997	1986	1980	1986
MIN	28.5	27.6	39.9	41.2	46.7	52.9	68.9	44.4	31.7	26.7	21.3	20.1
(WY)	2000	2000	2000	2000	2003	2000	1971	1971	1971	2003	2005	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	32889		32415			
ANNUAL MEAN	89.9		88.8		102	
HIGHEST ANNUAL MEAN					134	1997
LOWEST ANNUAL MEAN					56.5	2003
HIGHEST DAILY MEAN	645	Mar 6	931	Jan 14	1810	Feb 22 1997
LOWEST DAILY MEAN	18	Sep 22	17	Sep 7	17	Oct 1 2002
ANNUAL SEVEN-DAY MINIMUM	23	Sep 21	17	Sep 6	17	Sep 6 2005
MAXIMUM PEAK FLOW			1120	Jan 13	(a)2390	Feb 21 1997
MAXIMUM PEAK STAGE			11.41	Jan 13	14.90	Feb 21 1997
INSTANTANEOUS LOW FLOW			16	(b)	16	(c)
ANNUAL RUNOFF (CFSM)	1.07		1.06		1.22	
ANNUAL RUNOFF (INCHES)	14.63		14.42		16.59	
10 PERCENT EXCEEDS	183		193		198	
50 PERCENT EXCEEDS	64		53		72	
90 PERCENT EXCEEDS	29		22		32	

(a) From rating curve extended above 1,800 ft^3/s.
(b) Part of each day Sept. 7-12.
(c) Sept. 7, 1999, Sept. 30, Oct. 1, 2002, part of each day Sept. 7-12, 2005.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04102776 MIDDLE BRANCH BLACK RIVER NEAR SOUTH HAVEN, MI

LOCATION.--Lat 42°25'57", long 86°12'25", in NE1/4 NE1/4 sec.32, T.1 N., R.16 W., Allegan County, Hydrologic Unit 04050002, on left bank 10 ft downstream from bridge on 68th Street, 4.0 mi northeast of South Haven.

DRAINAGE AREA.--83.0 mi^2.

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 590 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	67	147	e107	e109	e120	125	64	46	28	20	17
2	30	89	163	123	e106	e113	122	62	43	26	19	16
3	31	96	153	157	e104	e108	116	60	42	25	17	16
4	29	98	136	164	e102	e106	110	57	42	24	18	15
5	28	124	122	168	e100	e111	105	57	40	24	18	15
6	28	109	113	151	e105	132	101	56	51	24	17	15
7	27	97	128	136	132	194	98	61	50	22	17	15
8	28	86	176	131	177	270	94	62	46	21	17	15
9	31	78	169	117	179	217	90	58	46	20	16	14
10	32	71	157	111	166	196	87	55	41	19	16	14
11	31	67	174	109	156	168	84	58	40	18	16	14
12	30	63	168	145	144	153	80	68	39	18	22	14
13	30	59	149	416	141	139	77	68	39	20	25	14
14	30	56	139	638	230	130	74	86	44	20	23	21
15	31	54	126	e572	394	123	72	87	42	19	22	28
16	38	54	115	e444	404	118	71	77	41	22	21	28
17	50	56	e104	e350	381	115	70	70	38	24	19	31
18	45	59	e95	e272	e324	115	69	65	36	22	18	25
19	42	63	e84	e228	e251	129	68	68	34	21	20	23
20	40	76	e68	e197	218	162	67	85	33	21	22	22
21	39	73	e72	e177	193	167	65	76	31	24	24	21
22	38	67	e71	e160	183	168	65	72	30	24	22	20
23	44	65	e68	e147	172	169	69	83	28	24	19	25
24	65	63	e69	e141	163	160	75	77	27	26	19	25
25	61	66	e66	e138	155	151	80	71	26	26	19	22
26	54	70	e66	e136	146	144	77	65	25	26	18	23
27	50	90	e64	e126	138	136	73	61	26	28	17	22
28	48	144	e64	e120	e130	130	71	57	28	26	20	21
29	64	151	e66	e116	---	125	68	54	30	24	19	32
30	91	135	e69	e118	---	120	66	52	28	23	17	33
31	73	---	e92	e113	---	124	---	49	---	22	17	---
TOTAL	1286	2446	3453	6228	5203	4513	2489	2041	1112	711	594	616
MEAN	41.5	81.5	111	201	186	146	83.0	65.8	37.1	22.9	19.2	20.5
MAX	91	151	176	638	404	270	125	87	51	28	25	33
MIN	27	54	64	107	100	106	65	49	25	18	16	14
CFSM	0.50	0.98	1.34	2.42	2.24	1.75	1.00	0.79	0.45	0.28	0.23	0.25
IN.	0.58	1.10	1.55	2.79	2.33	2.02	1.12	0.91	0.50	0.32	0.27	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

MEAN	55.5	85.9	89.1	116	135	137	118	124	112	45.3	37.0	38.9
MAX	168	155	122	201	317	200	162	215	397	90.5	60.2	89.8
(WY)	2002	1995	1997	2005	1997	1998	1998	2000	1997	1997	2001	2000
MIN	23.5	26.4	47.8	47.5	51.9	56.7	79.0	65.8	37.1	22.9	19.2	17.6
(WY)	2000	2000	2000	2003	2003	2000	1996	2005	2005	2005	2005	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	32558		30692			
ANNUAL MEAN	89.0		84.1		90.8	
HIGHEST ANNUAL MEAN					145	1997
LOWEST ANNUAL MEAN					56.9	2003
HIGHEST DAILY MEAN	616	May 23	638	Jan 14	2980	Jun 22 1997
LOWEST DAILY MEAN	27	Sep 24	14	Sep 9	14	Sep 9 2005
ANNUAL SEVEN-DAY MINIMUM	27	Sep 24	14	Sep 7	14	Sep 7 2005
MAXIMUM PEAK FLOW			651	Jan 14	(a)4340	Jun 21 1997
MAXIMUM PEAK STAGE			7.99	Jan 14	12.85	Jun 21 1997
INSTANTANEOUS LOW FLOW			14	(b)	14	(b)
ANNUAL RUNOFF (CFSM)	1.07		1.01		1.09	
ANNUAL RUNOFF (INCHES)	14.59		13.76		14.87	
10 PERCENT EXCEEDS	149		163		157	
50 PERCENT EXCEEDS	69		65		72	
90 PERCENT EXCEEDS	31		19		28	

(a) From rating curve extended above 1,400 ft^3/s.
(b) Part or all of each day Sept. 4, 7-14, 2005.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04103010 KALAMAZOO RIVER NEAR MARENGO, MI

LOCATION.--Lat 42°15'42", long 84°51'21", in SW1/4 SE1/4 sec.26, T.2 S., R.5 W., Calhoun County, Hydrologic Unit 04050003, on right bank at upstream side of bridge on B Drive North, 0.8 mi south of Marengo, and 5.0 mi west of Albion.

DRAINAGE AREA.--267 mi^2.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 910 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some diversion by pumping for irrigation. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	224	377	270	231	290	323	234	182	e170	186	123
2	140	242	369	286	223	285	310	226	175	e173	175	121
3	136	217	347	310	222	279	297	219	180	e166	167	119
4	132	270	308	349	222	274	278	221	175	e160	161	121
5	131	262	271	350	220	269	276	220	175	e168	157	118
6	127	235	256	317	223	279	268	215	173	181	153	121
7	127	214	286	276	240	367	264	211	166	174	149	120
8	127	201	333	258	320	465	263	207	165	166	146	118
9	135	e178	348	246	366	452	258	204	161	158	144	114
10	136	171	350	238	342	390	253	201	158	154	143	112
11	133	163	345	237	304	350	246	200	169	150	143	113
12	130	162	327	283	280	326	241	203	181	149	146	114
13	128	e156	302	564	269	311	237	210	226	150	144	114
14	127	e154	277	747	411	301	232	226	230	156	150	115
15	135	152	254	e730	540	290	229	225	218	156	159	115
16	164	152	239	e660	629	282	227	221	202	199	159	157
17	165	156	225	e560	639	285	226	215	194	190	154	152
18	158	156	218	e460	553	287	226	208	185	193	147	142
19	158	167	201	e390	477	307	228	211	178	184	145	138
20	145	183	e195	e340	410	350	235	233	172	183	171	140
21	142	184	e185	e320	381	361	234	238	168	339	165	146
22	139	181	e180	e300	368	357	237	233	163	299	156	149
23	147	174	e175	e280	357	356	244	237	155	260	152	143
24	155	172	e170	e270	340	345	261	231	154	252	148	138
25	153	193	e165	e260	324	345	278	223	150	228	143	137
26	148	198	e165	e255	306	346	277	215	147	220	138	145
27	144	262	e165	e250	291	341	278	206	146	229	140	143
28	141	383	e170	e245	286	337	274	199	146	236	131	141
29	182	398	e178	e245	---	330	258	194	e145	231	125	152
30	202	363	185	e240	---	325	245	191	e155	219	125	139
31	228	---	233	240	---	332	---	186	---	203	125	---
TOTAL	4555	6323	7799	10776	9774	10214	7703	6663	5194	6096	4647	3920
MEAN	147	211	252	348	349	329	257	215	173	197	150	131
MAX	228	398	377	747	639	465	323	238	230	339	186	157
MIN	127	152	165	237	220	269	226	186	145	149	125	112
CFSM	0.55	0.79	0.94	1.30	1.31	1.23	0.96	0.81	0.65	0.74	0.56	0.49
IN.	0.63	0.88	1.09	1.50	1.36	1.42	1.07	0.93	0.72	0.85	0.65	0.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2005, BY WATER YEAR (WY)

MEAN	204	229	224	248	258	298	301	263	240	184	168	165
MAX	349	383	356	466	445	445	468	386	530	274	226	272
(WY)	1987	1989	1991	1993	2001	1990	1993	1990	1989	1993	1989	1993
MIN	128	129	151	140	128	169	175	177	126	111	113	111
(WY)	2000	2000	2003	2003	2003	2000	2004	1987	1988	1988	2003	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1987 - 2005	
ANNUAL TOTAL	71794		83664			
ANNUAL MEAN	196		229		231	
HIGHEST ANNUAL MEAN					332	1993
LOWEST ANNUAL MEAN					154	2003
HIGHEST DAILY MEAN	470	Jun 14	747	Jan 14	1140	Jun 3 1989
LOWEST DAILY MEAN	120	Sep 25	112	Sep 10	93	Sep 21 2003
ANNUAL SEVEN-DAY MINIMUM	122	Sep 21	114	Sep 9	98	Jul 4 1988
MAXIMUM PEAK FLOW			(a)787	Jan 15	1160	Jun 3 1989
MAXIMUM PEAK STAGE			(b)9.37	Jan 15	10.18	Jun 3 1989
INSTANTANEOUS LOW FLOW					(c)73	Mar 10 2003
ANNUAL RUNOFF (CFSM)	0.735		0.858		0.867	
ANNUAL RUNOFF (INCHES)	10.00		11.66		11.78	
10 PERCENT EXCEEDS	285		347		356	
50 PERCENT EXCEEDS	179		211		208	
90 PERCENT EXCEEDS	139		139		132	

(a) Gage height 9.29 ft.
(b) Backwater from ice.
(c) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04103500 KALAMAZOO RIVER AT MARSHALL, MI

LOCATION.--Lat 42°15'53", long 84°57'50", in SW1/4 SW1/4 sec.25, T.2 S., R.6 W., Calhoun County, Hydrologic Unit 04050003, on left bank at upstream side of bridge on Kalamazoo Avenue in Marshall.

DRAINAGE AREA.--449 mi^2.

PERIOD OF RECORD.--October 1948 to March 1982, October 2001 to current year. Monthly discharge only for October 1948, published in WSP 1307.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 876.65 ft above sea level (NAVD 1988). Formerly published as 877.09 ft above sea level (NGVD 1929). Prior to Nov. 11, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by powerplant upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	190	299	559	441	369	459	514	327	249	252	267	170
2	187	325	564	448	358	450	483	330	247	254	247	164
3	183	317	544	481	352	429	453	326	249	245	238	163
4	179	360	486	531	350	427	431	321	249	233	219	164
5	178	384	442	550	370	425	422	319	248	242	216	163
6	175	361	400	498	351	442	413	313	249	253	202	163
7	175	296	400	453	377	e560	378	310	238	248	196	163
8	178	292	515	409	493	e620	415	305	230	240	196	161
9	185	272	524	393	552	e700	386	286	229	224	189	157
10	194	262	532	368	537	e600	371	289	215	218	187	152
11	198	250	546	385	489	570	345	297	288	213	192	150
12	192	235	526	434	459	535	349	301	356	212	196	151
13	187	236	495	815	443	509	339	297	411	215	198	154
14	184	233	441	1180	606	486	334	334	379	234	212	155
15	181	228	406	1200	847	456	331	335	370	225	205	158
16	207	227	359	1090	978	448	325	325	335	287	209	205
17	239	232	353	902	995	459	322	314	293	269	208	213
18	215	204	338	725	897	440	325	305	278	275	206	202
19	208	244	310	604	764	488	323	300	269	273	187	194
20	210	267	230	536	665	548	333	344	255	288	226	184
21	170	276	301	495	607	570	334	340	245	532	242	190
22	233	322	321	394	574	569	346	334	244	500	222	205
23	205	249	260	259	558	574	345	337	235	428	202	207
24	218	251	256	463	535	547	377	346	217	381	204	199
25	220	270	253	507	513	574	431	330	219	339	201	193
26	209	291	287	475	489	558	411	309	221	339	194	204
27	205	347	282	374	461	550	394	296	216	378	189	205
28	203	550	283	380	449	535	413	285	214	365	187	205
29	235	589	284	392	---	531	359	277	215	338	175	215
30	266	563	285	417	---	530	376	272	227	312	175	211
31	296	---	357	364	---	511	---	266	---	271	174	---
TOTAL	6305	9232	12139	16963	15438	16100	11378	9670	7890	9083	6361	5420
MEAN	203	308	392	547	551	519	379	312	263	293	205	181
MAX	296	589	564	1200	995	700	514	346	411	532	267	215
MIN	170	204	230	259	350	425	322	266	214	212	174	150
CFSM	0.45	0.69	0.87	1.22	1.23	1.16	0.84	0.69	0.59	0.65	0.46	0.40
IN.	0.52	0.76	1.01	1.41	1.28	1.33	0.94	0.80	0.65	0.75	0.53	0.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2005, BY WATER YEAR (WY)

MEAN	241	265	304	310	347	475	475	386	312	263	223	212
MAX	578	443	470	666	627	890	1143	702	544	500	461	445
(WY)	2002	2002	1976	1952	1949	1982	1950	1956	1969	1968	1973	1975
MIN	87.0	102	112	113	113	156	213	167	121	104	84.7	84.9
(WY)	1964	1965	1964	1964	1964	1964	1963	1964	1964	1964	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1949 - 2005	
ANNUAL TOTAL	110060		125979			
ANNUAL MEAN	301		345		316	
HIGHEST ANNUAL MEAN					498	1950
LOWEST ANNUAL MEAN					122	1964
HIGHEST DAILY MEAN	726	May 23	1200	Jan 15	2050	Mar 29 1950
LOWEST DAILY MEAN	170	Oct 21	150	Sep 11	31	Aug 16 1964
ANNUAL SEVEN-DAY MINIMUM	176	Sep 22	154	Sep 9	59	Aug 2 1964
MAXIMUM PEAK FLOW			1310	Jan 15	2130	Mar 29 1950
MAXIMUM PEAK STAGE			6.41	Jan 15	8.20	Mar 29 1950
INSTANTANEOUS LOW FLOW			97	(a)	12	Aug 2 1967
ANNUAL RUNOFF (CFSM)	0.670		0.769		0.703	
ANNUAL RUNOFF (INCHES)	9.12		10.44		9.56	
10 PERCENT EXCEEDS	485		547		544	
50 PERCENT EXCEEDS	266		309		270	
90 PERCENT EXCEEDS	197		190		148	

(a) Oct. 21, Nov. 18.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04104945 WANADOGA CREEK NEAR BATTLE CREEK, MI

LOCATION.--Lat 42°23'47", long 85°07'54", in NW1/4 SE1/4 sec.9, T.1 S., R.7 W., Calhoun County, Hydrologic Unit 04050003, on right bank 30 ft upstream from bridge on State Highway 66, 5.0 mi north of Battle Creek.

DRAINAGE AREA.--48.3 mi^2.

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 830 ft above sea level, from topographic map.

REMARKS.--Records fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	29	102	49	34	44	80	29	23	18	14	8.1
2	19	39	96	65	33	43	71	29	21	18	13	7.5
3	20	47	100	81	32	43	60	27	21	17	13	7.3
4	18	60	96	106	32	47	52	27	20	18	12	7.4
5	18	74	79	112	31	44	47	25	20	27	11	7.3
6	17	75	66	97	32	45	44	25	21	27	10	7.1
7	17	67	70	85	36	65	42	26	20	28	9.9	7.1
8	16	55	91	63	54	99	40	26	28	24	10	7.3
9	16	45	113	51	74	154	39	26	32	21	11	7.3
10	17	41	112	46	80	177	37	25	31	18	10	7.4
11	17	34	106	41	71	107	37	25	32	16	9.5	7.3
12	17	32	101	47	60	75	33	26	31	14	10	7.0
13	17	29	96	171	53	60	31	27	41	14	10	7.1
14	17	26	84	607	79	53	30	32	45	16	11	7.2
15	18	23	74	e350	167	49	29	34	46	15	11	e9.0
16	24	23	52	e190	293	43	28	32	42	15	11	e16
17	32	24	43	e120	280	44	27	30	36	15	11	e13
18	34	25	38	e81	206	44	27	28	31	17	8.7	e12
19	33	30	30	e65	135	52	28	28	27	23	8.8	e11
20	30	36	30	e50	99	77	27	34	25	22	10	e10
21	27	38	26	46	81	97	27	31	23	30	11	e10
22	25	36	24	43	71	103	27	32	21	27	10	11
23	24	33	23	42	64	104	28	37	19	24	9.7	14
24	26	30	22	40	59	102	31	38	17	24	9.4	12
25	26	32	22	39	53	97	35	34	16	22	9.1	e12
26	26	34	22	39	49	91	38	32	15	21	9.0	e19
27	25	43	22	37	47	86	37	28	15	25	9.0	e15
28	24	73	22	37	47	81	34	26	14	24	9.0	e13
29	28	106	22	36	---	80	30	26	14	21	8.7	e21
30	31	114	22	35	---	81	29	25	17	19	8.1	e16
31	30	---	36	34	---	82	---	24	---	17	8.1	---
TOTAL	707	1353	1842	2905	2352	2369	1125	894	764	637	316.0	316.4
MEAN	22.8	45.1	59.4	93.7	84.0	76.4	37.5	28.8	25.5	20.5	10.2	10.5
MAX	34	114	113	607	293	177	80	38	46	30	14	21
MIN	16	23	22	34	31	43	27	24	14	14	8.1	7.0
CFSM	0.47	0.93	1.23	1.94	1.74	1.58	0.78	0.60	0.53	0.43	0.21	0.22
IN.	0.54	1.04	1.42	2.24	1.81	1.82	0.87	0.69	0.59	0.49	0.24	0.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

MEAN	26.2	39.1	37.6	44.2	55.7	61.8	55.7	62.2	32.0	19.9	17.2	17.0
MAX	77.9	69.0	60.0	93.7	125	93.6	86.6	142	46.0	28.8	27.8	27.6
(WY)	2002	1995	1995	2005	2001	2004	1998	2004	2004	2004	2004	1997
MIN	13.0	16.0	20.7	18.3	16.0	24.9	29.5	26.7	18.4	12.1	10.2	9.45
(WY)	2000	2000	2000	2003	2003	2000	2004	1999	1999	1996	2005	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	17295		15580.4			
ANNUAL MEAN	47.3		42.7		39.0	
HIGHEST ANNUAL MEAN					46.6	2001
LOWEST ANNUAL MEAN					26.6	2003
HIGHEST DAILY MEAN	758	May 23	607	Jan 14	758	May 23 2004
LOWEST DAILY MEAN	16	Jan 23	7.0	Sep 12	7.0	Sep 12 2005
ANNUAL SEVEN-DAY MINIMUM	16	Feb 14	7.2	Sep 6	7.2	Sep 6 2005
MAXIMUM PEAK FLOW			693	Jan 14	802	May 23 2004
MAXIMUM PEAK STAGE			7.79	Jan 14	(a)8.17	Feb 11 2001
ANNUAL RUNOFF (CFSM)	0.978		0.884		0.807	
ANNUAL RUNOFF (INCHES)	13.32		12.00		10.96	
10 PERCENT EXCEEDS	87		88		75	
50 PERCENT EXCEEDS	29		29		28	
90 PERCENT EXCEEDS	18		10		13	

(a) Backwater from ice.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04105000 BATTLE CREEK AT BATTLE CREEK, MI

LOCATION (REVISED).--Lat 42°19'53", long 85°09'13", in NE1/4 NW1/4 sec.5, T.2 S., R.7 W., Calhoun County, Hydrologic Unit 04050003, on right bank 350 ft upstream from bridge on Emmett Street in Battle Creek, 3.0 mi upstream from mouth.

DRAINAGE AREA.--241 mi^2.

PERIOD OF RECORD.--October 1930 to September 1931, October 1932 to July 1933, January 1934 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1387: 1931, 1944. WSP 1507: 1956.

GAGE.--Water-stage recorder. Datum of gage is 823.24 ft above sea level (levels by Michigan Department of Natural Resources). Prior to May 14, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good. Occasional slight regulation prior to November 1943. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	128	556	248	209	277	449	164	130	85	72	52
2	78	141	560	297	201	270	430	162	123	100	66	51
3	77	160	537	362	194	252	399	158	120	97	62	45
4	78	194	544	422	186	244	368	154	118	93	58	46
5	75	226	517	516	191	266	337	149	113	104	59	45
6	73	254	462	421	198	280	307	140	104	116	55	44
7	74	270	425	489	215	316	286	145	97	119	53	45
8	74	269	415	531	245	378	269	141	101	108	52	44
9	73	251	432	462	287	425	248	137	105	97	52	47
10	73	219	507	403	346	738	235	134	100	91	53	49
11	76	184	548	359	397	884	219	132	104	80	50	44
12	78	159	541	356	387	664	210	134	101	77	56	43
13	79	147	584	513	348	471	198	139	122	74	59	42
14	79	140	576	1410	358	404	185	164	144	79	58	42
15	82	135	467	1980	463	373	176	184	160	76	58	42
16	78	130	425	e1740	885	317	168	193	171	75	60	49
17	95	130	393	e1450	1260	291	158	191	166	76	55	51
18	117	134	336	e1000	1210	284	158	168	148	78	53	55
19	122	142	251	801	1000	298	156	161	133	84	52	53
20	118	154	182	611	812	341	155	169	122	86	53	49
21	112	164	206	490	626	398	153	171	112	95	57	48
22	107	167	198	403	531	490	151	169	103	98	56	49
23	101	168	182	353	445	546	152	170	99	99	57	55
24	101	163	181	324	406	547	159	176	90	85	58	58
25	101	159	163	286	373	556	173	176	82	88	47	55
26	103	163	156	268	339	523	192	175	82	87	49	60
27	105	180	150	270	309	494	208	164	88	98	50	62
28	104	236	149	261	299	479	204	154	94	98	48	61
29	113	299	150	237	---	467	193	147	90	98	47	64
30	117	408	152	221	---	458	182	142	80	85	46	66
31	125	---	195	215	---	456	---	137	---	80	44	---
TOTAL	2866	5674	11140	17699	12720	13187	6878	4900	3402	2806	1695	1516
MEAN	92.5	189	359	571	454	425	229	158	113	90.5	54.7	50.5
MAX	125	408	584	1980	1260	884	449	193	171	119	72	66
MIN	73	128	149	215	186	244	151	132	80	74	44	42
CFSM	0.38	0.78	1.49	2.37	1.89	1.77	0.95	0.66	0.47	0.38	0.23	0.21
IN.	0.44	0.88	1.72	2.73	1.96	2.04	1.06	0.76	0.53	0.43	0.26	0.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	123	164	195	212	251	408	385	273	192	109	87.7	96.1
MAX	673	474	468	591	748	936	1162	825	678	281	313	276
(WY)	1987	1993	1991	1952	2001	1948	1947	1943	1943	1968	1994	1950
MIN	32.4	46.1	46.8	57.5	61.5	87.6	93.7	69.6	49.2	34.3	27.8	30.6
(WY)	1964	1964	1964	1964	1963	1931	1931	1931	1964	1936	1936	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	96414		84483			
ANNUAL MEAN	263		231		(a)211	
HIGHEST ANNUAL MEAN					394	1943
LOWEST ANNUAL MEAN					64.1	1964
HIGHEST DAILY MEAN	2560	May 24	1980	Jan 15	3560	Apr 7 1947
LOWEST DAILY MEAN	73	Oct 6	42	Sep 13	22	Aug 14 1934
ANNUAL SEVEN-DAY MINIMUM	74	Oct 5	44	Sep 9	25	Aug 10 1936
MAXIMUM PEAK FLOW			2080	Jan 15	3640	Apr 7 1947
MAXIMUM PEAK STAGE			3.17	Jan 15	(b)4.48	Apr 7 1947
INSTANTANEOUS LOW FLOW			41	(c)	22	Aug 14 1934
ANNUAL RUNOFF (CFSM)	1.09		0.960		0.875	
ANNUAL RUNOFF (INCHES)	14.88		13.04		11.88	
10 PERCENT EXCEEDS	538		490		427	
50 PERCENT EXCEEDS	162		156		139	
90 PERCENT EXCEEDS	97		54		60	

(a) Does not include water year 1931.
(b) From floodmark.
(c) Part of each day Sept. 6, 11-15.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04105500 KALAMAZOO RIVER NEAR BATTLE CREEK, MI

LOCATION.--Lat 42°19'26", long 85°11'51", in SW1/4 sec.1, T.2 S., R.8 W., Calhoun County, Hydrologic Unit 04050003, on left bank 20 ft upstream from bridge on Kendall Street in Battle Creek.

DRAINAGE AREA.--824 mi^2.

PERIOD OF RECORD.--July 1937 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 924: 1938-39. WSP 1387: 1938, 1945-46, 1948.

GAGE.--Water-stage recorder. Elevation of gage is 815 ft above sea level, from topographic map. Prior to Oct. 1, 1957, water-stage recorder at site 4.7 mi downstream at different datum. Oct. 1, 1957 to June 15, 1959, nonrecording gage at bridge 1,800 ft upstream at different datum. June 16, 1959 to Oct. 13, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation below 1,500 ft^3/s caused by powerplants upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	354	613	1420	868	761	930	1170	643	503	414	447	263
2	363	698	1420	974	745	910	1120	631	473	445	418	253
3	349	691	1320	1090	733	877	1050	626	471	429	399	222
4	338	762	1270	1220	728	858	983	612	469	429	379	223
5	329	834	1180	1330	741	854	909	604	481	437	358	224
6	326	819	1080	1180	740	895	879	588	486	453	353	220
7	321	785	1080	1160	782	1080	828	594	464	464	321	224
8	331	739	1130	1170	908	1350	827	582	468	437	330	220
9	358	688	1180	1060	1040	1390	785	564	454	403	327	222
10	346	646	1300	987	1090	1590	764	556	443	379	310	214
11	e358	594	1370	941	1100	1710	724	567	416	351	304	196
12	e358	556	1330	1060	1040	1450	707	584	613	381	326	192
13	351	518	1310	1850	1010	1200	689	626	721	378	321	190
14	347	510	1250	3020	1240	1080	669	696	709	439	342	201
15	347	496	1080	3870	1730	1030	653	695	666	423	337	206
16	409	489	988	3550	2310	943	640	684	651	484	333	330
17	455	499	937	3010	2740	901	627	664	601	492	333	355
18	474	512	859	2170	2620	901	624	627	546	511	323	337
19	458	505	748	1880	2240	966	624	642	517	511	310	321
20	445	578	612	1480	1860	1100	630	712	480	541	408	298
21	419	592	655	1240	1570	1190	628	680	451	819	392	281
22	390	604	691	e1010	1410	1280	660	674	436	796	379	323
23	452	619	597	e742	1270	1360	649	674	421	720	337	340
24	432	570	e580	e881	1190	1340	684	681	395	627	332	330
25	444	592	e560	e976	1110	1350	748	663	371	586	304	320
26	434	601	590	1050	1030	1330	759	634	373	570	294	367
27	427	747	611	899	978	1290	771	601	391	612	294	349
28	421	991	616	834	940	1260	754	573	385	603	284	360
29	538	1130	617	826	---	1220	712	551	381	572	268	394
30	576	1210	633	817	---	1220	701	540	389	527	257	368
31	575	---	755	791	---	1190	---	525	---	474	256	---
TOTAL	12525	20188	29769	43936	35656	36045	22968	19293	14625	15707	10376	8343
MEAN	404	673	960	1417	1273	1163	766	622	488	507	335	278
MAX	576	1210	1420	3870	2740	1710	1170	712	721	819	447	394
MIN	321	489	560	742	728	854	624	525	371	351	256	190
CFSM	0.49	0.82	1.17	1.72	1.55	1.41	0.93	0.76	0.59	0.61	0.41	0.34
IN.	0.57	0.91	1.34	1.98	1.61	1.63	1.04	0.87	0.66	0.71	0.47	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2005, BY WATER YEAR (WY)

MEAN	495	592	655	686	785	1108	1082	864	682	490	422	428
MAX	1446	1284	1248	1557	1748	2183	2834	1998	1703	1000	899	855
(WY)	1987	1993	1991	1993	2001	1948	1947	1943	1943	1943	1994	1975
MIN	173	204	215	229	218	317	441	336	238	186	189	167
(WY)	1964	1965	1964	1964	1964	1964	1946	1958	1964	1964	1964	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1937 - 2005	
ANNUAL TOTAL	268201		269431			
ANNUAL MEAN	733		738		690	
HIGHEST ANNUAL MEAN					1081	1943
LOWEST ANNUAL MEAN					250	1964
HIGHEST DAILY MEAN	3960	May 24	3870	Jan 15	7130	Apr 7 1947
LOWEST DAILY MEAN	317	Sep 21	190	Sep 13	86	Aug 5 1964
ANNUAL SEVEN-DAY MINIMUM	326	Sep 21	203	Sep 9	106	Aug 4 1964
MAXIMUM PEAK FLOW			(a)3990	Jan 15	(b)7290	Apr 7 1947
MAXIMUM PEAK STAGE			(c)6.80	Jan 23	(d)7.95	Feb 26 1985
INSTANTANEOUS LOW FLOW			177	(f)	50	Sep 22 1939
ANNUAL RUNOFF (CFSM)	0.889		0.896		0.837	
ANNUAL RUNOFF (INCHES)	12.11		12.16		11.38	
10 PERCENT EXCEEDS	1280		1270		1230	
50 PERCENT EXCEEDS	576		617		555	
90 PERCENT EXCEEDS	400		327		301	

(a) Gage height 6.53 ft.
(b) Gage height 9.13 ft, site and datum then in use.
(c) Backwater from ice.
(d) Present site and datum.
(e) Estimated.
(f) Sept. 11, 12, 13.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04105700 AUGUSTA CREEK NEAR AUGUSTA, MI

LOCATION.--Lat 42°21'12", long 85°21'14", in SW1/4 sec.27, T.1 S., R.9 W., Kalamazoo County, Hydrologic Unit 04050003, on left bank 15 ft downstream from bridge on EF Road, 1.3 mi north of Augusta.

DRAINAGE AREA.--38.9 mi^2.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 815 ft above sea level, from topographic map. Prior to June 15, 1965, nonrecording gage at same site and datum.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	41	67	50	29	45	61	32	26	28	27	18
2	27	57	66	58	30	44	58	31	25	26	26	19
3	26	55	59	64	29	41	55	31	26	24	25	18
4	25	61	53	66	31	42	51	31	26	25	25	18
5	23	61	49	60	34	44	48	30	27	31	24	18
6	26	55	49	49	40	46	45	29	31	28	23	17
7	27	49	59	53	48	60	44	29	28	26	22	17
8	27	42	64	47	59	65	44	26	77	25	21	17
9	33	37	58	43	57	56	42	26	74	23	21	17
10	29	36	61	41.	52	50	40	28	64	21	21	17
11	25	35	66	40	48	49	38	30	53	20	21	17
12	25	34	60	54	45	46	36	32	45	22	21	17
13	28	33	55	120	46	44	34	33	71	24	21	17
14	28	32	49	140	67	43	32	37	77	22	23	18
15	28	31	44	115	86	42	33	37	67	23	24	18
16	41	32	40	84	100	41	32	34	59	30	21	28
17	47	34	38	63	88	41	32	33	50	37	18	27
18	42	39	37	55	72	42	31	31	43	41	17	24
19	38	45	30	53	62	52	30	37	40	53	22	23
20	35	49	32	50	59	61	30	46	37	48	27	24
21	33	46	31	45	56	60	29	42	34	60	26	24
22	33	43	29	38	55	59	30	41	33	53	24	25
23	34	40	28	39	51	61	32	42	31	45	23	27
24	39	40	26	40	50	58	36	39	29	43	22	25
25	38	46	29	38	48	58	38	37	29	37	21	25
26	38	46	29	37	46	58	39	34	27	40	21	33
27	36	57	26	32	44	58	39	32	27	42	20	28
28	34	71	28	34	44	57	38	30	26	36	20	26
29	48	65	28	32	---	57	35	29	25	32	19	36
30	46	59	29	30	---	58	33	29	28	29	18	32
31	41	---	49	29	---	62	---	27	---	27	18	---
TOTAL	1025	1371	1368	1699	1476	1600	1165	1025	1235	1021	682	670
MEAN	33.1	45.7	44.1	54.8	52.7	51.6	38.8	33.1	41.2	32.9	22.0	22.3
MAX	48	71	67	140	100	65	61	46	77	60	27	36
MIN	23	31	26	29	29	41	29	26	25	20	17	17
CFSM	0.85	1.17	1.13	1.41	1.36	1.33	1.00	0.85	1.06	0.85	0.57	0.57
IN.	0.98	1.31	1.31	1.62	1.41	1.53	1.11	0.98	1.18	0.98	0.65	0.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2005, BY WATER YEAR (WY)

MEAN	39.5	45.5	46.5	43.2	45.9	55.8	56.9	47.6	42.1	34.6	33.2	35.0
MAX	85.2	67.3	65.3	66.3	66.3	81.3	86.9	81.8	73.2	51.4	53.8	70.7
(WY)	1987	1986	1992	1993	1976	1985	1975	1975	1978	1986	1980	1986
MIN	18.9	23.4	31.9	26.4	23.6	33.4	31.2	30.0	23.9	17.4	17.9	17.5
(WY)	1965	1965	1965	2003	2003	2000	2004	1965	1988	1965	1984	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1965 - 2005	
ANNUAL TOTAL	14886		14337			
ANNUAL MEAN	40.7		39.3		43.8	
HIGHEST ANNUAL MEAN					57.5	1975
LOWEST ANNUAL MEAN					30.3	1965
HIGHEST DAILY MEAN	135	May 24	140	Jan 14	454	Jun 27 1978
LOWEST DAILY MEAN	21	Feb 18	17	Aug 18	14	(a)
ANNUAL SEVEN-DAY MINIMUM	23	Feb 13	17	Sep 6	14	Aug 21 1984
MAXIMUM PEAK FLOW			147	Jan 14	560	Jun 27 1978
MAXIMUM PEAK STAGE			2.45	Jan 14	3.41	Jun 27 1978
INSTANTANEOUS LOW FLOW			(b)13	(c)	5.6	Feb 16 2003
ANNUAL RUNOFF (CFSM)	1.05		1.01		1.13	
ANNUAL RUNOFF (INCHES)	14.24		13.71		15.29	
10 PERCENT EXCEEDS	62		60		66	
50 PERCENT EXCEEDS	35		36		40	
90 PERCENT EXCEEDS	26		22		26	

(a) Aug. 24-27, 1984, Jan. 30, 31, 2003.
(b) Result of freezeup.
(c) Dec. 24, 25, 27.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106000 KALAMAZOO RIVER AT COMSTOCK, MI

LOCATION.--Lat 42°17'08", long 85°30'50", in NE1/4 sec.19, T.2 S., R.10 W., Kalamazoo County, Hydrologic Unit 04050003, on left bank at downstream side of bridge on River Street in Comstock, 0.2 mi downstream from Comstock Creek.

DRAINAGE AREA.--1,010 mi^2, approximately.

PERIOD OF RECORD.--April to August 1931, October 1932 to December 1979, October 1984 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 824: 1933-36. WSP 1387: 1933, 1934(M), 1935, 1936(M), 1938(M), 1940(M), 1941.

GAGE.--Water-stage recorder. Datum of gage is 756.12 ft above sea level. Prior to Oct. 1, 1987, at datum 3.00 ft higher. Prior to November 1945, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by powerplant 1.2 mi upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	616	859	1770	1000	1130	1340	1580	896	677	633	637	478
2	544	965	1770	1270	1100	1310	1580	881	682	637	499	392
3	469	1020	1780	1470	1060	1230	1520	865	582	514	668	406
4	475	1060	1740	1620	1030	1180	1420	899	633	519	636	406
5	480	1140	1670	1660	1030	1240	1310	927	638	667	488	327
6	480	1220	1530	1670	1040	1250	1240	832	579	699	648	470
7	485	1110	1540	1550	1050	1350	1200	714	690	550	561	327
8	487	1020	1610	1510	1190	1590	1130	849	951	485	474	343
9	637	1010	1550	1520	1370	1670	1060	826	964	657	474	475
10	543	984	1600	1410	1430	1790	1050	701	819	541	479	318
11	468	928	1690	1320	1510	1860	1050	703	652	480	479	411
12	473	921	1810	1400	1450	1990	997	714	543	484	479	389
13	483	780	1790	2100	1440	1860	990	725	1060	645	480	257
14	630	696	1640	2640	1610	1550	967	879	1120	556	480	419
15	586	684	1580	2990	1880	1420	945	930	1080	589	480	480
16	486	698	1430	3660	2320	1380	928	921	973	577	480	416
17	645	707	1340	3880	2610	1290	912	908	917	676	482	288
18	704	772	1270	3130	2820	1210	832	901	853	878	484	532
19	687	836	1110	2170	2740	1370	850	759	704	857	480	649
20	676	684	883	2020	2590	1480	824	861	705	726	591	480
21	606	842	719	2080	2370	1580	839	935	706	887	582	394
22	627	830	890	1660	2040	1610	905	923	698	999	486	415
23	560	692	969	1270	1830	1670	715	902	615	1020	491	498
24	644	862	924	1100	1720	1770	739	921	481	1010	491	495
25	702	911	761	1380	1580	1760	875	910	645	978	489	557
26	685	766	674	1590	1480	1740	1010	899	522	856	485	568
27	610	881	696	1550	1390	1730	1030	821	624	719	481	485
28	623	1020	806	1270	1340	1670	1020	699	583	888	428	488
29	708	1280	943	1080	---	1680	954	828	468	794	270	496
30	732	1500	919	1300	---	1660	901	751	480	719	452	649
31	770	---	937	1260	---	1620	---	675	---	719	496	---
TOTAL	18321	27678	40341	55530	46150	47850	31373	25955	21644	21959	15630	13308
MEAN	591	923	1301	1791	1648	1544	1046	837	721	708	504	444
MAX	770	1500	1810	3880	2820	1990	1580	935	1120	1020	668	649
MIN	468	684	674	1000	1030	1180	715	675	468	480	270	257
CFSM	0.59	0.91	1.29	1.77	1.63	1.53	1.04	0.83	0.71	0.70	0.50	0.44
IN.	0.67	1.02	1.49	2.05	1.70	1.76	1.16	0.96	0.80	0.81	0.58	0.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	686	807	867	927	1002	1366	1335	1083	881	677	580	582
MAX	1990	1652	1674	1958	2048	2802	3018	2484	2063	1446	1217	1170
(WY)	1987	1993	1991	1993	2001	1985	1950	1943	1989	1943	1994	1975
MIN	268	285	347	371	370	461	617	405	302	269	235	278
(WY)	1964	1964	1964	1964	1964	1964	1964	1931	1934	1934	1934	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	354253		365739			
ANNUAL MEAN	968		1002		900	
HIGHEST ANNUAL MEAN					1387	1943
LOWEST ANNUAL MEAN					368	1964
HIGHEST DAILY MEAN	4150	May 26	3880	Jan 17	6830	Apr 8 1947
LOWEST DAILY MEAN	402	Jan 23	257	Sep 13	185	Aug 7 1934
ANNUAL SEVEN-DAY MINIMUM	489	Oct 2	360	Sep 7	217	Aug 1 1934
MAXIMUM PEAK FLOW			4190	Jan 17	6910	Apr 8 1947
MAXIMUM PEAK STAGE			8.53	Jan 17	(a)10.94	Apr 8 1947
INSTANTANEOUS LOW FLOW			152	Jul 4	106	Dec 24 1999
ANNUAL RUNOFF (CFSM)	0.958		0.992		0.891	
ANNUAL RUNOFF (INCHES)	13.05		13.47		12.10	
10 PERCENT EXCEEDS	1610		1670		1540	
50 PERCENT EXCEEDS	819		879		753	
90 PERCENT EXCEEDS	551		480		416	

(a) Present datum.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106137 HAMPTON LAKE NEAR PORTAGE, MI

LOCATION.--Lat 42°11'24", long 85°37'50", in SE1/4 sec. 19, T.3 S., R.11 W., Kalamazoo County, Hydrologic Unit 04050003, on left bank at outlet of Hampton Lake (Portage Creek), 1.8 mi south of Portage.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--November 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 855 ft above sea level, from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 3.53 ft, Aug. 22, 2001; minimum, 1.89 ft, Apr. 6, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 3.48 ft, Jan. 13; minimum, 2.21 ft, Dec. 27-30, May 5, 6, 9-11, Sept. 14-16, 23-25.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.32	2.45	2.58	2.41	2.31	2.35	2.44	2.23	2.26	2.56	2.50	2.32
2	2.33	2.69	2.53	2.47	2.31	2.32	2.39	2.23	2.26	2.54	2.49	2.31
3	2.33	2.56	2.45	2.51	2.30	2.31	2.34	2.23	2.26	2.54	2.48	2.29
4	2.31	2.64	2.40	2.55	2.30	2.31	2.33	2.22	2.27	2.54	2.47	2.29
5	2.30	2.62	2.38	2.45	2.30	2.32	2.31	2.22	2.30	2.56	2.46	2.28
6	2.30	2.49	2.42	2.39	2.31	2.36	2.31	2.22	2.38	2.54	2.44	2.28
7	2.29	2.42	2.54	2.33	2.35	2.50	2.30	2.24	2.33	2.53	2.43	2.27
8	2.30	2.37	2.58	2.30	2.44	2.50	2.29	2.23	2.48	2.52	2.42	2.26
9	2.34	2.34	2.47	2.29	2.42	2.40	2.28	2.22	2.45	2.50	2.41	2.26
10	2.31	2.34	2.48	2.28	2.38	2.35	2.28	2.22	2.40	2.48	2.42	2.25
11	2.29	2.33	2.52	2.30	2.35	2.34	2.27	2.26	2.39	2.47	2.40	2.24
12	2.28	2.32	2.45	2.45	2.33	2.34	2.25	2.27	2.40	2.47	2.40	2.23
13	2.28	2.31	2.44	3.25	2.35	2.31	2.25	2.27	3.09	2.50	2.39	2.22
14	2.28	2.30	2.40	3.05	2.60	2.30	2.24	2.31	2.99	2.48	2.38	2.21
15	2.29	2.30	2.37	2.71	2.72	2.29	2.24	2.29	2.72	2.49	2.37	2.21
16	2.43	2.31	2.35	2.52	2.82	2.29	2.24	2.26	2.60	2.54	2.36	2.40
17	2.45	2.33	2.34	2.42	2.60	2.30	2.24	2.25	2.56	2.53	2.34	2.36
18	2.37	2.34	2.32	2.38	2.48	2.31	2.24	2.24	2.55	2.67	2.35	2.29
19	2.33	2.40	2.31	2.34	2.40	2.41	2.24	2.32	2.56	2.80	2.37	2.26
20	2.32	2.42	2.28	2.33	2.39	2.47	2.24	2.45	2.55	2.66	2.80	2.27
21	2.31	2.37	2.27	2.32	2.42	2.42	2.23	2.35	2.55	2.69	2.72	2.25
22	2.30	2.33	2.26	2.35	2.40	2.41	2.25	2.31	2.55	2.65	2.52	2.24
23	2.33	2.31	2.26	2.34	2.37	2.44	2.27	2.31	2.55	2.58	2.45	2.22
24	2.37	2.32	2.25	2.32	2.35	2.42	2.29	2.29	2.55	2.60	2.41	2.21
25	2.35	2.37	2.24	2.31	2.34	2.43	2.28	2.27	2.55	2.56	2.38	2.22
26	2.33	2.36	2.23	2.32	2.33	2.43	2.27	2.27	2.55	2.54	2.37	2.28
27	2.31	2.51	2.22	2.31	2.32	2.43	2.28	2.26	2.55	2.58	2.37	2.25
28	2.30	2.65	2.21	2.31	2.33	2.42	2.26	2.27	2.55	2.55	2.36	2.23
29	2.66	2.51	2.21	2.31	---	2.42	2.24	2.26	2.56	2.53	2.35	2.36
30	2.69	2.44	2.22	2.31	---	2.41	2.24	2.27	2.56	2.51	2.34	2.29
31	2.50	---	2.42	2.31	---	2.49	---	2.26	---	2.51	2.33	---
MEAN	2.35	2.42	2.37	2.43	2.40	2.38	2.28	2.27	2.51	2.56	2.43	2.27
MAX	2.69	2.69	2.58	3.25	2.82	2.50	2.44	2.45	3.09	2.80	2.80	2.40
MIN	2.28	2.30	2.21	2.28	2.30	2.29	2.23	2.22	2.26	2.47	2.33	2.21

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106180 PORTAGE CREEK AT PORTAGE, MI

LOCATION.--Lat 42°12'21", long 85°35'23", in SE1/4 sec.16, T.3 S., R.11 W., Kalamazoo County, Hydrologic Unit 04050003, on right bank 750 ft upstream from bridge on Westnedge Avenue in Portage.

DRAINAGE AREA.--16.5 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 850 ft above sea level, from topographic map.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	21	28	22	19	20	23	17	15	15	14	13
2	14	32	25	27	18	20	21	17	15	14	14	13
3	14	23	22	27	18	19	20	17	15	14	14	13
4	13	29	20	28	18	19	19	17	15	14	14	13
5	13	26	20	23	19	20	19	17	16	15	14	13
6	13	21	21	21	19	21	19	17	17	15	14	13
7	13	19	28	19	21	28	19	18	16	14	13	13
8	14	17	26	19	24	25	19	17	28	14	13	13
9	15	17	22	19	22	21	18	17	20	14	13	13
10	14	17	24	18	21	20	18	17	18	14	15	13
11	14	16	25	19	20	20	18	18	16	14	14	13
12	14	16	21	27	20	20	18	18	16	14	14	13
13	14	16	21	73	21	19	18	18	62	14	14	12
14	13	16	20	51	34	19	17	19	40	14	14	12
15	14	16	19	31	38	19	17	18	25	16	14	12
16	e21	16	18	25	40	19	17	17	20	17	13	18
17	e19	17	18	22	28	19	17	17	19	16	13	14
18	e17	17	18	20	24	19	17	17	18	24	14	13
19	e16	20	17	20	22	24	17	21	18	24	14	13
20	e15	20	16	20	22	25	17	23	17	20	32	13
21	14	18	16	20	23	22	17	19	17	22	23	12
22	14	17	16	20	22	23	18	18	16	20	17	12
23	15	17	16	20	21	24	18	18	16	18	16	12
24	16	17	16	20	20	22	19	17	16	18	15	12
25	15	18	16	20	20	23	18	17	15	16	14	13
26	15	18	16	19	20	23	18	17	15	16	14	14
27	15	27	16	19	19	23	18	16	15	17	14	13
28	14	30	16	19	20	23	18	16	15	16	14	14
29	33	23	16	19	---	22	18	16	15	15	14	16
30	27	21	16	19	---	22	17	16	15	15	13	14
31	20	---	25	19	---	27	---	16	---	15	13	---
TOTAL	491	598	614	745	633	670	547	543	581	504	461	395
MEAN	15.8	19.9	19.8	24.0	22.6	21.6	18.2	17.5	19.4	16.3	14.9	13.2
MAX	33	32	28	73	40	28	23	23	62	24	32	18
MIN	13	16	16	18	18	19	17	16	15	14	13	12
CFSM	0.96	1.21	1.20	1.46	1.37	1.31	1.11	1.06	1.17	0.99	0.90	0.80
IN.	1.11	1.35	1.38	1.68	1.43	1.51	1.23	1.22	1.31	1.14	1.04	0.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2005, BY WATER YEAR (WY)

MEAN	17.0	18.9	18.1	17.7	18.1	20.0	20.2	19.4	17.5	15.7	15.4	15.3
MAX	25.7	25.5	23.6	24.0	22.6	28.1	26.6	24.1	24.9	21.4	19.2	20.3
(WY)	1992	1991	1991	2005	2005	1985	1985	1983	1989	1986	1994	1993
MIN	10.5	11.2	13.0	12.0	12.2	12.0	14.4	15.5	13.3	11.8	10.8	10.7
(WY)	2000	2000	2000	2000	2000	2000	2004	1999	2000	2003	2003	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1983 - 2005	
ANNUAL TOTAL	6425		6782			
ANNUAL MEAN	17.6		18.6		17.8	
HIGHEST ANNUAL MEAN					21.2	1991
LOWEST ANNUAL MEAN					12.7	2000
HIGHEST DAILY MEAN	43	May 10	73	Jan 13	87	Jun 21 1997
LOWEST DAILY MEAN	12	Feb 1	12	Sep 13	9.2	(a)
ANNUAL SEVEN-DAY MINIMUM	12	Feb 12	12	Sep 18	9.4	Sep 15 2003
MAXIMUM PEAK FLOW			84	Jan 13	(b)118	May 31 1989
MAXIMUM PEAK STAGE			3.52	Jan 13	4.11	Jun 21 1997
ANNUAL RUNOFF (CFSM)	1.06		1.13		1.08	
ANNUAL RUNOFF (INCHES)	14.49		15.29		14.64	
10 PERCENT EXCEEDS	25		24		23	
50 PERCENT EXCEEDS	16		17		17	
90 PERCENT EXCEEDS	13		13		13	

(a) Sept. 18-21, 2003.
(b) Gage height 3.87 ft.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106300 PORTAGE CREEK NEAR KALAMAZOO, MI

LOCATION.--Lat 42°14'46", long 85°34'30" (revised), in SE1/4 sec.34, T.2 S., R.11 W., Kalamazoo County, Hydrologic Unit 04050003, on left bank 5 ft upstream from bridge on Lovers Lane, 3.0 mi south of Kalamazoo.

DRAINAGE AREA.--22.4 mi^2.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 814.88 ft above sea level.

REMARKS.--Records good. Flow includes water which is pumped from ground-water sources by industry and discharged into stream 2.0 mi upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	31	42	e32	36	42	44	34	38	34	36	28
2	24	47	36	e40	31	41	43	37	36	31	36	28
3	23	33	31	e41	33	39	41	37	37	32	35	30
4	22	42	29	42	33	37	39	37	36	31	34	29
5	22	37	31	35	36	39	37	37	40	34	31	29
6	21	33	32	32	33	39	37	38	40	32	29	29
7	22	33	42	28	36	48	38	39	35	32	30	28
8	22	27	39	31	42	47	39	39	58	32	30	29
9	22	26	33	31	41	39	39	39	44	31	32	29
10	21	25	37	29	40	39	38	38	38	30	35	27
11	21	24	35	27	38	37	38	42	38	29	31	27
12	22	23	31	e44	39	37	37	41	36	33	28	28
13	22	22	30	e138	39	37	39	44	114	32	33	27
14	23	22	28	86	60	36	39	46	73	31	31	26
15	23	22	26	53	65	36	38	45	48	32	30	25
16	39	22	28	46	68	37	38	42	42	44	32	42
17	30	24	27	41	51	37	39	37	32	35	32	32
18	26	25	25	38	46	37	39	33	37	57	31	30
19	23	31	24	40	44	45	38	44	35	51	30	29
20	23	30	23	38	43	43	38	48	33	46	64	30
21	21	27	24	37	44	42	37	44	33	46	41	29
22	22	25	25	38	42	42	38	41	33	40	34	25
23	25	24	25	34	40	42	38	41	32	34	35	29
24	24	24	26	36	41	42	37	39	31	41	33	24
25	21	27	25	35	41	43	37	37	29	38	28	28
26	21	27	24	36	40	41	39	37	31	37	24	33
27	20	41	25	33	39	42	36	37	33	40	30	32
28	19	44	25	33	42	42	37	38	33	37	30	34
29	61	34	26	35	---	41	37	38	32	36	30	38
30	37	32	25	35	---	41	37	36	32	37	31	35
31	28	---	e39	35	---	48	---	37	---	35	28	---
TOTAL	772	884	918	1279	1183	1258	1151	1222	1209	1130	1014	889
MEAN	24.9	29.5	29.6	41.3	42.2	40.6	38.4	39.4	40.3	36.5	32.7	29.6
MAX	61	47	42	138	68	48	44	48	114	57	64	42
MIN	19	22	23	27	31	36	36	33	29	29	24	24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2005, BY WATER YEAR (WY)

MEAN	36.2	38.1	38.1	37.8	40.2	45.0	47.1	44.1	40.9	37.8	36.8	35.9
MAX	56.0	56.4	53.5	48.9	53.0	61.4	63.3	57.5	55.3	54.0	50.3	51.9
(WY)	1992	1991	1992	1988	1971	1985	1991	1991	1989	1991	1980	1992
MIN	21.5	24.7	24.1	20.6	22.9	24.9	30.1	30.4	23.1	23.1	26.0	23.0
(WY)	2004	2003	2004	2001	2003	2003	2004	1977	2003	2003	2003	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1965 - 2005	
ANNUAL TOTAL	11701		12909			
ANNUAL MEAN	32.0		35.4		39.8	
HIGHEST ANNUAL MEAN					51.5	1991
LOWEST ANNUAL MEAN					25.9	2003
HIGHEST DAILY MEAN	95	Jun 12	138	Jan 13	257	May 31 1989
LOWEST DAILY MEAN	19	Jan 22	19	Oct 28	15	Sep 24 1999
ANNUAL SEVEN-DAY MINIMUM	20	Jan 21	22	Oct 5	17	Sep 21 1999
MAXIMUM PEAK FLOW			158	Jan 13	(a)407	May 30 1989
MAXIMUM PEAK STAGE			2.17	Jan 13	4.49	Jun 26 1978
INSTANTANEOUS LOW FLOW					(b)8.0	Jan 19 1965
10 PERCENT EXCEEDS	44		44		52	
50 PERCENT EXCEEDS	30		35		38	
90 PERCENT EXCEEDS	22		24		27	

(a) Gage height 3.09 ft.
(b) Result of bridge construction upstream.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106320 WEST FORK PORTAGE CREEK NEAR OSHTEMO, MI

LOCATION.--Lat 42°14'07", long 85°38'54", in SE1/4 sec.1, T.3 S., R.12 W., Kalamazoo County, Hydrologic Unit 04050003, on right bank at upstream side of culvert on 12th Street, 2.1 mi southeast of Oshtemo.

DRAINAGE AREA.--13.0 mi^2.

PERIOD OF RECORD.--May 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 868.86 ft above sea level (Kalamazoo County Road Commission bench mark).

REMARKS.--Records good. At times, flow is affected by ground-water withdrawals. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	7.6	9.3	7.2	4.4	4.7	5.9	3.5	2.8	2.0	2.9	1.8
2	1.5	8.6	8.9	7.7	4.3	4.7	5.4	3.5	2.7	1.8	2.7	1.8
3	1.5	8.3	8.1	7.9	4.2	4.6	5.1	3.4	2.6	1.8	2.6	1.7
4	1.5	8.7	7.5	8.1	4.2	4.6	4.8	3.2	2.5	1.9	2.7	1.7
5	1.5	8.3	7.0	7.6	4.3	4.7	4.6	3.2	3.0	2.2	2.5	1.6
6	1.5	7.6	7.1	7.3	4.4	4.9	4.5	3.1	3.7	2.2	2.4	1.6
7	1.5	6.8	8.0	6.7	4.8	5.8	4.3	3.3	3.7	2.1	2.3	1.6
8	1.5	6.2	8.5	6.2	5.5	6.0	4.1	3.3	4.0	2.0	2.2	1.6
9	1.7	5.7	8.0	5.8	5.8	5.4	3.9	3.3	3.9	1.9	2.1	1.5
10	1.7	5.6	8.1	5.4	5.5	5.1	3.9	3.3	3.7	1.8	2.3	1.5
11	1.7	5.3	8.2	5.4	5.1	5.1	3.9	3.4	3.5	1.7	2.2	1.5
12	1.7	5.2	7.9	6.5	4.9	5.3	3.7	3.3	3.3	1.7	2.2	1.5
13	1.8	5.1	8.1	13	4.9	5.1	3.7	3.3	7.1	1.8	2.2	1.5
14	1.9	4.8	7.7	14	6.9	4.9	3.6	3.4	8.5	1.8	2.2	1.5
15	2.1	4.8	7.2	12	8.6	4.7	3.5	3.5	8.1	1.9	2.0	1.5
16	3.3	5.1	6.8	9.3	9.8	4.7	3.5	3.2	6.8	2.2	2.0	2.0
17	4.2	5.5	6.6	8.0	8.5	4.6	3.5	3.1	5.6	2.3	1.9	2.2
18	4.5	5.7	6.4	e6.8	7.3	4.6	3.4	2.9	4.7	3.6	2.0	2.4
19	4.5	6.2	6.0	e6.2	6.4	5.3	3.4	3.3	4.2	4.7	2.1	2.4
20	4.4	6.6	5.5	5.8	6.1	6.0	3.5	3.7	3.8	5.4	3.0	2.4
21	4.2	6.4	5.1	5.5	6.3	5.9	3.3	3.7	3.7	6.1	3.2	2.4
22	4.1	5.9	4.8	e5.3	6.0	5.7	3.4	3.8	3.3	5.9	3.3	2.6
23	4.2	5.6	4.8	e5.1	5.6	5.7	3.6	3.8	3.1	5.3	3.1	2.6
24	4.4	5.7	4.8	e5.0	5.2	5.6	3.9	3.8	2.9	5.0	3.0	2.5
25	4.4	6.0	4.7	4.9	4.9	5.6	3.9	3.6	2.6	4.5	2.7	2.6
26	4.3	6.0	4.7	4.9	4.7	5.6	3.9	3.5	2.4	4.2	2.6	3.1
27	4.2	6.8	4.7	4.8	4.6	5.6	3.9	3.3	2.1	3.9	2.5	3.1
28	4.1	8.9	4.7	4.7	4.6	5.6	3.9	3.3	2.0	3.6	2.4	3.2
29	6.6	8.5	4.7	4.5	---	5.6	3.7	3.1	1.9	3.4	2.2	3.5
30	8.5	7.7	4.8	4.4	---	5.7	3.6	3.0	2.1	3.3	2.0	3.5
31	8.0	---	6.5	4.4	---	6.2	---	2.9	---	3.1	1.9	---
TOTAL	102.4	195.2	205.2	210.4	157.8	163.6	119.3	104.0	114.3	95.1	75.4	64.4
MEAN	3.30	6.51	6.62	6.79	5.64	5.28	3.98	3.35	3.81	3.07	2.43	2.15
MAX	8.5	8.9	9.3	14	9.8	6.2	5.9	3.8	8.5	6.1	3.3	3.5
MIN	1.4	4.8	4.7	4.4	4.2	4.6	3.3	2.9	1.9	1.7	1.9	1.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2005, BY WATER YEAR (WY)

MEAN	5.61	6.55	6.56	6.33	6.24	6.74	6.65	5.61	4.81	4.20	4.48	4.91
MAX	9.74	11.0	11.8	9.79	9.63	10.4	11.2	12.5	11.4	10.7	11.8	12.6
(WY)	1976	1986	1976	1973	1976	1973	1973	1973	1973	1973	1975	1975
MIN	1.82	2.54	3.35	2.31	2.70	3.17	2.00	2.16	1.13	1.20	0.81	0.84
(WY)	2000	2000	2001	2004	2004	2000	2004	2001	1988	1988	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1972 - 2005	
ANNUAL TOTAL	1300.3		1607.1			
ANNUAL MEAN	3.55		4.40		5.69	
HIGHEST ANNUAL MEAN					10.0	1975
LOWEST ANNUAL MEAN					2.82	2000
HIGHEST DAILY MEAN	9.3	Dec 1	14	Jan 14	35	(a)
LOWEST DAILY MEAN	1.3	Aug 22	1.4	Oct 1	0.34	(b)
ANNUAL SEVEN-DAY MINIMUM	1.4	Aug 16	1.5	Oct 1	0.41	Sep 15 2003
MAXIMUM PEAK FLOW			15	Jan 13	36	(c)
MAXIMUM PEAK STAGE			1.67	Jan 13	2.47	Dec 5 1992
INSTANTANEOUS LOW FLOW			1.3	(d)	0.20	Jul 27 1996
10 PERCENT EXCEEDS	6.6		7.5		9.3	
50 PERCENT EXCEEDS	2.9		4.2		5.4	
90 PERCENT EXCEEDS	1.7		1.9		2.3	

(a) Dec. 6, 1992, Oct. 28, 1994.
(b) July 27, 1996, Sept. 21, 2003.
(c) Dec. 5, 1992, Oct. 28, 1994, Apr. 16, 1995.
(d) Sept. 12, 13.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106362 ASYLUM LAKE NEAR KALAMAZOO, MI

LOCATION.--Lat 42°15'57", long 85°38'20", in NE1/4 SW1/4 sec. 30, T.2 S., R.11 W., Kalamazoo County, Hydrologic Unit 04050003, on south side of lake, 0.5 mi west of Kalamazoo.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 863.69 ft above sea level (levels by City of Kalamazoo).

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.50 ft, Mar. 9, 2002; minimum, 4.33 ft, Aug. 22, 2000, Sept. 21, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.02 ft, Jan. 13, 14; minimum, 4.46 ft, Oct. 6, 7, 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.50	4.75	4.81	4.67	4.67	4.75	4.75	4.69	4.64	4.61	4.66	4.55
2	4.51	4.82	4.79	4.72	4.66	4.75	4.74	4.68	4.64	4.59	4.64	4.54
3	4.50	4.79	4.78	4.75	4.66	4.74	4.72	4.68	4.63	4.58	4.63	4.53
4	4.49	4.82	4.75	4.77	4.65	4.74	4.71	4.68	4.63	4.60	4.63	4.52
5	4.47	4.80	4.73	4.76	4.65	4.74	4.71	4.68	4.65	4.68	4.62	4.52
6	4.47	4.77	4.74	4.78	4.65	4.74	4.71	4.68	4.70	4.66	4.61	4.51
7	4.46	4.74	4.77	4.76	4.67	4.75	4.70	4.70	4.69	4.65	4.59	4.51
8	4.47	4.72	4.78	4.75	4.69	4.74	4.70	4.70	4.69	4.63	4.59	4.51
9	4.51	4.69	4.76	4.73	4.70	4.74	4.69	4.70	4.69	4.62	4.60	4.50
10	4.50	4.68	4.78	4.72	4.69	4.73	4.68	4.70	4.67	4.61	4.64	4.50
11	4.49	4.66	4.79	4.73	4.69	4.74	4.67	4.73	4.66	4.59	4.65	4.50
12	4.49	4.64	4.76	4.78	4.68	4.76	4.66	4.75	4.65	4.62	4.65	4.49
13	4.49	4.63	4.77	4.97	4.68	4.75	4.65	4.74	4.90	4.73	4.63	4.49
14	4.49	4.62	4.75	4.97	4.77	4.74	4.64	4.76	4.92	4.72	4.63	4.49
15	4.49	4.61	4.73	4.91	4.82	4.73	4.64	4.75	4.86	4.71	4.62	4.48
16	4.61	4.62	4.71	4.87	4.86	4.72	4.64	4.73	4.82	4.71	4.61	4.59
17	4.64	4.64	4.69	4.84	4.84	4.71	4.64	4.72	4.78	4.71	4.60	4.59
18	4.62	4.65	4.68	4.82	4.81	4.71	4.64	4.71	4.75	4.74	4.61	4.58
19	4.61	4.67	4.67	4.80	4.79	4.74	4.64	4.74	4.74	4.78	4.63	4.58
20	4.60	4.68	4.66	4.78	4.80	4.75	4.66	4.77	4.72	4.79	4.68	4.57
21	4.59	4.67	4.64	4.76	4.82	4.74	4.66	4.75	4.70	4.85	4.69	4.56
22	4.58	4.66	4.64	4.78	4.80	4.74	4.66	4.74	4.68	4.84	4.66	4.56
23	4.60	4.65	4.64	4.78	4.79	4.73	4.67	4.74	4.67	4.81	4.65	4.56
24	4.62	4.66	4.64	4.76	4.77	4.73	4.69	4.73	4.66	4.82	4.63	4.55
25	4.61	4.69	4.63	4.73	4.76	4.72	4.69	4.71	4.65	4.79	4.62	4.56
26	4.60	4.68	4.63	4.72	4.75	4.72	4.70	4.70	4.64	4.77	4.61	4.62
27	4.59	4.73	4.62	4.71	4.73	4.72	4.70	4.69	4.64	4.76	4.61	4.61
28	4.59	4.77	4.62	4.71	4.74	4.72	4.70	4.68	4.63	4.73	4.60	4.61
29	4.74	4.75	4.62	4.70	---	4.72	4.69	4.67	4.62	4.70	4.59	4.67
30	4.79	4.74	4.62	4.68	---	4.72	4.69	4.66	4.62	4.68	4.58	4.65
31	4.75	---	4.67	4.67	---	4.75	---	4.65	---	4.67	4.57	---
MEAN	4.56	4.70	4.71	4.77	4.74	4.73	4.68	4.71	4.70	4.70	4.62	4.55
MAX	4.79	4.82	4.81	4.97	4.86	4.76	4.75	4.77	4.92	4.85	4.69	4.67
MIN	4.46	4.61	4.62	4.67	4.65	4.71	4.64	4.65	4.62	4.58	4.57	4.48

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106400 WEST FORK PORTAGE CREEK AT KALAMAZOO, MI

LOCATION.--Lat 42°14'40", long 85°36'52" (revised), in NE1/4 sec.5, T.3 S., R.11 W., Kalamazoo County, Hydrologic Unit 04050003, on right bank 30 ft upstream from culvert on Oakland Drive, 2.5 mi upstream from mouth, and 3.7 mi southwest of main business district of Kalamazoo.

DRAINAGE AREA.--18.7 mi^2.

PERIOD OF RECORD.--September 1959 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 858.09 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good. At times, flow is affected by ground-water withdrawals. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	9.1	13	8.8	e6.4	8.2	10	5.9	4.9	4.2	e4.4	3.2
2	1.6	11	13	11	e6.5	7.8	9.2	6.0	4.6	3.8	e4.2	3.2
3	1.4	11	12	12	e6.6	e7.8	8.3	5.9	4.4	3.5	3.8	3.2
4	1.4	12	11	13	e6.7	e7.7	8.0	5.7	4.4	3.8	3.7	3.2
5	1.3	11	9.7	12	e6.8	7.7	7.7	5.5	5.2	4.9	3.5	3.2
6	1.3	10	9.7	12	e7.5	8.1	7.6	5.3	6.8	4.6	3.4	3.2
7	1.3	8.9	11	10	8.1	9.8	7.5	5.7	6.2	4.3	3.3	3.2
8	1.4	7.8	12	9.3	9.0	9.9	7.2	5.7	6.4	4.0	3.3	3.2
9	e1.5	7.0	11	8.7	9.0	9.2	7.0	5.6	6.2	3.6	3.5	3.2
10	e1.5	6.3	12	8.3	8.4	8.5	6.7	5.5	5.8	3.4	3.9	3.1
11	e1.5	5.7	12	8.4	8.0	8.7	6.5	5.9	5.3	3.2	3.9	3.0
12	e1.6	5.4	11	10	7.7	9.1	6.3	6.2	5.0	3.1	3.8	3.0
13	e1.8	5.3	11	25	7.8	8.8	6.2	6.1	14	e3.1	3.7	2.9
14	1.8	5.2	10	24	13	8.2	6.0	6.5	15	e3.2	3.6	2.8
15	1.8	5.2	9.2	19	16	7.7	5.9	6.4	12	e3.4	3.4	2.8
16	3.8	5.4	8.8	15	18	7.6	5.8	6.3	11	e3.8	3.1	4.3
17	4.9	5.7	8.4	13	15	7.5	5.8	6.2	9.2	e4.2	2.9	4.1
18	4.5	6.0	8.2	e11	13	7.5	5.9	6.0	8.0	e6.9	3.4	3.8
19	4.4	7.0	e7.9	9.6	e11	e9.1	5.8	6.7	7.1	e8.5	3.7	3.6
20	4.5	7.6	7.4	8.8	11	e10	6.0	7.7	6.4	e10	5.3	3.6
21	4.3	7.5	7.3	7.8	11	e10	5.8	7.2	6.1	e11	5.6	3.4
22	4.0	7.2	6.7	6.8	10	9.7	5.8	7.2	5.5	e10	5.0	3.6
23	5.0	7.0	6.4	e7.8	10	9.6	6.1	7.4	4.9	e9.4	4.9	3.8
24	6.6	7.0	6.4	e7.4	9.0	9.4	6.3	7.0	4.5	e8.5	4.7	3.7
25	6.5	7.4	e6.4	e7.3	e8.2	9.4	6.3	6.7	4.4	e7.9	4.4	3.8
26	6.3	7.6	e6.3	e7.1	e7.9	9.4	6.3	6.4	4.9	e7.1	4.3	4.7
27	6.0	9.4	e6.2	e7.1	e7.6	9.4	6.3	6.3	4.6	e6.3	4.2	4.6
28	6.0	12	e6.2	e6.8	7.8	9.4	6.3	6.1	4.3	e6.0	4.0	4.6
29	9.3	11	e6.4	e6.6	---	9.4	6.2	5.8	3.9	e5.5	3.7	5.5
30	10	11	e7.0	e6.5	---	9.5	6.0	5.5	4.2	e5.1	3.5	5.4
31	9.1	---	8.8	e6.5	---	11	---	5.2	---	e4.7	3.3	---
TOTAL	117.9	239.7	282.4	326.6	267.0	275.1	200.8	191.6	195.2	171.0	121.4	108.9
MEAN	3.80	7.99	9.11	10.5	9.54	8.87	6.69	6.18	6.51	5.52	3.92	3.63
MAX	10	12	13	25	18	11	10	7.7	15	11	5.6	5.5
MIN	1.3	5.2	6.2	6.5	6.4	7.5	5.8	5.2	3.9	3.1	2.9	2.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

MEAN	8.72	9.65	9.80	9.34	9.65	10.9	10.8	9.24	8.14	7.02	6.90	7.68
MAX	15.2	16.8	16.8	14.5	15.9	18.0	18.2	15.2	14.9	12.7	13.9	18.8
(WY)	1970	1986	1992	1993	1971	1971	1975	1975	1969	1970	1975	1975
MIN	1.77	2.32	3.78	2.50	2.83	3.78	2.29	2.94	2.36	1.74	1.43	1.31
(WY)	2000	2000	2001	2004	2004	2000	2004	2001	1988	2000	2003	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005	
ANNUAL TOTAL	1666.5		2497.6			
ANNUAL MEAN	4.55		6.84		8.98	
HIGHEST ANNUAL MEAN					14.1	1975
LOWEST ANNUAL MEAN					3.33	2000
HIGHEST DAILY MEAN	14	Mar 5	25	Jan 13	40	(a)
LOWEST DAILY MEAN	1.3	Oct 5	1.3	Oct 5	0.34	Sep 27 1999
ANNUAL SEVEN-DAY MINIMUM	1.4	Oct 3	1.4	Oct 3	0.57	Sep 21 1999
MAXIMUM PEAK FLOW			(b)29	Jan 13	46	Jun 21 1997
MAXIMUM PEAK STAGE			(c)3.05	Jan 29	3.33	Jun 21 1997
INSTANTANEOUS LOW FLOW			1.2	(d)	0.23	Sep 21 2003
10 PERCENT EXCEEDS	9.0		11		14	
50 PERCENT EXCEEDS	3.4		6.4		8.7	
90 PERCENT EXCEEDS	2.0		3.3		3.9	

(a) Dec. 7, 1992, June 21, 1997.
(b) Gage height 2.99 ft.
(c) Backwater from ice.
(d) Oct. 5, 6, 7, 8.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106906 KALAMAZOO RIVER AT PLAINWELL, MI

LOCATION.--Lat 42°26'55", long 85°38'58", in NW1/4 NE1/4 sec.30, T.1 N., R.11 W., Allegan County, Hydrologic Unit 04050003, on left bank 0.4 mi downstream from bridge on 10th Street in Plainwell, 0.4 mi upstream from bridge on U.S. Highway 131, and 2.2 mi upstream from Gun River.

DRAINAGE AREA.--1,260 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2000 to September 2005 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 720 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good. Flow regulated by powerplant upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	651	938	2010	1240	1410	1640	1840	1090	869	716	886	719
2	805	1470	2170	1510	1360	1600	1820	1080	877	903	676	714
3	589	1350	2110	1680	1340	1540	1780	1060	865	696	725	509
4	592	1480	2060	1900	1290	1450	1660	1040	720	819	935	722
5	590	1490	2000	1920	1290	1470	1600	1110	917	842	682	476
6	590	1490	1920	1920	1300	1560	1480	1080	843	978	711	687
7	594	1490	1910	1860	1350	1640	1470	917	920	920	872	709
8	596	1330	1960	1740	1440	1800	1370	942	1150	706	651	446
9	707	1300	1880	1750	1590	1910	1330	1080	1350	809	671	733
10	779	1280	1870	1730	1670	1970	1270	900	1210	918	725	703
11	577	1220	2010	1590	1690	2130	1260	934	987	718	682	505
12	575	1200	2020	1750	1740	2220	1230	928	784	756	695	764
13	587	1130	2120	2700	1640	2290	1200	951	1710	1060	684	502
14	654	951	2000	3270	2010	1960	1190	1050	1640	992	696	529
15	813	928	1810	3470	2230	1700	1160	1180	1450	805	700	783
16	765	942	1770	3870	2730	1640	1130	1170	1330	1020	710	948
17	737	965	1590	4530	3000	1620	1120	1150	1170	992	711	585
18	876	953	1570	4420	3280	1480	1110	1130	1120	1240	724	616
19	848	1200	e1400	3530	3370	1600	990	1130	927	1410	723	1030
20	833	1020	e1100	2410	3160	1800	1120	1070	876	1090	892	798
21	818	1000	e1000	2500	3140	1800	975	1170	866	1260	873	740
22	663	1160	1040	2240	2630	1890	1130	1190	854	1310	780	561
23	806	958	1220	1630	2350	1920	1030	1160	835	1270	705	757
24	697	1010	1190	1430	2040	2010	952	1180	627	1310	708	737
25	841	1200	e1000	1490	1950	2070	1030	1140	679	1210	703	734
26	825	1120	e930	1830	1760	2030	1180	1130	817	1160	691	946
27	798	1190	932	1790	1710	2020	1230	1110	684	969	694	707
28	659	1430	953	1680	1620	1990	1220	913	859	967	684	703
29	1060	1460	1170	1360	---	1940	1190	942	624	1080	469	810
30	966	1700	1170	1430	---	1930	1100	1060	634	890	481	756
31	888	---	1280	1590	---	1940	---	866	---	880	750	---
TOTAL	22779	36355	49165	67760	56090	56560	38167	32853	29194	30696	22289	20929
MEAN	735	1212	1586	2186	2003	1825	1272	1060	973	990	719	698
MAX	1060	1700	2170	4530	3370	2290	1840	1190	1710	1410	935	1030
MIN	575	928	930	1240	1290	1450	952	866	624	696	469	446
CFSM	0.58	0.96	1.26	1.73	1.59	1.45	1.01	0.84	0.77	0.79	0.57	0.55
IN.	0.67	1.07	1.45	2.00	1.66	1.67	1.13	0.97	0.86	0.91	0.66	0.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2005, BY WATER YEAR (WY)

MEAN	981	1232	1234	1248	1519	1722	1389	1614	1246	867	863	772
MAX	1811	1592	1586	2186	2466	2003	1748	2086	1749	1001	1087	1059
(WY)	2002	2002	2005	2005	2001	2001	2002	2001	2001	2004	2001	2001
MIN	701	822	820	737	690	1029	1007	1060	796	598	559	619
(WY)	2004	2003	2003	2003	2003	2003	2004	2005	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2001 - 2005	
ANNUAL TOTAL	441424		462837			
ANNUAL MEAN	1206		1268		1222	
HIGHEST ANNUAL MEAN					1417	2001
LOWEST ANNUAL MEAN					841	2003
HIGHEST DAILY MEAN	4130	May 26	4530	Jan 17	4530	Jan 17 2005
LOWEST DAILY MEAN	550	Jan 24	446	Sep 8	293	Jul 30 2003
ANNUAL SEVEN-DAY MINIMUM	608	Oct 3	597	Sep 8	447	Jul 26 2003
MAXIMUM PEAK FLOW			4950	Jan 17	(a)4950	Jan 17 2005
MAXIMUM PEAK STAGE			4.08	Jan 17	4.17	Feb 15 2001
INSTANTANEOUS LOW FLOW			366	Aug 29		
ANNUAL RUNOFF (CFSM)	0.957		1.01		0.970	
ANNUAL RUNOFF (INCHES)	13.03		13.66		13.18	
10 PERCENT EXCEEDS	1910		2000		1950	
50 PERCENT EXCEEDS	1060		1120		1090	
90 PERCENT EXCEEDS	709		686		651	

(a) Gage height 4.08 ft.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04106906 KALAMAZOO RIVER AT PLAINWELL, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 2001 to August 2005 (discontinued).

REMARKS.--Cross-sectional samples for suspended sediment were collected from bridge 0.4 mi upstream from gage.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT 2004					
14...	0850	761	13.3	71	53
NOV					
02...	0920	597	11.3	73	90
23...	0910	735	9.2	59	89
DEC					
16...	0940	677	1.4	63	28
JAN 2005					
04...	1225	613	3.3	74	36
19...	0955	468	.5	64	51
FEB					
10...	1255	718	2.0	72	21
MAR					
08...	1200	615	2.6	78	70
30...	1205	522	9.8	81	36
APR					
22...	0745	703	15.6	65	73
MAY					
10...	0940	741	18.7	80	27
10...	0941	741	18.7	77	29
JUN					
02...	0815	713	20.7	46	56
28...	1025	680	26.7	68	34
JUL					
25...	1045	630	26.7	85	26
AUG					
23...	0815	756	21.0	74	31

STREAMS TRIBUTARY TO LAKE MICHIGAN

04107850 KALAMAZOO RIVER NEAR ALLEGAN, MI

LOCATION.--Lat 42°28'56", long 85°47'54", in NW1/4 SW1/4 sec.12, T.1 N., R.13 W., Allegan County, Hydrologic Unit 04050003, on left bank 10 ft upstream from bridge on 26th Street, 600 ft downstream from Trowbridge Dam, and 4.0 mi southeast of Allegan.

DRAINAGE AREA.--1,530 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2000 to September 2005 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 650 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Flow regulated by powerplant upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e950	1220	2540	1750	1950	2210	2450	1470	1140	951	1060	689
2	1030	1680	2780	2110	1880	2170	2410	1450	1140	1100	935	693
3	857	1600	2710	2490	1860	2100	2360	1430	1130	996	875	667
4	839	1760	2630	2730	1800	1980	2230	1410	1010	1000	1040	697
5	837	1960	2590	2660	1790	2000	2160	1480	1150	1010	916	681
6	836	1840	2570	2590	1800	2100	2010	1460	1190	1120	834	693
7	835	1820	2620	2510	1890	2530	1980	1320	1130	1090	e929	720
8	841	1620	2770	2340	2150	2800	1890	1270	1280	e969	e830	685
9	894	1530	2600	2320	2320	2650	1830	1430	1580	e1050	e807	712
10	1020	1450	2510	2280	2330	2560	1740	1290	1420	e1070	e795	741
11	851	1430	2700	2130	2290	2700	1730	1250	1240	e942	781	697
12	833	1380	2650	2440	2350	2740	1670	1280	1080	e983	816	746
13	840	1340	2690	4220	2260	2800	1600	1290	1670	1020	800	725
14	861	1180	2600	e5400	2900	2590	1630	1370	2270	1040	798	714
15	1020	1140	2380	e5800	3330	2280	1600	1540	1910	852	801	770
16	1000	1140	2320	e5140	3790	2200	1570	1500	1740	1010	800	820
17	1000	1160	2130	e4640	3740	2160	1550	1470	1520	1050	792	783
18	1100	1170	2070	e4190	3720	2020	1540	1440	1440	1220	792	762
19	1080	1340	1900	e3710	3750	2110	1390	1460	1270	1540	806	852
20	1070	1320	e1830	3170	3600	2520	1500	1400	1170	1240	843	846
21	1050	1220	e1470	2990	3490	2510	1370	1500	1160	1380	948	831
22	929	1370	1390	e2700	3230	2580	1540	1500	1140	1470	872	803
23	1050	1240	1580	e2250	2990	2640	1500	1520	1130	1440	786	841
24	968	1190	1560	e1920	2720	2620	1350	1510	984	1490	772	845
25	1070	1410	e1500	2040	2580	2680	1400	1450	927	1400	759	852
26	1070	1390	e1320	2340	2390	2650	1550	1420	1130	1370	741	897
27	1050	1590	1280	2330	2310	2620	1650	1400	972	1250	731	865
28	942	2270	1310	e2160	2200	2590	1590	1250	1150	1150	718	860
29	1210	2100	1480	1990	---	2520	1600	1190	991	1300	670	898
30	1360	2210	1530	1920	---	2510	1500	1340	947	1120	632	879
31	1200	---	1710	2140	---	2530	---	1160	---	1080	686	---
TOTAL	30493	45070	65720	89400	73410	75670	51890	43250	38011	35703	25365	23264
MEAN	984	1502	2120	2884	2622	2441	1730	1395	1267	1152	818	775
MAX	1360	2270	2780	5800	3790	2800	2450	1540	2270	1540	1060	898
MIN	833	1140	1280	1750	1790	1980	1350	1160	927	852	632	667
CFSM	0.64	0.98	1.39	1.88	1.71	1.60	1.13	0.91	0.83	0.75	0.53	0.51
IN.	0.74	1.10	1.60	2.17	1.78	1.84	1.26	1.05	0.92	0.87	0.62	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2005, BY WATER YEAR (WY)

MEAN	1335	1611	1662	1709	2014	2294	1853	2180	1630	1094	1067	984
MAX	2532	2062	2120	2884	3097	2710	2307	2630	2176	1324	1286	1407
(WY)	2002	2002	2005	2005	2001	2002	2002	2004	2001	2004	2001	2001
MIN	929	1053	1086	1000	940	1390	1363	1395	1074	829	781	775
(WY)	2003	2003	2003	2003	2003	2003	2004	2005	2003	2003	2003	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2001 - 2005	
ANNUAL TOTAL	588368		597246			
ANNUAL MEAN	1608		1636		1617	
HIGHEST ANNUAL MEAN					1915	2002
LOWEST ANNUAL MEAN					1138	2003
HIGHEST DAILY MEAN	4920	May 26	5800	Jan 15	5800	Jan 15 2005
LOWEST DAILY MEAN	833	Oct 12	632	Aug 30	617	Jul 31 2003
ANNUAL SEVEN-DAY MINIMUM	848	Oct 3	676	Aug 29	665	Sep 16 2003
MAXIMUM PEAK FLOW			5950	Jan 15	5950	Jan 15 2005
MAXIMUM PEAK STAGE			11.60	Jan 15	11.60	Jan 15 2005
ANNUAL RUNOFF (CFSM)	1.05		1.07		1.06	
ANNUAL RUNOFF (INCHES)	14.31		14.52		14.36	
10 PERCENT EXCEEDS	2610		2640		2620	
50 PERCENT EXCEEDS	1360		1430		1440	
90 PERCENT EXCEEDS	965		807		862	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04107850 KALAMAZOO RIVER NEAR ALLEGAN, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2001 to 2005 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2001 to September 2005.
WATER TEMPERATURE: June 2001 to September 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval. Automatic suspended sediment pumping sampler since Feb. 13, 2001.

REMARKS.--Water-quality monitor sensors and automatic pump sampler intake located approximately 6 ft into channel from left bank. Cross-sectional samples for suspended sediment were collected from bridge 5 ft downstream from gage. Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 5-14, Oct. 26 to Nov. 2, Feb. 10 to Mar. 30, Apr. 5-19, July 24, 25, rated good; Apr. 20-22, rated fair. Water temperature records rated excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 891 microsiemens, Feb. 3, 2003; minimum, 334 microsiemens, Jan. 18, 2005.
WATER TEMPERATURE: Maximum, 29.5°C, Aug. 9, 2001, July 4, 2002; minimum, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 772 microsiemens, Sept. 9; minimum, 334 microsiemens, Jan. 18.
WATER TEMPERATURE: Maximum, 29.0°C, July 25; minimum, 0.0°C, on many days during winter period.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	672	659	666	633	594	617	676	639	655
2	739	692	716	659	591	632	623	591	608	640	598	621
3	714	689	696	651	599	631	609	595	603	617	595	607
4	722	694	708	648	613	637	613	594	605	595	574	584
5	708	669	691	626	589	614	604	591	599	580	572	576
6	678	610	648	643	621	635	613	597	604	586	572	580
7	622	581	602	636	617	629	620	580	605	589	571	584
8	732	560	621	643	613	630	603	572	591	598	586	593
9	755	696	721	645	632	640	620	600	614	610	584	600
10	749	719	730	656	633	647	619	602	614	611	600	607
11	742	710	724	664	645	655	602	594	599	640	607	625
12	745	694	719	671	649	661	613	598	607	688	571	639
13	717	646	681	677	660	668	622	599	609	571	407	482
14	656	608	623	690	666	678	674	607	644	519	410	472
15	639	620	634	693	667	682	635	627	631	525	501	512
16	637	610	621	695	675	687	656	630	648	509	468	491
17	637	566	593	708	683	692	648	628	641	468	428	448
18	631	603	623	720	693	705	654	633	646	445	334	427
19	645	625	632	721	689	701	669	568	645	484	338	440
20	644	628	635	691	666	677	602	555	578	531	483	514
21	640	623	632	712	675	690	717	581	661	538	524	531
22	652	620	631	706	680	687	722	707	716	564	531	548
23	669	635	652	693	673	679	722	716	719	616	336	524
24	639	618	628	702	680	689	728	671	708	637	468	554
25	669	637	653	700	683	687	727	602	678	642	621	634
26	678	651	666	732	694	708	741	690	727	648	636	643
27	685	662	673	694	615	658	742	721	731	661	628	648
28	697	677	686	627	598	614	741	728	735	678	508	596
29	721	677	699	649	627	641	749	729	738	689	638	676
30	677	514	585	654	633	647	744	727	735	691	678	686
31	674	624	655	---	---	---	732	676	704	694	681	687
MONTH	---	---	---	732	589	662	749	555	650	694	334	574

STREAMS TRIBUTARY TO LAKE MICHIGAN

04107850 KALAMAZOO RIVER NEAR ALLEGAN, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	693	678	686	668	633	650	594	581	588	681	668	675
2	702	685	695	720	658	691	595	574	584	683	669	677
3	704	694	698	685	671	680	602	576	595	685	666	678
4	702	691	698	701	669	689	608	588	600	687	673	680
5	706	693	700	700	690	695	615	595	609	691	672	682
6	702	689	695	710	659	689	626	602	618	687	667	680
7	693	673	686	659	573	618	638	617	631	691	672	681
8	680	655	672	611	581	602	649	633	645	699	677	688
9	666	652	662	638	609	628	666	644	657	697	685	691
10	704	658	688	640	618	635	670	648	660	713	687	699
11	685	661	677	621	601	612	663	649	656	713	699	706
12	674	649	664	687	601	640	677	648	667	704	684	692
13	655	633	647	636	586	610	697	671	685	696	678	687
14	633	526	582	608	591	601	693	676	685	695	674	684
15	554	488	530	642	598	628	694	675	683	685	675	678
16	538	477	510	645	627	638	706	676	691	683	671	677
17	541	523	534	653	625	643	687	672	679	671	663	666
18	524	500	514	660	640	652	682	666	673	669	655	662
19	504	485	498	660	632	649	670	662	664	664	652	658
20	494	485	490	648	618	633	670	638	659	657	623	642
21	571	487	531	637	615	626	669	652	661	655	640	650
22	572	547	563	635	615	628	675	665	670	657	646	652
23	591	547	575	630	606	622	674	660	667	652	643	648
24	606	591	600	618	598	610	691	665	681	659	640	652
25	615	595	610	613	591	607	696	680	687	672	649	661
26	629	611	622	600	584	593	693	670	677	680	662	673
27	634	620	627	595	578	587	673	663	668	689	665	679
28	643	619	635	587	573	582	672	659	667	686	669	678
29	---	---	---	586	569	580	676	663	671	695	674	684
30	---	---	---	595	570	580	678	664	672	694	673	680
31	---	---	---	593	575	585	---	---	---	691	666	675
MONTH	706	477	617	720	569	628	706	574	655	713	623	675

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	693	670	682	---	---	---	610	597	603	710	665	687
2	690	671	680	---	---	---	632	606	620	717	691	703
3	687	670	677	---	---	---	700	626	655	---	---	---
4	700	677	686	---	---	---	695	651	671	---	---	---
5	710	652	691	---	---	---	666	632	643	---	---	---
6	669	606	646	---	---	---	694	659	674	---	---	---
7	692	612	661	---	---	---	---	---	---	756	671	705
8	666	635	648	---	---	---	---	---	---	---	---	---
9	640	586	601	---	---	---	---	---	---	772	---	---
10	614	590	602	---	---	---	---	---	---	763	642	681
11	617	594	602	---	---	---	701	607	665	701	655	684
12	632	603	615	---	---	---	701	634	669	758	662	705
13	640	446	600	683	588	650	703	667	687	683	660	670
14	581	432	517	677	555	623	696	677	688	706	672	690
15	609	580	599	701	657	674	695	666	680	766	695	735
16	608	585	599	725	674	702	690	669	678	716	651	680
17	612	582	600	678	643	663	699	667	682	688	584	627
18	615	604	610	665	637	651	713	690	698	728	646	686
19	625	601	615	659	575	620	704	677	687	758	694	729
20	635	612	620	643	611	629	728	677	693	698	654	666
21	652	630	638	645	572	617	734	612	664	703	667	685
22	661	627	644	622	577	612	675	637	658	709	662	687
23	663	631	648	637	613	626	697	664	679	734	678	710
24	650	586	627	621	572	604	697	676	686	693	674	685
25	658	599	645	607	570	590	706	664	686	699	660	678
26	---	---	---	609	593	601	710	676	693	699	665	685
27	---	---	---	621	585	604	710	663	685	687	625	650
28	---	---	---	637	605	623	707	675	691	706	687	694
29	672	634	644	639	630	635	---	---	---	698	667	686
30	700	670	682	641	616	629	---	---	---	683	624	651
31	---	---	---	640	604	623	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04107850 KALAMAZOO RIVER NEAR ALLEGAN, MI--Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	12.1	11.1	11.4	4.7	3.6	3.9	4.2	2.6	3.2
2	16.8	15.5	16.2	11.3	10.5	11.1	4.1	3.5	3.8	3.4	2.5	3.0
3	15.5	13.4	14.4	10.8	9.6	10.2	4.0	3.4	3.8	3.5	3.2	3.4
4	14.5	13.1	13.8	10.2	9.2	9.9	3.8	3.2	3.5	3.4	3.1	3.2
5	13.6	11.3	12.5	9.6	8.6	9.1	3.9	3.3	3.6	3.2	1.6	2.5
6	14.1	11.2	12.7	9.6	8.3	8.9	4.3	3.7	4.0	1.6	1.0	1.2
7	14.7	12.3	13.6	9.7	8.6	9.1	5.5	4.3	5.0	1.3	1.1	1.2
8	15.3	13.4	14.3	8.7	7.7	8.2	6.0	5.5	5.7	1.4	1.2	1.3
9	16.1	14.4	15.2	7.9	7.1	7.5	6.1	5.6	5.8	1.7	1.3	1.5
10	15.1	13.3	14.2	8.1	6.8	7.4	6.4	6.0	6.2	2.4	1.7	2.0
11	14.0	12.1	13.2	8.3	7.2	8.0	6.0	5.2	5.6	2.4	2.0	2.2
12	13.6	11.8	12.8	7.2	5.8	6.4	5.2	4.4	4.9	3.8	2.3	2.9
13	13.2	11.9	12.7	6.2	5.0	5.7	4.4	3.0	3.7	4.4	3.2	4.0
14	14.4	12.8	13.6	6.0	4.6	5.4	3.0	2.0	2.5	3.2	1.4	2.1
15	14.0	12.9	13.5	6.2	5.0	5.5	2.0	1.2	1.6	1.4	0.3	0.8
16	12.9	10.5	11.6	7.6	6.2	6.9	2.0	1.2	1.5	0.3	0.0	0.1
17	10.5	9.5	9.8	8.4	7.6	8.0	2.1	1.8	2.0	0.1	0.0	0.0
18	9.5	9.1	9.3	9.6	8.4	9.1	2.0	1.6	1.8	0.1	0.0	0.0
19	9.9	9.1	9.5	9.5	9.2	9.3	1.7	0.0	0.6	0.2	0.0	0.1
20	10.2	9.6	9.9	9.9	9.2	9.6	0.0	0.0	0.0	0.4	0.0	0.2
21	10.4	9.6	10.0	9.6	9.0	9.4	0.7	0.0	0.2	0.4	0.0	0.1
22	11.0	9.3	10.2	9.0	8.3	8.7	1.1	0.6	0.9	0.0	0.0	0.0
23	11.8	10.8	11.2	9.2	8.6	8.9	0.6	0.1	0.3	0.0	0.0	0.0
24	12.0	11.3	11.6	8.7	5.2	7.3	0.2	0.0	0.0	0.3	0.0	0.1
25	12.5	10.6	11.6	5.6	4.8	5.2	0.0	0.0	0.0	1.6	0.3	1.0
26	12.8	11.2	12.0	5.3	4.6	5.0	0.1	0.0	0.0	1.7	0.8	1.4
27	13.7	12.1	12.8	5.5	5.2	5.4	0.2	0.0	0.0	0.8	0.0	0.2
28	13.1	12.2	12.6	5.5	5.0	5.3	1.1	0.0	0.5	0.2	0.0	0.0
29	14.5	12.9	13.7	5.0	4.6	4.9	2.0	1.0	1.5	1.2	0.0	0.6
30	15.2	13.7	14.8	5.0	4.7	4.9	3.1	1.6	2.2	1.8	0.9	1.3
31	13.7	12.1	12.9	---	---	---	5.0	3.1	4.2	1.3	0.5	0.9
MONTH	---	---	---	12.1	4.6	7.7	6.4	0.0	2.6	4.4	0.0	1.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.8	0.8	1.3	2.5	1.6	2.1	10.6	9.2	9.9	11.9	10.8	11.4
2	2.3	1.4	1.8	2.3	1.5	1.9	11.6	9.7	10.5	11.1	10.2	10.7
3	2.1	0.9	1.5	2.3	0.7	1.5	11.1	9.2	10.2	10.2	9.1	9.7
4	2.8	1.6	2.1	2.7	1.2	1.9	11.9	9.3	10.6	12.0	8.1	10.0
5	3.3	1.9	2.5	4.8	2.5	3.6	14.3	11.0	12.6	14.0	10.4	12.0
6	3.4	2.5	2.9	5.4	3.3	4.3	15.1	13.2	14.1	14.3	12.0	13.2
7	3.3	3.0	3.1	4.9	3.5	4.5	14.9	13.7	14.3	16.2	13.3	14.7
8	3.1	2.7	2.9	3.5	2.4	2.9	15.1	12.4	13.7	18.4	14.9	16.5
9	2.7	2.2	2.5	2.4	2.0	2.2	15.8	13.0	14.4	19.5	16.7	18.1
10	3.0	2.0	2.4	2.0	1.8	1.9	16.6	13.9	15.2	21.5	18.4	19.8
11	2.4	2.0	2.2	2.8	1.5	2.1	16.8	14.7	15.7	20.4	17.0	18.6
12	3.7	2.0	2.7	2.4	1.8	2.1	15.4	12.6	13.7	17.1	15.3	16.3
13	3.1	2.3	2.7	2.9	1.3	2.1	13.7	11.1	12.4	16.3	14.8	15.5
14	2.8	2.3	2.6	3.0	1.9	2.4	14.3	11.4	12.8	16.7	14.9	15.6
15	2.8	2.4	2.7	3.8	2.7	3.2	15.0	11.8	13.3	15.8	14.5	15.1
16	2.4	1.9	2.1	3.8	2.5	3.2	16.1	12.8	14.4	15.3	13.9	14.5
17	2.0	1.0	1.5	4.2	3.2	3.7	17.3	14.5	15.8	15.1	13.2	14.1
18	1.1	0.3	0.8	5.3	3.7	4.4	18.1	15.3	16.6	16.7	14.0	15.3
19	0.7	0.2	0.5	4.8	4.0	4.4	19.5	16.5	17.8	16.0	14.3	15.1
20	0.7	0.5	0.6	4.2	3.8	4.0	19.9	17.5	18.5	17.4	13.8	15.5
21	1.3	0.6	1.0	4.6	3.5	4.1	18.3	16.1	17.3	18.8	15.4	17.0
22	1.6	1.3	1.4	5.9	4.1	4.9	16.8	13.6	15.1	17.4	16.6	16.9
23	2.0	0.9	1.5	5.3	4.3	5.0	13.6	10.1	12.0	18.2	16.0	17.1
24	2.9	1.8	2.2	5.8	3.6	4.7	10.1	8.2	8.8	18.1	16.3	17.2
25	2.5	2.2	2.3	6.3	5.4	5.8	11.5	7.7	9.5	19.6	15.8	17.6
26	3.5	2.0	2.6	6.6	5.2	5.9	12.7	10.5	11.4	18.6	17.1	17.7
27	2.9	2.0	2.5	6.9	5.5	6.2	11.3	10.0	10.6	19.3	16.5	17.9
28	3.0	2.4	2.7	8.6	5.8	7.1	12.0	9.4	10.6	19.3	17.0	18.0
29	---	---	---	9.5	7.1	8.3	13.2	10.6	11.8	18.7	16.8	17.8
30	---	---	---	11.8	9.2	10.3	13.3	11.3	12.2	20.2	16.9	18.4
31	---	---	---	11.5	9.8	10.8	---	---	---	21.2	17.5	19.2
MONTH	3.7	0.2	2.1	11.8	0.7	4.2	19.9	7.7	13.2	21.5	8.1	15.7

STREAMS TRIBUTARY TO LAKE MICHIGAN

04107850 KALAMAZOO RIVER NEAR ALLEGAN, MI--Continued

TEMPERATURE, WATER, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.2	18.3	20.2	---	---	---	27.5	24.1	25.8	23.5	21.0	22.1
2	21.8	19.6	20.8	---	---	---	28.0	24.6	26.3	23.2	20.3	21.6
3	22.0	20.1	21.1	---	---	---	28.3	25.1	26.7	---	---	---
4	23.1	20.1	21.6	---	---	---	27.4	25.9	26.6	---	---	---
5	24.2	21.3	22.7	---	---	---	27.6	25.0	26.2	---	---	---
6	25.1	21.7	23.3	---	---	---	27.0	23.3	25.2	---	---	---
7	25.9	22.1	24.0	---	---	---	---	---	---	24.2	21.0	22.4
8	27.1	23.8	25.3	---	---	---	---	---	---	---	---	---
9	27.3	24.4	25.8	---	---	---	---	---	---	---	---	---
10	27.8	25.1	26.3	---	---	---	---	---	---	24.4	21.4	22.9
11	27.5	25.3	26.3	---	---	---	26.6	24.0	24.8	24.5	21.7	23.1
12	26.6	25.0	25.8	---	---	---	25.7	23.5	24.4	24.6	21.8	23.2
13	25.4	23.8	24.6	27.6	24.3	25.9	24.9	23.9	24.5	24.3	22.1	23.2
14	25.7	23.5	24.4	28.3	25.2	26.7	24.4	22.9	23.8	23.6	21.9	22.8
15	23.9	21.4	22.9	28.5	25.3	26.8	24.9	22.4	23.7	21.9	19.9	20.6
16	22.3	20.4	21.3	27.8	25.7	26.7	25.3	22.8	24.1	20.2	18.9	19.4
17	20.8	19.1	19.8	27.8	24.9	26.3	25.8	22.5	24.1	20.4	17.6	19.0
18	20.1	18.5	19.3	27.6	25.5	26.5	24.5	22.9	23.4	20.7	17.6	19.1
19	21.8	18.9	20.2	27.2	24.9	26.1	24.6	23.0	23.6	20.2	18.7	19.5
20	23.1	19.2	21.0	26.6	24.6	25.5	24.8	22.7	23.7	21.5	19.0	20.2
21	24.3	20.6	22.4	26.5	24.4	25.3	25.0	22.7	23.8	21.6	18.8	20.2
22	24.6	21.3	22.9	27.4	24.7	25.8	23.6	21.7	22.5	21.2	19.3	20.3
23	25.3	21.2	23.2	26.7	24.8	25.7	21.9	20.2	21.1	20.4	18.9	19.6
24	27.3	23.5	25.3	28.2	24.8	26.3	22.9	19.4	21.2	19.4	18.2	18.8
25	27.7	24.4	26.1	29.0	26.6	27.6	22.7	20.3	21.6	19.5	18.6	19.1
26	---	---	---	27.7	26.0	27.0	24.6	21.0	22.7	20.4	19.1	19.6
27	---	---	---	26.0	24.4	25.2	24.9	22.5	23.6	19.7	17.4	18.6
28	---	---	---	25.5	22.6	24.0	24.5	21.7	23.1	18.8	16.9	18.0
29	28.8	25.5	27.0	25.2	22.8	23.9	---	---	---	18.0	16.3	17.0
30	28.0	25.4	26.7	26.0	22.6	24.2	---	---	---	16.9	14.5	15.8
31	---	---	---	26.4	23.4	24.9	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04107850 KALAMAZOO RIVER NEAR ALLEGAN, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Sampling method, code (82398)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)
OCT 2004				
14...	1020	20	58	52
NOV				
02...	1055	20	85	18
23...	1100	20	58	95
DEC				
16...	1135	20	62	19
JAN 2005				
04...	1015	20	81	45
19...	1135	20	79	12
FEB				
10...	1045	20	91	34
MAR				
08...	1020	20	78	45
30...	1000	20	76	40
APR				
22...	0900	20	69	56
MAY				
10...	1135	20	82	31
10...	1136	20	90	40
10...	1141	50	83	23
JUN				
02...	0945	20	45	68
02...	0950	20	72	56
12...	1200	50	96	30
13...	1300	50	77	77
14...	1300	50	90	76
15...	1300	50	87	50
28...	1255	50	92	43
JUL				
25...	1235	20	85	33
AUG				
23...	1000	20	77	30

Sampling method code: 20 is cross-sectional samples; 50 is automatic pump sampler.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04108600 RABBIT RIVER NEAR HOPKINS, MI

LOCATION.--Lat 42°38'32", long 85°43'19", in SE1/4 sec.16, T.3 N., R.12 W., Allegan County, Hydrologic Unit 04050003, on left bank at downstream side of bridge on 18th Street, 2.5 mi northeast of Hopkins.

DRAINAGE AREA.--71.4 mi^2.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 700 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	28	92	84	e48	e52	98	35	25	39	16	11
2	18	51	122	116	e47	e50	82	34	24	24	15	11
3	19	49	102	157	e46	e49	69	34	24	20	15	11
4	18	58	84	141	e45	e48	62	33	24	19	14	11
5	18	81	95	100	e44	e50	58	33	24	19	14	11
6	18	53	101	69	e46	59	55	32	30	18	14	10
7	18	42	161	71	e72	201	53	33	26	17	13	10
8	17	35	231	64	142	292	50	32	24	16	13	10
9	21	31	144	57	116	156	48	31	23	15	13	9.9
10	20	28	100	56	84	89	46	30	22	14	12	9.4
11	19	27	118	56	70	74	44	31	22	14	12	9.3
12	18	25	95	159	65	67	42	33	25	14	17	9.4
13	18	23	92	818	73	60	41	36	51	14	18	9.4
14	18	22	77	629	242	56	40	53	72	14	15	10
15	17	21	64	320	361	55	39	48	47	13	14	12
16	21	21	58	191	320	51	38	39	38	15	14	13
17	35	23	54	149	199	52	38	36	34	18	14	15
18	26	24	52	e114	119	55	37	35	31	18	14	13
19	23	25	46	e97	91	70	37	34	29	24	17	12
20	21	33	e44	e86	83	135	40	47	27	20	16	13
21	20	33	e42	e72	79	116	38	38	25	37	16	12
22	19	29	e40	e65	73	124	37	35	23	35	14	12
23	25	26	e38	e62	68	156	40	36	21	27	14	16
24	52	25	e36	e61	66	114	42	37	20	25	13	14
25	35	26	e34	e61	63	116	43	34	19	24	12	14
26	28	33	e34	e59	59	104	41	32	18	24	12	16
27	25	94	e34	e55	55	96	40	31	18	26	13	16
28	24	210	e34	e54	e54	91	39	29	18	22	15	15
29	26	148	e35	e53	---	89	37	28	17	20	13	21
30	35	86	e37	e52	---	84	36	27	29	18	12	19
31	31	---	78	e50	---	97	---	27	---	17	12	---
TOTAL	720	1410	2374	4178	2830	2908	1410	1073	830	640	436	375.4
MEAN	23.2	47.0	76.6	135	101	93.8	47.0	34.6	27.7	20.6	14.1	12.5
MAX	52	210	231	818	361	292	98	53	72	39	18	21
MIN	17	21	34	50	44	48	36	27	17	13	12	9.3
CFSM	0.33	0.66	1.07	1.89	1.42	1.31	0.66	0.48	0.39	0.29	0.20	0.18
IN.	0.38	0.73	1.24	2.18	1.47	1.52	0.73	0.56	0.43	0.33	0.23	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

MEAN	39.8	57.0	68.3	67.1	77.2	105	92.0	68.9	56.3	32.6	27.5	31.9
MAX	119	171	131	146	192	227	152	152	183	99.0	86.8	123
(WY)	1987	1991	1976	1993	1997	1979	1993	2000	1997	1986	1994	1978
MIN	15.0	14.5	21.7	19.8	22.1	32.0	42.2	25.1	16.4	13.6	12.5	10.1
(WY)	1969	2000	1999	1970	2003	2000	2004	1977	1987	1987	1970	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	21344		19184.4			
ANNUAL MEAN	58.3		52.6		60.2	
HIGHEST ANNUAL MEAN					89.3	1993
LOWEST ANNUAL MEAN					32.5	1977
HIGHEST DAILY MEAN	598	May 22	818	Jan 13	2320	Jun 21 1997
LOWEST DAILY MEAN	16	Sep 23	9.3	Sep 11	7.9	Sep 12 1999
ANNUAL SEVEN-DAY MINIMUM	17	Sep 21	9.6	Sep 7	8.5	Sep 9 1999
MAXIMUM PEAK FLOW			982	Jan 13	(a)3740	Jun 21 1997
MAXIMUM PEAK STAGE			8.56	Jan 13	11.11	Jun 21 1997
INSTANTANEOUS LOW FLOW			9.1	(b)		
ANNUAL RUNOFF (CFSM)	0.817		0.736		0.843	
ANNUAL RUNOFF (INCHES)	11.12		10.00		11.46	
10 PERCENT EXCEEDS	111		100		113	
50 PERCENT EXCEEDS	34		34		42	
90 PERCENT EXCEEDS	19		14		18	

(a) From rating curve extended above 1,200 ft^3/s.
(b) Sept. 11, 12.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04108670 KALAMAZOO RIVER NEAR NEW RICHMOND, MI

LOCATION.--Lat 42°38'41", long 86°06'58", in NE1/4 SE1/4 sec.18, T.3 N., R.15 W., Allegan County, Hydrologic Unit 04050003, on right bank at downstream side of bridge on 58th Street, 0.5 mi west of New Richmond, and 0.7 mi downstream from Mann Creek.

DRAINAGE AREA.--1,994 mi^2.

PERIOD OF RECORD.--April 1994 to October 1995, October 2002 to current year. Published as "at New Richmond" prior to October 2002.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 595 ft above sea level, from topographic map. April 1994 to October 1995 water-stage recorder at site 1.2 mi upstream at different datum (station 04108660).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplants upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	1860	3120	e2550	e2780	3040	3380	1890	1510	1240	1350	836
2	1110	1590	3270	2520	e2650	3000	3330	1830	1470	1220	1270	834
3	1070	1740	3630	2990	e2620	2890	3240	1790	1450	1220	1240	833
4	1090	2080	3660	3320	e2520	2760	3020	1790	1420	1200	1140	865
5	1050	2290	3460	3780	e2540	2680	2860	1750	1430	1210	1040	870
6	1040	2310	3520	4030	e2600	2570	2730	1730	1380	1200	1090	876
7	1040	2390	3730	3750	e2730	2860	2630	1840	1410	1190	1050	864
8	1070	2320	3800	3470	2860	3500	2440	1830	1420	1180	1060	889
9	1100	1930	3720	3310	2860	4020	2290	1710	1720	1160	1050	868
10	1080	2110	3950	3160	3180	4150	2240	1670	1570	1100	998	853
11	1180	1740	3940	3000	3280	4180	2170	1690	1830	1070	972	884
12	1240	1960	3780	3110	3310	3940	2140	1700	1570	1070	1100	861
13	1170	1690	3830	3950	3220	3770	2070	1640	1470	1010	1140	800
14	1100	1590	3800	4920	3620	3700	1830	1730	1730	1130	1110	894
15	1010	1610	3640	7360	4160	3580	2090	1740	2730	1160	1040	876
16	1180	1520	3420	7320	5000	3270	1820	1870	2310	1200	1000	801
17	1310	1560	3160	6560	5560	2840	1760	1910	2060	1310	995	1040
18	1330	1620	2950	e5990	5470	2690	1840	1880	1970	1360	1000	1040
19	1330	1580	2750	e5380	5210	2940	1880	1860	1840	1280	1130	922
20	1360	1750	e2640	e4500	5100	2790	1860	1980	1720	1620	1130	938
21	1310	1740	e2140	e4240	5100	3000	1670	1900	1430	1820	1110	995
22	1300	1670	e2020	e4020	4830	3490	1880	1640	1410	1520	1090	1050
23	1370	1980	e2280	e3220	4570	3540	1970	1900	1410	1550	1100	1150
24	1530	1690	e2240	e2860	4200	3630	1980	1920	1400	1710	1090	1050
25	1530	1610	e2180	e2910	3890	3800	1710	1880	1390	1730	1060	1050
26	1340	1940	e1880	e3340	3690	3800	1680	1790	1270	1770	1050	1080
27	1310	1860	e1830	e3400	3300	3750	1920	1790	1220	1800	1030	1050
28	1390	2290	e1880	e3320	3070	3710	1960	1740	1210	1610	1000	1090
29	1490	2730	e2060	e2790	---	3570	2010	1660	1230	1400	998	1180
30	1410	2950	e2200	e2780	---	3590	1960	1510	1300	1340	999	1110
31	1690	---	e2430	e3040	---	3540	---	1500	---	1400	936	---
TOTAL	38580	57700	92910	120890	103920	104590	66360	55060	47280	41780	33368	28449
MEAN	1245	1923	2997	3900	3711	3374	2212	1776	1576	1348	1076	948
MAX	1690	2950	3950	7360	5560	4180	3380	1980	2730	1820	1350	1180
MIN	1010	1520	1830	2520	2520	2570	1670	1500	1210	1010	936	800
CFSM	0.62	0.96	1.50	1.96	1.86	1.69	1.11	0.89	0.79	0.68	0.54	0.48
IN.	0.72	1.08	1.73	2.26	1.94	1.95	1.24	1.03	0.88	0.78	0.62	0.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2005, BY WATER YEAR (WY)

MEAN	1218	2013	2154	2313	2071	2787	2245	2411	1846	1529	1503	1134
MAX	1528	2704	2997	3900	3711	3419	2488	3448	2919	2193	2544	1444
(WY)	1995	1995	2005	2005	2005	2004	2003	2004	2004	1994	1994	1994
MIN	1054	1220	1360	1261	1169	1797	1670	1776	1273	979	888	837
(WY)	2004	2003	2003	2003	2003	2003	2004	2005	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1994 - 2005	
ANNUAL TOTAL	773650		790887			
ANNUAL MEAN	2114		2167		1897	
HIGHEST ANNUAL MEAN					2167	2005
LOWEST ANNUAL MEAN					1412	2003
HIGHEST DAILY MEAN	6870	May 25	7360	Jan 15	7360	Jan 15 2005
LOWEST DAILY MEAN	1010	Oct 15	800	Sep 13	665	Sep 21 2003
ANNUAL SEVEN-DAY MINIMUM	1060	Oct 1	853	Sep 10	696	Sep 16 2003
MAXIMUM PEAK FLOW			8110	Jan 15	8110	Jan 15 2005
MAXIMUM PEAK STAGE			10.55	Jan 15	10.55	Jan 15 2005
ANNUAL RUNOFF (CFSM)	1.06		1.09		0.951	
ANNUAL RUNOFF (INCHES)	14.43		14.75		12.93	
10 PERCENT EXCEEDS	3640		3760		3180	
50 PERCENT EXCEEDS	1690		1800		1610	
90 PERCENT EXCEEDS	1290		1040		1030	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04108801 MACATAWA RIVER NEAR ZEELAND, MI

LOCATION.--Lat 42°47'01", long 86°02'11", in NW1/4 NW1/4 sec.36, T.5 N., R.15 W., Ottawa County, Hydrologic Unit 04050002, on right bank 5 ft upstream from bridge on Adams Road, 0.1 mi upstream from North Branch, and 2.5 mi south of Zeeland.

DRAINAGE AREA.--68.5 mi^2.

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1978, published as Black River near Zeeland.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 583.4 ft above sea level. Prior to Oct. 1, 2003, at site 1.5 mi upstream at different datum (station 04108800).

REMARKS.--Records fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	11	213	142	e27	e35	64	11	6.7	7.9	1.9	0.98
2	6.8	68	289	314	e26	e32	46	11	5.7	3.9	1.6	0.92
3	6.6	40	121	340	e24	e34	36	11	5.6	2.9	1.4	0.81
4	4.1	36	68	286	e28	e33	30	10	5.5	2.7	1.2	0.83
5	4.1	50	49	111	e39	e36	27	10	5.5	2.9	1.2	0.73
6	4.6	25	52	49	68	72	27	10	6.1	2.6	1.1	0.71
7	3.9	16	355	59	162	753	24	11	5.4	2.4	1.00	0.66
8	4.8	11	549	52	431	823	23	11	4.6	2.1	1.1	0.60
9	11	8.3	244	48	311	306	20	10	4.2	1.9	1.1	0.53
10	5.9	7.2	144	51	e135	126	19	9.1	4.6	1.7	0.91	0.48
11	4.5	6.8	202	58	e80	76	17	16	6.2	1.6	0.98	0.44
12	4.3	5.9	101	354	65	55	16	18	7.5	1.7	3.5	0.43
13	3.9	5.3	112	1620	122	44	14	22	8.3	1.7	3.4	0.41
14	3.8	4.9	59	1150	818	e40	12	35	8.7	1.6	1.9	0.45
15	4.3	4.7	46	416	1110	36	12	29	5.7	1.5	1.3	1.1
16	13	4.9	39	235	641	33	11	18	5.1	13	1.2	1.8
17	16	6.3	38	114	334	36	11	14	4.3	28	1.2	2.0
18	7.4	7.0	34	e66	e159	42	11	12	4.2	8.4	1.2	1.8
19	5.6	9.7	e30	e49	e91	58	11	16	4.2	4.4	1.5	1.4
20	4.3	22	e26	e38	e68	103	13	31	4.1	6.1	2.0	1.5
21	3.8	20	e23	e30	e59	118	12	e20	3.5	19	2.2	1.5
22	3.7	13	e20	e27	e55	219	14	e16	2.9	21	1.5	2.7
23	34	10	e17	e26	e47	277	21	e17	2.7	7.7	1.2	4.4
24	49	9.7	e15	e25	e44	138	19	e16	2.6	5.8	1.1	3.1
25	18	13	e14	e24	e41	137	18	11	2.4	4.8	0.90	2.0
26	9.5	21	e13	e24	e37	93	17	9.3	2.4	11	0.93	2.9
27	6.6	200	e13	e25	e35	72	16	8.7	2.4	9.5	1.2	2.5
28	5.4	373	e14	e25	e36	63	16	7.8	2.6	4.7	1.6	3.1
29	13	155	e15	e26	---	57	13	7.2	2.4	3.5	1.1	20
30	15	78	e16	e27	---	49	12	7.0	7.8	2.9	0.93	4.2
31	9.8	---	225	e27	---	83	---	6.8	---	2.4	0.90	---
TOTAL	290.9	1242.7	3156	5838	5093	4079	602	441.9	143.9	191.3	44.25	64.98
MEAN	9.38	41.4	102	188	182	132	20.1	14.3	4.80	6.17	1.43	2.17
MAX	49	373	549	1620	1110	823	64	35	8.7	28	3.5	20
MIN	3.7	4.7	13	24	24	32	11	6.8	2.4	1.5	0.90	0.41
CFSM	0.14	0.60	1.49	2.75	2.66	1.92	0.29	0.21	0.07	0.09	0.02	0.03
IN.	0.16	0.67	1.71	3.17	2.77	2.22	0.33	0.24	0.08	0.10	0.02	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2005, BY WATER YEAR (WY)

MEAN	32.6	75.4	92.1	87.2	117	164	101	68.1	46.2	22.0	16.1	30.3
MAX	273	333	328	278	408	499	206	308	295	185	122	252
(WY)	2002	1991	1983	1974	1997	1979	1993	2000	1997	1982	1994	1986
MIN	2.56	2.98	3.99	2.89	6.71	20.5	20.1	8.89	3.10	1.94	1.43	2.09
(WY)	1964	1977	1977	1977	1963	2000	2005	1968	1987	1965	2005	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1961 - 2005	
ANNUAL TOTAL	25916.9		21187.93			
ANNUAL MEAN	70.8		58.0		70.7	
HIGHEST ANNUAL MEAN					115	1993
LOWEST ANNUAL MEAN					24.6	1977
HIGHEST DAILY MEAN	1330	Mar 2	1620	Jan 13	5540	Jun 21 1997
LOWEST DAILY MEAN	1.9	Sep 15	0.41	Sep 13	0.41	Sep 13 2005
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 14	0.48	Sep 8	0.48	Sep 8 2005
MAXIMUM PEAK FLOW			1870	Jan 13	(a)8810	Jun 21 1997
MAXIMUM PEAK STAGE			12.00	Jan 13	(b)16.72	Jun 21 1997
INSTANTANEOUS LOW FLOW			0.30	Sep 14	0.30	Sep 14 2005
ANNUAL RUNOFF (CFSM)	1.03		0.847		1.03	
ANNUAL RUNOFF (INCHES)	14.07		11.51		14.02	
10 PERCENT EXCEEDS	205		130		150	
50 PERCENT EXCEEDS	19		13		20	
90 PERCENT EXCEEDS	4.4		1.4		3.3	

(a) From rating curve extended above 2,000 ft^3/s.
(b) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04109000 GRAND RIVER AT JACKSON, MI

LOCATION.--Lat 42°17'01", long 84°24'32", in NW1/4 SE1/4 sec.22, T.2 S., R.1 W., Jackson County, Hydrologic Unit 04050004, on left bank on grounds of sewage-treatment plant, 1 mi north of Jackson, 2.2 mi upstream from Portage River, and at mile 216.

DRAINAGE AREA.--174 mi^2.

PERIOD OF RECORD.--April 1935 to current year.

REVISED RECORDS.--WSP 974: 1937(M). WSP 1387: 1936. WSP 1727: 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 900.00 ft above sea level (Fargo Engineering Co. bench mark). Prior to Sept. 24, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Slight regulation by mills upstream from station. Flow includes about 20 ft^3/s as sewage effluent, which originates from ground-water sources, from the City of Jackson. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	81	247	130	135	226	298	109	83	71	111	54
2	53	114	227	163	182	216	250	113	81	54	105	53
3	50	88	222	226	180	203	232	162	117	49	95	50
4	50	127	220	243	176	204	221	146	122	106	89	48
5	49	141	217	240	177	205	211	95	127	78	79	48
6	47	147	215	234	175	208	186	90	119	62	72	48
7	46	143	262	238	200	247	178	88	68	62	69	48
8	62	138	241	236	250	258	168	85	56	62	69	48
9	59	133	232	228	263	210	160	108	58	57	65	47
10	46	129	253	225	254	189	153	133	56	59	67	42
11	46	125	242	223	221	205	151	97	60	59	64	45
12	45	121	238	295	213	197	195	130	60	60	84	45
13	48	117	236	462	211	191	194	e132	131	55	68	45
14	48	112	230	440	281	216	183	e137	80	58	79	42
15	65	110	223	427	300	226	161	e144	73	88	e70	43
16	71	109	251	431	353	253	113	e127	70	105	68	97
17	62	107	251	421	365	262	109	e113	68	89	65	51
18	57	105	236	398	348	249	105	96	66	85	64	46
19	58	122	170	365	347	207	89	106	64	86	63	50
20	56	117	143	271	353	205	97	104	64	114	102	49
21	55	108	166	221	328	209	91	93	64	191	68	48
22	57	108	148	175	305	217	93	97	61	168	65	82
23	65	106	131	162	286	229	97	e108	60	e165	64	61
24	60	120	96	176	273	232	110	e122	57	184	63	48
25	60	130	85	173	261	240	113	e137	53	173	61	49
26	62	125	87	160	249	245	115	147	50	185	60	73
27	59	205	84	139	235	249	122	145	52	193	76	55
28	58	204	83	132	234	254	118	99	73	172	61	54
29	88	194	85	132	---	295	116	88	64	137	60	66
30	105	197	89	128	---	311	112	86	102	120	57	52
31	81	---	136	127	---	313	---	85	---	113	55	---
TOTAL	1818	3883	5746	7621	7155	7171	4541	3522	2259	3260	2238	1587
MEAN	58.6	129	185	246	256	231	151	114	75.3	105	72.2	52.9
MAX	105	205	262	462	365	313	298	162	131	193	111	97
MIN	45	81	83	127	135	189	89	85	50	49	55	42
CFSM	0.34	0.74	1.07	1.41	1.47	1.33	0.87	0.65	0.43	0.60	0.41	0.30
IN.	0.39	0.83	1.23	1.63	1.53	1.53	0.97	0.75	0.48	0.70	0.48	0.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2005, BY WATER YEAR (WY)

MEAN	81.0	107	117	126	149	222	223	168	130	85.0	68.2	66.2
MAX	222	305	211	343	308	501	589	484	433	349	193	222
(WY)	2002	1993	2002	1993	2001	1976	1950	1943	1943	1968	1995	1975
MIN	23.4	25.5	27.7	27.2	31.5	73.2	64.3	54.7	34.3	19.5	15.1	25.2
(WY)	1964	1964	1964	1964	1964	1964	1935	1936	1936	1936	1936	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1935 - 2005	
ANNUAL TOTAL	47292		50801			
ANNUAL MEAN	129		139		129	
HIGHEST ANNUAL MEAN					216	1993
LOWEST ANNUAL MEAN					44.3	1964
HIGHEST DAILY MEAN	410	May 22	462	Jan 13	971	Jun 3 1943
LOWEST DAILY MEAN	43	Sep 25	42	Sep 10	12	Aug 23 1936
ANNUAL SEVEN-DAY MINIMUM	48	Sep 21	44	Sep 9	14	Aug 4 1936
MAXIMUM PEAK FLOW			562	Jan 13	(a)1070	Jun 25 1937
MAXIMUM PEAK STAGE			13.03	Jan 13	15.44	Jun 25 1968
INSTANTANEOUS LOW FLOW			35	Sep 14	9.2	Aug 22 1936
ANNUAL RUNOFF (CFSM)	0.743		0.800		0.739	
ANNUAL RUNOFF (INCHES)	10.11		10.86		10.04	
10 PERCENT EXCEEDS	250		250		258	
50 PERCENT EXCEEDS	98		113		97	
90 PERCENT EXCEEDS	59		53		40	

(a) Gage height 13.50 ft.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04111000 GRAND RIVER NEAR EATON RAPIDS, MI

LOCATION.--Lat 42°32'05", long 84°37'23", in NE1/4 sec.26, T.2 N., R.3 W., Eaton County, Hydrologic Unit 04050004, on right bank 400 ft upstream from bridge on Petrieville Highway, 2 mi northeast of Eaton Rapids, 2.5 mi downstream from Spring Brook, 25 mi upstream from Red Cedar River, and at mile 178.

DRAINAGE AREA.--661 mi^2.

PERIOD OF RECORD.--October 1950 to September 1982, October 1995 to current year. Gage-height records collected in this vicinity 1905-28 (flood seasons only) are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1707: 1951 (m).

GAGE.--Water-stage recorder. Datum of gage is 852.68 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by powerplant at Smithville Dam and mills at Eaton Rapids. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 4, 1950, reached a stage of 8.15 ft, discharge, 3,860 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	341	1040	700	e606	e830	1120	513	295	202	403	139
2	166	400	1060	819	e565	e784	1100	506	255	215	281	137
3	179	399	1040	927	e556	e725	1060	491	279	225	271	135
4	169	458	1030	1000	e518	e713	1020	464	251	217	262	138
5	167	516	990	1020	e531	e762	973	462	270	202	213	129
6	161	542	931	911	e529	e820	906	371	311	196	154	123
7	149	535	937	916	676	1090	886	538	267	257	211	119
8	161	520	1060	970	800	1440	865	601	260	269	185	127
9	172	477	1060	983	897	1370	843	377	258	205	172	116
10	178	445	1180	961	e935	1370	821	252	234	138	178	121
11	194	429	1210	926	e921	1290	748	350	282	180	151	121
12	169	410	1160	1020	886	1150	712	382	244	235	151	121
13	176	385	1140	1920	902	978	651	386	319	166	173	114
14	177	374	1090	2540	1170	895	654	397	339	155	183	111
15	175	369	1010	2600	1530	876	642	495	344	154	175	95
16	205	349	893	2370	2000	862	648	534	379	153	173	92
17	256	342	909	2050	1940	849	642	491	343	222	173	111
18	268	345	862	1720	1740	880	632	457	271	337	147	136
19	252	352	e766	e1420	1540	927	614	429	255	280	150	148
20	229	386	e625	e1260	1460	1000	590	420	281	208	168	134
21	228	412	e555	e1150	1320	1040	485	416	232	227	163	144
22	224	418	e578	e968	1260	1050	353	386	170	286	210	128
23	224	394	e606	e750	e1130	1090	448	398	238	364	190	135
24	224	324	e608	e769	e1060	1090	450	388	201	427	162	179
25	239	427	e555	e817	e1010	1110	497	388	222	379	152	185
26	234	417	e534	e825	e967	1110	597	382	198	424	145	156
27	238	538	e501	e769	e873	1110	524	357	175	442	146	132
28	216	813	e506	e682	e827	1110	583	355	189	516	148	161
29	235	854	e494	e682	---	1120	520	354	158	393	147	195
30	243	927	e509	e655	---	1120	540	323	160	440	144	178
31	302	---	536	e630	---	1110	---	273	---	338	139	---
TOTAL	6401	13898	25975	35730	29149	31671	21124	12936	7680	8452	5720	4060
MEAN	206	463	838	1153	1041	1022	704	417	256	273	185	135
MAX	302	927	1210	2600	2000	1440	1120	601	379	516	403	195
MIN	149	324	494	630	518	713	353	252	158	138	139	92
CFSM	0.31	0.70	1.27	1.74	1.57	1.55	1.07	0.63	0.39	0.41	0.28	0.20
IN.	0.36	0.78	1.46	2.01	1.64	1.78	1.19	0.73	0.43	0.48	0.32	0.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2005, BY WATER YEAR (WY)

MEAN	253	351	438	481	594	921	908	672	428	276	201	192
MAX	875	744	877	1406	1489	1932	1561	1848	1041	1234	591	800
(WY)	1955	2002	1976	1952	2001	1974	1974	1956	1968	1968	2000	1975
MIN	64.6	94.7	86.0	96.5	111	223	378	200	138	94.7	78.8	64.6
(WY)	1964	1964	1964	1963	1964	1964	1964	1958	1964	1965	1963	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1951 - 2005	
ANNUAL TOTAL	205770		202796			
ANNUAL MEAN	562		556		475	
HIGHEST ANNUAL MEAN					769	1974
LOWEST ANNUAL MEAN					147	1964
HIGHEST DAILY MEAN	3380	May 23	2600	Jan 15	3400	Feb 22 1971
LOWEST DAILY MEAN	146	Sep 20	92	Sep 16	21	Oct 12 1963
ANNUAL SEVEN-DAY MINIMUM	156	Sep 22	109	Sep 11	52	Oct 10 1963
MAXIMUM PEAK FLOW			2810	Jan 14	3500	(a)
MAXIMUM PEAK STAGE			7.01	Jan 14	8.19	Jun 28 1968
INSTANTANEOUS LOW FLOW			65	Jun 22	14	(b)
ANNUAL RUNOFF (CFSM)	0.851		0.841		0.719	
ANNUAL RUNOFF (INCHES)	11.58		11.41		9.77	
10 PERCENT EXCEEDS	1060		1100		1010	
50 PERCENT EXCEEDS	428		417		337	
90 PERCENT EXCEEDS	210		152		122	

(a) Feb. 21, 1971, gage height 7.52 ft; May 23, 2004, gage height 8.04 ft.
(b) Dec. 20, 1962, Oct. 14, 1966.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04111379 RED CEDAR RIVER NEAR WILLIAMSTON, MI

LOCATION.--Lat 42°40'59", long 84°13'09", in NE1/4 sec.4, T.3 N., R.2 E., Ingham County, Hydrologic Unit 04050004, on right bank 20 ft upstream from bridge on State Highway 52, 1.5 mi upstream from Squaw Creek, 3.5 mi east of Williamston, and at mile 26.

DRAINAGE AREA.--163 mi^2.

PERIOD OF RECORD.--July 1975 to September 1989, July 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 870 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. At times, low flow is affected by pumpage for irrigation. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 19, 1975, reached a stage of 10.41 ft, from floodmark, discharge, 2,670 ft^3/s.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	52	250	256	e79	e130	332	119	44	32	22	13
2	24	62	306	286	e76	e125	303	106	40	29	20	12
3	25	68	306	356	e76	e118	271	104	39	26	20	12
4	25	79	277	400	e76	e116	237	98	39	25	20	12
5	25	100	247	403	e76	e120	204	91	38	32	19	12
6	23	99	233	e352	e86	e130	177	84	42	33	18	11
7	22	88	248	302	e141	e216	161	84	40	30	17	10
8	22	73	339	284	278	e506	150	82	38	27	16	12
9	25	62	346	253	333	e520	139	77	35	25	16	11
10	26	55	307	224	e269	e445	129	74	33	24	15	10
11	25	51	278	199	e231	377	120	71	32	22	e16	10
12	25	48	265	219	216	330	113	70	30	20	18	9.7
13	25	45	266	573	201	283	106	72	45	20	18	10
14	25	42	254	885	295	232	99	101	61	20	17	10
15	26	40	226	e905	559	190	92	116	57	20	17	10
16	32	41	202	e810	750	169	88	111	62	23	17	15
17	36	44	180	e622	e741	173	86	101	59	33	15	16
18	36	46	156	e471	e620	198	83	87	51	42	15	14
19	35	48	e135	e358	e534	211	82	76	45	35	15	13
20	35	53	e119	e303	459	264	81	74	40	28	16	13
21	36	56	e105	e260	392	313	82	68	37	26	16	14
22	35	54	e93	e222	327	333	81	62	35	26	17	14
23	34	50	e83	e194	276	394	87	64	34	24	15	22
24	36	48	e79	e167	230	393	107	66	31	28	14	19
25	35	68	e77	e147	198	392	141	64	28	32	15	17
26	34	78	e75	e135	176	395	180	58	29	37	14	19
27	39	103	e74	e114	154	384	186	54	29	51	15	20
28	42	214	e73	e103	e144	372	179	52	29	48	16	18
29	45	275	e75	e94	---	368	162	51	30	37	14	19
30	52	246	e80	e89	---	360	140	47	33	31	14	18
31	56	---	141	e84	---	350	---	46	---	26	14	---
TOTAL	984	2388	5895	10070	7993	8907	4398	2430	1185	912	511	415.7
MEAN	31.7	79.6	190	325	285	287	147	78.4	39.5	29.4	16.5	13.9
MAX	56	275	346	905	750	520	332	119	62	51	22	22
MIN	22	40	73	84	76	116	81	46	28	20	14	9.7
CFSM	0.19	0.49	1.17	1.99	1.75	1.76	0.90	0.48	0.24	0.18	0.10	0.09
IN.	0.22	0.54	1.35	2.30	1.82	2.03	1.00	0.55	0.27	0.21	0.12	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2005, BY WATER YEAR (WY)

MEAN	71.9	78.4	110	88.9	138	255	214	120	86.0	34.9	23.1	38.4
MAX	329	265	248	325	411	504	354	292	306	72.6	49.1	133
(WY)	1982	1989	1976	2005	1976	1982	1985	2004	1989	2004	1980	1975
MIN	15.7	26.9	25.6	22.3	20.8	103	80.5	40.8	16.6	10.8	9.27	11.3
(WY)	2003	1977	2003	1977	2003	2003	2004	1987	1988	1988	1984	1978

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1975 - 2005	
ANNUAL TOTAL	40841		46088.7			
ANNUAL MEAN	112		126		104	
HIGHEST ANNUAL MEAN					157	1976
LOWEST ANNUAL MEAN					56.3	2003
HIGHEST DAILY MEAN	822	May 24	905	Jan 15	1700	Feb 26 1985
LOWEST DAILY MEAN	21	Sep 27	9.7	Sep 12	4.4	Jul 14 1988
ANNUAL SEVEN-DAY MINIMUM	22	Sep 22	10	Sep 9	5.7	Jul 9 1988
MAXIMUM PEAK FLOW			(a)921	Jan 14	1790	Feb 26 1985
MAXIMUM PEAK STAGE			(b)8.03	Jan 15	9.07	Feb 26 1985
INSTANTANEOUS LOW FLOW			8.5	(c)	2.2	(d)
ANNUAL RUNOFF (CFSM)	0.685		0.775		0.639	
ANNUAL RUNOFF (INCHES)	9.32		10.52		8.68	
10 PERCENT EXCEEDS	256		331		257	
50 PERCENT EXCEEDS	70		68		56	
90 PERCENT EXCEEDS	30		16		17	

(a) Gage height 7.40 ft.
(b) Backwater from ice.
(c) Sept. 11, 12, 13.
(d) July 13, 14, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04111500 DEER CREEK NEAR DANSVILLE, MI

LOCATION.--Lat 42°36'30", long 84°19'15", in SE1/4 NE1/4 sec.33, T.3 N., R.1 E., Ingham County, Hydrologic Unit 04050004, on right bank 15 ft upstream from bridge on Clark Road, 3.5 mi north of Dansville, and 7.2 mi upstream from mouth.

DRAINAGE AREA.--16.3 mi^2.

PERIOD OF RECORD.--May 1954 to current year.

REVISED RECORDS.--WSP 1727: 1954(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 889.08 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good except for estimated daily discharges, which are fair. At times, low flow is affected by pumpage for irrigation. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	3.4	54	37	e7.3	e11	21	7.1	2.7	1.7	0.90	0.16
2	0.95	8.0	50	47	e7.0	e11	18	6.1	2.5	1.7	0.78	0.12
3	0.97	8.5	36	53	e6.9	e10	15	6.4	2.5	1.4	0.69	0.10
4	0.88	11	26	55	e6.8	e10	13	6.1	2.4	1.6	0.73	0.17
5	0.88	15	23	38	e7.0	11	12	5.7	2.3	2.7	0.73	0.08
6	0.94	9.8	22	28	e9.2	12	12	5.7	2.3	1.9	0.66	0.10
7	0.89	7.4	41	22	20	75	11	5.9	2.0	1.5	0.62	0.09
8	0.85	5.9	53	20	38	e88	10	5.6	2.1	1.2	0.51	0.12
9	1.1	5.0	34	18	25	e41	9.4	5.0	2.0	1.0	0.48	0.10
10	1.1	4.7	27	18	19	28	8.8	4.6	3.4	0.94	0.45	0.08
11	1.1	4.3	28	17	e16	21	8.3	4.6	2.5	0.87	0.46	0.05
12	1.1	3.9	26	68	15	18	7.8	4.7	2.4	0.78	0.58	0.07
13	1.1	3.5	28	249	16	16	7.0	5.3	7.9	0.79	0.52	0.05
14	1.2	3.3	22	181	89	14	6.4	13	7.0	0.84	0.53	0.04
15	1.2	3.3	19	67	114	13	6.1	8.3	5.0	0.71	0.51	0.08
16	1.9	3.5	17	39	e139	13	6.0	6.5	4.4	0.78	0.43	0.51
17	2.5	3.8	15	e26	64	16	6.0	5.7	3.5	0.86	0.39	0.44
18	2.3	4.0	14	e17	e37	19	5.9	5.2	3.2	0.75	0.35	0.34
19	2.1	4.1	11	e15	e28	20	5.7	4.9	2.8	0.75	0.37	0.29
20	2.0	5.5	9.6	14	24	26	6.0	5.2	2.4	0.69	0.43	0.38
21	1.9	5.5	9.4	11	21	25	5.9	4.4	2.3	1.1	0.41	0.19
22	1.8	5.0	8.3	8.6	19	31	6.0	4.4	2.0	0.87	0.32	0.38
23	1.8	4.7	7.5	10	17	37	7.0	4.8	1.8	0.71	0.34	0.53
24	2.2	4.6	e7.2	e11	16	29	8.9	4.5	1.7	3.3	0.33	0.36
25	2.1	5.8	e6.9	e10	15	33	14	4.1	1.5	3.7	0.26	0.35
26	2.0	6.2	e6.7	e9.5	13	30	14	3.7	1.5	3.5	0.28	0.51
27	1.9	30	e6.6	e9.0	13	28	11	3.5	1.4	3.6	0.27	0.44
28	1.8	72	e6.5	e8.6	12	27	9.5	3.3	1.2	2.2	0.24	0.38
29	2.4	41	e6.4	e8.2	---	26	8.3	3.2	1.2	1.6	0.20	0.57
30	4.6	28	e6.4	e7.9	---	25	7.7	3.2	1.6	1.3	0.17	0.47
31	4.4	---	39	e7.6	---	24	---	2.8	---	1.1	0.20	---
TOTAL	52.96	320.7	666.5	1130.4	814.2	788	287.7	163.5	81.5	46.44	14.14	7.55
MEAN	1.71	10.7	21.5	36.5	29.1	25.4	9.59	5.27	2.72	1.50	0.46	0.25
MAX	4.6	72	54	249	139	88	21	13	7.9	3.7	0.90	0.57
MIN	0.85	3.3	6.4	7.6	6.8	10	5.7	2.8	1.2	0.69	0.17	0.04
CFSM	0.10	0.66	1.32	2.24	1.78	1.56	0.59	0.32	0.17	0.09	0.03	0.02
IN.	0.12	0.73	1.52	2.58	1.86	1.80	0.66	0.37	0.19	0.11	0.03	0.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2005, BY WATER YEAR (WY)

MEAN	5.57	9.12	11.9	12.0	17.6	28.5	23.2	13.7	8.67	3.91	2.38	2.83
MAX	33.8	45.1	32.7	40.1	62.5	70.6	64.8	57.2	43.3	30.5	17.1	20.6
(WY)	1960	1993	1973	1974	2001	1982	1975	1956	1968	1957	1992	1992
MIN	0.35	0.65	0.48	0.88	1.28	3.00	5.93	2.58	1.03	0.39	0.19	0.19
(WY)	1964	1964	1964	1977	2003	1964	1963	1958	1988	1965	1971	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1954 - 2005	
ANNUAL TOTAL	5149.78		4373.59			
ANNUAL MEAN	14.1		12.0		11.6	
HIGHEST ANNUAL MEAN					22.8	1993
LOWEST ANNUAL MEAN					1.86	1964
HIGHEST DAILY MEAN	215	May 22	249	Jan 13	720	Apr 19 1975
LOWEST DAILY MEAN	0.81	Sep 24	0.04	Sep 14	0.04	Sep 14 2005
ANNUAL SEVEN-DAY MINIMUM	0.85	Sep 22	0.07	Sep 9	0.07	Sep 9 2005
MAXIMUM PEAK FLOW			282	Jan 13	(a)962	Apr 19 1975
MAXIMUM PEAK STAGE			8.13	Jan 13	(b)12.18	Apr 19 1975
INSTANTANEOUS LOW FLOW			0.01	Sep 8	0.01	Sep 8 2005
ANNUAL RUNOFF (CFSM)	0.863		0.735		0.709	
ANNUAL RUNOFF (INCHES)	11.75		9.98		9.63	
10 PERCENT EXCEEDS	35		28		26	
50 PERCENT EXCEEDS	6.4		5.2		4.8	
90 PERCENT EXCEEDS	1.3		0.40		0.70	

(a) From rating curve extended above 610 ft^3/s.
(b) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04112000 SLOAN CREEK NEAR WILLIAMSTON, MI

LOCATION.--Lat 42°40'33", long 84°21'50", in SE1/4 NE1/4 sec.1, T.3 N., R.1 W., Ingham County, Hydrologic Unit 04050004, on left bank 30 ft downstream from culvert on Meridian Road, 2.1 mi upstream from mouth, and 4.2 mi west of Williamston.

DRAINAGE AREA.--9.34 mi^2.

PERIOD OF RECORD.--June 1954 to current year.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Datum of gage is 862.12 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good except for estimated daily discharges, which are fair. At times, low flow is affected by pumpage for irrigation. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.14	0.37	18	19	2.3	3.9	7.9	2.8	0.78	0.66	e0.17	0.04
2	0.13	1.3	16	28	2.2	3.9	7.0	2.6	0.73	0.51	e0.14	0.03
3	0.13	1.5	11	27	2.2	3.7	6.1	2.4	0.75	0.42	e0.13	0.04
4	0.13	2.9	7.5	32	2.2	3.7	5.6	2.2	0.75	0.40	e0.12	0.04
5	0.13	3.9	7.3	18	2.3	3.6	5.3	2.0	0.68	0.48	e0.12	0.03
6	0.14	2.5	7.6	12	2.6	4.7	4.9	2.0	0.66	0.35	e0.12	0.04
7	0.14	1.9	24	8.7	7.8	62	4.6	2.1	0.57	0.28	e0.10	0.03
8	0.14	1.4	22	7.7	22	54	4.0	1.9	0.62	0.23	e0.09	0.04
9	0.18	1.2	12	7.1	12	27	3.6	1.9	0.57	0.20	e0.08	e0.03
10	0.16	1.1	8.9	6.9	7.0	16	3.3	1.8	0.48	0.17	e0.07	e0.03
11	0.16	0.99	10	6.9	6.0	9.5	3.0	1.7	0.47	0.15	e0.06	e0.03
12	0.17	0.90	10	57	6.3	7.7	2.9	1.6	0.55	0.14	0.13	e0.03
13	0.18	0.82	17	165	7.3	6.2	2.7	1.8	1.2	0.15	0.12	e0.03
14	0.19	0.74	9.4	84	65	5.5	2.4	2.0	1.4	0.14	0.12	e0.03
15	0.26	0.69	7.5	39	79	5.1	2.2	1.8	1.3	0.12	0.11	e0.03
16	0.40	0.71	6.5	25	79	5.6	2.1	1.6	1.2	0.15	0.11	e0.09
17	0.41	0.73	5.6	16	36	8.3	2.0	1.5	e0.85	0.16	0.07	e0.09
18	0.38	0.73	5.3	9.7	23	9.6	2.0	1.5	e0.72	e0.17	0.07	e0.07
19	0.34	0.74	4.2	7.5	15	11	2.0	1.5	0.67	0.16	0.07	e0.06
20	0.33	0.95	3.6	5.8	10	21	2.0	1.6	0.60	e0.15	e0.08	e0.05
21	0.31	0.90	3.6	4.7	8.2	17	2.0	1.3	0.61	e0.27	e0.08	e0.06
22	0.31	0.82	3.1	3.9	6.9	26	2.2	1.3	0.56	e0.19	e0.05	e0.07
23	0.30	0.82	2.9	3.8	6.0	26	2.6	1.5	0.54	e0.15	e0.06	e0.09
24	0.34	0.86	2.7	3.7	5.6	19	3.3	1.3	0.49	e0.54	e0.06	e0.07
25	0.34	0.98	2.5	3.5	5.2	22	5.7	1.2	0.49	0.63	e0.04	e0.07
26	0.32	1.0	2.4	3.3	4.7	18	5.9	1.1	0.50	e0.66	e0.05	e0.09
27	0.30	12	2.2	2.6	4.3	16	5.0	1.1	0.45	e0.66	e0.04	e0.09
28	0.28	24	2.3	2.4	4.6	15	4.0	1.0	0.44	e0.51	e0.04	e0.08
29	0.37	9.9	2.3	2.6	---	14	3.4	0.96	0.40	e0.37	e0.03	e0.09
30	e0.39	6.4	2.2	2.6	---	12	3.1	0.90	0.55	e0.25	0.03	e0.08
31	0.35	---	29	2.4	---	9.6	---	0.85	---	e0.20	0.04	---
TOTAL	7.85	83.75	268.6	617.8	434.7	466.6	112.8	50.81	20.58	9.62	2.60	1.65
MEAN	0.25	2.79	8.66	19.9	15.5	15.1	3.76	1.64	0.69	0.31	0.08	0.06
MAX	0.41	24	29	165	79	62	7.9	2.8	1.4	0.66	0.17	0.09
MIN	0.13	0.37	2.2	2.4	2.2	3.6	2.0	0.85	0.40	0.12	0.03	0.03
CFSM	0.03	0.30	0.93	2.13	1.66	1.61	0.40	0.18	0.07	0.03	0.01	0.01
IN.	0.03	0.33	1.07	2.46	1.73	1.86	0.45	0.20	0.08	0.04	0.01	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2005, BY WATER YEAR (WY)

MEAN	2.64	4.02	5.62	5.55	8.77	15.6	12.2	6.34	4.42	1.77	1.03	1.35
MAX	20.9	21.9	24.9	21.4	36.5	39.9	47.2	37.6	35.3	26.5	8.15	7.19
(WY)	1960	1993	1973	1974	2001	1982	1975	1956	1968	1957	1980	1993
MIN	0.08	0.13	0.11	0.11	0.12	0.78	1.45	0.94	0.25	0.07	0.05	0.05
(WY)	2004	2000	1964	1963	1963	1964	1963	1955	1988	1988	2003	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1954 - 2005	
ANNUAL TOTAL	1953.59		2077.36			
ANNUAL MEAN	5.34		5.69		5.76	
HIGHEST ANNUAL MEAN					10.5	(a)
LOWEST ANNUAL MEAN					0.72	1964
HIGHEST DAILY MEAN	77	Mar 5	165	Jan 13	536	Apr 19 1975
LOWEST DAILY MEAN	0.11	Sep 24	0.03	Aug 29	0.02	Aug 3 1988
ANNUAL SEVEN-DAY MINIMUM	0.12	Sep 21	0.03	Sep 9	0.03	Sep 9 2005
MAXIMUM PEAK FLOW			201	Jan 13	(b)1290	Apr 18 1975
MAXIMUM PEAK STAGE			4.39	Jan 13	9.99	Apr 18 1975
INSTANTANEOUS LOW FLOW					0.01	(c)
ANNUAL RUNOFF (CFSM)	0.571		0.609		0.617	
ANNUAL RUNOFF (INCHES)	7.78		8.27		8.38	
10 PERCENT EXCEEDS	12		15		13	
50 PERCENT EXCEEDS	1.7		1.4		1.7	
90 PERCENT EXCEEDS	0.27		0.07		0.17	

(a) 1973, 1993.
(b) From rating curve extended above 660 ft^3/s on basis of computation of peak flow through culvert and over road embankment.
(c) Sept. 11, 1954, Jan. 18, 1957, Aug. 3, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04112500 RED CEDAR RIVER AT EAST LANSING, MI

LOCATION.--Lat 42°43'40", long 84°28'40", in SW1/4 sec.18, T.4 N., R.1 W., Ingham County, Hydrologic Unit 04050004, in left downstream bridge abutment of Farm Lane Bridge on Michigan State University Campus in East Lansing, 4.0 mi upstream from Sycamore Creek, and 5.6 mi upstream from mouth.

DRAINAGE AREA.--355 mi^2.

PERIOD OF RECORD.--August 1902 to December 1903, March 1931 to current year. Monthly discharge only for some periods, published in WSP 1307. Published as Red Cedar River at Agricultural College, August 1902 to December 1903 and as Cedar River at East Lansing, March 1931 to September 1965. Gage-height records collected in this vicinity 1911-19, and 1920-28 (flood seasons only), are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1307: 1936(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 824.39 ft above sea level. August 1902 to December 1903 nonrecording gage at site 0.8 mi downstream at different datum. March 1931 to November 1940 water-stage recorder at site 250 ft upstream at present datum.

REMARKS.--Records good. Prior to April 1975, occasional regulation at low flow by mill at Williamston, 16 mi upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 24, 1904, reached a stage of 13.4 ft, discharge, 8,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	89	431	460	173	264	551	215	87	63	49	20
2	40	121	497	545	166	255	497	195	82	57	42	20
3	39	118	530	633	161	224	444	180	76	51	37	18
4	39	147	482	712	160	228	395	175	73	86	41	17
5	41	175	418	740	164	261	350	165	77	118	36	17
6	41	196	384	665	172	257	315	158	74	86	33	16
7	41	176	403	562	198	375	282	160	74	74	32	18
8	43	154	535	489	328	917	258	157	113	64	30	17
9	49	135	596	424	478	1110	238	156	88	56	29	15
10	41	119	559	390	503	1030	222	152	72	50	28	15
11	42	110	489	363	405	801	208	153	100	46	26	16
12	41	104	447	420	354	590	195	152	110	42	38	16
13	41	98	447	1160	347	489	185	167	157	39	28	15
14	41	93	440	1910	505	416	176	182	160	37	28	15
15	51	89	396	1980	1010	359	166	211	163	40	26	16
16	63	88	353	1680	1620	314	157	206	150	40	26	57
17	61	89	321	1340	1670	298	152	192	136	49	25	41
18	61	93	286	996	1340	332	151	179	119	60	24	31
19	61	103	220	795	1060	363	148	167	104	73	21	27
20	58	112	134	644	892	430	148	163	90	64	25	24
21	57	113	195	527	680	512	148	154	79	60	24	23
22	58	114	211	517	576	554	148	147	72	49	23	35
23	61	111	165	398	481	665	153	152	68	46	22	39
24	61	100	153	335	410	702	180	147	62	126	21	41
25	59	100	152	319	359	693	221	143	58	88	21	42
26	58	111	148	281	324	695	266	137	54	76	21	63
27	57	171	144	236	283	679	287	126	53	80	20	44
28	56	349	139	206	273	646	282	119	52	87	20	41
29	74	465	141	196	---	631	263	114	51	78	21	54
30	71	452	145	190	---	614	239	107	66	65	21	41
31	75	---	236	183	---	591	---	95	---	56	20	---
TOTAL	1620	4495	10197	20296	15092	16295	7425	4926	2720	2006	858	854
MEAN	52.3	150	329	655	539	526	248	159	90.7	64.7	27.7	28.5
MAX	75	465	596	1980	1670	1110	551	215	163	126	49	63
MIN	39	88	134	183	160	224	148	95	51	37	20	15
CFSM	0.15	0.42	0.93	1.84	1.52	1.48	0.70	0.45	0.26	0.18	0.08	0.08
IN.	0.17	0.47	1.07	2.13	1.58	1.71	0.78	0.52	0.29	0.21	0.09	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2005, BY WATER YEAR (WY)

MEAN	104	144	182	215	295	492	457	292	181	89.4	60.4	73.5
MAX	571	735	494	739	1036	1162	1494	1310	627	578	366	426
(WY)	1982	1993	1995	1993	2001	1948	1947	1956	1968	1994	1992	1903
MIN	14.8	21.2	20.5	29.0	28.6	58.6	62.3	52.9	20.4	5.70	9.24	14.6
(WY)	1935	1964	1964	1940	1940	1934	1931	1931	1934	1934	1934	1939

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1902 - 2005	
ANNUAL TOTAL	86429		86784			
ANNUAL MEAN	236		238		216	
HIGHEST ANNUAL MEAN					431	1993
LOWEST ANNUAL MEAN					43.3	1964
HIGHEST DAILY MEAN	2220	May 24	1980	Jan 15	5720	Apr 20 1975
LOWEST DAILY MEAN	36	Sep 24	15	Sep 9	3.0	Jul 31 1931
ANNUAL SEVEN-DAY MINIMUM	38	Sep 23	15	Sep 9	3.9	Jul 15 1934
MAXIMUM PEAK FLOW			2060	Jan 15	5940	Apr 20 1975
MAXIMUM PEAK STAGE			7.19	Jan 15	11.95	Apr 20 1975
INSTANTANEOUS LOW FLOW			14	(a)	3.0	Jul 31 1931
ANNUAL RUNOFF (CFSM)	0.665		0.670		0.609	
ANNUAL RUNOFF (INCHES)	9.06		9.09		8.27	
10 PERCENT EXCEEDS	532		560		510	
50 PERCENT EXCEEDS	140		147		108	
90 PERCENT EXCEEDS	54		28		30	

(a) Sept. 13, 14.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04113000 GRAND RIVER AT LANSING, MI

LOCATION.--Lat 42°45'02", long 84°33'19", in NW1/4 sec.9, T.4 N., R.2 W., Ingham County, Hydrologic Unit 04050004, on right bank 30 ft upstream from bridge on North Grand River Avenue in Lansing, 2.0 mi downstream from Red Cedar River, and at mile 152.

DRAINAGE AREA.--1,230 mi^2, approximately.

PERIOD OF RECORD.--March 1901 to September 1906, October 1934 to current year. Monthly discharge only for some periods, published in WSP 1307. Published as "at North Lansing" 1901-6. Gage-height records collected in this vicinity 1907-10 (flood seasons only), 1911-19, 1920-28 (flood seasons only), and since 1931 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1174: 1949. WSP 1387: 1901, 1903-4, 1935, 1937, 1942.

GAGE.--Water-stage recorder. Datum of gage is 805.53 ft above sea level (levels by Michigan Department of Natural Resources). Prior to August 1906, nonrecording gage at same site at different datum. November 1934 to June 1949 water-stage recorder at site 1.8 mi downstream at datum 2.42 ft lower.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow caused by powerplants upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	479	1960	1410	966	1460	1870	801	476	331	472	209
2	288	813	2030	1830	898	1350	1800	801	449	346	497	134
3	200	651	1990	2020	918	1190	1770	771	470	368	328	155
4	244	874	1870	2250	809	1240	1600	682	484	722	438	175
5	305	788	1760	2240	921	1450	1500	714	443	622	323	108
6	183	964	1700	2080	862	1440	1380	691	506	415	220	160
7	216	798	1700	1730	991	1790	1300	610	542	304	188	137
8	235	815	1920	1810	1330	2900	1230	885	504	449	240	147
9	405	691	2050	1700	1600	3120	1210	781	630	335	254	110
10	174	698	2080	1650	1660	2780	1090	409	707	291	241	115
11	245	606	2190	1600	1500	2580	1110	559	574	168	245	174
12	277	600	2030	1890	1440	2130	930	581	710	270	259	165
13	219	576	1970	4460	1450	1800	964	755	936	340	228	109
14	252	508	1940	5630	1940	1560	910	723	983	166	226	154
15	288	575	1780	5670	3020	1530	843	731	774	244	228	130
16	348	459	1520	4610	4270	1440	860	901	833	272	270	372
17	338	577	1430	3780	4570	1430	860	772	709	196	198	167
18	452	461	1410	2950	3630	1460	856	744	634	484	209	139
19	391	546	1120	2410	3040	1580	839	746	450	556	212	207
20	400	613	699	2200	2690	1750	807	678	519	381	186	190
21	237	556	850	1940	2480	1800	806	707	489	401	286	181
22	388	621	973	1430	2160	1880	594	667	356	358	227	275
23	363	613	949	1040	1930	2110	672	716	350	470	267	299
24	448	552	914	1290	1830	2090	852	671	393	1150	198	145
25	292	597	768	1440	1750	2140	834	606	244	704	202	348
26	369	579	818	1340	1620	2110	949	683	410	709	201	519
27	360	984	714	1180	1430	2090	1070	569	292	659	200	237
28	288	1460	791	1080	1420	2020	907	593	300	693	200	192
29	488	1790	719	1130	---	2020	941	489	346	683	166	387
30	341	1700	826	1060	---	2000	898	577	407	508	199	315
31	450	---	970	1000	---	2010	---	518	---	594	186	---
TOTAL	9776	22544	44441	67850	53125	58250	32252	21131	15920	14189	7794	6155
MEAN	315	751	1434	2189	1897	1879	1075	682	531	458	251	205
MAX	488	1790	2190	5670	4570	3120	1870	901	983	1150	497	519
MIN	174	459	699	1000	809	1190	594	409	244	166	166	108
CFSM	0.26	0.61	1.17	1.78	1.54	1.53	0.87	0.55	0.43	0.37	0.20	0.17
IN.	0.30	0.68	1.34	2.05	1.61	1.76	0.98	0.64	0.48	0.43	0.24	0.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 2005, BY WATER YEAR (WY)

MEAN	466	630	744	838	1055	1885	1740	1156	838	486	357	356
MAX	1880	2559	1666	2669	3091	7242	5113	3815	2803	2204	1178	1277
(WY)	1987	1993	1976	1993	2001	1904	1947	1956	1905	1902	1992	1903
MIN	88.5	138	124	150	158	348	488	330	168	98.3	61.1	93.6
(WY)	1964	1965	1964	1963	1963	1964	1935	1958	1936	1936	1936	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1901 - 2005	
ANNUAL TOTAL	366110		353427			
ANNUAL MEAN	1000		968		877	
HIGHEST ANNUAL MEAN					1638	1993
LOWEST ANNUAL MEAN					232	1964
HIGHEST DAILY MEAN	7550	May 24	5670	Jan 15	22700	Mar 26 1904
LOWEST DAILY MEAN	174	Oct 10	108	Sep 5	20	Aug 25 1941
ANNUAL SEVEN-DAY MINIMUM	215	Sep 20	136	Sep 5	44	Aug 15 1936
MAXIMUM PEAK FLOW			5950	Jan 15	(a)24500	Mar 26 1904
MAXIMUM PEAK STAGE			10.74	Jan 15	(b)15.43	Apr 20 1975
INSTANTANEOUS LOW FLOW			89	(c)	2.8	Sep 9 1963
ANNUAL RUNOFF (CFSM)	0.813		0.787		0.713	
ANNUAL RUNOFF (INCHES)	11.07		10.69		9.69	
10 PERCENT EXCEEDS	1980		2020		1910	
50 PERCENT EXCEEDS	711		707		557	
90 PERCENT EXCEEDS	301		202		186	

(a) From rating curve extended above 15,000 ft^3/s; gage height, 18.60 ft, datum then in use.
(b) Present site and datum.
(c) Sept. 6, 15, 16.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04114000 GRAND RIVER AT PORTLAND, MI

LOCATION.--Lat 42°51'23", long 84°54'44", in NW1/4 sec.4, T.5 N., R.5 W., Ionia County, Hydrologic Unit 04050004, on left bank at downstream side of bridge on Kent Street, 1.0 mi south of Portland, 1.9 mi upstream from Looking Glass River, and at mile 115.

DRAINAGE AREA.--1,385 mi^2.

PERIOD OF RECORD.--August 1952 to March 1982, June 1988 to current year. Gage-height records collected in this vicinity 1907-28 (flood seasons only) are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 705.00 ft above sea level (levels by Michigan Department of Natural Resources). Prior to July 6, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight diurnal fluctuation caused by powerplants upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	284	496	2000	1340	1230	1620	2190	979	532	504	695	272
2	318	721	2180	1860	1150	1470	2090	890	491	433	557	308
3	428	893	2130	2350	1090	1440	1960	872	484	382	593	315
4	284	795	2030	2550	1110	1320	1880	856	493	421	483	240
5	278	1120	1890	2610	993	1390	1730	771	506	1010	505	275
6	400	874	1820	2510	1130	1490	1600	824	512	716	490	276
7	317	1060	1910	2100	1100	1860	1550	740	517	539	404	212
8	271	863	2220	1970	1500	3220	1420	736	603	424	286	283
9	339	885	2210	1910	1760	3640	1400	949	626	502	303	256
10	521	761	2150	1850	1900	3300	1320	834	913	453	384	252
11	326	755	2380	1770	1850	2980	1230	500	720	398	321	208
12	295	667	2260	1910	1660	2610	1200	648	679	301	412	212
13	381	664	2200	5440	1650	2190	1100	687	848	264	396	292
14	346	627	2030	7520	2120	1860	1030	897	1070	418	392	253
15	314	569	1960	7090	3170	1640	1070	844	1070	330	353	206
16	385	637	1760	e5800	4770	1560	961	841	834	228	350	290
17	534	528	1490	e4650	5160	1510	999	952	861	430	366	466
18	447	630	1460	e3960	4650	1520	996	821	716	266	379	349
19	530	538	1390	e3230	3630	1610	984	833	649	490	310	257
20	508	669	1200	e2650	3270	1940	955	816	499	657	336	276
21	469	702	e972	e2240	2750	2070	926	744	507	537	328	302
22	355	638	e958	e1930	2630	2150	914	760	517	531	337	294
23	469	699	1030	e1600	2310	2340	694	733	424	461	387	398
24	441	696	954	e1300	2110	2460	868	805	357	741	411	464
25	567	664	e910	e1600	1970	2460	1040	709	464	1500	293	267
26	369	704	e924	e1700	1880	2460	979	643	299	935	321	381
27	443	757	e888	e1500	1690	2400	1130	691	419	883	328	626
28	432	1660	e848	e1350	1490	2380	1080	601	370	781	324	344
29	398	1740	e895	e1280	---	2330	1050	600	346	819	312	310
30	597	1880	981	e1200	---	2340	961	524	403	797	298	440
31	429	---	1090	e1220	---	2290	---	580	---	628	307	---
TOTAL	12475	24892	49120	81990	61723	65850	37307	23680	17729	17779	11961	9324
MEAN	402	830	1585	2645	2204	2124	1244	764	591	574	386	311
MAX	597	1880	2380	7520	5160	3640	2190	979	1070	1500	695	626
MIN	271	496	848	1200	993	1320	694	500	299	228	286	206
CFSM	0.29	0.60	1.14	1.91	1.59	1.53	0.90	0.55	0.43	0.41	0.28	0.22
IN.	0.34	0.67	1.32	2.20	1.66	1.77	1.00	0.64	0.48	0.48	0.32	0.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	555	786	915	990	1202	2001	1891	1355	874	571	444	429
MAX	1766	2743	1975	2989	3655	4202	3936	4676	2587	2268	1297	1433
(WY)	1982	1993	1976	1993	2001	1974	1975	1956	1989	1968	1992	1975
MIN	132	174	161	184	186	382	683	373	258	155	166	133
(WY)	1964	1965	1964	1963	1963	1964	1964	1958	1988	1965	1965	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	430227		413830			
ANNUAL MEAN	1175		1134		998	
HIGHEST ANNUAL MEAN					1830	1993
LOWEST ANNUAL MEAN					282	1964
HIGHEST DAILY MEAN	10800	May 24	7520	Jan 14	12200	Apr 21 1975
LOWEST DAILY MEAN	234	Sep 15	206	Sep 15	58	Oct 9 1963
ANNUAL SEVEN-DAY MINIMUM	278	Sep 21	240	Sep 9	85	Aug 18 1963
MAXIMUM PEAK FLOW			8260	Jan 13	12400	Apr 21 1975
MAXIMUM PEAK STAGE			11.19	Jan 13	12.98	Apr 21 1975
INSTANTANEOUS LOW FLOW			199	Sep 15	38	Oct 10 1963
ANNUAL RUNOFF (CFSM)	0.849		0.819		0.720	
ANNUAL RUNOFF (INCHES)	11.56		11.12		9.79	
10 PERCENT EXCEEDS	2210		2270		2130	
50 PERCENT EXCEEDS	812		819		660	
90 PERCENT EXCEEDS	391		310		243	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04114498 LOOKING GLASS RIVER NEAR EAGLE, MI

LOCATION.--Lat 42°49'41", long 84°45'34", in NE1/4 NE1/4 sec.15, T.5 N., R.4 W., Clinton County, Hydrologic Unit 04050004, on right bank at downstream side of bridge on Tallman Road, 1.9 mi northeast of Eagle, and 11 mi upstream from mouth.

DRAINAGE AREA.--280 mi^2.

PERIOD OF RECORD.--August 1944 to September 1996, October 2001 to current year.

REVISED RECORDS.--WSP 1387: 1946-47.

GAGE.--Water-stage recorder. Elevation of gage is 760 ft above sea level, from topographic map. Prior to June 2, 1962, nonrecording gage and June 3, 1962 to Sept. 30, 1996, water-stage recorder at site 1.0 mi downstream at different datum (station 04114500).

REMARKS.--Records good except for estimated daily discharges, which are fair. Small intermittent diversion at times into Lake Geneva when discharge is above 50 ft^3/s. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	59	207	227	e143	e230	524	202	73	60	56	25
2	42	85	249	285	e135	e220	514	203	71	53	54	23
3	39	92	242	327	e130	e200	499	198	67	49	49	22
4	39	105	233	332	e126	e220	479	190	64	46	47	22
5	38	120	245	329	e133	246	460	179	60	71	45	21
6	39	118	259	311	203	240	434	168	60	96	43	20
7	38	108	318	e289	233	388	411	161	55	94	42	21
8	38	105	347	e274	302	502	385	150	61	92	41	20
9	41	105	324	e269	272	e370	359	139	67	95	39	19
10	43	105	306	e259	249	e330	332	131	167	92	38	19
11	48	104	310	e259	e239	e310	308	126	117	83	38	17
12	46	100	314	e361	240	e300	282	120	101	70	41	17
13	43	94	332	e1200	254	e290	259	125	128	59	41	17
14	43	88	324	e1130	421	e270	237	133	140	51	42	16
15	43	82	e310	e1110	514	e260	219	135	130	47	42	17
16	49	77	e269	e904	577	e255	204	130	120	58	40	21
17	52	75	e240	e713	497	e250	191	126	116	71	38	24
18	55	72	e223	e609	e450	e250	179	127	112	51	36	27
19	52	74	e176	e516	e430	e260	166	127	106	54	38	25
20	49	81	e109	e454	e410	e280	158	123	100	49	37	24
21	49	80	e141	e385	e390	e310	149	115	94	52	35	23
22	48	80	e157	e338	e370	e330	143	110	85	50	34	25
23	47	80	e146	e252	e340	e350	145	113	75	46	34	35
24	53	83	e138	e234	e310	387	155	108	69	113	34	38
25	56	85	e124	e222	e290	416	169	104	e62	115	33	39
26	53	85	e124	e214	e270	434	176	96	e59	147	31	42
27	48	123	e113	e181	e250	460	182	90	e60	112	31	42
28	46	226	e117	e165	e240	484	184	87	54	88	30	46
29	51	207	e111	e165	---	505	189	82	58	76	28	46
30	54	167	e119	e157	---	521	197	80	63	71	28	41
31	54	---	e163	e148	---	531	---	77	---	65	26	---
TOTAL	1436	3065	6790	12619	8418	10399	8289	4055	2594	2276	1191	794
MEAN	46.3	102	219	407	301	335	276	131	86.5	73.4	38.4	26.5
MAX	56	226	347	1200	577	531	524	203	167	147	56	46
MIN	38	59	109	148	126	200	143	77	54	46	26	16
CFSM	0.17	0.36	0.78	1.45	1.07	1.20	0.99	0.47	0.31	0.26	0.14	0.09
IN.	0.19	0.41	0.90	1.68	1.12	1.38	1.10	0.54	0.34	0.30	0.16	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2005, BY WATER YEAR (WY)

MEAN	92.0	128	159	172	212	428	402	256	147	85.7	55.9	69.7
MAX	614	414	445	505	673	1058	1131	910	579	405	206	532
(WY)	1987	1991	1976	1993	1976	1985	1947	1956	2004	1994	1994	1975
MIN	15.3	25.0	21.6	24.0	24.3	47.0	85.9	64.8	31.3	13.6	16.9	15.3
(WY)	1964	1964	1964	1963	1963	1964	1964	1958	1964	1965	1965	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1944 - 2005	
ANNUAL TOTAL	76146		61926			
ANNUAL MEAN	208		170		184	
HIGHEST ANNUAL MEAN					321	1993
LOWEST ANNUAL MEAN					35.7	1964
HIGHEST DAILY MEAN	1830	May 24	1200	Jan 13	2400	Apr 5 1947
LOWEST DAILY MEAN	36	Sep 27	16	Sep 14	11	Jul 21 1965
ANNUAL SEVEN-DAY MINIMUM	37	Sep 22	17	Sep 9	11	Jul 25 1965
MAXIMUM PEAK FLOW			1440	Jan 13	(a)2860	Apr 5 1947
MAXIMUM PEAK STAGE			6.92	Jan 13	(b)8.24	May 24 2004
INSTANTANEOUS LOW FLOW			15	(c)	10	Jul 28 1965
ANNUAL RUNOFF (CFSM)	0.743		0.606		0.657	
ANNUAL RUNOFF (INCHES)	10.12		8.23		8.92	
10 PERCENT EXCEEDS	465		370		430	
50 PERCENT EXCEEDS	118		115		100	
90 PERCENT EXCEEDS	48		38		32	

(a) From rating curve extended above 1,900 ft^3/s; gage height 7.70 ft, from graph based on gage readings, site and datum then in use.
(b) Present site and datum; maximum peak stage at previous site and datum, 9.9 ft, Mar. 7, 1956, from floodmark, backwater from ice.
(c) Sept. 13, 14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04115000 MAPLE RIVER AT MAPLE RAPIDS, MI

LOCATION.--Lat 43°06'35", long 84°41'35", in sec.5, T.8 N., R.3 W., Clinton County, Hydrologic Unit 04050005, on right bank at downstream side of bridge on Maple Road in Maple Rapids, 50 ft upstream from Pine Creek, and 2.3 mi upstream from Hayworth Creek. Records include flow of Pine Creek.

DRAINAGE AREA.--434 mi^2.

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 1707: 1956.

GAGE.--Water-stage recorder. Datum of gage is 642.58 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Oct. 4, 1968, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. At times, water is pumped from the river about 8 mi upstream to fill the wetlands in the Maple River State Game Area. Some of the water is returned to the river at a later date, when water levels in the wetlands are lowered. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1904 reached a stage of 13.8 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	71	195	168	e265	343	981	190	77	53	33	19
2	38	75	222	201	e267	333	922	183	71	51	31	18
3	38	82	246	281	e261	328	835	180	67	48	28	19
4	39	84	261	365	e240	322	759	174	66	46	28	18
5	37	88	269	417	e244	319	676	165	65	44	29	18
6	33	91	270	428	e227	348	604	155	86	44	27	18
7	30	100	278	417	e313	359	547	150	101	43	27	17
8	29	110	338	402	e327	501	502	143	109	43	25	18
9	29	97	394	387	e352	714	465	134	144	42	24	18
10	31	84	421	369	353	e708	432	126	138	40	23	18
11	30	79	425	349	366	e708	403	123	127	38	23	18
12	30	83	423	347	361	e673	373	119	125	36	23	17
13	28	73	421	657	354	e614	343	119	140	35	23	17
14	28	66	417	e911	400	e511	307	159	234	33	24	17
15	29	66	398	e1410	606	e436	279	185	298	32	24	17
16	29	74	376	e1740	868	e397	252	193	321	31	24	16
17	30	68	352	e1460	e1010	e372	231	193	325	32	23	16
18	36	63	328	e1170	e1070	e350	211	187	316	31	22	16
19	37	63	299	e1000	e1080	e348	193	181	297	32	21	17
20	35	73	274	e752	e972	e348	182	179	271	31	21	17
21	34	93	240	e714	e809	e359	172	168	245	31	21	17
22	34	86	216	e689	e696	471	161	159	218	32	22	18
23	36	79	201	e543	e574	638	153	153	189	31	22	21
24	40	76	188	e450	503	768	151	142	163	42	21	31
25	41	74	177	e405	460	853	156	129	138	49	21	34
26	40	71	158	e431	429	920	171	116	109	50	20	35
27	41	77	144	e431	398	964	182	105	83	52	20	30
28	39	135	130	e431	359	987	193	98	68	49	20	25
29	41	159	117	e352	---	1010	200	91	60	45	20	27
30	43	175	110	e325	---	1020	199	86	56	41	20	26
31	54	---	131	e284	---	1000	---	82	---	36	19	---
TOTAL	1100	2615	8419	18286	14164	18022	11235	4567	4707	1243	729	613
MEAN	35.5	87.2	272	590	506	581	374	147	157	40.1	23.5	20.4
MAX	54	175	425	1740	1080	1020	981	193	325	53	33	35
MIN	28	63	110	168	227	319	151	82	56	31	19	16
CFSM	0.08	0.20	0.63	1.36	1.17	1.34	0.86	0.34	0.36	0.09	0.05	0.05
IN.	0.09	0.22	0.72	1.57	1.21	1.54	0.96	0.39	0.40	0.11	0.06	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2005, BY WATER YEAR (WY)

MEAN	142	181	245	256	318	695	601	394	205	108	58.0	119
MAX	1461	837	813	1035	1137	2049	1582	1812	937	1243	361	1634
(WY)	1987	1991	1991	1973	2001	1985	1947	1956	1996	1994	1994	1986
MIN	9.77	21.8	20.9	17.3	16.9	103	139	74.1	24.6	10.6	8.47	8.34
(WY)	1967	1963	1963	1963	1963	1964	1945	1977	1977	1965	1965	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1944 - 2005	
ANNUAL TOTAL	125652		85700			
ANNUAL MEAN	343		235		277	
HIGHEST ANNUAL MEAN					501	1976
LOWEST ANNUAL MEAN					65.1	1963
HIGHEST DAILY MEAN	3280	May 24	1740	Jan 16	6500	Mar 20 1948
LOWEST DAILY MEAN	28	Oct 13	16	Sep 16	3.3	Sep 19 2003
ANNUAL SEVEN-DAY MINIMUM	29	Oct 11	17	Sep 12	4.1	Sep 14 2003
MAXIMUM PEAK FLOW			(a)		(b)8770	Sep 12 1986
MAXIMUM PEAK STAGE			(a)		(c)12.33	Sep 12 1986
ANNUAL RUNOFF (CFSM)	0.791		0.541		0.638	
ANNUAL RUNOFF (INCHES)	10.77		7.35		8.66	
10 PERCENT EXCEEDS	873		609		661	
50 PERCENT EXCEEDS	130		138		120	
90 PERCENT EXCEEDS	47		22		23	

(a) Not determined.
(b) Result of dam failure on Rainbow Lake (Pine Creek).
(c) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04115265 FISH CREEK NEAR CRYSTAL, MI

LOCATION.--Lat 43°14'59", long 84°58'52", in NW1/4 NE1/4 sec.23, T.10 N., R.6 W., Montcalm County, Hydrologic Unit 04050005, on left bank 10 ft downstream from bridge on Sidney Road, 3.5 mi southwest of Crystal.

DRAINAGE AREA.--39.7 mi^2.

PERIOD OF RECORD.--October 1987 to current year.

REVISED RECORDS.--WDR MI-92-1: Drainage area. WDR MI-99-1: 1988-90, 1991 (M).

GAGE.--Water-stage recorder. Elevation of gage is 795 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. At times, low flow is affected by pumpage for irrigation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	28	36	41	e25	28	112	28	20	21	22	16
2	15	54	37	49	e25	28	74	27	18	19	19	15
3	15	37	32	55	e25	e28	61	27	18	18	18	15
4	15	38	30	40	e25	e30	53	27	19	18	24	15
5	14	39	34	34	e25	27	49	26	23	20	23	15
6	14	31	32	30	e25	29	46	25	35	19	20	15
7	15	28	50	31	e26	41	47	25	25	17	19	14
8	18	25	98	29	42	49	42	25	29	15	18	14
9	26	24	66	28	35	e40	38	24	24	15	16	14
10	19	24	55	27	30	e35	36	24	21	13	17	14
11	18	23	53	27	28	31	34	25	19	14	16	14
12	17	21	46	39	27	30	31	26	19	13	28	14
13	17	20	44	122	28	29	30	35	82	14	23	13
14	17	20	36	164	53	29	29	48	182	14	21	16
15	19	19	31	97	110	26	28	42	67	15	20	16
16	23	20	30	e55	64	26	29	34	49	58	19	17
17	22	21	29	39	43	25	28	30	38	53	18	17
18	20	21	28	e34	e36	26	28	28	34	31	18	16
19	20	24	27	e33	31	26	27	29	30	29	20	15
20	19	36	e27	e31	30	26	34	32	27	23	19	15
21	19	30	26	e30	31	26	32	27	25	22	18	14
22	19	25	24	e28	30	27	32	26	23	24	17	22
23	23	23	e22	e26	28	29	36	27	22	20	17	29
24	35	22	e22	e25	28	28	38	25	21	83	16	18
25	25	25	e22	e25	28	32	42	24	21	89	16	37
26	22	25	e22	e25	27	36	35	23	29	74	16	80
27	21	41	e21	e25	31	46	32	22	23	61	17	38
28	20	83	e21	e25	28	67	34	22	21	36	18	27
29	36	45	21	e25	---	94	31	22	19	29	17	41
30	34	33	22	e25	---	109	29	21	21	26	16	29
31	28	---	42	e25	---	163	---	20	---	24	16	---
TOTAL	639	905	1086	1289	964	1266	1197	846	1004	927	582	635
MEAN	20.6	30.2	35.0	41.6	34.4	40.8	39.9	27.3	33.5	29.9	18.8	21.2
MAX	36	83	98	164	110	163	112	48	182	89	28	80
MIN	14	19	21	25	25	25	27	20	18	13	16	13
CFSM	0.52	0.76	0.88	1.05	0.87	1.03	1.01	0.69	0.84	0.75	0.47	0.53
IN.	0.60	0.85	1.02	1.21	0.90	1.19	1.12	0.79	0.94	0.87	0.55	0.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2005, BY WATER YEAR (WY)

MEAN	27.1	34.9	30.6	30.4	34.3	47.1	41.5	38.8	30.5	21.7	21.4	20.7
MAX	39.2	59.5	46.1	48.9	61.2	75.9	66.6	79.5	46.0	50.9	41.7	33.8
(WY)	1992	1995	1992	1993	1997	1990	1991	2004	2004	1994	1994	1993
MIN	13.5	17.7	19.8	15.5	15.3	25.3	24.8	26.5	14.9	11.6	10.8	9.66
(WY)	2004	2000	1990	2004	2004	2000	2004	1999	2003	1998	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1988 - 2005	
ANNUAL TOTAL	11420		11340			
ANNUAL MEAN	31.2		31.1.		31.6	
HIGHEST ANNUAL MEAN					40.7	1993
LOWEST ANNUAL MEAN					19.8	2003
HIGHEST DAILY MEAN	277	May 10	182	Jun 14	450	Mar 12 1990
LOWEST DAILY MEAN	13	Jan 23	13	Jul 10	5.6	Aug 2 1999
ANNUAL SEVEN-DAY MINIMUM	14	Jan 17	14	Sep 7	7.7	Jul 28 1998
MAXIMUM PEAK FLOW			224	Jun 14	558	Mar 12 1990
MAXIMUM PEAK STAGE			4.69	Jun 14	5.53	Mar 12 1990
INSTANTANEOUS LOW FLOW			13	(a)		
ANNUAL RUNOFF (CFSM)	0.786		0.783		0.795	
ANNUAL RUNOFF (INCHES)	10.70		10.63		10.80	
10 PERCENT EXCEEDS	55		49		50	
50 PERCENT EXCEEDS	23		26		27	
90 PERCENT EXCEEDS	14		16		16	

(a) Part of each day July 9-12, 14, 15, Sept. 11-14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04116000 GRAND RIVER AT IONIA, MI

LOCATION.--Lat 42°58'19", long 85°04'09", in NW1/4 sec.30, T.7 N., R.6 W., Ionia County, Hydrologic Unit 04050006, on left bank 15 ft downstream from bridge on State Highway 66 in Ionia, 2.7 mi downstream from Prairie Creek, and at mile 87.

DRAINAGE AREA.--2,840 mi^2, approximately.

PERIOD OF RECORD.--March to June 1931, July 1951 to current year. Gage-height records collected in this vicinity 1907-28 (flood seasons only) are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 615.38 ft above sea level. Mar. 19 to Sept. 24, 1931, nonrecording gage at site 1.5 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuation below approximately 5,000 ft^3/s caused by powerplants upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	396	774	2890	e2230	e2280	2950	5720	1860	964	742	830	430
2	382	903	3220	2620	e2230	2840	5560	1770	934	778	907	425
3	506	1310	3320	3500	e2090	2580	5220	1770	834	655	659	410
4	507	1300	3210	3770	e2060	2490	4840	1660	805	666	759	405
5	490	1480	3070	3900	e1920	2500	4420	1580	857	728	635	382
6	364	1640	3000	3760	e1990	2680	4020	1540	897	1410	630	357
7	508	1390	3180	3500	e2040	3210	3690	1540	954	702	580	364
8	499	1430	3980	3160	e2390	5670	3440	1420	1150	732	560	351
9	429	1240	4030	3190	3240	6150	3180	1500	1250	663	537	398
10	543	1280	3820	3210	3190	5950	3030	1590	1240	714	414	377
11	546	1110	3900	3080	3090	5500	2830	1250	1630	659	576	372
12	513	1130	4020	3190	3020	5080	2650	1020	1300	619	528	344
13	395	1040	3940	5630	2970	4450	2480	1320	1610	572	534	327
14	532	971	3800	11100	3560	3890	2380	1660	2230	550	534	375
15	529	896	3550	13500	5520	3510	2260	1620	2390	498	525	381
16	537	898	3340	e12600	6510	3300	2090	1590	2320	550	482	383
17	567	997	3070	e11000	7440	3210	2060	1710	2060	576	551	460
18	639	1020	2800	e8950	7390	3120	2010	1630	1940	648	448	531
19	607	909	2690	e7090	6760	3100	1970	1540	1850	680	592	438
20	642	1010	2340	e5650	6030	3240	1890	1550	1660	673	512	420
21	673	1050	1730	e5040	5440	3870	1720	1460	1520	854	413	384
22	625	1130	2130	e4330	4920	4200	1790	1390	1320	730	422	448
23	656	1050	2130	e3430	4430	4530	1730	1460	1240	682	546	588
24	608	1080	e2070	e2500	4040	4700	1600	1440	1070	786	511	616
25	696	1080	e1930	e3050	3800	4680	1890	1400	974	1680	439	614
26	690	1100	e1750	e3300	3580	4900	1980	1260	910	1700	472	573
27	594	1220	e1650	e2980	3220	5070	1960	1200	908	1460	439	612
28	647	2170	e1630	e2730	3030	5160	2070	1150	790	1240	469	774
29	731	2770	e1600	e2530	---	5340	2000	1050	736	1180	465	647
30	814	2740	e1640	e2520	---	5530	1890	986	711	1110	443	603
31	743	---	e1850	e2370	---	5680	---	968	---	1000	433	---
TOTAL	17608	38118	87280	149410	108180	129080	84370	44884	39054	26237	16845	13789
MEAN	568	1271	2815	4820	3864	4164	2812	1448	1302	846	543	460
MAX	814	2770	4030	13500	7440	6150	5720	1860	2390	1700	907	774
MIN	364	774	1600	2230	1920	2490	1600	968	711	498	413	327
CFSM	0.20	0.45	0.99	1.70	1.36	1.47	0.99	0.51	0.46	0.30	0.19	0.16
IN.	0.23	0.50	1.14	1.96	1.42	1.69	1.11	0.59	0.51	0.34	0.22	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	1192	1583	1905	2014	2459	4288	3932	2715	1669	1056	772	894
MAX	7613	4931	4672	5715	6595	9398	7492	9715	4963	4468	2416	4613
(WY)	1987	1993	1991	1993	2001	1985	1993	1956	1989	1994	1994	1975
MIN	254	380	346	375	377	802	702	567	464	287	310	300
(WY)	1964	1965	1964	1963	1963	1964	1931	1931	1988	1965	1965	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	876835		754855			
ANNUAL MEAN	2396		2068		2047	
HIGHEST ANNUAL MEAN					3482	1993
LOWEST ANNUAL MEAN					631	1964
HIGHEST DAILY MEAN	21000	May 25	13500	Jan 15	21300	Apr 1 1960
LOWEST DAILY MEAN	364	Oct 6	327	Sep 13	109	Jul 16 1977
ANNUAL SEVEN-DAY MINIMUM	438	Sep 26	362	Sep 7	118	Jul 14 1977
MAXIMUM PEAK FLOW			13600	Jan 15	21500	Apr 1 1960
MAXIMUM PEAK STAGE			20.46	Jan 15	23.43	Apr 1 1960
INSTANTANEOUS LOW FLOW			321	Sep 13	40	May 13 1968
ANNUAL RUNOFF (CFSM)	0.844		0.728		0.721	
ANNUAL RUNOFF (INCHES)	11.49		9.89		9.79	
10 PERCENT EXCEEDS	5280		4440		4420	
50 PERCENT EXCEEDS	1440		1500		1300	
90 PERCENT EXCEEDS	608		471		459	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04117000 QUAKER BROOK NEAR NASHVILLE, MI

LOCATION.--Lat 42°33'57", long 85°05'37", in NW1/4 sec.13, T.2 N., R.7 W., Barry County, Hydrologic Unit 04050007, on left bank 150 ft upstream from culvert on Clark Road, 500 ft upstream from unnamed tributary, and 2.5 mi south of Nashville.

DRAINAGE AREA.--7.60 mi^2.

PERIOD OF RECORD.--August 1954 to September 1975, October 1975 to September 1994 (operated as a crest-stage partial-record station), October 1994 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 821.89 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	5.0	16	14	6.6	8.0	12	5.1	3.4	5.4	2.7	1.9
2	3.4	17	16	19	6.6	7.8	9.6	5.2	3.3	3.8	2.5	1.8
3	3.3	11	11	22	6.5	7.3	8.3	5.3	3.3	3.2	2.4	1.8
4	3.1	15	8.8	21	6.8	7.7	7.7	5.2	3.3	3.6	2.4	2.1
5	3.0	17	9.4	13	6.9	7.9	7.4	5.0	3.3	7.1	2.4	1.9
6	3.1	8.7	12	8.3	7.9	10	7.4	4.9	3.9	4.1	2.3	1.9
7	3.1	6.8	20	9.4	13	28	7.4	5.1	3.2	3.5	2.2	1.9
8	3.2	5.8	22	8.0	22	25	7.0	4.8	19	3.2	2.2	1.9
9	4.3	5.3	12	7.7	15	13	6.3	4.7	13	3.0	2.2	1.9
10	3.6	5.3	13	7.7	9.8	9.4	6.2	4.7	9.3	2.8	2.1	1.8
11	3.5	5.1	19	7.8	8.1	8.6	6.0	6.1	4.9	2.7	2.2	1.7
12	3.4	4.8	12	19	8.4	8.7	5.7	6.1	4.3	2.7	2.4	1.7
13	3.5	4.6	10	114	9.3	8.2	5.5	6.7	17	2.6	2.3	1.7
14	3.6	4.5	8.1	37	26	7.7	5.3	8.0	12	2.6	2.3	1.8
15	3.6	4.5	6.9	18	31	7.6	5.2	6.9	6.0	2.8	2.2	2.0
16	9.6	4.9	6.5	12	32	7.3	5.2	5.5	5.4	3.2	2.1	3.6
17	11	5.5	6.4	8.5	18	7.7	5.3	5.1	4.5	3.6	2.1	2.9
18	5.8	5.4	6.2	6.8	12	8.7	5.4	4.9	4.2	6.6	2.1	2.4
19	4.8	7.5	5.4	6.8	10	13	5.3	6.1	4.0	10	2.3	2.4
20	4.5	9.4	4.2	7.4	9.5	20	5.3	7.6	3.7	5.7	2.6	2.4
21	4.4	7.0	4.5	6.8	9.8	14	5.0	5.0	3.5	12	2.4	2.3
22	4.1	5.8	4.9	5.9	9.3	14	5.4	5.2	3.4	5.8	2.2	2.8
23	4.8	5.4	4.6	7.6	8.8	15	6.2	7.0	3.1	4.1	2.2	3.6
24	8.1	5.4	4.8	7.3	8.6	12	8.4	6.2	3.0	5.3	2.1	2.9
25	5.7	6.2	4.5	7.6	8.3	13	9.6	5.0	2.9	3.9	2.0	2.9
26	4.8	6.2	4.7	7.6	8.0	12	7.2	4.5	2.9	5.1	2.0	4.4
27	4.5	17	4.5	6.3	7.5	12	6.4	4.2	2.9	5.0	2.0	3.3
28	4.5	27	4.8	6.8	7.8	11	5.9	4.0	3.0	3.7	1.9	3.0
29	6.2	14	5.1	7.0	---	12	5.5	3.8	2.8	3.3	1.8	5.0
30	6.3	9.3	5.5	6.9	---	13	5.3	3.8	7.6	3.1	1.8	3.3
31	4.9	---	17	6.7	---	14	---	3.6	---	2.8	1.8	---
TOTAL	144.9	256.4	289.8	443.9	333.5	363.6	198.4	165.3	166.1	136.3	68.2	75.0
MEAN	4.67	8.55	9.35	14.3	11.9	11.7	6.61	5.33	5.54	4.40	2.20	2.50
MAX	11	27	22	114	32	28	12	8.0	19	12	2.7	5.0
MIN	3.0	4.5	4.2	5.9	6.5	7.3	5.0	3.6	2.8	2.6	1.8	1.7
CFSM	0.62	1.12	1.23	1.88	1.57	1.54	0.87	0.70	0.73	0.58	0.29	0.33
IN.	0.71	1.26	1.42	2.17	1.63	1.78	0.97	0.81	0.81	0.67	0.33	0.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2005, BY WATER YEAR (WY)

MEAN	4.94	6.51	6.78	6.77	8.35	11.2	9.88	8.91	5.82	3.77	3.63	3.46
MAX	14.2	14.3	14.9	15.6	19.0	25.0	23.7	26.4	12.8	7.78	13.5	8.17
(WY)	1955	1995	1973	1974	2001	1974	1975	2004	1973	1969	1972	1972
MIN	1.59	2.33	2.11	2.78	2.36	4.23	4.07	2.97	2.05	1.22	1.36	1.52
(WY)	1964	1964	1964	1964	1964	1964	1963	1958	1959	1964	1964	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1954 - 2005	
ANNUAL TOTAL	3021.0		2641.4			
ANNUAL MEAN	8.25		7.24		6.62	
HIGHEST ANNUAL MEAN					11.1	1974
LOWEST ANNUAL MEAN					2.73	1964
HIGHEST DAILY MEAN	176	May 21	114	Jan 13	211	Apr 19 1975
LOWEST DAILY MEAN	2.2	Jan 23	1.7	Sep 11	0.70	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	2.8	Jan 20	1.8	Sep 8	0.73	Aug 4 1964
MAXIMUM PEAK FLOW			155	Jan 13	470	Apr 19 1975
MAXIMUM PEAK STAGE			5.20	Jan 13	9.45	Apr 19 1975
INSTANTANEOUS LOW FLOW			1.6	(a)	(b)0.44	Nov 3 1966
ANNUAL RUNOFF (CFSM)	1.09		0.952		0.871	
ANNUAL RUNOFF (INCHES)	14.79		12.93		11.84	
10 PERCENT EXCEEDS	15		13		12	
50 PERCENT EXCEEDS	4.9		5.4		4.6	
90 PERCENT EXCEEDS	3.4		2.3		2.3	

(a) Part of each day Sept. 10-14.
(b) Result of freezeup.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04117500 THORNAPPLE RIVER NEAR HASTINGS, MI

LOCATION.--Lat 42°36'57", long 85°14'11", in SE1/4 sec.27, T.3 N., R.8 W., Barry County, Hydrologic Unit 04050007, on right bank 100 ft upstream from bridge on McKeown Road, 0.6 mi downstream from Cedar Creek, 2.0 mi downstream from Thornapple Lake, and 3.2 mi southeast of Hastings.

DRAINAGE AREA.--385 mi^2.

PERIOD OF RECORD.--October 1944 to current year.

GAGE.--Water-stage recorder. Datum of gage is 786.71 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Oct. 1, 1965, nonrecording gage at same site and datum.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	163	599	355	e300	372	714	224	155	174	111	71
2	106	205	636	434	e290	363	669	217	146	165	108	69
3	105	251	653	539	e280	334	607	214	142	149	105	67
4	103	282	647	651	e270	324	550	209	138	133	104	66
5	100	317	634	746	262	337	491	205	137	127	103	64
6	97	336	618	726	268	340	443	200	144	132	98	63
7	97	335	630	709	296	425	407	199	134	137	95	63
8	97	308	720	723	404	730	378	198	161	130	93	63
9	102	273	784	659	540	899	352	194	241	120	90	61
10	105	240	806	569	599	989	334	192	264	113	88	59
11	105	220	848	499	587	1070	315	197	245	107	87	57
12	104	203	877	480	535	969	295	204	224	102	93	57
13	106	189	879	930	487	773	277	203	272	98	95	56
14	107	178	854	2230	535	611	262	222	369	96	95	57
15	109	171	792	3050	787	497	254	245	428	96	93	57
16	122	171	709	2870	1150	424	246	246	418	97	92	65
17	154	170	613	e2430	1420	381	238	231	357	103	91	72
18	170	172	518	e1760	1410	374	233	214	293	105	89	73
19	166	184	424	e1300	1280	389	229	206	246	117	87	74
20	154	206	300	e990	1170	489	230	221	220	124	87	74
21	142	225	258	e800	984	613	226	224	199	151	87	73
22	134	228	270	e650	812	703	217	217	181	162	86	75
23	133	216	270	e550	668	775	217	218	166	159	85	87
24	140	208	252	e490	566	793	232	235	154	158	82	87
25	147	207	232	e440	496	793	256	234	134	151	80	86
26	149	208	225	e410	445	779	275	220	133	155	80	91
27	147	233	219	e410	406	758	277	205	139	156	81	92
28	143	353	212	e380	382	739	269	191	139	147	81	89
29	145	484	209	e350	---	733	255	178	135	136	79	98
30	149	552	212	e330	---	734	238	171	150	125	76	102
31	157	---	257	e315	---	733	---	163	---	117	73	---
TOTAL	3901	7488	16157	27775	17629	19243	9986	6497	6264	4042	2794	2168
MEAN	126	250	521	896	630	621	333	210	209	130	90.1	72.3
MAX	170	552	879	3050	1420	1070	714	246	428	174	111	102
MIN	97	163	209	315	262	324	217	163	133	96	73	56
CFSM	0.33	0.65	1.35	2.33	1.64	1.61	0.86	0.54	0.54	0.34	0.23	0.19
IN.	0.38	0.72	1.56	2.68	1.70	1.86	0.96	0.63	0.61	0.39	0.27	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2005, BY WATER YEAR (WY)

MEAN	199	264	321	351	407	672	619	421	275	161	130	144
MAX	1072	939	895	1049	1140	1506	1914	1425	1011	410	385	358
(WY)	1987	1991	1991	1973	2001	1948	1947	2004	1989	1968	1980	1992
MIN	54.5	73.6	75.2	90.4	87.5	129	176	111	87.0	56.0	50.2	54.4
(WY)	1964	1964	1964	1964	1963	1964	1946	1958	1964	1964	1946	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1945 - 2005	
ANNUAL TOTAL	150064		123944			
ANNUAL MEAN	410		340		330	
HIGHEST ANNUAL MEAN					534	1993
LOWEST ANNUAL MEAN					99.2	1964
HIGHEST DAILY MEAN	5430	May 25	3050	Jan 15	6590	Apr 7 1947
LOWEST DAILY MEAN	97	Oct 6	56	Sep 13	35	Jul 31 1964
ANNUAL SEVEN-DAY MINIMUM	100	Oct 3	58	Sep 9	36	Aug 7 1964
MAXIMUM PEAK FLOW			3140	Jan 15	6810	Apr 7 1947
MAXIMUM PEAK STAGE			7.95	Jan 15	(a)10.20	Apr 7 1947
INSTANTANEOUS LOW FLOW			54	(b)	33	Aug 10 1964
ANNUAL RUNOFF (CFSM)	1.06		0.882		0.857	
ANNUAL RUNOFF (INCHES)	14.50		11.98		11.64	
10 PERCENT EXCEEDS	807		736		686	
50 PERCENT EXCEEDS	225		219		200	
90 PERCENT EXCEEDS	134		87		92	

(a) From graph based on gage readings.
(b) Sept. 13, 14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04118500 ROGUE RIVER NEAR ROCKFORD, MI

LOCATION.--Lat 43°04'56", long 85°35'27", in NE1/4 sec.15, T.8 N., R.11 W., Kent County, Hydrologic Unit 04050006, on left bank at downstream side of bridge on Packer Drive, 2.2 mi upstream from mouth, and 3.0 mi southwest of Rockford.

DRAINAGE AREA.--234 mi^2.

PERIOD OF RECORD.--February 1952 to September 1982, October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 624.80 ft above sea level (levels by Johnson and Anderson, Inc.). Prior to Aug. 30, 1952, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation caused by dam 2 mi upstream from station. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 12, 1986, reached a stage of 11.35 ft, from floodmark, and discharge of approximately 6,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	198	342	281	e218	230	1330	218	145	125	e108	90
2	116	254	320	393	e218	229	1110	209	140	125	e102	89
3	114	232	296	411	e218	207	799	203	137	110	e101	87
4	114	260	279	419	e218	216	609	205	134	108	e98	85
5	111	255	268	385	e220	235	505	199	150	112	97	81
6	111	232	262	296	222	264	442	193	154	114	97	80
7	112	212	416	298	265	341	397	198	140	109	94	80
8	126	193	516	300	315	401	362	199	131	101	91	80
9	144	181	656	290	365	458	336	196	124	97	88	80
10	141	173	638	264	358	411	313	187	119	93	86	80
11	138	169	554	245	330	410	292	194	118	91	86	80
12	128	164	459	310	288	337	275	197	121	88	116	79
13	125	160	401	632	271	297	260	244	142	92	129	76
14	124	156	365	810	424	277	249	280	154	92	119	78
15	123	154	302	850	618	255	239	294	154	92	111	80
16	130	154	321	730	726	240	231	299	136	97	106	93
17	133	161	292	549	592	231	226	260	128	140	102	102
18	133	165	274	439	472	240	223	228	127	157	110	101
19	131	183	208	e352	389	233	221	215	125	131	112	95
20	129	221	177	e311	337	227	302	212	119	117	115	93
21	128	223	236	e294	302	226	305	204	113	116	114	105
22	127	228	213	e287	285	232	322	195	110	131	108	130
23	191	216	e213	e278	275	250	324	198	107	124	104	130
24	251	202	e212	e268	259	269	303	201	103	129	100	124
25	231	201	e212	e260	250	297	273	196	100	129	97	129
26	235	196	e211	e252	245	339	262	185	109	151	95	170
27	216	277	e209	e248	233	409	249	178	113	167	100	173
28	182	343	203	e238	239	539	248	167	111	159	97	174
29	193	332	203	e232	---	700	241	158	104	136	96	182
30	193	331	205	e220	---	841	232	155	113	e120	93	163
31	193	---	261	e218	---	1120	---	150	---	e115	91	---
TOTAL	4633	6426	9724	11360	9152	10961	11480	6417	3781	3668	3163	3189
MEAN	149	214	314	366	327	354	383	207	126	118	102	106
MAX	251	343	656	850	726	1120	1330	299	154	167	129	182
MIN	110	154	177	218	218	207	221	150	100	88	86	76
CFSM	0.64	0.92	1.34	1.57	1.40	1.51	1.64	0.88	0.54	0.51	0.44	0.45
IN.	0.74	1.02	1.55	1.81	1.45	1.74	1.83	1.02	0.60	0.58	0.50	0.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	185	237	244	233	255	392	379	304	217	155	150	155
MAX	528	525	557	512	567	944	836	636	457	362	317	556
(WY)	1982	1991	1992	1973	1976	1976	1967	2004	1989	1994	1994	1975
MIN	100	118	126	116	107	222	175	122	108	83.8	83.2	80.9
(WY)	1965	1965	1963	1970	1963	2000	1958	1958	1964	1964	1971	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	100594		83954			
ANNUAL MEAN	275		230		242	
HIGHEST ANNUAL MEAN					360	(a)
LOWEST ANNUAL MEAN					155	1964
HIGHEST DAILY MEAN	1560	Mar 7	1330	Apr 1	3290	Mar 6 1976
LOWEST DAILY MEAN	106	Sep 25	76	Sep 13	49	Aug 27 1955
ANNUAL SEVEN-DAY MINIMUM	107	Sep 23	79	Sep 8	58	Aug 13 1958
MAXIMUM PEAK FLOW			1360	Apr 1	3540	Mar 6 1976
MAXIMUM PEAK STAGE			7.52	Apr 1	9.29	Mar 6 1976
INSTANTANEOUS LOW FLOW			76	(b)	28	Jan 22 1967
ANNUAL RUNOFF (CFSM)	1.17		0.983		1.03	
ANNUAL RUNOFF (INCHES)	15.99		13.35		14.04	
10 PERCENT EXCEEDS	524		395		415	
50 PERCENT EXCEEDS	206		201		192	
90 PERCENT EXCEEDS	121		97		110	

(a) 1976, 1991.
(b) Sept. 13, 14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04119000 GRAND RIVER AT GRAND RAPIDS, MI

LOCATION.--Lat 42°57'52", long 85°40'35", in NE1/4 sec.25, T.7 N., R.12 W., Kent County, Hydrologic Unit 04050006, on right bank 500 ft upstream from bridge on Fulton Street in Grand Rapids, 1.7 mi upstream from Plaster Creek, and at mile 41.

DRAINAGE AREA.--4,900 mi^2, approximately.

PERIOD OF RECORD.--March 1901 to December 1905, January 1906 to August 1918 (gage heights only), October 1930 to current year. Monthly discharge only for some periods, published in WSP 1307. Gage-height records collected in this vicinity since 1907 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 924: 1938(M). WSP 1387: 1901-5, 1940.

GAGE.--Water-stage recorder. Datum of gage is 585.70 ft above sea level (levels by City of Grand Rapids). March 1901 to August 1918, nonrecording gage at Fulton Street Bridge and Oct. 1, 1930 to Oct. 26, 1953, water-stage recorder at sewage pumping station 1 mi downstream at datum 2.99 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Moderate diurnal fluctuation at low and medium flow caused by powerplants upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1210	2060	5190	4160	e3940	4930	9900	3400	2310	1920	1930	1020
2	1150	2350	5440	4850	e3920	4850	10000	3370	2300	1870	1770	980
3	1130	2540	5620	5760	e3800	4640	9770	3200	2250	1720	1710	976
4	1220	3060	5640	6230	e3760	4400	9240	3240	2030	1580	1500	916
5	1230	3240	5470	6410	e3760	4320	8550	3040	2040	1580	1490	892
6	1190	3230	5340	6480	e3960	4230	7800	2970	2250	1700	1400	904
7	1150	3240	5800	6210	e4390	4770	7150	2980	2330	2120	1260	820
8	1750	2890	6700	5800	e5010	6470	6840	2950	2300	1600	1260	871
9	1670	2860	7330	5550	e5930	8090	5990	2850	2350	1560	1200	911
10	1360	2730	7300	5550	e6120	8700	5590	2890	2460	1450	1170	875
11	1270	2500	7210	5390	e6050	8800	4830	3000	2520	1460	986	771
12	1220	2320	7240	5560	e5810	8600	4420	2730	3410	1410	1220	821
13	1190	2330	7210	8350	e5890	8080	4350	2710	3630	1250	1320	806
14	1100	2210	7040	10700	6170	7300	4090	3180	5590	1300	1270	876
15	1320	2130	6640	13000	7690	6430	3930	3560	5640	1180	1280	919
16	1470	2060	6210	15500	9020	5670	3810	3470	5060	1160	1190	1000
17	1510	2070	5790	16700	9690	e5450	3660	3350	4560	1280	1220	1030
18	1670	2150	5300	e13200	10100	e4920	3630	3320	4060	1380	1300	1110
19	1500	2260	4610	e10800	10200	4950	3590	3160	3730	1500	1240	1120
20	1570	2320	3520	e8510	10100	5060	3590	3180	3470	1560	1300	1080
21	1590	2500	3010	e7510	9700	5170	3610	3120	3020	1570	1310	1040
22	1640	2600	3040	e6620	8820	5870	3800	2890	2840	1850	1180	1220
23	1870	2650	e3280	e5730	7810	6490	3680	2860	2540	1690	1070	1330
24	2180	2540	e3460	e4910	7060	6950	3540	2950	2440	1810	1230	1570
25	1930	2490	e3280	e5240	6510	7220	3150	2950	2190	1820	1110	1560
26	1920	2620	e3310	e5380	5970	7360	3390	2950	1980	2760	1090	1700
27	1940	2870	e3210	e5240	5600	7570	3620	2830	1910	3000	1160	1710
28	1850	3640	e3330	e4800	5270	7890	3620	2690	1870	2720	1100	1770
29	1920	4560	e3170	e4560	---	8260	3610	2610	1820	2450	1130	2130
30	2000	4810	e3280	e4280	---	8720	3520	2480	1990	2310	1100	1890
31	2090	---	e3550	e4010	---	9400	---	2370	---	2170	1020	---
TOTAL	47810	81830	156520	222990	182050	201560	156270	93250	86890	54730	39516	34618
MEAN	1542	2728	5049	7193	6502	6502	5209	3008	2896	1765	1275	1154
MAX	2180	4810	7330	16700	10200	9400	10000	3560	5640	3000	1930	2130
MIN	1100	2060	3010	4010	3760	4230	3150	2370	1820	1160	986	771
CFSM	0.31	0.56	1.03	1.47	1.33	1.33	1.06	0.61	0.59	0.36	0.26	0.24
IN.	0.36	0.62	1.19	1.69	1.38	1.53	1.19	0.71	0.66	0.42	0.30	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 2005, BY WATER YEAR (WY)

MEAN	2392	2929	3373	3718	4371	7547	6876	4894	3426	2178	1727	1935
MAX	13630	7966	8794	12020	14720	21580	17900	15650	15670	7885	5225	7600
(WY)	1987	1991	1991	1973	1938	1904	1947	1956	1905	1994	1994	1975
MIN	906	1004	1080	1069	1079	1858	1759	1459	930	650	617	949
(WY)	1965	1931	1964	1963	1963	1931	1931	1931	1934	1934	1934	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1901 - 2005	
ANNUAL TOTAL	1624330		1358034			
ANNUAL MEAN	4438		3721		3775	
HIGHEST ANNUAL MEAN					6314	1943
LOWEST ANNUAL MEAN					1264	1931
HIGHEST DAILY MEAN	28900	May 27	16700	Jan 17	53300	Mar 27 1904
LOWEST DAILY MEAN	1080	Sep 27	771	Sep 11	381	Aug 9 1936
ANNUAL SEVEN-DAY MINIMUM	1160	Sep 27	839	Sep 7	438	Aug 8 1936
MAXIMUM PEAK FLOW			(a)16800	Jan 17	54000	Mar 28 1904
MAXIMUM PEAK STAGE			(b)16.35	Jan 22	(c)22.49	Mar 28 1904
INSTANTANEOUS LOW FLOW			739	(d)		
ANNUAL RUNOFF (CFSM)	0.906		0.759		0.770	
ANNUAL RUNOFF (INCHES)	12.33		10.31		10.47	
10 PERCENT EXCEEDS	8730		7310		7610	
50 PERCENT EXCEEDS	2900		3000		2580	
90 PERCENT EXCEEDS	1570		1180		1200	

(a) Gage height 14.27 ft.
(b) Backwater from ice.
(c) Present datum; from graph based on gage readings.
(d) Part of each day Sept. 11, 12.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

442805084411001 HIGGINS LAKE NEAR ROSCOMMON, MI

LOCATION.--Lat 44°25'35", long 84°40'55", in NW1/4 SW1/4 sec.33, T.24 N., R.3 W., Roscommon County, Hydrologic Unit 04060102, at South Higgins Lake State Park, 6.7 mi southwest of Roscommon.

DRAINAGE AREA.--58 mi^2, approximately.

PERIOD OF RECORD.--September 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,148.74 ft above sea level. Sept. 1, 1942 to Nov. 27, 1942, nonrecording gage at different datum. Nov. 27, 1942 to June 9, 1988, water-stage recorder at same datum. June 9, 1988 to Nov. 6, 1998, nonrecording gage at same datum.

REMARKS.--Inlets are Big Creek and Little Creek. The outlet is "The Cut". Lake elevation controlled by dam. Established legal level; summer, 1,154.11 ft, winter, 1,153.61 ft, above sea level. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 6.23 ft, June 26, 1954; minimum 4.32 ft, Oct. 3, 4, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.54 ft, July 24; minimum, 4.66 ft, Oct. 7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.85	5.00	5.00	5.04	5.14	5.16	5.05	4.99	5.19	5.39	5.30	5.31
2	4.89	5.04	4.98	5.07	5.13	5.16	5.05	5.00	5.19	5.33	5.29	5.30
3	4.84	5.03	5.00	5.08	5.12	5.15	5.05	5.00	5.19	5.30	5.29	5.28
4	4.86	5.04	4.97	5.07	5.11	5.14	5.03	4.99	5.19	5.34	5.39	5.27
5	4.81	5.03	4.97	5.07	5.10	5.12	5.01	4.97	5.18	5.37	5.44	5.25
6	4.78	5.00	4.96	5.09	5.10	5.11	5.02	4.98	5.21	5.36	5.42	5.24
7	4.77	5.03	5.02	5.09	5.12	5.13	5.03	4.99	5.20	5.35	5.41	5.25
8	4.79	5.00	5.06	5.08	5.13	5.14	5.02	4.98	5.26	5.34	5.40	5.26
9	4.86	4.98	5.04	5.08	5.13	5.13	5.02	4.97	5.31	5.33	5.39	5.25
10	4.84	4.96	5.05	5.08	5.13	5.12	5.01	4.99	5.32	5.32	5.39	5.23
11	4.83	4.97	5.07	5.07	5.12	5.11	5.01	5.04	5.33	5.32	5.38	5.21
12	4.83	4.96	5.06	5.09	5.11	5.12	5.00	5.03	5.34	5.33	5.39	5.21
13	4.83	4.95	5.11	5.21	5.10	5.11	5.00	5.03	5.38	5.33	5.38	5.20
14	4.82	4.94	5.08	5.23	5.12	5.10	4.98	5.05	5.37	5.32	5.37	5.21
15	4.83	4.93	5.06	5.22	5.12	5.09	4.97	5.08	5.40	5.30	5.36	5.20
16	4.86	4.92	5.06	5.22	5.12	5.08	4.96	5.08	5.41	5.31	5.35	5.19
17	4.89	4.92	5.05	5.21	5.13	5.08	4.95	5.06	5.38	5.31	5.34	5.18
18	4.87	4.93	5.06	5.20	5.13	5.07	4.94	5.06	5.35	5.31	5.32	5.17
19	---	4.93	5.08	5.21	5.12	5.07	4.93	5.08	5.33	5.33	5.41	5.16
20	---	4.94	5.04	5.21	5.12	5.08	4.99	5.09	5.31	5.30	5.42	5.16
21	---	4.95	5.05	5.20	5.13	5.07	4.98	5.09	5.33	5.30	5.43	5.13
22	4.84	4.94	5.06	5.21	5.13	5.07	4.99	5.11	5.31	5.29	5.41	5.13
23	4.85	4.93	5.06	5.20	5.12	5.06	5.04	5.16	5.29	5.27	5.38	5.13
24	4.90	4.94	5.06	5.19	5.12	5.05	5.08	5.17	5.27	5.33	5.37	5.10
25	4.90	4.95	5.05	5.18	5.12	5.04	5.01	5.16	5.29	5.34	5.36	5.14
26	4.91	4.92	5.05	5.19	5.13	5.03	4.99	5.17	5.34	5.42	5.35	5.27
27	4.91	4.94	5.04	5.19	5.12	5.02	5.00	5.18	5.32	5.41	5.35	5.24
28	4.90	5.01	5.03	5.18	5.13	5.01	5.01	5.19	5.34	5.37	5.34	5.23
29	4.97	4.99	5.02	5.16	---	5.00	4.99	5.20	5.35	5.36	5.33	5.29
30	4.98	4.99	5.02	5.15	---	5.00	4.99	5.21	5.35	5.34	5.33	---
31	5.00	---	5.03	5.14	---	5.04	---	5.19	---	5.31	5.33	---
MEAN	---	4.97	5.04	5.15	5.12	5.09	5.00	5.07	5.30	5.33	5.37	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

442400084472801 HOUGHTON LAKE NEAR HOUGHTON LAKE HEIGHTS, MI

LOCATION.--Lat 44°24'16", long 84°47'28", in NW1/4 NW1/4 sec.10, T.23 N., R.4 W., Roscommon County, Hydrologic Unit 04060102, on right bank of Muskegon River at upstream side of bridge on Old U.S. Highway 27, 0.4 mi downstream from Houghton Lake, and 5.2 mi north of Houghton Lake Heights.

DRAINAGE AREA.--222 mi^2.

PERIOD OF RECORD.--June 1942 to September 1991, September 1993 to current year, except winter period of 1942-43.

GAGE.--Water-stage recorder. Datum of gage is 1,130.00 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Sept. 28, 1960, nonrecording gage at datum 6.21 ft higher. Sept. 28, 1960 to Sept. 30, 1991, water-stage recorder. September 1993 to Nov. 26, 1996, nonrecording gage.

REMARKS.--Backus Creek and "The Cut" from Higgins Lake, join about 1 mi upstream from Houghton Lake and become the major inlet. There are also many small tributaries which feed the lake. The outlet is Muskegon River. Houghton Lake is the largest inland lake in Michigan. Established legal level, summer, 1,138.1 ft, minimum winter, 1,137.6 ft, above sea level. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 10.18 ft, Apr. 23, 1985; minimum observed, 6.95 ft, Sept. 3, 5, Nov. 8, 1958, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.98 ft, May 13; minimum, 7.62 ft, Nov. 7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.16	8.06	7.90	8.12	8.33	8.32	8.42	8.68	8.56	8.44	8.41	8.22
2	8.03	8.05	7.94	8.17	8.32	8.32	8.46	8.67	8.57	8.52	8.42	8.17
3	8.11	8.08	7.90	8.19	8.31	8.32	8.50	8.70	8.56	8.54	8.44	8.17
4	7.99	8.01	7.94	8.19	8.30	8.31	8.54	8.72	8.56	8.52	8.45	8.21
5	8.06	8.00	7.93	8.19	8.30	8.30	8.57	8.75	8.57	8.51	8.44	8.23
6	8.04	8.04	8.00	8.22	8.29	8.30	8.61	8.75	8.51	8.51	8.45	8.19
7	8.04	7.92	7.97	8.24	8.30	8.31	8.63	8.72	8.50	8.50	8.43	8.15
8	8.06	7.98	8.06	8.23	8.30	8.32	8.67	8.77	8.53	8.48	8.43	8.17
9	8.07	8.04	8.10	8.23	8.31	8.32	8.69	8.77	8.51	8.47	8.40	8.19
10	8.12	8.01	8.08	8.23	8.31	8.31	8.71	8.74	8.54	8.47	8.37	8.19
11	8.12	7.95	8.05	8.23	8.31	8.31	8.75	8.69	8.59	8.47	8.40	8.16
12	8.12	7.96	8.15	8.25	8.30	8.30	8.77	8.77	8.58	8.46	8.39	8.15
13	8.11	7.96	8.08	8.37	8.30	8.29	8.68	8.79	8.58	8.46	8.35	8.15
14	8.08	7.94	8.18	8.40	8.32	8.28	8.69	8.62	8.62	8.45	8.33	8.08
15	8.08	7.94	8.18	8.42	8.33	8.27	8.70	8.56	8.54	8.45	8.33	8.11
16	8.05	7.93	8.18	8.41	8.32	8.27	8.68	8.57	8.47	8.46	8.31	8.09
17	8.03	7.92	8.18	8.41	8.31	8.26	8.67	8.58	8.49	8.48	8.33	8.10
18	8.12	7.91	8.18	8.41	8.31	8.26	8.67	8.57	8.53	8.48	8.37	8.09
19	8.08	7.94	8.17	8.41	8.30	8.25	8.65	8.60	8.55	8.45	8.36	8.11
20	8.01	7.92	8.17	8.40	8.31	8.25	8.64	8.56	8.54	8.48	8.35	8.02
21	8.01	7.88	8.18	8.40	8.32	8.25	8.67	8.53	8.50	8.45	8.29	8.08
22	8.05	7.90	8.17	8.39	8.31	8.25	8.63	8.56	8.52	8.43	8.28	8.04
23	8.14	7.88	8.16	8.40	8.31	8.23	8.47	8.55	8.52	8.45	8.30	8.05
24	8.01	7.83	8.16	8.39	8.30	8.23	8.40	8.52	8.49	8.49	8.32	8.08
25	8.01	7.83	8.15	8.39	8.30	8.22	8.56	8.52	8.48	8.47	8.31	8.08
26	7.99	7.90	8.14	8.37	8.30	8.22	8.61	8.49	8.53	8.49	8.31	8.19
27	7.99	8.00	8.13	8.37	8.29	8.22	8.61	8.51	8.54	8.46	8.28	8.24
28	7.99	7.86	8.13	8.37	8.30	8.22	8.65	8.54	8.53	8.47	8.27	8.24
29	8.11	7.94	8.11	8.36	---	8.22	8.68	8.55	8.56	8.45	8.27	8.22
30	8.10	7.93	8.10	8.34	---	8.26	8.69	8.53	8.60	8.47	8.26	8.35
31	8.00	---	8.12	8.34	---	8.37	---	8.56	---	8.46	8.22	---
MEAN	8.06	7.95	8.09	8.32	8.31	8.28	8.62	8.63	8.54	8.47	8.35	8.15
MAX	8.16	8.08	8.18	8.42	8.33	8.37	8.77	8.79	8.62	8.54	8.45	8.35
MIN	7.99	7.83	7.90	8.12	8.29	8.22	8.40	8.49	8.47	8.43	8.22	8.02

CAL YR 2004 MEAN 8.57 MAX 9.69 MIN 7.83
WTR YR 2005 MEAN 8.31 MAX 8.79 MIN 7.83

STREAMS TRIBUTARY TO LAKE MICHIGAN

441508085244001 LAKE MITCHELL-CADILLAC AT CADILLAC, MI

LOCATION.--Lat 44°14'21", long 85°27'17", in SW1/4 SW1/4 sec.6, T.21 N., R.9 W., Wexford County, Hydrologic Unit 04060102, on right bank of channel between lakes, at William Mitchell State Park, at Cadillac.

DRAINAGE AREA.--46.6 mi^2.

PERIOD OF RECORD.--August 1942 to December 1959, July 1960 to current year.

GAGE.--Nonrecording gage. Once daily reading by observer. Datum of gage is 1,283.41 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--The major inlet is Mitchell Creek. The outlet is Clam River. Lake elevation controlled by dam. Established legal levels; annual maximum level, 1,290.0 ft, minimum winter level, 1,288.9 ft, summer minimum level, 1,289.7 ft above sea level.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.86 ft, Sept. 6, 1975; minimum observed, 4.62 ft, Oct. 4, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 6.94 ft, Apr. 7-10; minimum observed, 5.74 ft, Oct. 8-15.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.78	6.08	6.22	6.52	6.80	6.72	6.72	6.80	6.72	6.32	6.10	6.30
2	5.78	6.12	6.22	6.56	6.78	6.70	6.78	6.80	6.72	6.32	6.10	6.26
3	5.76	6.16	6.24	6.58	6.78	6.70	6.82	6.80	6.72	6.32	6.10	6.24
4	5.76	6.16	6.24	6.60	6.76	6.70	6.88	6.80	6.70	6.30	6.20	6.24
5	5.76	6.18	6.26	6.64	6.76	6.68	6.90	6.80	6.70	6.30	6.32	6.22
6	5.76	6.18	6.28	6.64	6.76	6.68	6.92	6.80	6.68	6.30	6.36	6.22
7	5.76	6.20	6.32	6.66	6.76	6.68	6.94	6.80	6.66	6.28	6.34	6.22
8	5.74	6.22	6.40	6.66	6.76	6.68	6.94	6.80	6.64	6.28	6.30	6.22
9	5.74	6.20	6.40	6.68	6.76	6.68	6.94	6.80	6.62	6.28	6.28	6.22
10	5.74	6.18	6.42	6.70	6.76	6.67	6.94	6.80	6.60	6.26	6.26	6.20
11	5.74	6.18	6.40	6.67	6.76	6.68	6.92	6.80	6.58	6.26	6.24	6.20
12	5.74	6.18	6.40	6.78	6.76	6.68	6.90	6.80	6.58	6.26	6.24	6.20
13	5.74	6.16	6.38	6.86	6.78	6.68	6.86	6.77	6.58	6.24	6.22	6.20
14	5.74	6.16	6.38	6.88	6.80	6.66	6.84	6.80	6.58	6.24	6.20	6.18
15	5.74	6.16	6.38	6.90	6.80	6.66	6.82	6.80	6.56	6.22	6.18	6.18
16	5.76	6.14	6.36	6.92	6.78	6.64	6.80	6.80	6.54	6.22	6.16	6.16
17	5.76	6.14	6.36	6.92	6.76	6.64	6.80	6.80	6.50	6.20	6.14	6.16
18	5.78	6.14	6.36	6.92	6.74	6.64	6.78	6.80	6.50	6.20	6.14	6.14
19	5.78	6.12	6.34	6.92	6.74	6.62	6.78	6.80	6.48	6.18	6.14	6.14
20	5.80	6.12	6.34	6.92	6.74	6.62	6.78	6.80	6.46	6.16	6.18	6.14
21	5.80	6.12	6.34	6.92	6.74	6.60	6.78	6.80	6.44	6.16	6.26	6.12
22	5.82	6.12	6.32	6.92	6.74	6.60	6.78	6.78	6.40	6.14	6.40	6.12
23	5.82	6.12	6.32	6.92	6.74	6.56	6.78	6.78	6.38	6.14	6.40	6.12
24	5.84	6.12	6.32	6.90	6.74	6.54	6.78	6.78	6.38	6.12	6.38	6.10
25	5.86	6.14	6.32	6.90	6.74	6.52	6.80	6.76	6.36	6.12	6.38	6.14
26	5.86	6.16	6.32	6.90	6.74	6.50	6.80	6.76	6.36	6.24	6.38	6.28
27	5.88	6.16	6.32	6.88	6.72	6.50	6.80	6.76	6.34	6.08	6.36	6.28
28	5.88	6.18	6.36	6.86	6.72	6.48	6.80	6.74	6.34	6.10	6.36	6.28
29	5.90	6.18	6.40	6.84	---	6.50	6.80	6.74	6.34	6.10	6.36	6.28
30	5.92	6.22	6.44	6.82	---	6.52	6.80	6.74	6.32	6.10	6.34	6.30
31	5.98	---	6.48	6.80	---	6.66	---	6.74	---	6.10	6.32	---
MEAN	5.80	6.16	6.34	6.79	6.76	6.63	6.83	6.79	6.53	6.21	6.26	6.20
MAX	5.98	6.22	6.48	6.92	6.80	6.72	6.94	6.80	6.72	6.32	6.40	6.30
MIN	5.74	6.08	6.22	6.52	6.72	6.48	6.72	6.74	6.32	6.08	6.10	6.10

CAL YR 2004 MEAN 6.45 MAX 7.36 MIN 5.74
WTR YR 2005 MEAN 6.44 MAX 6.94 MIN 5.74

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121300 CLAM RIVER AT VOGEL CENTER, MI

LOCATION.--Lat 44°12'02", long 85°03'10", in SW1/4 NW1/4 sec.21, T.21 N., R.6 W., Missaukee County, Hydrologic Unit 04060102, on left bank 10 ft downstream from bridge on 8 Mile Road, 0.5 mi north of Vogel Center, and 3.5 mi southeast of Falmouth.

DRAINAGE AREA.--243 mi^2.

PERIOD OF RECORD.--June 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,130 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation at low flow by dams upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	110	118	201	e112	125	810	114	94	79	68	67
2	64	119	114	232	e112	125	657	111	92	76	66	66
3	75	125	111	264	e115	123	435	110	90	74	66	65
4	71	112	108	274	e118	125	319	108	89	76	78	64
5	67	105	113	222	e127	128	268	106	89	88	97	63
6	66	100	114	134	136	123	250	105	86	86	90	63
7	66	96	131	104	160	136	241	107	83	76	79	66
8	72	96	229	136	170	160	229	107	82	71	74	75
9	81	94	260	162	169	151	213	104	80	70	71	76
10	80	92	225	162	156	148	199	102	80	69	70	72
11	72	97	185	140	149	158	186	99	79	68	69	68
12	67	97	164	139	148	148	177	99	84	67	74	66
13	66	95	152	248	137	135	170	99	82	73	78	65
14	65	94	134	278	138	128	163	108	82	76	75	64
15	65	94	132	289	151	127	157	110	79	73	71	64
16	68	95	132	255	156	122	154	106	80	74	66	65
17	75	97	127	e204	153	120	145	103	80	74	66	64
18	77	98	130	e162	131	118	138	101	81	74	71	63
19	71	97	96	e143	143	119	134	104	80	76	85	63
20	69	102	106	e136	131	119	140	152	79	72	104	62
21	67	105	107	e136	111	118	142	141	79	71	99	62
22	71	103	e106	e135	154	118	129	125	76	72	88	62
23	79	102	e103	e133	141	119	121	128	74	70	82	64
24	101	100	e102	e132	129	119	121	124	74	75	77	63
25	93	99	e101	e131	126	122	129	115	73	84	74	e65
26	82	98	e101	e129	123	128	138	106	76	88	72	e150
27	76	105	e101	e125	118	142	131	100	81	87	72	153
28	73	141	e101	e121	130	179	124	98	77	79	72	109
29	117	143	e101	e118	---	237	120	102	74	74	70	113
30	155	124	e103	e116	---	354	119	101	77	72	67	111
31	126	---	139	e113	---	620	---	96	---	69	68	---
TOTAL	2438	3135	4046	5274	3844	4894	6459	3391	2432	2333	2359	2273
MEAN	78.6	104	131	170	137	158	215	109	81.1	75.3	76.1	75.8
MAX	155	143	260	289	170	620	810	152	94	88	104	153
MIN	61	92	96	104	111	118	119	96	73	67	66	62
CFSM	0.32	0.43	0.54	0.70	0.56	0.65	0.89	0.45	0.33	0.31	0.31	0.31
IN.	0.37	0.48	0.62	0.81	0.59	0.75	0.99	0.52	0.37	0.36	0.36	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

MEAN	111	131	132	120	121	187	229	155	114	88.5	82.2	93.9
MAX	275	248	259	187	194	389	396	278	218	238	185	281
(WY)	1987	1986	1992	1993	1988	1976	1976	2004	1996	1969	1969	1985
MIN	60.5	70.3	64.5	62.7	62.1	87.5	104	67.9	57.0	53.0	58.1	50.0
(WY)	2004	1977	1977	1977	2003	2003	2000	1977	1977	1977	1978	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	50926		42878			
ANNUAL MEAN	139		117		131	
HIGHEST ANNUAL MEAN					185	1992
LOWEST ANNUAL MEAN					76.8	2003
HIGHEST DAILY MEAN	588	May 25	810	Apr 1	1680	Mar 29 1989
LOWEST DAILY MEAN	61	Sep 30	61	Oct 1	45	Sep 20 2003
ANNUAL SEVEN-DAY MINIMUM	62	Sep 25	63	Sep 18	46	Sep 15 2003
MAXIMUM PEAK FLOW			836	Apr 1	1710	Mar 29 1989
MAXIMUM PEAK STAGE			5.74	Apr 1	7.31	Mar 29 1989
INSTANTANEOUS LOW FLOW			59	Sep 22	(a)29	Nov 3 1969
ANNUAL RUNOFF (CFSM)	0.573		0.483		0.537	
ANNUAL RUNOFF (INCHES)	7.80		6.56		7.30	
10 PERCENT EXCEEDS	249		162		219	
50 PERCENT EXCEEDS	102		103		108	
90 PERCENT EXCEEDS	70		67		66	

(a) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121500 MUSKEGON RIVER AT EVART, MI

LOCATION.--Lat 43°53'57", long 85°15'19", in NW1/4 NE1/4 sec.3, T.17 N., R.8 W., Osceola County, Hydrologic Unit 04060102, on right bank 500 ft downstream from bridge on U.S. Highway 10 in Evart, 0.4 mi upstream from Twin Creek, and at mile 123.9.

DRAINAGE AREA.--1,433 mi^2.

PERIOD OF RECORD.--October 1930 to September 1931, October 1933 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1437: 1934, 1947(M). WDR MI-96-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 977.72 ft above sea level. Prior to Nov. 7, 1956, nonrecording gages at sites 400 ft and 500 ft upstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation at low flow by dams upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	342	1090	1140	1580	e979	928	4140	1180	896	462	431	407
2	351	1150	1110	1770	e984	926	4550	1150	813	448	412	397
3	352	1170	1090	2050	e984	993	4900	1090	746	435	390	381
4	356	1150	1050	2140	e990	970	4840	994	698	453	480	372
5	361	1110	1060	2100	1010	1010	4300	934	665	501	694	366
6	353	1060	1080	e1610	1030	1050	3810	899	631	501	624	361
7	355	1010	1310	e1370	1150	1220	3420	898	604	482	550	356
8	381	968	2130	1410	1350	1380	3120	865	590	456	500	374
9	519	933	2290	1430	1410	1410	2870	839	560	435	464	420
10	570	923	2330	1430	1330	1360	2650	821	537	415	438	418
11	522	907	2130	1370	1290	1340	2460	804	521	400	420	398
12	478	882	1920	1330	1260	1310	2280	782	512	393	418	380
13	461	845	1800	2230	1270	1210	2120	793	528	403	424	367
14	466	817	1670	2530	1200	1160	1980	862	556	407	421	360
15	472	803	1470	2500	1360	1140	1850	881	545	398	408	351
16	492	793	1420	2160	1400	1080	1740	862	538	400	393	355
17	513	797	1380	e1740	1410	1040	1650	873	524	406	375	359
18	531	799	1260	e1390	1340	1010	1560	894	518	407	371	357
19	541	797	1160	e1220	1260	1000	1470	930	508	403	746	354
20	550	822	828	e1130	1200	995	1510	1010	496	386	706	352
21	552	840	e649	e1180	1070	999	1530	1100	481	377	636	344
22	548	835	e720	e1150	1100	1030	1440	1130	466	369	588	348
23	602	818	e813	e1030	1090	1030	1360	1160	450	362	545	359
24	765	803	e838	e1020	1070	1020	1310	1190	441	479	513	359
25	801	800	e823	e1030	1060	1060	1310	1190	429	477	493	461
26	771	792	e818	e1060	1060	1160	1310	1160	425	666	471	1140
27	735	864	e879	e1090	1010	1270	1290	1130	417	660	474	1340
28	715	1110	e901	e1010	997	1450	1270	1080	415	574	465	1250
29	957	1200	e957	e975	---	1800	1240	1040	426	516	449	1310
30	1190	1170	1050	e968	---	2320	1200	1010	458	477	430	1230
31	1190	---	1310	e968	---	3420	---	965	---	451	418	---
TOTAL	17792	28058	39386	45971	32664	39091	70480	30516	16394	13999	15147	15626
MEAN	574	935	1271	1483	1167	1261	2349	984	546	452	489	521
MAX	1190	1200	2330	2530	1410	3420	4900	1190	896	666	746	1340
MIN	342	792	649	968	979	926	1200	782	415	362	371	344
CFSM	0.40	0.65	0.89	1.03	0.81	0.88	1.64	0.69	0.38	0.32	0.34	0.36
IN.	0.46	0.73	1.02	1.19	0.85	1.01	1.83	0.79	0.43	0.36	0.39	0.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	766	996	976	874	908	1581	2190	1377	979	674	544	619
MAX	2402	2656	2270	1700	2353	4115	3869	3091	2945	2901	1243	2269
(WY)	1987	1992	1992	1973	1938	1976	1971	2004	1945	1957	1969	1975
MIN	374	433	499	418	327	594	928	548	409	327	316	325
(WY)	1949	1950	1977	1936	1936	1940	2000	1977	1988	1934	1941	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	470561		365124			
ANNUAL MEAN	1286		1000		(a)1047	
HIGHEST ANNUAL MEAN					1532	1992
LOWEST ANNUAL MEAN					581	2003
HIGHEST DAILY MEAN	4630	May 26	4900	Apr 3	8770	Mar 31 1989
LOWEST DAILY MEAN	334	Sep 29	342	Oct 1	252	Aug 28 1941
ANNUAL SEVEN-DAY MINIMUM	339	Sep 24	353	Sep 16	274	Aug 27 1941
MAXIMUM PEAK FLOW			5020	Apr 3	9040	Mar 31 1989
MAXIMUM PEAK STAGE			11.90	Apr 3	14.99	Mar 31 1989
INSTANTANEOUS LOW FLOW			342	(b)	(c)164	Dec 20 1947
ANNUAL RUNOFF (CFSM)	0.897		0.698		0.731	
ANNUAL RUNOFF (INCHES)	12.22		9.48		9.93	
10 PERCENT EXCEEDS	2850		1630		1970	
50 PERCENT EXCEEDS	885		901		806	
90 PERCENT EXCEEDS	380		395		440	

(a) Does not include water years 1931, 1934.
(b) Part of each day Oct. 1, 2, Sept. 21, 22.
(c) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121650 MUSKEGON RIVER AT BIG RAPIDS, MI

LOCATION.--Lat 43°41'37", long 85°28'03", in SE1/4 NE1/4 sec.14, T.15 N., R.10 W., Mecosta County, Hydrologic Unit 04060102, on right bank at sewage treatment plant in Big Rapids.

DRAINAGE AREA.--1,751 mi^2.

PERIOD OF RECORD.--Water years 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1999 to September 2001.
WATER TEMPERATURE: October 1998 to current year.
DISSOLVED OXYGEN: October 1998 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval. Automatic suspended sediment pump sampler from December 22, 1999 to Apr. 14, 2002.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Oct. 25-31, Nov. 18-21, Dec. 6-10, Jan. 13, Apr. 19-26, May 24-31, July 20-30, Sept. 11, 12 rated good; Oct. 1, Nov. 1-10, 22-27, Dec. 11-14, Apr. 27 to May 5, July 31 to Aug. 4, Sept. 13-16 rated fair; and Oct. 2-12, Nov. 28, 29, Dec. 18, Dec. 21 to Jan. 5, Sept. 17-29 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 461 microsiemens, Feb. 16, 2000; minimum, 200 microsiemens, May 17, 2001.
WATER TEMPERATURE: Maximum, 29.0°C, Aug. 7, 8, 2001; minimum, -0.5°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 16.1 mg/L, Jan. 6, 2003; minimum, 3.7 mg/L, July 5, 6, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 28.0°C, June 29; minimum recorded, 0.0°C, on many days during winter period, but may have been lower during instrument malfunction Jan. 29 to Apr. 7.
DISSOLVED OXYGEN: Maximum recorded, 13.5 mg/L, Dec. 3, 5, but may have been higher during instrument malfunction Dec. 15-17, 19, 20, Jan. 10-12, Jan. 29 to Apr. 7; minimum, 5.6 mg/L, June 12.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.0	11.0	13.0	10.0	9.0	9.5	3.0	2.0	2.5	0.0	0.0	0.0
2	14.0	11.5	13.0	9.0	8.0	9.0	2.5	2.0	2.5	0.0	0.0	0.0
3	13.0	9.5	11.5	8.5	7.5	8.0	2.0	1.0	1.5	0.0	0.0	0.0
4	12.5	10.0	11.0	7.5	6.5	7.5	2.0	1.0	1.5	0.0	0.0	0.0
5	11.5	8.0	9.5	7.5	6.0	6.5	2.5	1.5	2.0	0.0	0.0	0.0
6	13.0	9.0	11.0	8.0	6.0	6.5	2.0	1.5	1.5	0.0	0.0	0.0
7	14.0	10.5	12.0	7.5	6.0	7.0	2.5	2.0	2.0	0.0	0.0	0.0
8	14.5	12.0	13.0	6.0	4.5	5.5	2.5	2.0	2.5	0.5	0.0	0.5
9	14.5	12.0	13.0	4.5	4.0	4.0	3.0	2.0	2.5	0.5	0.5	0.5
10	13.0	10.5	12.0	6.0	3.5	4.5	3.0	3.0	3.0	1.0	0.5	0.5
11	13.0	10.5	11.5	6.5	4.5	5.5	3.0	2.0	2.5	1.0	0.5	0.5
12	12.0	9.5	10.5	4.5	3.0	4.0	2.0	1.5	2.0	2.0	1.0	1.0
13	12.0	9.5	10.5	4.0	2.0	3.0	1.5	0.5	1.0	2.0	0.5	1.0
14	13.0	10.5	11.5	3.5	1.5	2.5	0.5	0.0	0.5	0.5	0.0	0.0
15	11.5	10.5	11.0	3.0	1.5	2.5	---	---	---	0.0	0.0	0.0
16	10.5	8.5	9.5	4.5	3.0	4.0	---	---	---	0.0	0.0	0.0
17	8.5	7.5	8.0	6.5	4.5	5.5	---	---	---	0.0	0.0	0.0
18	8.0	7.0	7.5	7.5	6.5	7.0	0.5	0.0	0.0	0.0	0.0	0.0
19	8.0	7.0	7.5	7.0	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
20	9.0	8.0	8.5	7.5	7.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0
21	10.0	8.0	9.0	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
22	9.5	8.5	9.0	6.5	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
23	10.5	9.0	9.5	6.5	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
24	10.5	10.0	10.0	5.5	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
25	11.5	9.5	10.5	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
26	11.0	10.0	10.5	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
27	11.0	10.0	10.5	4.0	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
28	11.0	10.0	10.5	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
29	11.5	10.5	11.0	3.5	3.0	3.0	0.0	0.0	0.0	---	---	---
30	12.5	11.0	12.0	3.5	3.0	3.0	0.0	0.0	0.0	---	---	---
31	11.0	10.0	10.5	---	---	---	0.0	0.0	0.0	---	---	---
MONTH	14.5	7.0	10.6	10.0	1.5	5.3	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121650 MUSKEGON RIVER AT BIG RAPIDS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	10.0	8.5	9.5
2	---	---	---	---	---	---	---	---	---	9.0	8.0	8.5
3	---	---	---	---	---	---	---	---	---	8.5	7.5	8.0
4	---	---	---	---	---	---	---	---	---	11.5	6.5	9.0
5	---	---	---	---	---	---	---	---	---	13.0	8.5	10.5
6	---	---	---	---	---	---	---	---	---	12.5	10.5	11.5
7	---	---	---	---	---	---	---	---	---	15.0	11.0	12.5
8	---	---	---	---	---	---	11.0	8.5	9.5	17.0	12.5	14.5
9	---	---	---	---	---	---	11.5	8.5	10.0	18.0	15.0	16.5
10	---	---	---	---	---	---	12.0	9.5	10.5	19.5	16.5	18.0
11	---	---	---	---	---	---	12.0	9.5	11.0	18.0	13.5	15.5
12	---	---	---	---	---	---	11.5	9.0	10.5	15.0	12.0	13.0
13	---	---	---	---	---	---	12.0	9.0	10.5	12.5	11.0	11.5
14	---	---	---	---	---	---	12.5	9.0	11.0	14.0	11.0	12.0
15	---	---	---	---	---	---	12.5	9.5	11.0	12.5	11.5	12.0
16	---	---	---	---	---	---	13.0	10.0	11.5	12.5	10.0	11.5
17	---	---	---	---	---	---	15.0	11.5	13.5	13.0	9.5	11.0
18	---	---	---	---	---	---	15.5	12.5	14.0	14.5	12.0	13.5
19	---	---	---	---	---	---	17.0	13.5	15.0	14.0	12.0	13.0
20	---	---	---	---	---	---	16.0	13.5	15.0	16.5	11.5	14.0
21	---	---	---	---	---	---	15.0	12.0	13.5	18.0	13.5	15.5
22	---	---	---	---	---	---	13.5	11.5	12.5	16.5	15.0	15.5
23	---	---	---	---	---	---	11.5	8.5	10.0	16.5	14.5	15.5
24	---	---	---	---	---	---	8.5	7.0	7.5	16.5	14.0	15.5
25	---	---	---	---	---	---	10.5	6.5	8.5	18.0	14.0	16.0
26	---	---	---	---	---	---	10.5	9.0	9.5	17.0	15.5	16.0
27	---	---	---	---	---	---	10.0	8.5	9.5	17.0	14.5	15.5
28	---	---	---	---	---	---	9.5	8.0	9.0	17.5	14.5	15.5
29	---	---	---	---	---	---	10.5	7.5	9.0	16.5	14.0	15.5
30	---	---	---	---	---	---	11.0	8.5	9.5	18.0	14.0	16.0
31	---	---	---	---	---	---	---	---	---	19.5	15.0	17.0
MONTH	---	---	---	---	---	---	---	---	---	19.5	6.5	13.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	16.0	18.5	23.5	19.0	21.0	26.0	21.5	23.5	22.0	18.0	20.0
2	21.0	17.0	19.0	22.5	17.0	19.5	27.0	22.0	24.0	21.5	18.0	19.5
3	19.5	18.0	19.0	24.0	18.5	21.0	26.5	22.5	24.5	21.0	17.0	19.0
4	22.0	18.0	20.0	22.0	19.5	20.5	25.0	22.5	24.0	21.5	16.5	19.0
5	24.0	19.5	21.5	23.0	19.0	21.0	24.0	20.5	22.0	21.5	17.0	19.0
6	24.0	20.0	22.0	23.5	20.0	21.5	24.0	20.0	22.0	22.0	17.5	19.5
7	25.0	20.0	22.5	24.0	19.0	21.5	24.5	20.0	22.5	22.5	18.5	20.5
8	26.0	21.5	23.5	25.0	20.0	22.5	25.0	20.5	23.0	22.5	19.0	20.5
9	27.0	22.5	24.5	25.5	20.0	22.5	26.0	21.5	23.5	22.0	18.0	20.0
10	26.5	23.0	24.5	26.5	20.5	23.5	25.5	22.5	23.5	22.0	18.0	20.0
11	27.0	23.0	25.0	26.5	22.0	24.0	23.0	21.0	21.5	22.5	18.0	20.5
12	26.0	23.5	24.5	25.0	22.5	23.5	22.0	20.0	21.0	22.5	19.0	21.0
13	25.0	22.5	24.0	24.5	21.0	22.5	21.5	19.0	20.5	22.5	19.0	20.5
14	25.0	22.0	23.5	27.5	22.0	24.5	23.0	19.0	21.0	22.0	19.0	20.5
15	22.5	18.5	20.5	27.5	22.5	25.0	23.5	18.5	21.0	19.0	16.5	18.0
16	19.0	16.5	18.0	26.5	24.0	25.0	23.5	19.5	21.5	18.0	16.5	17.0
17	18.0	16.0	17.0	27.0	23.0	24.5	24.0	19.0	21.5	19.0	14.5	16.5
18	18.0	16.5	17.0	27.5	23.5	25.5	22.0	20.0	20.5	19.5	15.0	17.0
19	21.5	16.0	18.5	26.5	22.5	24.5	21.0	19.5	20.0	17.5	15.5	16.5
20	23.5	17.5	20.5	24.5	21.0	23.0	21.5	19.0	20.0	19.5	15.5	17.0
21	23.5	19.5	21.5	25.5	22.0	23.5	21.5	18.5	20.0	20.0	16.0	18.0
22	24.5	19.0	21.5	26.5	22.0	24.0	19.5	18.0	19.0	18.5	17.0	17.5
23	23.5	19.5	21.5	26.0	21.5	24.0	20.0	17.0	18.5	18.5	15.0	16.5
24	26.5	20.5	23.5	26.0	22.0	23.5	21.0	16.5	18.5	16.5	14.5	15.5
25	26.0	23.0	24.5	26.0	22.5	24.5	19.5	17.0	18.5	17.0	15.5	16.0
26	24.5	22.0	23.0	24.5	21.0	22.5	21.5	16.5	19.0	17.0	16.0	16.5
27	26.5	21.5	24.0	22.0	19.0	20.5	22.0	18.5	20.0	16.5	14.5	15.5
28	27.5	22.5	24.5	22.5	18.5	20.5	22.0	18.5	20.0	15.5	14.0	15.0
29	28.0	22.5	25.0	22.0	19.0	20.5	22.5	18.0	20.0	14.5	13.0	14.0
30	25.5	23.0	24.0	23.5	18.5	20.5	22.5	18.0	20.0	14.5	12.0	13.0
31	---	---	---	24.5	20.0	22.0	22.0	18.5	20.0	---	---	---
MONTH	28.0	16.0	21.9	27.5	17.0	22.7	27.0	16.5	21.1	22.5	12.0	18.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121650 MUSKEGON RIVER AT BIG RAPIDS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.1	8.5	9.3	10.1	9.5	9.8	13.0	11.9	12.3	12.3	11.2	11.8
2	9.8	8.4	9.1	10.4	9.8	10.1	13.3	12.0	12.6	12.5	12.1	12.3
3	10.1	8.9	9.4	11.1	10.2	10.6	13.5	12.2	12.8	12.7	12.2	12.5
4	10.4	9.0	9.5	10.7	10.4	10.5	13.3	12.4	12.8	13.0	12.6	12.8
5	10.5	9.4	9.9	11.4	10.5	11.0	13.5	12.3	12.8	13.1	12.8	13.0
6	10.4	9.1	9.8	11.4	10.7	11.1	13.1	12.3	12.6	13.0	12.9	12.9
7	10.3	9.1	9.6	11.4	10.6	10.9	12.5	11.9	12.3	13.2	12.8	13.0
8	9.4	8.5	8.9	12.1	10.9	11.5	12.2	11.8	12.0	13.2	12.8	13.1
9	9.8	8.5	9.1	12.4	11.7	12.0	12.2	12.0	12.1	13.3	12.7	13.0
10	10.2	9.0	9.6	12.7	11.5	12.0	12.0	11.8	11.9	---	---	---
11	10.4	9.5	9.8	12.2	11.0	11.5	12.2	11.9	12.1	---	---	---
12	10.7	9.6	10.0	12.6	11.4	12.1	12.4	12.1	12.3	---	---	---
13	10.7	9.4	9.9	13.1	12.0	12.4	13.0	12.4	12.7	12.4	12.2	12.3
14	10.6	9.1	9.8	13.4	12.3	12.7	13.0	12.1	12.6	12.7	12.4	12.6
15	10.0	9.0	9.4	13.2	12.1	12.7	---	---	---	12.7	12.4	12.6
16	10.5	9.2	9.9	12.4	11.6	12.1	---	---	---	12.6	12.4	12.5
17	11.1	9.9	10.4	11.8	11.1	11.4	---	---	---	12.6	12.5	12.5
18	11.3	10.4	10.7	11.9	10.6	11.2	12.8	12.1	12.4	12.6	12.2	12.4
19	11.2	10.4	10.7	11.7	10.2	10.7	---	---	---	12.3	11.8	12.0
20	11.2	10.2	10.6	10.8	10.2	10.5	---	---	---	11.8	11.7	11.8
21	11.2	10.1	10.5	12.2	10.2	11.1	11.9	11.1	11.6	11.8	11.5	11.7
22	11.1	10.1	10.5	12.5	11.1	11.7	11.9	11.6	11.7	11.6	11.2	11.4
23	10.2	9.5	9.9	12.0	10.9	11.4	12.2	11.8	12.0	11.3	11.0	11.1
24	9.9	9.4	9.6	12.0	11.1	11.6	12.2	11.7	12.0	11.1	10.8	10.9
25	10.6	9.4	9.9	13.3	11.7	12.4	11.9	11.7	11.8	10.9	10.5	10.6
26	10.5	9.5	9.9	13.4	12.1	12.6	11.8	11.4	11.5	10.6	10.4	10.5
27	10.6	9.4	9.9	12.2	11.3	11.8	11.6	11.3	11.4	10.7	10.4	10.5
28	10.6	9.6	10.0	12.4	11.4	11.9	11.5	11.1	11.2	10.8	10.5	10.6
29	9.9	9.1	9.6	12.8	11.7	12.2	11.2	11.0	11.1	---	---	---
30	9.2	8.8	9.0	12.6	11.8	12.1	11.0	10.8	10.9	---	---	---
31	9.8	9.0	9.4	---	---	---	11.4	10.9	11.2	---	---	---
MONTH	11.3	8.4	9.8	13.4	9.5	11.5	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	11.1	9.8	10.5
2	---	---	---	---	---	---	---	---	---	11.3	10.0	10.6
3	---	---	---	---	---	---	---	---	---	11.3	10.2	10.8
4	---	---	---	---	---	---	---	---	---	11.5	10.2	10.9
5	---	---	---	---	---	---	---	---	---	11.1	9.9	10.5
6	---	---	---	---	---	---	---	---	---	10.7	9.5	10.1
7	---	---	---	---	---	---	---	---	---	10.5	9.3	9.9
8	---	---	---	---	---	---	10.4	9.9	10.2	10.4	9.0	9.6
9	---	---	---	---	---	---	10.1	9.6	9.9	9.8	8.4	9.1
10	---	---	---	---	---	---	9.9	9.5	9.7	9.4	8.0	8.7
11	---	---	---	---	---	---	10.0	9.5	9.7	9.4	7.8	8.6
12	---	---	---	---	---	---	10.1	9.5	9.8	10.5	9.0	9.7
13	---	---	---	---	---	---	10.2	9.6	9.9	10.2	9.3	9.7
14	---	---	---	---	---	---	10.3	9.7	9.9	10.4	9.4	9.8
15	---	---	---	---	---	---	10.4	9.6	9.9	10.5	9.2	9.9
16	---	---	---	---	---	---	10.3	9.4	9.8	10.8	9.5	10.2
17	---	---	---	---	---	---	10.1	9.0	9.5	11.0	9.8	10.3
18	---	---	---	---	---	---	9.8	8.8	9.3	10.6	9.3	9.9
19	---	---	---	---	---	---	9.7	8.5	9.0	9.7	9.0	9.3
20	---	---	---	---	---	---	8.8	8.2	8.5	10.7	9.2	9.9
21	---	---	---	---	---	---	9.9	8.6	9.2	10.4	9.0	9.6
22	---	---	---	---	---	---	9.9	8.8	9.3	9.6	8.4	8.9
23	---	---	---	---	---	---	10.4	9.2	9.8	9.8	8.3	9.1
24	---	---	---	---	---	---	11.1	10.0	10.5	10.2	8.6	9.4
25	---	---	---	---	---	---	11.2	10.1	10.7	10.3	8.8	9.5
26	---	---	---	---	---	---	10.7	9.8	10.2	9.8	8.5	9.1
27	---	---	---	---	---	---	10.8	9.7	10.2	9.9	8.6	9.3
28	---	---	---	---	---	---	11.1	10.0	10.6	9.9	8.6	9.3
29	---	---	---	---	---	---	11.4	10.2	10.8	9.9	8.7	9.3
30	---	---	---	---	---	---	11.1	9.9	10.5	9.7	8.7	9.2
31	---	---	---	---	---	---	---	---	---	9.7	8.5	9.1
MONTH	---	---	---	---	---	---	---	---	---	11.5	7.8	9.7

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121650 MUSKEGON RIVER AT BIG RAPIDS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.6	8.3	8.9	8.8	6.7	7.7	9.3	7.0	8.0	9.5	7.7	8.5
2	9.4	8.0	8.6	9.6	7.7	8.6	9.1	6.8	7.8	9.5	7.7	8.5
3	9.0	7.8	8.4	9.5	7.4	8.4	9.2	6.7	7.8	9.5	7.8	8.6
4	9.3	7.7	8.4	8.4	6.8	7.6	8.4	6.6	7.5	9.6	7.9	8.7
5	9.3	7.4	8.2	9.0	7.1	8.0	8.8	7.1	7.8	9.5	7.8	8.5
6	9.3	7.1	8.1	9.1	6.9	7.9	9.4	7.3	8.2	9.7	7.7	8.5
7	9.4	7.1	8.2	9.1	7.1	8.1	9.7	7.3	8.3	9.4	7.6	8.3
8	9.0	6.6	7.7	9.2	7.1	8.1	9.3	7.2	8.1	9.6	7.5	8.4
9	8.9	6.4	7.5	9.0	7.1	7.9	9.3	6.8	7.9	9.7	7.6	8.5
10	8.4	6.2	7.2	9.0	6.8	7.8	8.7	6.7	7.6	9.6	7.8	8.6
11	8.0	5.8	6.7	8.5	6.5	7.5	8.8	6.8	7.8	9.4	7.4	8.4
12	7.7	5.6	6.6	7.9	6.4	7.2	8.9	7.3	8.0	9.1	7.1	7.9
13	7.7	5.7	6.6	8.8	6.7	7.5	9.0	7.4	8.1	8.7	6.8	7.6
14	8.4	6.0	7.2	8.7	6.7	7.7	9.2	7.4	8.2	8.5	6.3	7.4
15	7.7	6.1	6.8	8.3	6.4	7.3	9.1	7.4	8.1	9.2	7.0	8.1
16	8.5	6.9	7.6	7.9	6.0	6.8	9.0	7.2	8.0	8.9	7.2	8.0
17	8.7	7.1	8.0	8.9	6.5	7.6	9.1	7.3	8.1	9.0	7.2	8.0
18	9.1	7.4	8.2	8.4	6.3	7.3	8.3	7.1	7.7	9.2	7.2	8.0
19	8.8	6.9	7.9	8.6	6.3	7.4	8.4	7.3	7.8	8.7	7.1	7.6
20	9.0	6.7	8.0	9.0	6.8	7.8	8.5	7.3	7.8	9.4	6.9	8.1
21	9.1	6.9	7.9	8.8	6.8	7.7	9.1	7.6	8.3	9.3	7.4	8.2
22	9.4	6.9	8.2	8.8	6.5	7.5	9.3	7.7	8.4	8.2	7.1	7.6
23	9.0	6.9	7.9	8.4	6.4	7.3	9.6	8.0	8.7	9.4	7.4	8.2
24	8.8	6.6	7.5	7.6	6.1	6.7	9.8	8.0	8.8	9.3	7.5	8.3
25	9.0	6.1	7.6	8.1	5.9	6.9	9.7	8.0	8.7	8.6	7.5	8.0
26	8.8	6.3	7.6	7.2	6.6	6.9	9.7	7.9	8.8	8.4	7.3	7.9
27	9.5	7.2	8.3	8.5	6.9	7.7	9.2	7.6	8.3	7.6	6.8	7.3
28	9.5	6.9	8.0	9.0	7.4	8.2	9.4	7.6	8.4	8.1	7.0	7.6
29	8.7	6.7	7.7	8.8	7.1	7.9	9.3	7.6	8.4	8.5	7.3	7.9
30	8.6	6.3	7.3	9.2	7.2	8.2	9.3	7.5	8.3	---	---	---
31	---	---	---	9.3	7.0	8.1	9.3	7.4	8.3	---	---	---
MONTH	9.6	5.6	7.8	9.6	5.9	7.7	9.8	6.6	8.1	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121660 MUSKEGON RIVER NEAR STANWOOD, MI

LOCATION.--Lat 43°36'47", long 85°28'40", in SE1/4 SW1/4 sec.11, T.14 N., R.10 W., Mecosta County, Hydrologic Unit 04060102, on left bank downstream from Rogers Dam, 2.8 mi northwest of Stanwood.

DRAINAGE AREA.--1,834 mi^2.

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1995 to current year.
DISSOLVED OXYGEN: October 1995 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Oct. 10-12, 15, 16, Dec. 3-5, Feb. 21-27, Mar. 29 to Apr. 6, July 9-14 rated good; Oct. 17, 18, Dec. 6-8, Feb. 28 to Mar. 8, July 15-23 rated fair; and Oct. 19-26, Dec. 9-24, July 24 to Aug. 3 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.5°C, Aug. 8-10, 2001, July 4, 2002; minimum, -0.5°C, on several days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.9 mg/L, Feb. 3, 4, 2002; minimum, 3.9 mg/L, July 5, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.0°C, June 11-13, July 19, 26; minimum, -0.5°C, Mar. 11-14.
DISSOLVED OXYGEN: Maximum, 13.6 mg/L, Mar. 17, 18; minimum, 4.7 mg/L, June 30.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.0	14.0	14.5	11.0	10.0	10.5	3.0	2.5	3.0	0.0	0.0	0.0
2	15.0	14.0	14.5	10.0	9.0	9.5	2.5	2.5	2.5	0.0	0.0	0.0
3	14.0	13.0	13.5	9.0	8.5	8.5	2.5	2.0	2.0	0.0	0.0	0.0
4	13.5	12.5	13.0	8.5	7.5	8.0	2.0	1.5	1.5	0.0	0.0	0.0
5	12.5	11.0	12.0	7.5	7.0	7.0	1.5	1.5	1.5	0.0	0.0	0.0
6	11.5	11.0	11.5	7.0	6.5	7.0	1.5	1.5	1.5	0.0	0.0	0.0
7	12.0	11.5	11.5	7.5	6.5	7.0	2.0	1.5	1.5	0.0	0.0	0.0
8	12.5	12.0	12.0	7.0	6.0	6.5	2.5	2.0	2.0	0.0	0.0	0.0
9	13.5	12.5	13.0	6.0	5.5	6.0	2.5	2.5	2.5	0.0	0.0	0.0
10	13.5	12.5	13.0	5.5	4.5	5.0	3.0	2.5	2.5	0.0	0.0	0.0
11	13.0	12.0	12.5	5.0	4.5	5.0	3.0	2.5	2.5	0.0	0.0	0.0
12	12.5	12.0	12.0	5.5	5.0	5.0	2.5	1.5	2.0	0.0	0.0	0.0
13	12.0	11.0	11.5	5.5	4.0	4.5	1.5	1.0	1.5	0.5	0.0	0.0
14	12.0	11.0	11.5	4.0	3.5	3.5	1.0	0.5	0.5	0.5	0.0	0.0
15	12.0	11.5	11.5	---	---	---	0.5	0.0	0.5	0.0	0.0	0.0
16	11.5	11.0	11.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
17	11.0	9.5	10.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
18	9.5	8.5	9.0	5.5	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
19	9.0	8.0	8.0	7.0	5.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0
20	8.0	7.5	8.0	7.0	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
21	8.0	7.5	8.0	7.0	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0
22	8.5	8.0	8.5	7.0	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
23	9.0	8.5	9.0	6.5	6.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0
24	10.0	9.0	9.5	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
25	10.0	10.0	10.0	5.5	4.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
26	10.5	10.0	10.5	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
27	10.5	10.5	10.5	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
28	10.5	10.5	10.5	3.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
29	11.0	10.5	10.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
30	11.5	11.0	11.5	3.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
31	11.5	11.0	11.5	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	15.0	7.5	11.1	---	---	---	3.0	0.0	0.9	0.5	0.0	0.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121660 MUSKEGON RIVER NEAR STANWOOD, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.0	0.0	0.0	3.5	2.0	2.5	10.0	9.5	9.5
2	0.0	0.0	0.0	0.0	0.0	0.0	3.5	2.5	2.5	9.5	9.0	9.5
3	0.0	0.0	0.0	0.0	0.0	0.0	4.0	3.0	3.5	9.0	8.0	8.5
4	0.0	0.0	0.0	0.0	0.0	0.0	5.0	3.5	4.0	8.5	7.5	8.0
5	0.0	0.0	0.0	0.0	0.0	0.0	6.5	5.0	5.5	10.0	8.5	9.0
6	0.0	0.0	0.0	0.5	0.0	0.0	8.5	6.5	7.0	11.5	10.0	10.5
7	0.0	0.0	0.0	2.0	0.5	1.5	9.5	8.0	8.5	12.5	11.5	12.0
8	0.0	0.0	0.0	2.0	0.5	1.5	10.0	9.0	9.5	14.0	12.5	13.0
9	0.0	0.0	0.0	0.5	0.0	0.0	10.5	10.0	10.0	16.0	14.0	14.5
10	0.0	0.0	0.0	0.0	0.0	0.0	11.0	10.5	11.0	17.5	15.5	16.5
11	0.0	0.0	0.0	0.0	-0.5	0.0	11.0	10.5	11.0	17.5	17.0	17.5
12	0.0	0.0	0.0	0.0	-0.5	0.0	11.0	10.5	10.5	17.0	14.5	16.0
13	0.0	0.0	0.0	0.0	-0.5	0.0	10.5	10.0	10.5	14.5	12.0	13.5
14	0.0	0.0	0.0	0.0	-0.5	0.0	11.0	10.0	10.5	12.5	11.5	12.0
15	0.0	0.0	0.0	0.0	0.0	0.0	12.0	11.0	11.0	12.5	12.0	12.5
16	0.0	0.0	0.0	0.5	0.0	0.0	12.0	11.0	11.5	12.5	11.5	12.0
17	0.0	0.0	0.0	0.0	0.0	0.0	13.5	12.0	12.5	12.0	11.5	11.5
18	0.0	0.0	0.0	0.5	0.0	0.5	14.5	13.5	14.0	13.0	11.5	12.0
19	0.0	0.0	0.0	1.0	0.5	1.0	15.5	14.5	14.5	13.5	13.0	13.0
20	0.0	0.0	0.0	1.0	0.5	0.5	16.0	15.5	16.0	14.0	13.0	13.5
21	0.0	0.0	0.0	1.0	0.5	1.0	15.5	14.0	14.5	15.5	13.5	14.0
22	0.0	0.0	0.0	2.5	1.0	2.0	14.5	13.0	14.0	16.0	15.5	16.0
23	0.0	0.0	0.0	3.0	2.0	2.5	13.0	10.5	12.0	16.0	15.5	16.0
24	0.0	0.0	0.0	3.0	2.5	3.0	10.5	8.0	9.5	16.0	15.5	16.0
25	0.0	0.0	0.0	3.0	2.5	3.0	8.0	7.5	8.0	16.5	15.5	16.0
26	0.0	0.0	0.0	3.5	3.0	3.5	10.0	8.0	9.0	17.0	16.0	16.5
27	0.0	0.0	0.0	4.0	3.5	3.5	10.0	9.5	10.0	16.5	15.5	16.0
28	0.0	0.0	0.0	4.0	3.5	4.0	9.5	9.0	9.5	16.5	15.5	16.0
29	---	---	---	5.0	4.0	4.5	9.5	9.0	9.0	16.0	15.5	16.0
30	---	---	---	5.5	4.5	5.0	10.0	9.0	9.5	17.0	16.0	16.0
31	---	---	---	6.0	3.5	5.0	---	---	---	17.5	16.5	17.0
MONTH	0.0	0.0	0.0	6.0	-0.5	1.4	16.0	2.0	9.7	17.5	7.5	13.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.5	17.5	18.0	25.5	23.5	24.5	23.5	22.5	22.5	21.5	20.5	21.0
2	19.5	18.5	19.0	23.5	21.5	22.0	24.0	23.0	23.5	21.5	21.0	21.0
3	20.0	19.0	19.5	22.0	21.0	21.5	25.0	24.0	24.5	21.0	20.5	21.0
4	20.0	19.0	19.5	22.0	21.5	22.0	25.5	24.5	25.0	21.0	20.0	20.5
5	22.0	20.0	20.5	22.5	21.5	22.0	25.0	24.0	24.5	20.0	20.0	20.0
6	22.5	21.0	21.5	22.5	22.0	22.0	24.0	22.5	23.5	20.5	20.0	20.0
7	23.0	22.0	22.5	23.0	21.5	22.0	24.0	22.5	23.0	21.0	20.5	20.5
8	24.0	22.5	23.0	23.0	22.0	22.5	24.0	23.0	23.5	22.0	21.0	21.5
9	24.5	23.5	24.0	23.0	22.0	22.5	24.5	23.5	24.0	21.5	21.0	21.5
10	25.5	24.5	25.0	23.5	22.5	23.0	25.0	24.0	24.5	21.0	20.5	21.0
11	26.0	25.0	25.5	24.5	23.5	24.0	24.5	23.5	24.0	21.5	20.5	21.0
12	26.0	25.5	25.5	24.5	24.5	24.5	23.5	22.5	23.0	21.5	21.0	21.0
13	26.0	25.0	25.5	24.5	23.5	24.0	22.5	22.0	22.5	22.0	21.0	21.5
14	25.0	24.5	24.5	25.0	23.5	24.5	22.5	22.0	22.0	22.0	21.5	21.5
15	25.0	23.0	24.0	25.5	24.5	25.0	22.0	21.5	22.0	21.5	20.5	21.0
16	23.0	20.5	21.5	25.5	25.0	25.5	22.5	21.5	22.0	20.5	19.0	20.0
17	20.5	19.0	19.5	25.5	24.5	25.0	22.5	22.0	22.0	19.0	18.5	19.0
18	19.0	18.0	18.5	25.5	25.0	25.5	22.5	22.0	22.5	18.5	17.5	18.0
19	19.0	18.0	18.5	26.0	25.5	25.5	22.5	21.5	21.5	18.5	17.5	18.0
20	20.0	18.5	19.0	25.5	24.5	25.0	21.5	20.5	21.0	18.5	17.5	18.0
21	21.5	20.0	20.5	25.0	24.5	25.0	21.5	21.0	21.0	18.5	17.5	18.0
22	21.5	20.5	21.0	25.5	24.5	25.0	21.0	20.0	21.0	19.0	18.5	18.5
23	22.0	21.5	21.5	25.0	24.5	25.0	20.0	19.5	20.0	19.0	18.0	18.5
24	23.5	22.0	22.5	25.0	24.5	25.0	20.0	19.5	19.5	18.0	17.0	17.5
25	24.5	23.0	23.5	25.5	25.0	25.0	20.0	19.5	19.5	17.0	16.5	17.0
26	24.5	24.0	24.0	26.0	24.5	25.0	20.0	19.5	19.5	18.0	17.0	17.5
27	24.5	23.5	24.0	24.5	22.0	23.0	20.5	20.0	20.0	17.5	16.0	16.5
28	25.5	24.5	24.5	22.0	21.0	21.5	21.0	20.5	20.5	16.5	15.5	16.0
29	25.5	25.0	25.0	22.0	21.0	21.5	21.0	20.5	21.0	16.0	14.5	15.5
30	25.5	25.0	25.5	21.5	20.5	21.0	22.0	21.0	21.5	14.5	13.5	14.0
31	---	---	---	22.5	21.0	21.5	21.5	20.5	21.5	---	---	---
MONTH	26.0	17.5	22.2	26.0	20.5	23.6	25.5	19.5	22.1	22.0	13.5	19.2

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121660 MUSKEGON RIVER NEAR STANWOOD, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.5	8.6	9.1	---	---	---	10.7	10.2	10.5	---	---	---
2	10.0	8.7	9.3	---	---	---	11.3	10.7	11.0	---	---	---
3	9.6	8.6	9.2	---	---	---	11.4	11.1	11.3	---	---	---
4	10.2	9.3	9.7	---	---	---	11.1	10.6	10.8	---	---	---
5	10.2	9.5	9.8	---	---	---	10.7	10.6	10.6	---	---	---
6	10.3	9.4	9.8	---	---	---	10.9	10.6	10.8	13.1	12.9	13.0
7	10.7	10.1	10.4	---	---	---	11.0	10.8	10.9	13.0	12.6	12.8
8	10.6	9.8	10.3	---	---	---	11.2	10.9	11.1	12.8	12.6	12.7
9	9.8	9.0	9.5	---	---	---	11.5	11.2	11.4	12.8	12.7	12.8
10	9.2	8.7	9.0	---	---	---	11.6	11.4	11.5	12.8	12.6	12.7
11	8.9	8.5	8.7	11.8	11.6	11.8	11.5	11.3	11.4	12.7	12.5	12.6
12	8.9	8.4	8.8	11.8	11.4	11.6	11.5	11.2	11.3	12.9	12.6	12.7
13	8.9	8.2	8.6	11.9	11.4	11.6	11.6	11.4	11.5	12.9	12.5	12.7
14	9.3	8.2	8.9	12.2	11.9	12.0	11.6	11.2	11.4	13.0	12.9	12.9
15	9.2	8.7	9.0	---	---	---	11.4	11.0	11.2	13.3	12.9	13.1
16	8.9	8.3	8.6	---	---	---	11.3	11.0	11.2	13.3	13.1	13.2
17	8.8	8.4	8.6	---	---	---	11.3	10.9	11.2	13.2	13.0	13.1
18	8.8	8.6	8.7	11.9	11.1	11.5	11.3	11.2	11.3	13.1	13.0	13.1
19	9.1	8.7	8.9	11.1	10.7	10.8	11.4	11.2	11.3	13.1	12.7	13.0
20	9.1	8.8	9.0	10.8	10.4	10.6	11.4	11.2	11.3	12.7	12.3	12.5
21	9.3	9.1	9.2	10.4	9.7	10.1	11.5	11.3	11.4	12.3	11.9	12.1
22	9.4	9.1	9.3	9.8	9.4	9.6	11.5	11.3	11.4	12.0	11.9	11.9
23	9.5	9.3	9.4	9.4	9.1	9.2	11.5	11.3	11.4	11.9	11.6	11.8
24	9.5	9.1	9.4	9.3	9.1	9.2	11.7	11.5	11.6	11.7	11.3	11.5
25	9.3	9.1	9.2	9.6	9.2	9.4	---	---	---	11.4	11.0	11.2
26	9.6	9.1	9.5	10.0	9.6	9.8	---	---	---	11.1	10.8	11.0
27	---	---	---	10.2	10.0	10.1	---	---	---	10.9	10.7	10.8
28	---	---	---	10.2	9.9	10.0	---	---	---	10.9	10.6	10.8
29	---	---	---	10.2	9.9	10.1	---	---	---	10.9	10.8	10.9
30	---	---	---	10.4	10.1	10.3	---	---	---	11.0	10.7	10.9
31	---	---	---	---	---	---	---	---	---	10.8	10.7	10.8
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.8	10.5	10.6	12.6	12.4	12.5	12.3	11.4	11.9	10.1	9.9	10.0
2	10.7	10.5	10.6	12.6	12.2	12.4	12.3	12.2	12.2	10.0	9.8	9.9
3	10.9	10.6	10.8	12.6	12.1	12.3	12.2	12.0	12.1	10.1	9.8	10.0
4	11.2	10.9	11.1	12.4	12.1	12.3	12.1	11.0	11.9	10.5	10.0	10.2
5	11.4	11.1	11.3	12.6	12.1	12.3	12.0	11.4	11.6	10.6	10.2	10.5
6	11.7	11.3	11.6	12.5	12.0	12.3	11.5	10.9	11.1	10.3	9.6	10.0
7	12.1	11.7	11.9	12.7	12.2	12.5	11.0	10.5	10.6	9.7	9.3	9.5
8	12.1	12.0	12.1	12.6	11.9	12.4	10.5	10.2	10.3	9.3	8.9	9.1
9	12.3	12.1	12.2	13.1	12.6	12.9	10.4	10.1	10.2	8.9	8.3	8.6
10	12.4	12.2	12.2	13.4	13.0	13.2	10.2	9.9	10.1	8.3	7.5	7.9
11	12.3	12.1	12.2	13.3	13.0	13.2	10.1	9.9	10.0	7.8	7.3	7.6
12	12.4	12.2	12.3	13.2	12.9	13.0	10.2	10.0	10.1	7.5	6.9	7.2
13	12.5	12.2	12.3	13.0	12.8	12.9	10.3	10.1	10.2	7.9	7.5	7.8
14	12.4	12.1	12.2	13.3	13.0	13.1	10.3	10.1	10.2	8.2	7.7	8.1
15	12.4	12.2	12.3	13.4	13.2	13.3	10.3	10.0	10.1	8.4	8.1	8.3
16	12.3	12.2	12.2	13.4	13.2	13.3	10.2	9.8	10.0	8.5	8.1	8.3
17	12.3	12.2	12.3	13.6	13.4	13.5	10.1	9.5	9.9	8.8	8.5	8.7
18	12.8	12.3	12.6	13.6	13.4	13.5	9.7	9.0	9.5	9.3	8.8	9.0
19	13.0	12.7	12.8	13.4	13.1	13.2	9.3	8.7	9.1	9.0	8.2	8.6
20	13.0	12.7	12.8	13.3	13.0	13.1	9.1	8.4	8.8	8.5	7.9	8.1
21	12.8	12.6	12.7	13.4	13.0	13.2	8.7	8.1	8.3	9.7	8.4	9.3
22	12.7	12.5	12.6	13.4	13.1	13.2	9.0	8.6	8.8	9.5	8.9	9.3
23	12.5	12.4	12.4	13.2	13.1	13.2	9.3	8.6	9.0	9.0	8.6	8.8
24	12.6	12.4	12.5	13.1	12.9	13.0	10.1	9.2	9.7	9.0	8.5	8.8
25	12.5	12.4	12.4	13.1	12.9	13.0	10.6	10.1	10.4	9.1	8.6	8.9
26	12.7	12.4	12.6	13.0	12.7	12.8	10.5	10.0	10.4	9.2	8.5	9.0
27	12.8	12.6	12.7	12.8	12.5	12.6	10.1	9.8	10.0	8.8	8.2	8.6
28	12.8	12.6	12.7	12.6	12.3	12.5	10.1	9.8	9.9	8.9	8.4	8.6
29	---	---	---	12.6	12.0	12.3	10.4	9.9	10.1	8.9	8.3	8.7
30	---	---	---	12.1	11.5	11.8	10.4	9.9	10.2	9.1	8.6	8.8
31	---	---	---	11.6	11.2	11.4	---	---	---	9.4	8.8	9.0
MONTH	13.0	10.5	12.1	13.6	11.2	12.8	12.3	8.1	10.2	10.6	6.9	8.9

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121660 MUSKEGON RIVER NEAR STANWOOD, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.4	8.6	9.0	6.1	4.9	5.6	8.1	6.9	7.3	7.4	6.5	7.1
2	9.3	8.5	8.8	6.7	5.1	6.1	8.1	7.4	7.8	7.6	6.9	7.3
3	8.6	7.8	8.3	7.7	6.0	6.9	8.0	7.0	7.4	7.7	6.8	7.4
4	8.2	7.1	7.8	7.8	6.6	7.3	7.4	6.4	6.9	8.2	7.2	7.6
5	9.0	7.7	8.3	7.5	6.1	6.8	6.8	5.5	6.5	8.4	7.7	8.0
6	8.8	7.3	8.0	7.6	6.8	7.3	7.6	6.2	6.8	8.8	8.1	8.3
7	8.8	7.2	8.1	8.0	6.6	7.3	7.8	6.7	7.2	9.0	8.6	8.7
8	9.3	7.5	8.6	8.2	6.9	7.7	7.9	6.9	7.4	8.8	7.8	8.5
9	9.5	7.4	8.6	8.2	7.3	7.8	7.8	7.1	7.4	9.0	7.5	8.4
10	9.6	7.4	8.5	8.5	7.5	7.9	7.8	6.8	7.4	8.0	7.4	7.8
11	8.8	6.6	7.6	8.3	7.4	7.9	7.3	5.8	6.7	8.7	7.8	8.1
12	7.7	6.1	6.8	7.9	7.1	7.6	6.8	5.2	6.3	8.7	8.2	8.4
13	6.9	5.7	6.2	7.1	5.8	6.6	7.1	6.2	6.7	8.6	7.3	8.0
14	6.1	5.4	5.8	7.3	5.8	6.7	7.4	6.6	7.0	8.1	7.5	7.8
15	6.2	5.5	6.0	8.0	7.0	7.5	7.7	6.9	7.3	7.9	6.5	7.5
16	6.7	5.6	6.2	7.9	7.3	7.7	8.0	7.2	7.7	8.2	6.9	7.5
17	7.6	6.4	7.0	7.4	5.6	6.3	8.1	7.2	7.8	8.1	7.1	7.6
18	8.0	7.1	7.5	6.9	6.0	6.4	7.7	7.0	7.5	8.6	7.6	8.1
19	8.2	7.2	7.6	7.1	6.4	6.7	7.2	6.0	6.7	8.7	8.1	8.3
20	8.5	7.6	8.0	6.8	5.0	6.4	7.3	6.3	6.7	8.4	7.4	8.1
21	8.4	7.5	7.9	7.4	6.1	6.7	7.5	6.9	7.2	8.6	7.9	8.1
22	8.0	6.8	7.4	7.7	6.6	7.1	7.8	6.5	7.3	8.6	8.2	8.4
23	7.1	6.5	6.8	7.7	6.5	7.4	7.5	6.6	7.1	8.5	7.5	8.2
24	7.3	6.6	6.9	7.4	6.3	6.8	7.9	7.2	7.4	8.1	6.5	7.4
25	7.2	6.9	7.1	7.5	6.6	6.9	8.1	7.2	7.6	8.2	7.5	7.8
26	7.2	5.6	6.6	8.2	6.3	6.9	7.9	7.0	7.5	8.3	7.6	8.0
27	6.2	5.0	5.7	6.9	6.0	6.6	7.8	7.0	7.5	7.7	6.9	7.3
28	6.7	5.9	6.2	8.3	6.5	7.2	7.7	6.3	7.2	7.5	6.8	7.2
29	6.6	6.0	6.3	8.3	6.4	7.6	7.4	6.4	6.8	7.5	7.2	7.3
30	6.6	4.7	5.8	7.3	6.2	6.8	7.6	7.2	7.3	7.8	7.4	7.7
31	---	---	---	7.3	6.7	7.0	7.5	6.7	7.2	---	---	---
MONTH	9.6	4.7	7.3	8.5	4.9	7.0	8.1	5.2	7.2	9.0	6.5	7.9

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121680 MUSKEGON RIVER NEAR OXBOW, MI

LOCATION.--Lat 43°29'09", long 85°37'50", in SW1/4 SE1/4 sec.28, T.13 N., R.11 W., Newaygo County, Hydrologic Unit 04060102, on right bank downstream from Hardy Dam, 0.6 mi northwest of Oxbow.

DRAINAGE AREA.--1,931 mi^2.

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1995 to current year.
DISSOLVED OXYGEN: October 1995 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent except the following period: Oct. 1 to Dec. 29 rated good. Dissolved oxygen records rated excellent except the following periods: Oct. 1-5, 22-27, Nov. 14-16, Dec. 26-29, Mar. 15-18, Apr. 26 to May 5, May 21-28, June 26 to July 16, Aug. 12-16 rated good; Oct. 6-12, Oct. 28 to Nov. 4, Nov. 17-20, Mar. 19-24, May 29-31, July 17 to Aug. 3, Aug. 17-23 rated fair; and Nov. 5-9, Nov. 21-29, Mar. 25 to Apr. 6, Aug. 24 to Sept. 26 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 22.0°C, on several days during summer periods, 1996, 1999; minimum, 0.5°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.1 mg/L, Apr. 21, 2003; minimum, 0.3 mg/L, Sept. 9, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 20.5°C, on several days during summer period; minimum, 0.5°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 12.7 mg/L, Apr. 4; minimum, 0.3 mg/L, Sept. 9.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.5	18.0	19.0	12.5	12.0	12.0	7.0	7.0	7.0	---	---	---
2	19.5	18.5	19.0	12.5	11.5	12.0	7.0	7.0	7.0	---	---	---
3	19.0	18.0	18.5	12.5	11.5	12.0	7.0	6.5	7.0	---	---	---
4	19.0	18.0	18.5	12.0	11.5	12.0	6.5	6.5	6.5	---	---	---
5	18.5	18.0	18.5	12.0	11.0	11.5	6.5	6.5	6.5	2.0	2.0	2.0
6	18.5	18.0	18.0	12.0	11.0	11.5	6.5	6.0	6.5	2.0	2.0	2.0
7	18.0	17.5	18.0	12.0	11.0	11.5	6.5	6.0	6.0	2.0	2.0	2.0
8	18.0	17.5	18.0	11.5	11.5	11.5	6.0	6.0	6.0	2.0	2.0	2.0
9	18.0	17.0	17.5	11.5	11.0	11.0	6.0	6.0	6.0	2.0	2.0	2.0
10	17.5	17.0	17.5	11.0	11.0	11.0	6.0	5.5	6.0	2.0	2.0	2.0
11	17.5	16.5	17.0	11.0	11.0	11.0	5.5	5.5	5.5	2.0	2.0	2.0
12	17.0	16.0	16.5	11.0	10.5	10.5	5.5	5.5	5.5	2.0	1.5	1.5
13	16.5	16.0	16.5	10.5	10.5	10.5	5.5	5.0	5.0	2.0	1.5	1.5
14	16.5	15.5	16.5	10.5	10.0	10.0	5.0	4.5	4.5	1.5	1.5	1.5
15	16.5	15.5	16.0	10.0	9.5	10.0	4.5	4.5	4.5	1.5	1.5	1.5
16	16.0	15.0	15.5	9.5	9.0	9.5	4.5	4.0	4.0	1.5	1.5	1.5
17	15.5	15.0	15.0	9.0	9.0	9.0	---	---	---	2.0	1.5	1.5
18	15.5	14.5	15.0	9.0	8.5	9.0	---	---	---	1.5	1.5	1.5
19	15.0	14.5	15.0	9.0	8.0	8.5	3.5	2.5	3.0	2.0	1.5	1.5
20	15.0	14.5	15.0	8.5	8.0	8.5	3.0	2.5	2.5	1.5	1.5	1.5
21	14.5	14.5	14.5	8.5	7.5	8.0	3.0	2.0	2.5	1.5	1.5	1.5
22	14.5	14.5	14.5	8.0	7.5	8.0	3.0	2.0	2.5	1.5	1.5	1.5
23	14.5	14.5	14.5	8.0	7.5	7.5	3.0	2.0	2.5	1.5	1.5	1.5
24	14.5	14.0	14.0	8.0	7.0	8.0	3.0	2.0	2.5	1.5	1.5	1.5
25	14.0	13.0	13.5	8.0	7.0	7.5	3.0	2.0	2.5	1.5	1.5	1.5
26	13.5	12.5	13.0	7.5	7.0	7.0	3.0	2.0	2.5	1.5	1.5	1.5
27	13.0	12.0	13.0	7.5	7.0	7.0	3.0	2.0	2.5	2.0	1.5	1.5
28	13.0	12.0	12.5	7.5	7.0	7.0	3.0	2.0	2.5	2.5	1.5	1.5
29	12.5	11.5	12.5	7.0	7.0	7.0	3.0	2.0	2.5	2.5	1.5	1.5
30	12.5	11.5	12.0	7.0	7.0	7.0	---	---	---	1.5	1.5	1.5
31	12.5	12.0	12.0	---	---	---	---	---	---	1.5	1.0	1.5
MONTH	19.5	11.5	15.7	12.5	7.0	9.6	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121680 MUSKEGON RIVER NEAR OXBOW, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.5	1.0	1.5	2.5	1.0	1.0	1.5	1.5	1.5	8.5	6.5	8.0
2	1.5	1.0	1.5	2.0	0.5	1.0	1.5	1.5	1.5	8.5	6.5	8.0
3	2.0	1.0	1.5	2.0	0.5	1.0	2.0	1.5	2.0	8.5	6.5	8.0
4	2.5	1.0	1.5	2.0	0.5	1.0	2.0	2.0	2.0	8.5	6.5	8.0
5	2.5	1.0	1.5	2.0	1.0	1.0	3.0	2.0	2.5	9.0	6.5	8.0
6	2.5	1.0	1.5	2.0	1.0	1.0	3.0	3.0	3.0	9.0	6.5	8.0
7	2.5	1.0	1.5	2.0	1.0	1.0	3.5	3.0	3.0	9.5	7.0	8.5
8	2.0	1.0	1.0	2.0	1.0	1.0	3.5	3.0	3.5	10.0	7.5	9.0
9	2.0	1.0	1.0	2.0	1.0	1.0	4.5	3.5	4.0	10.0	7.5	9.0
10	2.0	1.0	1.0	2.0	1.0	1.0	6.0	4.5	5.0	9.5	7.5	8.5
11	2.0	1.0	1.0	2.0	1.0	1.0	6.0	6.0	6.0	10.5	7.5	9.5
12	2.0	1.0	1.0	2.0	0.5	1.0	6.5	5.5	6.0	11.0	7.5	9.5
13	2.0	1.0	1.0	2.0	0.5	1.0	6.5	5.5	6.5	11.0	8.0	10.0
14	2.0	1.0	1.0	2.0	0.5	1.0	7.0	6.0	6.5	10.5	8.0	10.0
15	2.0	1.0	1.0	2.0	0.5	1.0	7.0	5.0	6.5	10.5	8.0	10.0
16	1.0	1.0	1.0	2.0	0.5	1.0	7.0	5.0	6.5	11.0	8.5	10.0
17	1.0	1.0	1.0	2.0	0.5	1.0	7.0	4.5	6.5	11.0	8.5	10.0
18	1.0	1.0	1.0	2.0	0.5	1.0	7.5	4.5	6.5	11.0	8.5	10.0
19	1.5	1.0	1.0	2.5	0.5	1.0	7.5	4.5	6.0	11.5	9.0	10.5
20	1.5	0.5	1.0	2.0	0.5	1.0	8.0	4.5	7.0	12.0	9.0	11.0
21	2.0	1.0	1.0	2.0	0.5	1.0	9.0	5.0	7.5	11.5	9.0	10.5
22	2.0	1.0	1.0	2.0	0.5	1.0	9.5	5.5	8.5	11.5	9.0	10.5
23	2.0	1.0	1.0	2.0	0.5	1.0	9.0	6.0	8.5	12.0	9.0	11.0
24	2.0	0.5	1.0	2.0	0.5	1.0	8.5	5.5	8.0	12.5	9.5	11.5
25	2.0	1.0	1.0	2.0	0.5	1.0	8.5	5.5	7.5	12.5	9.5	11.5
26	2.5	1.0	1.0	2.0	0.5	1.0	8.5	6.0	7.5	12.0	9.5	11.5
27	2.5	0.5	1.0	2.0	1.0	1.0	8.5	6.0	7.5	12.0	9.5	11.0
28	2.5	0.5	1.0	2.0	1.0	1.0	8.5	6.0	7.5	12.0	9.5	11.0
29	---	---	---	1.0	1.0	1.0	8.5	6.0	8.0	12.5	10.0	11.5
30	---	---	---	1.5	1.0	1.0	9.0	6.0	8.0	13.0	10.0	12.0
31	---	---	---	1.5	1.0	1.0	---	---	---	13.5	10.0	12.5
MONTH	2.5	0.5	1.1	2.5	0.5	1.0	9.5	1.5	5.7	13.5	6.5	9.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.5	10.5	12.5	17.0	11.0	15.0	19.0	12.5	16.5	20.0	14.5	17.5
2	14.0	10.5	13.0	17.5	11.5	15.0	19.0	12.5	17.0	20.0	14.5	18.0
3	14.0	10.0	13.0	17.0	11.5	15.0	19.0	12.5	16.5	20.0	15.0	18.0
4	14.0	10.5	12.5	17.0	11.5	15.5	19.0	12.0	17.0	20.0	15.0	18.0
5	13.5	10.0	12.5	17.5	12.0	15.5	19.5	12.5	17.5	20.0	15.0	18.0
6	13.0	10.5	12.0	18.0	11.5	16.0	19.5	16.5	19.0	20.0	15.0	18.0
7	14.5	10.5	13.0	17.5	11.5	15.5	19.5	15.0	19.0	20.0	15.0	18.0
8	14.5	10.5	13.0	18.0	11.5	15.5	19.5	13.0	18.0	20.5	15.5	18.5
9	15.0	10.5	13.5	18.0	11.5	15.5	19.5	12.5	18.0	20.5	15.5	18.0
10	15.0	10.5	13.5	18.0	11.5	15.5	19.5	12.5	18.0	20.5	15.5	18.5
11	15.0	10.5	13.5	18.0	11.5	15.5	20.0	13.0	17.5	20.5	15.5	18.5
12	15.5	10.5	13.5	18.5	11.5	15.5	19.5	13.0	17.5	20.5	15.5	18.5
13	16.5	11.0	14.0	18.0	11.5	15.5	19.5	13.0	17.0	20.5	15.5	18.5
14	15.5	11.0	13.5	18.5	12.0	16.0	20.0	12.5	17.0	20.5	15.5	19.0
15	15.5	10.5	14.0	18.5	12.0	16.5	20.0	13.0	17.0	20.5	16.0	18.5
16	16.0	10.5	14.5	18.5	12.0	16.5	19.5	12.5	17.0	20.5	16.5	19.0
17	16.0	10.5	14.5	18.5	12.0	16.0	20.0	13.0	16.0	20.5	16.5	19.0
18	16.0	10.5	14.5	18.0	11.5	15.5	20.0	13.0	17.0	20.5	16.5	19.0
19	16.0	11.0	14.5	18.5	12.0	16.0	19.5	13.0	18.0	20.5	16.5	19.0
20	16.0	11.0	14.5	18.5	12.0	16.0	20.0	15.0	19.0	20.5	17.0	19.0
21	16.5	11.0	14.5	18.5	12.0	16.0	20.0	14.5	19.0	20.5	16.5	19.0
22	16.5	10.5	14.5	19.0	12.0	16.0	19.5	14.0	18.5	20.5	17.0	19.0
23	16.0	10.5	14.0	19.0	11.5	16.0	19.5	14.0	18.0	20.5	17.0	19.0
24	16.0	10.5	13.5	18.5	12.0	16.5	19.5	13.5	18.0	20.0	17.0	19.0
25	17.0	11.0	14.5	19.0	12.0	17.0	19.5	14.0	18.0	20.0	17.5	19.5
26	17.0	11.0	15.0	18.5	14.0	18.0	20.0	14.0	18.0	20.5	17.5	19.5
27	17.0	10.5	15.0	19.0	18.5	18.5	20.0	14.0	18.0	20.5	20.0	20.0
28	17.0	10.5	15.0	19.0	13.0	18.0	20.0	14.5	18.5	20.0	20.0	20.0
29	17.5	11.0	15.0	19.0	12.0	17.0	20.0	14.5	18.0	20.0	18.5	19.5
30	17.0	11.0	14.5	19.0	12.5	17.0	20.0	14.5	18.0	20.0	19.0	19.5
31	---	---	---	19.0	12.5	16.5	20.0	14.5	18.0	---	---	---
MONTH	17.5	10.0	13.8	19.0	11.0	16.1	20.0	12.0	17.7	20.5	14.5	18.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121680 MUSKEGON RIVER NEAR OXBOW, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4.5	0.7	2.6	8.7	8.3	8.4	10.3	7.9	9.7	---	---	---
2	4.5	0.7	2.7	9.0	7.9	8.7	10.3	7.9	9.6	---	---	---
3	5.6	0.8	3.2	9.1	8.1	8.8	10.5	8.0	9.6	---	---	---
4	5.5	1.5	4.0	9.1	7.7	8.8	10.5	8.2	9.9	---	---	---
5	5.5	3.1	4.4	9.1	6.9	8.5	10.6	8.6	9.9	11.9	11.7	11.8
6	5.6	3.1	4.5	8.8	5.4	7.5	10.7	8.4	10.1	11.8	10.7	11.3
7	5.7	3.6	4.7	9.1	5.2	7.4	10.8	8.6	10.1	11.8	10.9	11.4
8	5.8	3.8	5.0	9.3	6.3	8.0	10.7	10.0	10.6	11.7	11.3	11.6
9	6.3	3.8	5.3	9.0	6.5	8.1	10.8	10.2	10.5	11.6	10.8	11.1
10	6.5	3.8	5.6	8.7	7.3	8.1	11.0	10.2	10.6	11.7	11.0	11.4
11	6.7	4.2	6.0	8.7	5.5	7.8	11.1	10.1	10.8	11.6	10.8	11.2
12	6.7	4.3	6.1	9.0	6.2	8.1	11.3	10.1	10.8	11.5	10.6	11.1
13	6.7	6.1	6.5	8.8	7.6	8.5	11.4	10.6	11.1	12.0	10.7	11.3
14	6.9	6.1	6.6	9.0	7.4	8.4	11.4	10.3	11.0	11.8	11.0	11.4
15	6.9	6.1	6.6	8.7	7.0	8.2	11.7	9.8	11.1	11.5	11.1	11.2
16	7.0	6.1	6.7	9.1	6.7	8.4	12.0	9.4	11.2	11.4	10.9	11.2
17	7.0	6.3	6.8	9.0	8.0	8.7	---	---	---	11.4	11.0	11.2
18	7.3	6.2	6.9	9.3	8.2	8.6	---	---	---	11.5	10.9	11.3
19	7.8	6.5	7.3	9.5	6.8	8.7	12.5	9.6	11.4	11.5	10.8	11.2
20	7.8	6.8	7.4	9.4	6.7	8.5	12.5	9.5	11.4	11.5	10.7	11.1
21	7.8	6.5	7.4	9.6	7.3	8.9	12.6	8.9	11.5	11.4	10.8	11.2
22	7.8	6.8	7.5	9.9	6.9	9.1	12.6	9.3	11.4	11.4	10.9	11.2
23	7.9	6.9	7.6	9.9	8.5	9.4	12.4	10.0	11.6	11.4	10.6	11.1
24	7.8	7.3	7.7	9.9	7.1	9.0	12.1	9.9	11.4	11.5	9.8	11.0
25	8.0	7.2	7.8	10.2	7.3	9.1	11.8	10.0	11.1	11.5	9.8	10.8
26	8.1	7.3	7.8	10.2	7.3	9.3	11.7	9.8	10.9	11.4	10.1	11.0
27	8.3	7.3	8.0	10.1	7.4	9.2	11.6	9.6	10.8	11.4	8.7	10.9
28	8.3	7.3	8.0	10.3	7.9	9.6	11.6	9.3	10.8	11.3	8.9	10.8
29	8.3	7.6	8.1	10.5	7.6	10.0	11.5	9.8	10.9	11.3	8.9	10.8
30	8.3	7.6	8.0	10.4	10.0	10.3	---	---	---	11.4	9.7	10.8
31	8.5	8.2	8.3	---	---	---	---	---	---	11.4	9.7	10.9
MONTH	8.5	0.7	6.3	10.5	5.2	8.7	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.3	9.8	10.7	10.9	7.2	9.8	12.4	11.5	12.0	9.6	7.0	8.6
2	11.0	9.8	10.5	10.5	7.1	9.5	12.4	11.8	12.1	9.9	6.7	8.9
3	11.4	8.9	10.7	10.9	7.3	10.0	12.5	11.9	12.2	9.8	7.1	8.6
4	11.4	7.8	10.6	10.8	8.7	10.4	12.7	12.1	12.4	10.0	6.4	8.6
5	11.4	8.4	10.7	10.9	8.5	10.4	12.6	12.0	12.3	9.6	6.5	8.6
6	11.3	8.2	10.6	10.8	8.7	10.3	12.4	11.3	11.9	9.1	5.9	8.6
7	11.3	8.2	10.5	10.8	8.7	10.3	11.7	11.0	11.5	9.5	8.0	8.9
8	11.2	8.6	10.6	10.7	8.4	10.2	11.7	11.0	11.4	9.4	6.5	8.6
9	11.1	10.2	11.0	10.9	8.6	10.3	11.7	11.0	11.4	9.3	6.3	8.5
10	11.1	9.9	10.9	10.8	8.7	10.4	11.6	10.8	11.1	8.9	5.9	7.8
11	11.0	10.0	10.8	11.1	8.9	10.7	11.6	10.8	11.3	9.3	6.4	8.3
12	11.0	9.7	10.8	11.1	8.7	10.6	11.4	10.1	10.8	9.3	6.3	8.2
13	10.9	10.0	10.7	11.3	9.1	11.0	11.4	10.1	10.8	9.2	6.4	8.2
14	10.9	8.2	10.6	11.3	9.2	10.9	11.3	11.0	11.2	9.1	5.7	7.8
15	10.9	8.1	10.5	11.4	9.1	10.9	11.1	8.0	10.2	9.1	5.4	8.1
16	10.9	10.5	10.8	11.4	9.3	11.0	11.1	7.7	9.7	9.2	6.4	8.2
17	10.9	10.7	10.8	11.6	9.2	11.0	11.0	7.4	9.4	9.0	6.4	8.3
18	10.8	9.9	10.6	11.6	7.9	10.4	10.7	7.2	9.0	9.0	5.3	7.7
19	10.8	8.8	10.6	11.8	7.5	10.3	10.9	6.3	9.2	9.1	5.4	7.9
20	10.8	8.5	10.5	11.1	7.9	10.0	10.7	6.7	8.6	9.1	5.1	7.7
21	10.8	7.7	10.2	11.9	7.8	10.6	11.0	7.0	9.5	9.0	5.5	7.7
22	10.8	7.9	10.1	11.9	7.9	10.5	10.7	6.7	9.2	8.8	5.2	7.4
23	10.8	7.5	10.1	11.4	8.1	10.1	10.2	7.1	8.7	8.8	5.1	7.5
24	10.8	7.4	9.8	12.2	8.2	10.9	10.5	7.0	9.1	9.0	5.0	7.6
25	10.8	7.2	10.0	12.2	8.6	11.1	10.1	6.4	8.7	9.0	5.3	7.8
26	10.8	7.0	9.8	11.6	8.7	10.5	10.2	7.0	9.2	8.8	5.1	7.6
27	10.9	7.0	9.9	12.4	8.4	11.3	9.8	6.8	8.6	8.4	4.9	7.2
28	10.8	6.9	9.4	12.3	8.5	11.1	9.9	7.3	8.8	8.4	5.4	7.2
29	---	---	---	12.3	11.0	11.5	10.5	7.1	9.0	8.6	4.7	7.4
30	---	---	---	12.5	10.1	11.8	10.3	6.9	9.0	8.5	4.7	7.4
31	---	---	---	12.5	11.8	12.2	---	---	---	8.6	4.5	7.6
MONTH	11.4	6.9	10.5	12.5	7.1	10.6	12.7	6.3	10.3	10.0	4.5	8.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121680 MUSKEGON RIVER NEAR OXBOW, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.4	5.3	7.6	6.2	3.2	4.9	3.9	0.8	2.7	3.6	1.3	2.3
2	8.2	4.9	6.9	6.0	3.3	4.8	4.8	0.8	3.1	3.4	1.3	2.3
3	8.2	4.4	7.2	6.8	2.8	5.1	4.2	0.8	2.7	3.9	1.4	2.5
4	8.1	4.9	7.0	6.1	2.7	5.0	3.6	1.1	2.6	4.6	1.4	3.1
5	8.2	4.6	7.1	6.0	3.0	4.5	4.5	1.4	3.5	4.0	1.4	2.6
6	7.9	5.4	7.1	6.7	3.0	5.4	4.4	2.4	4.0	3.8	0.6	2.4
7	8.0	4.5	7.1	6.3	2.8	4.7	4.6	2.2	4.0	4.2	0.5	2.5
8	7.7	4.0	6.4	5.7	2.7	4.5	4.3	1.4	3.5	4.3	0.4	2.5
9	7.5	3.6	6.2	6.0	2.7	4.8	3.9	1.2	3.2	4.4	0.3	2.3
10	7.6	4.2	6.5	5.7	2.6	4.3	4.1	1.3	3.3	4.3	0.4	2.4
11	7.0	3.3	5.7	4.9	2.6	3.9	4.4	1.4	3.3	3.7	0.5	1.9
12	7.5	3.5	6.1	5.7	2.7	4.4	4.3	1.5	3.0	3.2	0.6	1.8
13	7.4	3.9	5.7	5.2	2.4	4.1	4.2	1.5	2.9	3.2	0.7	1.8
14	7.6	4.2	6.4	4.5	2.3	3.7	5.0	1.4	3.4	3.5	0.8	2.0
15	7.5	3.4	6.0	5.4	2.5	4.3	4.7	1.5	3.4	3.5	0.9	2.2
16	7.6	3.8	6.4	4.9	2.1	3.9	4.2	1.5	3.1	4.1	1.0	2.6
17	7.2	3.2	5.8	4.3	2.3	3.3	4.8	1.4	2.8	4.0	1.1	2.5
18	7.7	3.1	6.1	4.4	2.2	3.3	4.9	1.5	3.1	3.7	1.2	2.4
19	6.9	3.8	5.6	4.7	1.6	3.4	3.0	1.3	2.4	4.0	1.3	2.6
20	7.2	3.7	5.9	4.0	1.8	3.1	3.6	1.7	3.1	3.6	1.3	2.4
21	8.0	3.2	6.2	5.0	1.8	3.7	3.9	1.4	3.3	3.3	1.4	2.1
22	6.6	2.8	5.0	4.9	1.4	3.3	4.7	1.6	3.7	3.9	1.5	2.6
23	6.9	2.7	5.1	3.8	1.3	2.7	4.6	1.5	3.7	3.7	1.6	2.5
24	6.9	2.7	5.2	4.8	1.5	3.2	4.6	1.1	3.5	3.7	1.7	2.5
25	6.8	2.6	5.0	4.4	1.1	3.3	4.5	1.3	3.2	4.2	1.7	3.0
26	6.4	2.3	4.7	3.9	1.6	3.1	3.8	1.0	2.6	3.8	1.8	3.2
27	7.2	2.5	5.4	4.1	3.4	3.7	4.0	1.1	2.7	---	---	---
28	7.1	2.6	5.2	4.1	1.5	3.4	3.5	1.1	2.6	---	---	---
29	6.6	3.0	5.3	5.4	0.9	3.8	3.5	1.1	2.5	---	---	---
30	5.7	3.4	4.6	4.7	1.2	3.6	4.4	1.2	2.9	---	---	---
31	---	---	---	5.3	1.1	3.3	4.8	1.2	3.2	---	---	---
MONTH	8.4	2.3	6.0	6.8	0.9	4.0	5.0	0.8	3.1	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121944 LITTLE MUSKEGON RIVER NEAR OAK GROVE, MI

LOCATION.--Lat 43°25'51", long 85°35'44", in NE1/4 SW1/4 sec.14, T.13 N., R.11 W., Newaygo County, Hydrologic Unit 04060102, on left bank 1.6 mi downstream from Tamarack Creek, 2.4 mi northeast of Oak Grove.

DRAINAGE AREA.--345 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1995 to current year.

REVISED RECORDS.--WDR MI-98-1: 1996-97.

GAGE.--Water-stage recorder. Elevation of gage is 750 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	293	364	545	e298	334	1650	288	225	e170	156	137
2	172	333	360	533	e298	336	1340	284	221	167	145	137
3	173	367	348	708	e298	338	1040	284	217	159	136	133
4	173	337	327	636	e298	e345	838	280	200	161	154	131
5	169	325	327	534	298	e330	746	277	202	164	182	129
6	169	307	331	419	308	334	688	273	204	168	182	128
7	171	288	460	373	358	397	651	275	208	162	164	127
8	181	273	968	399	515	555	602	279	200	151	151	127
9	209	262	851	384	488	521	514	271	193	147	142	130
10	210	250	769	361	405	483	468	264	184	141	136	130
11	198	256	670	354	351	455	427	268	178	139	136	126
12	189	253	568	381	337	403	380	280	177	130	147	125
13	188	247	515	894	336	359	352	293	187	136	161	125
14	188	244	475	1210	422	344	332	354	203	142	159	126
15	199	240	403	913	758	339	324	356	208	139	152	129
16	205	235	390	e719	754	327	318	326	205	136	145	137
17	211	245	362	e602	611	322	313	301	192	142	140	142
18	207	250	343	e504	e444	320	307	285	184	143	140	141
19	203	255	e283	e440	e430	320	300	280	181	144	153	138
20	214	288	e245	e415	e385	318	322	293	178	139	166	138
21	215	311	e319	e391	340	317	343	287	170	133	162	137
22	213	294	e291	e388	384	317	329	274	165	137	155	138
23	249	276	e291	e377	355	329	311	283	158	136	149	142
24	422	271	e289	e372	344	338	313	285	153	155	146	145
25	396	274	e289	e356	347	368	314	274	149	192	142	157
26	310	270	e289	e350	332	435	310	265	158	243	141	378
27	261	298	e289	e342	317	550	299	261	171	271	145	388
28	248	477	e289	e322	344	728	303	247	163	219	152	257
29	282	485	e283	e316	---	920	305	240	156	183	148	251
30	340	400	e283	e302	---	1120	293	235	157	164	141	241
31	338	---	409	e298	---	1470	---	230	---	164	139	---
TOTAL	7069	8904	12680	15138	11155	14372	15032	8692	5547	4977	4667	4870
MEAN	228	297	409	488	398	464	501	280	185	161	151	162
MAX	422	485	968	1210	758	1470	1650	356	225	271	182	388
MIN	166	235	245	298	298	317	293	230	149	130	136	125
CFSM	0.66	0.86	1.19	1.42	1.15	1.34	1.45	0.81	0.54	0.47	0.44	0.47
IN.	0.76	0.96	1.37	1.63	1.20	1.55	1.62	0.94	0.60	0.54	0.50	0.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

MEAN	235	297	294	311	356	448	403	439	307	205	198	188
MAX	426	393	410	488	491	681	501	1005	508	305	272	247
(WY)	2002	1996	2002	2005	1997	2004	2005	2004	2004	2004	1996	2001
MIN	171	195	204	200	198	270	328	256	183	131	133	142
(WY)	2004	2000	1998	2003	2003	1999	2004	1998	1998	1998	1998	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	142781		113103			
ANNUAL MEAN	390		310		306	
HIGHEST ANNUAL MEAN					382	2004
LOWEST ANNUAL MEAN					243	2003
HIGHEST DAILY MEAN	1960	Mar 6	1650	Apr 1	1960	Mar 6 2004
LOWEST DAILY MEAN	158	Sep 22	125	Sep 12	113	Aug 1 1998
ANNUAL SEVEN-DAY MINIMUM	159	Sep 21	127	Sep 8	116	Jul 28 1998
MAXIMUM PEAK FLOW			1810	Mar 31	2150	Mar 7 2004
MAXIMUM PEAK STAGE			7.94	Mar 31	8.69	Mar 7 2004
INSTANTANEOUS LOW FLOW			120	(a)	105	Jul 19 1998
ANNUAL RUNOFF (CFSM)	1.13		0.898		0.888	
ANNUAL RUNOFF (INCHES)	15.40		12.20		12.07	
10 PERCENT EXCEEDS	690		508		483	
50 PERCENT EXCEEDS	289		283		260	
90 PERCENT EXCEEDS	186		141		165	

(a) July 12, Sept. 12-14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121944 LITTLE MUSKEGON RIVER NEAR OAK GROVE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1995 to current year.
DISSOLVED OXYGEN: October 1995 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Nov. 6-9, 14, 15, Jan. 8-12, 29, 30, Feb. 20-26, Apr. 8, 9, July 24 to Aug. 13, Sept. 25-30 rated good; Nov. 16-19, Jan. 13, Jan. 31 to Feb. 1, Feb. 27 to Mar. 7, Apr. 10, 11 rated fair; and Nov. 20-29, Feb. 2-8, Mar. 8, 9, Mar. 11 to Apr. 5, Apr. 12-20 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.5°C, July 4, 2002; minimum, -0.5°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum recorded (more than 20 percent missing record), 16.5 mg/L, Dec. 7, 1995; minimum, 5.2 mg/L, Aug. 11, Sept. 2, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.0°C, June 11, 29, July 18, 25; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L, Mar. 16; minimum, 6.8 mg/L, July 16, 25, 26.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	11.0	12.0	10.5	9.0	9.5	3.5	3.0	3.0	1.0	0.5	0.5
2	13.0	11.0	12.0	9.0	8.5	9.0	3.0	2.5	3.0	1.5	1.0	1.5
3	11.0	9.5	10.5	8.5	7.5	8.0	3.0	2.0	2.5	1.5	1.5	1.5
4	11.0	9.5	10.5	8.0	7.5	8.0	2.5	2.0	2.5	1.5	1.5	1.5
5	9.5	8.0	8.5	7.5	6.5	7.0	2.5	2.0	2.5	1.5	0.5	1.0
6	10.5	8.5	9.5	7.0	6.0	7.0	2.5	2.0	2.0	0.5	0.0	0.0
7	11.5	10.0	11.0	7.5	7.0	7.0	3.0	2.5	2.5	0.0	0.0	0.0
8	13.0	11.5	12.0	7.0	5.0	6.0	3.0	2.5	3.0	0.5	0.0	0.5
9	13.5	12.0	12.5	5.0	4.5	4.5	3.0	2.5	3.0	1.0	0.5	1.0
10	12.0	10.0	11.0	6.0	4.5	5.0	4.0	3.0	3.5	1.5	1.0	1.5
11	11.0	10.0	10.5	6.0	5.0	6.0	3.5	3.5	3.5	2.0	1.5	1.5
12	10.0	9.0	9.5	5.0	3.5	4.0	3.5	2.5	3.0	3.0	2.0	2.0
13	10.0	9.0	9.5	3.5	3.0	3.0	2.5	1.5	2.0	3.0	1.0	2.5
14	11.0	10.0	10.5	3.0	2.0	2.5	1.5	0.5	1.0	1.0	0.0	0.0
15	11.0	10.5	11.0	3.5	2.5	3.0	0.5	0.0	0.0	0.0	0.0	0.0
16	10.5	9.0	9.5	5.5	3.5	5.0	1.0	0.0	0.5	0.0	0.0	0.0
17	9.0	7.5	8.0	7.0	5.5	6.5	1.0	0.0	0.5	0.0	0.0	0.0
18	8.0	7.5	7.5	8.5	7.0	8.0	1.5	0.5	1.0	0.0	0.0	0.0
19	8.0	7.0	7.5	8.5	8.0	8.0	1.0	0.0	0.0	0.0	0.0	0.0
20	9.0	8.0	8.5	8.5	8.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0
21	8.5	8.0	8.5	8.5	7.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0
22	9.0	7.5	8.5	7.0	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
23	10.0	9.0	9.5	7.0	6.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0
24	10.5	10.0	10.0	6.0	3.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
25	10.5	9.5	10.0	3.0	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
26	11.0	10.0	10.5	3.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
27	11.0	10.5	10.5	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
28	10.5	10.0	10.5	4.5	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
29	11.5	10.5	11.0	4.0	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
30	12.0	11.5	12.0	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
31	11.5	10.5	11.0	---	---	---	1.5	0.0	1.0	0.0	0.0	0.0
MONTH	13.5	7.0	10.1	10.5	2.0	5.7	4.0	0.0	1.3	3.0	0.0	0.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121944 LITTLE MUSKEGON RIVER NEAR OAK GROVE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.5	0.0	0.0	4.5	3.0	3.5	10.0	8.5	9.5
2	0.0	0.0	0.0	1.0	0.0	0.5	6.0	4.5	5.5	9.5	8.0	9.0
3	0.0	0.0	0.0	0.0	0.0	0.0	7.0	5.5	6.5	8.0	7.0	7.5
4	0.5	0.0	0.0	1.0	0.0	0.0	8.5	6.0	7.0	10.0	5.5	8.0
5	1.0	0.5	0.5	2.0	0.5	1.0	11.0	8.0	9.5	12.0	8.5	10.0
6	1.5	1.0	1.0	4.0	2.0	3.0	13.0	10.5	11.5	12.0	10.5	11.5
7	1.5	1.5	1.5	4.0	3.0	3.5	13.0	11.5	12.5	14.5	11.0	13.0
8	1.5	1.0	1.0	3.0	1.0	1.5	12.0	10.0	11.5	16.5	13.5	15.0
9	1.0	1.0	1.0	1.0	0.0	0.0	12.0	10.0	11.0	17.5	15.5	16.5
10	1.0	0.0	0.5	0.0	0.0	0.0	12.5	10.0	11.5	19.5	17.0	18.0
11	1.0	0.5	0.5	1.0	0.0	0.5	12.5	10.5	11.5	18.5	14.0	16.0
12	2.0	0.5	1.0	1.5	0.5	1.0	11.5	9.5	10.5	14.5	12.5	13.5
13	1.5	1.0	1.5	1.0	0.0	0.5	11.0	8.5	10.0	13.5	11.0	11.5
14	2.0	1.5	2.0	1.0	0.0	0.5	11.5	9.0	10.5	13.0	11.0	12.0
15	2.0	1.0	1.5	1.0	0.5	0.5	12.0	9.5	11.0	12.5	11.5	12.0
16	1.5	1.0	1.0	0.5	0.0	0.5	13.0	10.0	11.5	11.5	10.0	11.0
17	1.0	0.0	0.5	1.5	0.0	1.0	15.0	12.5	13.5	12.5	10.0	11.0
18	0.0	0.0	0.0	2.5	1.5	2.0	15.0	13.0	14.0	14.0	12.0	13.0
19	0.5	0.0	0.0	2.5	1.5	2.0	16.5	14.0	15.5	14.0	12.0	13.0
20	0.0	0.0	0.0	2.5	1.5	2.0	16.5	14.0	15.5	15.0	11.5	13.5
21	1.0	0.0	0.0	3.5	2.0	3.0	14.5	12.0	13.5	16.0	13.0	14.5
22	1.0	0.5	1.0	4.5	2.5	3.5	13.5	11.0	11.5	15.5	14.0	14.5
23	1.0	0.0	0.5	5.0	3.5	4.5	11.0	8.0	9.5	14.5	14.0	14.5
24	1.5	0.5	1.0	4.5	2.5	4.0	8.0	6.5	7.0	15.5	13.0	14.0
25	1.5	1.0	1.0	5.0	4.0	4.5	10.0	6.5	8.5	16.5	13.0	15.0
26	1.5	0.0	0.5	5.0	3.0	4.0	10.5	9.5	10.0	16.0	14.5	15.0
27	1.0	0.0	0.5	5.0	3.0	4.0	10.0	9.5	9.5	16.0	14.0	15.0
28	0.5	0.0	0.5	5.0	2.5	4.0	9.5	8.0	9.0	15.5	14.0	14.5
29	---	---	---	4.5	2.5	3.5	10.5	7.0	9.0	15.5	13.5	14.5
30	---	---	---	4.5	3.0	3.5	10.5	9.0	10.0	16.0	13.5	15.0
31	---	---	---	4.5	3.5	4.0	---	---	---	17.5	14.5	16.0
MONTH	2.0	0.0	0.7	5.0	0.0	2.0	16.5	3.0	10.4	19.5	5.5	13.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.0	15.5	17.5	---	---	---	23.0	19.5	21.0	19.5	17.5	18.5
2	18.5	16.5	17.5	19.5	16.0	18.0	23.0	20.0	21.5	19.0	17.0	18.0
3	18.5	17.5	18.0	20.5	16.5	18.5	23.5	20.5	22.0	18.0	16.0	17.0
4	19.5	17.5	18.5	19.5	18.0	19.0	23.0	21.5	22.5	18.0	15.5	17.0
5	21.5	18.5	20.0	20.5	18.0	19.5	22.5	20.5	21.5	18.5	15.5	17.0
6	21.5	19.0	20.5	21.5	19.0	20.0	21.5	19.5	20.5	18.5	16.5	17.5
7	22.0	19.0	20.5	21.0	17.5	19.5	22.0	19.0	20.5	19.5	17.5	18.5
8	23.0	20.5	21.5	21.0	18.0	19.5	22.5	19.5	21.0	20.0	18.0	19.0
9	23.5	21.0	22.0	21.5	18.0	19.5	23.0	20.0	21.5	19.5	17.5	18.5
10	23.0	21.0	22.0	22.0	18.0	20.0	22.5	21.0	21.5	19.0	17.0	18.0
11	24.0	21.5	22.5	22.5	19.0	21.0	21.5	19.5	20.0	19.5	17.0	18.5
12	23.0	21.5	22.0	21.5	20.0	20.5	20.5	19.0	19.5	20.0	18.0	19.0
13	22.0	21.0	21.5	20.5	20.0	20.0	20.0	19.0	19.5	20.0	18.5	19.0
14	22.0	20.5	21.0	22.5	19.5	21.0	20.0	18.5	19.0	20.0	18.5	19.0
15	20.5	17.5	19.5	23.5	20.5	22.0	20.0	17.5	19.0	18.5	15.5	16.5
16	17.5	16.0	17.0	22.5	21.5	22.0	20.0	18.0	19.0	16.5	15.5	16.0
17	16.0	15.0	15.5	22.0	21.0	21.5	20.5	17.5	19.0	16.0	14.0	15.0
18	16.5	15.0	15.5	24.0	21.0	22.5	19.5	19.0	19.0	16.0	14.0	15.0
19	18.5	15.5	17.0	23.5	21.0	22.0	19.5	18.5	19.0	16.0	14.5	15.5
20	20.0	16.0	18.0	22.0	19.5	20.5	19.5	18.5	19.0	17.0	15.0	16.0
21	20.5	17.5	19.0	22.5	20.0	21.0	20.0	18.0	19.0	17.0	15.0	16.0
22	20.5	17.0	19.0	23.5	20.5	21.5	18.5	17.0	18.0	16.5	16.0	16.5
23	20.5	17.5	19.0	22.0	20.0	21.0	18.0	16.5	17.0	16.5	14.5	15.5
24	23.5	19.5	21.0	23.5	20.5	21.5	18.0	15.5	16.5	15.5	14.0	14.5
25	23.0	21.0	22.0	24.0	22.0	23.0	18.0	16.0	17.0	16.5	15.0	15.5
26	22.0	20.0	21.0	23.5	21.5	22.5	19.5	16.5	18.0	17.0	16.5	17.0
27	23.0	20.5	21.5	21.5	19.5	20.5	20.0	18.0	18.5	16.5	15.0	15.5
28	23.5	21.5	22.5	20.0	18.0	19.0	20.0	17.5	18.5	15.0	14.0	14.5
29	24.0	21.0	22.5	19.5	18.0	18.5	19.5	17.0	18.5	15.0	13.0	14.0
30	---	---	---	20.5	17.5	19.0	19.0	17.0	18.0	13.0	12.0	12.5
31	---	---	---	21.5	18.5	20.0	19.5	17.0	18.0	---	---	---
MONTH	---	---	---	---	---	---	23.5	15.5	19.4	20.0	12.0	16.7

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121944 LITTLE MUSKEGON RIVER NEAR OAK GROVE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.8	9.1	9.8	10.0	9.1	9.6	12.9	12.0	12.4	13.3	12.7	13.1
2	10.3	8.9	9.5	10.1	9.6	9.8	13.3	12.4	12.8	13.2	12.4	12.7
3	10.9	9.4	10.0	10.7	10.0	10.3	13.5	12.6	13.0	12.7	12.0	12.4
4	10.8	9.4	9.9	10.3	10.0	10.1	13.3	12.6	12.9	12.4	12.1	12.3
5	11.3	9.8	10.5	11.0	10.0	10.5	13.5	12.6	13.0	12.3	12.0	12.1
6	11.1	9.7	10.3	10.8	10.0	10.4	13.0	12.6	12.8	12.4	11.0	11.8
7	10.9	9.3	9.9	10.7	9.9	10.3	12.6	12.3	12.5	12.8	10.3	11.9
8	9.6	8.7	9.2	11.3	10.3	10.8	12.6	12.2	12.4	12.8	11.8	12.3
9	9.7	8.7	9.1	12.5	10.9	11.6	12.6	12.1	12.4	12.4	11.7	12.1
10	10.4	9.0	9.7	12.2	11.1	11.7	12.1	11.7	11.9	12.0	11.5	11.7
11	10.7	9.4	9.9	12.0	10.8	11.4	12.1	11.7	11.9	11.9	11.3	11.6
12	11.1	9.6	10.2	12.8	11.5	12.1	12.3	12.0	12.2	11.6	10.3	11.0
13	10.9	9.5	10.1	13.1	12.1	12.5	12.9	12.2	12.6	11.8	10.3	10.9
14	10.6	9.3	9.8	13.4	12.2	12.8	13.5	12.9	13.3	---	---	---
15	9.9	9.2	9.4	13.4	12.5	12.9	13.8	13.3	13.6	---	---	---
16	10.4	9.3	9.8	12.5	11.7	12.1	13.5	12.9	13.1	---	---	---
17	10.6	9.7	10.1	11.8	11.3	11.6	13.6	12.8	13.3	---	---	---
18	11.2	10.2	10.6	12.0	11.0	11.3	13.5	13.1	13.3	---	---	---
19	11.2	10.2	10.6	11.5	10.9	11.1	---	---	---	---	---	---
20	11.0	10.1	10.4	11.2	10.8	11.0	---	---	---	---	---	---
21	11.2	10.0	10.5	12.2	11.0	11.5	---	---	---	---	---	---
22	11.2	9.9	10.5	12.7	11.6	12.1	---	---	---	---	---	---
23	9.9	9.1	9.5	12.3	11.7	12.0	---	---	---	---	---	---
24	9.2	8.9	9.0	12.7	11.9	12.4	---	---	---	---	---	---
25	9.4	8.9	9.1	13.6	12.6	13.0	---	---	---	---	---	---
26	9.6	8.9	9.1	13.9	12.5	13.0	---	---	---	---	---	---
27	9.5	8.6	9.1	12.9	12.4	12.7	---	---	---	13.7	11.7	12.9
28	9.8	8.9	9.2	12.5	12.0	12.2	---	---	---	12.9	11.9	12.2
29	8.9	8.5	8.7	12.6	12.0	12.2	---	---	---	12.9	11.6	12.0
30	8.5	8.1	8.3	12.6	12.1	12.3	13.0	12.7	12.9	12.7	11.5	11.8
31	9.3	8.4	8.8	---	---	---	12.9	12.5	12.6	12.5	11.3	11.8
MONTH	11.3	8.1	9.7	13.9	9.1	11.6	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.6	11.5	12.1	14.0	13.5	13.7	13.2	12.3	12.8	---	---	---
2	13.9	12.0	13.0	14.0	13.5	13.8	12.8	12.0	12.4	---	---	---
3	14.0	13.4	13.7	14.1	12.4	13.3	12.5	11.8	12.2	---	---	---
4	13.9	13.5	13.7	13.8	12.3	13.0	12.6	11.1	12.1	---	---	---
5	13.8	13.3	13.6	13.7	12.9	13.3	11.7	9.9	11.1	---	---	---
6	13.7	13.2	13.4	12.9	12.0	12.6	10.1	9.6	9.9	11.6	9.6	10.6
7	13.2	12.9	13.0	12.2	11.8	12.0	10.2	9.2	9.7	11.5	9.1	10.3
8	13.5	12.9	13.1	12.5	11.5	12.1	10.9	9.7	10.2	11.0	8.3	9.6
9	13.5	13.3	13.4	13.4	11.6	12.4	11.0	9.8	10.3	10.3	7.9	8.9
10	13.8	13.3	13.6	---	---	---	11.0	9.8	10.3	10.1	7.8	8.7
11	13.9	13.6	13.7	12.0	11.4	11.8	11.6	9.7	10.5	9.5	7.7	8.6
12	13.7	13.2	13.5	13.2	11.5	12.4	11.9	9.9	10.9	10.8	8.8	9.7
13	13.6	13.1	13.3	13.6	13.0	13.3	12.3	10.3	11.1	10.2	9.0	9.5
14	13.2	12.8	13.0	14.7	12.2	14.0	12.5	10.5	11.3	10.4	9.0	9.6
15	13.2	12.7	13.0	14.9	14.3	14.6	12.9	10.5	11.5	10.4	8.9	9.7
16	13.4	13.0	13.3	15.0	13.2	14.6	13.1	10.7	11.7	11.1	9.5	10.2
17	13.9	13.3	13.7	14.9	14.2	14.6	12.7	10.3	11.3	11.7	9.4	10.4
18	14.3	12.3	13.2	14.5	13.9	14.2	12.8	10.1	11.1	11.4	9.0	9.9
19	14.1	12.3	13.1	14.4	13.8	14.1	12.6	10.0	11.1	9.5	8.8	9.1
20	14.3	14.0	14.1	14.3	13.8	14.1	11.1	9.9	10.4	11.6	8.9	10.0
21	14.1	13.8	14.0	14.2	13.6	13.9	---	---	---	11.6	8.6	9.8
22	14.0	13.7	13.9	14.1	13.0	13.6	---	---	---	10.3	8.4	9.1
23	14.5	13.9	14.2	13.7	13.0	13.3	---	---	---	10.0	8.2	9.2
24	14.3	13.7	14.1	13.8	12.6	13.2	---	---	---	10.6	8.6	9.3
25	13.9	13.5	13.7	13.0	12.3	12.6	---	---	---	9.8	7.7	8.7
26	14.2	13.5	14.0	12.7	11.6	12.3	---	---	---	9.5	7.8	8.7
27	14.4	12.8	14.0	12.7	11.6	12.0	---	---	---	10.7	8.7	9.5
28	13.9	13.5	13.8	12.0	11.4	11.7	---	---	---	10.6	8.1	9.4
29	---	---	---	12.2	11.4	11.9	---	---	---	10.8	8.8	9.6
30	---	---	---	13.3	11.8	12.7	---	---	---	10.7	8.7	9.6
31	---	---	---	12.4	11.6	11.9	---	---	---	10.6	8.5	9.4
MONTH	14.5	11.5	13.5	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121944 LITTLE MUSKEGON RIVER NEAR OAK GROVE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.5	8.3	9.2	---	---	---	8.9	7.3	7.9	9.8	7.6	8.4
2	10.9	8.2	9.3	10.2	8.0	8.9	9.2	7.2	7.9	9.8	7.7	8.4
3	9.8	8.3	9.0	10.3	7.9	8.9	9.2	7.1	8.0	9.7	7.8	8.5
4	10.3	8.3	9.2	9.3	7.8	8.3	8.9	7.4	8.0	10.1	7.8	8.6
5	10.1	7.9	8.8	9.5	7.6	8.4	9.8	7.7	8.5	10.0	7.8	8.6
6	9.8	7.8	8.5	9.8	7.5	8.4	10.0	7.9	8.6	10.3	7.8	8.8
7	9.9	7.7	8.6	9.9	7.6	8.4	10.1	7.8	8.6	10.3	7.9	8.8
8	9.5	7.5	8.3	9.6	7.4	8.2	10.2	7.7	8.6	10.2	7.7	8.6
9	9.4	7.4	8.1	10.3	7.5	8.5	10.3	7.5	8.5	10.3	7.8	8.7
10	9.2	7.3	8.1	10.3	7.4	8.5	9.7	7.3	8.3	10.5	8.0	8.9
11	9.2	7.2	8.0	10.3	7.3	8.4	9.4	7.5	8.4	10.5	7.9	8.8
12	8.8	7.1	7.8	9.1	7.1	8.0	9.6	7.8	8.4	10.3	7.7	8.6
13	8.7	7.3	7.7	9.4	7.3	8.2	9.3	7.7	8.4	9.9	7.6	8.4
14	8.6	7.3	7.8	10.1	7.1	8.3	10.1	7.7	8.6	9.5	7.4	8.1
15	8.4	7.4	7.9	10.2	6.9	8.1	10.2	7.8	8.7	10.2	7.9	8.8
16	9.4	8.2	8.8	9.0	6.8	7.4	10.0	7.7	8.6	10.1	8.4	8.9
17	9.8	8.5	9.1	9.4	7.0	8.0	10.3	7.7	8.7	10.1	8.5	9.0
18	9.9	8.7	9.2	9.8	7.1	8.0	8.6	7.4	8.0	10.3	8.5	9.1
19	10.0	8.4	9.0	10.1	6.9	8.1	9.1	7.5	8.1	10.0	8.4	8.9
20	10.0	8.1	8.9	10.5	7.4	8.4	9.3	7.6	8.2	9.6	8.1	8.7
21	9.6	7.8	8.5	10.4	7.4	8.4	9.3	7.6	8.2	10.0	8.3	8.9
22	9.8	7.7	8.6	10.3	7.3	8.3	9.7	7.7	8.5	8.4	7.8	8.1
23	9.6	7.6	8.5	10.3	7.2	8.3	9.9	7.9	8.7	9.5	7.9	8.6
24	9.6	7.1	8.1	9.4	6.9	7.8	9.9	7.9	8.7	9.8	8.3	8.8
25	9.3	7.0	7.9	9.0	6.8	7.5	10.1	7.7	8.6	9.3	8.0	8.5
26	9.3	7.2	8.1	7.4	6.8	7.1	9.7	7.6	8.4	8.1	7.3	7.6
27	9.4	7.5	8.2	8.1	7.1	7.6	9.5	7.4	8.1	7.9	7.0	7.7
28	9.2	7.3	8.0	8.6	7.5	8.0	9.6	7.5	8.2	8.3	7.8	8.0
29	9.6	7.2	8.2	8.9	7.6	8.2	9.7	7.6	8.4	8.7	7.8	8.3
30	---	---	---	9.1	7.6	8.2	10.1	7.6	8.6	9.2	8.6	8.8
31	---	---	---	9.2	7.5	8.1	10.1	7.7	8.6	---	---	---
MONTH	---	---	---	---	---	---	10.3	7.1	8.4	10.5	7.0	8.6

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121970 MUSKEGON RIVER NEAR CROTON, MI

LOCATION.--Lat 43°26'05", long 85°39'55", in SE1/4 NE1/4 sec.18, T.12 N., R.11 W., Newaygo County, Hydrologic Unit 04060102, on right bank 75 ft downstream from Croton Drive, 0.4 mi southwest of Croton.

DRAINAGE AREA.--2,313 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 675.62 ft above sea level (Consumers Energy bench mark).

REMARKS.--Water-discharge records good. Flow completely regulated by Croton Dam 1,000 ft upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	879	2380	2180	3280	2400	2040	6650	1680	1530	1050	989	866
2	996	2340	2050	3490	2360	2090	6350	1720	1660	1010	1010	898
3	987	2280	2030	4410	2350	2100	6120	1730	1650	976	1010	922
4	931	2290	1990	3910	2350	2060	6260	1740	1490	1040	1090	936
5	889	2050	1960	3700	2340	1970	5840	1670	1420	1090	1540	922
6	933	1840	2090	3050	2320	1990	5630	1630	1240	1080	1790	872
7	997	1760	2650	2670	2440	2150	5520	1610	1230	1040	1460	e850
8	989	1730	4580	2820	2680	2280	4910	1590	1110	1000	1290	e860
9	1040	1740	5060	2810	2710	2340	4380	1520	1050	983	1180	863
10	1150	1650	4560	2750	2580	2350	3900	1480	1050	939	1120	865
11	1390	1630	4070	2920	2590	2380	3600	1550	1050	929	1160	866
12	1310	1650	3600	3270	2570	2500	3290	1580	1050	920	1190	866
13	1240	1550	3290	4810	2520	2550	3050	1580	1070	951	1060	910
14	1240	1480	3010	4900	2580	2440	2830	1600	1080	975	933	952
15	1240	1470	2450	3880	3140	2220	2620	1690	1090	979	901	948
16	1230	1480	2230	3610	3190	2130	2470	1710	1080	1040	904	955
17	1120	1520	2180	3520	3050	2000	2160	1670	1080	1190	833	962
18	1090	1540	2070	3210	2710	1940	1960	1650	1080	1050	847	961
19	1130	1530	2020	2550	2400	1940	1910	1650	1080	898	1360	995
20	1150	1570	1760	2610	2370	1940	1990	1640	1070	869	1970	929
21	1210	1580	1230	2700	2400	1930	2080	1690	1050	918	1590	888
22	1230	1660	1120	2590	2410	1920	2060	1760	1020	966	1140	851
23	1430	1720	1550	2480	2400	1910	1970	1990	979	996	1070	843
24	1760	1670	1640	2220	2350	1910	1880	2130	962	1020	1150	854
25	2030	1600	1510	2450	2330	2070	1830	1970	958	1230	1180	978
26	1860	1580	1390	2530	2300	2210	1850	2000	1040	1660	1150	2120
27	1590	1650	1380	2340	2190	2280	1770	1950	1050	1870	1170	3750
28	1440	1790	1530	2280	2020	2730	1740	1910	1030	1930	1160	2590
29	1670	2750	1840	2220	---	3230	1710	1880	1030	1540	1140	2390
30	2050	2580	2180	2220	---	3740	1690	1650	1070	1100	966	2290
31	2260	---	2240	2350	---	6060	---	1440	---	1000	870	---
TOTAL	40461	54060	73440	94550	70050	73400	100020	53060	34349	34239	36223	35752
MEAN	1305	1802	2369	3050	2502	2368	3334	1712	1145	1104	1168	1192
MAX	2260	2750	5060	4900	3190	6060	6650	2130	1660	1930	1970	3750
MIN	879	1470	1120	2220	2020	1910	1690	1440	958	869	833	843
CFSM	0.56	0.78	1.02	1.32	1.08	1.02	1.44	0.74	0.50	0.48	0.51	0.52
IN.	0.65	0.87	1.18	1.52	1.13	1.18	1.61	0.85	0.55	0.55	0.58	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2005, BY WATER YEAR (WY)

MEAN	1376	1776	1772	2056	2232	2760	2709	2717	1900	1246	1172	1085
MAX	2239	2554	2520	3050	3046	4432	3334	5535	2946	1661	1382	1301
(WY)	2002	2004	2002	2005	1997	2004	2005	2004	1996	2004	1996	1997
MIN	1058	1229	1201	1211	1169	1338	1900	1373	1060	848	836	817
(WY)	2004	2003	2003	2003	2003	2003	2000	1999	1998	1998	1998	1998

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1996 - 2005	
ANNUAL TOTAL	883714		699604			
ANNUAL MEAN	2415		1917		1898	
HIGHEST ANNUAL MEAN					2431	2004
LOWEST ANNUAL MEAN					1295	2003
HIGHEST DAILY MEAN	9210	May 24	6650	Apr 1	9210	May 24 2004
LOWEST DAILY MEAN	879	Oct 1	833	Aug 17	720	Sep 11 1998
ANNUAL SEVEN-DAY MINIMUM	914	Sep 21	863	Sep 6	723	Sep 7 1998
MAXIMUM PEAK FLOW			7080	Apr 4	9580	May 24 2004
MAXIMUM PEAK STAGE			9.10	Apr 4	10.45	May 24 2004
INSTANTANEOUS LOW FLOW					684	(a)
ANNUAL RUNOFF (CFSM)	1.04		0.829		0.821	
ANNUAL RUNOFF (INCHES)	14.21		11.25		11.15	
10 PERCENT EXCEEDS	4800		3090		3150	
50 PERCENT EXCEEDS	1940		1690		1640	
90 PERCENT EXCEEDS	1060		952		987	

(a) July 6, 2000, Aug. 22, 2003.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121970 MUSKEGON RIVER NEAR CROTON, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1995 to current year.
DISSOLVED OXYGEN: October 1995 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Nov. 1-9, Feb. 28 to Mar. 8, Mar. 20-25, Aug. 18-26 rated good; Mar. 26 to Apr. 4, Aug. 27 to Sept. 6 rated fair; and Apr. 5, 6 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.0°C, Aug. 10, 2001; minimum recorded, 0.5°C, on many days during winter periods, but may have been lower during instrument malfunction Jan. 3-29, Feb. 19, 1996.
DISSOLVED OXYGEN: Maximum, 14.7 mg/L, Mar. 31, 2005; minimum, 2.3 mg/L, Aug. 24, Sept. 3, 2003.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.5°C, Aug. 5; minimum, 0.5°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 14.7 mg/L, Mar. 31; minimum, 2.4 mg/L, Aug. 19.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	18.0	18.0	12.0	11.5	12.0	6.0	5.5	6.0	2.0	1.5	2.0
2	18.5	17.5	18.0	11.5	11.5	11.5	6.0	5.5	5.5	2.0	1.5	2.0
3	17.5	17.0	17.5	11.5	11.0	11.0	5.5	5.0	5.5	2.0	1.5	2.0
4	17.0	16.5	17.0	11.0	11.0	11.0	5.5	5.0	5.0	2.0	2.0	2.0
5	17.0	16.0	16.5	11.0	10.5	10.5	5.5	4.5	5.0	2.0	1.5	2.0
6	16.5	16.0	16.0	11.0	10.5	10.5	5.0	4.5	5.0	1.5	1.5	1.5
7	16.5	16.0	16.0	10.5	10.0	10.5	—	—	—	1.5	1.5	1.5
8	16.0	16.0	16.0	10.5	10.0	10.0	5.0	4.5	4.5	1.5	1.0	1.5
9	16.5	16.0	16.0	10.0	9.5	9.5	5.5	5.0	5.5	1.5	1.0	1.5
10	16.5	15.5	16.0	9.5	9.0	9.5	5.5	5.0	5.5	1.5	1.5	1.5
11	16.5	16.0	16.0	9.5	9.0	9.5	5.5	5.0	5.5	1.5	1.5	1.5
12	16.0	15.5	16.0	9.5	9.0	9.0	5.5	4.5	5.0	1.5	1.5	1.5
13	16.0	15.5	15.5	9.5	8.5	9.0	5.0	4.0	4.5	2.0	1.5	1.5
14	16.0	15.5	16.0	9.0	8.5	9.0	4.5	4.0	4.0	2.0	1.5	1.5
15	15.5	15.0	15.5	9.0	8.5	8.5	4.5	3.5	4.0	1.5	1.0	1.5
16	15.0	14.0	14.5	8.5	8.5	8.5	4.0	3.0	3.5	1.0	1.0	1.0
17	14.0	13.5	13.5	9.0	8.0	8.5	3.5	2.5	3.0	1.0	1.0	1.0
18	13.5	13.0	13.5	9.5	8.5	9.0	3.5	2.5	3.0	1.0	1.0	1.0
19	13.0	12.5	12.5	9.0	9.0	9.0	3.0	2.0	2.5	1.0	1.0	1.0
20	12.5	12.5	12.5	9.0	8.5	8.5	2.5	2.0	2.0	1.0	1.0	1.0
21	12.5	12.5	12.5	8.5	8.0	8.5	2.5	2.0	2.0	1.0	1.0	1.0
22	12.5	12.5	12.5	8.0	8.0	8.0	2.5	2.0	2.0	1.0	1.0	1.0
23	12.5	12.0	12.5	8.0	7.5	8.0	2.0	1.5	2.0	1.0	1.0	1.0
24	12.5	12.5	12.5	8.0	7.5	7.5	2.0	1.5	2.0	1.0	1.0	1.0
25	13.0	12.0	12.5	7.5	7.0	7.0	2.0	1.5	1.5	1.0	1.0	1.0
26	13.0	12.5	13.0	7.0	6.5	7.0	2.0	1.5	1.5	1.0	1.0	1.0
27	13.0	12.5	13.0	7.0	6.5	6.5	2.0	1.0	1.5	1.0	0.5	1.0
28	12.5	12.0	12.5	6.5	6.0	6.5	2.0	1.5	1.5	1.5	0.5	1.0
29	12.5	12.0	12.5	6.0	5.5	6.0	2.0	1.5	1.5	1.0	1.0	1.0
30	—	—	—	6.5	6.0	6.0	2.0	1.5	1.5	1.0	0.5	1.0
31	12.0	12.0	12.0	—	—	—	2.0	1.5	2.0	1.0	1.0	1.0
MONTH	—	—	—	12.0	5.5	8.8	—	—	—	2.0	0.5	1.3

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121970 MUSKEGON RIVER NEAR CROTON, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.0	1.0	1.0	1.0	0.5	0.5	2.5	2.0	2.0	9.0	9.0	9.0
2	1.0	1.0	1.0	1.0	0.5	0.5	2.0	2.0	2.0	9.0	9.0	9.0
3	1.0	0.5	1.0	1.0	0.5	0.5	2.5	2.0	2.5	9.0	8.5	9.0
4	1.5	1.0	1.0	1.0	0.5	0.5	3.0	2.5	3.0	9.0	8.5	9.0
5	1.5	1.0	1.0	1.0	0.5	0.5	3.5	3.0	3.0	9.0	8.5	9.0
6	1.5	1.0	1.0	1.0	0.5	0.5	4.5	3.5	4.0	9.5	8.5	9.0
7	1.5	1.0	1.0	1.0	0.5	1.0	5.5	4.5	5.0	11.5	9.0	10.0
8	1.0	1.0	1.0	1.0	1.0	1.0	6.0	5.0	5.5	11.0	10.0	10.5
9	1.0	1.0	1.0	1.0	1.0	1.0	6.5	5.5	6.0	11.5	9.5	10.5
10	1.0	1.0	1.0	1.0	1.0	1.0	7.0	5.5	6.0	12.0	10.5	11.0
11	1.0	1.0	1.0	1.0	1.0	1.0	6.5	6.0	6.5	14.0	12.0	13.0
12	1.0	1.0	1.0	1.0	0.5	1.0	7.0	6.5	7.0	13.5	12.5	13.0
13	1.0	1.0	1.0	1.0	0.5	0.5	7.5	7.0	7.0	12.5	11.5	12.0
14	1.0	1.0	1.0	1.0	0.5	1.0	8.0	7.0	7.5	12.0	11.0	11.5
15	1.0	1.0	1.0	1.0	0.5	1.0	8.5	7.0	8.0	11.5	11.0	11.5
16	1.0	1.0	1.0	1.0	0.5	1.0	8.5	7.5	8.0	11.5	11.5	11.5
17	1.0	1.0	1.0	1.0	0.5	1.0	10.0	8.0	8.5	11.5	11.0	11.0
18	1.0	1.0	1.0	1.0	0.5	0.5	9.0	8.0	8.5	12.0	11.0	11.5
19	1.0	1.0	1.0	1.0	0.5	0.5	9.0	7.5	8.5	12.0	11.0	11.5
20	1.0	0.5	0.5	1.0	0.5	1.0	11.0	8.5	10.0	13.0	12.0	12.5
21	1.0	0.5	1.0	1.0	0.5	1.0	11.0	10.0	10.5	12.5	12.0	12.5
22	1.0	0.5	0.5	1.0	0.5	1.0	11.0	10.0	10.5	13.0	12.0	12.5
23	0.5	0.5	0.5	1.0	1.0	1.0	11.0	9.0	10.0	13.5	13.0	13.5
24	1.0	0.5	0.5	1.5	1.0	1.0	9.0	8.0	8.5	14.5	13.0	13.5
25	1.0	0.5	0.5	1.5	1.0	1.5	9.0	8.5	8.5	14.0	13.0	13.5
26	1.0	0.5	0.5	1.5	1.0	1.5	9.0	8.5	8.5	14.0	13.0	13.5
27	1.0	0.5	0.5	2.0	1.5	2.0	9.0	9.0	9.0	13.5	13.0	13.0
28	0.5	0.5	0.5	2.5	1.5	2.0	9.0	9.0	9.0	14.0	13.0	13.5
29	---	---	---	2.5	2.0	2.5	9.5	9.0	9.0	14.0	13.0	13.5
30	---	---	---	2.5	2.0	2.5	9.5	9.0	9.0	16.0	13.0	14.5
31	---	---	---	2.5	2.0	2.0	---	---	---	16.0	13.5	14.5
MONTH	1.5	0.5	0.9	2.5	0.5	1.1	11.0	2.0	7.0	16.0	8.5	11.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.5	14.0	15.5	21.0	19.5	20.5	22.0	20.5	21.0	21.5	20.0	21.0
2	16.5	15.0	15.5	20.5	19.5	20.0	22.0	21.0	21.5	21.5	20.0	20.5
3	16.5	14.5	15.5	20.0	19.0	19.5	22.0	20.5	21.5	21.5	20.0	21.0
4	16.0	14.5	15.5	20.5	19.5	20.0	22.0	21.0	21.5	21.5	20.5	21.0
5	16.0	14.5	15.0	21.0	19.5	20.0	23.5	21.5	22.5	21.0	20.5	20.5
6	17.0	15.0	16.0	21.5	20.0	20.5	23.0	21.5	22.0	21.5	20.5	21.0
7	18.5	16.5	17.5	21.0	19.5	20.5	22.0	21.0	21.5	---	---	---
8	18.0	16.0	17.0	21.5	20.0	20.5	22.5	21.0	21.5	---	---	---
9	18.5	18.0	18.5	21.0	19.5	20.0	22.0	21.0	21.5	22.0	21.5	21.5
10	19.0	18.0	18.5	21.0	19.5	20.5	22.5	21.5	22.0	21.5	21.0	21.0
11	19.0	16.5	18.0	21.5	20.0	20.5	22.0	21.5	22.0	21.5	20.5	21.0
12	19.5	18.0	18.5	22.5	20.5	21.5	22.0	20.5	21.5	21.5	21.0	21.5
13	20.0	19.0	19.5	22.0	21.0	21.0	21.5	21.0	21.5	21.5	20.0	21.0
14	19.0	17.0	18.0	22.5	20.0	21.5	22.0	21.0	21.5	22.5	21.0	21.5
15	19.5	17.5	19.0	22.0	21.0	21.5	21.5	21.0	21.5	21.5	21.0	21.0
16	20.0	18.0	19.0	22.0	21.0	21.5	21.5	21.0	21.0	21.0	20.5	21.0
17	19.0	18.0	18.5	21.0	20.5	21.0	22.0	21.0	21.5	21.0	20.0	20.5
18	18.0	17.5	18.0	21.0	19.5	20.0	21.5	20.5	21.0	21.0	20.0	20.5
19	18.5	17.5	18.0	22.0	20.5	21.5	21.0	20.0	21.0	20.5	19.5	20.0
20	18.5	17.5	18.0	22.0	20.5	21.0	21.0	20.5	21.0	20.5	19.5	20.0
21	20.5	17.5	19.0	22.0	21.0	21.5	21.5	20.5	21.0	20.5	19.5	20.0
22	20.0	18.0	19.0	22.5	21.0	22.0	21.5	20.5	21.0	20.0	20.0	20.0
23	19.0	17.0	18.0	22.0	21.0	21.5	21.0	20.5	20.5	20.0	19.5	20.0
24	19.5	17.5	18.5	21.5	20.5	21.0	21.0	20.0	20.5	20.0	19.5	19.5
25	20.5	19.5	20.0	22.5	21.5	22.0	21.0	20.5	20.5	20.0	19.0	19.5
26	21.0	20.0	20.5	23.0	21.0	22.0	21.0	20.5	20.5	19.5	19.0	19.5
27	20.5	19.5	20.0	22.5	21.0	22.0	21.5	20.5	21.0	19.0	19.0	19.0
28	20.5	19.5	20.0	21.0	20.0	20.5	21.5	20.0	20.5	19.0	19.0	19.0
29	21.5	19.0	20.5	22.0	20.0	21.0	21.5	20.5	21.0	19.0	18.5	19.0
30	21.0	19.0	20.0	21.0	20.5	21.0	21.5	20.5	21.0	18.5	18.0	18.0
31	---	---	---	21.0	20.0	20.5	22.0	20.5	21.5	---	---	---
MONTH	21.5	14.0	18.1	23.0	19.0	20.9	23.5	20.0	21.3	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121970 MUSKEGON RIVER NEAR CROTON, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.7	5.8	6.2	9.1	8.9	9.0	10.6	10.1	10.4	12.3	11.8	12.0
2	6.8	5.9	6.3	9.2	9.0	9.1	10.6	10.1	10.3	12.2	11.9	12.1
3	6.8	6.0	6.4	9.2	8.9	9.1	10.7	10.2	10.4	13.3	12.1	12.9
4	6.8	5.8	6.4	9.1	8.9	9.0	10.7	10.3	10.5	13.2	12.2	12.6
5	7.3	6.5	6.7	9.3	9.0	9.1	10.8	10.3	10.5	12.5	12.2	12.3
6	8.4	6.5	6.9	9.3	9.0	9.2	11.0	10.5	10.7	12.4	12.2	12.3
7	7.4	6.5	6.8	9.6	9.2	9.4	---	---	---	12.4	12.1	12.2
8	7.1	6.6	6.8	9.8	9.5	9.6	12.1	11.0	11.6	12.4	12.1	12.2
9	7.6	6.9	7.2	9.8	9.3	9.6	12.0	11.6	11.8	12.3	12.0	12.1
10	7.6	7.2	7.4	9.8	9.3	9.5	11.8	11.3	11.5	12.3	12.0	12.1
11	7.5	7.1	7.3	9.9	9.3	9.6	11.6	11.1	11.3	12.2	12.0	12.1
12	7.7	7.1	7.4	9.9	9.5	9.7	11.3	10.7	10.9	12.3	12.1	12.2
13	7.7	7.3	7.4	9.9	9.5	9.7	11.1	10.9	11.0	13.6	12.0	12.9
14	7.6	7.2	7.4	9.9	9.5	9.7	11.3	11.0	11.1	13.8	12.0	13.0
15	7.6	7.3	7.4	9.8	9.4	9.6	11.3	11.0	11.1	13.0	12.5	12.7
16	7.9	7.4	7.6	9.7	9.5	9.6	11.5	11.1	11.3	12.7	12.1	12.4
17	7.9	7.5	7.8	9.7	9.4	9.6	11.7	11.3	11.5	12.2	12.0	12.1
18	8.0	7.6	7.8	9.8	9.3	9.6	11.7	11.4	11.5	12.1	11.8	12.0
19	8.4	8.0	8.2	9.6	9.4	9.5	11.9	11.6	11.8	12.2	11.8	12.0
20	8.5	8.2	8.3	9.8	9.5	9.6	11.9	11.6	11.8	12.1	11.8	11.9
21	8.7	8.3	8.5	9.9	9.6	9.7	11.9	11.6	11.8	12.1	11.7	11.8
22	8.7	8.3	8.4	10.0	9.6	9.8	12.1	11.6	11.9	12.0	11.7	11.8
23	8.8	8.3	8.6	9.9	9.7	9.8	12.0	11.7	11.9	11.9	11.6	11.7
24	8.7	8.5	8.6	9.9	9.7	9.8	12.1	11.6	11.9	11.9	11.6	11.8
25	8.7	8.3	8.6	10.2	9.8	10.0	12.1	11.7	11.9	11.9	11.6	11.8
26	8.6	8.3	8.4	10.1	9.8	10.0	12.0	11.7	11.9	11.8	11.6	11.7
27	8.8	8.4	8.6	10.1	9.9	10.0	12.1	11.7	11.9	11.9	11.5	11.7
28	9.0	8.6	8.8	10.3	10.0	10.2	12.0	11.7	11.8	11.9	11.5	11.7
29	8.9	8.6	8.7	10.6	10.1	10.3	12.1	11.7	11.9	11.8	11.5	11.7
30	---	---	---	10.5	10.2	10.3	12.3	11.7	12.0	11.8	11.6	11.7
31	9.0	8.7	8.9	---	---	---	12.2	11.7	11.9	11.7	11.5	11.6
MONTH	---	---	---	10.6	8.9	9.6	---	---	---	13.8	11.5	12.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.8	11.5	11.6	11.8	11.2	11.5	13.6	12.9	13.2	8.5	8.0	8.3
2	11.7	11.4	11.6	11.9	11.1	11.5	13.8	13.1	13.4	8.3	7.8	8.1
3	11.8	11.4	11.6	11.5	11.0	11.3	13.6	12.7	13.2	8.9	7.9	8.1
4	11.7	11.4	11.6	11.6	11.0	11.4	13.4	12.2	12.9	9.1	8.7	8.9
5	11.7	11.4	11.5	11.9	11.2	11.5	13.0	12.2	12.7	9.3	8.8	9.1
6	11.7	11.4	11.5	12.0	11.2	11.6	12.9	12.2	12.6	9.5	8.7	9.1
7	11.8	11.4	11.6	11.8	11.2	11.5	12.6	11.5	11.8	9.6	8.9	9.3
8	11.8	11.4	11.6	12.0	11.5	11.7	12.1	11.5	11.8	9.4	8.6	9.0
9	11.7	11.4	11.5	12.1	11.5	11.8	11.8	11.2	11.5	9.3	8.4	8.8
10	11.7	11.4	11.5	12.2	11.6	12.0	11.5	10.6	11.0	9.0	8.5	8.7
11	11.6	11.4	11.5	12.3	11.8	12.0	11.0	10.4	10.8	9.5	8.1	8.7
12	11.6	11.3	11.5	12.3	11.7	12.0	11.0	10.4	10.7	9.9	7.9	9.3
13	11.6	11.2	11.4	12.2	11.6	11.9	11.1	10.2	10.7	9.4	8.8	9.0
14	11.5	11.2	11.3	12.1	11.6	11.8	10.9	10.3	10.6	9.4	8.7	9.0
15	11.6	11.3	11.5	12.5	11.7	12.1	10.9	10.2	10.5	9.3	8.7	9.0
16	11.6	11.4	11.5	12.6	12.0	12.3	10.6	9.9	10.3	9.5	8.9	9.1
17	11.6	11.3	11.5	12.8	12.0	12.3	10.5	9.5	10.0	10.1	5.3	8.9
18	11.6	11.2	11.3	12.5	12.0	12.3	10.4	9.3	9.8	10.2	8.8	9.6
19	11.7	11.2	11.4	12.4	12.0	12.3	10.1	9.3	9.6	9.8	9.1	9.4
20	11.7	11.1	11.3	12.8	12.1	12.4	10.3	9.1	9.6	10.3	9.4	9.8
21	11.7	11.1	11.3	12.8	12.2	12.5	10.0	9.3	9.6	9.8	8.9	9.4
22	11.7	11.1	11.4	12.9	12.3	12.6	10.4	9.0	9.7	9.6	8.9	9.2
23	11.6	11.1	11.3	12.9	12.4	12.6	10.1	9.4	9.7	10.0	9.2	9.6
24	11.5	11.1	11.3	12.8	12.1	12.6	9.9	9.0	9.4	9.8	9.0	9.5
25	11.6	11.1	11.3	12.8	12.4	12.6	9.8	8.8	9.3	9.4	8.7	9.0
26	11.7	11.1	11.3	12.9	12.5	12.7	9.6	9.0	9.3	9.1	8.6	8.8
27	11.7	11.1	11.4	13.0	12.6	12.8	9.7	8.7	9.2	9.1	8.3	8.7
28	11.8	11.1	11.5	13.1	12.7	12.9	9.3	8.7	9.0	9.1	8.3	8.7
29	---	---	---	13.0	12.7	12.8	9.2	8.4	8.8	8.9	8.1	8.5
30	---	---	---	14.1	12.7	13.2	8.8	8.3	8.5	9.1	8.1	8.7
31	---	---	---	14.7	12.9	14.2	---	---	---	9.6	8.1	8.8
MONTH	11.8	11.1	11.4	14.7	11.0	12.2	13.8	8.3	10.6	10.3	5.3	9.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04121970 MUSKEGON RIVER NEAR CROTON, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.4	8.2	8.9	6.7	5.4	6.0	5.5	4.6	5.1	5.2	3.5	4.2
2	9.7	8.3	9.0	6.1	5.6	5.8	5.7	5.1	5.4	5.2	2.9	4.2
3	9.4	8.6	8.9	6.0	5.2	5.6	5.7	4.7	5.4	5.9	4.1	5.0
4	9.2	7.8	8.6	6.1	5.1	5.6	5.7	4.7	5.2	5.6	4.7	5.1
5	8.5	7.7	8.2	6.6	5.0	5.6	8.0	4.9	6.9	5.6	3.1	4.6
6	8.7	7.6	8.1	6.6	5.7	6.1	8.4	7.2	7.8	5.8	4.8	5.3
7	8.6	7.6	8.1	6.2	5.3	5.8	7.7	5.6	6.7	---	---	---
8	8.2	7.4	7.8	6.5	5.3	5.9	7.5	5.3	6.0	---	---	---
9	8.9	7.5	8.2	6.2	5.2	5.8	6.2	3.7	5.0	6.6	5.6	6.0
10	8.7	7.6	8.2	6.3	5.6	6.0	5.1	4.2	4.8	6.9	4.6	5.9
11	8.5	7.1	7.9	6.8	5.6	6.0	5.3	3.9	4.6	6.0	3.7	5.0
12	8.3	7.1	7.6	6.4	5.2	5.8	5.0	3.3	4.1	6.0	3.9	5.3
13	7.7	6.7	7.1	5.8	5.2	5.5	4.5	3.5	4.0	5.8	2.5	4.4
14	7.3	6.4	6.8	5.8	5.1	5.5	4.7	3.4	4.0	6.9	4.7	5.7
15	7.0	6.2	6.6	5.7	5.0	5.4	4.3	3.5	3.8	6.3	5.5	5.9
16	7.5	6.2	6.8	5.8	5.0	5.5	4.3	3.4	3.8	6.8	6.0	6.5
17	7.4	6.3	6.8	6.0	5.3	5.7	4.6	3.4	4.0	6.3	5.1	5.9
18	7.1	6.4	6.7	5.4	4.0	4.5	4.7	3.2	3.8	5.6	3.7	5.0
19	7.0	6.3	6.7	5.3	4.4	4.9	4.7	2.4	3.6	5.4	2.7	4.3
20	7.0	6.4	6.7	5.3	4.5	4.9	5.0	3.5	4.4	5.8	4.0	5.0
21	7.8	6.5	7.1	5.4	4.5	4.9	5.8	3.7	4.7	5.8	4.2	5.2
22	7.6	6.2	6.8	5.4	4.6	4.9	5.9	3.7	5.1	6.0	4.8	5.3
23	7.0	6.1	6.6	5.4	4.5	4.9	5.4	3.9	4.6	6.4	5.5	5.9
24	7.0	6.0	6.5	4.8	4.1	4.6	4.8	3.7	4.2	6.5	5.8	6.1
25	7.1	6.5	6.8	7.2	4.6	5.6	5.4	3.4	4.2	6.3	5.4	5.9
26	7.2	6.2	6.7	7.3	5.4	6.6	5.8	4.6	5.1	6.0	5.0	5.7
27	7.0	6.4	6.7	7.3	6.7	7.1	6.0	4.0	5.2	5.7	5.1	5.4
28	6.7	6.3	6.5	7.6	7.2	7.4	5.6	3.8	4.7	5.3	4.8	5.0
29	6.8	6.0	6.4	7.7	6.1	7.1	5.8	4.1	4.9	5.2	4.9	5.1
30	6.2	5.5	5.9	6.3	5.0	5.4	5.7	4.3	4.8	5.2	4.9	5.1
31	---	---	---	5.3	4.0	4.6	5.4	3.8	4.7	---	---	---
MONTH	9.7	5.5	7.3	7.7	4.0	5.6	8.4	2.4	4.9	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04122100 BEAR CREEK NEAR MUSKEGON, MI

LOCATION.--Lat 43°17'19", long 86°13'22", in SW1/4 NW1/4 sec.4, T.10 N., R.16 W., Muskegon County, Hydrologic Unit 04060102, on left bank at upstream side of bridge on North Getty Street, 1.5 mi upstream from Little Bear Creek, and 3.9 mi northeast of Muskegon.

DRAINAGE AREA.--16.7 mi^2.

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR MI-80-1: 1976(M), 1978(M), 1979(P). WDR MI-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 590.00 ft above sea level (Michigan Department of Natural Resources bench mark). Prior to Mar. 17, 1978, at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation during low flow by dams and irrigation upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	8.6	13	23	e10	18	42	10	6.2	3.9	2.0	1.7
2	3.9	14	13	45	e10	17	30	9.9	5.8	3.2	1.8	1.5
3	3.9	13	12	43	e10	20	25	9.5	5.9	3.2	1.8	1.5
4	3.6	9.0	11	29	e10	23	22	9.1	6.2	4.1	2.3	1.5
5	3.6	8.4	10	24	e14	16	21	8.9	5.6	4.3	2.2	1.4
6	4.1	7.9	10	22	19	19	19	9.1	5.1	3.6	1.6	1.5
7	3.7	7.2	37	20	32	34	18	8.9	5.2	3.2	1.8	1.3
8	6.1	7.0	52	19	37	35	17	8.8	4.6	2.6	1.6	1.5
9	7.7	6.8	29	18	31	26	16	8.4	4.6	2.7	1.5	1.4
10	5.3	7.7	28	e15	26	23	16	8.4	4.5	2.2	1.4	1.3
11	4.8	7.0	27	18	23	20	15	12	4.1	2.3	1.8	1.2
12	4.8	6.6	26	23	22	19	14	11	4.1	2.3	4.4	1.2
13	5.1	6.3	28	81	22	18	13	15	4.3	2.8	3.1	1.3
14	4.9	6.7	e21	66	e31	18	13	14	3.8	2.6	2.9	1.9
15	5.1	6.3	e17	39	e45	16	12	13	4.7	2.3	2.6	1.8
16	7.3	6.4	e17	e27	e32	17	12	11	4.6	2.4	1.9	2.6
17	7.7	8.3	e16	e22	e28	15	12	10	4.2	2.8	1.7	1.8
18	6.8	7.1	e13	e17	e26	15	12	9.9	4.1	2.0	2.0	2.0
19	6.7	8.7	e7.9	e15	e24	15	11	11	4.2	1.9	2.8	2.4
20	6.6	9.9	e11	e13	e24	15	14	12	4.1	2.1	2.9	2.4
21	6.5	8.1	e11	e13	e23	15	13	9.9	3.5	3.1	2.6	2.0
22	6.6	7.2	e12	e12	e21	17	12	9.7	3.3	3.2	2.3	2.7
23	23	6.9	e11	e12	e20	19	12	9.5	3.2	2.5	2.3	2.9
24	15	6.8	e11	e12	e19	21	12	8.9	3.0	3.0	1.6	2.4
25	9.3	6.9	e10	e12	e19	24	12	8.3	e3.4	2.8	1.7	7.8
26	8.2	7.1	e10	e12	19	25	11	7.9	e3.5	4.9	2.2	14
27	7.7	11	e9.8	e11	19	28	11	7.6	e3.0	3.7	3.3	6.4
28	7.1	17	e9.9	e10	18	31	11	7.5	e2.7	3.0	2.7	7.1
29	10	12	e10	e10	---	33	11	7.3	2.7	2.4	1.9	11
30	9.2	11	e13	e10	---	35	10	6.7	4.5	2.2	1.7	6.6
31	8.1	---	e24	e10	---	59	---	6.2	---	2.1	1.7	---
TOTAL	215.1	256.9	530.6	703	634	706	469	299.4	128.7	89.4	68.1	96.1
MEAN	6.94	8.56	17.1	22.7	22.6	22.8	15.6	9.66	4.29	2.88	2.20	3.20
MAX	23	17	52	81	45	59	42	15	6.2	4.9	4.4	14
MIN	2.7	6.3	7.9	10	10	15	10	6.2	2.7	1.9	1.4	1.2
CFSM	0.42	0.51	1.02	1.36	1.36	1.36	0.94	0.58	0.26	0.17	0.13	0.19
IN.	0.48	0.57	1.18	1.57	1.41	1.57	1.04	0.67	0.29	0.20	0.15	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

MEAN	12.5	17.2	19.0	17.7	20.2	28.8	26.4	19.3	12.1	6.83	7.51	7.92
MAX	45.2	55.2	40.5	31.3	47.8	87.9	50.6	46.8	26.0	17.6	30.2	43.0
(WY)	1987	1986	1992	1986	1976	1976	1982	2004	2004	1994	1980	1986
MIN	3.48	4.54	4.98	6.15	6.05	10.2	11.0	6.84	4.29	2.88	2.20	2.67
(WY)	1972	1972	1977	1977	2003	2003	2003	1977	2005	2005	2005	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	6384.5		4196.3			
ANNUAL MEAN	17.4		11.5		16.3	
HIGHEST ANNUAL MEAN					27.4	1976
LOWEST ANNUAL MEAN					7.05	2003
HIGHEST DAILY MEAN	139	Mar 5	81	Jan 13	720	Mar 5 1976
LOWEST DAILY MEAN	2.6	Sep 25	1.2	Sep 11	1.2	Sep 11 2005
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 25	1.3	Sep 7	1.3	Sep 7 2005
MAXIMUM PEAK FLOW			109	Jan 13	(a)930	Mar 5 1976
MAXIMUM PEAK STAGE			13.38	Jan 13	(b)16.61	Feb 20 1994
INSTANTANEOUS LOW FLOW			0.94	(c)	0.94	(c)
ANNUAL RUNOFF (CFSM)	1.04		0.688		0.973	
ANNUAL RUNOFF (INCHES)	14.22		9.35		13.23	
10 PERCENT EXCEEDS	34		24		30	
50 PERCENT EXCEEDS	11		9.0		12	
90 PERCENT EXCEEDS	4.1		2.0		4.4	

(a) Gage height 11.00 ft, datum then in use.
(b) Backwater from ice.
(c) Part of each day Sept. 12, 13, 2005.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04122200 WHITE RIVER NEAR WHITEHALL, MI

LOCATION.--Lat 43°27'51", long 86°13'57", in SE1/4 NW1/4 sec.4, T.12 N., R.16 W., Muskegon County, Hydrologic Unit 04060101, on right bank 30 ft downstream from bridge on Fruitvale Road, 6.3 mi downstream from North Branch, and 6.9 mi northeast of Whitehall.

DRAINAGE AREA.--406 mi^2.

PERIOD OF RECORD.--August 1957 to current year.

REVISED RECORDS.--WDR MI-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 594.10 ft above sea level. Nov. 18, 1957 to Oct. 22, 1958, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	268	467	538	860	e451	481	895	408	342	302	256	238
2	273	481	531	921	e450	473	895	406	335	285	249	235
3	281	525	531	899	e449	463	895	403	322	278	244	230
4	276	526	506	969	e447	460	895	399	326	279	253	231
5	275	502	478	821	e458	493	852	394	327	326	294	230
6	275	468	474	e621	e488	473	767	388	324	322	283	228
7	274	440	526	e581	e597	516	691	387	315	291	272	226
8	301	417	712	637	721	653	626	383	309	278	260	228
9	404	397	1080	553	791	751	575	378	302	268	251	228
10	423	386	961	510	699	650	534	379	300	262	245	223
11	375	381	853	494	611	594	507	384	301	257	244	221
12	346	374	803	500	561	567	485	398	303	255	268	218
13	331	370	753	669	533	504	465	411	316	265	279	217
14	324	366	724	1380	561	477	449	462	321	279	266	220
15	320	365	668	1270	718	464	437	470	310	264	258	223
16	338	365	624	1010	861	460	427	451	314	262	253	229
17	380	383	576	e840	778	454	422	428	307	267	248	234
18	388	394	534	e723	684	448	422	411	303	271	245	229
19	372	392	491	e659	625	444	421	409	301	262	277	229
20	354	414	426	e612	565	444	423	448	296	256	299	231
21	344	437	467	e574	560	440	431	441	290	258	278	229
22	337	420	e458	e553	535	445	429	411	283	257	266	233
23	397	402	e505	e542	507	469	425	404	279	252	260	243
24	558	388	e505	e530	493	505	427	404	275	274	255	241
25	672	384	e492	e515	485	536	431	400	271	271	250	260
26	603	381	e475	e498	478	577	428	389	277	310	248	367
27	500	396	e475	e486	465	611	426	378	280	339	255	380
28	438	475	e479	e474	478	656	426	370	273	302	261	345
29	437	567	e488	e471	---	717	426	362	270	284	250	370
30	492	565	e564	e455	---	801	420	355	286	272	243	371
31	501	---	705	e450	---	893	---	348	---	262	241	---
TOTAL	11857	12828	18402	21077	16049	16919	16352	12459	9058	8610	8051	7587
MEAN	382	428	594	680	573	546	545	402	302	278	260	253
MAX	672	567	1080	1380	861	893	895	470	342	339	299	380
MIN	268	365	426	450	447	440	420	348	270	252	241	217
CFSM	0.94	1.05	1.46	1.67	1.41	1.34	1.34	0.99	0.74	0.68	0.64	0.62
IN.	1.09	1.18	1.69	1.93	1.47	1.55	1.50	1.14	0.83	0.79	0.74	0.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2005, BY WATER YEAR (WY)

MEAN	377	452	471	449	464	632	645	508	411	309	299	335
MAX	912	906	896	680	760	1449	1224	1059	747	523	484	1071
(WY)	1987	1986	1992	2005	1985	1976	1967	2004	1989	1982	1982	1986
MIN	226	263	286	252	240	380	315	259	230	202	186	188
(WY)	1972	2000	1959	1959	1959	2000	1958	1958	1958	1964	1958	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1957 - 2005	
ANNUAL TOTAL	193478		159249			
ANNUAL MEAN	529		436		446	
HIGHEST ANNUAL MEAN					635	1976
LOWEST ANNUAL MEAN					288	1958
HIGHEST DAILY MEAN	2520	May 10	1380	Jan 14	4650	Sep 1 1975
LOWEST DAILY MEAN	255	Sep 25	217	Sep 13	162	Sep 13 2003
ANNUAL SEVEN-DAY MINIMUM	261	Sep 22	221	Sep 9	167	Sep 8 2003
MAXIMUM PEAK FLOW			1670	Jan 14	5400	Sep 1 1975
MAXIMUM PEAK STAGE			5.42	Jan 14	7.46	Sep 1 1975
INSTANTANEOUS LOW FLOW			214	Sep 13	161	(a)
ANNUAL RUNOFF (CFSM)	1.30		1.07		1.10	
ANNUAL RUNOFF (INCHES)	17.73		14.59		14.93	
10 PERCENT EXCEEDS	870		677		694	
50 PERCENT EXCEEDS	440		411		391	
90 PERCENT EXCEEDS	307		252		252	

(a) Part of each day Sept. 12-14, 2003.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04122500 PERE MARQUETTE RIVER AT SCOTTVILLE, MI

LOCATION.--Lat 43°56'42", long 86°16'43", in NW1/4 NW1/4 sec.19, T.18 N., R.16 W., Mason County, Hydrologic Unit 04060101, on right bank 20 ft upstream from bridge on South Main Street at south edge of Scottville, 1.4 mi upstream from India Creek, and 5.6 mi downstream from Big South Branch.

DRAINAGE AREA.--681 mi^2.

PERIOD OF RECORD.--August 1939 to current year. Prior to October 1942, published as "at Custer".

REVISED RECORDS.--WSP 1437: 1941(M), 1943(M), 1949(M), 1950. WDR MI-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 597.66 ft above sea level. Prior to June 12, 1943, nonrecording gage at bridge 4.5 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	452	953	898	e1440	e910	875	2070	717	570	435	454	414
2	490	941	860	e1630	e900	869	2240	700	563	446	447	406
3	476	897	836	1790	e900	836	2210	693	553	437	436	399
4	469	915	817	1650	e880	800	1980	685	547	471	e760	393
5	460	922	791	1580	e890	842	1760	673	543	629	832	390
6	454	877	779	1480	994	871	1570	660	537	610	803	386
7	454	819	875	1390	1110	933	1420	676	527	552	702	383
8	467	766	1060	1280	1320	1090	1300	680	518	482	567	385
9	510	725	1270	1060	1410	1220	1180	673	510	453	494	388
10	634	699	1530	995	1380	1120	1070	663	500	447	465	386
11	659	676	1620	970	1250	1110	972	650	491	438	451	380
12	594	659	1460	929	1200	1040	895	649	486	426	451	376
13	556	647	1360	1370	1140	1010	841	670	491	437	453	372
14	536	633	1310	1890	1150	938	804	710	497	445	456	372
15	533	622	1280	e1500	1200	873	776	745	487	456	449	371
16	561	618	1180	e950	1260	832	755	761	485	444	444	374
17	588	627	1060	e830	1290	822	736	725	480	442	434	378
18	619	635	1010	e830	1240	822	726	688	475	444	427	380
19	625	647	963	e840	1140	820	716	674	470	438	445	380
20	599	656	e840	e870	1060	815	727	686	466	423	508	380
21	574	663	e740	e870	1040	803	749	691	458	421	545	378
22	559	684	e830	e870	992	801	797	687	453	419	495	383
23	618	682	e870	e800	944	814	804	664	448	413	458	396
24	724	658	e880	e780	930	848	780	658	441	411	447	403
25	814	644	e880	e850	904	893	763	656	434	434	444	439
26	902	633	e860	e900	882	942	755	650	458	689	441	757
27	897	657	e890	e940	840	1020	745	627	448	734	441	801
28	815	713	e920	e930	851	1100	743	605	446	705	444	837
29	858	798	e940	e900	---	1230	740	592	435	622	445	915
30	867	879	e1000	e900	---	1410	738	582	422	518	435	805
31	904	---	e1220	e900	---	1780	---	574	---	477	421	---
TOTAL	19268	21945	31829	34914	30007	30179	32362	20764	14639	15198	15494	13807
MEAN	622	732	1027	1126	1072	974	1079	670	488	490	500	460
MAX	904	953	1620	1890	1410	1780	2240	761	570	734	832	915
MIN	452	618	740	780	840	800	716	574	422	411	421	371
CFSM	0.91	1.07	1.51	1.65	1.57	1.43	1.58	0.98	0.72	0.72	0.73	0.68
IN.	1.05	1.20	1.74	1.91	1.64	1.65	1.77	1.13	0.80	0.83	0.85	0.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2005, BY WATER YEAR (WY)

MEAN	602	709	734	711	730	980	1029	802	685	535	495	540
MAX	1507	1523	1311	1129	1301	1779	1732	1558	1401	1232	826	1880
(WY)	1987	1986	1992	1985	1984	1976	1993	2004	2004	1969	1994	1986
MIN	379	439	449	427	440	526	550	425	408	368	354	369
(WY)	1957	1945	1945	1945	1958	1940	1945	1958	1964	1963	1941	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1939 - 2005	
ANNUAL TOTAL	347361		280406			
ANNUAL MEAN	949		768		712	
HIGHEST ANNUAL MEAN					1087	1986
LOWEST ANNUAL MEAN					472	1958
HIGHEST DAILY MEAN	2880	Mar 8	2240	Apr 2	6020	Sep 13 1986
LOWEST DAILY MEAN	450	Sep 29	371	Sep 15	310	Aug 9 1941
ANNUAL SEVEN-DAY MINIMUM	452	Sep 25	375	Sep 11	322	Aug 5 1941
MAXIMUM PEAK FLOW			(a)2280	Apr 2	6440	Sep 13 1986
MAXIMUM PEAK STAGE			(b)5.10	Jan 16	8.07	Sep 13 1986
INSTANTANEOUS LOW FLOW			371	(c)	(d)209	Dec 11 1962
ANNUAL RUNOFF (CFSM)	1.39		1.13		1.05	
ANNUAL RUNOFF (INCHES)	18.97		15.32		14.21	
10 PERCENT EXCEEDS	1610		1220		1080	
50 PERCENT EXCEEDS	808		716		634	
90 PERCENT EXCEEDS	564		435		428	

(a) Gage height 4.99 ft.
(b) Backwater from ice.
(c) Part of each day Sept. 13-16.
(d) Discharge measurement.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

444351084561801 BEAR LAKE NEAR KALKASKA, MI

LOCATION.--Lat 44°43'57", long 84°56'56", in NW1/4 SE1/4 sec.17, T.27 N., R.5 W., Kalkaska County, Hydrologic Unit 04060103, on west shore of Bear Lake, 11.7 mi east of Kalkaska.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--August 1994 to current year.

GAGE.--Nonrecording gage. Elevation of gage is 1,180 ft above sea level, from topographic map. August 1994 to Sept. 30, 1997, at datum 3.00 ft higher. Oct. 1, 1997 to Sept. 30, 1999, at datum 2.00 ft higher. Prior to June 19, 2000 at site on east shore. June 19, 2000 to May 21, 2002 at site on south shore.

REMARKS.--Staff gage read by observer. No inlets or outlets.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 4.68 ft, Aug. 26, 28, 1994, present datum; minimum observed, 0.96 ft, Nov. 12, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 3.38 ft, May 1; minimum observed, 2.74 ft, Sept. 25.

REVISIONS.--Daily instantaneous gage height for Aug. 29 to Sept. 30, 2004 has been revised to incorporate a 1.00 ft correction.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.09	3.11	3.11	---	---	---	---	3.38	3.29	---	3.11	2.98
2	3.07	3.12	3.10	---	---	---	---	3.37	3.27	---	3.10	2.97
3	3.05	3.12	3.09	---	---	---	---	3.35	3.26	---	3.09	2.96
4	3.02	3.13	3.08	---	---	---	---	3.35	3.27	---	3.19	2.95
5	2.99	3.12	3.10	---	---	---	---	3.36	3.25	3.11	3.17	2.93
6	2.97	3.11	3.11	---	---	---	---	3.36	3.24	3.11	3.14	2.90
7	2.95	3.11	3.20	---	---	---	---	3.37	3.24	3.10	3.11	2.90
8	2.93	3.10	3.25	---	---	---	---	3.37	3.24	3.08	3.09	2.90
9	2.96	3.11	3.24	---	---	---	---	3.37	3.23	3.07	3.11	2.90
10	2.97	3.10	3.24	---	---	---	---	3.36	3.23	3.06	3.08	2.89
11	2.95	3.09	3.25	---	---	---	---	3.34	3.33	3.05	3.08	2.88
12	2.95	3.07	3.26	---	---	---	---	3.33	3.31	3.05	3.09	2.87
13	2.93	3.06	3.27	---	---	---	---	3.32	3.31	3.04	3.08	2.83
14	2.93	3.06	3.29	---	---	---	---	3.32	3.31	3.02	3.06	2.83
15	2.93	3.05	3.27	---	---	---	---	3.32	3.30	3.01	3.03	2.81
16	2.93	3.04	---	---	---	---	---	3.31	3.28	3.00	3.04	2.82
17	2.95	3.06	---	---	---	---	---	3.31	3.27	2.99	3.03	2.81
18	2.97	3.05	3.25	---	---	---	---	3.31	3.26	3.00	3.07	2.80
19	2.98	3.05	3.19	---	---	---	---	3.33	3.25	3.00	3.09	2.80
20	2.99	3.07	---	---	---	---	---	3.31	3.23	3.03	3.15	2.77
21	3.01	3.07	---	---	---	---	---	3.32	3.21	3.02	3.16	2.78
22	3.02	3.06	---	---	---	---	---	3.33	3.20	3.02	3.13	2.79
23	3.03	3.05	---	---	---	---	---	3.32	3.20	3.16	3.12	2.77
24	3.04	3.05	---	---	---	---	---	3.32	3.19	3.17	3.11	2.75
25	3.04	3.07	---	---	---	---	---	3.32	3.18	3.21	3.09	2.74
26	3.07	3.09	---	---	---	---	---	3.31	---	3.20	3.07	2.87
27	3.07	3.09	---	---	---	---	---	3.31	---	3.19	3.06	2.87
28	3.08	3.15	---	---	---	---	---	3.30	---	3.19	3.05	2.85
29	3.09	3.14	---	---	---	---	3.37	3.30	---	3.15	3.01	2.93
30	3.13	3.12	---	---	---	---	3.37	3.29	---	3.13	3.01	2.89
31	3.12	---	---	---	---	---	---	3.28	---	3.12	2.99	---
MEAN	3.01	3.09	---	---	---	---	---	3.33	---	---	3.09	2.86
MAX	3.13	3.15	---	---	---	---	---	3.38	---	---	3.19	2.98
MIN	2.93	3.04	---	---	---	---	---	3.28	---	---	2.99	2.74

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124000 MANISTEE RIVER NEAR SHERMAN, MI

LOCATION.--Lat 44°26'11", long 85°41'55", in NE1/4 NE1/4 sec.36, T.24 N., R.12 W., Wexford County, Hydrologic Unit 04060103, on right bank 50 ft downstream from bridge on State Highway 37, 200 ft upstream from Wheeler Creek, 0.9 mi north of Sherman, and at mile 60.8.

DRAINAGE AREA.--857 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1903 to May 1916, October 1930 to September 1931, October 1933 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1004: 1936(M). WSP 1307: 1911, 1913-14(M), 1934(M), 1936(M), 1937, 1939-40(M). WSP 1437: 1911, 1913(M), 1937. WDR MI-88-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 804.24 ft above sea level. Prior to Apr. 13, 1934, at various datums. Apr. 14, 1934 to Oct. 25, 1990, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	733	1050	1040	1470	e1070	998	2060	1140	951	816	823	817
2	771	1060	1010	1540	e1080	986	2060	1120	933	807	802	805
3	766	1070	988	1500	e1090	965	2030	1110	918	800	788	797
4	757	1030	975	1370	e1100	933	1930	1090	908	853	929	794
5	748	1000	982	1270	e1110	960	1790	1070	904	894	1020	787
6	747	977	988	1180	1110	985	1660	1060	898	896	975	782
7	748	957	1090	1100	1140	1020	1570	1050	888	887	948	802
8	760	939	1400	1080	1210	1070	1520	1040	876	848	910	833
9	783	915	1450	1080	1200	1040	1460	1030	867	818	855	819
10	780	913	1400	1070	1150	958	1380	1010	890	802	820	805
11	774	933	1380	1050	1110	1000	1310	995	919	793	804	794
12	767	911	1310	1080	1070	1010	1260	978	966	787	830	783
13	761	891	1270	1590	1060	965	1200	974	1020	784	837	782
14	759	884	1190	1750	1070	918	1160	1000	1020	779	838	824
15	764	879	1110	1450	1090	946	1140	1030	974	773	824	798
16	817	880	1070	e850	1100	934	1110	1030	937	772	802	789
17	894	884	1070	e880	1090	929	1090	1010	910	773	786	781
18	900	886	1050	e880	1060	926	1070	991	905	794	808	774
19	906	882	1010	e890	1020	921	1060	1010	890	813	1050	769
20	907	886	e800	e930	998	925	1110	1150	873	793	1090	772
21	878	889	e700	e960	1020	922	1180	1120	861	794	1130	768
22	844	882	e800	e960	1020	922	1200	1060	848	795	1160	778
23	886	882	e900	e890	1000	928	1200	1070	836	800	1140	e820
24	978	881	e1000	e850	988	930	1170	1070	832	e880	1050	e790
25	952	873	e950	e910	987	939	1220	1070	828	e860	976	e850
26	937	871	e800	e1020	980	956	1310	1050	837	1010	914	e1090
27	908	901	e850	e1040	950	989	1290	1010	863	1070	891	1030
28	875	985	e950	e1000	965	1040	1260	982	858	1010	868	1110
29	1060	1050	e1050	e920	---	1130	1220	975	835	983	847	1180
30	1150	1060	e1200	e940	---	1310	1180	978	821	910	833	1110
31	1090	---	1320	e1030	---	1800	---	972	---	856	823	---
TOTAL	26400	28101	33103	34530	29838	31255	41200	32245	26866	26250	28171	25433
MEAN	852	937	1068	1114	1066	1008	1373	1040	896	847	909	848
MAX	1150	1070	1450	1750	1210	1800	2060	1150	1020	1070	1160	1180
MIN	733	871	700	850	950	918	1060	972	821	772	786	768
CFSM	0.99	1.09	1.25	1.30	1.24	1.18	1.60	1.21	1.04	0.99	1.06	0.99
IN.	1.15	1.22	1.44	1.50	1.30	1.36	1.79	1.40	1.17	1.14	1.22	1.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2005, BY WATER YEAR (WY)

MEAN	969	1048	1032	997	985	1199	1524	1204	1053	933	881	906
MAX	1803	1597	1417	1224	1458	1811	2198	1742	1603	1336	1200	1610
(WY)	1987	1989	1912	1916	1938	1913	1916	1904	1954	1994	1903	1986
MIN	754	780	805	752	604	808	943	834	802	740	722	717
(WY)	2001	1982	2003	2003	1936	1940	2000	1958	1958	1936	1964	1966

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1903 - 2005	
ANNUAL TOTAL	398044		363392			
ANNUAL MEAN	1088		996		(a)1060	
HIGHEST ANNUAL MEAN					1261	1912
LOWEST ANNUAL MEAN					864	2003
HIGHEST DAILY MEAN	2290	May 25	2060	Apr 1	3500	Mar 25 1913
LOWEST DAILY MEAN	700	Dec 21	700	Dec 21	540	Feb 21 1936
ANNUAL SEVEN-DAY MINIMUM	721	Sep 22	753	Oct 1	549	Feb 19 1936
MAXIMUM PEAK FLOW			(b)2080	Apr 1	(c)3570	Mar 25 1913
MAXIMUM PEAK STAGE			(d)14.69	Jan 16	(f)15.30	Apr 15 2001
ANNUAL RUNOFF (CFSM)	1.27		1.16		1.24	
ANNUAL RUNOFF (INCHES)	17.28		15.77		16.80	
10 PERCENT EXCEEDS	1520		1200		1420	
50 PERCENT EXCEEDS	978		960		979	
90 PERCENT EXCEEDS	767		792		811	

(a) Does not include water years 1931, 1934.
(b) Gage height 14.30 ft.
(c) Gage height 7.1 ft, from graph based on gage readings, datum then in use.
(d) Backwater from ice.
(e) Estimated.
(f) Does not include water years 1903-90.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124000 MANISTEE RIVER NEAR SHERMAN, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1996 to current year.
DISSOLVED OXYGEN: October 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Oct. 13-16, Dec. 26 to Jan. 3, Jan. 28 to Feb. 6, Feb. 19-23, Apr. 22 to May 1, May 21-26, July 9-12, 22-27, Sept. 1-4, 16, 30 rated good; Oct. 17-22, Jan. 4-11, Feb. 7-9, Feb. 24-26, Feb. 28 to Mar. 3, May 2-9, May 27 to June 5, July 28 to Aug. 4, Sept. 5-11, 17, 18 rated fair; and Oct. 23-26, Mar. 5-10, June 6-14, Aug. 5-24, Sept. 12, 13, 19-22 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 24.5°C, Aug. 7, 8, 2001, July 2, 2002; minimum, -0.5°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.5 mg/L, Mar. 13-15, 2005; minimum, 5.4 mg/L, Oct. 30, 1996.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.0°C, June 29; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 15.5 mg/L, Mar. 13-15; minimum, 6.7 mg/L, June 7.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	10.0	11.0	10.0	9.0	9.0	3.5	3.0	3.0	0.0	0.0	0.0
2	11.5	10.5	11.0	9.0	8.0	8.5	3.0	2.5	3.0	1.0	0.0	0.5
3	10.5	9.0	10.0	8.0	7.5	7.5	2.5	2.0	2.5	1.5	1.0	1.5
4	10.5	9.0	10.0	7.5	6.5	7.0	3.0	2.0	2.5	2.0	1.5	1.5
5	9.0	7.5	8.5	7.0	6.0	6.5	3.0	2.5	3.0	1.5	0.5	1.0
6	10.5	8.0	9.0	7.0	6.0	6.5	2.5	2.5	2.5	0.5	0.0	0.0
7	11.5	9.5	10.5	6.5	6.0	6.5	3.0	2.5	3.0	0.0	0.0	0.0
8	12.0	11.0	11.5	6.0	5.0	5.5	3.5	3.0	3.5	0.5	0.0	0.5
9	12.0	11.5	11.5	5.0	4.5	4.5	4.0	3.5	3.5	1.0	0.5	1.0
10	11.5	10.0	10.5	5.5	4.5	5.0	4.0	4.0	4.0	1.5	1.0	1.5
11	10.5	8.5	9.5	5.5	4.5	5.5	4.0	3.5	3.5	2.0	1.0	1.5
12	9.5	8.0	9.0	4.5	4.0	4.0	3.5	2.5	3.0	2.5	2.0	2.0
13	9.5	8.0	9.0	4.0	3.0	3.5	2.5	1.5	2.0	2.5	1.5	2.5
14	9.5	9.0	9.5	3.0	2.5	3.0	1.5	1.0	1.0	1.5	0.0	0.5
15	9.5	9.5	9.5	3.5	2.5	3.0	1.0	0.0	0.5	0.0	0.0	0.0
16	9.5	8.0	9.0	5.0	3.5	4.0	0.5	0.0	0.5	0.0	0.0	0.0
17	8.0	7.5	7.5	6.5	5.0	6.0	1.0	0.5	0.5	0.0	0.0	0.0
18	7.5	7.0	7.5	7.5	6.5	7.0	1.0	0.5	1.0	0.0	0.0	0.0
19	7.5	6.5	7.0	7.5	7.0	7.0	0.5	0.0	0.0	0.0	0.0	0.0
20	8.0	7.5	7.5	7.5	7.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0
21	8.5	7.5	8.0	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
22	8.5	7.5	8.0	6.5	5.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0
23	9.0	8.0	8.5	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
24	9.5	9.0	9.5	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
25	10.5	9.0	10.0	4.0	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
26	10.0	9.0	9.5	3.5	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
27	9.5	9.0	9.5	4.0	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
28	9.5	9.0	9.5	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
29	10.5	9.5	10.0	4.0	3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0
30	11.0	10.5	10.5	3.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
31	10.5	10.0	10.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	12.0	6.5	9.4	10.0	2.5	5.4	4.0	0.0	1.4	2.5	0.0	0.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124000 MANISTEE RIVER NEAR SHERMAN, MI–Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	1.0	0.5	0.5	5.5	4.5	5.0	9.5	7.0	8.0
2	0.0	0.0	0.0	1.0	0.0	0.5	5.5	4.0	4.5	9.0	8.0	8.5
3	0.0	0.0	0.0	1.0	0.0	0.5	6.0	4.5	5.0	8.5	7.5	8.0
4	0.5	0.0	0.0	1.5	0.0	0.5	7.0	5.0	6.0	10.0	6.5	8.0
5	1.5	0.0	0.5	2.5	0.5	1.5	9.0	6.0	7.5	11.5	8.0	9.5
6	3.5	0.5	1.5	4.5	2.0	3.0	10.0	8.0	9.0	11.5	9.5	10.5
7	4.0	3.5	3.5	4.0	3.0	3.5	11.0	9.0	9.5	13.0	10.5	11.5
8	3.5	2.5	3.0	3.0	1.5	2.5	11.0	8.5	10.0	15.0	11.5	13.0
9	2.5	2.0	2.0	1.5	0.5	1.0	11.0	8.5	10.0	15.5	13.5	14.5
10	2.0	1.0	1.5	0.5	0.0	0.0	11.5	9.5	10.5	16.5	14.5	15.5
11	1.0	0.5	1.0	1.0	0.0	0.5	11.5	9.5	10.5	16.0	12.5	14.0
12	2.0	1.0	1.5	2.0	0.5	1.0	11.0	9.0	10.0	13.0	11.0	12.0
13	2.0	1.0	1.5	1.5	0.5	1.0	11.0	8.5	10.0	12.0	10.0	10.5
14	2.0	1.5	2.0	1.5	0.0	0.5	11.0	8.5	10.0	11.0	10.0	10.5
15	3.5	2.0	3.0	2.0	0.0	1.0	11.5	8.5	10.0	10.5	10.0	10.0
16	3.5	2.5	3.0	1.5	1.0	1.5	12.0	9.5	10.5	10.0	9.0	9.5
17	3.0	1.0	2.0	3.0	1.5	2.0	13.5	11.0	12.0	10.5	8.5	9.5
18	1.0	0.5	1.0	3.0	1.5	2.0	14.0	11.5	13.0	12.5	10.0	11.0
19	1.0	0.0	0.5	3.0	2.0	2.5	14.5	12.5	13.5	12.0	11.0	11.5
20	0.5	0.0	0.0	3.0	2.5	3.0	14.5	12.0	13.0	13.5	10.5	12.0
21	1.0	0.0	0.5	4.5	2.5	3.5	13.0	10.5	12.0	15.0	11.5	13.5
22	1.5	0.5	1.0	5.5	3.0	4.0	12.0	10.5	11.0	14.5	13.5	14.0
23	1.5	1.0	1.5	5.0	4.0	4.5	10.5	7.5	8.5	14.5	13.5	14.0
24	2.0	1.0	1.5	5.5	3.5	4.5	7.5	6.0	6.5	15.0	13.0	14.0
25	2.0	1.5	1.5	6.0	4.0	5.0	8.5	5.5	7.0	16.0	13.0	14.5
26	1.5	0.5	1.5	6.0	4.0	5.0	8.0	7.5	8.0	15.5	13.5	14.5
27	1.0	0.0	0.5	6.5	4.0	5.0	8.5	7.5	8.0	14.5	13.0	14.0
28	1.0	0.5	1.0	7.0	4.5	6.0	9.5	7.5	8.5	15.0	12.5	14.0
29	—	—	—	7.5	5.5	6.5	8.5	7.5	8.0	15.0	12.5	14.0
30	—	—	—	8.0	6.5	7.5	8.5	7.0	8.0	15.5	12.5	14.0
31	—	—	—	7.5	5.5	6.5	—	—	—	17.0	13.5	15.5
MONTH	4.0	0.0	1.3	8.0	0.0	2.8	14.5	4.0	9.2	17.0	6.5	12.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.0	14.5	16.5	21.5	18.0	19.5	22.5	19.0	20.5	18.0	16.0	17.0
2	18.5	15.5	17.0	19.5	16.0	18.0	23.0	20.0	21.5	17.5	15.5	16.5
3	18.0	16.0	17.0	20.0	16.5	18.5	23.0	20.5	21.5	17.5	15.5	16.5
4	18.5	16.5	17.5	19.0	18.0	18.0	22.5	20.5	21.5	17.5	15.0	16.0
5	20.5	17.5	19.0	19.0	17.5	18.0	21.0	19.0	20.0	17.5	15.0	16.5
6	21.0	18.5	20.0	20.0	17.5	18.5	20.5	18.0	19.0	18.0	15.5	17.0
7	21.5	18.5	20.0	21.0	17.5	19.0	20.5	17.5	19.0	17.5	16.5	17.0
8	22.0	19.0	20.5	20.5	17.5	19.5	21.0	18.0	19.5	17.0	15.5	16.5
9	23.0	20.0	21.5	21.0	17.5	19.5	22.0	19.0	20.5	17.0	15.0	16.0
10	22.5	20.0	21.5	22.0	18.5	20.0	22.0	20.0	21.0	17.0	15.0	16.0
11	23.5	20.5	22.0	22.0	19.0	20.5	21.0	18.5	19.5	18.0	15.5	17.0
12	23.0	21.0	22.0	21.5	20.0	20.5	18.5	18.0	18.5	18.5	16.5	17.5
13	22.0	20.5	21.5	22.5	19.5	21.0	18.0	17.0	18.0	19.5	17.0	18.0
14	22.0	20.0	21.0	23.0	20.5	21.5	18.5	16.5	17.5	18.5	17.5	18.0
15	20.5	17.5	19.0	23.5	20.5	22.0	18.5	16.0	17.5	17.5	15.5	16.5
16	17.5	16.0	16.5	22.5	21.0	21.5	19.0	16.5	18.0	16.0	14.5	15.5
17	16.5	15.0	15.5	22.5	19.5	21.0	19.0	17.0	18.0	16.0	13.5	15.0
18	15.5	14.5	15.0	22.5	20.5	21.5	18.5	17.0	17.5	15.5	13.5	14.5
19	17.5	14.0	15.5	22.0	20.0	21.0	18.0	17.0	17.5	15.0	14.0	14.5
20	19.5	15.0	17.0	21.0	19.0	20.0	18.0	16.5	17.0	16.0	14.0	15.0
21	20.5	17.5	19.0	21.5	19.0	20.5	17.5	16.5	17.0	16.0	14.0	15.5
22	20.5	17.0	19.0	21.5	19.0	20.0	17.0	16.5	16.5	16.0	15.0	15.5
23	19.5	17.5	18.5	20.5	18.5	19.5	16.5	15.5	16.0	—	—	—
24	22.5	18.5	20.5	20.5	19.0	19.5	17.0	14.5	15.5	—	—	—
25	22.0	20.0	20.5	21.0	19.0	20.0	16.5	15.0	15.5	—	—	—
26	21.5	19.0	20.5	20.5	18.5	19.5	17.5	15.0	16.5	—	—	—
27	22.5	19.5	21.0	18.5	17.0	18.0	18.5	16.5	17.0	14.5	12.5	13.5
28	23.5	20.5	22.0	19.0	16.0	17.5	18.5	16.0	17.5	14.0	12.5	13.5
29	24.0	21.0	22.5	19.5	17.0	18.0	18.5	16.0	17.5	13.5	12.5	12.5
30	22.5	21.0	22.0	19.5	16.5	18.0	18.5	16.5	17.5	13.0	11.5	12.0
31	—	—	—	21.0	17.5	19.0	18.5	16.0	17.5	—	—	—
MONTH	24.0	14.0	19.4	23.5	16.0	19.6	23.0	14.5	18.3	—	—	—

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124000 MANISTEE RIVER NEAR SHERMAN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.6	9.0	9.2	10.5	9.7	10.0	12.7	12.4	12.5	12.1	11.7	11.9
2	9.3	8.7	9.0	10.6	9.6	10.3	12.7	12.4	12.6	13.5	12.0	12.4
3	9.6	9.1	9.4	11.2	10.4	11.0	13.0	12.5	12.7	13.6	13.5	13.6
4	10.0	9.1	9.5	11.0	10.7	10.9	12.8	12.5	12.6	13.7	13.4	13.6
5	10.3	9.8	10.0	11.3	10.7	11.0	12.8	12.4	12.6	13.7	13.2	13.6
6	10.4	9.8	10.0	11.1	10.8	11.0	12.8	12.6	12.7	13.2	12.4	12.6
7	10.3	9.8	10.0	11.5	10.6	11.1	12.6	12.2	12.4	12.8	12.5	12.6
8	9.8	9.3	9.5	11.9	11.2	11.6	12.2	12.1	12.2	13.3	12.7	13.0
9	9.7	9.1	9.4	12.6	11.8	12.2	12.6	12.0	12.3	14.0	12.7	13.4
10	10.2	9.4	9.8	12.4	12.1	12.3	12.5	12.4	12.4	14.0	13.7	13.9
11	10.6	9.9	10.2	12.3	11.9	12.1	12.6	12.4	12.5	14.1	13.7	13.9
12	10.7	10.2	10.4	12.7	12.1	12.4	12.8	12.6	12.7	13.8	13.4	13.6
13	10.7	10.1	10.4	13.0	12.6	12.8	13.4	12.8	13.1	13.5	13.3	13.4
14	10.3	10.1	10.2	13.2	12.8	13.1	13.8	13.4	13.6	13.5	12.6	13.1
15	10.2	9.8	10.0	13.1	12.7	13.0	13.4	12.5	12.9	13.0	12.6	12.8
16	10.4	9.9	10.1	12.7	12.1	12.4	13.4	12.7	13.1	13.0	12.7	12.8
17	10.6	10.2	10.4	12.1	11.5	11.7	13.8	13.0	13.4	12.7	12.4	12.6
18	10.9	10.5	10.7	11.6	11.3	11.4	13.7	12.8	13.5	12.5	12.1	12.3
19	11.3	10.7	11.0	11.6	11.2	11.4	12.9	12.4	12.7	12.1	11.5	11.8
20	11.1	10.8	11.0	11.3	11.1	11.2	12.8	12.5	12.7	11.5	11.3	11.4
21	11.2	10.7	10.9	11.6	11.1	11.3	12.5	11.9	12.1	11.4	11.2	11.3
22	11.1	10.8	10.9	12.0	11.4	11.7	12.2	11.9	12.0	11.2	11.1	11.2
23	10.8	10.4	10.6	11.8	11.5	11.6	12.5	12.2	12.4	11.2	10.8	10.9
24	10.4	10.2	10.3	12.2	11.6	11.9	12.6	12.2	12.3	10.9	10.8	10.8
25	10.6	10.2	10.4	12.5	11.8	12.2	12.5	11.9	12.2	10.9	10.7	10.8
26	11.0	10.3	10.6	12.7	12.3	12.5	12.0	11.8	11.9	11.0	10.6	10.8
27	11.0	10.2	10.7	12.4	12.0	12.2	11.9	11.8	11.9	11.0	10.8	10.9
28	11.1	10.6	10.8	12.3	11.8	12.0	11.8	11.6	11.8	11.2	10.9	11.1
29	10.8	9.6	10.3	12.6	12.2	12.4	11.7	11.5	11.6	11.1	10.9	11.1
30	10.0	9.0	9.3	12.8	12.4	12.6	11.7	11.4	11.5	11.1	10.9	11.0
31	10.1	9.1	9.7	---	---	---	11.8	11.6	11.7	11.2	11.0	11.1
MONTH	11.3	8.7	10.2	13.2	9.6	11.8	13.8	11.4	12.5	14.1	10.6	12.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.2	11.0	11.1	14.3	13.1	13.7	13.0	12.1	12.7	10.9	9.4	9.8
2	11.4	11.2	11.3	14.5	13.1	13.7	13.3	12.8	13.1	11.5	10.6	11.1
3	11.6	11.4	11.5	14.6	13.0	13.8	13.0	12.5	12.8	11.6	11.0	11.3
4	12.0	11.5	11.7	---	---	---	12.7	11.7	12.4	11.9	11.3	11.6
5	13.3	11.9	12.6	14.5	13.7	14.2	11.9	10.9	11.4	11.4	10.8	11.2
6	13.3	12.3	12.8	14.1	13.5	13.8	11.0	10.0	10.6	10.9	10.3	10.7
7	12.6	12.1	12.3	13.5	13.1	13.3	10.6	10.0	10.3	10.6	9.9	10.3
8	12.7	12.2	12.4	14.1	13.4	13.7	10.4	9.8	10.2	10.6	9.9	10.3
9	13.3	12.6	12.9	14.9	13.6	14.2	10.3	9.7	10.0	9.9	9.2	9.6
10	13.6	13.0	13.3	14.4	13.0	13.7	10.0	9.6	9.8	9.4	8.9	9.2
11	13.4	12.9	13.1	---	---	---	10.1	9.5	9.8	9.7	8.8	9.3
12	13.6	13.1	13.4	15.2	13.6	14.5	9.7	9.1	9.4	10.4	9.6	10.0
13	13.7	13.4	13.5	15.5	13.8	14.7	9.5	9.1	9.3	10.1	9.8	9.9
14	13.4	13.2	13.3	15.5	---	---	9.7	9.1	9.4	10.3	9.8	10.0
15	13.2	13.0	13.1	15.5	13.7	14.7	9.9	9.3	9.6	10.3	9.8	10.1
16	13.2	12.9	13.1	15.2	14.5	15.0	10.2	9.5	9.9	10.6	10.0	10.3
17	13.6	13.0	13.3	15.0	14.7	14.8	10.1	9.6	9.9	10.7	10.2	10.4
18	13.8	12.9	13.4	15.1	14.5	14.8	10.2	9.3	9.8	10.4	9.8	10.2
19	14.0	12.9	13.3	14.7	14.3	14.5	10.1	9.4	9.8	9.8	9.4	9.6
20	13.1	12.4	12.7	14.8	14.2	14.5	9.8	9.2	9.6	9.7	9.2	9.4
21	13.8	12.6	13.2	14.7	14.2	14.4	10.3	9.3	9.9	9.5	9.1	9.3
22	14.1	13.5	13.8	14.6	13.9	14.2	9.9	9.5	9.7	9.4	9.0	9.1
23	14.2	13.7	14.0	14.4	13.7	14.0	10.3	9.4	9.9	9.5	8.9	9.2
24	14.2	13.9	14.1	14.4	13.7	14.0	10.9	10.2	10.6	9.9	9.2	9.6
25	14.1	13.9	14.0	14.3	13.5	13.8	10.6	10.1	10.4	10.3	9.4	9.8
26	14.5	13.5	14.0	14.2	13.4	13.8	10.3	9.1	9.5	9.9	9.4	9.7
27	---	---	---	14.0	13.3	13.6	9.6	9.1	9.2	10.1	9.5	9.8
28	14.4	13.4	13.9	13.5	12.9	13.2	9.6	9.2	9.4	10.2	9.6	9.9
29	---	---	---	12.9	12.3	12.6	9.8	9.4	9.5	10.1	9.6	9.9
30	---	---	---	12.3	11.8	12.1	10.0	9.5	9.6	10.3	9.7	10.0
31	---	---	---	12.2	11.7	12.0	---	---	---	10.2	9.6	9.8
MONTH	---	---	---	---	---	---	13.3	9.1	10.2	11.9	8.8	10.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124000 MANISTEE RIVER NEAR SHERMAN, MI–Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	9.3	9.6	8.0	7.1	7.5	8.3	7.6	8.0	9.4	8.5	8.9
2	9.9	9.1	9.5	8.5	7.7	8.1	8.0	7.4	7.7	9.3	8.6	8.9
3	9.7	9.2	9.4	8.7	7.9	8.2	8.0	7.4	7.7	9.3	8.6	8.9
4	9.6	9.0	9.3	8.1	7.7	7.9	7.4	6.8	7.1	9.5	8.7	9.0
5	9.5	8.2	9.0	8.3	7.7	8.0	7.7	7.1	7.4	9.4	8.7	9.0
6	8.2	7.5	7.8	8.3	7.7	8.0	8.4	7.5	8.0	9.1	8.5	8.8
7	8.2	6.7	7.1	8.3	7.4	7.8	8.4	7.9	8.2	8.8	8.3	8.5
8	8.0	7.2	7.4	8.3	7.7	8.0	8.3	7.7	8.0	9.5	8.4	8.9
9	8.0	6.8	7.3	8.4	7.7	8.0	8.6	7.8	8.1	9.7	8.9	9.2
10	8.2	6.9	7.6	7.9	7.3	7.6	8.6	7.8	8.1	9.8	9.0	9.3
11	7.6	6.9	7.2	8.0	7.0	7.5	8.8	7.9	8.3	9.5	8.9	9.2
12	8.2	7.2	7.7	8.2	7.2	7.7	8.8	8.1	8.4	9.3	8.4	8.9
13	7.8	6.9	7.4	8.4	7.5	7.9	8.9	8.3	8.6	8.8	8.1	8.4
14	7.9	7.1	7.6	8.3	7.4	7.8	9.2	8.4	8.7	8.7	7.8	8.2
15	8.0	7.4	7.7	8.4	7.4	7.8	9.2	8.6	8.9	9.4	8.2	8.9
16	8.9	7.9	8.4	7.9	7.3	7.6	9.1	8.5	8.8	9.7	8.9	9.3
17	9.1	8.4	8.8	8.3	7.5	7.9	9.1	8.2	8.7	10.0	9.2	9.6
18	9.2	8.7	8.9	8.1	7.4	7.8	8.7	8.3	8.5	10.2	9.4	9.8
19	9.4	8.8	9.1	8.1	7.2	7.6	8.5	8.1	8.3	10.0	9.6	9.8
20	9.2	8.5	8.9	8.1	7.3	7.6	8.5	8.0	8.3	10.5	9.8	10.1
21	8.8	8.2	8.4	8.0	7.2	7.6	8.8	8.2	8.5	10.4	9.5	10.0
22	8.9	8.0	8.4	8.4	7.3	7.8	8.7	8.4	8.5	10.2	9.4	10.0
23	8.6	8.0	8.3	8.5	7.7	8.1	9.0	8.5	8.7	---	---	---
24	8.5	7.7	8.1	8.1	7.6	7.8	9.3	8.6	8.9	---	---	---
25	8.1	7.3	7.7	8.4	7.5	7.9	9.3	8.7	9.0	---	---	---
26	8.3	7.6	7.9	7.8	7.3	7.5	9.3	8.7	9.0	---	---	---
27	8.3	7.6	7.9	8.2	7.4	7.7	8.9	8.4	8.6	9.3	8.6	8.9
28	8.1	7.4	7.7	8.6	7.9	8.2	9.1	8.5	8.8	9.3	8.7	9.0
29	8.1	7.2	7.7	8.6	8.0	8.3	9.2	8.5	8.8	9.6	8.4	9.0
30	8.0	7.2	7.5	8.6	7.9	8.2	9.3	8.5	8.9	9.8	9.3	9.6
31	---	---	---	8.5	7.9	8.2	9.2	8.5	8.8	---	---	---
MONTH	10.0	6.7	8.2	8.7	7.0	7.9	9.3	6.8	8.4	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124200 MANISTEE RIVER NEAR MESICK, MI

LOCATION.--Lat 44°21'47", long 85°49'15", in SE1/4 NE1/4 sec.25, T.23 N., R.13 W., Manistee County, Hydrologic Unit 04060103, on right bank 200 ft downstream from Hodenpyl Dam, 6.2 mi southwest of Mesick.

DRAINAGE AREA.--1,018 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 732.22 ft above sea level (Consumers Energy bench mark).

REMARKS.--Water-discharge records good. Flow completely regulated by Hodenpyl Dam 200 ft upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	894	1190	1180	1690	1340	1170	2130	1250	1100	925	948	971
2	947	1200	1200	1830	1320	1180	2080	1250	1100	898	897	952
3	924	1240	1170	1820	1320	1150	2150	1230	1080	878	898	925
4	895	1190	1140	1530	1330	1080	2090	1160	1050	1090	1300	921
5	895	1170	1180	1410	1370	1060	1920	1130	1040	1040	1160	916
6	902	1170	1190	1450	1340	1130	1800	1130	926	954	997	905
7	908	1130	1380	1350	1380	1300	1730	1170	911	956	1020	993
8	955	1060	1620	1220	1350	1260	1600	1190	1070	956	1030	1060
9	960	1030	1560	1240	1290	1220	1540	1150	1090	951	1030	969
10	925	1030	1560	1260	1340	1150	1500	1120	998	930	992	952
11	900	1110	1610	1210	1340	1120	1430	1120	1010	919	935	931
12	887	1140	1580	1370	1220	1200	1330	1100	1010	891	970	903
13	885	1090	1520	1850	1200	1200	1270	1080	1120	865	976	896
14	924	1060	1360	1950	1280	1150	1270	1100	1060	905	939	1030
15	973	1010	1250	1640	1300	1100	1270	1140	1070	920	929	964
16	1020	1010	1290	1060	1230	1080	1220	1160	1080	899	930	903
17	1130	1080	1330	1090	1240	1120	1180	1160	1030	883	930	903
18	1040	1060	1230	1240	1260	1140	1180	1130	1000	914	930	903
19	1020	1080	1150	1110	1220	1100	1150	1140	991	911	1480	905
20	1030	1110	907	1160	1160	1110	1290	1250	992	854	1300	877
21	1030	1080	801	1250	1150	1110	1290	1270	991	886	1150	867
22	1050	1040	876	1220	1160	1110	1240	1250	927	935	1200	960
23	1160	1010	1050	1140	1190	1110	1300	1230	901	957	1250	927
24	1170	1040	1150	1060	1170	1110	1270	1160	971	1040	1240	875
25	1070	1060	1110	1140	1150	1110	1330	1130	999	1020	1120	953
26	1070	1060	924	1280	1160	1140	1430	1160	995	1280	1020	1210
27	1110	1090	952	1360	1160	1200	1490	1160	969	1160	1020	1140
28	1050	1190	1060	1240	1150	1240	1410	1120	954	1000	997	1210
29	1340	1240	1150	1140	---	1330	1280	1090	957	1020	919	1400
30	1310	1200	1420	1160	---	1470	1200	1090	947	1080	900	1200
31	1240	---	1630	1250	---	2020	---	1090	---	1030	939	---
TOTAL	31614	33170	38530	41720	35120	36970	44370	35910	30339	29947	32346	29521
MEAN	1020	1106	1243	1346	1254	1193	1479	1158	1011	966	1043	984
MAX	1340	1240	1630	1950	1380	2020	2150	1270	1120	1280	1480	1400
MIN	885	1010	801	1060	1150	1060	1150	1080	901	854	897	867
CFSM	1.00	1.09	1.22	1.32	1.23	1.17	1.45	1.14	0.99	0.95	1.02	0.97
IN.	1.16	1.21	1.41	1.52	1.28	1.35	1.62	1.31	1.11	1.09	1.18	1.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

MEAN	1036	1106	1108	1107	1155	1303	1538	1341	1135	997	951	927
MAX	1204	1376	1266	1359	1328	1675	1954	1761	1314	1155	1043	1006
(WY)	2002	2004	1997	1997	1997	2004	1997	1997	2004	1999	2005	1997
MIN	901	965	937	881	932	1080	1042	1076	1011	897	860	867
(WY)	2001	2003	2001	2003	2003	2001	2000	1999	2005	2000	2001	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	452427		419557			
ANNUAL MEAN	1236		1149		1123	
HIGHEST ANNUAL MEAN					1254	2004
LOWEST ANNUAL MEAN					1009	2003
HIGHEST DAILY MEAN	2550	May 25	2150	Apr 3	2950	Apr 15 2001
LOWEST DAILY MEAN	764	Jan 8	801	Dec 21	648	Dec 4 2002
ANNUAL SEVEN-DAY MINIMUM	875	Sep 25	895	Jul 15	792	Jan 18 2003
MAXIMUM PEAK FLOW			2340	Mar 31	(a)3060	Apr 15 2001
MAXIMUM PEAK STAGE			5.58	Mar 31	6.46	Mar 31 1998
INSTANTANEOUS LOW FLOW			708	Jun 10	449	Aug 31 2001
ANNUAL RUNOFF (CFSM)	1.21		1.13		1.10	
ANNUAL RUNOFF (INCHES)	16.53		15.33		14.99	
10 PERCENT EXCEEDS	1640		1380		1430	
50 PERCENT EXCEEDS	1140		1120		1070	
90 PERCENT EXCEEDS	914		913		883	

(a) Gage height 6.37 ft.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124200 MANISTEE RIVER NEAR MESICK, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: December 1996 to current year.
DISSOLVED OXYGEN: December 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated good. Dissolved oxygen records rated excellent except the following periods: Oct. 5, 6, 16-21, Feb. 24 to Mar. 3, Mar. 28 to Apr. 5, July 1-9, 19-26, Sept. 16-27 rated good; Oct 22-30, Mar. 4-10, July 10-12, July 27 to Aug. 8, Sept. 28-30 rated fair; and Oct. 31 to Nov. 9, Aug. 9-24 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 23.5°C, Aug. 13, 2001; minimum, 0.0°C, Feb. 10-13, 1997, Feb. 18, 19, 2004.
DISSOLVED OXYGEN: Maximum, 15.3 mg/L, Mar. 15, 1999; minimum, 6.3 mg/L, July 11, 2003, July 26, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.5°C, on several days during summer period; minimum, 0.5°C, on several days during winter period.
DISSOLVED OXYGEN: Maximum, 14.0 mg/L, Mar. 6; minimum, 6.3 mg/L, July 26.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	16.5	17.0	10.0	10.0	10.0	4.5	4.5	4.5	1.0	1.0	1.0
2	17.0	16.5	16.5	10.0	10.0	10.0	4.5	4.5	4.5	1.0	1.0	1.0
3	16.5	16.0	16.0	10.0	10.0	10.0	4.5	4.0	4.0	1.0	1.0	1.0
4	16.0	15.5	16.0	10.0	9.5	9.5	4.0	4.0	4.0	1.0	1.0	1.0
5	15.5	15.0	15.5	9.5	9.5	9.5	4.0	3.5	4.0	1.0	1.0	1.0
6	15.5	15.0	15.0	9.5	9.5	9.5	3.5	3.5	3.5	1.0	1.0	1.0
7	15.0	14.5	15.0	9.5	9.0	9.0	3.5	3.0	3.5	1.0	1.0	1.0
8	14.5	14.0	14.5	9.0	8.5	9.0	3.0	3.0	3.0	1.0	1.0	1.0
9	14.0	13.5	14.0	8.5	8.5	8.5	3.0	3.0	3.0	1.0	1.0	1.0
10	13.5	13.5	13.5	8.5	8.5	8.5	3.0	3.0	3.0	1.0	1.0	1.0
11	13.5	13.0	13.0	8.5	8.0	8.0	3.0	3.0	3.0	1.0	1.0	1.0
12	13.0	13.0	13.0	8.0	8.0	8.0	3.0	2.5	3.0	1.0	1.0	1.0
13	13.0	13.0	13.0	8.0	7.5	7.5	2.5	2.0	2.5	1.0	1.0	1.0
14	13.0	13.0	13.0	7.5	7.0	7.5	2.0	2.0	2.0	1.0	1.0	1.0
15	13.0	12.5	13.0	7.0	7.0	7.0	2.0	2.0	2.0	1.0	1.0	1.0
16	13.0	12.5	12.5	7.0	6.5	6.5	2.0	2.0	2.0	1.0	1.0	1.0
17	12.5	12.5	12.5	6.5	6.5	6.5	2.0	1.5	1.5	1.0	1.0	1.0
18	12.5	12.0	12.0	6.5	6.5	6.5	2.0	2.0	2.0	1.0	1.0	1.0
19	12.0	11.5	12.0	6.5	6.0	6.5	2.0	1.5	1.5	1.0	1.0	1.0
20	11.5	11.5	11.5	6.0	6.0	6.0	1.5	1.5	1.5	1.0	1.0	1.0
21	11.5	11.0	11.0	6.0	6.0	6.0	1.5	1.5	1.5	1.0	1.0	1.0
22	11.0	11.0	11.0	6.0	6.0	6.0	1.5	1.5	1.5	1.0	1.0	1.0
23	11.0	10.5	11.0	6.0	6.0	6.0	1.5	1.5	1.5	1.0	1.0	1.0
24	11.0	10.5	10.5	6.0	5.5	5.5	1.5	1.5	1.5	1.0	1.0	1.0
25	10.5	10.0	10.5	5.5	5.5	5.5	1.5	1.5	1.5	1.0	1.0	1.0
26	10.5	10.0	10.0	5.5	5.0	5.0	1.5	1.5	1.5	1.0	1.0	1.0
27	10.5	10.0	10.0	5.0	5.0	5.0	1.5	1.0	1.5	1.0	1.0	1.0
28	10.0	10.0	10.0	5.0	5.0	5.0	1.5	1.0	1.5	1.0	1.0	1.0
29	10.0	10.0	10.0	5.0	4.5	4.5	1.0	1.0	1.0	1.0	1.0	1.0
30	10.0	9.5	10.0	4.5	4.5	4.5	1.0	1.0	1.0	1.0	1.0	1.0
31	10.0	10.0	10.0	---	---	---	1.0	1.0	1.0	1.0	1.0	1.0
MONTH	17.0	9.5	12.7	10.0	4.5	7.2	4.5	1.0	2.4	1.0	1.0	1.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124200 MANISTEE RIVER NEAR MESICK, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.0	1.0	1.0	2.0	2.0	2.0	3.5	3.0	3.0	10.0	10.0	10.0
2	1.0	0.5	1.0	2.0	2.0	2.0	4.0	3.5	4.0	10.0	9.5	10.0
3	0.5	0.5	0.5	2.0	1.5	1.5	4.5	4.0	4.5	10.0	9.5	10.0
4	0.5	0.5	0.5	1.5	1.5	1.5	5.0	4.5	4.5	10.0	9.5	9.5
5	0.5	0.5	0.5	1.5	1.5	1.5	5.0	5.0	5.0	9.5	9.5	9.5
6	0.5	0.5	0.5	1.5	1.5	1.5	6.0	5.0	5.5	10.0	9.5	9.5
7	0.5	0.5	0.5	1.5	1.5	1.5	7.0	5.5	6.5	10.5	9.5	10.0
8	0.5	0.5	0.5	1.5	1.5	1.5	7.5	6.5	7.0	10.5	10.0	10.0
9	0.5	0.5	0.5	1.5	1.5	1.5	7.5	7.0	7.5	10.5	10.0	10.5
10	0.5	0.5	0.5	1.5	1.5	1.5	9.0	7.5	8.0	11.0	10.0	10.5
11	1.0	0.5	0.5	1.5	1.5	1.5	9.5	8.5	9.0	11.5	11.0	11.0
12	1.0	1.0	1.0	1.5	1.5	1.5	9.5	9.0	9.5	11.5	11.0	11.5
13	1.0	1.0	1.0	1.5	1.5	1.5	10.0	9.5	9.5	11.5	11.5	11.5
14	1.0	1.0	1.0	1.5	1.5	1.5	10.5	9.5	10.0	11.5	11.5	11.5
15	1.5	1.0	1.0	1.5	1.5	1.5	10.0	9.5	10.0	11.5	11.5	11.5
16	1.5	1.5	1.5	1.5	1.5	1.5	10.0	9.5	10.0	12.0	11.5	11.5
17	1.5	1.5	1.5	2.0	1.5	1.5	11.0	10.0	10.0	12.0	11.5	11.5
18	1.5	1.5	1.5	2.0	1.5	1.5	10.5	10.0	10.0	12.0	12.0	12.0
19	1.5	1.5	1.5	2.0	1.5	1.5	10.5	9.5	10.0	12.5	12.0	12.0
20	1.5	1.5	1.5	2.0	1.5	1.5	11.5	10.5	11.0	12.5	12.0	12.5
21	1.5	1.5	1.5	1.5	1.5	1.5	12.0	11.0	11.5	12.5	12.5	12.5
22	2.0	1.5	2.0	1.5	1.5	1.5	12.0	11.5	11.5	12.5	12.0	12.5
23	2.0	2.0	2.0	1.5	1.5	1.5	12.0	11.5	11.5	13.0	12.5	12.5
24	2.0	2.0	2.0	2.0	1.5	1.5	11.5	11.0	11.5	13.0	13.0	13.0
25	2.0	2.0	2.0	2.0	2.0	2.0	11.0	11.0	11.0	13.5	13.0	13.0
26	2.0	1.5	2.0	2.0	2.0	2.0	11.0	10.5	11.0	13.0	13.0	13.0
27	2.0	1.5	2.0	2.0	2.0	2.0	11.0	10.5	10.5	13.0	13.0	13.0
28	2.0	2.0	2.0	2.0	2.0	2.0	10.5	10.5	10.5	13.5	13.0	13.0
29	---	---	---	2.5	2.0	2.0	10.5	10.5	10.5	13.5	13.5	13.5
30	---	---	---	2.5	2.5	2.5	10.5	10.0	10.0	14.5	13.5	14.0
31	---	---	---	3.0	2.5	2.5	---	---	---	15.0	14.0	14.5
MONTH	2.0	0.5	1.2	3.0	1.5	1.7	12.0	3.0	8.8	15.0	9.5	11.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.0	14.5	14.5	21.0	20.5	21.0	21.5	21.5	21.5	19.0	18.5	19.0
2	15.0	14.5	15.0	21.0	21.0	21.0	21.5	21.5	21.5	19.0	18.5	18.5
3	15.0	15.0	15.0	21.0	21.0	21.0	21.5	21.0	21.0	19.0	18.5	19.0
4	15.5	15.0	15.0	21.0	21.0	21.0	21.5	21.0	21.5	19.0	19.0	19.0
5	15.5	15.0	15.5	21.5	21.0	21.0	22.0	21.5	21.5	19.0	19.0	19.0
6	15.5	15.0	15.5	21.5	21.0	21.5	22.0	21.5	21.5	19.0	18.5	19.0
7	18.0	15.5	17.0	22.0	21.5	21.5	22.0	21.5	21.5	19.5	19.0	19.0
8	18.5	16.0	17.0	22.0	21.5	21.5	22.0	21.5	21.5	19.0	19.0	19.0
9	19.5	16.0	17.5	21.5	21.5	21.5	22.0	21.5	22.0	19.0	19.0	19.0
10	20.0	19.0	19.5	21.5	21.0	21.0	22.0	22.0	22.0	19.0	19.0	19.0
11	20.0	19.0	19.5	21.5	21.0	21.5	22.0	22.0	22.0	19.0	18.5	19.0
12	20.0	19.5	19.5	21.5	21.5	21.5	22.0	21.5	22.0	19.0	18.5	18.5
13	21.0	20.0	20.5	22.0	21.5	21.5	22.0	22.0	22.0	19.0	18.0	18.5
14	21.0	20.0	20.5	22.5	21.5	22.0	22.0	21.5	22.0	19.0	18.0	19.0
15	21.0	20.5	20.5	22.0	22.0	22.0	22.0	21.5	21.5	19.0	18.5	19.0
16	21.0	20.5	20.5	22.0	21.5	22.0	21.5	21.5	21.5	19.0	19.0	19.0
17	21.0	20.5	20.5	22.0	21.5	21.5	21.5	21.5	21.5	19.0	19.0	19.0
18	20.5	20.5	20.5	22.5	21.5	22.0	21.5	21.0	21.0	19.0	18.5	19.0
19	20.5	20.5	20.5	22.5	22.0	22.0	21.5	21.0	21.0	18.5	18.5	18.5
20	20.5	20.0	20.0	22.0	22.0	22.0	21.0	20.5	20.5	18.5	18.5	18.5
21	20.5	20.0	20.0	22.0	22.0	22.0	20.5	20.0	20.5	18.5	18.0	18.5
22	20.5	20.0	20.0	22.5	22.0	22.5	20.5	20.0	20.0	18.5	18.0	18.5
23	20.0	19.0	19.5	22.5	22.0	22.5	20.5	20.0	20.0	18.5	18.0	18.0
24	19.0	19.0	19.0	22.5	22.0	22.0	20.5	20.0	20.0	18.0	18.0	18.0
25	20.0	19.0	19.5	22.5	22.0	22.5	20.0	20.0	20.0	18.0	18.0	18.0
26	20.0	20.0	20.0	22.5	22.0	22.5	20.0	19.5	19.5	18.0	17.5	18.0
27	20.0	20.0	20.0	22.5	22.0	22.5	19.5	19.0	19.5	17.5	17.5	17.5
28	20.5	20.0	20.5	22.0	22.0	22.0	19.5	19.0	19.0	17.5	17.0	17.5
29	21.5	20.5	21.0	22.5	22.0	22.0	19.0	19.0	19.0	17.5	17.0	17.0
30	21.5	20.5	21.0	22.0	22.0	22.0	19.5	19.0	19.0	17.0	16.5	16.5
31	---	---	---	22.0	21.5	21.5	19.5	19.0	19.0	---	---	---
MONTH	21.5	14.5	18.8	22.5	20.5	21.7	22.0	19.0	20.8	19.5	16.5	18.5

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124200 MANISTEE RIVER NEAR MESICK, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.6	8.4	8.5	10.3	10.1	10.2	12.2	12.1	12.1	12.8	12.7	12.7
2	8.6	8.1	8.3	10.5	10.3	10.4	12.2	12.1	12.2	12.7	12.6	12.6
3	8.6	8.2	8.4	10.4	10.2	10.3	12.4	12.2	12.3	12.6	12.5	12.6
4	8.9	8.6	8.8	10.4	10.2	10.3	12.3	12.2	12.3	12.6	12.5	12.5
5	8.9	8.8	8.8	10.5	10.3	10.4	12.5	12.3	12.4	12.6	12.5	12.6
6	9.0	8.7	8.9	10.5	9.8	10.4	12.5	12.4	12.4	12.5	12.4	12.5
7	9.2	9.0	9.1	10.7	10.4	10.5	12.6	12.5	12.5	12.6	12.5	12.6
8	9.2	8.9	9.0	11.0	10.7	10.9	12.6	12.5	12.6	12.7	12.6	12.6
9	9.4	8.9	9.1	11.1	10.9	11.0	12.6	12.5	12.6	12.7	12.5	12.6
10	9.5	9.3	9.4	11.1	11.0	11.0	12.7	12.6	12.6	12.7	12.6	12.6
11	9.6	9.3	9.4	11.2	10.9	11.0	12.8	12.7	12.7	12.8	12.6	12.7
12	9.3	9.2	9.3	11.2	11.0	11.1	12.8	12.6	12.6	12.8	12.6	12.7
13	9.3	8.5	9.2	11.3	11.2	11.3	13.0	12.6	12.8	12.7	12.6	12.6
14	9.3	9.1	9.1	11.5	11.3	11.4	13.1	12.9	13.0	12.9	12.7	12.8
15	9.1	8.2	9.0	11.6	11.5	11.6	13.1	13.0	13.0	12.8	12.8	12.8
16	9.2	9.0	9.1	11.6	11.5	11.5	13.0	12.9	13.0	13.5	12.8	13.2
17	9.1	8.9	9.1	11.5	11.4	11.5	13.1	13.0	13.1	13.4	12.8	13.1
18	9.3	9.0	9.2	11.6	11.5	11.6	13.0	12.9	13.0	12.9	12.8	12.8
19	9.6	9.3	9.4	11.6	11.5	11.6	13.2	13.0	13.1	13.1	12.8	12.9
20	9.6	9.4	9.5	11.7	11.5	11.5	13.6	13.2	13.4	13.1	12.8	12.9
21	9.7	9.5	9.6	11.8	11.6	11.7	13.6	13.5	13.5	12.9	12.8	12.9
22	9.9	9.6	9.8	11.8	11.7	11.8	13.7	13.3	13.5	12.9	12.7	12.8
23	9.8	9.4	9.6	11.9	11.7	11.8	13.3	13.2	13.2	13.1	12.8	12.9
24	9.8	9.5	9.6	11.9	11.8	11.9	13.2	13.1	13.2	13.0	12.9	13.0
25	10.1	9.8	10.0	12.0	11.9	12.0	13.3	13.1	13.2	12.9	12.6	12.8
26	10.1	10.0	10.1	12.1	12.0	12.0	13.8	13.2	13.5	12.7	12.6	12.6
27	10.3	9.9	10.1	12.0	11.9	12.0	13.8	13.3	13.5	12.7	12.6	12.7
28	10.3	10.2	10.2	12.1	11.9	12.0	13.3	13.1	13.2	12.9	12.6	12.7
29	10.3	9.2	10.0	12.2	12.1	12.1	13.2	12.9	13.1	12.8	12.6	12.7
30	10.2	10.0	10.1	12.2	12.1	12.1	13.0	12.8	12.9	12.7	12.6	12.6
31	10.2	10.1	10.2	---	---	---	12.8	12.7	12.7	12.6	12.4	12.5
MONTH	10.3	8.1	9.4	12.2	9.8	11.3	13.8	12.1	12.9	13.5	12.4	12.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.4	12.4	12.4	13.1	13.0	13.0	12.6	12.4	12.5	10.5	10.4	10.5
2	12.4	12.3	12.4	13.1	13.0	13.1	12.4	12.2	12.3	10.6	10.5	10.5
3	12.4	12.3	12.3	13.3	13.1	13.2	12.3	11.9	12.0	10.7	10.6	10.7
4	12.4	12.3	12.4	13.5	13.2	13.4	11.9	11.6	11.7	10.9	10.7	10.8
5	12.4	12.3	12.3	13.6	13.5	13.5	11.6	11.5	11.5	10.9	10.8	10.8
6	12.4	12.2	12.3	14.0	13.3	13.5	11.6	11.3	11.5	10.9	10.7	10.8
7	12.4	12.0	12.2	13.3	13.1	13.2	11.5	11.3	11.4	10.8	10.7	10.7
8	12.2	12.0	12.1	13.5	13.1	13.3	11.4	11.2	11.3	10.7	10.7	10.7
9	12.2	12.0	12.1	13.5	13.4	13.4	11.3	11.1	11.2	10.8	10.5	10.7
10	12.3	12.1	12.1	13.6	13.2	13.5	11.1	10.9	11.1	10.6	10.4	10.5
11	12.3	12.1	12.2	13.6	13.4	13.5	11.0	10.8	10.9	10.4	10.3	10.4
12	12.6	12.2	12.4	13.5	13.4	13.4	10.9	10.8	10.8	10.4	10.2	10.3
13	12.5	12.3	12.4	13.4	13.2	13.3	10.9	10.7	10.8	10.2	10.0	10.1
14	12.3	12.0	12.2	13.5	13.3	13.4	10.8	10.7	10.8	10.1	9.9	10.0
15	12.4	12.1	12.2	13.6	13.5	13.6	10.8	10.7	10.7	10.0	9.9	9.9
16	12.6	12.3	12.5	13.6	13.5	13.6	10.8	10.7	10.8	9.9	9.8	9.9
17	12.6	12.5	12.6	13.6	13.4	13.5	10.8	10.7	10.8	9.8	9.8	9.8
18	12.6	12.5	12.6	13.4	13.3	13.4	10.7	10.6	10.7	9.8	9.7	9.8
19	13.0	12.6	12.8	13.4	13.3	13.4	10.7	10.6	10.6	9.8	9.7	9.7
20	13.0	12.8	12.9	13.4	13.3	13.4	10.6	10.3	10.4	9.8	9.7	9.7
21	12.9	12.9	12.9	13.5	13.4	13.5	10.4	10.3	10.4	9.7	9.6	9.6
22	12.9	12.8	12.9	13.5	13.5	13.5	10.5	10.2	10.3	9.7	9.5	9.6
23	13.1	12.9	12.9	13.5	13.3	13.4	10.3	10.1	10.2	9.5	9.4	9.5
24	13.2	12.9	13.1	13.4	13.3	13.4	10.3	10.2	10.2	9.6	9.5	9.5
25	13.2	13.1	13.1	13.4	13.3	13.3	10.3	10.1	10.2	9.6	9.5	9.5
26	13.2	13.1	13.2	13.4	13.2	13.3	10.2	10.1	10.1	9.5	9.4	9.5
27	13.2	13.0	13.1	13.3	13.1	13.2	10.2	10.1	10.2	9.5	9.4	9.4
28	13.1	13.0	13.1	13.1	12.9	13.0	10.3	10.1	10.2	9.4	9.3	9.4
29	---	---	---	13.0	12.7	12.9	10.4	10.3	10.3	9.4	9.3	9.3
30	---	---	---	12.8	12.6	12.7	10.5	10.4	10.4	9.3	9.2	9.3
31	---	---	---	12.6	12.5	12.6	---	---	---	9.3	9.1	9.2
MONTH	13.2	12.0	12.6	14.0	12.5	13.3	12.6	10.1	10.9	10.9	9.1	10.0

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124200 MANISTEE RIVER NEAR MESICK, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.2	9.0	9.1	7.6	7.4	7.5	7.4	7.0	7.2	8.1	7.8	8.0
2	9.1	8.9	9.0	7.7	7.6	7.6	7.4	7.3	7.4	8.1	7.9	8.0
3	8.9	8.8	8.9	7.6	7.4	7.6	7.4	7.3	7.4	8.1	7.9	8.0
4	8.9	8.7	8.8	7.5	6.9	7.1	7.4	6.7	6.9	8.1	7.9	8.0
5	8.8	8.7	8.7	7.3	6.9	7.1	7.8	6.9	7.3	8.1	7.9	8.0
6	9.0	8.7	8.8	7.3	7.2	7.2	7.6	7.4	7.5	8.0	7.8	7.9
7	8.8	8.7	8.7	7.4	7.2	7.3	7.5	7.3	7.4	7.9	7.3	7.7
8	9.4	8.4	9.0	7.3	7.2	7.2	7.4	7.2	7.3	7.7	7.4	7.6
9	9.2	8.3	8.8	7.3	7.2	7.2	7.3	7.2	7.3	7.9	7.7	7.8
10	8.5	8.1	8.3	7.4	7.2	7.3	7.4	7.2	7.3	7.8	7.7	7.7
11	8.3	8.1	8.2	7.4	7.3	7.4	7.4	7.3	7.4	7.8	7.7	7.7
12	8.1	7.9	8.0	7.4	7.2	7.3	7.3	7.1	7.2	7.9	7.7	7.8
13	7.9	7.6	7.8	7.3	7.2	7.3	7.5	7.1	7.3	7.8	7.6	7.8
14	7.8	7.5	7.7	7.3	7.2	7.2	7.7	7.4	7.6	7.8	7.5	7.6
15	7.6	7.4	7.5	7.3	7.3	7.3	7.7	7.5	7.6	8.0	7.6	7.8
16	7.7	7.4	7.5	7.4	7.3	7.3	7.6	7.4	7.5	7.9	7.7	7.8
17	7.7	7.6	7.6	7.4	7.3	7.3	7.5	7.3	7.5	8.0	7.7	7.8
18	7.7	7.5	7.6	7.5	7.3	7.4	7.5	7.4	7.5	7.9	7.6	7.8
19	7.6	7.5	7.6	7.6	7.4	7.5	7.5	6.8	6.9	7.9	7.6	7.7
20	7.5	7.2	7.4	7.6	7.4	7.5	7.1	6.9	7.0	7.9	7.6	7.8
21	7.5	7.2	7.3	7.5	7.3	7.4	7.2	7.1	7.1	7.8	7.6	7.7
22	8.0	7.4	7.6	7.4	7.3	7.3	7.4	7.1	7.3	7.7	7.2	7.4
23	8.0	7.2	7.6	7.3	7.2	7.3	7.4	7.3	7.3	8.0	7.5	7.8
24	7.3	7.1	7.2	7.2	6.7	6.9	7.6	7.3	7.4	8.0	7.8	7.9
25	7.3	7.2	7.2	7.0	6.7	6.9	7.7	7.4	7.6	7.9	7.6	7.7
26	7.5	7.3	7.4	7.0	6.3	6.6	7.7	7.6	7.7	7.6	7.2	7.5
27	7.5	7.3	7.4	7.2	6.7	6.9	7.7	7.5	7.6	7.6	7.5	7.6
28	7.4	7.3	7.3	7.2	7.0	7.1	7.9	7.6	7.7	7.6	7.1	7.4
29	7.5	7.3	7.4	7.2	7.0	7.1	8.2	7.9	8.0	7.5	7.4	7.4
30	7.5	7.4	7.4	7.1	6.9	7.0	8.2	8.0	8.1	8.0	7.4	7.7
31	---	---	---	7.0	6.8	6.9	8.1	8.0	8.0	---	---	---
MONTH	9.4	7.1	8.0	7.7	6.3	7.2	8.2	6.7	7.4	8.1	7.1	7.7

STREAMS TRIBUTARY TO LAKE MICHIGAN

04124500 EAST BRANCH PINE RIVER NEAR TUSTIN, MI

LOCATION.--Lat 44°06'09", long 85°31'02", in NE1/4 NW1/4 sec. 28, T.20 N., R.10 W., Osceola County, Hydrologic Unit 04060103, on left bank 75 ft downstream from bridge on Marion Road, 3.0 mi west of Tustin.

DRAINAGE AREA.--60.0 mi^2.

PERIOD OF RECORD.--July 1952 to September 1963, October 1963 to September 1991 (operated as a crest-stage partial-record station), October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,077.65 ft above sea level (levels by Michigan Department of Natural Resources).

REMARKS.--Records good.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	48	36	91	27	26	271	29	12	8.1	9.7	9.7
2	15	62	32	161	27	26	214	26	11	7.7	9.1	8.4
3	11	50	30	151	27	26	177	25	11	7.2	8.6	8.0
4	11	43	29	111	27	26	142	24	11	14	18	7.8
5	9.5	41	34	71	28	25	120	22	10	17	17	7.8
6	11	32	35	55	31	27	107	21	9.4	12	12	7.5
7	8.0	29	92	55	53	48	104	22	8.6	9.5	11	7.6
8	12	30	147	48	61	57	87	21	8.0	8.5	9.5	10
9	19	32	114	42	51	49	72	20	7.9	7.8	9.0	8.8
10	23	27	88	40	44	43	61	20	7.7	7.4	8.7	8.0
11	13	26	70	38	41	37	55	23	11	7.5	8.6	7.7
12	8.5	24	58	46	38	34	48	18	8.1	7.6	9.4	7.5
13	13	23	50	248	35	31	43	22	8.0	12	9.6	7.6
14	10	21	42	153	39	28	38	31	8.0	11	9.1	7.8
15	17	19	34	120	47	26	33	29	7.7	8.7	8.8	7.2
16	18	18	38	96	49	25	32	26	8.0	12	8.1	7.9
17	28	22	33	68	42	24	31	21	7.6	15	8.0	8.4
18	25	19	31	52	39	24	30	19	7.5	12	8.5	8.7
19	22	19	25	42	37	23	29	21	7.8	11	32	9.1
20	19	25	25	38	32	23	45	24	8.0	9.0	22	8.6
21	19	31	24	35	33	23	43	24	7.7	8.6	17	8.3
22	16	26	23	33	30	23	36	22	7.4	8.3	13	9.6
23	29	26	23	33	29	24	33	29	7.1	7.8	12	9.9
24	41	23	22	32	29	25	33	27	7.0	24	11	9.0
25	31	21	21	32	28	28	43	22	6.9	20	10	34
26	30	20	20	32	26	31	41	18	7.1	27	10	255
27	26	33	19	31	27	39	37	17	6.9	24	10	126
28	19	56	19	29	26	55	36	16	6.8	18	10	90
29	77	47	19	27	---	82	37	16	6.8	13	27	93
30	75	40	19	27	---	146	30	15	8.1	12	20	67
31	62	---	91	27	---	353	---	13	---	11	11	---
TOTAL	725.5	933	1343	2064	1003	1457	2108	683	250.1	378.7	387.7	865.9
MEAN	23.4	31.1	43.3	66.6	35.8	47.0	70.3	22.0	8.34	12.2	12.5	28.9
MAX	77	62	147	248	61	353	271	31	12	27	32	255
MIN	7.5	18	19	27	26	23	29	13	6.8	7.2	8.0	7.2
CFSM	0.39	0.52	0.72	1.11	0.60	0.78	1.17	0.37	0.14	0.20	0.21	0.48
IN.	0.45	0.58	0.83	1.28	0.62	0.90	1.31	0.42	0.16	0.23	0.24	0.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	25.1	32.7	26.2	24.3	27.2	57.0	77.5	41.6	24.0	16.6	17.1	15.2
MAX	99.9	90.8	83.8	66.6	54.4	129	190	118	70.4	45.1	68.5	44.2
(WY)	1992	1993	1992	2005	1994	2004	1959	2004	1993	1994	1956	1993
MIN	9.54	12.3	12.4	10.1	9.39	18.7	31.6	10.7	8.34	7.22	6.29	6.82
(WY)	1956	1954	1956	1956	1963	1956	2000	1958	2005	1959	1957	1955

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	15938.4		12198.9			
ANNUAL MEAN	43.5		33.4		32.0	
HIGHEST ANNUAL MEAN					54.5	1992
LOWEST ANNUAL MEAN					16.0	1958
HIGHEST DAILY MEAN	319	Mar 6	353	Mar 31	753	Aug 4 1956
LOWEST DAILY MEAN	7.0	Aug 24	6.8	Jun 28	5.3	Aug 4 1958
ANNUAL SEVEN-DAY MINIMUM	7.2	Aug 18	6.9	Jun 23	5.5	Aug 1 1959
MAXIMUM PEAK FLOW			401	Mar 31	(a)1410	Aug 4 1956
MAXIMUM PEAK STAGE			4.83	Mar 31	6.23	Aug 4 1956
INSTANTANEOUS LOW FLOW			6.3	(b)	(c)4.1	Mar 13 1958
ANNUAL RUNOFF (CFSM)	0.726		0.557		0.534	
ANNUAL RUNOFF (INCHES)	9.88		7.56		7.25	
10 PERCENT EXCEEDS	101		62		67	
50 PERCENT EXCEEDS	23		24		20	
90 PERCENT EXCEEDS	8.7		8.0		8.5	

(a) From rating curve extended above 450 ft^3/s.
(b) Part of each day June 25, 27-30.
(c) Result of freezeup.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125460 PINE RIVER NEAR HOXEYVILLE, MI

LOCATION.--Lat 44°11'36", long 85°46'11", in NW1/4 NE1/4 sec.28, T.21 N., R.12 W., Wexford County, Hydrologic Unit 04060103, on right bank 75 ft downstream from High School Bridge on S 5 1/2 Road, 2.5 mi west of Hoxeyville.

DRAINAGE AREA.--245 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1952 to September 1982, October 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 850 ft above sea level, from topographic map. July 1952 to September 1982, water-stage recorder at site 3.5 mi downstream at different datum (station 04125500).

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	207	337	277	538	283	287	1030	273	234	205	208	215
2	218	338	267	550	284	283	773	269	231	200	206	214
3	222	351	258	722	286	272	599	265	230	197	e240	212
4	215	305	255	548	285	277	508	262	230	213	e270	212
5	213	287	267	413	287	286	450	258	230	251	262	211
6	212	277	271	337	294	284	424	255	226	240	242	211
7	211	263	348	305	346	321	418	255	223	216	225	213
8	214	251	631	312	428	387	408	252	218	208	217	218
9	250	247	602	306	389	358	368	248	218	203	213	224
10	246	248	444	297	346	328	342	244	219	201	211	219
11	230	245	372	290	322	331	323	244	226	199	210	217
12	220	242	342	315	318	311	310	245	215	199	213	216
13	214	237	331	743	309	294	301	245	212	217	216	213
14	215	233	306	943	317	283	291	268	211	235	215	214
15	214	230	283	602	351	287	284	273	212	217	212	213
16	233	231	275	485	360	277	277	260	213	215	209	214
17	255	234	279	421	344	280	275	e250	212	e225	209	214
18	264	240	270	384	e300	278	275	241	209	e225	212	214
19	242	238	260	351	e300	278	273	239	210	212	255	213
20	230	247	e260	332	300	278	301	247	207	208	289	214
21	224	263	270	e310	293	276	331	244	201	205	251	213
22	221	260	268	303	296	275	304	243	198	205	236	219
23	246	247	257	e300	290	278	288	265	196	203	226	222
24	297	242	250	310	286	280	284	273	196	e215	221	219
25	289	236	e250	309	285	285	295	261	195	e215	218	232
26	256	233	e250	299	280	294	312	251	e200	262	218	556
27	244	249	e250	277	271	311	303	246	e200	264	220	745
28	237	323	257	e255	292	349	294	241	194	234	221	419
29	332	342	247	e255	---	414	287	238	194	220	217	365
30	445	297	245	e270	---	529	284	237	201	214	226	358
31	388	---	352	284	---	840	---	235	---	210	220	---
TOTAL	7704	7973	9494	12366	8742	10111	11212	7827	6361	6733	7008	7839
MEAN	249	266	306	399	312	326	374	252	212	217	226	261
MAX	445	351	631	943	428	840	1030	273	234	264	289	745
MIN	207	230	245	255	271	272	273	235	194	197	206	211
CFSM	1.01	1.08	1.25	1.63	1.27	1.33	1.53	1.03	0.87	0.89	0.92	1.07
IN.	1.17	1.21	1.44	1.88	1.33	1.54	1.70	1.19	0.97	1.02	1.06	1.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	260	276	272	258	266	348	426	317	273	244	239	243
MAX	373	339	408	399	361	629	670	486	391	427	393	504
(WY)	1955	1976	1966	2005	1976	1976	1959	2004	1974	1969	1956	1975
MIN	212	212	207	199	199	252	258	222	206	196	191	190
(WY)	2003	2003	2003	2003	2003	2003	2000	1958	1964	1966	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	112569		103370			
ANNUAL MEAN	308		283		285	
HIGHEST ANNUAL MEAN					356	1976
LOWEST ANNUAL MEAN					219	2003
HIGHEST DAILY MEAN	1020	Mar 6	1030	Apr 1	1830	Aug 5 1956
LOWEST DAILY MEAN	207	Sep 30	194	Jun 28	170	Oct 3 1996
ANNUAL SEVEN-DAY MINIMUM	208	Sep 25	196	Jun 23	180	Jan 21 1961
MAXIMUM PEAK FLOW			1100	Apr 1	(a)2440	Aug 6 1956
MAXIMUM PEAK STAGE			6.69	Apr 1	7.45	Apr 13 2001
INSTANTANEOUS LOW FLOW			192	(b)	(c)161	Feb 2 1961
ANNUAL RUNOFF (CFSM)	1.26		1.16		1.16	
ANNUAL RUNOFF (INCHES)	17.09		15.70		15.80	
10 PERCENT EXCEEDS	448		362		387	
50 PERCENT EXCEEDS	258		255		252	
90 PERCENT EXCEEDS	215		211		212	

(a) From rating curve extended above 1,000 ft ^{3}/s; gage height 6.82 ft, site and datum then in use.
(b) Part of each day June 25, 28, 29, 30.
(c) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125460 PINE RIVER NEAR HOXEYVILLE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: December 1996 to to current year.
DISSOLVED OXYGEN: December 1996 to to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Nov. 28-30, Dec. 26-28, Jan. 24-26, Jan. 29 to Feb. 1, Apr. 21-29, May 26 to June 3, Aug. 22-24 rated good; Oct. 6-10, 27-30, Dec. 11-13, 29-31, Feb. 2-9, Apr. 30 to May 11, June 4-14, Aug. 25-28 rated fair; and Oct. 1-5, 11-17, Oct. 31 to Nov. 7, Dec. 14-19, 21, 22, Jan. 1-5, Aug. 29 to Sept. 13 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded, 21.0°C, July 25, 1999, but may have been higher during instrument malfunction July 23, 24, 1999; minimum, -0.5°C, on several days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.6 mg/L, Mar. 23, 1999; minimum, 6.6 mg/L, June 6, 7, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.0°C, June 11; minimum, -0.5°C, on several days during winter period.
DISSOLVED OXYGEN: Maximum recorded, 14.2 mg/L, Jan. 14, but may have been higher during instrument malfunction Jan. 15-18; minimum, 6.6 mg/L, June 6, 7.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.0	8.5	9.5	9.5	8.5	9.0	4.5	4.0	4.0	3.0	1.0	2.0
2	10.0	9.0	10.0	8.5	8.0	8.0	4.5	4.0	4.0	2.0	1.0	1.5
3	9.0	8.0	8.5	8.0	7.0	7.5	4.0	3.0	3.5	2.0	1.0	1.5
4	9.0	8.0	9.0	7.5	7.0	7.0	4.0	3.0	3.5	1.5	1.0	1.5
5	8.0	7.0	7.5	7.0	6.5	6.5	4.0	4.0	4.0	1.5	1.0	1.0
6	9.0	7.5	8.0	7.0	6.0	6.5	4.0	3.5	3.5	1.0	0.0	0.0
7	10.0	8.5	9.5	7.0	6.5	6.5	4.0	4.0	4.0	1.5	0.0	1.0
8	11.0	10.0	10.5	6.5	5.0	5.5	4.0	3.0	3.5	2.0	1.5	1.5
9	11.0	10.0	10.5	5.0	4.5	5.0	4.0	3.0	3.0	2.5	2.0	2.0
10	10.0	8.5	9.5	6.5	4.5	5.5	4.5	4.0	4.0	2.5	2.5	2.5
11	9.0	8.0	8.5	6.5	5.5	6.0	4.5	4.0	4.0	3.0	2.0	2.5
12	8.5	7.5	8.0	5.5	4.0	4.5	4.0	3.0	3.5	3.5	2.5	3.0
13	9.0	8.0	8.5	4.0	3.5	4.0	3.0	2.0	2.5	2.5	0.5	2.0
14	9.5	9.0	9.0	4.0	3.0	3.5	2.5	2.0	2.0	0.5	-0.5	-0.5
15	9.5	9.0	9.5	4.5	3.5	4.0	2.0	1.0	1.5	-0.5	-0.5	-0.5
16	9.0	7.5	8.5	6.5	4.5	5.5	2.5	1.5	2.0	-0.5	-0.5	-0.5
17	7.5	7.0	7.5	7.5	6.5	7.0	2.0	1.5	2.0	-0.5	-0.5	-0.5
18	7.5	7.0	7.5	8.5	7.5	8.0	2.5	2.0	2.5	-0.5	-0.5	-0.5
19	8.0	7.0	7.5	8.0	7.5	8.0	2.5	0.0	1.0	0.0	-0.5	-0.5
20	8.5	8.0	8.0	8.0	7.5	8.0	0.0	0.0	0.0	0.5	0.0	0.0
21	8.5	8.0	8.5	8.0	6.5	7.5	1.0	0.0	0.5	0.0	-0.5	-0.5
22	8.5	7.5	8.0	6.5	5.5	5.5	1.0	0.5	0.5	0.0	-0.5	-0.5
23	9.5	8.5	9.0	6.5	5.5	6.0	0.5	0.5	0.5	0.0	-0.5	-0.5
24	9.5	9.0	9.5	6.0	4.5	5.0	0.5	-0.5	0.0	1.0	0.0	0.5
25	9.5	9.0	9.5	4.5	4.0	4.0	-0.5	-0.5	-0.5	1.5	0.5	1.0
26	9.5	8.5	9.0	4.5	4.0	4.5	0.0	-0.5	0.0	2.0	1.0	1.5
27	9.5	9.0	9.0	5.5	4.5	5.0	0.5	-0.5	0.0	1.0	-0.5	0.0
28	9.5	9.0	9.5	5.5	4.5	5.0	1.0	0.0	0.5	-0.5	-0.5	-0.5
29	10.5	9.5	10.0	4.5	4.0	4.5	2.5	1.0	2.0	1.0	-0.5	0.0
30	11.0	10.5	11.0	4.5	4.0	4.5	3.5	2.5	3.0	2.0	0.5	1.0
31	10.5	9.5	10.0	---	---	---	3.5	3.0	3.5	2.5	2.0	2.5
MONTH	11.0	7.0	9.0	9.5	3.0	5.9	4.5	-0.5	2.2	3.5	-0.5	0.8

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125460 PINE RIVER NEAR HOXEYVILLE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.0	2.5	3.0	2.0	1.5	1.5	2.5	1.0	2.0	8.0	6.5	7.0
2	4.0	3.0	3.5	2.0	1.0	1.5	4.5	2.5	3.5	8.0	7.0	7.5
3	4.0	3.0	3.5	1.5	0.5	1.0	5.5	3.0	4.5	7.5	6.5	7.0
4	4.0	3.0	3.5	2.0	0.5	1.0	6.5	3.5	5.0	9.0	5.5	7.5
5	4.5	3.5	4.0	3.5	1.5	2.5	8.0	5.5	7.0	11.0	7.5	9.0
6	4.0	3.5	4.0	5.0	3.0	4.0	9.0	7.5	8.5	10.0	9.0	9.5
7	4.0	3.5	4.0	5.0	3.0	4.5	9.5	8.0	9.0	12.0	9.0	10.5
8	3.5	2.0	2.5	3.0	1.0	2.0	9.0	7.0	8.5	13.5	10.5	12.0
9	2.0	1.5	1.5	1.0	0.0	0.5	9.5	7.5	8.5	14.0	12.5	13.5
10	1.5	0.5	1.0	1.0	-0.5	0.5	10.5	8.5	9.5	14.5	13.0	13.5
11	2.0	1.0	1.5	1.5	0.5	1.0	10.5	8.5	9.5	14.0	10.5	12.0
12	3.0	1.5	2.0	2.5	1.5	2.0	10.0	8.0	9.0	11.5	9.0	10.0
13	2.5	2.0	2.5	2.0	1.0	1.5	9.5	7.5	8.5	10.5	9.0	9.0
14	3.0	2.5	2.5	2.0	0.5	1.5	10.0	7.5	9.0	10.5	8.5	9.5
15	4.0	3.0	3.5	2.5	1.5	2.0	10.5	8.0	9.5	10.0	9.0	9.5
16	3.5	2.5	3.0	2.0	1.0	1.5	11.0	8.5	10.0	10.0	8.5	9.0
17	2.5	1.0	2.0	3.0	1.5	2.0	13.0	10.0	11.5	10.0	7.5	8.5
18	1.0	0.5	1.0	3.5	2.5	3.0	13.0	10.5	12.0	12.0	9.5	10.5
19	1.5	0.5	1.0	3.5	2.5	3.0	13.5	11.0	12.0	11.5	10.5	11.0
20	1.0	0.5	0.5	3.5	2.5	3.0	13.0	10.5	12.0	13.0	9.5	11.0
21	2.5	1.0	1.5	4.5	3.0	4.0	11.5	9.0	10.5	14.0	11.0	12.5
22	3.0	2.5	2.5	5.0	3.0	4.0	11.0	8.5	9.5	13.5	12.0	12.5
23	3.0	2.0	2.5	5.0	4.0	4.5	8.5	6.5	7.5	13.0	12.0	12.5
24	2.5	2.0	2.5	5.0	3.0	4.0	6.5	5.5	6.0	13.5	11.5	12.5
25	2.5	2.0	2.0	5.5	4.0	4.5	9.0	6.0	7.5	14.5	11.5	13.0
26	2.0	1.0	1.5	5.5	3.0	4.5	9.0	8.0	8.5	13.5	12.0	12.5
27	1.5	0.5	1.0	5.5	3.5	4.5	8.5	7.5	8.0	12.5	11.0	12.0
28	2.0	1.5	1.5	6.0	3.5	5.0	8.5	7.0	7.5	12.5	11.0	12.0
29	---	---	---	6.0	4.0	5.0	7.5	6.5	7.0	12.5	10.5	11.5
30	---	---	---	6.0	4.5	5.0	7.5	6.0	7.0	13.5	10.5	12.0
31	---	---	---	5.0	2.0	3.5	---	---	---	14.0	11.5	13.0
MONTH	4.5	0.5	2.3	6.0	-0.5	2.8	13.5	1.0	8.3	14.5	5.5	10.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.0	12.0	13.5	17.0	14.5	15.5	18.0	15.5	16.5	14.5	13.5	14.0
2	15.0	13.0	14.5	15.5	12.5	14.0	18.0	15.5	17.0	14.5	13.0	14.0
3	14.5	13.0	14.0	16.5	13.5	15.0	---	---	---	14.0	12.5	13.5
4	15.5	13.5	14.5	15.5	14.0	15.0	---	---	---	14.0	12.5	13.0
5	17.0	14.0	15.5	15.5	14.0	14.5	17.0	15.0	16.0	14.5	12.5	13.5
6	17.5	15.5	16.5	16.0	14.5	15.0	16.5	14.5	16.0	14.5	13.0	13.5
7	17.5	15.0	16.5	16.5	14.0	15.5	16.5	14.5	15.5	14.5	13.0	14.0
8	18.0	15.5	17.0	17.0	14.5	15.5	17.0	14.5	15.5	14.5	13.5	14.0
9	18.5	16.0	17.0	17.0	14.0	15.5	17.5	15.0	16.5	14.5	13.0	14.0
10	17.5	16.0	17.0	17.5	14.5	16.0	17.0	16.0	16.5	14.5	13.0	14.0
11	19.0	16.0	17.5	17.5	15.0	16.5	16.0	14.5	15.0	15.0	13.0	14.0
12	18.0	17.0	17.5	16.5	15.5	16.0	15.0	14.0	14.5	15.5	14.0	14.5
13	17.0	16.0	16.5	16.5	15.0	15.5	14.5	13.5	14.0	15.5	14.0	15.0
14	17.5	15.5	16.5	17.5	15.0	16.5	15.0	13.5	14.0	15.0	14.0	15.0
15	16.5	13.5	15.0	18.5	16.5	17.5	15.0	13.0	14.5	14.0	12.5	13.0
16	14.0	12.5	13.0	17.5	16.0	17.0	15.5	13.5	14.5	13.0	12.0	12.5
17	13.0	12.0	12.5	---	---	---	15.0	14.0	14.5	12.5	11.0	12.0
18	12.5	12.0	12.5	18.0	15.5	17.0	14.5	14.0	14.5	13.0	11.5	12.0
19	14.5	12.0	13.0	18.0	16.0	17.0	15.5	14.0	14.5	12.5	12.0	12.0
20	16.0	12.5	14.5	16.5	15.0	16.0	15.5	14.5	15.0	13.5	12.0	12.5
21	16.5	14.5	15.5	17.0	15.5	16.0	15.5	14.0	14.5	13.5	12.0	13.0
22	16.5	13.5	15.0	17.0	15.5	16.5	14.5	13.5	14.0	13.5	12.5	13.0
23	16.0	14.0	15.0	17.0	15.0	16.0	14.0	13.0	13.5	12.5	11.5	12.0
24	18.5	14.5	16.5	---	---	---	14.0	12.0	13.0	12.0	11.0	11.5
25	18.0	16.5	17.0	---	---	---	13.5	12.5	13.0	13.0	12.0	12.5
26	---	---	---	17.0	15.5	16.5	14.5	12.5	13.5	15.5	13.0	14.5
27	---	---	---	16.0	14.5	15.0	15.0	13.5	14.5	15.0	14.0	14.5
28	18.5	16.5	17.5	15.5	13.5	14.5	15.0	13.5	14.0	14.0	12.5	13.0
29	18.5	16.5	17.5	16.0	14.0	15.0	15.0	13.5	14.0	12.5	11.5	12.0
30	18.0	16.5	17.0	16.0	13.5	14.5	14.5	13.5	14.0	11.5	10.5	11.0
31	---	---	---	17.0	14.0	15.5	15.0	13.5	14.0	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	15.5	10.5	13.2

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125460 PINE RIVER NEAR HOXEYVILLE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.2	9.3	10.1	10.2	9.6	9.9	11.5	11.0	11.2	13.4	12.2	13.0
2	10.4	9.1	9.7	10.6	10.1	10.3	11.6	11.0	11.2	13.3	13.1	13.1
3	11.3	9.5	10.2	10.9	10.5	10.7	11.9	11.1	11.4	13.5	13.0	13.3
4	11.0	9.3	10.1	10.8	10.5	10.6	11.5	11.0	11.3	13.2	12.8	12.9
5	11.3	9.9	10.5	11.3	10.8	11.0	11.6	10.9	11.3	13.2	12.6	13.0
6	11.2	9.7	10.2	11.3	10.7	10.9	11.4	11.0	11.2	13.4	13.1	13.3
7	10.9	9.4	10.0	11.3	10.6	10.9	11.7	10.9	11.2	13.3	12.9	13.2
8	9.7	8.7	9.2	—	—	—	12.2	11.5	11.8	13.1	12.8	13.0
9	9.8	8.7	9.2	—	—	—	12.2	11.5	11.8	12.9	12.6	12.8
10	10.4	8.9	9.6	11.4	10.6	11.0	11.5	11.1	11.4	12.8	12.3	12.6
11	10.6	9.0	9.8	11.2	10.4	10.8	11.3	11.0	11.2	12.8	12.4	12.7
12	10.7	9.3	9.9	11.9	10.9	11.4	11.3	10.9	11.1	12.8	12.1	12.3
13	10.9	9.3	10.0	12.1	11.3	11.6	11.9	11.1	11.6	13.6	12.8	13.0
14	10.9	9.0	9.6	12.1	11.4	11.7	12.2	11.8	12.0	14.2	—	—
15	9.9	8.8	9.3	12.0	11.1	11.6	12.6	11.6	12.2	—	—	—
16	10.7	9.0	9.8	11.1	10.3	10.8	12.1	11.4	11.7	—	—	—
17	11.0	9.8	10.4	10.4	9.9	10.2	12.3	11.7	12.0	—	—	—
18	—	—	—	10.4	9.6	10.0	11.9	11.3	11.6	—	—	—
19	—	—	—	10.6	9.7	10.0	12.5	11.4	12.0	13.2	12.2	12.9
20	—	—	—	10.0	9.5	9.8	—	—	—	13.2	12.9	13.1
21	—	—	—	10.6	9.7	10.1	12.5	11.9	12.2	—	—	—
22	—	—	—	11.1	10.1	10.6	13.0	12.2	12.6	13.4	12.6	13.1
23	—	—	—	10.6	10.2	10.4	12.9	12.6	12.8	—	—	—
24	—	—	—	11.2	10.3	10.7	13.2	12.6	12.9	13.4	13.0	13.2
25	—	—	—	11.6	10.6	11.0	13.0	12.7	12.8	13.0	12.4	12.8
26	—	—	—	11.5	10.7	11.0	13.1	12.7	12.9	12.5	12.1	12.3
27	10.6	9.7	10.1	10.8	10.3	10.6	13.4	13.1	13.3	—	—	—
28	11.1	9.9	10.3	11.7	10.3	11.2	13.2	12.6	13.0	—	—	—
29	10.1	9.3	9.6	12.0	11.6	11.8	12.7	12.2	12.5	13.6	12.7	13.1
30	9.5	9.0	9.2	11.7	11.1	11.5	12.4	11.8	12.2	12.9	11.9	12.5
31	9.9	9.1	9.5	—	—	—	12.2	11.7	12.0	12.1	11.7	11.9
MONTH	—	—	—	—	—	—	—	—	—	—	—	—

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.0	11.4	11.7	13.2	12.7	12.9	—	—	—	11.8	11.1	11.4
2	11.9	11.3	11.6	13.4	12.7	13.0	—	—	—	11.8	11.1	11.4
3	11.8	11.3	11.5	13.6	12.3	13.2	—	—	—	11.9	11.2	11.5
4	11.7	11.1	11.5	13.6	11.9	13.0	—	—	—	12.2	10.9	11.6
5	11.7	11.1	11.4	13.0	11.5	12.5	—	—	—	11.8	10.4	11.2
6	11.6	11.1	11.3	12.4	11.5	12.1	11.2	10.7	11.0	11.2	10.3	10.7
7	12.5	11.4	11.8	12.1	11.0	11.6	11.2	10.7	11.0	11.2	9.9	10.6
8	13.2	12.5	12.9	13.1	12.1	12.7	11.5	10.9	11.2	10.8	9.3	10.1
9	13.4	13.0	13.2	13.7	13.1	13.4	11.5	10.7	11.1	10.3	9.1	9.6
10	13.7	13.2	13.5	13.7	12.2	13.1	11.3	10.6	10.9	10.0	9.0	9.5
11	13.4	12.5	13.3	13.4	12.6	13.1	11.3	10.6	10.9	10.2	9.2	9.6
12	13.1	12.6	12.9	12.9	11.9	12.5	11.5	10.6	11.1	10.7	9.5	10.0
13	13.2	12.6	12.8	13.3	12.5	12.9	11.7	10.9	11.3	10.1	9.4	9.8
14	12.8	12.5	12.6	13.5	12.6	13.1	11.7	10.7	11.2	10.2	9.5	9.8
15	12.6	12.4	12.5	13.3	12.6	13.0	11.6	10.7	11.1	10.1	9.4	9.8
16	12.8	12.0	12.5	13.4	12.7	13.0	11.5	10.5	11.0	10.5	9.6	10.0
17	13.2	12.4	12.9	13.1	12.3	12.8	11.2	10.1	10.7	—	—	—
18	13.8	13.1	13.4	13.0	12.0	12.5	10.9	10.0	10.4	10.4	9.1	9.7
19	13.7	12.6	13.4	12.6	11.9	12.2	10.7	9.7	10.2	9.6	8.7	9.2
20	13.7	13.3	13.5	12.6	12.1	12.3	10.3	9.7	10.0	10.2	8.9	9.6
21	13.3	12.8	13.1	12.7	11.9	12.3	11.1	10.3	10.7	9.9	8.5	9.2
22	13.0	12.7	12.8	12.8	11.6	12.2	11.1	9.8	10.7	9.4	8.4	8.8
23	13.2	11.9	12.9	12.6	11.6	12.0	11.5	9.8	11.1	9.3	8.6	8.9
24	13.1	11.9	12.8	12.8	11.5	12.1	12.1	11.4	11.7	9.5	8.6	9.0
25	13.1	12.0	12.8	12.6	11.5	11.9	11.7	10.6	11.3	9.6	8.3	8.9
26	13.5	12.2	13.1	12.7	11.4	12.0	11.0	10.5	10.8	9.3	7.8	8.7
27	13.8	12.6	13.3	12.5	11.3	11.8	11.3	9.9	10.6	9.3	8.5	8.9
28	13.1	12.7	12.9	12.2	11.2	11.6	11.5	10.8	11.2	9.4	8.6	9.0
29	—	—	—	11.9	11.2	11.5	11.9	11.0	11.4	9.4	8.6	8.9
30	—	—	—	11.7	11.4	11.6	11.8	11.1	11.4	9.4	8.5	8.9
31	—	—	—	13.1	11.4	12.5	—	—	—	9.3	8.0	8.7
MONTH	13.8	11.1	12.6	13.7	11.0	12.5	—	—	—	—	—	—

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125460 PINE RIVER NEAR HOXEYVILLE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.9	7.2	8.3	8.9	7.4	8.2	9.1	7.8	8.3	9.6	8.2	8.8
2	8.7	7.7	8.2	9.6	8.2	8.8	9.1	7.7	8.3	9.7	8.3	8.9
3	8.6	7.7	8.1	9.3	7.8	8.5	---	---	---	9.8	8.5	9.0
4	8.5	7.7	8.1	8.1	7.7	7.9	---	---	---	10.1	8.5	9.2
5	8.3	7.3	7.8	8.4	7.9	8.1	---	---	---	10.1	8.7	9.2
6	8.0	6.6	7.5	8.7	7.9	8.2	---	---	---	10.3	8.7	9.3
7	8.4	6.6	7.5	8.9	7.9	8.3	---	---	---	10.1	8.8	9.3
8	8.7	7.3	8.1	9.2	7.9	8.4	---	---	---	10.1	8.6	9.2
9	8.8	7.7	8.2	9.1	7.9	8.4	---	---	---	9.7	8.7	9.0
10	8.8	7.7	8.2	9.0	7.7	8.2	---	---	---	9.9	8.5	9.1
11	8.3	7.5	7.9	8.8	7.5	8.1	---	---	---	10.1	8.5	9.2
12	8.4	7.4	7.9	9.2	7.4	8.3	---	---	---	10.0	8.7	9.2
13	8.6	7.7	8.1	9.5	8.4	8.8	---	---	---	9.5	8.4	8.9
14	9.3	7.7	8.5	9.2	8.0	8.5	---	---	---	9.5	8.2	8.7
15	9.1	8.3	8.7	9.2	7.9	8.4	---	---	---	10.2	8.6	9.3
16	10.2	8.8	9.4	8.9	8.0	8.3	---	---	---	10.2	8.9	9.3
17	10.1	9.1	9.5	---	---	---	---	---	---	10.2	8.9	9.4
18	10.1	9.2	9.6	9.1	7.9	8.5	8.1	7.5	7.8	10.1	8.8	9.3
19	10.2	9.0	9.6	9.1	7.8	8.3	7.9	7.6	7.7	9.5	8.6	8.9
20	10.0	8.6	9.3	9.2	8.0	8.5	8.0	7.6	7.8	9.7	8.4	8.9
21	9.6	8.5	8.9	9.3	7.9	8.4	8.6	7.6	8.1	9.6	8.3	8.7
22	9.7	8.5	9.0	9.3	7.7	8.3	9.1	7.9	8.4	8.7	8.1	8.3
23	9.6	8.5	9.0	9.1	7.8	8.3	9.4	8.1	8.7	9.6	8.4	8.9
24	9.4	7.9	8.7	---	---	---	9.6	8.3	8.8	9.5	8.3	8.8
25	9.0	7.9	8.4	---	---	---	9.6	8.3	8.8	8.9	8.1	8.4
26	---	---	---	8.2	7.7	8.0	9.7	8.4	8.9	8.3	7.8	8.1
27	---	---	---	8.9	8.0	8.4	9.3	8.1	8.5	8.6	7.9	8.3
28	9.1	7.8	8.3	9.3	8.2	8.7	9.6	8.1	8.7	8.9	8.6	8.8
29	8.9	7.7	8.2	9.3	8.2	8.6	9.6	8.2	8.7	9.2	8.8	9.0
30	8.6	7.6	8.0	9.5	8.2	8.7	9.7	8.3	8.8	9.3	9.0	9.1
31	---	---	---	9.4	8.0	8.6	9.5	8.3	8.8	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	10.3	7.8	8.9

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125550 MANISTEE RIVER NEAR WELLSTON, MI

LOCATION.--Lat 44°15'34", long 85°56'30", in NE1/4 SE1/4 sec.36, T.22 N., R.14 W., Manistee County, Hydrologic Unit 04060103, on right bank 700 ft downstream from Tippy Dam, at public access site, 3.2 mi north of Wellston, and 5.0 mi southeast of Brethren.

DRAINAGE AREA.--1,451 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 640 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good. Flow completely regulated by Tippy Dam 700 ft upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1290	1790	1590	2460	1660	1540	3480	1610	1470	1250	1290	1290
2	1360	1720	1570	2840	1630	1530	3220	1640	1450	1170	1340	1380
3	1360	1750	1540	2770	1670	1500	3010	1630	1420	1150	1310	1310
4	1350	1680	1560	2530	1670	1450	2950	1550	1440	1470	e1910	1260
5	1320	1640	1530	2080	1680	1450	2800	1490	1410	1380	1760	1240
6	1290	1630	1550	2040	1680	1490	2490	1550	1340	1320	1500	1300
7	1350	1600	1960	1910	2050	1700	2440	1550	1250	1290	1400	1370
8	1410	1480	2520	1620	1920	1770	2300	1540	1350	1280	1380	1530
9	1420	1460	2520	1630	1880	1640	2260	1560	1460	1300	1410	1360
10	1390	1470	2320	1650	1820	1570	2220	1560	1430	1260	1390	1280
11	1370	1530	2290	1630	1720	1500	1930	1500	e1350	1250	1330	1200
12	1340	1510	2240	1870	1650	1600	1790	1460	e1360	1220	1330	1200
13	1290	1470	2180	3090	1600	1610	1660	1500	e1450	1190	1360	1150
14	1310	1470	1860	3100	1750	1480	1630	1510	1440	1230	1350	1310
15	1400	1410	1660	2700	1760	1440	1630	1560	1380	1300	1310	1340
16	1550	1400	1660	1750	1650	1490	1630	1560	1420	1310	1290	1200
17	1590	1470	1680	1520	1640	1480	1590	1580	1410	1330	1310	1160
18	1510	1490	1620	1800	1680	1470	1580	1530	1380	1300	1400	1170
19	1460	1480	1550	1640	1580	1460	1560	1590	1360	1300	2060	1200
20	1440	1500	1270	1570	1600	1450	1580	1580	1360	1170	1850	1130
21	1420	1470	1220	1630	1550	1480	1600	1600	1360	1240	1660	1120
22	1460	1440	1320	1600	1550	1470	1560	1640	1330	1280	e1670	1280
23	1680	1450	1460	1520	1550	1420	1580	1640	1240	1270	e1740	1310
24	1710	1430	1520	1520	1510	1470	1600	1560	1230	1450	e1720	1180
25	1530	1420	1450	1570	1520	1460	1580	1510	1270	1440	1510	1250
26	1510	1420	1340	1580	1530	1510	1660	1530	1300	1840	1440	1770
27	1560	1500	1380	1670	1500	1580	1760	1510	1300	1570	1430	2190
28	1450	1620	1440	1600	1520	1640	1710	1480	1280	1380	1360	1970
29	2130	1700	1450	1510	---	1830	1630	1450	1270	1360	1240	2060
30	1930	1640	1690	1550	---	2260	1640	1460	1270	1370	1210	1870
31	1930	---	2270	1610	---	3080	---	1470	---	1380	1280	---
TOTAL	46110	46040	53210	59560	46520	49820	60070	47900	40780	41050	45540	41380
MEAN	1487	1535	1716	1921	1661	1607	2002	1545	1359	1324	1469	1379
MAX	2130	1790	2520	3100	2050	3080	3480	1640	1470	1840	2060	2190
MIN	1290	1400	1220	1510	1500	1420	1560	1450	1230	1150	1210	1120
CFSM	1.03	1.06	1.18	1.32	1.15	1.11	1.38	1.06	0.94	0.91	1.01	0.95
IN.	1.18	1.18	1.36	1.53	1.19	1.28	1.54	1.23	1.05	1.05	1.17	1.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

MEAN	1487	1589	1568	1565	1620	1817	2084	1851	1571	1402	1370	1337
MAX	1645	2039	1722	1921	1856	2553	2512	2530	1778	1675	1469	1409
(WY)	2002	2004	1997	2005	1997	2004	1997	2004	2004	1999	2005	1997
MIN	1316	1405	1361	1288	1349	1528	1508	1504	1359	1324	1287	1268
(WY)	2001	2003	2001	2003	2003	2003	2000	1999	2005	2005	2001	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	648370		577980			
ANNUAL MEAN	1772		1584		1604	
HIGHEST ANNUAL MEAN					1810	2004
LOWEST ANNUAL MEAN					1429	2003
HIGHEST DAILY MEAN	3860	Mar 7	3480	Apr 1	4240	Apr 2 1998
LOWEST DAILY MEAN	1210	Jan 16	1120	Sep 21	1060	Aug 9 2001
ANNUAL SEVEN-DAY MINIMUM	1270	Sep 21	1180	Sep 16	1180	Jan 18 2003
MAXIMUM PEAK FLOW			3950	Apr 1	6130	Mar 31 1998
MAXIMUM PEAK STAGE			9.96	Apr 1	10.91	Mar 31 1998
INSTANTANEOUS LOW FLOW			662	Apr 20	83	Mar 31 1998
ANNUAL RUNOFF (CFSM)	1.22		1.09		1.11	
ANNUAL RUNOFF (INCHES)	16.62		14.82		15.02	
10 PERCENT EXCEEDS	2510		1930		2070	
50 PERCENT EXCEEDS	1570		1510		1520	
90 PERCENT EXCEEDS	1340		1280		1280	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125550 MANISTEE RIVER NEAR WELLSTON, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1996 to current year.
DISSOLVED OXYGEN: October 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Oct. 21-28, Dec. 25 to Jan. 7, Jan. 20-25, Apr. 17-23 rated good; Oct. 29 to Nov. 9, Jan. 8-11, Jan. 26 to Feb. 1, Apr. 24 to May 3 rated fair; and Oct. 1-6, Feb. 2-9, May 4-13 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 24.0°C, Aug. 9, 10, 2001, Aug. 1, 2002; minimum, 0.0°C, on several days during winter periods.
DISSOLVED OXYGEN: Maximum, 16.0 mg/L, Mar. 11, 12, 1997; minimum, 5.7 mg/L, July 11, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.5°C, July 16, Aug. 3; minimum, 0.5°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 13.5 mg/L, Mar. 21-23; minimum, 5.7 mg/L, July 11.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	16.5	17.0	10.5	10.5	10.5	5.0	5.0	5.0	1.0	1.0	1.0
2	17.0	16.0	16.0	10.5	10.5	10.5	5.0	4.5	4.5	1.5	1.0	1.5
3	16.0	15.5	16.0	10.5	10.0	10.5	4.5	4.5	4.5	1.5	1.5	1.5
4	15.5	15.0	15.5	10.0	10.0	10.0	4.5	4.0	4.0	1.5	1.5	1.5
5	15.0	14.5	15.0	10.0	9.5	9.5	4.0	4.0	4.0	1.5	1.0	1.5
6	15.0	14.5	14.5	9.5	9.0	9.5	4.0	4.0	4.0	1.5	1.0	1.0
7	15.0	14.5	14.5	9.0	9.0	9.0	4.0	3.5	4.0	1.0	1.0	1.0
8	14.5	14.0	14.5	9.0	8.5	8.5	4.0	3.5	3.5	1.0	1.0	1.0
9	14.0	13.5	14.0	8.5	8.0	8.5	3.5	3.5	3.5	1.0	1.0	1.0
10	14.5	14.0	14.0	8.0	8.0	8.0	3.5	3.5	3.5	1.0	1.0	1.0
11	14.0	13.5	14.0	8.0	8.0	8.0	3.5	3.5	3.5	1.0	1.0	1.0
12	14.0	13.5	13.5	8.0	7.5	7.5	3.5	3.5	3.5	1.0	1.0	1.0
13	13.5	13.5	13.5	7.5	7.0	7.5	3.5	3.0	3.0	1.5	1.0	1.5
14	13.5	13.0	13.5	7.0	7.0	7.0	3.0	3.0	3.0	1.5	1.5	1.5
15	13.0	12.5	13.0	7.0	7.0	7.0	3.0	2.5	2.5	1.5	1.0	1.5
16	12.5	12.0	12.5	7.0	7.0	7.0	2.5	2.5	2.5	1.5	1.0	1.0
17	12.0	12.0	12.0	7.0	6.5	7.0	2.5	2.0	2.0	1.0	0.5	1.0
18	12.0	11.5	12.0	7.0	6.5	6.5	2.0	2.0	2.0	0.5	0.5	0.5
19	11.5	11.5	11.5	6.5	6.5	6.5	2.0	1.5	2.0	0.5	0.5	0.5
20	11.5	11.5	11.5	6.5	6.5	6.5	2.0	1.5	1.5	0.5	0.5	0.5
21	11.5	11.0	11.5	6.5	6.5	6.5	1.5	1.5	1.5	0.5	0.5	0.5
22	11.5	11.0	11.0	6.5	6.5	6.5	1.5	1.5	1.5	0.5	0.5	0.5
23	11.0	11.0	11.0	6.5	6.5	6.5	1.5	1.5	1.5	0.5	0.5	0.5
24	11.0	11.0	11.0	6.5	6.5	6.5	1.5	1.0	1.0	0.5	0.5	0.5
25	11.0	11.0	11.0	6.5	6.0	6.0	1.0	1.0	1.0	0.5	0.5	0.5
26	11.0	11.0	11.0	6.0	6.0	6.0	1.0	1.0	1.0	0.5	0.5	0.5
27	11.0	10.5	11.0	6.0	6.0	6.0	1.0	1.0	1.0	0.5	0.5	0.5
28	11.0	10.5	11.0	6.0	5.5	5.5	1.0	1.0	1.0	0.5	0.5	0.5
29	11.0	11.0	11.0	5.5	5.0	5.5	1.0	0.5	1.0	1.0	0.5	0.5
30	11.0	10.5	10.5	5.0	5.0	5.0	1.0	0.5	0.5	0.5	0.5	0.5
31	10.5	10.5	10.5	---	---	---	1.0	0.5	1.0	0.5	0.5	0.5
MONTH	17.0	10.5	12.9	10.5	5.0	7.5	5.0	0.5	2.5	1.5	0.5	0.9

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125550 MANISTEE RIVER NEAR WELLSTON, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.5	0.5	0.5	2.0	1.5	2.0	4.0	3.5	4.0	10.0	10.0	10.0
2	1.0	0.5	0.5	2.0	1.5	1.5	4.5	4.0	4.0	10.0	10.0	10.0
3	1.0	0.5	1.0	1.5	1.5	1.5	4.5	4.0	4.0	10.0	10.0	10.0
4	1.0	1.0	1.0	1.5	1.5	1.5	4.5	4.0	4.5	10.0	9.5	10.0
5	1.5	1.0	1.0	1.5	1.5	1.5	5.5	4.5	5.0	10.5	10.0	10.0
6	1.5	1.0	1.5	1.5	1.5	1.5	6.0	5.5	5.5	11.0	10.0	10.5
7	1.5	1.5	1.5	1.5	1.5	1.5	7.0	5.5	6.0	11.5	10.5	11.0
8	1.5	1.5	1.5	2.0	1.5	2.0	7.5	6.0	6.5	12.0	11.0	11.5
9	1.5	1.5	1.5	2.0	2.0	2.0	8.0	7.0	7.5	12.0	11.5	11.5
10	1.5	1.5	1.5	2.0	2.0	2.0	9.5	7.5	8.5	12.5	11.5	12.0
11	1.5	1.5	1.5	2.0	2.0	2.0	9.0	8.5	9.0	13.0	12.0	12.5
12	1.5	1.0	1.5	2.0	1.5	2.0	9.0	8.5	8.5	13.0	12.0	12.5
13	1.5	1.0	1.0	1.5	1.5	1.5	9.5	8.0	8.5	12.5	12.0	12.5
14	1.5	1.0	1.0	1.5	1.5	1.5	10.0	8.5	9.0	12.0	11.5	11.5
15	1.5	1.0	1.5	1.5	1.5	1.5	10.0	9.0	9.5	11.5	11.0	11.0
16	1.5	1.5	1.5	1.5	1.5	1.5	9.5	9.0	9.5	11.5	11.0	11.0
17	1.5	1.5	1.5	1.5	1.5	1.5	11.0	9.5	10.0	11.5	11.0	11.5
18	2.0	1.5	1.5	1.5	1.5	1.5	11.0	10.0	10.5	12.5	11.5	12.0
19	2.0	1.5	1.5	1.5	1.5	1.5	12.0	10.5	11.5	12.5	12.5	12.5
20	1.5	1.5	1.5	1.5	1.5	1.5	12.0	11.5	12.0	13.0	12.0	12.5
21	1.5	1.5	1.5	2.0	1.5	2.0	12.5	11.5	12.0	12.5	12.0	12.5
22	1.5	1.5	1.5	2.0	2.0	2.0	12.5	11.5	12.0	13.5	12.0	13.0
23	1.5	1.5	1.5	2.0	2.0	2.0	11.5	10.0	10.5	13.5	13.0	13.5
24	1.5	1.5	1.5	2.5	2.0	2.0	10.0	9.5	10.0	14.5	13.0	13.5
25	1.5	1.5	1.5	2.5	2.5	2.5	10.5	9.5	10.0	14.5	13.5	14.0
26	2.0	1.5	1.5	2.5	2.5	2.5	10.5	10.0	10.0	14.5	13.5	14.0
27	2.0	1.5	2.0	3.0	2.5	3.0	10.0	10.0	10.0	14.5	13.5	14.0
28	2.0	2.0	2.0	3.5	3.0	3.0	10.0	10.0	10.0	14.5	14.0	14.0
29	—	—	—	3.5	3.0	3.5	10.5	10.0	10.0	15.0	14.0	14.5
30	—	—	—	3.5	3.5	3.5	10.5	10.0	10.0	15.0	14.5	15.0
31	—	—	—	3.5	3.5	3.5	—	—	—	16.0	14.5	15.5
MONTH	2.0	0.5	1.4	3.5	1.5	2.0	12.5	3.5	8.6	16.0	9.5	12.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	15.0	15.5	22.0	20.5	21.0	22.5	21.5	22.0	20.5	20.0	20.0
2	17.0	15.5	16.5	22.0	21.5	21.5	22.5	22.0	22.5	20.0	19.5	20.0
3	17.0	16.5	16.5	21.5	21.5	21.5	23.5	22.5	23.0	20.0	19.5	20.0
4	17.0	16.5	17.0	21.5	21.0	21.5	—	—	—	20.5	19.5	20.0
5	18.0	17.0	17.0	21.5	21.0	21.0	23.0	22.5	22.5	20.5	20.0	20.0
6	18.0	16.0	16.5	21.5	21.0	21.5	23.0	22.5	23.0	20.5	20.0	20.0
7	18.5	17.0	17.5	21.5	21.0	21.5	23.0	22.5	22.5	21.0	19.5	20.0
8	19.0	18.0	18.5	21.5	21.0	21.0	23.0	22.5	22.5	20.0	20.0	20.0
9	19.0	18.5	18.5	22.0	21.0	21.5	23.0	22.5	22.5	20.5	19.5	20.0
10	19.5	18.5	19.5	22.0	21.5	21.5	23.0	22.0	22.5	20.0	20.0	20.0
11	—	—	—	22.5	21.5	22.0	23.0	22.5	22.5	20.0	20.0	20.0
12	—	—	—	22.5	22.0	22.0	23.0	22.0	22.5	20.5	20.0	20.0
13	—	—	—	22.5	22.0	22.0	22.0	21.5	22.0	20.5	19.5	20.0
14	21.0	20.0	20.5	23.0	22.0	22.5	22.0	21.5	22.0	20.0	19.0	19.5
15	20.5	19.5	20.0	23.0	22.5	22.5	22.0	21.5	22.0	20.0	19.5	20.0
16	20.0	19.0	19.5	23.5	22.5	23.0	22.0	21.5	21.5	20.0	19.5	19.5
17	19.5	19.5	19.5	23.0	23.0	23.0	22.0	21.5	22.0	19.5	19.0	19.5
18	19.5	19.0	19.5	23.0	22.0	23.0	22.0	22.0	22.0	19.5	19.0	19.0
19	19.5	19.0	19.0	23.0	22.5	23.0	22.0	21.0	21.5	19.5	18.5	19.0
20	19.5	19.0	19.5	23.0	23.0	23.0	21.5	20.5	21.0	19.0	18.5	18.5
21	20.0	19.0	19.5	23.0	22.5	23.0	21.0	20.5	20.5	19.0	18.5	19.0
22	20.0	19.0	19.5	23.0	22.5	23.0	—	—	—	19.0	18.5	18.5
23	20.5	20.0	20.0	23.0	22.5	23.0	—	—	—	19.0	18.0	18.5
24	20.5	20.0	20.5	23.0	22.5	23.0	—	—	—	18.5	18.5	18.5
25	21.0	20.5	20.5	23.0	22.5	23.0	20.5	20.5	20.5	18.5	18.0	18.0
26	21.5	21.0	21.0	23.0	22.0	22.5	21.0	20.5	20.5	18.0	17.5	17.5
27	21.5	21.0	21.0	22.5	22.0	22.0	20.5	20.0	20.0	18.0	17.5	17.5
28	21.5	21.0	21.5	22.5	22.0	22.0	20.5	20.0	20.0	17.5	17.0	17.5
29	22.0	21.5	21.5	22.5	22.0	22.0	20.5	20.0	20.5	17.0	16.5	16.5
30	22.5	21.5	22.0	22.5	21.5	22.0	21.0	20.5	20.5	16.5	16.5	16.5
31	—	—	—	22.5	22.0	22.0	20.5	20.0	20.0	—	—	—
MONTH	—	—	—	23.5	20.5	22.2	—	—	—	21.0	16.5	19.1

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125550 MANISTEE RIVER NEAR WELLSTON, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.7	7.8	8.1	9.8	9.7	9.7	11.9	11.7	11.8	12.7	12.5	12.6
2	8.5	7.6	7.9	9.8	9.3	9.7	11.9	11.8	11.9	12.5	12.3	12.4
3	8.5	7.6	7.9	9.7	9.5	9.6	12.1	11.9	12.0	12.4	12.3	12.4
4	8.4	7.7	7.9	9.6	9.4	9.5	12.1	11.9	12.0	12.5	12.4	12.5
5	8.8	7.6	8.1	9.7	9.6	9.6	12.3	12.1	12.2	12.5	12.4	12.5
6	9.2	7.8	8.7	9.8	9.6	9.7	12.2	12.1	12.2	12.5	12.4	12.4
7	9.3	8.9	9.1	9.8	9.7	9.8	12.2	12.1	12.1	12.6	12.4	12.5
8	9.2	8.7	9.0	10.1	9.8	9.9	12.3	12.1	12.2	12.5	12.4	12.4
9	9.3	8.8	9.0	10.9	10.0	10.5	12.3	12.2	12.2	12.4	12.2	12.3
10	9.7	9.2	9.5	11.0	10.9	11.0	12.2	12.2	12.2	12.4	12.2	12.3
11	9.8	9.5	9.6	11.2	11.0	11.1	12.2	12.0	12.1	12.4	12.2	12.3
12	9.8	9.4	9.6	11.3	11.1	11.2	12.0	12.0	12.0	12.2	12.1	12.2
13	9.7	9.3	9.5	11.5	11.2	11.4	12.3	12.0	12.2	12.2	12.0	12.1
14	9.6	9.3	9.4	11.7	11.4	11.6	12.4	12.2	12.3	12.1	12.0	12.0
15	9.5	9.2	9.4	11.8	11.5	11.6	12.4	12.3	12.3	12.4	12.0	12.2
16	9.4	9.2	9.3	11.7	11.5	11.6	12.5	12.3	12.4	12.5	12.3	12.4
17	9.6	9.3	9.4	11.7	11.5	11.6	12.6	12.4	12.5	12.6	12.3	12.4
18	9.8	9.5	9.6	11.8	11.6	11.7	12.6	12.4	12.5	12.5	12.2	12.4
19	9.8	9.6	9.7	11.9	11.6	11.7	12.7	12.5	12.6	12.4	12.2	12.3
20	9.9	9.8	9.8	11.8	11.7	11.7	12.8	12.6	12.7	12.4	12.3	12.3
21	10.0	9.8	9.9	11.9	11.8	11.8	12.8	12.6	12.8	12.4	12.2	12.3
22	10.0	9.8	9.9	11.9	11.8	11.8	12.9	12.8	12.9	12.3	12.2	12.3
23	9.9	9.8	9.8	11.8	11.8	11.8	12.9	12.8	12.8	12.6	12.2	12.4
24	10.0	9.8	9.9	11.9	11.8	11.8	12.9	12.8	12.8	12.4	12.3	12.4
25	10.1	9.8	9.9	11.9	11.6	11.8	12.9	12.7	12.8	12.4	12.3	12.3
26	10.0	9.9	9.9	11.9	11.7	11.8	12.9	12.8	12.8	12.6	12.3	12.4
27	10.0	9.9	9.9	11.8	10.9	11.1	12.9	12.7	12.8	12.7	12.3	12.5
28	10.0	9.9	9.9	11.4	10.9	11.2	12.8	12.6	12.7	12.8	12.4	12.6
29	9.9	9.6	9.8	11.5	11.3	11.4	12.7	12.5	12.6	12.9	12.7	12.8
30	9.7	9.4	9.6	11.8	11.4	11.6	12.6	12.5	12.5	12.8	12.7	12.7
31	9.8	9.5	9.7	---	---	---	12.7	12.4	12.6	12.9	12.7	12.8
MONTH	10.1	7.6	9.3	11.9	9.3	11.0	12.9	11.7	12.4	12.9	12.0	12.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.8	12.7	12.7	13.2	13.0	13.1	12.8	12.6	12.7	10.7	10.2	10.5
2	13.0	12.7	12.8	13.3	13.0	13.2	12.6	12.4	12.6	10.9	10.3	10.5
3	13.1	12.9	13.0	13.3	13.0	13.1	12.5	12.3	12.4	11.0	10.3	10.5
4	13.1	13.0	13.1	13.2	13.0	13.1	12.4	12.2	12.3	11.1	10.3	10.6
5	13.2	13.0	13.1	13.3	12.9	13.1	12.3	12.0	12.2	11.2	10.1	10.5
6	13.2	13.0	13.0	13.2	12.8	13.0	12.1	11.9	12.0	10.8	9.9	10.2
7	13.0	12.9	13.0	13.1	12.8	12.9	12.8	11.9	12.1	10.9	9.7	10.1
8	13.1	12.9	13.1	13.1	12.7	12.9	12.1	11.7	12.0	11.1	9.5	10.0
9	13.3	13.0	13.1	13.1	12.6	12.8	11.8	11.5	11.7	10.2	9.2	9.6
10	13.3	13.1	13.1	13.0	12.6	12.7	11.6	11.2	11.4	10.5	9.3	9.7
11	13.2	13.1	13.1	13.1	12.7	12.8	11.3	10.4	11.1	10.6	9.4	9.6
12	13.3	13.0	13.2	13.2	12.8	12.9	11.3	11.0	11.1	10.6	9.5	9.8
13	13.4	13.1	13.2	13.3	12.9	13.1	11.3	11.0	11.1	10.0	9.3	9.6
14	13.1	13.1	13.1	13.3	13.0	13.1	11.3	10.9	11.1	9.5	9.2	9.3
15	13.2	13.0	13.1	13.3	13.0	13.1	11.2	10.8	11.0	9.4	9.2	9.3
16	13.2	13.0	13.1	13.2	12.9	13.1	11.2	10.7	10.9	---	---	---
17	13.3	13.0	13.1	13.3	13.0	13.1	11.1	10.6	10.8	---	---	---
18	13.2	12.9	13.0	13.4	13.1	13.2	11.0	10.4	10.7	9.0	8.5	8.8
19	13.3	12.9	13.1	13.3	13.1	13.2	10.9	10.3	10.5	8.8	8.4	8.6
20	13.2	13.0	13.1	13.4	13.2	13.3	11.2	10.1	10.7	8.7	8.3	8.6
21	13.3	13.0	13.2	13.5	13.2	13.3	11.2	10.9	11.1	8.8	8.1	8.5
22	13.4	13.2	13.3	13.5	13.2	13.3	11.0	10.8	10.8	9.2	8.1	8.4
23	13.4	13.2	13.3	13.5	13.0	13.3	11.4	11.0	11.2	8.4	7.9	8.2
24	13.4	13.2	13.3	13.4	13.1	13.2	11.7	11.2	11.4	9.0	7.6	8.0
25	13.3	13.1	13.2	13.4	13.1	13.2	11.7	11.0	11.4	8.7	7.5	8.0
26	13.4	13.1	13.2	13.3	13.1	13.2	11.6	11.0	11.2	8.4	7.3	8.0
27	13.3	13.1	13.2	13.3	12.8	13.1	11.7	11.2	11.5	8.1	7.0	7.6
28	13.2	13.0	13.0	13.3	12.8	13.0	12.0	11.6	11.8	8.1	7.1	7.5
29	---	---	---	13.1	12.7	12.9	11.8	10.4	11.2	8.4	6.9	7.6
30	---	---	---	12.9	12.4	12.7	10.8	10.3	10.5	7.9	6.8	7.4
31	---	---	---	12.6	12.3	12.5	---	---	---	8.5	6.9	7.3
MONTH	13.4	12.7	13.1	13.5	12.3	13.0	12.8	10.1	11.4	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04125550 MANISTEE RIVER NEAR WELLSTON, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	6.5	7.2	7.3	6.3	6.8	6.9	6.2	6.5	8.0	7.2	7.4
2	7.6	6.4	6.9	7.8	6.3	6.8	7.2	6.2	6.7	8.4	7.2	7.4
3	7.4	6.5	6.9	7.3	6.3	6.7	7.1	6.3	6.7	8.2	7.2	7.4
4	7.6	6.6	7.1	7.0	6.3	6.5	---	---	---	8.6	7.1	7.5
5	7.8	6.9	7.3	7.3	6.3	6.7	8.2	7.4	8.0	8.6	7.2	7.6
6	7.8	6.9	7.3	7.8	6.4	6.9	8.2	7.4	7.9	8.2	7.2	7.5
7	7.7	6.8	7.3	8.0	6.4	6.9	8.1	7.7	7.9	8.2	7.3	7.6
8	7.9	6.8	7.4	8.1	6.3	6.9	8.0	7.4	7.8	8.2	7.3	7.6
9	7.9	7.1	7.5	8.4	6.2	6.8	8.0	7.4	7.6	8.3	7.3	7.7
10	8.0	6.6	7.4	8.4	5.9	6.7	7.9	6.9	7.5	8.3	7.6	7.8
11	---	---	---	8.1	5.7	6.6	8.1	7.4	7.9	8.3	7.6	7.8
12	---	---	---	7.1	5.9	6.2	7.9	7.5	7.7	8.3	7.6	7.8
13	---	---	---	7.2	5.9	6.4	8.0	7.2	7.7	8.0	7.4	7.7
14	8.0	7.7	7.9	8.3	5.9	7.4	7.9	7.2	7.7	8.1	7.4	7.7
15	7.7	7.1	7.6	8.3	7.6	8.1	8.1	7.3	7.7	8.6	7.8	8.1
16	7.6	7.3	7.5	8.2	7.4	7.9	8.1	6.7	7.3	8.3	7.9	8.1
17	7.6	7.3	7.4	7.8	7.2	7.5	8.1	6.8	7.4	8.4	7.8	8.1
18	7.5	7.3	7.4	8.1	7.2	7.4	7.6	6.6	7.4	8.5	7.8	8.0
19	7.6	6.6	7.2	7.9	7.0	7.5	7.5	7.1	7.3	8.1	7.8	7.9
20	7.0	6.3	6.7	7.3	6.8	7.0	7.8	7.1	7.4	8.2	7.1	7.6
21	7.5	6.3	6.8	7.6	6.7	7.1	8.0	7.1	7.3	8.2	7.5	7.9
22	7.7	6.4	7.1	7.2	6.6	6.9	---	---	---	8.0	7.5	7.7
23	7.6	6.0	6.7	7.3	6.7	7.1	---	---	---	8.3	6.8	7.7
24	7.7	5.8	6.5	7.2	6.8	7.0	---	---	---	7.4	6.6	7.1
25	7.2	6.0	6.5	7.3	6.8	7.1	8.2	7.2	7.6	7.5	6.5	7.0
26	7.5	6.1	6.6	7.2	6.8	7.1	8.5	7.4	7.6	7.8	6.5	7.0
27	7.6	6.0	6.7	7.3	6.7	7.0	7.9	7.3	7.5	7.7	6.8	7.1
28	7.5	6.1	6.6	7.2	6.5	6.8	8.6	7.4	7.7	7.9	7.0	7.5
29	7.4	6.1	6.7	6.9	6.4	6.7	8.9	7.4	7.7	7.5	6.9	7.3
30	7.6	6.3	6.7	7.1	6.4	6.7	8.8	7.4	7.7	7.6	7.0	7.4
31	---	---	---	6.9	6.3	6.6	8.7	7.3	7.6	---	---	---
MONTH	---	---	---	8.4	5.7	7.0	---	---	---	8.6	6.5	7.6

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126740 PLATTE RIVER AT HONOR, MI

LOCATION.--Lat 44°40'05", long 86°02'05", in SW1/4 NW1/4 sec.8, T.26 N., R.14 W., Benzie County, Hydrologic Unit 04060104, on right bank 20 ft downstream from bridge on U.S. Highway 31, 1.0 mi west of Honor.

DRAINAGE AREA.--118 mi^2.

PERIOD OF RECORD.--April 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 589.73 ft above sea level (Michigan Department of Transportation bench mark).

REMARKS.--Records good. Some diversion for fish hatchery 6 mi upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	133	130	146	132	133	161	125	112	106	101	101
2	131	144	128	159	131	133	149	125	112	106	100	99
3	122	134	130	148	132	131	146	125	112	105	99	99
4	123	147	137	140	132	131	143	123	112	126	111	99
5	121	144	135	136	134	131	142	122	112	117	105	99
6	120	136	131	136	139	132	142	122	111	112	102	99
7	118	133	174	135	165	139	138	122	111	109	101	160
8	124	129	162	134	150	135	135	121	111	107	100	142
9	124	128	142	134	140	132	133	122	111	106	99	115
10	121	127	140	134	137	132	131	123	109	105	99	111
11	120	134	138	133	136	131	130	121	110	104	100	109
12	120	127	152	141	136	130	129	120	110	104	101	108
13	120	125	157	202	135	128	127	122	111	104	101	118
14	120	125	146	148	145	127	126	126	112	103	100	128
15	124	125	143	144	146	127	125	122	112	102	98	114
16	151	125	140	141	141	126	124	119	114	102	97	112
17	157	127	138	138	137	127	123	118	113	101	97	110
18	135	127	137	e135	136	125	123	117	112	101	99	109
19	130	126	137	e135	134	127	122	126	112	99	214	109
20	127	132	e136	e135	133	127	144	133	110	99	140	109
21	126	129	e136	e135	135	127	130	122	109	99	121	107
22	125	126	136	e135	133	128	126	122	108	99	113	112
23	176	126	136	e135	132	128	126	123	108	98	111	111
24	172	124	136	137	132	127	130	120	110	106	108	108
25	140	123	136	136	133	126	133	117	114	104	105	115
26	133	123	135	136	131	126	130	117	116	132	104	119
27	133	143	e134	134	131	128	129	117	115	112	113	111
28	130	155	134	e133	132	133	128	116	110	107	106	119
29	189	137	132	e133	---	141	126	115	109	105	104	130
30	144	132	133	132	---	158	125	114	108	102	103	113
31	138	---	173	132	---	189	---	113	---	102	101	---
TOTAL	4134	3946	4354	4332	3830	4115	3976	3750	3336	3284	3353	3395
MEAN	133	132	140	140	137	133	133	121	111	106	108	113
MAX	189	155	174	202	165	189	161	133	116	132	214	160
MIN	118	123	128	132	131	125	122	113	108	98	97	99
CFSM	1.13	1.11	1.19	1.18	1.16	1.12	1.12	1.03	0.94	0.90	0.92	0.96
IN.	1.30	1.24	1.37	1.37	1.21	1.30	1.25	1.18	1.05	1.04	1.06	1.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2005, BY WATER YEAR (WY)

MEAN	123	125	124	124	124	133	140	133	128	120	118	122
MAX	148	150	151	147	144	164	169	155	165	152	136	158
(WY)	1992	1993	1992	1992	1992	1992	1992	1997	1993	1993	2002	1993
MIN	93.7	96.3	98.3	97.8	102	98.5	96.0	95.6	98.5	93.2	96.2	99.6
(WY)	2001	2000	2001	2001	2001	2001	2000	2000	2000	2000	1998	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1990 - 2005	
ANNUAL TOTAL	49115		45805			
ANNUAL MEAN	134		125		126	
HIGHEST ANNUAL MEAN					147	1993
LOWEST ANNUAL MEAN					101	2000
HIGHEST DAILY MEAN	198	Mar 5	214	Aug 19	386	Oct 25 1991
LOWEST DAILY MEAN	106	Feb 19	97	Aug 16	87	Jul 17 2000
ANNUAL SEVEN-DAY MINIMUM	108	Feb 14	99	Aug 12	88	Jul 14 2000
MAXIMUM PEAK FLOW			374	Aug 19	545	Aug 22 2002
MAXIMUM PEAK STAGE			3.03	Aug 19	4.37	Aug 22 2002
INSTANTANEOUS LOW FLOW			96	(a)	75	Aug 13 2001
ANNUAL RUNOFF (CFSM)	1.14		1.06		1.07	
ANNUAL RUNOFF (INCHES)	15.48		14.44		14.48	
10 PERCENT EXCEEDS	155		143		151	
50 PERCENT EXCEEDS	133		126		125	
90 PERCENT EXCEEDS	113		104		100	

(a) Part of each day Aug. 16-18.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

445331085564501 GLEN LAKE NEAR GLEN ARBOR, MI

LOCATION.--Lat 44°51'31", long 85°59'46", in SW1/4 NW1/4 sec.3, T.28 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, at bridge on State Highway 22, 2.6 mi south of Glen Arbor.

DRAINAGE AREA.--30.8 mi^2.

PERIOD OF RECORD.--June 1942 to current year.

GAGE.--Nonrecording gage. Datum of gage is 596.00 ft above sea level.

REMARKS.--Staff gage read by observer. There is one small inlet on the south side near Burdickville. The outlet is the Crystal River. Lake elevation controlled by dam. Established legal level 596.75 ft above sea level.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 1.90 ft, June 23, 1943; minimum observed, 0.34 ft, Nov. 8, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 0.75 ft, May 24, 27, 28; minimum observed, 0.37 ft, Oct. 12.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.45	0.64	0.51	0.53	---	---	0.48	0.58	0.72	0.60	0.50	0.46
2	0.49	0.67	0.50	0.55	---	---	0.48	0.58	0.72	0.59	0.50	0.45
3	0.45	0.65	0.50	0.54	---	---	0.48	0.59	0.72	0.57	0.49	0.42
4	0.44	0.68	0.52	0.53	---	---	0.47	0.60	0.72	0.61	0.49	0.41
5	0.40	0.66	0.51	0.52	---	---	0.47	0.59	0.69	0.60	0.50	0.41
6	0.38	0.63	---	---	0.46	---	0.47	0.60	0.71	0.60	0.48	0.40
7	0.38	0.61	0.53	---	0.50	---	0.45	0.59	0.72	0.60	0.48	0.40
8	0.39	0.57	0.58	---	---	---	0.45	0.58	0.74	0.60	0.46	0.46
9	0.41	0.56	0.54	---	---	---	0.44	0.60	0.74	0.59	0.45	0.45
10	0.41	0.54	0.55	---	---	---	0.45	0.62	0.72	0.57	0.45	0.45
11	0.39	0.58	0.54	---	---	---	0.45	0.61	0.73	0.57	0.44	0.44
12	0.37	0.58	0.56	---	---	---	0.43	0.61	0.72	0.57	0.46	0.44
13	0.39	0.55	0.60	0.55	---	---	0.42	0.60	0.73	0.58	0.47	0.44
14	0.40	0.54	0.60	---	---	---	0.42	0.60	0.72	0.57	0.45	0.50
15	0.39	0.54	0.59	---	---	---	0.43	0.63	0.72	0.56	0.45	0.50
16	0.45	0.53	0.59	---	---	---	0.43	0.65	0.70	0.55	0.45	0.50
17	0.45	0.54	0.56	---	---	---	0.44	0.65	0.69	0.55	0.43	0.48
18	0.44	0.55	0.55	---	---	---	0.44	0.66	0.67	0.54	0.41	---
19	0.44	0.54	---	---	---	---	0.45	0.65	0.67	0.52	0.50	0.46
20	0.44	0.53	---	0.55	---	---	0.51	0.71	0.67	0.50	0.53	0.48
21	0.45	0.54	---	---	---	---	0.51	0.73	0.68	0.50	0.53	0.47
22	---	0.53	---	---	0.50	0.47	0.53	0.74	0.67	0.48	0.51	0.47
23	0.55	0.50	---	---	0.49	0.47	0.53	0.74	0.64	0.47	0.50	0.47
24	0.59	0.52	---	---	0.49	0.45	0.52	0.75	0.65	0.47	0.48	0.45
25	0.59	0.50	---	---	0.50	0.44	0.55	0.74	0.65	0.49	0.48	0.44
26	0.58	0.48	---	---	---	0.44	0.54	0.73	0.65	0.54	0.48	0.52
27	0.62	---	---	---	---	0.44	0.55	0.75	0.66	0.54	0.50	0.48
28	0.60	0.52	---	---	---	0.44	0.57	0.75	0.66	0.51	0.49	0.48
29	0.64	0.54	---	---	---	0.43	0.56	0.74	0.64	0.53	0.48	0.50
30	0.62	0.53	---	---	---	0.41	0.58	0.73	0.62	0.51	0.48	0.48
31	0.66	---	0.52	---	---	0.45	---	0.73	---	0.51	0.47	---
MEAN	---	---	---	---	---	---	0.48	0.66	0.69	0.55	0.48	---
MAX	---	---	---	---	---	---	0.58	0.75	0.74	0.61	0.53	---
MIN	---	---	---	---	---	---	0.42	0.58	0.62	0.47	0.41	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126801 CRYSTAL RIVER BELOW DAM NEAR GLEN ARBOR, MI

LOCATION.--Lat 44°53'56", long 85°57'23", in SW1/4 NE1/4 sec.24, T.29 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, downstream from Glen Lake Dam, 1.6 mi east of Glen Arbor.

DRAINAGE AREA.-- 44.5 mi^2.

PERIOD OF RECORD.--Water years 2004 to current year.

REMARKS.--Cross-sectional samples were collected by wading 200 ft downstream from dam.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT 2004											
06...	1015	29	.021	.013	9.8	8.2	251	12.8	31.7	13.7	.66

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
OCT 2004											
06...	3.34	121	145	1	2.67	.5	5.75	10.7	154	.19	.19

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
OCT 2004											
06...	<.04	<.06	<.008	.03	<.006	.005	.006	.4	<.1	.4	2.2

Date	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)
OCT 2004											
06...	M	<.20	<2	23	<.06	<.04	<.8	.121	.6	<6	<.08

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126801 CRYSTAL RIVER BELOW DAM NEAR GLEN ARBOR, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	1,4-Dichlorobenzene water, fltrd, ug/L (34572)	1-Methylnaphthalene, water, fltrd, ug/L (62054)	2,6-Dimethylnaphthalene, water, fltrd, ug/L (62055)	2-Methylnaphthalene, water, fltrd, ug/L (62056)	3-beta-Coprostanol, water, fltrd, ug/L (62057)
OCT 2004 06...	.3	.4	.26	<3	<.2	1.2	<.5	<.5	<.5	<.5	M

Date	3-Methyl-1H-indole, water, fltrd, ug/L (62058)	3-tert-Butyl-4-hydroxyanisole wat flt ug/L (62059)	4-Cumylphenol, water, fltrd, ug/L (62060)	4-Octylphenol, water, fltrd, ug/L (62061)	4-Nonylphenol, water, fltrd, ug/L (62085)	4-tert-Octylphenol, water, fltrd, ug/L (62062)	5-Methyl-1H-benzotriazole, wat flt ug/L (62063)	9,10-Anthraquinone water, fltrd, ug/L (62066)	Acetophenone water, fltrd, ug/L (62064)	AHTN, water, fltrd, ug/L (62065)	Anthracene, water, fltrd, ug/L (34221)
OCT 2004 06...	<1	<5	<1	<1	E2	<1	<2	<.5	<.5	<.5	<.5

Date	Benzo-[a]-pyrene, water, fltrd, ug/L (34248)	Benzophenone water, fltrd, ug/L (62067)	beta-Sitosterol, water, fltrd, ug/L (62068)	beta-Stigmastanol, water, fltrd, ug/L (62086)	Bisphenol A, water, fltrd, ug/L (62069)	Bisphenol A-d3 sur Sch 2033 & 8033, wat flt pct rcv (99583)	Bromacil, water, fltrd, ug/L (04029)	Caffeine, water, fltrd, ug/L (50305)	Caffeine-13C sur Sch 2033 & 8033, wat flt pct rcv (99584)	Camphor water, fltrd, ug/L (62070)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)
OCT 2004 06...	<.5	<.5	M	M	<1	94.3	<.5	<.5	95.6	<.5	<1

Date	Carbazole, water, fltrd, ug/L (62071)	Chlorpyrifos water, fltrd, ug/L (38933)	Cholesterol, water, fltrd, ug/L (62072)	Cotinine, water, fltrd, ug/L (62005)	DecaF-biphenl sur Sch 2033 & 8033, wat flt pct rcv (99585)	DEET, water, fltrd, ug/L (62082)	Diazinon, water, fltrd, ug/L (39572)	Diethoxynonylphenol, water, fltrd, ug/L (62083)	Diethoxyoctylphenol, water, fltrd ug/L (61705)	D-Limonene, water, fltrd, ug/L (62073)	Ethoxyoctylphenol, water, fltrd ug/L (61706)
OCT 2004 06...	<.5	<.5	E1	<1.00	50.1	<.5	<.5	<5	<1	<.5	<1

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126801 CRYSTAL RIVER BELOW DAM NEAR GLEN ARBOR, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Fluoranthene water, fltrd, ug/L (34377)	Fluoranthene -d10, sur Sch 20/8033 wat flt pct rcv (99586)	HHCB, water, fltrd, ug/L (62075)	Indole, water, fltrd, ug/L (62076)	Isoborneol, water, fltrd, ug/L (62077)	Isophorone water, fltrd, ug/L (34409)	Isopropylbenzene water, fltrd, ug/L (62078)	Isoquinoline, water, fltrd, ug/L (62079)	Menthol water, fltrd, ug/L (62080)	Metalaxyl, water, fltrd, ug/L (50359)	Methyl salicylate, water, fltrd, ug/L (62081)
OCT 2004 06...	<.5	101	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5

Date	Metolachlor, water, fltrd, ug/L (39415)	Naphthalene, water, fltrd, ug/L (34443)	p-Cresol, water, fltrd, ug/L (62084)	Pentachlorophenol, water, fltrd, ug/L (34459)	Phenanthrene, water, fltrd, ug/L (34462)	Phenol, water, fltrd, ug/L (34466)	Prometon, water, fltrd, ug/L (04037)	Pyrene, water, fltrd, ug/L (34470)	Tetrachloroethene, water, fltrd, ug/L (34476)	Tribromomethane water, fltrd, ug/L (34288)	Tributyl phosphate, water, fltrd, ug/L (62089)
OCT 2004 06...	<.5	<.5	<1	<2	<.5	.5	<.5	<.5	<.5	<.5	<.5

Date	Triclosan, water, fltrd, ug/L (62090)	Triethyl citrate water, fltrd, ug/L (62091)	Triphenyl phosphate, water, fltrd, ug/L (62092)	Tris(2-butoxyethyl) phosphate, wat flt ug/L (62093)	Tris(2-chloroethyl) phosphate, wat flt ug/L (62087)	Tris(dichloro i-Pr) phosphate, wat flt ug/L (62088)	Xylene, water, unfltrd ug/L (81551)	1,2-Dichloroethane-d4, sur Sch2090 wat unf pct rcv (99832)	14Bromo fluorobenzene surrog. VOC Sch wat unf pct rcv (99834)	Benzene water unfltrd ug/L (34030)	Ethylbenzene water unfltrd ug/L (34371)
OCT 2004 06...	<1	<.5	<.5	<.5	<.5	<.5	.5	114	101	.1	<.1

Date	meta- + para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Toluene water unfltrd ug/L (34010)	Toluene -d8, surrog, Sch2090 wat unf percent recovry (99833)	Uranium natural water, fltrd, ug/L (22703)	Sample volume, wastewater method wat flt mL (99587)
OCT 2004 06...	.4	.1	<.2	.5	102	.30	885

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI

LOCATION.--Lat 44°54'12", long 85°57'44", in SE1/4 NE1/4 sec.23, T.29 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, on right bank at County Highway 675, 1.4 mi northeast of Glen Arbor.

DRAINAGE AREA.--45.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2003 to current year.

REVISED RECORDS.--WDR MI-04-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 582.20 ft above sea level (Michigan Department of Transportation bench mark).

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Some regulation by dam at outlet of Glen Lake. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	59	64	62	e67	66	67	31	37	32	28	27
2	35	59	63	66	65	66	66	31	38	31	27	26
3	34	59	63	66	64	66	65	31	39	30	27	25
4	31	60	66	65	63	e65	65	31	39	32	28	25
5	31	63	63	64	62	63	64	31	39	32	27	25
6	30	66	64	64	61	63	64	31	38	31	27	25
7	29	64	67	65	65	62	63	30	34	30	27	26
8	30	61	71	61	66	65	61	31	36	30	27	27
9	31	61	69	64	65	e65	52	31	38	31	26	27
10	30	61	67	62	e65	e65	44	32	38	32	26	27
11	30	62	66	62	64	66	36	31	39	31	26	e27
12	27	61	71	63	64	65	29	31	39	31	28	e27
13	22	60	73	70	64	e65	28	32	38	31	27	e28
14	22	59	72	e70	66	e65	28	32	38	30	27	e27
15	26	59	73	e67	66	64	28	31	38	30	26	27
16	31	59	70	e67	65	64	28	31	37	30	26	27
17	32	59	68	e67	65	64	28	31	36	30	25	27
18	31	59	68	e67	65	63	28	34	36	30	25	27
19	31	58	e65	e67	64	63	27	38	36	28	30	27
20	31	60	e65	e67	e64	64	30	36	36	28	31	27
21	31	62	e65	e67	64	64	31	38	35	27	30	27
22	31	64	e65	e67	64	63	31	39	34	26	29	27
23	35	63	e65	e67	64	63	28	40	36	26	29	26
24	37	60	e65	e67	64	62	31	39	36	27	28	27
25	40	59	e65	e67	64	62	33	39	35	27	28	27
26	53	59	e65	e67	64	61	33	40	34	30	28	28
27	54	64	e65	e67	e64	61	30	40	34	29	28	28
28	54	67	e65	e67	64	61	28	39	34	28	28	28
29	59	66	65	e67	---	62	29	38	33	29	28	29
30	62	65	64	e67	---	63	30	37	34	28	27	29
31	60	---	64	e67	---	68	---	37	---	28	26	---
TOTAL	1114	1838	2061	2043	1802	1979	1205	1063	1094	915	850	807
MEAN	35.9	61.3	66.5	65.9	64.4	63.8	40.2	34.3	36.5	29.5	27.4	26.9
MAX	62	67	73	70	67	68	67	40	39	32	31	29
MIN	22	58	63	61	61	61	27	30	33	26	25	25
CFSM	0.80	1.36	1.47	1.46	1.43	1.42	0.89	0.76	0.81	0.65	0.61	0.60
IN.	0.92	1.52	1.70	1.69	1.49	1.63	0.99	0.88	0.90	0.75	0.70	0.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2004 - 2005, BY WATER YEAR (WY)

MEAN	45.5	70.5	66.0	64.9	67.1	72.4	52.1	41.1	46.5	30.8	31.2	42.0
MAX	55.2	79.7	66.5	65.9	69.8	81.0	64.1	47.9	56.5	32.1	35.0	57.0
(WY)	2004	2004	2005	2005	2004	2004	2004	2004	2004	2004	2004	2004
MIN	35.9	61.3	65.5	63.9	64.4	63.8	40.2	34.3	36.5	29.5	27.4	26.9
(WY)	2005	2005	2004	2004	2005	2005	2005	2005	2005	2005	2005	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2004 - 2005	
ANNUAL TOTAL	20421		16771			
ANNUAL MEAN	55.8		45.9		52.4	
HIGHEST ANNUAL MEAN					58.9	2004
LOWEST ANNUAL MEAN					45.9	2005
HIGHEST DAILY MEAN	133	Jun 1	73	Dec 13	133	Jun 1 2004
LOWEST DAILY MEAN	22	Oct 13	22	Oct 13	22	Oct 13 2004
ANNUAL SEVEN-DAY MINIMUM	27	Oct 9	26	Aug 31	26	Aug 31 2005
MAXIMUM PEAK FLOW			(a)77	Dec 13	137	May 31 2004
MAXIMUM PEAK STAGE			(b)5.92	(c)	6.64	Jan 8 2004
INSTANTANEOUS LOW FLOW			21	(d)	21	(d)
ANNUAL RUNOFF (CFSM)	1.24		1.02		1.16	
ANNUAL RUNOFF (INCHES)	16.84		13.83		15.79	
10 PERCENT EXCEEDS	78		66		75	
50 PERCENT EXCEEDS	60		38		59	
90 PERCENT EXCEEDS	31		27		28	

(a) Gage height, 5.23 ft.
(b) Backwater from ice.
(c) Date not determined.
(d) Oct. 13, 14, 2004.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2003 to current year.
pH: April 2004 to current year.
WATER TEMPERATURE: December 2003 to current year.
DISSOLVED OXYGEN: April 2004 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval, pH and dissolved oxygen not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except the following periods: Oct. 12-27, Feb. 23 to Mar. 30, Aug. 9-31, and Sept. 21-30 rated good. pH records rated excellent except the following periods: Oct. 31, July 8-13, and Aug. 23-31 rated good. Water temperature records rated good. Dissolved oxygen records rated excellent except the following periods: Oct. 28-31, Apr. 12-18, July 29 to Aug. 6, Sept. 13-19 rated good; Apr. 19-28, Aug. 7-19, Sept. 20-30 rated fair; and Apr. 29 to May 11, Aug. 20-31 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 295 microsiemens, Mar. 2, 3, 2004; minimum, 203 microsiemens, Aug. 25, 2004.
pH: Maximum recorded during period of operation, 8.7 std. units, May 12, 17-20, 2004; minimum recorded, 7.5 std. units, Apr. 1-3, 2005.
WATER TEMPERATURE: Maximum, 29.5°C, July 14, 15, 17, 18, 2005; minimum, -0.5°C, on several days during 2005 water year winter period.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 13.1 mg/L, Apr. 1, 4, 2004, but may have been higher during instrument malfunction Apr. 5-22, 2004; minimum recorded, 6.3 mg/L, July 16, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 290 microsiemens, June 14, but may have been higher during instrument malfunction June 10-13; minimum, 244 microsiemens, Apr. 7, Aug. 19.
pH: Maximum recorded during period of operation, 8.6 std. units, on many days; minimum recorded, 7.5 std. units, Apr. 1-3.
WATER TEMPERATURE: Maximum, 29.5°C, July 14, 15, 17, 18; minimum, -0.5°C, on several days during winter period.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 12.9 mg/L, Apr. 1; minimum recorded, 6.3 mg/L, July 16.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	275	257	267	272	267	270	273	269	271	274	266	267
2	267	257	263	269	266	268	272	269	271	266	263	265
3	269	260	265	270	267	268	273	269	270	267	265	266
4	266	260	263	270	264	267	274	266	271	267	266	267
5	265	260	262	268	265	266	275	270	272	269	267	267
6	266	262	264	269	266	267	274	270	271	270	266	268
7	266	260	264	270	266	268	273	263	268	270	268	269
8	268	261	264	269	265	268	270	267	268	272	268	270
9	270	263	266	269	266	268	273	269	270	271	269	270
10	267	262	265	273	267	270	273	269	271	271	269	270
11	265	261	263	271	266	268	272	269	271	271	269	270
12	265	260	263	270	266	268	271	264	267	270	259	267
13	267	259	263	270	267	268	267	265	266	266	258	263
14	266	261	264	272	267	269	267	265	266	273	266	270
15	265	258	262	273	268	270	268	266	268	276	269	272
16	261	254	257	274	270	272	274	268	270	277	270	274
17	259	256	258	275	271	273	270	267	268	278	269	274
18	261	258	259	276	271	273	270	268	269	278	272	275
19	262	258	260	276	271	273	275	261	268	274	268	270
20	263	259	261	274	270	272	269	267	268	274	270	272
21	263	260	261	276	271	273	272	269	271	274	268	272
22	262	259	261	276	271	272	272	269	270	272	269	270
23	265	246	256	275	272	273	269	265	267	271	269	270
24	262	257	260	273	271	272	270	267	268	273	270	271
25	266	261	264	274	270	272	273	268	270	272	271	271
26	266	262	264	275	271	273	272	268	269	273	270	271
27	269	261	266	272	267	269	274	269	272	274	271	272
28	273	267	269	271	267	269	273	268	271	274	267	272
29	269	262	266	271	269	270	273	269	271	275	270	272
30	271	268	269	274	271	272	272	267	270	277	273	275
31	273	269	271	---	---	---	275	266	268	277	273	274
MONTH	275	246	263	276	264	270	275	261	269	278	258	270

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	273	271	272	267	266	266	259	254	256	276	273	274
2	272	271	272	268	266	267	259	255	257	275	271	273
3	273	271	272	269	267	267	259	255	257	275	271	273
4	272	271	271	268	266	267	258	255	256	276	273	274
5	272	271	272	269	268	268	258	251	256	277	273	275
6	272	271	272	270	268	269	252	246	250	277	273	276
7	271	267	269	270	266	269	250	244	248	278	273	276
8	270	268	269	270	267	268	255	248	251	280	273	276
9	269	268	268	273	266	268	262	254	257	280	274	278
10	269	268	268	271	266	268	267	261	264	280	273	278
11	269	268	269	269	267	268	274	267	269	285	279	282
12	269	268	268	270	268	269	274	271	273	284	280	282
13	269	267	268	270	268	269	274	270	272	285	278	282
14	268	265	267	278	268	273	274	272	273	284	279	282
15	269	268	268	278	270	274	276	274	275	284	278	281
16	268	267	267	271	269	270	278	274	275	283	280	281
17	270	267	268	273	270	272	278	275	277	283	276	280
18	268	267	267	273	271	272	279	275	277	283	274	279
19	268	267	267	274	271	272	280	275	278	281	269	276
20	268	265	267	274	273	274	279	268	273	279	274	277
21	268	267	268	275	272	273	276	272	274	278	270	276
22	269	267	268	274	272	273	277	271	274	279	271	275
23	269	266	267	274	272	273	277	270	273	279	272	276
24	267	266	266	274	272	273	273	271	272	278	271	276
25	267	264	266	275	273	274	274	270	272	278	270	275
26	267	265	266	275	273	274	275	272	274	278	272	276
27	273	266	267	276	273	274	274	271	273	280	272	277
28	267	265	266	277	273	275	275	273	274	281	272	277
29	---	---	---	276	273	274	275	273	274	280	273	278
30	---	---	---	274	260	270	276	273	275	280	270	276
31	---	---	---	261	257	259	---	---	---	278	271	275
MONTH	273	264	268	278	257	270	280	244	268	285	269	277

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	279	269	275	279	269	275	268	261	265	259	250	256
2	279	268	274	278	268	275	269	259	264	260	250	256
3	280	270	277	279	267	275	268	256	263	259	251	256
4	283	273	279	280	269	273	268	261	265	259	253	257
5	283	272	278	279	270	275	270	260	266	260	253	258
6	283	275	280	279	270	275	267	258	264	261	251	257
7	285	274	281	278	268	274	268	260	264	262	251	257
8	284	274	280	276	268	273	269	260	265	261	253	258
9	284	275	280	276	267	273	268	257	263	261	255	259
10	---	---	---	278	267	274	265	259	263	263	254	260
11	---	---	---	278	265	273	267	259	264	265	257	261
12	---	---	---	276	270	274	265	257	262	265	256	261
13	---	---	---	278	267	274	267	257	262	266	246	259
14	290	279	286	279	268	274	266	258	263	264	254	261
15	289	280	284	276	267	273	266	258	263	264	256	261
16	288	279	283	277	266	272	266	258	262	264	259	262
17	285	276	281	276	266	272	265	255	261	264	260	263
18	284	276	281	278	267	272	265	254	261	265	259	263
19	284	276	281	276	267	272	261	244	256	268	262	265
20	284	276	281	274	265	271	262	256	259	268	262	266
21	285	276	281	276	264	271	262	255	259	270	263	267
22	282	271	277	275	264	270	262	256	259	269	262	266
23	280	268	275	273	262	268	261	255	259	268	263	266
24	281	270	277	271	262	267	261	254	258	268	263	266
25	284	273	279	273	262	268	262	253	258	271	259	266
26	282	271	277	270	261	266	261	252	257	267	263	266
27	283	270	278	272	265	269	261	254	257	269	264	267
28	284	272	279	270	262	266	260	252	257	269	254	264
29	283	270	277	269	262	265	260	251	256	269	260	265
30	280	269	275	267	259	264	259	250	256	269	264	267
31	---	---	---	267	257	263	259	252	256	---	---	---
MONTH	---	---	---	280	257	271	270	244	261	271	246	262

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.5	8.1	8.3	---	---	---	---	---	---	---	---	---
2	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
3	8.5	8.1	8.2	---	---	---	---	---	---	---	---	---
4	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
5	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
6	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
7	8.5	8.1	8.2	---	---	---	---	---	---	---	---	---
8	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
9	8.4	8.0	8.2	---	---	---	---	---	---	---	---	---
10	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
11	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
12	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
13	8.5	8.0	8.2	---	---	---	---	---	---	---	---	---
14	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
15	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
16	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
17	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
18	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
19	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
20	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
21	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
22	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
23	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
24	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
25	8.3	8.0	8.0	---	---	---	---	---	---	---	---	---
26	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
27	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
28	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
29	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
30	8.0	7.9	7.9	---	---	---	---	---	---	---	---	---
31	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
MAX	8.5	8.1	8.3	---	---	---	---	---	---	---	---	---
MIN	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	7.8	7.5	7.6	8.3	7.9	8.1
2	---	---	---	---	---	---	7.9	7.5	7.6	8.3	8.0	8.1
3	---	---	---	---	---	---	8.0	7.5	7.7	8.3	7.9	8.1
4	---	---	---	---	---	---	8.0	7.6	7.7	8.3	7.9	8.1
5	---	---	---	---	---	---	8.1	7.7	7.8	8.3	8.0	8.1
6	---	---	---	---	---	---	8.1	7.7	7.8	8.3	8.0	8.2
7	---	---	---	---	---	---	8.1	7.7	7.8	8.4	8.0	8.1
8	---	---	---	---	---	---	8.1	7.7	7.8	8.4	8.0	8.1
9	---	---	---	---	---	---	8.1	7.7	7.8	8.3	8.0	8.1
10	---	---	---	---	---	---	8.1	7.7	7.9	8.4	8.0	8.2
11	---	---	---	---	---	---	8.2	7.8	7.9	8.4	8.0	8.1
12	---	---	---	---	---	---	8.2	7.7	7.9	8.4	8.0	8.1
13	---	---	---	---	---	---	8.2	7.8	7.9	8.2	8.0	8.1
14	---	---	---	---	---	---	8.3	7.8	8.0	8.3	8.0	8.1
15	---	---	---	---	---	---	8.3	7.8	8.0	8.3	8.0	8.1
16	---	---	---	---	---	---	8.3	7.9	8.0	8.4	8.0	8.1
17	---	---	---	---	---	---	8.3	7.9	8.1	8.4	8.0	8.2
18	---	---	---	---	---	---	8.3	7.9	8.1	8.4	8.0	8.2
19	---	---	---	---	---	---	8.4	8.0	8.1	8.2	8.1	8.1
20	---	---	---	---	---	---	8.3	8.0	8.1	8.4	8.0	8.2
21	---	---	---	---	---	---	8.3	7.9	8.1	8.4	8.1	8.2
22	---	---	---	---	---	---	8.3	7.9	8.1	8.3	8.1	8.1
23	---	---	---	---	---	---	8.1	7.9	8.0	8.4	8.1	8.2
24	---	---	---	---	---	---	8.2	7.8	7.9	8.4	8.1	8.2
25	---	---	---	---	---	---	8.2	7.8	8.0	8.4	8.1	8.2
26	---	---	---	---	---	---	8.2	7.9	8.0	8.4	8.1	8.2
27	---	---	---	---	---	---	8.2	7.9	8.0	8.4	8.1	8.2
28	---	---	---	---	---	---	8.3	7.9	8.0	8.4	8.1	8.2
29	---	---	---	---	---	---	8.3	7.8	8.0	8.4	8.1	8.2
30	---	---	---	---	---	---	8.3	7.9	8.1	8.4	8.1	8.2
31	---	---	---	---	---	---	---	---	---	8.5	8.1	8.2
MAX	---	---	---	---	---	---	8.4	8.0	8.1	8.5	8.1	8.2
MIN	---	---	---	---	---	---	7.8	7.5	7.6	8.2	7.9	8.1

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	8.1	8.2	8.5	8.0	8.2	8.5	8.1	8.3	8.6	8.2	8.3
2	8.5	8.1	8.2	8.5	8.0	8.2	8.5	8.1	8.2	8.6	8.2	8.3
3	8.5	8.1	8.2	8.5	8.0	8.2	8.6	8.1	8.3	8.6	8.2	8.3
4	8.5	8.1	8.2	8.4	8.0	8.1	8.4	8.1	8.2	8.5	8.2	8.3
5	8.5	8.1	8.2	8.4	8.0	8.2	8.5	8.1	8.2	8.6	8.2	8.3
6	8.4	8.0	8.2	8.5	8.0	8.2	8.5	8.1	8.2	8.6	8.2	8.3
7	8.5	8.0	8.2	8.5	8.0	8.2	8.4	8.0	8.1	8.5	8.2	8.3
8	8.5	8.1	8.2	8.4	8.0	8.1	8.4	8.0	8.1	8.6	8.2	8.3
9	8.5	8.1	8.2	8.4	7.9	8.1	8.5	8.0	8.2	8.4	8.1	8.2
10	8.5	8.1	8.2	8.4	7.9	8.1	8.4	7.9	8.1	8.5	8.1	8.2
11	8.5	8.1	8.2	8.4	7.9	8.1	8.4	7.9	8.1	8.5	8.1	8.2
12	8.5	8.1	8.2	8.3	7.9	8.1	8.4	7.9	8.1	8.5	8.1	8.2
13	8.5	8.1	8.2	8.6	7.9	8.2	8.4	7.9	8.2	8.5	8.1	8.2
14	8.6	8.1	8.3	8.6	8.1	8.3	8.4	8.0	8.1	8.4	8.1	8.2
15	8.4	8.1	8.3	8.6	8.1	8.3	8.4	8.0	8.1	8.5	8.1	8.2
16	8.6	8.2	8.3	8.6	8.1	8.3	8.4	8.0	8.1	8.5	8.1	8.2
17	8.6	8.2	8.3	8.6	8.1	8.3	8.5	8.0	8.2	8.5	8.1	8.2
18	8.5	8.2	8.3	8.6	8.1	8.3	8.3	8.0	8.1	8.5	8.1	8.2
19	8.5	8.1	8.2	8.6	8.1	8.3	8.3	7.9	8.1	8.3	8.1	8.2
20	8.5	8.1	8.3	8.6	8.1	8.3	8.4	8.0	8.1	8.4	8.1	8.2
21	8.5	8.1	8.3	8.5	8.1	8.3	8.4	8.0	8.2	8.4	8.1	8.2
22	8.6	8.1	8.3	8.5	8.0	8.2	8.4	8.0	8.2	8.4	8.1	8.2
23	8.5	8.1	8.3	8.5	8.0	8.2	8.4	7.9	8.1	8.4	8.1	8.2
24	8.6	8.1	8.3	8.5	8.0	8.2	8.4	8.0	8.1	8.5	8.2	8.2
25	8.5	8.1	8.3	8.5	8.0	8.2	8.4	8.0	8.1	8.4	8.1	8.2
26	8.6	8.1	8.3	8.4	8.0	8.1	8.4	8.0	8.1	8.5	8.1	8.2
27	8.6	8.1	8.3	8.4	8.0	8.2	8.4	8.0	8.1	8.4	8.1	8.2
28	8.5	8.1	8.2	8.5	8.1	8.3	8.4	8.0	8.1	8.4	8.1	8.2
29	8.5	8.0	8.2	8.5	8.1	8.2	8.4	8.0	8.1	8.4	8.1	8.2
30	8.5	8.0	8.2	8.5	8.1	8.2	8.4	8.0	8.1	8.4	8.1	8.2
31	---	---	---	8.6	8.1	8.3	8.6	8.0	8.3	---	---	---
MAX	8.6	8.2	8.3	8.6	8.1	8.3	8.6	8.1	8.3	8.6	8.2	8.3
MIN	8.4	8.0	8.2	8.3	7.9	8.1	8.3	7.9	8.1	8.3	8.1	8.2

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	16.0	17.0	11.0	10.5	10.5	5.0	4.0	4.5	1.5	0.5	1.0
2	16.5	14.0	15.0	10.5	10.0	10.0	4.5	3.5	4.0	2.0	1.0	1.5
3	15.0	14.0	14.5	10.5	9.5	10.0	3.5	3.0	3.5	1.5	1.0	1.5
4	14.5	12.0	13.0	9.5	8.5	9.0	4.0	3.0	3.5	2.0	1.0	1.5
5	14.0	11.0	12.5	9.0	8.0	8.5	4.0	3.0	3.5	1.0	0.5	1.0
6	15.0	12.0	13.5	9.5	8.0	8.5	3.5	2.5	3.0	1.0	0.0	0.5
7	16.0	13.5	14.5	9.0	7.5	8.5	3.5	3.0	3.5	1.0	1.0	1.0
8	15.5	14.5	15.0	7.5	6.5	7.0	4.0	3.5	4.0	1.0	0.5	0.5
9	15.5	13.0	14.0	7.0	6.5	6.5	4.5	4.0	4.5	0.5	0.5	0.5
10	15.0	12.5	13.5	8.0	6.5	7.0	4.5	4.0	4.5	0.5	0.0	0.5
11	15.0	11.5	13.0	7.5	6.0	6.5	4.0	3.5	4.0	1.0	0.0	0.5
12	15.0	12.0	13.0	6.5	5.5	6.0	3.5	3.0	3.0	1.5	0.5	1.0
13	14.5	12.0	13.0	6.5	5.0	5.5	3.0	1.5	2.5	1.5	0.0	1.0
14	13.5	12.5	13.0	7.0	5.5	6.0	1.5	1.0	1.5	0.0	0.0	0.0
15	13.5	12.0	13.0	7.0	6.0	6.5	1.5	1.0	1.5	0.0	-0.5	0.0
16	12.0	10.0	11.0	7.5	7.0	7.0	1.5	0.5	1.5	0.0	-0.5	0.0
17	10.0	9.0	9.5	8.5	7.5	8.0	1.0	0.5	0.5	0.0	0.0	0.0
18	10.0	9.0	9.5	9.5	8.0	8.5	1.5	0.0	1.0	0.0	0.0	0.0
19	10.0	8.5	9.5	8.5	8.0	8.0	0.0	-0.5	0.0	0.0	0.0	0.0
20	11.0	9.5	10.0	8.5	8.0	8.5	0.0	-0.5	-0.5	0.0	0.0	0.0
21	11.5	9.0	10.0	8.0	7.5	7.5	0.0	-0.5	0.0	0.0	0.0	0.0
22	10.5	9.5	10.0	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
23	11.5	10.5	11.0	7.0	6.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0
24	12.0	11.0	11.5	6.5	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
25	12.5	11.0	11.5	5.5	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
26	11.5	10.5	11.0	5.5	4.5	5.0	0.5	0.0	0.0	0.0	0.0	0.0
27	11.0	10.5	11.0	5.5	5.0	5.0	1.0	0.0	0.5	0.0	0.0	0.0
28	11.5	10.0	11.0	5.5	4.5	5.0	1.0	0.5	1.0	0.0	0.0	0.0
29	12.5	11.5	11.5	5.0	4.5	4.5	1.5	0.5	1.0	0.0	0.0	0.0
30	13.0	12.0	12.5	4.5	4.0	4.0	1.5	0.5	1.0	0.5	0.0	0.0
31	12.0	11.0	11.5	---	---	---	2.0	1.5	1.5	0.5	0.0	0.5
MONTH	18.5	8.5	12.2	11.0	4.0	7.1	5.0	-0.5	1.9	2.0	-0.5	0.4

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.5	0.5	0.5	0.5	0.0	0.0	4.5	1.5	3.0	12.0	9.0	10.0
2	1.0	0.0	0.5	1.0	0.0	0.0	6.0	2.0	3.5	11.5	9.0	10.0
3	1.0	0.0	0.5	1.5	0.0	0.5	6.5	2.5	4.0	12.0	8.5	9.5
4	1.5	0.0	0.5	1.5	-0.5	0.5	7.0	3.0	4.5	14.5	7.5	10.5
5	2.0	0.5	1.0	2.0	0.5	1.0	8.5	4.0	6.0	15.5	10.0	12.0
6	1.5	0.5	1.0	2.5	0.5	1.5	8.0	4.5	6.0	14.0	11.0	12.5
7	1.0	0.5	1.0	1.0	0.0	0.5	8.5	4.5	6.0	15.0	10.5	12.0
8	0.5	0.5	0.5	0.5	0.0	0.0	9.0	4.0	6.5	17.5	11.5	14.0
9	1.0	0.0	0.5	1.0	-0.5	0.0	10.0	5.5	7.0	16.5	14.0	15.0
10	1.5	0.0	0.5	1.0	-0.5	0.5	10.5	6.5	8.5	17.0	14.0	15.5
11	1.0	0.0	0.5	1.0	0.0	0.5	12.0	6.5	9.0	14.5	10.5	13.0
12	2.0	0.5	1.0	1.5	0.0	0.5	12.0	6.0	8.5	15.0	9.5	12.0
13	1.5	0.0	0.5	2.0	-0.5	0.5	12.5	6.5	9.0	12.0	10.0	11.0
14	1.0	0.5	0.5	2.5	-0.5	0.5	13.5	7.0	9.5	13.0	10.5	11.5
15	2.0	1.0	1.0	2.0	0.0	0.5	13.0	7.0	9.5	12.0	10.0	11.0
16	1.5	0.5	1.0	1.0	0.0	0.5	14.0	8.0	10.5	15.5	9.0	11.5
17	0.5	0.0	0.5	3.0	0.0	1.0	16.0	10.5	12.0	13.5	9.5	11.5
18	1.0	0.0	0.0	2.0	0.0	0.5	16.0	10.5	12.5	16.0	11.0	13.0
19	1.0	0.0	0.5	1.0	0.5	0.5	18.0	12.5	15.0	13.5	12.0	13.0
20	0.5	0.0	0.0	1.5	0.5	1.0	15.0	10.5	13.0	17.0	10.5	13.5
21	1.0	0.5	1.0	3.5	0.5	1.5	15.0	9.0	11.0	18.0	12.0	14.5
22	1.5	0.5	1.0	3.5	0.5	1.5	12.5	9.0	10.5	16.5	14.0	15.0
23	1.5	0.0	0.5	2.5	0.5	1.0	9.0	6.5	7.5	15.5	13.5	14.5
24	1.5	0.0	0.5	3.0	0.0	1.0	9.0	5.5	6.5	19.0	13.0	15.0
25	1.5	0.0	0.5	3.5	0.5	1.5	12.0	6.5	8.5	19.5	13.5	16.0
26	1.5	0.0	0.5	4.0	0.0	1.5	10.5	8.0	9.0	19.0	14.5	16.0
27	1.5	-0.5	0.5	4.5	0.5	2.0	10.0	7.5	8.5	20.0	15.0	17.0
28	1.0	0.0	0.5	5.0	1.0	2.5	11.5	7.0	8.5	20.0	15.5	17.0
29	---	---	---	5.5	1.5	3.0	13.5	7.5	9.5	21.0	15.0	17.0
30	---	---	---	5.0	2.5	3.5	14.0	8.0	10.5	21.5	15.5	17.5
31	---	---	---	3.5	2.5	3.0	---	---	---	22.0	16.0	18.0
MONTH	2.0	-0.5	0.6	5.5	-0.5	1.0	18.0	1.5	8.4	22.0	7.5	13.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.0	16.5	19.0	24.0	20.5	22.0	28.5	23.5	25.0	25.0	21.0	22.5
2	22.0	17.5	19.5	25.5	19.0	21.5	29.0	24.0	26.0	24.0	20.5	22.0
3	21.0	18.0	19.5	26.5	20.5	23.0	29.0	24.5	26.5	24.5	20.0	21.5
4	22.0	18.5	20.0	23.5	22.0	23.0	26.5	24.0	25.5	24.5	19.5	21.5
5	24.5	19.5	21.5	23.0	21.0	22.0	27.5	22.5	24.5	25.0	20.0	22.0
6	24.5	20.0	22.0	25.5	20.5	22.0	27.5	21.5	24.0	23.5	21.0	22.0
7	25.0	20.0	21.5	26.0	20.5	22.5	28.5	23.0	25.0	22.0	20.5	21.5
8	25.0	20.5	22.5	26.5	20.5	22.5	28.5	23.5	25.5	22.0	19.0	20.5
9	26.0	22.0	23.5	27.0	20.5	23.0	27.5	24.0	25.5	23.5	18.5	20.5
10	27.5	22.0	24.5	28.0	22.5	24.5	28.5	24.0	25.5	22.5	19.5	21.0
11	28.0	23.5	25.0	28.0	23.0	25.5	24.5	23.0	23.5	25.0	20.5	22.5
12	27.5	24.0	25.5	25.5	24.0	25.0	25.0	22.0	23.5	25.5	22.0	23.0
13	27.0	24.0	25.0	29.0	23.5	25.5	24.5	22.0	23.0	25.0	22.0	23.0
14	27.0	23.5	24.5	29.5	24.0	26.0	26.0	21.0	23.0	24.0	20.0	22.0
15	24.0	20.0	22.0	29.5	23.5	26.0	26.5	20.5	23.0	22.5	19.0	20.5
16	22.0	19.5	20.0	29.0	24.5	26.5	27.0	21.5	23.5	22.5	19.5	20.5
17	21.0	18.5	19.5	29.5	25.5	27.0	26.0	22.0	23.5	23.0	18.5	20.5
18	20.5	18.5	19.5	29.5	25.5	27.0	23.0	21.5	22.5	23.0	19.5	20.5
19	23.5	18.0	20.5	28.5	23.5	25.5	23.0	21.0	22.0	21.0	19.5	20.0
20	25.5	19.5	22.0	27.0	23.0	24.5	24.0	21.5	22.5	22.0	18.5	20.0
21	26.0	21.0	22.5	28.0	24.0	25.5	23.0	20.5	21.5	22.5	19.5	20.5
22	25.5	19.5	22.0	28.0	23.0	25.0	21.5	19.5	20.5	20.5	18.5	20.0
23	23.5	20.0	21.5	26.0	22.0	24.0	23.0	19.5	20.5	20.5	17.0	18.0
24	27.0	22.0	24.0	28.0	23.5	25.0	24.0	18.5	21.0	20.0	16.0	18.0
25	24.5	22.5	23.5	27.0	23.5	25.0	23.0	20.0	21.5	19.5	18.5	19.0
26	26.5	22.0	23.5	25.0	21.5	23.5	25.0	20.0	22.0	19.5	17.5	18.5
27	28.5	23.5	25.5	25.5	20.5	22.0	25.0	21.5	22.5	20.0	16.5	18.0
28	29.0	24.5	26.0	25.5	20.5	22.5	25.5	21.0	22.5	19.0	16.0	17.5
29	27.0	23.0	24.5	26.0	21.5	23.0	25.5	21.5	23.0	16.5	14.0	15.0
30	27.5	23.5	25.0	26.0	20.0	22.5	25.5	21.5	23.0	17.0	14.0	15.0
31	---	---	---	26.5	22.0	24.0	25.5	21.0	22.5	---	---	---
MONTH	29.0	16.5	22.5	29.5	19.0	24.1	29.0	18.5	23.3	25.5	14.0	20.2

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.4	8.7	9.4	---	---	---	---	---	---	---	---	---
2	10.6	8.9	9.6	---	---	---	---	---	---	---	---	---
3	10.9	9.3	9.9	---	---	---	---	---	---	---	---	---
4	11.1	9.4	10.2	---	---	---	---	---	---	---	---	---
5	11.2	10.0	10.4	---	---	---	---	---	---	---	---	---
6	11.0	9.5	10.2	---	---	---	---	---	---	---	---	---
7	11.0	9.5	10.1	---	---	---	---	---	---	---	---	---
8	10.2	9.3	9.7	---	---	---	---	---	---	---	---	---
9	11.0	9.4	10.0	---	---	---	---	---	---	---	---	---
10	11.1	9.9	10.3	---	---	---	---	---	---	---	---	---
11	11.3	10.0	10.5	---	---	---	---	---	---	---	---	---
12	11.1	9.6	10.3	---	---	---	---	---	---	---	---	---
13	11.2	9.5	10.2	---	---	---	---	---	---	---	---	---
14	10.7	9.4	9.8	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	11.8	10.6	11.1	---	---	---	---	---	---	---	---	---
29	10.9	10.1	10.5	---	---	---	---	---	---	---	---	---
30	10.6	9.7	10.0	---	---	---	---	---	---	---	---	---
31	11.0	9.8	10.2	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	12.9	12.3	12.6	10.9	8.6	10.2
2	---	---	---	---	---	---	12.5	12.1	12.3	11.0	8.5	9.7
3	---	---	---	---	---	---	12.5	12.0	12.2	11.3	10.1	10.6
4	---	---	---	---	---	---	12.4	11.9	12.1	11.1	9.7	10.5
5	---	---	---	---	---	---	12.3	11.7	12.0	10.9	9.4	10.1
6	---	---	---	---	---	---	12.3	11.6	11.9	10.8	9.4	10.0
7	---	---	---	---	---	---	12.0	11.5	11.8	11.0	9.5	10.1
8	---	---	---	---	---	---	12.1	11.2	11.7	10.9	8.8	9.9
9	---	---	---	---	---	---	11.9	11.0	11.5	10.3	8.7	9.4
10	---	---	---	---	---	---	11.7	9.3	10.7	10.5	8.7	9.5
11	---	---	---	---	---	---	11.6	9.7	10.6	11.5	8.9	10.2
12	---	---	---	---	---	---	11.5	10.1	10.7	11.7	9.6	10.5
13	---	---	---	---	---	---	11.3	10.1	10.6	10.9	9.8	10.3
14	---	---	---	---	---	---	11.3	10.1	10.5	11.2	9.8	10.4
15	---	---	---	---	---	---	11.4	10.2	10.7	11.6	9.7	10.7
16	---	---	---	---	---	---	11.3	9.6	10.5	11.6	10.3	10.8
17	---	---	---	---	---	---	10.9	9.5	10.1	11.9	10.3	11.0
18	---	---	---	---	---	---	10.9	8.9	9.9	12.0	10.0	10.9
19	---	---	---	---	---	---	10.6	8.4	9.5	10.9	10.0	10.4
20	---	---	---	---	---	---	10.4	8.2	9.3	11.7	10.1	10.7
21	---	---	---	---	---	---	10.7	9.4	10.0	11.6	9.4	10.5
22	---	---	---	---	---	---	10.9	9.4	10.0	11.2	9.3	10.0
23	---	---	---	---	---	---	9.9	8.7	9.4	10.0	8.3	9.3
24	---	---	---	---	---	---	10.9	8.8	9.5	11.2	8.2	10.1
25	---	---	---	---	---	---	10.8	8.2	9.2	11.2	9.3	10.2
26	---	---	---	---	---	---	11.0	8.1	9.2	10.9	9.0	9.8
27	---	---	---	---	---	---	11.1	8.7	9.6	10.9	8.8	9.7
28	---	---	---	---	---	---	11.1	9.0	10.4	10.8	8.7	9.3
29	---	---	---	---	---	---	11.1	9.0	10.3	---	---	---
30	---	---	---	---	---	---	11.0	8.7	9.8	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	12.9	8.1	10.6	---	---	---

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126802 CRYSTAL RIVER NEAR GLEN ARBOR, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	9.3	6.8	8.0	9.1	7.0	8.0	9.0	7.4	8.0
2	---	---	---	9.2	7.2	8.0	9.0	6.9	7.7	9.4	7.4	8.3
3	---	---	---	9.1	6.9	7.8	8.8	6.7	7.6	8.7	7.3	7.8
4	---	---	---	8.7	6.7	7.6	8.3	6.7	7.5	8.9	7.3	7.9
5	---	---	---	9.2	6.9	7.8	8.9	7.2	7.8	9.0	7.4	8.0
6	---	---	---	9.1	7.2	8.0	9.0	7.3	7.9	9.1	7.3	8.0
7	---	---	---	9.1	7.2	7.9	9.0	7.2	7.9	8.6	7.2	7.7
8	---	---	---	9.0	7.2	7.9	8.7	7.0	7.6	9.2	7.4	8.2
9	---	---	---	9.1	7.0	7.9	8.9	6.9	7.7	9.1	7.6	8.2
10	---	---	---	9.1	6.9	7.7	8.7	7.0	7.6	9.3	7.6	8.2
11	---	---	---	8.9	6.8	7.7	8.6	6.7	7.6	9.0	7.2	8.1
12	---	---	---	8.5	6.8	7.6	8.7	7.1	7.7	8.7	6.9	7.7
13	---	---	---	9.4	7.1	8.0	8.6	6.7	7.7	8.6	6.9	7.5
14	8.9	6.9	7.8	9.3	7.1	7.9	8.9	7.0	7.8	8.5	7.0	7.6
15	8.5	6.9	7.6	9.1	7.1	7.9	8.9	7.5	8.0	8.8	7.4	7.9
16	9.7	7.5	8.4	9.1	6.3	7.6	9.0	7.3	8.1	9.0	7.6	8.2
17	10.0	7.7	8.7	9.1	6.9	7.8	9.3	7.3	8.2	8.9	7.7	8.2
18	9.9	7.8	8.7	8.8	6.7	7.5	8.6	7.5	8.0	9.3	7.7	8.4
19	9.7	7.8	8.6	8.9	6.8	7.6	8.7	7.3	8.0	8.8	7.9	8.2
20	9.5	7.3	8.4	9.1	7.0	7.8	8.8	7.3	7.9	9.3	7.9	8.4
21	9.4	7.2	8.1	9.1	7.0	7.8	8.9	7.5	8.1	9.2	7.9	8.4
22	9.5	7.5	8.3	9.1	7.0	7.9	8.9	7.4	8.1	9.4	7.7	8.5
23	9.3	7.3	8.2	9.4	7.3	8.1	9.4	7.6	8.3	9.8	8.5	9.1
24	9.3	6.8	8.0	9.3	7.2	7.9	9.2	7.7	8.4	10.3	8.8	9.5
25	9.0	6.7	7.8	9.3	7.2	8.2	9.6	7.7	8.5	9.4	8.5	8.9
26	9.5	7.1	8.0	9.3	7.1	8.1	9.4	8.0	8.7	9.8	8.5	9.0
27	9.3	6.6	7.9	9.6	7.8	8.5	9.4	7.7	8.4	9.8	8.4	9.0
28	8.9	6.5	7.5	9.7	7.1	8.3	9.3	7.7	8.3	9.4	8.4	8.8
29	9.5	6.7	7.9	8.5	6.5	7.5	9.3	7.4	8.2	10.3	8.4	9.4
30	9.2	6.9	7.8	9.5	7.4	8.3	9.2	7.3	8.1	9.6	8.6	9.0
31	---	---	---	9.5	7.4	8.2	9.0	7.2	7.9	---	---	---
MONTH	---	---	---	9.7	6.3	7.9	9.6	6.7	8.0	10.3	6.9	8.3

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126803 CRYSTAL RIVER BELOW COUNTY HIGHWAY 675 NEAR GLEN ARBOR, MI

LOCATION.--Lat 44°54'15", long 85°58'10", in SE1/4 NW1/4 sec.23, T.29 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, 0.6 mi downstream from station 04126802, 1.1 mi northeast of Glen Arbor.

DRAINAGE AREA.--45.3 mi^2.

PERIOD OF RECORD.--October 2004 to September 2005.

REMARKS.--Cross-sectional samples were collected in vicinity of gage.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
OCT 2004 06...	1545	27	.031	.021	10.3	8.3	253	15.0	33.0	14.1	.64

Date	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
OCT 2004 06...	3.42	124	148	2	2.76	.5	6.11	10.6	151	.17	.20

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
OCT 2004 06...	<.04	<.06	<.008	.02	<.006	E.003	E.002	.3	<.1	.3	2.3

Date	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)
OCT 2004 06...	E1	<.20	<2	23	<.06	<.04	<.8	.122	.7	7	<.08

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126803 CRYSTAL RIVER BELOW COUNTY HIGHWAY 675 NEAR GLEN ARBOR, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	1,4-Dichlorobenzene water, fltrd, ug/L (34572)	1-Methylnaphthalene, water, fltrd, ug/L (62054)	2,6-Dimethylnaphthalene, water, fltrd, ug/L (62055)	2-Methylnaphthalene, water, fltrd, ug/L (62056)	3-beta-Coprostanol, water, fltrd, ug/L (62057)
OCT 2004 06...	1.2	.4	.18	<3	<.2	1.8	<.5	<.5	<.5	<.5	M

Date	3-Methyl-1H-indole, water, fltrd, ug/L (62058)	3-tert-Butyl-4-hydroxyanisole wat flt ug/L (62059)	4-Cumylphenol, water, fltrd, ug/L (62060)	4-Octylphenol, water, fltrd, ug/L (62061)	4-Nonylphenol, water, fltrd, ug/L (62085)	4-tert-Octylphenol, water, fltrd, ug/L (62062)	5-Methyl-1H-benzotriazole, wat flt ug/L (62063)	9,10-Anthraquinone water, fltrd, ug/L (62066)	Acetophenone water, fltrd, ug/L (62064)	AHTN, water, fltrd, ug/L (62065)	Anthracene, water, fltrd, ug/L (34221)
OCT 2004 06...	<1	<5	<1	<1	<5	<1	<2	<.5	<.5	<.5	<.5

Date	Benzo-[a]-pyrene, water, fltrd, ug/L (34248)	Benzophenone water, fltrd, ug/L (62067)	beta-Sitosterol, water, fltrd, ug/L (62068)	beta-Stigmastanol, water, fltrd, ug/L (62086)	Bisphenol A, water, fltrd, ug/L (62069)	Bisphenol A-d3 sur Sch 2033 & 8033, wat flt pct rcv (99583)	Bromacil, water, fltrd, ug/L (04029)	Caffeine, water, fltrd, ug/L (50305)	Caffeine-13C sur Sch 2033 & 8033, wat flt pct rcv (99584)	Camphor water, fltrd, ug/L (62070)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)
OCT 2004 06...	<.5	<.5	M	M	<1	.0	<.5	<.5	89.2	<.5	<1

Date	Carbazole, water, fltrd, ug/L (62071)	Chlorpyrifos water, fltrd, ug/L (38933)	Cholesterol, water, fltrd, ug/L (62072)	Cotinine, water, fltrd, ug/L (62005)	DecaF-biphenl sur Sch 2033 & 8033, wat flt pct rcv (99585)	DEET, water, fltrd, ug/L (62082)	Diazinon, water, fltrd, ug/L (39572)	Diethoxynonylphenol, water, fltrd, ug/L (62083)	Diethoxyoctylphenol, water, fltrd ug/L (61705)	D-Limonene, water, fltrd, ug/L (62073)	Ethoxyoctylphenol, water, fltrd ug/L (61706)
OCT 2004 06...	<.5	<.5	M	<1.00	55.2	<.5	<.5	<5	<1	<.5	<1

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126803 CRYSTAL RIVER BELOW COUNTY HIGHWAY 675 NEAR GLEN ARBOR, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Fluoranthene water, fltrd, ug/L (34377)	Fluoranthene -d10, sur Sch 20/8033 wat flt pct rcv (99586)	HHCB, water, fltrd, ug/L (62075)	Indole, water, fltrd, ug/L (62076)	Isoborneol, water, fltrd, ug/L (62077)	Isophorone water, fltrd, ug/L (34409)	Isopropylbenzene water, fltrd, ug/L (62078)	Isoquinoline, water, fltrd, ug/L (62079)	Menthol water, fltrd, ug/L (62080)	Metalaxyl, water, fltrd, ug/L (50359)	Methyl salicylate, water, fltrd, ug/L (62081)
OCT 2004 06...	<.5	100	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5

Date	Metolachlor, water, fltrd, ug/L (39415)	Naphthalene, water, fltrd, ug/L (34443)	p-Cresol, water, fltrd, ug/L (62084)	Pentachlorophenol, water, fltrd, ug/L (34459)	Phenanthrene, water, fltrd, ug/L (34462)	Phenol, water, fltrd, ug/L (34466)	Prometon, water, fltrd, ug/L (04037)	Pyrene, water, fltrd, ug/L (34470)	Tetrachloroethene, water, fltrd, ug/L (34476)	Tribromomethane water, fltrd, ug/L (34288)	Tributyl phosphate, water, fltrd, ug/L (62089)
OCT 2004 06...	<.5	<.5	<1	<2	<.5	.6	<.5	<.5	<.5	<.5	<.5

Date	Triclosan, water, fltrd, ug/L (62090)	Triethyl citrate water, fltrd, ug/L (62091)	Triphenyl phosphate, water, fltrd, ug/L (62092)	Tris(2-butoxyethyl) phosphate, wat flt ug/L (62093)	Tris(2-chloroethyl) phosphate, wat flt ug/L (62087)	Tris(dichloro-i-Pr) phosphate, wat flt ug/L (62088)	Xylene, water, unfltrd ug/L (81551)	1,2-Dichloroethane-d4, sur Sch2090 wat unf pct rcv (99832)	14Bromo fluorobenzene surrog. VOC Sch wat unf pct rcv (99834)	Benzene water unfltrd ug/L (34030)	Ethylbenzene water unfltrd ug/L (34371)
OCT 2004 06...	<1	<.5	<.5	<.5	<.5	<.5	<.2	112	99.4	<.1	<.1

Date	meta- + para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Toluene water unfltrd ug/L (34010)	Toluene -d8, surrog, Sch2090 wat unf percent recovry (99833)	Uranium natural water, fltrd, ug/L (22703)	Sample volume, wastewater method wat flt mL (99587)
OCT 2004 06...	<.2	<.1	<.2	.1	100	.29	862

STREAMS TRIBUTARY TO LAKE MICHIGAN

04126970 BOARDMAN RIVER AT BROWN BRIDGE ROAD NEAR MAYFIELD, MI

LOCATION.--Lat 44°39'24", long 85°26'12", in NE1/4 NE1/4 sec.18, T.26 N., R.9 W., Grand Traverse County, Hydrologic Unit 04060105, on right bank 200 ft upstream from Brown Bridge Road, 5.1 mi northeast of Mayfield.

DRAINAGE AREA.--141 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 830 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	118	117	144	122	133	273	127	107	91	92	82
2	94	124	113	154	121	131	268	125	104	e95	90	81
3	92	120	111	157	121	130	242	124	103	e95	88	81
4	93	119	112	151	122	130	222	122	105	e100	108	80
5	92	116	115	142	122	132	205	120	102	e110	104	79
6	92	113	115	133	124	134	196	118	101	e110	99	79
7	91	110	138	126	134	138	186	118	100	99	92	82
8	92	108	174	124	138	139	176	117	99	95	87	87
9	95	106	184	127	140	138	165	117	98	93	85	84
10	94	106	180	124	134	136	154	115	100	89	85	82
11	93	109	164	121	131	139	146	114	104	89	84	79
12	94	106	155	126	130	138	140	113	105	88	89	78
13	93	104	149	188	128	132	135	113	107	88	87	79
14	94	103	140	175	129	110	124	115	103	86	87	82
15	95	103	133	150	129	113	120	117	103	85	84	81
16	105	103	133	e140	130	114	118	116	103	85	82	81
17	118	104	130	e130	131	115	118	115	102	85	81	80
18	115	103	128	e130	127	115	117	113	101	87	85	79
19	115	102	120	e130	128	118	117	116	100	88	146	79
20	109	103	117	e130	126	119	132	120	98	88	123	79
21	103	103	124	e130	127	119	136	115	96	90	124	78
22	101	102	124	e130	128	120	137	115	96	88	116	80
23	111	102	122	e130	125	120	134	116	96	86	106	81
24	120	101	116	135	127	118	134	116	95	91	100	81
25	117	100	e110	134	128	118	154	114	95	92	94	91
26	115	100	e110	132	126	119	158	112	96	128	91	107
27	112	109	e110	118	125	120	156	110	95	112	91	101
28	110	120	e115	e110	131	124	146	110	93	111	88	100
29	129	122	117	e110	---	133	138	113	92	104	86	119
30	126	123	116	e120	---	159	132	111	92	97	84	109
31	122	---	140	123	---	232	---	109	---	94	83	---
TOTAL	3221	3262	4032	4174	3584	4036	4779	3596	2991	2939	2941	2561
MEAN	104	109	130	135	128	130	159	116	99.7	94.8	94.9	85.4
MAX	129	124	184	188	140	232	273	127	107	128	146	119
MIN	89	100	110	110	121	110	117	109	92	85	81	78
CFSM	0.74	0.77	0.92	0.95	0.91	0.92	1.13	0.82	0.71	0.67	0.67	0.61
IN.	0.85	0.86	1.06	1.10	0.95	1.06	1.26	0.95	0.79	0.78	0.78	0.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2005, BY WATER YEAR (WY)

MEAN	98.7	104	106	103	105	126	162	135	119	103	91.2	86.9
MAX	125	122	130	135	128	176	201	188	152	124	111	97.4
(WY)	2002	2002	2005	2005	2005	2004	2004	2004	2002	2004	2002	2001
MIN	77.9	83.7	82.0	79.3	81.9	89.3	89.4	94.6	95.2	82.8	74.5	74.0
(WY)	2001	2000	2001	2001	2003	2001	2000	2000	2000	2000	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1998 - 2005	
ANNUAL TOTAL	48376		42116			
ANNUAL MEAN	132		115		112	
HIGHEST ANNUAL MEAN					132	2002
LOWEST ANNUAL MEAN					90.4	2000
HIGHEST DAILY MEAN	370	Mar 30	273	Apr 1	423	Apr 2 1998
LOWEST DAILY MEAN	89	Sep 24	78	Sep 12	69	Aug 18 2003
ANNUAL SEVEN-DAY MINIMUM	89	Sep 24	79	Sep 16	70	Aug 18 2003
MAXIMUM PEAK FLOW			288	Apr 1	449	Apr 2 1998
MAXIMUM PEAK STAGE			4.41	Apr 1	5.44	Apr 2 1998
INSTANTANEOUS LOW FLOW			76	(a)	(b)62	Mar 3 2003
ANNUAL RUNOFF (CFSM)	0.937		0.818		0.792	
ANNUAL RUNOFF (INCHES)	12.76		11.11		10.76	
10 PERCENT EXCEEDS	187		140		152	
50 PERCENT EXCEEDS	117		115		104	
90 PERCENT EXCEEDS	95		86		81	

(a) Part of each day Sept. 6, 12, 21, 22.
(b) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

443903085312101 ARBUTUS LAKE NEAR MAYFIELD, MI

LOCATION.--Lat 44°40'26", long 85°30'54", in SW1/4 SW1/4 sec.3, T.26 N., R.10 W., Grand Traverse County, Hydrologic Unit 04060105, on north side of lake at Swain Road, 3.4 mi north of Mayfield.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--August 1994 to current year.

GAGE.--Nonrecording gage. Elevation of gage is 794 ft above sea level, from topographic map. Prior to Sept. 9, 2004 at site on south shore.

REMARKS.--Staff gage read by observer. No inlets or outlets.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.07 ft, Feb. 13, 1995; minimum observed, 2.60 ft, Sept. 27, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 3.51 ft, Jan. 13; minimum observed, 2.76 ft, Sept. 24.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.95	3.24	3.28	3.42	---	---	3.45	3.30	3.23	2.98	2.90	2.90
2	2.97	3.27	3.28	---	3.44	---	---	3.29	3.22	2.99	2.89	2.88
3	2.96	3.27	3.27	---	---	---	3.45	3.28	3.21	2.98	2.88	2.85
4	2.96	3.26	3.29	3.44	---	---	---	3.27	3.20	2.98	2.94	2.86
5	2.94	3.26	3.28	---	---	---	3.43	3.28	3.20	3.02	2.94	2.84
6	2.93	3.26	3.30	---	---	---	3.40	3.26	3.20	3.06	2.93	2.82
7	2.92	3.24	3.30	---	---	---	3.39	3.26	3.19	3.04	2.90	2.80
8	2.93	3.23	3.44	---	---	---	3.38	3.26	3.19	3.02	2.88	2.88
9	2.95	3.23	3.42	---	3.45	---	3.37	3.26	3.19	3.02	2.88	2.90
10	2.95	3.24	3.42	---	---	---	3.34	3.26	3.18	3.00	2.88	2.90
11	2.94	3.24	3.41	3.40	---	---	3.28	3.24	3.16	2.98	2.86	2.88
12	2.94	3.24	3.44	---	---	---	3.27	3.24	3.16	2.98	2.85	2.86
13	2.94	3.23	3.42	3.51	---	---	3.27	3.26	3.13	2.98	2.84	2.86
14	2.93	3.23	3.46	---	---	3.44	3.27	3.24	3.13	2.96	2.82	2.87
15	2.94	3.22	3.47	---	3.46	---	3.25	3.24	3.10	2.94	2.80	2.85
16	2.98	3.23	3.47	---	---	---	3.24	3.25	3.08	2.92	2.80	2.83
17	3.05	3.22	---	---	---	---	3.23	3.25	3.08	2.92	2.79	2.82
18	3.06	3.22	---	---	---	---	3.22	3.26	3.08	2.92	2.78	2.82
19	3.06	---	---	3.50	---	---	3.21	3.27	3.08	2.92	2.96	2.82
20	3.06	---	---	---	---	---	3.26	3.30	3.06	2.92	2.97	2.80
21	3.04	---	---	---	3.45	---	3.26	3.27	3.04	2.88	2.99	2.77
22	3.05	---	3.42	---	---	3.45	3.26	3.27	3.04	2.88	2.99	2.78
23	3.06	---	3.50	---	---	---	3.28	3.28	3.02	2.84	2.98	2.77
24	3.16	---	---	---	---	---	3.24	3.30	3.02	2.90	2.97	2.76
25	3.14	---	---	---	---	---	3.24	3.29	3.04	2.88	2.96	2.77
26	3.15	---	3.43	---	---	---	3.30	3.29	3.06	2.94	2.95	2.78
27	3.16	---	---	3.47	---	---	3.32	3.28	3.04	2.96	2.96	2.88
28	3.16	3.28	---	---	3.44	3.42	3.32	3.27	3.02	2.96	2.95	2.86
29	3.24	3.28	---	---	---	---	3.31	3.26	3.02	2.94	2.94	2.90
30	3.26	3.28	---	---	---	---	3.31	3.27	3.00	2.92	2.93	2.92
31	3.26	---	---	---	---	---	---	3.25	---	2.90	2.92	---
MEAN	3.03	---	---	---	---	---	---	3.27	3.11	2.95	2.90	2.84
MAX	3.26	---	---	---	---	---	---	3.30	3.23	3.06	2.99	2.92
MIN	2.92	---	---	---	---	---	---	3.24	3.00	2.84	2.78	2.76

STREAMS TRIBUTARY TO LAKE MICHIGAN

450415085153501 INTERMEDIATE LAKE AT CENTRAL LAKE, MI

LOCATION.--Lat 45°04'15", long 85°15'35", in SW 1/4 sec.23, T.31 N., R.8 W., Antrim County, Hydrologic Unit 04060105, on upstream side of bridge, at Central Lake.

DRAINAGE AREA.--112 mi^2.

PERIOD OF RECORD.--November 1945 to February 1975, October 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 599.38 ft above sea level (Antrim County Department of Public Works bench mark) November 6, 1945 to February 28, 1975, non-recording gage at datum of 605.73 ft above sea level.

REMARKS.--A long string of small lakes drain into the north end of Intermediate Lake. The outlet is located at the south end of Intermediate Lake and flows into Lake Bellaire. Lake elevation controlled by dam. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 9.55 ft, Apr. 6, 1963, present datum; minimum observed, 6.05 ft, Sept. 12-15, 1973, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.60 ft, Apr. 6, 7; minimum, 6.54 ft, Mar. 22, 25, 28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.15	7.13	7.02	7.07	6.80	6.77	7.21	7.22	7.06	7.13	7.11	7.09
2	7.16	7.13	7.02	7.13	6.79	6.76	7.35	7.18	7.12	7.13	7.10	7.09
3	7.17	7.12	7.03	7.16	6.77	6.74	7.45	7.15	7.09	7.12	7.14	7.10
4	7.19	7.11	7.03	7.18	6.75	6.71	7.52	7.13	7.07	7.15	7.26	7.11
5	7.22	7.10	7.06	7.17	6.74	6.70	7.56	7.11	7.13	7.13	7.28	7.13
6	7.21	7.08	7.07	7.18	6.75	6.68	7.58	7.11	7.17	7.11	7.20	7.13
7	7.18	7.04	7.14	7.18	6.82	6.69	7.57	7.10	7.20	7.11	7.12	7.13
8	7.16	7.02	7.32	7.16	6.91	6.69	7.54	7.10	7.25	7.11	7.10	7.10
9	7.14	7.00	7.38	7.14	6.95	6.68	7.51	7.09	7.26	7.11	7.12	7.08
10	7.10	6.97	7.41	7.12	6.97	6.67	7.45	7.09	7.27	7.10	7.18	7.09
11	7.05	6.98	7.41	7.09	6.98	6.66	7.40	7.07	7.29	7.10	7.16	7.10
12	7.00	6.97	7.43	7.08	6.98	6.66	7.33	7.05	7.22	7.14	7.12	7.10
13	6.96	6.96	7.45	7.19	6.97	6.65	7.25	7.06	7.14	7.19	7.07	7.11
14	6.92	6.94	7.42	7.24	6.99	6.63	7.19	7.09	7.15	7.22	7.09	7.11
15	6.90	6.92	7.40	7.24	7.00	6.62	7.12	7.10	7.18	7.20	7.11	7.11
16	6.98	6.90	7.36	7.23	6.99	6.61	7.12	7.10	7.15	7.18	7.13	7.11
17	7.10	6.89	7.34	7.23	7.00	6.61	7.14	7.10	7.11	7.17	7.14	7.11
18	7.15	6.88	7.29	7.21	6.99	6.59	7.16	7.10	7.14	7.15	7.16	7.11
19	7.14	6.86	7.26	7.19	6.97	6.58	7.17	7.11	7.15	7.10	7.28	7.11
20	7.13	6.88	7.24	7.16	6.94	6.58	7.23	7.13	7.17	7.13	7.28	7.11
21	7.11	6.89	7.24	7.12	6.93	6.57	7.25	7.14	7.17	7.17	7.26	7.12
22	7.10	6.88	7.22	7.09	6.90	6.56	7.24	7.17	7.17	7.20	7.21	7.12
23	7.12	6.86	7.20	7.06	6.88	6.56	7.23	7.26	7.17	7.23	7.17	7.11
24	7.16	6.84	7.18	7.02	6.86	6.56	7.23	7.28	7.17	7.38	7.12	7.11
25	7.16	6.83	7.14	7.00	6.84	6.55	7.31	7.26	7.17	7.36	7.13	7.13
26	7.14	6.82	7.10	6.97	6.81	6.55	7.36	7.22	7.16	7.35	7.18	7.19
27	7.15	6.85	7.07	6.94	6.78	6.56	7.37	7.18	7.17	7.27	7.24	7.16
28	7.15	6.93	7.04	6.90	6.77	6.58	7.35	7.05	7.18	7.19	7.20	7.11
29	7.17	7.00	7.01	6.87	---	6.64	7.31	7.01	7.17	7.19	7.13	7.10
30	7.17	7.02	6.99	6.85	---	6.76	7.27	6.96	7.17	7.16	7.07	7.08
31	7.14	---	7.03	6.83	---	7.00	---	6.99	---	7.14	7.06	---
MEAN	7.12	6.96	7.20	7.10	6.89	6.65	7.33	7.12	7.17	7.17	7.16	7.11
MAX	7.22	7.13	7.45	7.24	7.00	7.00	7.58	7.28	7.29	7.38	7.28	7.19
MIN	6.90	6.82	6.99	6.83	6.74	6.55	7.12	6.96	7.06	7.10	7.06	7.08

CAL YR 2004 MEAN 7.07 MAX 8.07 MIN 6.37
WTR YR 2005 MEAN 7.08 MAX 7.58 MIN 6.55

STREAMS TRIBUTARY TO LAKE MICHIGAN

04127800 JORDAN RIVER NEAR EAST JORDAN, MI

LOCATION.--Lat 45°06'09", long 85°05'53", in NW1/4 NW1/4 sec.7, T.31 N., R.6 W., Antrim County, Hydrologic Unit 04060105, on right bank 300 ft downstream from Webster Bridge, 4.2 mi south of East Jordan, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--67.9 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1960-65. October 1966 to current year.

REVISED RECORDS.--WDR MI-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 596.43 ft above sea level (Antrim County Road Commission bench mark). Nov. 19, 1959 to Sept. 30, 1966, nonrecording gage at site 600 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation at low flow by fish hatchery upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	182	186	241	e179	168	282	179	165	160	158	162
2	183	199	184	220	e179	166	245	179	164	159	156	161
3	168	187	184	223	179	165	227	180	163	156	156	162
4	183	184	217	211	179	165	211	177	166	174	e336	161
5	174	194	225	208	183	160	209	175	171	173	e238	160
6	168	181	190	200	196	163	207	175	164	161	171	159
7	167	178	282	200	265	173	200	183	161	156	163	171
8	178	178	321	200	239	163	193	176	163	154	160	172
9	187	176	222	199	197	162	189	174	160	154	159	163
10	170	178	204	199	183	162	187	181	159	153	175	162
11	168	208	194	198	178	153	180	177	207	152	166	162
12	167	182	193	201	180	151	176	173	196	153	185	160
13	167	176	198	365	179	150	175	185	167	155	172	160
14	168	175	187	231	185	149	175	200	165	152	164	176
15	172	175	183	e202	194	148	175	186	213	151	160	164
16	264	176	185	e202	191	146	174	179	180	151	159	163
17	316	179	183	e202	186	148	174	175	168	155	158	162
18	202	179	183	e186	179	147	174	173	166	155	167	162
19	179	175	167	e184	177	147	174	176	164	151	248	163
20	175	191	172	e179	179	148	257	177	161	150	287	167
21	174	201	e173	e175	175	149	200	171	159	152	223	162
22	171	182	e171	e175	174	152	182	182	157	151	182	163
23	187	178	e171	e175	172	153	183	265	158	150	173	164
24	210	175	e171	e175	173	155	199	200	158	247	169	161
25	183	176	e167	e175	173	162	276	179	156	183	166	172
26	176	177	e163	e175	170	170	224	174	156	244	165	200
27	205	215	e162	e175	174	181	199	173	172	178	171	170
28	190	268	e160	e175	166	206	197	171	193	162	169	170
29	199	212	e154	e175	---	241	186	170	162	187	164	242
30	197	192	150	e175	---	309	181	168	159	163	163	178
31	192	---	246	e177	---	367	---	167	---	159	163	---
TOTAL	5803	5629	5948	6178	5184	5379	6011	5600	5053	5101	5646	5054
MEAN	187	188	192	199	185	174	200	181	168	165	182	168
MAX	316	268	321	365	265	367	282	265	213	247	336	242
MIN	163	175	150	175	166	146	174	167	156	150	156	159
CFSM	2.76	2.76	2.83	2.94	2.73	2.56	2.95	2.66	2.48	2.42	2.68	2.48
IN.	3.18	3.08	3.26	3.38	2.84	2.95	3.29	3.07	2.77	2.79	3.09	2.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2005, BY WATER YEAR (WY)

MEAN	185	189	186	181	181	207	219	193	181	172	172	178
MAX	235	226	217	202	209	281	273	237	230	210	203	223
(WY)	1987	1993	1983	1997	1984	1979	1979	1983	1969	1975	1972	1986
MIN	163	163	163	157	157	174	163	164	160	151	150	150
(WY)	2001	1982	1982	1971	1982	2005	2000	1982	1982	1981	2001	1981

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1967 - 2005	
ANNUAL TOTAL	70065		66586			
ANNUAL MEAN	191		182		187	
HIGHEST ANNUAL MEAN					204	1979
LOWEST ANNUAL MEAN					170	2000
HIGHEST DAILY MEAN	561	May 24	367	Mar 31	840	Sep 29 1972
LOWEST DAILY MEAN	150	Dec 30	146	Mar 16	130	Jan 19 1971
ANNUAL SEVEN-DAY MINIMUM	161	Dec 24	148	Mar 14	136	Dec 28 1968
MAXIMUM PEAK FLOW			478	Dec 7	1360	Jul 19 1975
MAXIMUM PEAK STAGE			4.84	Dec 7	6.51	Jul 19 1975
INSTANTANEOUS LOW FLOW			144	Mar 16	(a)91	Mar 8 1982
ANNUAL RUNOFF (CFSM)	2.82		2.69		2.76	
ANNUAL RUNOFF (INCHES)	38.39		36.48		37.43	
10 PERCENT EXCEEDS	221		212		220	
50 PERCENT EXCEEDS	183		175		178	
90 PERCENT EXCEEDS	165		156		159	

(a) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE MICHIGAN

451540084560301 WALLOON LAKE AT WALLOON LAKE, MI

LOCATION.--Lat 45°15'40", long 84°56'03", in NW1/4 NW1/4 sec.16, T.33 N., R.5 W., Charlevoix County, Hydrologic Unit 04060105, on left upstream wingwall of dam at outlet of Walloon Lake (Bear River), 0.1 mi south of Walloon Lake.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--July 1942 to September 1950, September 1995 to current year.

GAGE.--Nonrecording gage. Datum of gage is 684.60 ft above sea level, (Charlevoix Abstract & Engineering Co.). Prior to September 30, 1950, nonrecording gage at approximately same elevation.

REMARKS.--Staff gage read by observer. Lake level maintained by a fix-crest concrete dam. Crest of dam is divided into two parts. The right sill is about 22 ft wide and has its crest at elevation 2.64 ft, gage datum. The left sill, 13 ft wide, is at elevation 1.93 ft, gage datum.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 3.47 ft, Apr. 3, 1998; minimum observed, 2.14 ft, Sept. 10, 1947, Oct. 7, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 2.92 ft, Jan. 13, 21; minimum observed, 2.15 ft, Oct. 7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.20	2.59	---	---	2.80	---	---	2.84	---	---	2.36	---
2	---	---	---	2.90	---	---	2.84	---	---	2.55	---	---
3	---	2.60	2.70	---	---	---	---	---	2.69	---	---	2.48
4	---	---	---	---	2.79	2.80	2.80	---	---	2.56	2.40	---
5	---	---	---	---	---	---	---	---	2.68	---	2.38	2.46
6	---	---	2.70	---	---	---	2.82	---	---	---	---	---
7	2.15	---	---	2.90	2.81	2.80	---	---	---	---	2.40	2.44
8	---	---	---	---	---	---	2.80	---	---	---	---	---
9	---	---	---	---	---	---	---	2.73	---	2.50	---	---
10	---	---	---	2.90	2.81	---	---	---	2.66	---	---	2.42
11	2.22	2.59	---	---	---	2.80	---	---	---	---	---	---
12	---	---	---	---	---	---	---	2.74	2.75	---	---	---
13	---	---	---	2.92	---	---	---	---	---	2.44	2.48	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	2.74	---	---	2.80	2.46	---	2.43
16	---	---	---	---	2.82	---	2.76	---	---	2.40	---	---
17	---	2.59	---	---	---	---	2.74	2.71	---	---	---	---
18	2.22	---	---	---	---	2.72	---	---	2.75	---	---	---
19	---	---	---	---	---	---	---	---	2.73	---	---	2.40
20	---	---	---	---	---	---	---	2.70	---	2.36	2.55	---
21	2.45	---	---	2.92	---	2.74	2.80	---	---	---	---	2.36
22	---	---	---	---	2.83	---	---	2.74	---	---	---	---
23	---	---	2.87	---	---	---	---	---	---	2.30	2.54	---
24	---	2.63	---	---	2.82	2.72	---	2.74	---	---	---	2.35
25	---	---	---	---	---	---	---	---	2.69	---	---	---
26	2.48	---	---	---	---	2.74	---	---	2.59	---	---	---
27	---	---	---	---	---	---	2.82	2.74	---	---	2.54	2.40
28	2.54	---	2.89	2.85	2.80	2.74	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	2.59	---	2.47	2.47
30	---	---	---	---	---	2.72	2.82	---	---	---	2.48	---
31	---	---	---	---	---	---	---	2.70	---	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04127918 PINE RIVER NEAR RUDYARD, MI

LOCATION.--Lat 46°11'09", long 84°35'52", in NW1/4 NE1/4 sec.30, T.44 N., R.2 W., Chippewa County, Hydrologic Unit 04070002, on right bank 15 ft upstream from bridge on Mackinac Trail, 3.2 mi south of Rudyard.

DRAINAGE AREA.--184 mi^2.

PERIOD OF RECORD.--April 1972 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 601.50 ft above sea level. Prior to Aug. 4, 1972, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	247	342	e190	e74	e69	e238	214	95	62	68	61
2	75	215	279	e186	e74	e68	e279	213	89	61	e67	58
3	87	194	230	e170	e77	e67	e346	208	85	59	e60	58
4	79	177	e250	e164	e78	e67	e554	195	81	60	80	57
5	78	181	e250	e148	e80	e66	e834	178	85	62	102	55
6	73	180	e250	e142	e84	e64	1340	166	92	63	77	54
7	72	170	e250	e140	e84	e63	2010	177	89	60	67	53
8	79	165	e250	e134	e84	e63	1330	166	84	57	61	53
9	126	162	e250	e126	e82	e63	915	158	82	56	60	51
10	122	226	e250	e120	e79	e63	689	199	80	54	81	52
11	109	504	e240	e118	e78	e63	532	207	78	54	86	58
12	102	330	e230	e114	e79	e62	425	178	76	55	76	58
13	96	262	e230	e112	e80	e62	357	182	75	53	71	57
14	91	225	e220	e108	e79	e62	316	410	84	51	66	65
15	97	208	e211	e102	e80	e62	285	333	254	50	62	66
16	112	197	e200	e99	e78	e62	260	270	204	48	60	58
17	161	191	e189	e96	e76	e62	243	227	155	48	57	56
18	188	185	e182	e92	e73	e64	231	199	128	47	57	56
19	170	174	e174	e89	e72	e64	218	176	110	47	66	64
20	153	268	e178	e85	e72	e64	242	158	97	46	82	92
21	139	348	e174	e83	e72	e65	250	145	87	47	86	86
22	129	270	e176	e79	e72	e67	220	136	80	46	78	74
23	138	234	e171	e78	e71	e68	201	143	77	46	71	69
24	397	207	e166	e77	e70	e67	208	138	79	48	65	64
25	365	189	e160	e75	e71	e67	380	126	75	54	60	62
26	290	166	e160	e74	e71	e69	380	115	72	54	58	68
27	268	201	e145	e74	e73	e69	336	110	68	61	64	71
28	260	1160	e139	e74	e71	e78	293	106	65	54	78	69
29	226	807	e139	e73	---	e96	261	115	64	58	76	115
30	247	478	e137	e72	---	e137	236	110	64	59	72	129
31	286	---	e177	e72	---	e185	---	104	---	59	66	---
TOTAL	4880	8521	6399	3366	2134	2248	14409	5562	2854	1679	2180	1989
MEAN	157	284	206	109	76.2	72.5	480	179	95.1	54.2	70.3	66.3
MAX	397	1160	342	190	84	185	2010	410	254	63	102	129
MIN	65	162	137	72	70	62	201	104	64	46	57	51
CFSM	0.86	1.54	1.12	0.59	0.41	0.39	2.61	0.98	0.52	0.29	0.38	0.36
IN.	0.99	1.72	1.29	0.68	0.43	0.45	2.91	1.12	0.58	0.34	0.44	0.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2005, BY WATER YEAR (WY)

MEAN	214	272	178	116	107	256	776	260	166	106	99.8	139
MAX	485	807	340	248	217	544	1589	633	432	261	349	383
(WY)	2002	1989	2002	1980	1984	1973	1985	1972	1974	1979	1973	1996
MIN	60.4	72.7	59.1	60.3	57.6	72.5	189	83.7	73.6	54.2	48.7	55.3
(WY)	2001	1977	2001	1977	2003	2005	2000	2000	2000	2005	2000	2000

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1972 - 2005	
ANNUAL TOTAL	76008		56221			
ANNUAL MEAN	208		154		223	
HIGHEST ANNUAL MEAN					344	1985
LOWEST ANNUAL MEAN					138	1998
HIGHEST DAILY MEAN	1330	May 24	2010	Apr 7	4050	Apr 21 1985
LOWEST DAILY MEAN	62	Sep 28	46	Jul 20	42	Aug 29 2000
ANNUAL SEVEN-DAY MINIMUM	64	Sep 25	47	Jul 17	43	Aug 25 2000
MAXIMUM PEAK FLOW			(a)2360	Apr 7	(b)4500	Mar 30 1986
MAXIMUM PEAK STAGE			(c)13.19	Apr 1	(c)19.34	Mar 29 2004
INSTANTANEOUS LOW FLOW			45	(d)	(f)33	Nov 16 1989
ANNUAL RUNOFF (CFSM)	1.13		0.837		1.21	
ANNUAL RUNOFF (INCHES)	15.37		11.37		16.43	
10 PERCENT EXCEEDS	447		264		450	
50 PERCENT EXCEEDS	152		87		120	
90 PERCENT EXCEEDS	72		58		66	

(a) Gage height 11.38 ft.
(b) Gage height 18.44 ft.
(c) Backwater from ice.
(d) July 20, 22, 23.
(e) Estimated.
(f) Result of Freezeup.

STREAMS TRIBUTARY TO LAKE HURON

04127937 EAST LAKE NEAR FIBRE, MI

LOCATION.--Lat 46°07'56", long 84°47'31", in SE1/4 SW1/4 sec.10, T.43 N., R.4 W., Mackinac County, Hydrologic Unit 04070002, 5.9 mi southwest of Fibre.

DRAINAGE AREA.--5.87 mi^2.

PERIOD OF RECORD.--July 1967 to September 1971, June 1990 to current year.

REVISED RECORDS.--WDR MI-96-1: 1991 (M).

GAGE.--Nonrecording gage. Elevation of gage is 805 ft above sea level, from topographic map. July 12, 1967 to Sept. 1, 1971, nonrecording gage at different datum.

REMARKS.--Staff gage read by observer. The inlet to East Lake is a small unnamed stream draining a marsh at the north end of the lake. The outlet is the East Lake Branch of the Carp River. Surface area of lake is 995 acres.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.62 ft, Dec. 2, 1991; minimum observed, 2.52 ft, July 28, 29, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 3.81 ft, Apr. 14, 15; minimum observed, 2.52 ft, July 28, 29.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.98	3.34	---	---	---	---	3.39	3.70	3.36	2.90	2.60	2.66
2	2.98	3.34	---	---	---	---	3.39	3.70	---	2.88	2.58	2.64
3	---	3.34	---	---	---	---	3.39	3.68	3.28	2.88	2.58	2.64
4	3.00	3.36	---	---	---	---	3.41	3.68	3.26	2.86	2.60	2.64
5	---	3.36	---	---	---	---	3.41	3.66	3.26	2.82	2.66	2.62
6	---	3.36	3.67	---	---	---	---	3.62	3.28	2.82	2.64	2.62
7	---	3.36	---	---	---	---	---	3.60	3.24	2.82	2.60	2.60
8	---	---	---	---	---	3.42	---	3.60	3.24	2.82	2.60	2.58
9	3.10	---	---	---	---	---	---	3.58	3.20	2.80	2.58	2.58
10	3.10	---	---	---	---	---	---	3.58	3.18	2.80	2.60	2.56
11	3.08	---	---	---	---	---	---	3.60	3.18	2.76	2.58	2.56
12	3.06	---	---	---	---	---	---	3.56	3.18	2.76	2.58	2.54
13	3.06	---	---	---	---	---	---	3.60	3.16	2.74	2.54	2.56
14	3.06	---	---	---	---	---	3.81	3.60	3.14	2.70	2.60	2.60
15	3.06	---	---	---	---	---	3.81	---	3.12	2.68	2.60	2.62
16	3.08	---	---	---	---	---	3.79	3.56	---	2.68	2.60	2.62
17	3.08	---	---	---	---	---	3.75	3.56	3.10	2.68	2.62	2.60
18	3.08	---	---	3.53	---	---	3.75	3.54	3.08	2.64	2.62	2.60
19	3.12	---	---	---	---	---	---	3.52	3.08	2.64	2.64	2.60
20	---	---	---	---	---	---	---	3.50	3.06	2.60	2.64	2.70
21	---	---	---	---	---	---	---	3.48	3.06	2.60	2.66	2.70
22	---	---	---	---	---	---	---	3.46	3.02	2.58	2.64	2.68
23	---	---	---	---	---	---	---	3.46	---	2.58	2.60	2.68
24	---	---	---	---	---	---	---	3.45	3.00	2.56	2.60	2.66
25	---	---	---	---	---	---	---	3.46	3.00	2.56	2.60	2.70
26	---	---	---	---	---	---	---	3.42	2.98	2.54	2.62	2.70
27	3.30	---	---	---	---	---	---	3.40	2.98	2.54	2.66	2.72
28	3.32	---	---	---	---	---	3.75	3.38	2.94	2.52	2.68	2.72
29	3.34	---	---	---	---	---	---	3.38	2.92	2.52	2.70	2.72
30	3.34	---	---	---	---	---	---	3.38	2.92	2.54	2.68	---
31	3.34	---	---	---	---	---	---	3.36	---	2.54	2.66	---

STREAMS TRIBUTARY TO LAKE HURON

453345084401501 DOUGLAS LAKE NEAR PELLSTON, MI

LOCATION.--Lat 45°33'45", long 84°40'15", in NW1/4 NE1/4 sec.33, T.37 N., R.3 W., Cheboygan County, Hydrologic Unit 04070004, in boat well in Laboratory building at University of Michigan Biological Station.

DRAINAGE AREA.--26.5 mi^2.

PERIOD OF RECORD.--June 1942 to December 1959, October 1994 to current year.

GAGE.--Nonrecording gage. Datum of gage is 710.00 ft above sea level (Doyle Civil Engineers bench mark). June 1942 to December 1959 at same site at datum 2.34 ft higher.

REMARKS.--Staff gage read by observer. Beavertail Creek flows into the lake from the northeast and Lancaster Creek flows into the lake from the northwest. East Branch Maple River flows from the southwest side of lake into Maple River, then into Burt Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 4.68 ft, May 7, 1959, from floodmark, present datum; minimum observed, 0.78 ft, Oct. 15, 1955, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 3.99 ft, Apr. 28; minimum observed, 2.11 ft, Sept. 27.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.60	---	---	---	---	---	---	3.43	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	2.63	---	3.45	---	---	---	---	3.37	---	2.33	---
4	---	---	---	---	---	---	3.55	3.79	---	---	---	---
5	2.55	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	2.73	---	2.25
7	---	---	---	---	3.37	3.35	---	---	---	---	---	2.25
8	---	---	---	---	---	---	3.85	---	---	---	2.23	2.23
9	---	2.59	3.19	---	---	---	---	---	3.27	2.67	---	---
10	---	---	---	3.47	---	---	---	3.71	---	---	---	2.21
11	2.53	---	---	---	---	---	3.93	---	3.25	2.63	2.23	---
12	---	---	---	---	---	---	---	---	---	2.61	---	---
13	---	---	---	---	---	---	---	---	3.27	---	---	---
14	---	---	---	---	3.37	3.29	3.93	3.67	---	---	2.23	---
15	---	2.61	---	---	---	---	3.93	---	---	2.57	2.21	---
16	---	---	3.33	---	---	---	---	---	---	---	---	2.17
17	---	---	---	3.51	---	---	---	3.61	---	2.53	---	---
18	---	---	---	---	---	3.27	---	---	---	2.53	---	---
19	---	2.65	---	---	---	---	3.87	---	3.11	2.53	---	2.13
20	---	---	---	---	---	---	---	---	3.08	---	---	---
21	2.53	---	---	---	3.39	3.29	---	---	---	---	2.44	---
22	---	2.73	---	---	---	---	---	3.53	---	---	---	2.13
23	---	---	---	---	---	---	---	---	---	2.39	---	---
24	---	---	3.39	3.47	---	3.25	---	---	---	2.41	2.39	---
25	2.57	---	---	---	---	---	---	3.53	---	2.41	---	---
26	---	---	---	---	---	---	---	---	---	2.43	---	---
27	---	---	---	---	---	---	---	---	2.93	---	---	2.11
28	---	---	---	---	3.35	---	3.99	---	---	---	---	---
29	2.61	2.91	---	---	---	3.23	---	---	---	2.39	2.39	---
30	---	---	---	---	---	---	---	---	2.87	---	---	---
31	---	---	---	3.41	---	3.29	---	3.45	---	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04127997 STURGEON RIVER AT WOLVERINE, MI

LOCATION.--Lat 45°16'28", long 84°36'00", in SE1/4 SW1/4 sec.6, T.33 N., R.2 W., Cheboygan County, Hydrologic Unit 04070004, on right bank at Cedar Street in Wolverine, 0.2 mi downstream from West Branch, and 11.7 mi upstream from mouth.

DRAINAGE AREA.--192 mi^2.

PERIOD OF RECORD.--April 1942 to current year. Published as "near Wolverine" prior to October 1994.

REVISED RECORDS.--WSP 1307: 1944(M), 1948(M). WSP 1727: 1951(M). WDR MI-83-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 770 ft above sea level, from topographic map. Prior to June 15, 1942, nonrecording gages at site 1.7 mi downstream and June 16, 1942 to Sept. 30, 1958, at site 2.0 mi downstream at different datums. Oct. 1, 1958 to Sept. 30, 1994, water-stage recorder at site 2.7 mi downstream at different datum (Station 04128000).

REMARKS.--Records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	236	269	269	191	178	441	220	175	156	154	169
2	154	263	266	226	194	174	388	211	170	155	150	163
3	152	248	258	225	196	e179	344	210	168	148	146	160
4	171	227	285	203	196	e177	316	208	167	158	345	159
5	176	234	330	187	192	e178	318	203	176	201	422	156
6	165	220	280	176	202	181	334	201	187	176	217	154
7	158	211	360	190	261	189	314	204	172	158	178	157
8	168	211	439	188	265	e184	289	200	169	153	165	163
9	201	211	325	181	217	e184	265	196	167	150	161	159
10	176	221	289	180	211	e182	247	207	164	147	183	155
11	165	274	268	177	199	178	227	203	209	146	177	153
12	161	240	244	186	189	174	221	194	210	146	206	151
13	161	218	239	380	184	168	216	205	184	149	208	151
14	163	210	216	317	191	e168	212	227	185	146	179	167
15	168	214	210	e235	205	e168	210	213	407	146	166	162
16	262	220	210	e223	199	168	205	209	336	145	162	158
17	436	239	207	e220	189	171	204	199	231	148	158	157
18	331	242	205	e205	188	169	205	192	206	146	174	155
19	233	231	208	e200	190	172	204	186	180	147	447	156
20	209	271	e205	e203	e191	174	308	187	173	142	494	162
21	197	281	e205	e200	e189	174	292	183	167	143	467	156
22	189	251	e203	e198	181	175	240	188	164	142	305	156
23	202	244	e203	e198	e183	177	234	237	165	140	244	158
24	265	237	e196	e198	179	174	250	244	168	186	206	156
25	226	234	e196	e198	176	176	351	204	170	210	196	164
26	204	233	e189	e195	179	177	384	190	164	237	189	234
27	239	273	e187	e193	e185	184	304	188	162	217	186	194
28	237	407	e177	e193	e177	206	271	187	185	172	187	177
29	260	333	189	e193	---	245	254	190	163	165	178	229
30	286	287	188	e193	---	330	236	181	159	160	177	207
31	268	---	286	e203	---	470	---	178	---	156	173	---
TOTAL	6529	7421	7532	6533	5499	6004	8284	6245	5703	4991	7000	4998
MEAN	211	247	243	211	196	194	276	201	190	161	226	167
MAX	436	407	439	380	265	470	441	244	407	237	494	234
MIN	146	210	177	176	176	168	204	178	159	140	146	151
CFSM	1.10	1.29	1.27	1.10	1.02	1.01	1.44	1.05	0.99	0.84	1.18	0.87
IN.	1.26	1.44	1.46	1.27	1.07	1.16	1.61	1.21	1.10	0.97	1.36	0.97

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2005, BY WATER YEAR (WY)

MEAN	211	223	211	200	198	243	305	237	208	184	181	198
MAX	326	301	306	295	275	354	431	353	272	255	301	290
(WY)	1984	1993	1972	1973	1984	1976	1971	1983	1969	1994	1972	1986
MIN	153	164	157	133	130	172	179	154	149	130	134	141
(WY)	1957	1950	1949	1957	1957	1954	2000	1958	1958	1981	1944	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1942 - 2005	
ANNUAL TOTAL	82601		76739			
ANNUAL MEAN	226		210		217	
HIGHEST ANNUAL MEAN					268	1972
LOWEST ANNUAL MEAN					167	1958
HIGHEST DAILY MEAN	674	May 24	494	Aug 20	1080	Sep 29 1972
LOWEST DAILY MEAN	142	Sep 25	140	Jul 23	113	Aug 6 1958
ANNUAL SEVEN-DAY MINIMUM	145	Sep 21	144	Jul 17	118	Aug 3 1958
MAXIMUM PEAK FLOW			(a)548	Aug 19	(b)1290	Sep 29 1972
MAXIMUM PEAK STAGE			(c)5.94	Jan 21	(d)6.99	Feb 14 2003
INSTANTANEOUS LOW FLOW			139	(f)	(g)93	Mar 18 1993
ANNUAL RUNOFF (CFSM)	1.18		1.10		1.13	
ANNUAL RUNOFF (INCHES)	16.00		14.87		15.33	
10 PERCENT EXCEEDS	296		286		290	
50 PERCENT EXCEEDS	205		193		200	
90 PERCENT EXCEEDS	163		156		158	

(a) Gage height 4.21 ft.
(b) Gage height 3.72 ft, site and datum then in use.
(c) Backwater from ice.
(d) Backwater from ice; peak stage at previous site and datum, 4.48 ft, Sept. 14, 1961.
(e) Estimated.
(f) Part of each day July 23, 24.
(g) Result of freezeup.

STREAMS TRIBUTARY TO LAKE HURON

04128990 PIGEON RIVER NEAR VANDERBILT, MI

LOCATION.--Lat 45°09'24", long 84°28'00", in NW1/4 NW1/4 sec.20, T.32 N., R.1 W., Otsego County, Hydrologic Unit 04070004, on left bank at Sturgeon Valley Road, 9.7 mi east of Vanderbilt, 1.0 mi downstream from Lansing Club Dam, and 28.5 mi upstream from Mullett Lake.

DRAINAGE AREA.--57.7 mi^2.

PERIOD OF RECORD.--September 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 909.03 ft above sea level (Wade-Trim Inc. bench mark). September 1950 to October 1990, water-stage recorder at site 2.5 mi downstream at different datum (Station 04129000).

REMARKS.--Records good except for estimated daily discharges, which are poor. Prior to May 16, 1957, and since Apr. 22, 1958, regulation by Lansing Club Dam 1.0 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	79	75	126	89	66	191	79	55	46	56	56
2	53	100	75	71	67	66	179	73	59	47	46	55
3	53	91	74	89	66	76	122	75	59	53	49	49
4	55	81	73	85	66	69	128	75	53	45	161	57
5	57	75	86	70	64	72	125	71	63	67	332	49
6	53	74	85	65	72	62	146	67	57	58	103	54
7	52	69	96	64	88	65	135	67	58	47	60	52
8	57	71	215	68	109	73	104	75	49	52	59	57
9	85	67	138	65	86	79	107	67	56	45	54	52
10	64	66	102	64	79	72	82	78	57	46	63	55
11	58	71	91	64	69	69	90	66	67	48	62	53
12	60	76	79	65	69	68	86	62	64	46	86	46
13	56	73	80	198	66	67	80	77	58	46	74	54
14	60	66	76	161	65	74	75	75	57	44	63	58
15	64	67	77	93	70	65	70	76	151	45	59	51
16	82	66	70	82	73	61	72	68	134	47	54	54
17	173	68	72	79	71	60	74	68	71	58	53	56
18	128	70	68	75	75	59	74	63	73	51	71	57
19	72	70	66	67	68	59	80	64	64	58	299	51
20	72	77	64	69	84	62	141	59	53	53	374	59
21	68	75	93	68	59	62	e123	57	57	45	385	58
22	69	75	71	67	63	62	e90	79	50	52	116	47
23	73	70	69	65	67	63	86	136	53	45	80	61
24	118	69	73	60	65	63	84	127	52	88	76	51
25	74	67	77	65	62	63	125	96	58	73	61	66
26	66	65	65	65	63	64	185	65	53	155	58	107
27	94	73	74	59	59	64	148	67	50	85	62	70
28	78	151	70	65	67	81	89	69	47	62	63	67
29	103	123	63	68	---	94	87	79	48	59	60	131
30	98	75	63	64	---	124	87	66	53	59	58	91
31	83	---	106	67	---	219	---	61	---	50	58	---
TOTAL	2328	2320	2586	2433	2001	2303	3265	2307	1879	1775	3255	1824
MEAN	75.1	77.3	83.4	78.5	71.5	74.3	109	74.4	62.6	57.3	105	60.8
MAX	173	151	215	198	109	219	191	136	151	155	385	131
MIN	50	65	63	59	59	59	70	57	47	44	46	46
CFSM	1.30	1.34	1.45	1.36	1.24	1.29	1.89	1.29	1.09	0.99	1.82	1.05
IN.	1.50	1.50	1.67	1.57	1.29	1.48	2.10	1.49	1.21	1.14	2.10	1.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2005, BY WATER YEAR (WY)

MEAN	77.5	81.8	75.8	70.4	70.2	88.1	117	86.2	70.5	64.5	64.4	71.5
MAX	112	112	105	94.9	90.1	136	164	142	94.5	106	116	120
(WY)	1987	1989	1972	1973	1984	1976	1960	1983	1993	1994	1995	1961
MIN	56.6	63.1	60.1	50.8	50.1	62.8	69.8	54.4	50.7	46.7	42.6	50.0
(WY)	1964	2000	2003	2003	2003	2001	2000	1958	1958	2000	1958	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1951 - 2005	
ANNUAL TOTAL	27241		28276			
ANNUAL MEAN	74.4		77.5		78.2	
HIGHEST ANNUAL MEAN					90.7	1985
LOWEST ANNUAL MEAN					62.3	1958
HIGHEST DAILY MEAN	306	May 24	385	Aug 21	829	Aug 18 1995
LOWEST DAILY MEAN	38	Aug 7	44	Jul 14	23	Mar 3 2003
ANNUAL SEVEN-DAY MINIMUM	46	Aug 3	46	Jul 9	38	Aug 2 1958
MAXIMUM PEAK FLOW			500	Aug 21	(a)1500	May 15 1957
MAXIMUM PEAK STAGE			4.49	Aug 21	6.49	Aug 18 1995
INSTANTANEOUS LOW FLOW			13	Jan 27	6.6	Sep 16 2003
ANNUAL RUNOFF (CFSM)	1.29		1.34		1.35	
ANNUAL RUNOFF (INCHES)	17.56		18.23		18.41	
10 PERCENT EXCEEDS	106		112		109	
50 PERCENT EXCEEDS	66		67		70	
90 PERCENT EXCEEDS	50		52		54	

(a) From rating curve extended above 500 ft^3/s, result of failure of Lansing Club Dam; gage height 6.80 ft, from floodmark, site and datum then in use.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04133501 THUNDER BAY RIVER AT HERRON ROAD NEAR BOLTON, MI

LOCATION.--Lat 45°07'27", long 83°38'08", in NE 1/4 SE 1/4, sec.36, T.32 N., R.6 E., Alpena County, Hydrologic Unit 04070006, on right bank at upstream side of bridge on Herron Road, 4.5 mi southwest of Bolton, and 14.6 mi upstream from mouth.

DRAINAGE AREA.--586 mi^2.

PERIOD OF RECORD.--March 1945 to September 1980, July 2002 to current year. Prior to October 1980, published as "Thunder Bay River near Bolton".

REVISED RECORDS--WSP 1437: 1946. WSP 1727: 1947 (M).

GAGE.--Water-stage recorder. Elevation of gage is 680 ft above sea level, from topographic map. Prior to August 12, 1945, nonrecording gage at site 0.7 mi upstream, August 13, 1945 to September 1980, water-stage recorder at site 0.8 mi upstream at different datums (station 04133500).

REMARKS.--Records good except for estimated daily discharges, which are poor. Occasional regulation by dams upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	382	557	e495	e480	e293	1870	831	207	136	180	183
2	133	459	530	e540	e472	e289	1940	713	185	141	183	175
3	128	545	440	e583	e472	e289	1660	645	178	144	176	174
4	119	564	419	e593	e472	e289	1420	640	189	157	178	177
5	118	558	380	e593	e472	e290	1260	605	204	172	188	179
6	118	535	438	e574	e507	e290	1150	581	221	193	213	181
7	116	509	485	e536	e529	e290	1030	563	236	197	210	181
8	117	479	594	e503	e531	e290	919	571	256	193	194	181
9	123	434	738	e490	e526	e290	814	575	255	188	182	180
10	132	410	749	e486	e500	e290	710	552	307	177	183	179
11	142	414	705	e485	e476	e290	643	484	440	169	176	178
12	155	405	642	e604	e466	e290	620	390	432	164	190	175
13	164	387	606	e621	e458	e289	574	380	356	164	199	171
14	177	391	e582	e632	e458	e289	534	371	320	162	202	165
15	210	371	e564	e601	e458	e293	508	434	360	162	193	157
16	218	355	e549	e604	e478	e294	454	455	465	162	179	158
17	211	388	e535	e575	e459	e297	458	440	567	163	173	163
18	245	399	e524	e566	e453	e297	431	408	565	179	166	165
19	282	428	e521	e559	e442	e297	414	376	465	183	219	172
20	362	530	e519	e560	e437	e303	433	325	335	184	416	170
21	384	500	e514	e557	e430	e305	611	305	302	173	553	174
22	344	532	e498	e555	e423	e311	703	296	241	165	547	179
23	312	506	e472	e554	e417	e324	658	290	211	160	463	183
24	279	428	e478	e550	e398	e337	645	259	198	164	331	198
25	275	395	e489	e547	e376	e350	750	285	186	172	258	221
26	277	393	e485	e536	e355	e394	964	269	190	231	216	262
27	233	442	e485	e529	e329	e441	1130	238	182	220	209	349
28	238	505	e485	e522	e309	526	1180	223	178	231	205	359
29	316	567	e485	e514	---	683	1090	227	171	201	204	236
30	350	576	e485	e508	---	993	940	217	162	176	203	261
31	384	---	e480	e502	---	1420	---	211	---	178	190	---
TOTAL	6793	13787	16433	17074	12583	11923	26513	13159	8564	5461	7379	5886
MEAN	219	460	530	551	449	385	884	424	285	176	238	196
MAX	384	576	749	632	531	1420	1940	831	567	231	553	359
MIN	116	355	380	485	309	289	414	211	162	136	166	157
CFSM	0.37	0.79	0.91	0.94	0.77	0.66	1.51	0.73	0.49	0.30	0.41	0.34
IN.	0.43	0.88	1.05	1.09	0.80	0.76	1.69	0.84	0.55	0.35	0.47	0.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2005, BY WATER YEAR (WY)

MEAN	357	415	440	416	396	618	860	542	439	372	335	326
MAX	620	651	754	892	709	1408	1632	1099	954	765	594	542
(WY)	1955	1952	1972	1973	1974	1976	1971	1960	1967	1974	1973	1975
MIN	219	202	198	256	225	305	360	254	189	176	193	152
(WY)	2005	1950	1949	1959	1950	2003	1945	1977	1964	2005	2004	2004

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1945 - 2005	
ANNUAL TOTAL	169419		145555			
ANNUAL MEAN	463		399		461	
HIGHEST ANNUAL MEAN					650	1974
LOWEST ANNUAL MEAN					315	1964
HIGHEST DAILY MEAN	2340	May 26	1940	Apr 2	4190	Mar 26 1976
LOWEST DAILY MEAN	102	Sep 29	116	Oct 7	102	Sep 29 2004
ANNUAL SEVEN-DAY MINIMUM	113	Sep 25	120	Oct 3	113	Sep 25 2004
MAXIMUM PEAK FLOW			2040	Apr 2	(a)4290	Mar 26 1976
MAXIMUM PEAK STAGE			15.46	Apr 2	(b)16.31	May 26 2004
INSTANTANEOUS LOW FLOW			109	Oct 1	92	(c)
ANNUAL RUNOFF (CFSM)	0.792		0.682		0.790	
ANNUAL RUNOFF (INCHES)	10.78		9.27		10.73	
10 PERCENT EXCEEDS	836		605		704	
50 PERCENT EXCEEDS	388		371		380	
90 PERCENT EXCEEDS	165		171		249	

(a) Gage height 10.29 ft, site and datum then in use.
(b) Present site and datum; peak stage at previous site and datum, 10.49 ft, Mar. 25, 1976, backwater from ice.
(c) Sept. 28, 29, 1955, site then in use.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

442409084274001 LAKE ST. HELEN AT ST. HELEN, MI

LOCATION.--Lat 44°22'27", long 84°25'17", in SE1/4 NW1/4 sec.22, T.23 N., R.1 W., Roscommon County, Hydrologic Unit 04070007, at marina, at end of Monroe Sreet, in St. Helen.

DRAINAGE AREA.--72.2 mi^2.

PERIOD OF RECORD.--June 1942 to December 1959, August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,149.01 ft above sea level. June 18, 1942 to May 21, 1947, nonrecording gage at Artesia Beach at same datum. May 22, 1947 to Dec. 31, 1959, and Aug. 17, 1993 to May 21, 1998, nonrecording gage at outlet at same datum.

REMARKS.--Inlets are Marsh Creek, Russell Creek and Cameron Creek. The outlet is the South Branch Au Sable River. Lake elevation controlled by dam. Established legal level; 1,155.25 ft, minimum winter level 1,154.75 ft, above sea level. Prior to May 5, 1998, established legal level; 1,154.15 ft, minimum winter level 1,153.65 ft, above sea level. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 7.71 ft, May 26, 2004; minimum observed, 4.64 ft, Jan. 21, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 6.63 ft, June 14; minimum, 5.66 ft, Mar. 19, 23-28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.30	6.26	6.14	6.14	5.93	5.79	6.07	6.32	6.44	6.33	6.24	6.16
2	6.33	6.28	6.13	6.19	5.91	5.79	6.22	6.30	6.42	6.27	6.22	6.15
3	6.30	6.27	6.12	6.23	5.89	5.77	6.33	6.28	6.41	6.25	6.21	6.12
4	6.27	6.28	6.11	6.24	5.87	5.76	6.41	6.27	6.40	6.26	6.26	6.10
5	6.26	6.32	6.11	6.24	5.85	5.75	6.47	6.24	6.42	6.27	6.25	6.09
6	6.26	6.27	6.10	6.27	5.84	5.73	6.52	6.23	6.48	6.26	6.24	6.08
7	6.23	6.25	6.17	6.27	5.85	5.76	6.57	6.22	6.43	6.25	6.23	6.08
8	6.28	6.23	6.25	6.26	5.86	5.78	6.59	6.23	6.41	6.24	6.22	6.08
9	6.45	6.20	6.27	6.24	5.86	5.78	6.60	6.24	6.41	6.23	6.21	6.07
10	6.39	6.20	6.29	6.22	5.86	5.76	6.59	6.26	6.42	6.22	6.19	6.06
11	6.37	6.16	6.35	6.19	5.85	5.75	6.55	6.24	6.50	6.20	6.16	6.06
12	6.36	6.15	6.38	6.19	5.84	5.74	6.53	6.21	6.53	6.19	6.18	6.05
13	6.34	6.13	6.39	6.29	5.82	5.73	6.53	6.23	6.55	6.20	6.16	6.04
14	6.32	6.12	6.38	6.34	5.85	5.72	6.51	6.28	6.59	6.17	6.15	6.04
15	6.33	6.10	6.37	6.34	5.84	5.70	6.49	6.32	6.58	6.17	6.14	6.01
16	6.39	6.09	6.36	6.33	5.84	5.70	6.47	6.31	6.56	6.18	6.13	6.01
17	6.37	6.07	6.35	6.32	5.83	5.69	6.45	6.31	6.52	6.21	6.11	6.01
18	6.30	6.07	6.34	6.29	5.82	5.68	6.42	6.31	6.48	---	6.10	6.01
19	6.27	6.03	6.33	6.28	5.81	5.67	6.41	6.31	6.46	6.20	6.20	6.02
20	6.27	6.06	6.31	6.25	5.81	5.68	6.39	6.34	6.44	6.18	6.23	6.02
21	6.25	6.07	6.31	6.22	5.82	5.68	6.38	6.35	---	6.17	6.25	6.00
22	6.23	6.03	6.29	6.20	5.81	5.67	6.35	6.36	---	6.16	6.22	5.99
23	6.21	6.03	6.27	6.17	5.79	5.67	6.33	6.40	---	6.14	6.20	5.97
24	6.26	5.99	6.26	6.14	5.78	5.66	6.36	6.43	6.40	6.20	6.20	5.96
25	6.24	6.02	6.23	6.12	5.77	5.66	6.38	6.45	6.36	6.23	6.19	6.04
26	6.21	5.98	6.21	6.09	5.77	5.66	6.37	6.47	6.35	6.29	6.19	6.30
27	6.20	6.01	6.19	6.07	5.75	5.66	6.37	6.48	6.35	6.28	6.20	6.32
28	6.19	6.11	6.17	6.04	5.77	5.67	6.36	6.46	6.34	6.28	6.20	6.35
29	6.28	6.09	6.15	6.01	---	5.69	6.34	6.47	6.33	6.25	6.18	6.44
30	6.36	6.09	6.13	5.98	---	5.74	6.32	6.47	6.32	6.25	6.16	6.46
31	6.31	---	6.14	5.96	---	5.90	---	6.45	---	6.25	6.16	---
MEAN	6.29	6.13	6.25	6.20	5.83	5.72	6.42	6.33	---	---	6.19	6.10
MAX	6.45	6.32	6.39	6.34	5.93	5.90	6.60	6.48	---	---	6.26	6.46
MIN	6.19	5.98	6.10	5.96	5.75	5.66	6.07	6.21	---	---	6.10	5.96

STREAMS TRIBUTARY TO LAKE HURON

04135700 SOUTH BRANCH AU SABLE RIVER NEAR LUZERNE, MI

LOCATION.--Lat 44°36'53", long 84°27'20", in SE1/4 SE1/4 sec.29, T.26 N., R.1 W., Crawford County, Hydrologic Unit 04070007, on right bank 10 ft upstream from Smith Bridge, 400 ft downstream from bridge on State Highway 72, 4.6 mi upstream from mouth, and 9.1 mi west of Luzerne.

DRAINAGE AREA.--401 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1951-66. October 1966 to September 1989, October 1990 to current year.

REVISED RECORDS.--WSP 2111: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,070 ft above sea level, from topographic map. Apr. 19, 1951 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Occasional regulation by dam upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	196	236	237	e200	182	551	256	154	137	121	104
2	104	207	231	250	200	180	574	248	148	132	117	101
3	104	211	222	273	198	180	552	241	144	128	114	100
4	104	212	212	273	197	185	527	235	141	125	124	100
5	110	217	210	266	199	185	502	229	140	135	132	101
6	109	220	213	e240	204	186	494	221	137	135	131	100
7	110	215	236	e230	220	194	487	215	136	127	122	99
8	118	210	301	e220	240	206	475	209	139	121	115	100
9	150	209	310	221	238	225	453	194	168	117	110	99
10	155	229	319	218	228	233	426	177	164	115	108	97
11	153	221	331	218	214	200	398	170	168	113	105	95
12	144	207	319	222	209	194	375	165	165	110	113	94
13	145	197	298	326	202	191	354	161	165	110	114	94
14	147	190	267	e320	211	190	337	168	172	107	113	93
15	150	185	245	e270	213	183	319	179	179	106	108	92
16	161	185	248	e250	220	182	302	179	184	108	105	92
17	171	186	236	e230	221	182	289	174	185	109	102	93
18	173	185	237	e230	212	179	280	166	185	116	103	96
19	171	184	e220	e230	208	182	272	164	185	119	128	95
20	167	186	e210	e230	199	180	277	169	178	117	141	94
21	164	185	e210	e230	198	180	281	171	172	112	150	94
22	162	182	e210	e230	188	175	277	167	165	109	140	94
23	164	179	208	e230	191	183	276	185	155	111	128	94
24	175	176	e200	245	197	180	276	213	139	145	118	94
25	175	175	e200	242	188	195	279	214	135	172	115	99
26	173	172	e200	238	187	182	282	199	139	199	111	152
27	174	182	e190	e220	192	185	277	183	151	200	111	164
28	175	216	e190	e200	191	197	276	173	147	185	110	166
29	187	228	188	e200	---	224	273	168	154	163	108	193
30	205	231	184	e200	---	282	265	163	141	140	105	185
31	199	---	206	e200	---	444	---	159	---	129	104	---
TOTAL	4699	5978	7287	7389	5765	6246	11006	5915	4735	4052	3626	3274
MEAN	152	199	235	238	206	201	367	191	158	131	117	109
MAX	205	231	331	326	240	444	574	256	185	200	150	193
MIN	100	172	184	200	187	175	265	159	135	106	102	92
CFSM	0.38	0.50	0.59	0.59	0.51	0.50	0.91	0.48	0.39	0.33	0.29	0.27
IN.	0.44	0.55	0.68	0.69	0.53	0.58	1.02	0.55	0.44	0.38	0.34	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2005, BY WATER YEAR (WY)

MEAN	201	229	227	193	183	254	384	281	207	160	144	163
MAX	456	444	373	275	251	508	596	440	307	251	255	379
(WY)	1987	1992	1992	1973	1984	1976	1985	2004	1993	1969	1994	1975
MIN	110	121	134	118	105	130	178	145	124	107	102	95.0
(WY)	2003	2003	2003	2003	2003	2003	2000	1999	1977	1977	2002	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1967 - 2005	
ANNUAL TOTAL	83318		69972			
ANNUAL MEAN	228		192		219	
HIGHEST ANNUAL MEAN					280	1992
LOWEST ANNUAL MEAN					135	2003
HIGHEST DAILY MEAN	658	May 26	574	Apr 2	1110	Mar 29 1976
LOWEST DAILY MEAN	98	Sep 25	92	Sep 15	87	Sep 14 2002
ANNUAL SEVEN-DAY MINIMUM	100	Sep 23	93	Sep 11	88	Sep 12 2002
MAXIMUM PEAK FLOW			579	Apr 2	(a)1120	Mar 28 1976
MAXIMUM PEAK STAGE			6.02	Apr 2	(b)7.75	Jan 28 1986
INSTANTANEOUS LOW FLOW			92	(c)	(d)78	Feb 12 1981
ANNUAL RUNOFF (CFSM)	0.568		0.478		0.546	
ANNUAL RUNOFF (INCHES)	7.73		6.49		7.42	
10 PERCENT EXCEEDS	382		276		344	
50 PERCENT EXCEEDS	184		185		193	
90 PERCENT EXCEEDS	111		107		127	

(a) Gage height 7.30 ft.
(b) Backwater from ice.
(c) Sept. 14-17.
(d) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

445512084415301 OTSEGO LAKE NEAR GAYLORD, MI

LOCATION.--Lat 44°55'50", long 84°41'32", in SW1/4 SE1/4 sec.5, T.29 N., R.3 W., Otsego County, Hydrologic Unit 04070007, at Otsego Lake State Park, 200 ft northwest of boat ramp, 6.7 mi south of Gaylord.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--August 1942 to current year, except for winter months 1942-43, 1943-44, 1977-78.

GAGE.--Water-stage recorder. Datum of gage is 1,270.03 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Aug. 18, 1958, nonrecording gage at datum 2.00 ft higher.

REMARKS.--Otsego Lake has no natural inlets or outlets. In December 1972 an outlet tube and pump system was installed connecting the lake with the North Branch Au Sable River to lower lake levels. Established legal level; maximum, 1,273.5 ft, minimum, 1,272.0 ft, above sea level.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 5.10 ft, May 6, 7, 1972; minimum, 0.96 ft, Aug. 14, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 2.41 ft, Mar. 31 to Apr. 11, Apr. 20, 22-25; minimum, 1.32 ft, Oct. 7, 8.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.39	1.62	1.75	2.08	2.29	2.38	2.41	2.35	2.25	2.01	1.85	1.95
2	1.37	1.64	1.75	2.08	2.29	2.39	2.41	2.35	2.23	1.99	1.84	1.94
3	1.36	1.65	1.76	2.09	2.28	2.39	2.41	2.34	2.21	1.94	1.83	1.92
4	1.36	1.65	1.77	2.09	2.27	2.39	2.41	2.33	2.20	1.94	1.87	1.90
5	1.35	1.67	1.79	2.09	2.27	2.39	2.41	2.32	2.18	1.97	1.92	1.88
6	1.33	1.65	1.79	2.09	2.28	2.39	2.41	2.31	2.17	1.96	1.90	1.86
7	1.33	1.66	1.81	2.10	2.28	2.39	2.41	2.32	2.17	1.94	1.88	1.86
8	1.32	1.66	1.88	2.10	2.30	2.40	2.41	2.30	2.15	1.92	1.87	1.86
9	1.36	1.65	1.90	2.10	2.31	2.40	2.41	2.29	2.14	1.90	1.84	1.86
10	1.37	1.62	1.91	2.10	2.31	2.40	2.41	2.30	2.13	1.88	1.86	1.83
11	1.36	1.65	1.91	2.10	2.30	2.40	2.41	2.31	2.20	1.87	1.85	1.82
12	1.35	1.65	1.91	2.11	2.30	2.40	2.39	2.28	2.21	1.86	1.85	1.81
13	1.35	1.64	1.94	2.19	2.30	2.40	2.38	2.25	2.21	1.86	1.87	1.79
14	1.35	1.63	1.95	2.23	2.31	2.40	2.37	2.27	2.20	1.84	1.86	1.81
15	1.35	1.63	1.95	2.24	2.32	2.40	2.35	2.27	2.22	1.82	1.83	1.79
16	1.38	1.63	1.96	2.24	2.33	2.39	2.33	2.26	2.22	1.81	1.82	1.79
17	1.47	1.63	1.97	2.24	2.33	2.39	2.33	2.25	2.20	1.80	1.81	1.77
18	1.49	1.63	1.98	2.25	2.33	2.39	2.32	2.24	2.18	1.80	1.81	1.76
19	1.49	1.63	1.98	2.25	2.33	2.39	2.31	2.23	2.16	1.81	1.95	1.74
20	1.48	1.63	1.98	2.26	2.33	2.40	2.38	2.24	2.15	1.79	2.03	1.74
21	1.48	1.66	2.00	2.26	2.35	2.40	2.37	2.23	2.14	1.77	2.10	1.72
22	1.47	1.66	2.02	2.26	2.35	2.40	2.36	2.22	2.12	1.76	2.08	1.72
23	1.45	1.65	2.02	2.27	2.35	2.40	2.38	2.31	2.09	1.74	2.06	1.72
24	1.51	1.65	2.03	2.27	2.35	2.40	2.38	2.32	2.07	1.78	2.04	1.70
25	1.52	1.66	2.03	2.27	2.35	2.40	2.38	2.31	2.09	1.83	2.03	1.70
26	1.53	1.65	2.03	2.29	2.36	2.39	2.37	2.29	2.09	1.92	2.02	1.77
27	1.55	1.66	2.03	2.29	2.36	2.39	2.38	2.28	2.07	1.94	2.01	1.75
28	1.55	1.72	2.03	2.29	2.36	2.39	2.38	2.28	2.07	1.90	2.01	1.73
29	1.55	1.75	2.03	2.29	---	2.39	2.37	2.29	2.06	1.90	1.99	1.80
30	1.57	1.75	2.03	2.29	---	2.39	2.36	2.28	2.03	1.89	1.99	1.75
31	1.61	---	2.07	2.29	---	2.40	---	2.27	---	1.86	1.99	---
MEAN	1.43	1.65	1.93	2.20	2.32	2.39	2.38	2.29	2.15	1.87	1.92	1.80
MAX	1.61	1.75	2.07	2.29	2.36	2.40	2.41	2.35	2.25	2.01	2.10	1.95
MIN	1.32	1.62	1.75	2.08	2.27	2.38	2.31	2.22	2.03	1.74	1.81	1.70

CAL YR 2004 MEAN 1.83 MAX 2.31 MIN 1.32
WTR YR 2005 MEAN 2.03 MAX 2.41 MIN 1.32

STREAMS TRIBUTARY TO LAKE HURON

04136000 AU SABLE RIVER NEAR RED OAK, MI

LOCATION.--Lat 44°40'37", long 84°17'33", in SE1/4 NE1/4 sec.3, T.26 N., R.1 E., Oscoda County, Hydrologic Unit 04070007, at Parmalee Bridge Campground, 2.6 mi south of Red Oak, on County Road 489, and 85.0 mi upstream from mouth.

DRAINAGE AREA.--1,108 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1908 to May 1916, December 1930 to June 1931, October 1995 to current year. Prior to October 1914, published as "near Lovells".

REVISED RECORDS.--WDR MI-96-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,000 ft above sea level, from topographic map. October 1908 to May 1916, nonrecording gage at site 5 mi upstream, datum of gage 1,004.69 ft above sea level (levels by Fargo Engineering Co.). December 1930 to June 1931, nonrecording gage at present site at different datum.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e525	726	787	e970	e790	687	1590	863	660	575	595	541
2	e550	759	763	e970	e770	668	1610	866	630	565	574	537
3	e550	768	744	941	e770	e630	1570	855	613	559	558	530
4	e550	741	729	900	e770	e630	1470	824	605	574	605	529
5	544	751	745	844	e800	694	1430	797	607	612	678	528
6	547	740	738	e730	738	693	1430	774	620	604	638	521
7	546	737	830	e730	793	711	1440	813	599	584	601	520
8	556	721	1130	801	871	679	1380	792	603	561	569	532
9	606	695	1120	770	850	e650	1290	776	638	550	551	527
10	616	703	1050	758	786	e680	1210	757	640	543	544	518
11	604	708	1020	738	e740	722	1140	729	e660	539	542	514
12	596	688	967	751	761	683	1080	713	e710	531	581	508
13	589	672	918	1190	739	655	1030	693	e740	529	593	505
14	591	659	847	1260	751	644	983	730	e740	521	573	508
15	598	654	e750	e790	782	663	943	743	747	517	553	510
16	e656	656	805	e820	778	654	915	729	805	520	541	516
17	e734	663	768	e740	764	655	887	708	761	562	527	514
18	735	665	e740	e700	731	646	877	687	729	551	524	510
19	714	657	e570	e820	735	653	867	676	712	568	736	507
20	687	668	e400	e820	e650	662	996	678	682	556	866	512
21	e650	683	e530	e760	743	655	1100	677	662	556	914	505
22	637	671	e780	e760	707	653	1010	678	638	546	810	510
23	637	660	e760	e750	667	658	944	788	622	535	714	518
24	712	652	e690	e740	711	653	935	914	604	740	655	513
25	712	650	e580	e840	692	657	985	859	587	853	613	569
26	683	641	e670	e790	664	661	1070	795	605	941	590	1040
27	677	684	e680	e670	e650	672	1030	746	611	954	576	931
28	676	852	e680	e630	712	706	984	722	603	822	569	796
29	697	868	e700	e750	---	787	938	726	595	732	558	916
30	731	818	e740	e770	---	954	895	704	588	664	549	905
31	746	---	e880	e760	---	1370	---	681	---	619	550	---
TOTAL	19652	21210	24111	25263	20915	21785	34029	23493	19616	19083	19047	17590
MEAN	634	707	778	815	747	703	1134	758	654	616	614	586
MAX	746	868	1130	1260	871	1370	1610	914	805	954	914	1040
MIN	525	641	400	630	650	630	867	676	587	517	524	505
CFSM	0.57	0.64	0.70	0.74	0.67	0.63	1.02	0.68	0.59	0.56	0.55	0.53
IN.	0.66	0.71	0.81	0.85	0.70	0.73	1.14	0.79	0.66	0.64	0.64	0.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2005, BY WATER YEAR (WY)

MEAN	731	802	800	728	717	864	1236	1041	849	689	659	663
MAX	1156	1289	1336	1004	900	1349	1747	1592	1380	1093	1129	1223
(WY)	1912	1912	1912	1912	1912	1913	1913	1912	1912	1912	1912	1912
MIN	535	589	562	532	534	624	639	668	613	537	521	510
(WY)	2001	2003	2001	2003	2003	2003	2000	1999	2003	2000	2001	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1909 - 2005	
ANNUAL TOTAL	290006		265794			
ANNUAL MEAN	792		728		815	
HIGHEST ANNUAL MEAN					1207	1912
LOWEST ANNUAL MEAN					599	2003
HIGHEST DAILY MEAN	2120	May 25	1610	Apr 2	3220	Apr 1 1998
LOWEST DAILY MEAN	400	Dec 20	400	Dec 20	400	Mar 3 2003
ANNUAL SEVEN-DAY MINIMUM	523	Sep 24	510	Sep 13	472	Sep 8 2003
MAXIMUM PEAK FLOW			(a)1630	Apr 1	(b)3300	Apr 1 1998
MAXIMUM PEAK STAGE			(c)6.73	Jan 17	(d)6.85	Jan 26 1996
INSTANTANEOUS LOW FLOW					(f)400	Mar 3 2003
ANNUAL RUNOFF (CFSM)	0.715		0.657		0.735	
ANNUAL RUNOFF (INCHES)	9.74		8.92		9.99	
10 PERCENT EXCEEDS	1170		942		1200	
50 PERCENT EXCEEDS	689		693		727	
90 PERCENT EXCEEDS	550		541		552	

(a) Gage height 4.42 ft.
(b) Gage height 6.66 ft; does not include water years 1909-16, 1931.
(c) Backwater from ice.
(d) Backwater from ice; does not include water years 1909-16, 1931.
(e) Estimated.
(f) Result of freezeup.

STREAMS TRIBUTARY TO LAKE HURON

04136000 AU SABLE RIVER NEAR RED OAK, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1996 to current year.
DISSOLVED OXYGEN: July 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent except the following period: Oct. 1 to Mar. 4 rated good. Dissolved oxygen records rated excellent except the following periods: Nov. 14-23, Dec. 19-28, Feb. 22 to Mar. 3, May 2-5, July 15-20, Sept. 12, 13, 28-30 rated good; Nov. 24 to Dec. 1, Dec. 29 to Jan. 4, July 21-27, Sept. 14-16 rated fair; and Jan. 5, 6, July 28 to Aug. 1, Sept. 17-20 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.0°C, July 2, 2002; minimum, -0.5°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum recorded, 15.1 mg/L, Dec. 17, 19, 1999, but may have been higher during instrument malfunction Dec. 19, 1999; minimum, 5.9 mg/L, July 3, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.0°C, June 28, 29; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 14.5 mg/L, Dec. 19; minimum, 6.3 mg/L, June 25.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	9.5	10.0	9.5	8.0	8.5	3.0	2.5	3.0	0.5	0.0	0.0
2	---	---	---	8.0	7.5	7.5	3.0	3.0	3.0	2.0	0.5	1.0
3	---	---	---	7.5	7.0	7.0	3.0	1.0	2.0	2.5	2.0	2.0
4	10.0	9.0	10.0	7.0	6.0	6.0	2.5	1.0	1.5	2.0	1.0	1.5
5	9.0	8.0	8.5	6.0	5.5	6.0	3.0	2.0	2.5	1.0	0.0	0.5
6	10.5	8.0	9.5	6.5	5.5	6.0	2.0	1.5	2.0	0.0	0.0	0.0
7	12.0	10.0	11.0	6.5	5.5	6.0	3.0	2.0	2.5	0.0	0.0	0.0
8	12.0	11.5	12.0	5.5	4.5	5.0	3.5	3.0	3.0	0.5	0.0	0.5
9	12.0	11.0	11.5	4.5	4.0	4.0	3.5	3.0	3.0	1.5	0.5	1.0
10	11.0	9.0	10.0	6.0	4.0	4.5	4.0	3.0	3.5	1.5	1.0	1.5
11	9.5	8.0	9.0	6.0	4.5	5.5	3.0	2.5	3.0	1.5	1.0	1.0
12	9.5	8.0	9.0	4.5	3.0	3.5	2.5	1.5	1.5	2.5	1.5	2.0
13	9.5	8.5	9.0	3.0	2.0	2.5	1.5	0.5	1.5	3.0	1.5	2.5
14	9.5	9.5	9.5	3.0	2.0	2.5	0.5	0.0	0.0	1.5	0.0	0.5
15	9.5	9.5	9.5	3.5	2.5	3.0	0.5	0.0	0.0	0.0	0.0	0.0
16	9.5	8.0	9.0	6.0	3.5	4.5	0.5	0.0	0.5	0.0	0.0	0.0
17	8.0	7.0	7.0	7.5	6.0	6.5	0.5	0.0	0.5	0.0	0.0	0.0
18	7.5	7.0	7.5	8.5	7.5	8.0	0.5	0.0	0.0	0.0	0.0	0.0
19	7.5	7.0	7.0	8.0	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
20	8.5	7.5	8.0	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
21	9.5	8.5	9.5	7.5	6.5	7.0	0.0	0.0	0.0	0.0	0.0	0.0
22	9.0	8.5	8.5	6.5	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
23	9.5	8.5	9.0	6.0	5.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
24	10.5	9.5	10.0	5.5	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
25	11.0	10.0	10.5	3.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
26	10.5	9.5	10.0	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
27	9.5	8.5	9.0	4.0	3.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
28	9.0	8.5	8.5	4.5	3.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0
29	10.5	9.0	9.5	3.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
30	11.5	10.5	11.0	3.0	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
31	11.0	9.5	10.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	---	---	---	9.5	2.0	5.0	4.0	0.0	1.1	3.0	0.0	0.5

STREAMS TRIBUTARY TO LAKE HURON

04136000 AU SABLE RIVER NEAR RED OAK, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.5	0.0	0.0	4.5	3.5	4.0	9.0	7.5	8.5
2	0.0	0.0	0.0	0.5	0.0	0.5	5.5	3.5	4.5	8.5	7.5	8.0
3	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.0	5.0	8.0	7.0	7.5
4	0.0	0.0	0.0	0.5	0.0	0.0	7.0	4.5	5.5	10.0	5.5	7.5
5	3.5	0.0	2.0	1.5	0.0	0.5	9.0	5.5	7.0	12.0	9.0	10.5
6	4.0	3.0	3.5	4.0	1.5	2.5	9.0	7.5	8.5	12.0	11.0	11.5
7	4.0	3.5	4.0	4.0	2.0	3.5	9.5	7.5	8.5	13.0	11.0	12.0
8	3.5	2.0	3.0	2.0	0.0	0.5	9.5	7.5	8.5	14.0	11.5	12.5
9	2.0	1.0	1.5	0.5	0.0	0.0	10.0	7.5	9.0	16.0	13.5	15.0
10	1.0	0.0	0.5	0.5	0.0	0.5	11.0	8.5	10.0	16.5	15.5	16.0
11	0.5	0.0	0.0	1.5	0.0	0.5	11.0	9.0	10.0	16.0	12.0	14.0
12	2.5	0.5	1.5	2.0	0.5	1.0	10.5	8.5	9.5	12.0	9.5	11.0
13	2.0	1.5	1.5	2.0	0.0	1.0	10.0	7.5	9.0	11.5	9.0	10.0
14	2.0	1.5	1.5	2.0	0.0	1.0	10.5	8.0	9.5	10.5	9.0	10.0
15	3.5	2.0	3.0	2.5	1.0	1.5	11.0	8.5	10.0	10.5	10.0	10.5
16	3.5	2.5	3.0	2.5	1.5	2.0	12.0	9.0	10.5	10.5	9.0	10.0
17	3.0	0.5	2.0	3.0	2.0	2.5	13.5	11.0	12.0	11.0	9.0	10.0
18	0.5	0.0	0.5	3.0	1.5	2.5	14.0	11.5	12.5	12.5	10.5	11.5
19	0.5	0.0	0.0	3.0	2.5	3.0	15.0	13.0	14.0	12.5	11.5	12.5
20	0.0	0.0	0.0	3.0	2.0	2.5	14.5	11.0	13.0	14.5	10.5	12.5
21	0.5	0.0	0.5	5.0	3.0	4.0	11.5	9.0	10.5	16.0	13.5	14.5
22	2.0	0.5	1.5	5.5	3.5	4.5	11.5	9.5	10.0	15.5	13.5	14.5
23	1.5	0.0	0.5	5.0	4.0	4.5	9.5	6.5	8.0	13.5	13.0	13.0
24	1.5	0.5	1.0	4.5	2.5	3.5	6.5	5.0	5.5	14.0	12.0	13.0
25	1.5	1.0	1.5	6.0	4.0	5.0	8.0	4.5	6.0	16.0	12.5	14.0
26	1.5	0.0	1.0	6.0	3.5	5.0	9.0	7.5	8.5	16.0	14.5	15.0
27	0.5	0.0	0.0	6.5	4.5	5.5	9.5	8.5	9.0	14.5	13.0	13.5
28	0.5	0.0	0.5	7.5	5.0	6.5	9.0	8.0	8.5	14.0	12.5	13.0
29	---	---	---	8.0	6.0	7.0	8.5	6.5	7.5	14.0	11.5	13.0
30	---	---	---	7.5	6.5	7.0	9.0	7.5	8.5	14.5	13.0	14.0
31	---	---	---	7.0	4.5	6.0	---	---	---	17.5	14.0	15.5
MONTH	4.0	0.0	1.2	8.0	0.0	2.7	15.0	3.5	8.8	17.5	5.5	12.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.5	16.0	17.5	20.5	17.0	19.0	22.0	19.5	20.5	17.5	16.0	17.0
2	18.0	16.5	17.5	18.5	15.0	17.0	22.5	20.0	21.5	16.5	15.5	16.0
3	19.0	16.5	17.5	20.0	17.0	18.5	22.5	20.5	21.5	17.0	15.0	16.0
4	18.5	17.5	18.0	19.5	17.0	18.0	22.0	19.5	21.0	16.5	15.0	16.0
5	20.5	17.5	19.0	19.0	16.5	17.5	20.0	17.5	19.0	17.0	15.0	16.0
6	20.5	19.0	20.0	20.5	18.0	19.5	20.0	17.5	18.5	17.5	15.5	17.0
7	21.5	18.0	19.5	20.0	17.5	19.0	20.5	17.5	19.0	17.5	16.5	17.0
8	21.0	20.0	20.5	20.0	17.5	19.0	21.5	19.0	20.0	17.0	16.0	16.5
9	22.0	19.0	20.5	21.0	17.5	19.5	22.0	19.5	21.0	16.5	14.5	15.5
10	22.0	21.0	21.5	22.0	19.0	20.5	21.5	20.5	21.0	16.5	14.5	16.0
11	---	---	---	22.5	20.0	21.5	20.5	17.5	19.0	18.0	15.5	16.5
12	---	---	---	22.0	21.0	21.5	17.5	16.5	17.0	19.0	17.0	18.0
13	---	---	---	21.5	20.0	21.0	18.0	16.5	17.5	19.0	17.5	18.0
14	---	---	---	21.0	20.0	20.5	18.5	16.5	17.5	19.0	17.0	18.0
15	21.0	17.0	19.0	22.5	19.0	20.5	18.0	16.0	17.5	17.0	14.5	15.5
16	17.0	15.5	16.0	21.5	20.5	21.0	19.0	16.5	18.0	14.5	13.5	14.0
17	16.0	15.0	15.5	21.0	19.5	20.0	19.5	17.5	18.5	15.0	12.5	13.5
18	15.5	14.5	15.0	22.0	20.0	21.0	19.0	17.0	18.0	15.5	13.5	14.5
19	18.0	13.5	15.5	21.5	20.0	20.5	17.0	16.5	17.0	15.0	14.0	14.0
20	20.5	17.0	18.5	21.0	19.0	20.0	17.0	16.0	16.5	16.0	13.5	14.5
21	20.5	19.0	19.5	21.0	19.5	20.0	17.0	15.5	16.5	16.0	14.0	15.5
22	20.0	17.5	19.0	21.0	19.0	20.5	16.5	15.5	16.0	16.0	14.5	15.5
23	19.5	17.5	18.0	20.5	19.0	20.0	15.5	14.5	15.0	14.5	13.0	13.5
24	22.5	18.0	20.0	20.0	18.0	19.0	16.5	14.0	15.5	13.0	11.5	12.5
25	22.5	20.0	21.5	20.0	17.5	18.5	16.5	15.0	16.0	15.0	13.0	14.0
26	21.0	18.5	19.5	20.0	18.5	19.5	18.0	15.5	16.5	15.0	14.0	15.0
27	22.5	19.5	21.0	18.5	17.0	18.0	18.0	16.5	17.0	14.0	12.5	13.5
28	23.0	21.0	22.0	18.5	16.5	17.5	17.5	15.5	16.5	13.5	12.5	13.0
29	23.0	20.5	22.0	19.5	17.5	18.5	18.0	16.0	17.0	13.0	11.5	12.0
30	22.0	20.5	21.0	19.5	17.0	18.5	17.5	16.0	17.0	12.0	11.0	11.5
31	---	---	---	20.0	18.0	19.0	18.0	16.0	17.0	---	---	---
MONTH	---	---	---	22.5	15.0	19.5	22.5	14.0	18.0	19.0	11.0	15.2

STREAMS TRIBUTARY TO LAKE HURON

04136000 AU SABLE RIVER NEAR RED OAK, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.4	9.9	10.4	10.5	9.6	10.1	13.1	12.3	12.7	14.1	12.3	12.9
2	---	---	---	10.9	10.0	10.4	13.2	12.6	12.9	14.0	13.7	13.9
3	---	---	---	11.3	10.3	10.8	13.7	12.8	13.2	14.0	13.6	13.8
4	11.3	10.3	11.0	11.3	10.7	10.9	13.7	13.0	13.4	14.2	13.7	14.0
5	11.8	10.4	11.0	11.9	10.9	11.4	13.4	12.8	13.1	14.3	13.7	14.1
6	11.3	10.3	10.8	11.9	11.0	11.5	13.5	13.1	13.3	13.7	13.0	13.3
7	11.0	9.7	10.3	11.6	10.8	11.2	13.2	12.5	12.8	13.2	13.0	13.1
8	9.9	9.2	9.5	12.4	11.2	11.8	13.0	12.5	12.7	13.1	12.9	13.0
9	10.3	9.0	9.6	12.4	11.7	12.1	13.0	12.7	12.9	13.0	12.7	12.9
10	10.9	9.6	10.2	12.2	11.4	11.9	12.7	12.3	12.5	12.9	12.6	12.7
11	11.3	10.0	10.6	11.8	10.9	11.4	13.1	12.5	12.8	13.1	12.7	12.9
12	11.3	9.9	10.5	12.6	11.6	12.1	13.3	12.7	13.0	12.7	12.2	12.5
13	11.0	9.7	10.4	12.8	11.9	12.4	13.7	13.0	13.3	12.2	11.9	12.0
14	10.3	9.3	9.8	12.9	12.2	12.5	14.3	13.7	14.0	13.2	12.2	12.7
15	10.1	9.4	9.7	12.6	12.0	12.3	14.3	14.0	14.2	13.4	13.0	13.2
16	10.6	9.3	9.8	12.2	11.2	11.7	14.1	13.7	13.9	13.3	13.0	13.1
17	11.3	10.2	10.9	11.2	10.4	10.7	14.3	13.7	14.0	13.0	12.8	12.9
18	11.4	10.5	10.9	11.1	9.9	10.6	14.1	13.6	13.8	13.1	12.7	12.9
19	11.4	10.4	10.9	11.8	10.2	11.1	14.5	13.7	14.1	12.7	12.0	12.4
20	10.9	10.2	10.5	11.4	10.8	11.0	14.3	13.8	14.0	12.3	11.9	12.1
21	---	---	---	11.8	10.7	11.2	13.8	12.8	13.2	12.4	12.1	12.3
22	10.5	9.8	10.1	12.3	11.2	11.8	12.8	12.6	12.7	12.4	12.0	12.2
23	10.2	9.5	9.8	11.9	11.4	11.6	13.2	12.8	12.9	12.3	12.1	12.2
24	10.0	9.1	9.6	12.5	11.4	12.0	13.3	13.1	13.2	12.3	11.9	12.1
25	10.2	9.1	9.6	13.1	12.0	12.6	13.3	13.0	13.2	11.9	11.7	11.8
26	10.7	9.2	9.9	12.9	12.3	12.5	13.1	12.7	12.9	12.2	11.8	11.9
27	10.4	9.6	10.0	12.4	11.4	12.1	13.1	12.7	12.8	12.5	12.2	12.3
28	10.8	9.9	10.3	12.1	10.6	11.5	13.1	12.6	12.8	12.5	12.1	12.3
29	10.3	9.6	9.9	13.0	12.1	12.5	12.8	12.5	12.7	12.2	11.8	12.0
30	9.6	9.0	9.3	13.0	12.5	12.7	13.0	12.8	12.9	12.0	11.8	11.9
31	10.3	9.1	9.7	---	---	---	12.9	12.2	12.5	12.2	11.9	12.0
MONTH	---	---	---	13.1	9.6	11.6	14.5	12.2	13.2	14.3	11.7	12.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.2	12.1	12.2	13.1	12.7	13.0	12.1	11.2	11.7	11.1	10.3	10.7
2	12.2	12.0	12.1	13.4	12.8	13.1	11.8	11.3	11.5	11.2	10.2	10.7
3	12.1	11.8	12.0	13.6	11.5	13.3	11.7	11.1	11.4	11.4	10.5	11.0
4	12.1	11.8	12.0	---	---	---	11.9	11.0	11.3	11.8	10.6	11.3
5	12.2	11.8	12.0	---	---	---	11.5	10.7	11.2	11.3	10.1	10.6
6	12.1	11.7	11.9	---	---	---	11.0	10.4	10.7	10.6	9.5	10.1
7	12.0	11.7	11.9	---	---	---	10.9	10.3	10.6	10.6	9.5	10.0
8	12.5	11.8	12.1	13.8	12.7	13.4	11.0	10.2	10.6	10.6	9.2	9.9
9	13.0	12.5	12.7	13.8	13.6	13.7	11.0	10.1	10.5	10.1	8.8	9.4
10	13.2	12.8	13.0	---	---	---	10.7	9.9	10.3	9.4	8.3	8.9
11	13.2	12.8	13.1	---	---	---	10.7	9.7	10.2	9.9	8.4	9.2
12	13.0	12.3	12.6	---	---	---	10.9	9.9	10.3	11.2	9.7	10.4
13	12.8	12.2	12.5	---	---	---	11.1	10.0	10.5	10.5	9.6	10.1
14	12.6	12.2	12.4	---	---	---	11.1	10.0	10.5	10.6	10.0	10.2
15	12.2	11.9	12.1	---	---	---	11.2	10.0	10.5	10.7	9.6	10.1
16	12.4	11.8	12.1	13.3	12.7	13.0	10.9	9.9	10.3	11.0	9.8	10.4
17	12.8	12.1	12.4	13.2	12.4	12.7	10.3	9.3	9.8	11.1	9.8	10.4
18	13.4	12.8	13.1	13.5	12.4	12.9	10.3	9.1	9.6	10.5	9.4	9.9
19	13.2	12.9	13.1	13.0	12.2	12.6	9.9	8.8	9.3	10.2	9.0	9.6
20	13.4	12.9	13.3	13.1	12.4	12.7	9.7	8.5	9.1	10.7	9.3	9.9
21	13.2	12.7	12.8	13.2	12.2	12.6	10.7	9.7	10.2	10.1	8.5	9.3
22	12.8	12.5	12.6	13.3	11.8	12.5	10.7	9.6	10.1	9.6	8.2	8.9
23	13.4	12.5	13.0	13.4	11.7	12.5	11.0	9.9	10.5	9.6	8.5	9.1
24	13.2	12.8	12.9	13.5	12.1	12.7	11.7	10.9	11.3	9.9	8.9	9.3
25	13.0	12.7	12.8	13.1	11.7	12.4	11.7	10.9	11.4	10.1	8.8	9.3
26	13.3	12.6	13.0	13.0	11.5	12.2	10.9	10.2	10.5	9.5	8.1	8.8
27	13.5	13.1	13.2	13.0	11.3	12.1	10.9	10.0	10.4	10.0	8.6	9.2
28	13.2	12.8	12.9	12.6	11.0	11.7	11.2	10.2	10.7	10.1	8.6	9.3
29	---	---	---	12.3	10.6	11.4	11.6	10.8	11.1	10.2	8.9	9.5
30	---	---	---	11.6	10.4	11.0	11.2	10.4	10.8	10.2	8.6	9.4
31	---	---	---	11.2	10.6	10.8	---	---	---	10.4	8.7	9.5
MONTH	13.5	11.7	12.6	---	---	---	12.1	8.5	10.6	11.8	8.1	9.8

STREAMS TRIBUTARY TO LAKE HURON

04136000 AU SABLE RIVER NEAR RED OAK, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.1	8.1	9.1	9.2	7.0	8.1	10.3	7.9	9.0	10.0	7.8	8.8
2	9.9	7.9	8.9	10.4	7.9	9.1	10.3	7.7	8.9	10.0	8.0	8.9
3	9.6	8.0	8.8	10.2	8.0	9.0	10.2	7.5	8.8	10.0	8.2	9.0
4	9.4	7.6	8.5	9.2	7.4	8.3	9.0	7.5	8.2	10.4	8.4	9.3
5	9.4	7.6	8.4	10.0	8.1	8.9	10.3	8.0	9.0	10.2	8.2	9.2
6	9.0	7.1	8.0	10.2	7.6	8.9	10.4	8.0	9.1	10.3	8.2	9.1
7	9.4	7.3	8.2	10.3	7.8	9.0	10.4	8.0	9.1	9.8	8.1	8.9
8	8.6	6.9	7.7	10.2	7.9	9.0	10.4	7.7	8.9	10.1	8.2	8.9
9	9.1	7.0	8.0	10.3	7.9	9.0	10.1	7.6	8.8	9.6	7.8	8.6
10	8.7	6.7	7.7	10.1	7.5	8.8	9.6	7.2	8.4	9.9	7.8	8.8
11	---	---	---	9.9	7.4	8.6	9.8	7.6	8.7	9.7	7.9	8.7
12	---	---	---	9.5	7.2	8.3	9.7	8.1	8.8	9.5	7.4	8.4
13	---	---	---	9.6	7.3	8.4	9.9	8.1	8.9	9.3	7.4	8.3
14	---	---	---	9.6	7.4	8.5	10.2	7.9	9.1	9.0	7.3	8.1
15	7.9	6.7	7.3	9.6	7.4	8.4	10.5	8.1	9.2	9.9	7.9	8.8
16	9.2	7.6	8.4	9.0	7.2	8.1	10.4	8.2	9.2	9.9	8.4	9.1
17	9.4	7.9	8.7	9.4	7.4	8.4	10.4	7.9	9.1	10.3	8.8	9.5
18	9.2	8.1	8.7	9.1	7.4	8.2	9.4	7.8	8.6	10.1	8.6	9.3
19	9.8	8.3	8.9	9.5	7.1	8.3	8.8	8.0	8.4	9.7	8.5	9.1
20	9.2	7.4	8.2	9.5	7.4	8.5	9.2	8.1	8.5	10.4	8.7	9.4
21	8.7	6.8	7.7	9.8	7.5	8.5	9.3	8.2	8.7	10.3	8.3	9.2
22	9.1	7.1	8.0	10.0	7.8	8.9	9.5	8.2	8.8	9.3	8.2	8.8
23	8.9	7.0	7.9	10.1	7.8	8.9	10.2	8.6	9.4	10.6	8.5	9.5
24	9.0	7.2	8.0	8.6	7.8	8.2	10.7	8.7	9.6	10.9	9.1	9.9
25	8.1	6.3	7.2	9.4	8.1	8.7	10.5	8.4	9.4	9.6	8.7	9.2
26	9.1	6.8	7.9	8.6	7.8	8.2	10.3	8.4	9.2	8.9	8.1	8.5
27	9.2	6.7	7.9	9.6	8.1	8.7	9.5	7.8	8.6	10.0	8.7	9.3
28	8.6	6.6	7.6	10.1	8.3	9.1	10.1	8.2	9.1	9.9	8.9	9.4
29	8.8	6.7	7.6	10.0	8.3	9.1	10.3	8.1	9.1	10.1	8.9	9.5
30	8.7	6.6	7.5	10.5	8.2	9.2	9.7	7.9	8.8	10.4	9.5	9.9
31	---	---	---	10.2	8.3	9.1	9.9	8.0	8.9	---	---	---
MONTH	---	---	---	10.5	7.0	8.7	10.7	7.2	8.9	10.9	7.3	9.0

STREAMS TRIBUTARY TO LAKE HURON

04136500 AU SABLE RIVER AT MIO, MI

LOCATION.--Lat 44°39'36", long 84°07'52", in SE1/4 NE1/4 sec.12, T.26 N., R.2 E., Oscoda County, Hydrologic Unit 04070007, on right bank 150 ft upstream from bridge on State Highway 33 in Mio, 500 ft downstream from Mio Dam, 9.5 mi downstream from Big Creek, and 73.0 mi upstream from mouth.

DRAINAGE AREA.--1,361 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1952 to current year.

REVISED RECORDS.--WDR MI-96-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 929.60 ft above sea level.

REMARKS.--Water-discharge records good. Flow regulated by Mio Dam 500 ft upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	690	899	986	1200	985	887	1880	1080	859	749	e760	699
2	698	916	940	1210	972	879	1900	1090	817	716	739	668
3	696	966	928	1190	977	786	1830	1070	808	736	722	663
4	719	927	895	1140	975	836	1710	1040	775	739	815	666
5	685	922	932	1060	1020	907	1680	1000	784	800	860	666
6	709	924	922	905	942	882	1680	996	799	773	807	655
7	718	921	1070	905	1020	937	1660	1040	783	730	780	654
8	764	901	1380	1040	1120	884	1600	1030	825	725	726	653
9	827	866	1340	1020	1070	847	1500	1000	838	713	716	676
10	783	876	1270	953	1020	894	1440	969	838	702	707	660
11	769	880	1220	931	948	943	1340	950	865	675	688	640
12	756	859	1180	959	983	872	1300	929	909	698	794	655
13	740	847	1090	1580	948	849	1230	932	950	679	769	648
14	752	830	1040	1610	958	829	1190	983	934	680	786	637
15	775	814	945	1000	1020	864	1150	977	921	684	658	631
16	836	823	1000	1040	1000	834	1120	943	1020	676	719	658
17	885	842	954	934	996	843	1080	917	939	729	684	660
18	904	840	929	884	931	837	1080	881	916	723	672	648
19	870	839	771	1040	915	862	1080	885	878	754	918	651
20	863	836	521	1050	815	853	1190	901	872	719	1080	645
21	832	873	725	955	961	856	1330	876	840	728	1110	633
22	800	842	984	948	918	851	1220	875	807	699	985	668
23	804	834	945	925	866	842	1150	1010	797	681	889	664
24	886	843	874	944	901	856	1170	1140	767	956	802	643
25	903	818	762	1050	908	849	1190	1060	756	1090	790	793
26	850	806	887	1000	857	865	1300	1010	809	1170	748	1210
27	849	881	859	851	815	894	1270	939	787	1150	734	1110
28	848	1050	880	818	938	946	1220	908	792	1010	730	975
29	867	1080	903	958	---	1060	1160	944	760	930	708	1070
30	893	1020	928	986	---	1270	1110	896	758	858	687	1070
31	933	---	1090	952	---	1730	---	867	---	e810	699	---
TOTAL	24904	26575	30150	32038	26779	28344	40760	30138	25203	24482	24282	21969
MEAN	803	886	973	1033	956	914	1359	972	840	790	783	732
MAX	933	1080	1380	1610	1120	1730	1900	1140	1020	1170	1110	1210
MIN	685	806	521	818	815	786	1080	867	756	675	658	631
CFSM	0.59	0.65	0.71	0.76	0.70	0.67	1.00	0.71	0.62	0.58	0.58	0.54
IN.	0.68	0.73	0.82	0.88	0.73	0.77	1.11	0.82	0.69	0.67	0.66	0.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	927	984	959	893	881	1083	1443	1155	985	863	816	857
MAX	1779	1430	1303	1321	1152	1813	2241	1636	1422	1520	1195	1575
(WY)	1987	1992	1967	1973	1973	1976	1971	1983	1954	1994	1994	1986
MIN	659	717	711	657	659	733	799	723	683	655	578	661
(WY)	2001	2003	1964	2003	2003	1956	2000	1958	1958	1958	1958	1958

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	363269		335624			
ANNUAL MEAN	993		920		987	
HIGHEST ANNUAL MEAN					1213	1986
LOWEST ANNUAL MEAN					746	1958
HIGHEST DAILY MEAN	2640	May 24	1900	Apr 2	4230	Apr 1 1998
LOWEST DAILY MEAN	521	Dec 20	521	Dec 20	21	Aug 9 1977
ANNUAL SEVEN-DAY MINIMUM	682	Sep 24	647	Sep 15	420	Aug 8 1977
MAXIMUM PEAK FLOW			2030	Apr 2	4380	(a)
MAXIMUM PEAK STAGE			4.24	Apr 2	6.37	Apr 1 1998
INSTANTANEOUS LOW FLOW			460	Dec 20	7.0	Aug 4 1977
ANNUAL RUNOFF (CFSM)	0.729		0.676		0.725	
ANNUAL RUNOFF (INCHES)	9.93		9.17		9.85	
10 PERCENT EXCEEDS	1410		1160		1340	
50 PERCENT EXCEEDS	874		885		917	
90 PERCENT EXCEEDS	718		689		708	

(a) Sept. 30, 1986, Apr. 1, 1998.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04136500 AU SABLE RIVER AT MIO, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1996 to current year.
DISSOLVED OXYGEN: July 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Water temperature records rated good. Dissolved oxygen records rated excellent except the following periods: Nov. 21 to Dec. 1, Dec. 26 to Jan. 11, Apr. 2-11, June 14-21, July 12-14, Aug. 15-21, Sept. 11 rated good; Oct. 1-4, June 22 to July 3, July 15-19, Aug. 22 to Sept. 2, Sept. 12-14 rated fair; and July 4-6, July 20 to Aug. 1, Sept. 3-8, 15-20 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 26.0°C, Aug. 9, 2001; minimum, 0.0°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.3 mg/L, Feb. 23-25, 1999; minimum, 5.8 mg/L, July 27, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.5°C, July 18; minimum, 0.0°C, Jan. 26-29.
DISSOLVED OXYGEN: Maximum, 13.0 mg/L, Jan. 18, 19; minimum, 6.5 mg/L, June 15.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.0	14.5	14.5	9.5	9.5	9.5	3.0	3.0	3.0	0.5	0.5	0.5
2	14.5	13.5	14.0	9.5	9.5	9.5	3.0	2.5	3.0	0.5	0.5	0.5
3	13.5	12.5	13.0	9.5	8.5	9.0	2.5	2.0	2.5	0.5	0.5	0.5
4	12.5	12.0	12.5	8.5	7.5	8.0	2.0	2.0	2.0	0.5	0.5	0.5
5	12.0	11.0	11.5	7.5	6.5	7.0	2.0	2.0	2.0	1.5	0.5	1.0
6	11.5	11.0	11.0	6.5	6.0	6.5	2.0	1.5	1.5	1.5	1.5	1.5
7	11.5	11.0	11.0	6.5	6.0	6.0	1.5	1.5	1.5	1.5	1.0	1.0
8	11.5	11.0	11.0	6.0	5.5	5.5	2.0	1.5	2.0	1.0	0.5	0.5
9	11.5	11.0	11.0	5.5	5.0	5.5	3.0	2.0	2.5	0.5	0.5	0.5
10	11.5	11.0	11.0	5.0	4.5	5.0	3.0	3.0	3.0	0.5	0.5	0.5
11	11.5	11.0	11.5	5.0	4.5	5.0	3.0	2.5	3.0	0.5	0.5	0.5
12	11.5	11.0	11.5	4.5	4.0	4.5	2.5	2.5	2.5	1.0	0.5	0.5
13	11.0	10.5	11.0	4.5	4.0	4.0	2.5	2.0	2.0	1.0	1.0	1.0
14	10.5	10.0	10.0	4.5	4.0	4.0	2.0	0.5	1.0	1.5	1.0	1.5
15	10.0	10.0	10.0	4.0	3.5	3.5	1.0	0.5	1.0	1.5	1.0	1.5
16	10.0	9.0	9.5	3.5	3.0	3.5	1.0	1.0	1.0	1.0	0.5	1.0
17	9.0	8.5	9.0	3.5	3.0	3.0	1.0	0.5	0.5	0.5	0.5	0.5
18	8.5	8.5	8.5	4.0	3.5	3.5	0.5	0.5	0.5	0.5	0.5	0.5
19	8.5	8.0	8.0	5.0	4.0	4.5	0.5	0.5	0.5	0.5	0.5	0.5
20	8.0	7.5	7.5	6.5	5.0	5.5	0.5	0.5	0.5	0.5	0.5	0.5
21	7.5	7.5	7.5	6.5	6.5	6.5	0.5	0.5	0.5	0.5	0.5	0.5
22	8.0	7.5	8.0	6.5	6.5	6.5	0.5	0.5	0.5	0.5	0.5	0.5
23	8.5	8.0	8.0	6.5	6.5	6.5	0.5	0.5	0.5	0.5	0.5	0.5
24	9.5	8.5	9.0	6.5	5.5	6.0	0.5	0.5	0.5	0.5	0.5	0.5
25	10.0	9.0	9.5	5.5	4.5	5.0	0.5	0.5	0.5	0.5	0.5	0.5
26	9.5	9.5	9.5	4.5	3.5	4.0	0.5	0.5	0.5	0.5	0.0	0.5
27	10.0	9.5	9.5	3.5	3.5	3.5	0.5	0.5	0.5	0.5	0.0	0.0
28	10.0	10.0	10.0	3.5	2.5	3.0	0.5	0.5	0.5	0.5	0.0	0.5
29	10.0	9.5	10.0	3.0	2.5	2.5	0.5	0.5	0.5	0.5	0.0	0.5
30	10.5	10.0	10.0	3.0	2.5	3.0	0.5	0.5	0.5	0.5	0.5	0.5
31	10.0	9.5	9.5	---	---	---	0.5	0.5	0.5	0.5	0.5	0.5
MONTH	15.0	7.5	10.2	9.5	2.5	5.3	3.0	0.5	1.3	1.5	0.0	0.6

STREAMS TRIBUTARY TO LAKE HURON

04136500 AU SABLE RIVER AT MIO, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.5	0.5	0.5	1.0	0.5	1.0	5.0	5.0	5.0	9.0	8.5	8.5
2	0.5	0.5	0.5	0.5	0.5	0.5	5.0	5.0	5.0	8.5	8.5	8.5
3	0.5	0.5	0.5	0.5	0.5	0.5	5.0	4.5	5.0	8.5	8.0	8.0
4	0.5	0.5	0.5	0.5	0.5	0.5	5.5	5.0	5.0	9.5	7.5	8.5
5	0.5	0.5	0.5	0.5	0.5	0.5	7.0	5.5	6.0	9.5	8.0	8.5
6	0.5	0.5	0.5	0.5	0.5	0.5	7.5	6.5	7.0	10.0	8.5	9.5
7	0.5	0.5	0.5	0.5	0.5	0.5	9.0	7.5	8.0	10.5	10.0	10.0
8	1.5	0.5	1.0	1.0	0.5	0.5	9.0	8.5	8.5	11.5	10.5	11.0
9	2.0	1.5	2.0	2.0	1.0	1.5	10.0	9.0	9.5	14.0	11.5	13.0
10	2.0	2.0	2.0	2.0	1.5	2.0	10.0	9.0	9.5	15.0	13.0	14.0
11	2.0	1.5	1.5	1.5	1.0	1.0	10.5	10.0	10.0	15.0	14.0	14.5
12	1.5	1.0	1.0	1.0	0.5	0.5	10.5	10.0	10.0	14.0	14.0	14.0
13	1.0	0.5	1.0	0.5	0.5	0.5	10.0	10.0	10.0	14.0	13.0	13.5
14	1.0	0.5	1.0	0.5	0.5	0.5	10.5	10.0	10.0	13.0	12.0	12.5
15	1.5	1.0	1.5	0.5	0.5	0.5	10.5	10.0	10.0	12.5	11.0	12.0
16	1.5	1.5	1.5	1.0	0.5	1.0	11.5	10.0	10.5	11.0	10.5	11.0
17	2.0	1.5	2.0	1.0	1.0	1.0	11.5	10.5	11.0	11.0	10.5	10.5
18	2.5	2.0	2.5	1.5	1.0	1.5	13.5	11.0	12.0	12.0	10.5	11.0
19	2.5	2.0	2.0	2.0	1.5	1.5	14.0	12.0	13.0	11.5	10.5	11.0
20	2.0	1.0	1.5	2.0	2.0	2.0	14.0	13.0	13.5	12.5	11.5	12.0
21	1.0	1.0	1.0	2.5	2.0	2.0	13.0	13.0	13.0	14.0	12.5	13.5
22	1.0	0.5	0.5	2.5	2.0	2.0	13.0	12.0	12.5	14.5	13.5	14.0
23	0.5	0.5	0.5	2.5	2.0	2.5	12.0	10.5	11.5	14.0	13.5	13.5
24	0.5	0.5	0.5	3.0	2.5	3.0	10.5	8.0	9.0	14.5	14.0	14.5
25	1.0	0.5	0.5	3.5	3.0	3.5	8.0	6.5	7.5	14.5	14.0	14.5
26	1.0	0.5	0.5	3.5	3.5	3.5	7.0	6.5	6.5	16.0	14.5	15.5
27	1.0	0.5	1.0	4.0	3.5	3.5	7.5	6.5	7.0	16.0	15.0	15.5
28	1.0	1.0	1.0	4.0	4.0	4.0	8.0	7.5	8.0	15.5	15.0	15.5
29	---	---	---	4.5	4.0	4.0	9.5	8.0	8.5	16.0	15.0	15.5
30	---	---	---	4.5	4.0	4.5	9.5	8.5	9.0	15.5	14.5	15.0
31	---	---	---	5.0	4.5	4.5	---	---	---	15.0	14.5	15.0
MONTH	2.5	0.5	1.1	5.0	0.5	1.8	14.0	4.5	9.0	16.0	7.5	12.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.5	15.0	15.5	23.5	22.0	23.0	21.5	20.0	21.0	20.5	19.0	19.5
2	16.5	15.5	16.0	22.5	21.5	22.0	22.5	21.0	21.5	19.5	18.5	19.0
3	18.0	16.5	17.0	21.5	20.5	21.0	23.0	21.5	22.0	19.0	18.5	18.5
4	18.5	18.0	18.0	20.5	20.0	20.5	23.5	22.0	23.0	19.0	17.5	18.5
5	20.5	18.0	19.0	20.0	19.5	20.0	23.0	22.0	22.5	19.0	17.5	18.0
6	21.0	19.5	20.5	20.0	19.5	20.0	23.0	22.0	22.5	19.5	17.5	18.5
7	22.0	20.0	20.5	20.0	19.5	19.5	22.5	21.5	22.0	19.5	18.0	18.5
8	22.0	20.0	20.5	20.5	20.0	20.0	23.0	21.0	22.0	19.0	18.5	18.5
9	22.5	21.0	21.5	21.5	20.0	21.0	23.5	21.5	22.5	18.5	18.0	18.5
10	22.5	21.5	22.0	22.0	20.5	21.5	22.5	21.5	22.0	19.0	18.0	18.5
11	23.0	21.5	22.5	23.0	21.5	22.0	22.5	21.5	22.0	20.0	18.0	19.0
12	24.0	22.5	23.0	22.5	21.5	22.0	22.5	21.0	22.0	20.0	18.5	19.0
13	23.0	22.5	22.5	22.5	22.0	22.5	22.0	20.5	21.5	20.5	18.5	19.5
14	24.0	22.5	23.0	22.5	21.5	22.0	21.0	20.5	20.5	20.0	19.0	19.5
15	23.0	21.5	22.5	23.0	22.0	22.5	20.5	20.0	20.0	19.5	18.5	19.0
16	21.5	20.5	21.0	23.0	22.5	22.5	21.0	19.5	20.0	18.5	18.0	18.5
17	20.5	19.0	20.0	23.0	22.5	23.0	20.5	19.0	20.0	18.5	17.5	18.0
18	19.0	17.5	18.0	24.5	23.0	23.5	19.5	19.0	19.0	18.0	16.5	17.5
19	17.5	17.0	17.5	24.0	23.0	23.5	20.5	18.5	19.5	17.5	16.0	16.5
20	18.5	16.5	17.5	24.0	23.0	23.5	20.0	19.5	19.5	17.5	16.5	17.0
21	19.5	17.5	18.5	24.0	23.0	23.0	19.5	19.0	19.5	17.5	16.5	17.0
22	19.5	18.0	19.0	23.0	22.5	22.5	19.0	17.5	18.0	17.0	16.5	16.5
23	20.5	19.0	19.5	23.0	22.0	22.5	17.5	17.0	17.0	16.5	15.5	16.0
24	22.0	20.0	21.0	22.5	22.0	22.5	17.5	16.5	17.0	16.0	15.5	16.0
25	21.0	20.5	21.0	22.5	21.5	22.0	17.0	16.5	17.0	16.0	15.5	16.0
26	21.5	20.5	21.0	22.5	21.0	21.5	17.5	16.5	17.0	16.0	15.0	15.5
27	22.5	21.0	21.5	21.0	20.0	20.5	19.5	16.5	17.5	15.5	14.5	15.0
28	23.0	21.5	22.0	21.0	20.0	20.5	19.5	17.5	18.5	15.5	14.5	15.0
29	22.5	21.5	22.0	20.0	19.5	20.0	19.5	18.0	18.5	14.5	14.0	14.5
30	24.0	21.5	22.5	20.0	19.5	19.5	18.5	18.0	18.5	14.0	13.0	13.5
31	---	---	---	21.5	19.0	20.5	19.0	18.5	18.5	---	---	---
MONTH	24.0	15.0	20.2	24.5	19.0	21.6	23.5	16.5	20.1	20.5	13.0	17.5

STREAMS TRIBUTARY TO LAKE HURON

04136500 AU SABLE RIVER AT MIO, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.4	8.8	9.1	9.7	9.5	9.6	12.0	11.5	11.7	11.7	11.6	11.6
2	9.3	9.0	9.2	9.5	9.3	9.4	12.0	11.9	12.0	11.8	11.7	11.8
3	9.4	9.2	9.3	9.5	9.3	9.4	12.1	12.0	12.1	12.1	11.8	11.9
4	9.8	9.3	9.6	9.9	9.5	9.6	12.2	12.0	12.1	12.3	12.1	12.2
5	10.1	9.8	10.0	10.3	9.8	10.2	12.3	12.1	12.2	12.5	12.1	12.3
6	10.3	10.1	10.2	10.6	10.3	10.5	12.4	12.2	12.3	12.6	12.4	12.5
7	10.3	10.2	10.3	10.8	10.4	10.6	12.4	12.4	12.4	12.7	12.5	12.6
8	10.4	10.3	10.3	11.1	10.8	10.9	12.4	12.3	12.4	12.9	12.7	12.8
9	10.4	10.3	10.4	11.0	10.9	10.9	12.3	11.7	12.0	12.8	12.6	12.7
10	10.3	10.0	10.2	11.3	10.9	11.1	11.8	11.7	11.8	12.7	12.6	12.6
11	10.0	9.7	9.9	11.2	11.1	11.1	11.9	11.7	11.8	12.6	12.4	12.5
12	9.7	9.5	9.6	11.4	11.2	11.3	11.8	11.7	11.8	12.4	12.3	12.4
13	9.9	9.5	9.7	11.5	11.3	11.4	11.9	11.7	11.8	12.6	12.3	12.4
14	10.1	9.9	10.0	11.5	11.2	11.3	12.4	11.8	12.1	12.5	12.1	12.3
15	10.2	10.0	10.1	11.7	11.4	11.6	12.4	12.3	12.3	12.2	12.0	12.1
16	10.2	10.1	10.1	12.0	11.7	11.8	12.6	12.3	12.4	12.6	12.2	12.3
17	10.4	10.1	10.3	12.0	11.9	12.0	12.7	12.5	12.6	12.9	12.6	12.8
18	10.3	10.2	10.3	12.0	11.7	11.9	12.7	12.6	12.7	13.0	12.9	13.0
19	10.5	10.3	10.4	11.7	11.2	11.5	12.7	12.6	12.7	13.0	12.9	12.9
20	10.6	10.5	10.6	11.2	10.6	10.9	12.8	12.7	12.7	12.9	12.6	12.7
21	10.7	10.6	10.6	10.7	10.5	10.6	12.7	12.7	12.7	12.6	12.2	12.4
22	10.6	10.4	10.6	10.5	10.3	10.4	12.7	12.6	12.7	12.2	11.8	12.0
23	10.4	10.3	10.4	10.4	10.2	10.3	12.6	12.2	12.4	11.8	11.8	11.8
24	10.4	10.1	10.2	10.4	10.3	10.4	12.2	11.8	12.0	11.8	11.8	11.8
25	10.1	9.9	10.0	10.8	10.4	10.6	11.9	11.7	11.8	11.8	11.6	11.7
26	9.9	9.7	9.8	10.9	10.8	10.9	11.9	11.7	11.8	11.7	11.6	11.7
27	9.7	9.5	9.6	11.2	10.9	11.0	12.0	11.9	11.9	11.6	11.4	11.5
28	9.6	9.4	9.5	11.9	11.2	11.6	11.9	11.8	11.9	11.5	11.4	11.4
29	9.5	9.4	9.5	12.0	11.7	11.9	11.9	11.7	11.8	11.6	11.4	11.5
30	9.6	9.4	9.5	11.8	11.6	11.6	11.8	11.7	11.7	11.9	11.6	11.8
31	9.7	9.6	9.7	---	---	---	11.7	11.6	11.7	11.9	11.7	11.8
MONTH	10.7	8.8	10.0	12.0	9.3	10.9	12.8	11.5	12.1	13.0	11.4	12.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.7	11.6	11.7	12.6	12.4	12.6	10.9	10.8	10.9	10.4	10.2	10.3
2	11.7	11.6	11.6	12.7	12.5	12.6	11.4	10.8	11.1	10.5	10.2	10.3
3	11.8	11.7	11.7	12.6	12.5	12.5	11.6	11.4	11.5	10.4	10.2	10.3
4	12.0	11.8	11.9	12.6	12.4	12.5	11.6	11.3	11.5	10.5	10.2	10.3
5	11.9	11.8	11.9	12.7	12.5	12.6	11.4	11.1	11.2	10.9	10.2	10.6
6	11.9	11.8	11.9	12.7	12.6	12.6	11.1	10.8	11.0	11.1	10.9	11.0
7	11.9	11.8	11.9	12.6	12.4	12.5	10.8	10.4	10.6	11.0	10.7	10.9
8	11.9	11.7	11.8	12.4	12.0	12.2	10.4	10.1	10.3	10.7	10.2	10.4
9	11.7	11.5	11.6	12.0	11.6	11.8	10.2	10.0	10.1	10.2	9.9	10.1
10	11.6	11.5	11.6	11.9	11.5	11.6	10.2	9.9	10.1	10.0	9.7	9.8
11	12.0	11.6	11.8	12.3	11.9	12.1	10.3	10.0	10.2	9.7	9.3	9.5
12	12.3	12.0	12.2	12.6	12.3	12.4	10.3	10.2	10.3	9.3	9.1	9.2
13	12.5	12.3	12.4	12.5	12.4	12.5	10.3	10.2	10.2	9.2	9.1	9.2
14	12.5	12.4	12.5	12.5	12.3	12.4	10.3	10.2	10.3	9.5	9.1	9.3
15	12.4	12.3	12.3	12.5	12.3	12.4	10.5	10.3	10.3	9.8	9.5	9.7
16	12.4	12.2	12.3	12.6	12.4	12.5	10.5	10.2	10.4	10.1	9.7	9.9
17	12.2	12.0	12.2	12.6	12.5	12.5	10.3	10.1	10.2	10.2	10.0	10.1
18	12.0	11.9	12.0	12.6	12.3	12.5	10.3	9.9	10.1	10.2	10.0	10.1
19	12.1	11.9	12.1	12.5	12.2	12.3	10.1	9.4	9.8	10.3	10.1	10.2
20	12.5	12.1	12.3	12.3	12.1	12.2	9.4	9.2	9.3	10.2	10.0	10.1
21	12.7	12.5	12.6	12.3	12.1	12.2	9.4	8.6	8.9	10.2	10.0	10.1
22	12.9	12.7	12.8	12.2	12.0	12.1	8.8	8.1	8.5	10.1	9.7	9.9
23	12.8	12.6	12.7	12.2	12.0	12.1	9.3	8.6	9.0	9.7	9.4	9.5
24	12.6	12.4	12.5	12.2	11.9	12.0	9.8	9.3	9.6	9.4	8.8	9.1
25	12.5	12.3	12.4	12.0	11.8	11.9	10.5	9.8	10.2	9.0	8.8	8.9
26	12.6	12.4	12.5	12.0	11.8	11.9	10.9	10.5	10.8	9.5	8.9	9.2
27	12.7	12.5	12.5	12.2	12.0	12.1	11.1	10.8	11.0	9.3	8.8	9.0
28	12.5	12.4	12.5	12.1	11.9	12.0	10.8	10.4	10.6	8.9	8.5	8.7
29	---	---	---	11.9	11.6	11.8	10.5	10.1	10.3	8.8	8.3	8.7
30	---	---	---	11.7	11.0	11.4	10.4	10.1	10.2	8.9	8.6	8.8
31	---	---	---	11.3	10.9	11.1	---	---	---	9.3	8.7	9.0
MONTH	12.9	11.5	12.2	12.7	10.9	12.2	11.6	8.1	10.3	11.1	8.3	9.7

STREAMS TRIBUTARY TO LAKE HURON

04136500 AU SABLE RIVER AT MIO, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.4	9.1	9.2	8.2	7.7	8.0	8.6	8.2	8.4	8.6	8.0	8.3
2	9.4	9.1	9.3	7.7	7.1	7.5	8.6	8.2	8.4	8.7	7.6	8.2
3	9.3	8.8	9.0	7.5	7.0	7.3	8.8	8.2	8.4	8.6	8.0	8.4
4	9.1	8.3	8.8	8.1	7.2	7.6	8.5	7.9	8.3	8.7	7.9	8.3
5	9.1	8.2	8.7	8.3	8.0	8.1	8.3	7.9	8.1	8.8	7.9	8.5
6	8.9	8.3	8.6	8.3	7.8	8.0	7.9	7.3	7.7	9.1	8.4	8.8
7	8.4	7.9	8.2	8.2	7.8	8.1	8.1	7.2	7.7	9.2	8.8	9.0
8	8.1	7.5	7.8	8.7	8.2	8.4	8.4	7.4	8.0	9.1	7.8	8.7
9	7.8	7.2	7.5	8.7	8.5	8.6	8.8	8.0	8.4	8.1	7.8	7.9
10	7.7	7.1	7.4	8.8	8.4	8.6	8.4	8.1	8.3	8.0	7.2	7.7
11	7.6	7.0	7.3	9.0	8.5	8.7	8.4	7.8	8.2	8.7	7.1	7.6
12	8.0	7.1	7.5	8.8	8.5	8.7	8.5	7.4	7.9	9.5	7.2	7.7
13	7.2	6.9	7.0	8.6	8.3	8.4	7.9	7.2	7.4	8.3	7.6	8.0
14	7.5	6.7	7.0	8.3	7.4	7.9	7.8	7.2	7.6	8.0	7.4	7.6
15	7.3	6.5	6.8	7.9	7.3	7.6	8.1	7.5	7.8	8.0	7.5	7.7
16	7.4	6.7	7.0	7.7	6.9	7.4	8.3	7.9	8.1	7.8	7.2	7.6
17	7.3	7.0	7.2	7.8	7.4	7.6	8.2	8.0	8.1	7.6	7.1	7.3
18	7.8	7.2	7.5	8.2	7.6	7.9	8.3	7.9	8.1	7.9	7.1	7.6
19	8.6	7.8	8.1	8.0	7.5	7.7	8.6	7.7	8.1	8.2	7.7	8.0
20	9.0	8.4	8.7	7.8	7.3	7.6	8.3	7.7	8.0	8.9	8.2	8.5
21	9.2	8.6	8.9	7.7	7.1	7.4	8.0	7.5	7.7	9.2	8.7	8.9
22	9.0	8.7	8.9	7.6	7.0	7.2	7.8	7.6	7.7	8.9	8.6	8.7
23	9.0	8.6	8.8	7.6	7.3	7.4	7.7	7.5	7.6	8.7	8.5	8.6
24	8.7	8.1	8.5	7.8	7.2	7.6	7.7	7.3	7.6	9.0	8.5	8.8
25	8.1	7.8	8.0	8.1	7.7	7.9	8.3	7.5	8.0	8.7	8.4	8.5
26	8.3	7.8	8.0	8.2	7.7	7.9	8.7	8.1	8.4	8.9	8.4	8.7
27	8.1	7.4	7.9	7.9	7.6	7.8	9.2	8.2	8.6	9.0	8.5	8.9
28	8.1	7.3	7.7	8.3	7.7	8.0	8.7	8.1	8.4	8.6	8.3	8.4
29	8.0	7.4	7.9	7.8	7.5	7.7	8.7	8.1	8.4	8.3	8.1	8.2
30	8.1	7.4	7.8	8.3	7.8	8.0	8.4	7.9	8.2	8.7	8.2	8.4
31	---	---	---	9.1	8.1	8.6	8.2	8.0	8.1	---	---	---
MONTH	9.4	6.5	8.0	9.1	6.9	7.9	9.2	7.2	8.1	9.5	7.1	8.2

STREAMS TRIBUTARY TO LAKE HURON

04136900 AU SABLE RIVER NEAR MC KINLEY, MI

LOCATION.--Lat 44°36'46", long 83°50'16", in SE1/4 SW1/4 sec.28, T.26 N., R.5 E., Alcona County, Hydrologic Unit 04070007, on right bank, upstream side of U.S. Forest Service 4001 bridge on Au Sable River Road, 5.5 mi southeast of McKinley.

DRAINAGE AREA.--1,513 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 830 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	765	1050	1130	e1320	e1120	995	2060	1160	965	886	884	806
2	777	1080	1090	e1340	e1100	995	2070	1170	944	836	859	787
3	773	1110	1070	e1330	e1130	e865	1960	1190	924	829	840	777
4	790	1080	1040	e1280	e1120	e894	1870	1140	910	842	902	775
5	775	1080	1050	e1190	e1160	e1000	1810	1110	896	907	924	794
6	784	1070	1070	e1050	e1070	988	1790	1100	951	902	926	778
7	801	1060	1130	e1050	e1180	1020	1770	1130	883	880	880	781
8	868	1060	1530	e1180	e1270	e977	1740	1150	927	858	840	782
9	1000	1010	1480	e1170	e1200	e927	1620	1110	976	856	815	793
10	889	1010	1420	e1090	e1140	e964	1540	1090	987	846	812	775
11	883	1030	1350	e1060	e1090	e1050	1450	1080	948	827	794	771
12	874	e1010	1320	e1120	e1130	e962	1380	1020	1020	847	873	765
13	855	e992	1260	1700	e1060	e927	1360	1020	1050	817	860	768
14	854	e973	1180	e1740	1110	e911	1300	1090	1080	796	840	769
15	890	e956	1110	e1140	1170	e940	1240	1100	1040	793	816	752
16	968	e967	1110	e1180	1130	e922	1250	1060	1120	801	797	810
17	998	e985	1180	e1080	1140	e953	1200	1040	1080	813	789	795
18	1030	967	1050	e1030	e1060	e936	1180	1010	1040	869	778	775
19	1010	978	e930	e1170	e1020	955	1180	997	1010	824	948	797
20	991	975	e645	e1190	e936	986	1220	1000	987	832	1110	784
21	968	1010	e877	e1090	1040	988	1400	993	951	848	1140	770
22	931	1000	e1120	e1090	1070	966	1330	988	935	798	1120	793
23	931	978	e1080	e1050	e954	986	1260	1080	930	788	1000	783
24	993	970	e1000	e1090	974	1000	1280	1220	912	912	921	800
25	1050	972	e920	e1170	1020	1000	1290	1200	882	1140	882	823
26	995	927	e1030	e1150	e968	1040	1380	1120	950	1170	856	1300
27	984	1010	e986	e996	e876	1070	1410	1080	935	1220	838	1240
28	983	1170	e1020	e962	1030	1110	1310	1040	936	1100	834	1080
29	1000	1210	e1050	e1100	---	1190	1260	1050	930	1030	816	1180
30	1030	1180	e1070	e1130	---	1380	1220	1020	868	951	805	1180
31	1070	---	e1220	e1090	---	1880	---	987	---	905	795	---
TOTAL	28510	30870	34518	36328	30268	31777	44130	33545	28967	27723	27294	25583
MEAN	920	1029	1113	1172	1081	1025	1471	1082	966	894	880	853
MAX	1070	1210	1530	1740	1270	1880	2070	1220	1120	1220	1140	1300
MIN	765	927	645	962	876	865	1180	987	868	788	778	752
CFSM	0.61	0.68	0.74	0.77	0.71	0.68	0.97	0.72	0.64	0.59	0.58	0.56
IN.	0.70	0.76	0.85	0.89	0.74	0.78	1.09	0.82	0.71	0.68	0.67	0.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

MEAN	949	1017	1020	978	1002	1158	1483	1251	1075	911	863	841
MAX	1074	1150	1229	1179	1162	1486	2300	1662	1270	1020	1020	1022
(WY)	1997	2004	1997	1997	1997	2004	1997	1997	2004	1999	1997	1997
MIN	809	875	839	803	805	939	979	967	919	795	781	777
(WY)	2001	2003	2001	2003	2003	2003	2000	1999	2003	2001	2001	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	410618		379513			
ANNUAL MEAN	1122		1040		1045	
HIGHEST ANNUAL MEAN					1260	1997
LOWEST ANNUAL MEAN					899	2003
HIGHEST DAILY MEAN	2840	May 25	2070	Apr 2	4790	Apr 1 1998
LOWEST DAILY MEAN	645	Dec 20	645	Dec 20	645	Dec 20 2004
ANNUAL SEVEN-DAY MINIMUM	761	Sep 26	770	Sep 9	724	Jan 17 2003
MAXIMUM PEAK FLOW			(a)2150	Apr 1	(b)4990	Apr 1 1998
MAXIMUM PEAK STAGE			(c)12.95	Jan 17	(c)14.40	Jan 1 1999
INSTANTANEOUS LOW FLOW					(d)363	Mar 11 2003
ANNUAL RUNOFF (CFSM)	0.742		0.687		0.691	
ANNUAL RUNOFF (INCHES)	10.10		9.33		9.39	
10 PERCENT EXCEEDS	1580		1260		1320	
50 PERCENT EXCEEDS	1000		1010		985	
90 PERCENT EXCEEDS	804		798		797	

(a) Gage height 8.80 ft.
(b) Gage height 10.73 ft.
(c) Backwater from ice.
(d) Result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04136900 AU SABLE RIVER NEAR MC KINLEY, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1996 to current year.
DISSOLVED OXYGEN: October 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.-- Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent except the following periods: Oct. 4-16, Nov. 3 to Feb. 14 rated good. Dissolved oxygen records rated excellent except the following periods: Mar. 20-27, Apr. 24-29, May 15-19, June 17-24, July 14-17, Sept. 17-24 rated good; Mar. 28 to Apr. 9, Apr. 30 to May 5, May 20-27, June 25 to July 5, July 18-23 rated fair; and Oct. 1-5, Apr. 10-12, May 28 to June 1, July 24 to Aug. 8 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 26.0°C, Aug. 7, 2001, July 2, 2002; minimum, -0.5°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 16.2 mg/L, Feb. 26, 2001, minimum, 5.2 mg/L, Aug. 28, 1998, July 28, 31, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.0°C, June 29; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 15.3 mg/L, Mar. 14; minimum, 6.4 mg/L, July 19.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	11.5	13.0	9.5	9.0	9.0	4.0	3.0	3.5	0.0	0.0	0.0
2	14.5	12.5	13.5	9.0	8.5	9.0	4.0	3.0	3.5	0.5	0.0	0.0
3	13.0	10.5	12.0	9.0	8.5	9.0	3.0	2.0	2.5	1.5	0.0	1.0
4	12.5	11.0	12.0	8.5	7.5	8.0	3.0	2.0	2.5	1.5	0.5	1.0
5	11.5	9.0	10.5	7.5	6.5	7.0	3.0	2.0	2.5	1.0	0.0	0.5
6	13.0	10.0	11.5	7.5	6.0	7.0	2.5	2.0	2.0	0.5	0.0	0.0
7	13.0	11.0	12.0	7.0	6.0	6.5	3.0	2.5	2.5	1.0	0.0	0.5
8	13.0	11.5	12.0	6.0	5.0	5.5	3.0	2.5	2.5	1.0	1.0	1.0
9	12.5	11.0	12.0	5.5	4.5	5.0	3.5	2.0	2.5	1.0	1.0	1.0
10	11.5	9.5	10.5	6.5	5.0	5.5	3.5	3.0	3.5	1.0	0.5	1.0
11	11.5	9.0	10.5	6.5	4.5	5.5	3.0	3.0	3.0	1.5	0.0	0.5
12	12.0	10.0	11.0	---	---	---	3.0	2.0	2.5	2.0	1.0	1.0
13	11.5	9.5	11.0	---	---	---	2.5	2.0	2.5	2.5	1.0	2.0
14	11.5	10.5	10.5	---	---	---	2.0	1.0	1.0	1.0	0.0	0.0
15	10.5	10.0	10.0	---	---	---	1.5	0.0	1.0	0.0	0.0	0.0
16	10.0	9.0	9.5	---	---	---	1.5	0.5	1.0	0.0	0.0	0.0
17	9.0	8.0	8.5	---	---	---	1.0	0.0	0.5	0.0	0.0	0.0
18	9.0	8.0	8.5	6.0	5.0	5.5	1.5	0.0	0.5	0.0	0.0	0.0
19	8.5	7.5	8.0	5.5	4.0	5.0	0.5	0.0	0.0	0.0	0.0	0.0
20	8.5	8.0	8.5	7.0	5.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
21	9.0	8.0	8.5	7.0	6.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0
22	9.0	7.5	8.0	6.5	5.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0
23	9.5	8.5	8.5	7.0	6.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0
24	10.0	9.0	9.5	6.5	4.5	5.5	0.0	0.0	0.0	0.0	0.0	0.0
25	11.0	9.5	10.0	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
26	10.5	9.0	9.5	5.0	4.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
27	10.0	9.0	9.5	5.0	4.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
28	10.5	9.0	9.5	5.0	3.5	4.5	0.0	0.0	0.0	0.0	0.0	0.0
29	11.0	10.0	10.5	3.5	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
30	12.0	10.5	11.0	4.0	2.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0
31	10.5	9.5	10.0	---	---	---	0.0	0.0	0.0	0.0	0.0	0.0
MONTH	14.5	7.5	10.3	---	---	---	4.0	0.0	1.3	2.5	0.0	0.3

STREAMS TRIBUTARY TO LAKE HURON

04136900 AU SABLE RIVER NEAR MC KINLEY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	1.0	0.0	0.5	6.5	4.0	5.5	9.5	7.5	9.0
2	0.0	0.0	0.0	0.5	0.0	0.5	6.5	4.5	5.5	9.0	7.5	8.5
3	0.0	0.0	0.0	0.5	0.0	0.0	7.0	4.0	5.5	8.5	7.0	8.0
4	0.0	0.0	0.0	1.5	0.0	0.5	7.5	4.0	6.0	11.0	6.0	8.5
5	0.0	0.0	0.0	2.0	0.0	1.0	8.5	5.0	7.0	11.5	7.5	10.0
6	0.0	0.0	0.0	3.0	1.0	2.0	8.5	6.5	7.5	11.0	8.5	10.0
7	1.5	0.0	1.0	2.5	0.0	1.0	10.0	7.0	8.5	11.5	9.5	10.5
8	1.5	1.0	1.0	0.5	0.0	0.0	11.0	7.0	9.0	13.5	8.5	11.0
9	1.5	0.5	1.0	1.0	0.0	0.0	11.5	7.0	9.5	15.0	11.0	13.0
10	2.0	0.5	1.5	2.5	0.0	1.0	11.5	8.0	10.0	15.5	13.5	14.5
11	2.0	0.5	1.5	2.5	0.5	1.5	11.0	8.0	9.5	15.0	12.5	13.5
12	2.5	1.5	2.0	2.0	0.0	1.0	11.0	8.0	9.5	14.0	10.5	12.5
13	2.0	0.0	1.0	2.0	0.0	1.0	11.5	7.5	10.0	13.5	10.5	11.5
14	2.0	0.5	1.0	2.0	0.0	1.0	12.0	8.0	10.0	13.5	11.5	12.5
15	2.5	1.5	2.0	2.5	0.0	1.0	12.0	7.5	10.0	12.5	11.0	12.0
16	2.5	1.0	2.0	2.5	0.0	1.5	12.5	8.0	10.5	11.5	9.5	10.5
17	2.0	0.5	1.0	2.5	0.5	1.5	13.5	10.0	12.0	12.0	9.0	10.5
18	2.0	0.0	1.0	3.0	0.5	2.0	14.0	9.5	12.0	12.5	9.5	11.5
19	2.0	0.5	1.5	3.0	1.5	2.0	15.0	11.5	13.5	12.0	10.5	11.0
20	1.5	0.0	0.5	3.0	2.0	2.5	14.5	11.0	12.5	15.0	9.5	12.5
21	1.5	0.5	1.0	4.5	2.0	3.5	14.5	10.5	12.5	16.0	11.0	13.5
22	2.0	1.0	1.5	4.5	1.5	3.5	13.0	10.0	11.5	15.0	12.0	13.0
23	1.0	0.0	0.5	4.0	1.5	3.0	11.5	8.5	10.0	14.0	12.5	13.5
24	1.0	0.0	0.5	5.0	1.0	3.0	8.5	7.5	8.0	15.0	12.0	13.5
25	1.5	0.0	0.5	5.0	2.5	4.0	9.5	7.0	8.0	17.0	12.0	14.5
26	1.0	0.0	0.5	5.5	2.0	4.0	8.5	7.0	7.5	16.0	12.5	14.5
27	1.0	0.0	0.5	6.0	2.5	4.5	8.5	6.0	7.5	16.0	13.0	14.5
28	1.0	0.0	0.5	6.5	2.5	5.0	8.0	6.5	7.5	15.0	13.0	14.0
29	---	---	---	7.0	3.0	5.5	10.0	6.0	8.0	16.5	12.5	15.0
30	---	---	---	6.5	4.0	5.5	10.0	7.5	9.0	16.0	13.5	15.0
31	---	---	---	5.5	4.5	5.0	---	---	---	18.0	13.5	16.0
MONTH	2.5	0.0	0.8	7.0	0.0	2.2	15.0	4.0	9.1	18.0	6.0	12.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.5	13.0	16.0	22.0	19.5	21.0	23.0	20.0	22.0	19.5	16.5	18.0
2	18.0	14.0	16.5	22.5	17.5	20.5	24.0	20.0	22.5	18.5	17.0	18.0
3	19.5	14.5	17.5	23.0	19.0	21.0	23.5	20.5	22.0	19.0	16.5	18.0
4	20.0	16.0	18.0	22.0	19.0	20.0	23.0	21.5	22.0	19.0	16.0	17.5
5	21.0	17.0	19.5	20.5	19.0	20.0	23.0	19.5	21.5	19.0	16.0	18.0
6	21.5	18.5	20.0	22.0	18.0	20.0	23.5	19.0	21.5	19.0	16.5	18.0
7	22.0	18.0	20.5	21.5	17.0	19.5	23.0	19.5	21.5	20.0	17.5	19.0
8	21.5	19.0	20.5	21.0	18.0	20.0	23.0	20.0	22.0	19.0	17.0	18.5
9	23.5	18.5	21.5	22.5	18.0	20.5	23.5	20.5	22.5	18.5	15.5	17.5
10	23.0	20.5	22.0	23.5	19.5	21.5	23.0	21.0	22.0	19.0	16.0	17.5
11	24.0	20.5	22.5	24.0	21.0	23.0	21.5	19.5	20.5	20.0	17.0	18.5
12	24.0	21.5	23.0	23.5	21.0	22.5	21.0	19.0	20.0	20.0	18.0	19.5
13	23.5	21.0	21.5	23.0	21.0	22.0	21.5	19.5	21.0	20.5	18.0	19.5
14	24.5	20.5	22.5	23.5	20.5	22.0	21.5	19.0	20.5	20.0	18.0	19.0
15	23.0	20.0	21.0	24.5	20.0	22.5	21.5	17.5	20.0	18.0	15.5	17.0
16	20.5	18.5	19.5	24.0	21.5	23.0	21.0	18.0	20.0	17.5	16.0	16.5
17	20.0	18.0	19.0	23.5	21.0	22.5	21.0	18.5	20.0	18.5	15.0	17.0
18	18.5	17.0	18.0	24.5	21.5	23.0	20.5	18.0	19.0	17.5	15.0	17.0
19	20.5	15.5	18.0	23.5	21.5	22.5	19.5	18.0	19.0	17.5	15.5	16.0
20	21.0	16.5	19.0	24.0	21.0	23.0	19.5	18.0	18.5	18.0	15.0	16.5
21	20.5	17.5	19.0	24.5	21.5	23.5	20.0	18.0	19.0	17.5	15.5	17.0
22	21.0	16.5	19.0	23.5	21.0	22.5	19.0	17.0	17.5	17.5	16.0	16.5
23	20.0	17.0	18.5	23.0	19.5	22.0	18.0	16.0	17.0	16.0	14.0	15.0
24	24.0	19.0	21.5	23.0	20.5	21.5	18.5	14.5	17.0	15.5	12.5	14.5
25	23.5	20.5	21.5	24.0	20.5	22.5	18.0	15.0	17.0	16.0	15.0	15.5
26	22.0	18.5	20.5	23.0	21.0	21.5	19.0	15.5	17.5	16.0	15.0	15.5
27	24.5	19.5	22.0	21.5	19.0	20.0	19.0	16.5	17.5	15.5	13.0	14.5
28	24.0	21.5	22.5	21.5	17.5	19.5	19.5	16.5	18.0	15.5	13.0	14.5
29	25.0	21.0	23.0	21.5	19.0	20.0	19.5	16.5	18.5	15.0	13.0	13.5
30	23.5	20.5	22.0	21.5	17.0	19.5	19.0	17.0	18.5	14.5	12.0	13.5
31	---	---	---	21.5	18.0	20.0	19.5	16.5	18.5	---	---	---
MONTH	25.0	13.0	20.2	24.5	17.0	21.4	24.0	14.5	19.8	20.5	12.0	16.9

STREAMS TRIBUTARY TO LAKE HURON

04136900 AU SABLE RIVER NEAR MC KINLEY, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.1	8.7	9.3	11.4	10.4	10.8	---	---	---	12.9	11.9	12.4
2	11.4	8.7	9.9	11.2	10.4	10.8	12.9	12.1	12.5	12.8	12.4	12.6
3	11.6	10.0	10.7	11.5	10.5	11.0	13.1	12.2	12.7	13.8	12.5	13.5
4	11.1	9.8	10.4	11.2	10.6	10.9	12.8	12.4	12.6	14.0	13.3	13.7
5	11.9	10.3	11.0	12.0	10.7	11.4	13.2	12.4	12.8	13.7	12.9	13.2
6	11.8	10.3	11.0	11.9	11.1	11.4	13.0	12.7	12.8	13.1	12.7	12.9
7	11.8	10.1	10.9	12.0	10.9	11.4	12.7	12.3	12.5	13.9	12.5	13.2
8	11.2	10.0	10.5	12.6	11.4	12.0	12.9	12.4	12.6	13.8	13.5	13.7
9	11.4	9.8	10.5	12.7	11.9	12.2	13.3	12.4	12.9	13.9	13.5	13.7
10	11.8	10.5	11.1	12.5	11.6	12.0	12.7	12.5	12.6	14.0	13.3	13.6
11	11.9	10.5	11.1	12.6	11.5	12.0	13.1	12.5	12.8	14.0	12.9	13.5
12	11.7	10.3	10.9	---	---	---	12.8	12.5	12.7	13.7	13.2	13.5
13	11.7	10.1	10.8	---	---	---	13.3	12.5	12.9	13.5	12.9	13.2
14	11.1	10.0	10.5	---	---	---	13.8	13.0	13.4	13.4	12.7	13.0
15	10.9	10.3	10.5	---	---	---	13.7	12.7	13.3	13.1	12.8	13.0
16	11.6	10.2	10.8	---	---	---	13.6	13.0	13.4	13.0	12.9	13.0
17	12.0	10.7	11.3	---	---	---	13.4	12.7	13.1	13.3	12.9	13.1
18	12.1	10.9	11.4	12.6	11.7	12.1	13.8	12.8	13.2	13.3	13.2	13.2
19	12.0	11.0	11.4	12.7	11.6	12.1	13.4	12.7	13.1	13.2	12.6	12.8
20	11.7	11.0	11.3	11.9	11.2	11.5	13.2	12.8	13.0	12.8	12.6	12.6
21	12.2	11.1	11.6	12.0	11.0	11.4	12.8	12.1	12.4	12.8	12.5	12.7
22	11.9	11.1	11.4	12.1	11.2	11.5	12.7	12.2	12.4	12.7	12.1	12.3
23	11.3	10.7	11.1	---	---	---	12.7	12.5	12.6	12.2	12.0	12.2
24	11.7	10.5	11.0	---	---	---	12.7	12.4	12.5	12.2	11.8	12.0
25	11.6	10.5	11.0	---	---	---	12.5	12.1	12.3	11.9	11.7	11.8
26	12.0	10.5	11.2	---	---	---	12.3	12.0	12.1	12.1	11.6	11.7
27	11.5	10.5	10.9	---	---	---	12.3	12.1	12.1	12.1	11.9	12.0
28	11.8	10.6	11.1	---	---	---	12.3	11.9	12.1	12.1	11.8	11.9
29	11.2	10.3	10.6	---	---	---	12.0	11.7	11.8	12.0	11.6	11.8
30	10.8	9.9	10.3	---	---	---	11.9	11.5	11.7	11.9	11.5	11.7
31	11.5	10.1	10.7	---	---	---	12.1	11.1	11.6	12.0	11.5	11.8
MONTH	12.2	8.7	10.8	---	---	---	---	---	---	14.0	11.5	12.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.1	11.8	11.9	14.3	12.5	13.4	12.8	11.3	11.9	11.6	10.7	11.1
2	12.2	11.8	12.0	14.5	12.7	13.6	12.6	11.1	11.7	11.6	10.9	11.3
3	12.2	12.0	12.1	14.3	12.9	13.5	12.4	11.3	11.8	11.8	11.1	11.5
4	12.3	12.0	12.1	14.3	12.9	13.5	12.3	11.3	11.8	12.0	10.9	11.6
5	12.5	12.2	12.3	14.5	12.7	13.7	12.1	11.0	11.5	12.0	10.7	11.4
6	12.5	12.2	12.3	14.1	13.4	13.7	11.8	10.5	11.1	11.9	10.6	11.2
7	13.5	12.4	13.2	13.7	13.0	13.3	11.5	10.4	10.8	11.6	10.5	11.1
8	13.9	13.3	13.6	14.2	12.7	13.4	11.3	10.2	10.7	11.5	10.0	11.0
9	13.7	13.1	13.4	14.7	13.0	13.7	11.2	10.0	10.5	11.1	9.5	10.4
10	13.4	13.0	13.3	14.5	12.7	13.7	11.0	9.8	10.3	10.6	9.2	9.9
11	13.4	12.8	13.2	14.4	12.6	13.5	11.0	9.8	10.3	10.7	9.1	9.9
12	13.3	13.0	13.2	14.3	12.4	13.6	11.0	9.8	10.3	11.4	9.7	10.5
13	13.9	12.7	13.5	14.4	12.6	13.6	11.0	10.0	10.5	10.7	9.6	10.1
14	13.6	13.0	13.3	15.3	13.3	14.1	11.1	10.0	10.5	11.0	9.5	10.2
15	13.4	13.1	13.2	14.6	12.7	13.8	11.1	10.0	10.6	11.3	9.6	10.5
16	13.5	13.1	13.3	14.6	12.8	13.8	11.0	9.8	10.5	11.6	10.1	10.9
17	13.8	13.2	13.5	14.5	13.2	13.8	10.6	9.7	10.1	11.8	10.2	11.0
18	13.7	12.6	13.3	14.5	13.0	13.9	10.8	9.5	10.2	11.6	10.1	10.8
19	13.7	13.0	13.5	14.4	13.1	13.7	10.4	9.2	9.8	11.5	10.0	10.8
20	13.7	12.7	13.2	14.3	12.8	13.5	10.1	9.0	9.5	11.5	9.3	10.6
21	13.7	13.3	13.5	14.4	12.9	13.7	10.5	9.5	10.1	10.9	9.0	10.1
22	14.1	13.4	13.7	14.7	13.0	13.8	10.4	9.5	9.9	10.8	8.8	9.7
23	14.3	13.0	13.6	14.6	13.1	13.8	10.6	9.7	10.2	10.5	8.7	9.5
24	14.8	13.0	13.9	14.0	12.7	13.4	11.0	10.2	10.6	10.4	9.1	9.7
25	14.3	12.9	13.8	13.8	12.3	13.1	11.3	10.6	10.9	10.5	8.6	9.6
26	14.4	12.9	13.7	13.9	12.6	13.2	11.5	10.6	11.0	10.2	8.4	9.4
27	15.0	13.1	13.9	14.2	12.5	13.2	11.8	11.0	11.4	10.3	8.4	9.3
28	14.1	12.7	13.6	13.2	12.1	12.6	11.7	11.2	11.4	10.0	8.5	9.2
29	---	---	---	13.4	11.8	12.6	11.6	10.7	11.3	10.1	8.3	9.2
30	---	---	---	13.2	11.5	12.3	11.5	10.7	11.0	10.1	8.2	9.1
31	---	---	---	12.5	11.2	11.9	---	---	---	10.1	8.1	9.1
MONTH	15.0	11.8	13.2	15.3	11.2	13.4	12.8	9.0	10.7	12.0	8.1	10.3

STREAMS TRIBUTARY TO LAKE HURON

04136900 AU SABLE RIVER NEAR MC KINLEY, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.2	8.0	9.1	9.3	7.2	8.3	9.5	7.3	8.3	9.8	7.6	8.6
2	10.0	8.2	9.1	9.4	7.6	8.5	9.9	7.4	8.5	9.7	7.5	8.6
3	9.7	7.9	8.8	9.4	7.3	8.4	9.8	7.3	8.5	9.8	7.8	8.7
4	9.5	7.8	8.6	8.7	7.1	7.9	9.2	7.1	8.1	10.0	7.8	8.8
5	9.2	7.4	8.3	9.2	7.6	8.4	9.8	7.6	8.7	9.9	7.7	8.8
6	9.0	7.2	8.1	9.4	7.6	8.6	9.8	7.6	8.6	10.0	7.7	8.8
7	9.0	7.2	8.1	9.5	7.4	8.4	9.6	7.3	8.4	9.8	7.5	8.6
8	8.8	7.1	7.8	9.4	7.3	8.3	10.1	7.2	8.4	10.3	7.6	8.8
9	8.7	7.0	7.8	9.4	7.3	8.3	9.5	7.1	8.3	10.4	8.2	9.2
10	8.4	6.8	7.6	9.3	7.1	8.1	9.1	6.8	8.0	10.4	8.1	9.1
11	8.6	6.9	7.7	9.2	6.8	8.0	9.4	7.2	8.2	10.1	7.9	8.9
12	8.6	6.7	7.6	9.1	6.8	7.9	9.0	7.3	8.0	9.7	7.5	8.6
13	7.9	6.6	7.2	8.9	6.8	7.8	9.4	7.1	8.2	9.7	7.6	8.4
14	8.4	6.8	7.5	9.1	6.9	7.9	9.7	7.2	8.4	9.2	7.1	8.0
15	7.8	6.6	7.2	9.0	6.9	7.9	10.0	7.6	8.7	9.7	7.7	8.6
16	8.6	6.8	7.8	9.0	6.6	7.7	10.0	7.6	8.8	9.2	7.6	8.3
17	9.3	7.4	8.3	8.4	6.7	7.6	10.1	7.6	8.8	9.5	7.8	8.5
18	9.2	7.6	8.5	8.1	6.5	7.4	10.0	7.6	8.6	9.7	7.5	8.5
19	9.8	8.1	8.9	8.6	6.4	7.6	9.1	7.8	8.3	9.4	7.6	8.5
20	9.8	7.8	8.8	9.1	7.0	7.9	9.2	7.8	8.4	9.6	7.8	8.6
21	9.5	7.6	8.6	9.1	6.9	7.9	9.9	7.7	8.7	9.8	7.7	8.6
22	9.7	7.9	8.8	9.0	7.0	8.0	9.7	7.9	8.7	9.1	7.6	8.3
23	9.4	7.8	8.6	9.5	7.2	8.3	10.2	8.1	9.1	10.0	8.1	9.0
24	9.0	7.1	8.1	8.5	7.0	7.7	10.4	8.4	9.4	10.2	8.4	9.2
25	8.9	6.8	7.9	9.2	7.1	8.1	10.6	8.2	9.3	9.2	8.0	8.5
26	9.3	7.4	8.2	8.4	7.0	7.8	10.4	8.2	9.2	8.9	7.9	8.4
27	9.3	7.2	8.3	9.3	7.3	8.2	9.9	7.9	8.8	9.8	8.4	9.0
28	9.1	7.1	8.1	9.2	7.5	8.3	10.1	8.0	9.0	9.9	8.5	9.1
29	9.4	7.2	8.2	9.1	7.4	8.3	10.1	7.8	8.8	10.0	8.3	9.1
30	9.3	7.1	8.2	9.8	7.6	8.6	9.8	7.6	8.6	9.8	8.6	9.2
31	---	---	---	9.6	7.6	8.5	9.8	7.6	8.6	---	---	---
MONTH	10.2	6.6	8.2	9.8	6.4	8.1	10.6	6.8	8.6	10.4	7.1	8.7

STREAMS TRIBUTARY TO LAKE HURON

04137005 AU SABLE RIVER NEAR CURTISVILLE, MI

LOCATION.--Lat 44°33'39", long 83°48'10", in SW1/4 NW1/4 sec.14, T.25 N., R.5 E., Alcona County, Hydrologic Unit 04070007, on left bank 200 ft upstream from Bamfield Road, 3.2 mi east of Curtisville.

DRAINAGE AREA.--1,598 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 778.11 ft above sea level (levels by Consumers Energy).

REMARKS.--Water-discharge records good. Flow completely regulated by Alcona Dam 300 ft upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	830	1140	1230	1470	1180	1100	2150	1280	1010	932	970	907
2	883	1140	1170	1510	1200	1030	2170	1280	989	862	934	900
3	829	1180	1140	1510	1210	907	2050	1300	950	881	903	871
4	853	1170	1140	1380	1220	995	1950	1220	963	925	1000	858
5	864	1130	1130	1300	1220	1120	1900	1220	953	976	1040	912
6	844	1140	1150	e1120	1260	1070	1870	1170	986	974	1010	868
7	876	1120	1250	e1110	1230	1140	1850	1230	919	922	978	863
8	971	1100	1640	1230	1340	1070	1820	1260	958	888	928	880
9	1180	1070	1610	1250	1320	947	1710	1180	1070	894	904	891
10	952	1060	1520	1170	1250	1060	1640	1190	1050	881	906	875
11	955	1090	1480	1120	1120	1190	1540	1140	987	865	868	869
12	937	1050	1440	1160	1190	1070	1500	1050	1090	872	979	840
13	934	1040	1370	1600	1130	1020	1460	1090	1120	874	978	863
14	924	1010	1260	2060	1170	1010	1390	1170	1150	861	929	887
15	997	1020	1210	1200	1220	1010	1350	1190	1130	858	940	823
16	1070	1010	1180	1180	1200	985	1340	1150	1160	861	883	871
17	1060	1030	1210	1020	1200	1030	1300	1100	1170	887	886	866
18	1130	1050	1140	902	1110	989	1270	1070	1090	1020	873	831
19	1090	1030	893	1110	1080	1010	1270	1050	1050	899	1210	873
20	1060	1060	604	1260	1020	1040	1350	1060	1030	914	1290	853
21	1050	1060	682	1030	1080	1030	1500	1070	1040	929	1340	829
22	997	1050	1160	1070	1160	998	1460	1040	973	881	1300	851
23	1020	1030	1240	1050	1060	1020	1370	1180	959	855	1120	833
24	1100	1020	941	1120	1020	1030	1410	1330	953	1020	1080	855
25	1130	1050	849	1290	1090	1020	1350	1310	894	1360	997	1040
26	1070	976	981	1240	1060	1030	1510	1190	1030	1340	988	1530
27	1050	1090	1080	1070	948	1100	1540	1180	970	1380	961	1410
28	1060	1300	1090	899	1130	1150	1420	1100	980	1260	963	1310
29	1080	1320	1190	1110	---	1300	1380	1110	949	1170	932	1340
30	1100	1290	1170	1240	---	1490	1330	1100	928	1060	910	1360
31	1140	---	1360	1200	---	1880	---	1050	---	1000	898	---
TOTAL	31036	32826	36510	37981	32418	33841	47150	36060	30501	30301	30898	28759
MEAN	1001	1094	1178	1225	1158	1092	1572	1163	1017	977	997	959
MAX	1180	1320	1640	2060	1340	1880	2170	1330	1170	1380	1340	1530
MIN	829	976	604	899	948	907	1270	1040	894	855	868	823
CFSM	0.63	0.68	0.74	0.77	0.72	0.68	0.98	0.73	0.64	0.61	0.62	0.60
IN.	0.72	0.76	0.85	0.88	0.75	0.79	1.10	0.84	0.71	0.71	0.72	0.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2005, BY WATER YEAR (WY)

MEAN	1005	1074	1078	1042	1076	1228	1561	1330	1138	966	918	901
MAX	1132	1257	1227	1236	1235	1541	2390	1786	1346	1083	1054	1098
(WY)	2002	2004	1997	1997	1997	2004	1997	1997	2004	1997	1997	1997
MIN	842	932	874	820	833	970	1020	993	1017	832	819	837
(WY)	2001	2003	2001	2003	2003	2003	2000	1999	2005	2001	2001	2000

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1997 - 2005	
ANNUAL TOTAL	436330		408281			
ANNUAL MEAN	1192		1119		1109	
HIGHEST ANNUAL MEAN					1320	1997
LOWEST ANNUAL MEAN					958	2003
HIGHEST DAILY MEAN	2930	May 25	2170	Apr 2	5410	Apr 1 1998
LOWEST DAILY MEAN	604	Dec 20	604	Dec 20	604	Dec 20 2004
ANNUAL SEVEN-DAY MINIMUM	805	Aug 17	846	Sep 18	723	Jan 17 2003
MAXIMUM PEAK FLOW			2320	Jan 14	5520	Apr 1 1998
MAXIMUM PEAK STAGE			10.32	Jan 14	13.56	Apr 1 1998
INSTANTANEOUS LOW FLOW			564	Dec 20	525	Jan 31 2000
ANNUAL RUNOFF (CFSM)	0.746		0.700		0.694	
ANNUAL RUNOFF (INCHES)	10.16		9.50		9.43	
10 PERCENT EXCEEDS	1640		1380		1410	
50 PERCENT EXCEEDS	1080		1070		1050	
90 PERCENT EXCEEDS	864		876		843	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04137005 AU SABLE RIVER NEAR CURTISVILLE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1997 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1996 to current year.
DISSOLVED OXYGEN: October 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent except the following periods: Nov. 14 to Dec. 19 rated good. Dissolved oxygen records rated excellent except the following periods: Nov. 10-17, Apr. 1-12 rated good; Nov. 18-28 rated fair; and Nov. 29 to Dec. 1 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 26.5°C, Aug. 8, 2001, July 4, 2002; minimum, -0.5°C, Feb. 18, 21, 2000.
DISSOLVED OXYGEN: Maximum, 14.1 mg/L, Feb. 20, 2002; minimum, 4.0 mg/L, July 6, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.5°C, on several days in July; minimum, 0.0°C, on several days during winter period.
DISSOLVED OXYGEN: Maximum, 13.5 mg/L, Dec. 20, 21; minimum, 5.9 mg/L, Aug. 13.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	15.5	16.0	10.0	10.0	10.0	4.0	3.5	3.5	0.5	0.5	0.5
2	16.0	15.5	16.0	10.0	9.5	10.0	3.5	3.0	3.5	0.5	0.5	0.5
3	15.5	14.5	15.0	9.5	9.5	9.5	3.0	2.5	3.0	0.5	0.5	0.5
4	15.0	14.0	14.5	9.5	9.0	9.5	3.0	2.5	2.5	0.5	0.5	0.5
5	14.0	13.5	14.0	9.0	8.0	8.5	2.5	2.0	2.5	0.5	0.5	0.5
6	13.5	13.5	13.5	8.0	8.0	8.0	2.5	2.0	2.5	---	---	---
7	13.5	12.5	13.0	8.0	7.5	8.0	2.5	2.0	2.0	---	---	---
8	13.5	12.0	12.5	7.5	7.0	7.5	2.0	2.0	2.0	0.5	0.5	0.5
9	13.5	13.0	13.5	7.0	6.5	7.0	2.0	2.0	2.0	0.5	0.5	0.5
10	13.5	12.5	13.0	6.5	6.5	6.5	2.5	2.0	2.5	0.5	0.5	0.5
11	13.0	12.5	12.5	6.5	6.0	6.0	2.0	2.0	2.0	0.5	0.5	0.5
12	13.0	12.5	12.5	6.0	5.5	5.5	2.5	2.0	2.0	0.5	0.5	0.5
13	12.5	12.0	12.0	5.5	5.0	5.0	2.0	1.5	1.5	0.5	0.5	0.5
14	12.5	12.0	12.0	5.0	4.5	5.0	1.5	1.0	1.0	1.0	0.5	0.5
15	12.0	11.5	11.5	4.5	4.0	4.5	1.5	1.0	1.5	1.0	1.0	1.0
16	11.5	11.0	11.5	4.5	4.0	4.5	1.5	1.0	1.0	1.0	0.5	1.0
17	11.0	10.5	10.5	4.5	4.5	4.5	1.0	0.5	1.0	0.5	0.5	0.5
18	10.5	10.0	10.5	5.0	4.5	4.5	1.0	1.0	1.0	0.5	0.5	0.5
19	10.0	10.0	10.0	5.0	5.0	5.0	1.0	1.0	1.0	0.5	0.5	0.5
20	10.0	9.5	9.5	5.0	5.0	5.0	1.0	1.0	1.0	0.5	0.5	0.5
21	9.5	9.5	9.5	5.5	5.0	5.5	1.0	1.0	1.0	0.5	0.5	0.5
22	9.5	9.0	9.0	5.5	5.5	5.5	1.0	1.0	1.0	0.5	0.5	0.5
23	9.0	9.0	9.0	5.5	5.5	5.5	1.0	0.5	1.0	0.5	0.5	0.5
24	9.5	9.0	9.5	5.5	5.0	5.5	0.5	0.5	0.5	0.5	0.5	0.5
25	10.0	9.5	9.5	5.0	4.5	4.5	0.5	0.5	0.5	0.5	0.5	0.5
26	10.0	9.5	10.0	5.0	4.5	4.5	0.5	0.5	0.5	0.5	0.0	0.5
27	10.0	9.5	9.5	4.5	4.5	4.5	0.5	0.5	0.5	0.5	0.0	0.0
28	9.5	9.5	9.5	4.5	4.0	4.5	0.5	0.5	0.5	0.0	0.0	0.0
29	10.0	9.5	9.5	4.0	4.0	4.0	0.5	0.5	0.5	0.5	0.0	0.0
30	10.5	9.5	10.0	4.0	4.0	4.0	0.5	0.5	0.5	0.0	0.0	0.0
31	10.5	10.0	10.5	---	---	---	0.5	0.5	0.5	0.0	0.0	0.0
MONTH	16.5	9.0	11.6	10.0	4.0	6.1	4.0	0.5	1.5	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04137005 AU SABLE RIVER NEAR CURTISVILLE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	1.0	0.5	0.5	4.5	4.0	4.0	9.0	8.5	9.0
2	0.0	0.0	0.0	0.5	0.5	0.5	4.0	4.0	4.0	9.0	9.0	9.0
3	0.0	0.0	0.0	0.5	0.5	0.5	4.5	4.0	4.0	9.0	8.5	9.0
4	0.0	0.0	0.0	0.5	0.5	0.5	4.5	4.0	4.5	9.5	8.5	8.5
5	0.0	0.0	0.0	0.5	0.5	0.5	5.0	4.5	4.5	9.5	8.5	9.0
6	0.0	0.0	0.0	0.5	0.5	0.5	5.5	5.0	5.0	10.0	9.0	9.5
7	0.5	0.0	0.0	0.5	0.5	0.5	7.5	5.5	7.0	11.0	10.0	10.5
8	0.5	0.0	0.5	0.5	0.5	0.5	8.0	6.0	7.0	11.5	10.0	10.5
9	0.5	0.0	0.5	0.5	0.5	0.5	8.5	6.5	7.5	12.0	10.0	11.0
10	0.5	0.0	0.5	1.0	0.5	0.5	9.0	7.5	8.5	14.0	11.5	12.5
11	0.5	0.5	0.5	0.5	0.5	0.5	9.5	8.5	9.0	14.0	13.5	14.0
12	0.5	0.5	0.5	0.5	0.5	0.5	10.0	9.0	9.5	13.5	12.5	13.0
13	0.5	0.5	0.5	0.5	0.5	0.5	10.5	9.5	10.0	13.0	12.0	12.5
14	0.5	0.5	0.5	1.0	0.5	0.5	11.0	10.0	10.5	13.0	12.5	12.5
15	1.0	0.5	0.5	1.0	0.5	1.0	10.0	10.0	10.0	13.0	12.5	12.5
16	1.0	1.0	1.0	1.0	1.0	1.0	11.5	10.0	10.5	12.5	12.0	12.0
17	1.0	1.0	1.0	1.0	1.0	1.0	11.5	10.5	11.0	12.5	11.5	12.0
18	1.5	1.0	1.5	1.0	1.0	1.0	12.0	11.0	11.5	12.0	12.0	12.0
19	1.5	1.5	1.5	1.0	1.0	1.0	13.5	12.0	12.0	12.5	11.5	12.0
20	1.5	1.5	1.5	1.5	1.0	1.0	13.5	12.5	13.0	13.0	12.0	12.5
21	1.5	1.5	1.5	1.5	1.5	1.5	12.5	12.0	12.5	13.5	12.5	13.0
22	1.5	1.0	1.0	1.5	1.5	1.5	12.5	12.0	12.5	13.5	13.0	13.0
23	1.0	1.0	1.0	2.0	1.5	2.0	12.5	10.5	11.5	14.0	13.5	13.5
24	1.0	1.0	1.0	2.0	2.0	2.0	10.5	9.0	10.0	14.0	13.5	14.0
25	1.0	1.0	1.0	2.5	2.0	2.5	9.5	9.0	9.0	14.5	13.5	14.0
26	1.0	0.5	1.0	3.0	2.5	2.5	9.0	8.0	8.5	15.5	14.0	14.5
27	1.0	0.5	0.5	3.0	3.0	3.0	9.0	8.5	9.0	15.5	14.5	15.0
28	1.0	0.5	0.5	3.5	3.0	3.5	9.0	8.5	8.5	15.5	15.0	15.0
29	---	---	---	4.0	3.5	3.5	9.0	8.5	8.5	16.0	15.0	15.5
30	---	---	---	4.0	4.0	4.0	9.0	8.5	8.5	16.0	15.5	15.5
31	---	---	---	4.0	4.0	4.0	---	---	---	16.5	15.5	16.0
MONTH	1.5	0.0	0.6	4.0	0.5	1.4	13.5	4.0	8.7	16.5	8.5	12.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	16.0	16.0	24.0	22.5	23.0	22.5	21.5	22.0	20.5	19.5	20.0
2	16.5	16.0	16.0	23.0	22.0	22.5	22.5	22.0	22.0	20.5	19.5	20.0
3	17.0	16.5	16.5	22.5	21.5	22.0	23.0	22.0	22.5	20.5	19.5	20.0
4	17.5	17.0	17.5	22.0	21.5	21.5	24.0	22.5	23.0	19.5	19.0	19.5
5	19.0	17.5	18.0	22.5	21.5	22.0	23.5	23.0	23.0	19.5	19.0	19.5
6	20.5	18.0	19.5	22.0	21.5	21.5	23.0	22.5	23.0	19.5	19.0	19.5
7	20.0	19.0	19.5	22.0	21.5	21.5	23.5	22.5	23.0	20.0	19.0	19.5
8	20.5	19.5	20.0	22.0	21.5	21.5	23.5	22.5	23.0	20.0	19.5	20.0
9	21.5	20.5	20.5	22.0	21.5	21.5	24.0	22.5	23.0	20.0	19.5	19.5
10	21.5	20.5	21.0	22.0	21.5	22.0	24.0	23.0	23.5	19.5	19.5	19.5
11	22.0	21.5	21.5	22.5	22.0	22.0	24.0	23.0	23.5	---	---	---
12	23.0	22.0	22.5	23.0	22.0	22.5	23.5	22.5	23.0	---	---	---
13	23.0	22.5	23.0	23.0	22.5	23.0	23.0	22.0	22.5	---	---	---
14	23.0	22.5	23.0	23.5	23.0	23.0	22.5	22.0	22.5	21.0	20.0	20.5
15	24.0	23.0	23.0	23.5	23.0	23.5	22.0	22.0	22.0	---	---	---
16	23.0	22.0	22.5	23.5	23.0	23.5	22.5	21.5	22.0	---	---	---
17	22.0	21.0	22.0	24.0	23.5	24.0	22.0	21.5	22.0	---	---	---
18	21.0	20.0	21.0	24.5	23.5	23.5	21.5	21.5	21.5	---	---	---
19	20.0	19.5	20.0	24.5	24.0	24.0	22.5	21.0	21.5	---	---	---
20	20.0	19.5	19.5	24.0	23.5	24.0	21.5	21.0	21.5	---	---	---
21	21.0	19.5	20.0	24.5	24.0	24.5	21.5	21.0	21.0	18.5	18.0	18.5
22	20.0	19.5	20.0	24.5	24.0	24.5	21.0	20.0	20.5	19.0	18.0	18.5
23	20.5	19.5	20.0	24.5	24.0	24.0	20.5	20.0	20.0	19.0	18.0	18.0
24	21.5	20.0	20.5	24.0	23.5	24.0	20.0	19.0	19.5	18.0	17.5	17.5
25	21.5	21.0	21.0	24.0	23.5	24.0	19.0	19.0	19.0	17.5	17.0	17.5
26	21.5	21.0	21.0	24.5	23.0	23.5	19.0	18.5	19.0	17.5	17.0	17.5
27	22.0	21.0	21.5	23.5	22.5	23.5	20.0	18.5	19.0	17.0	16.5	16.5
28	22.5	21.5	22.0	22.5	22.5	22.5	19.5	19.0	19.0	16.5	16.0	16.5
29	22.5	22.0	22.5	22.5	21.5	22.0	20.0	19.0	19.0	16.5	15.5	16.0
30	23.0	22.0	22.5	22.0	21.5	21.5	19.5	19.0	19.5	15.5	15.0	15.0
31	---	---	---	22.0	21.0	21.5	20.5	19.5	20.0	---	---	---
MONTH	24.0	16.0	20.4	24.5	21.0	22.8	24.0	18.5	21.5	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04137005 AU SABLE RIVER NEAR CURTISVILLE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	7.7	8.1	9.7	9.5	9.6	12.6	12.0	12.2	12.3	12.2	12.3
2	8.9	8.0	8.5	9.6	9.5	9.5	12.6	12.5	12.5	12.4	12.2	12.3
3	9.0	8.7	8.8	9.6	9.5	9.6	12.8	12.5	12.7	12.4	12.2	12.3
4	9.3	8.9	9.1	9.7	9.5	9.5	12.9	12.6	12.7	12.6	12.4	12.4
5	9.2	9.0	9.1	10.1	9.7	9.9	13.0	12.8	12.9	12.6	12.4	12.5
6	9.3	9.1	9.2	10.1	10.0	10.0	12.9	12.8	12.9	---	---	---
7	9.5	9.2	9.3	10.5	10.1	10.3	13.0	12.8	12.9	---	---	---
8	9.5	9.3	9.4	10.6	10.3	10.4	13.1	12.9	13.0	12.9	12.7	12.8
9	9.6	9.3	9.4	10.5	10.4	10.5	13.1	12.9	13.0	12.9	12.8	12.8
10	9.7	9.5	9.6	10.8	10.5	10.6	13.0	12.8	12.9	12.8	12.7	12.7
11	9.7	9.5	9.6	11.1	10.8	10.9	13.1	12.9	13.0	12.7	12.6	12.7
12	9.6	9.2	9.5	11.3	10.9	11.1	13.0	12.8	12.9	12.7	12.7	12.7
13	9.5	9.2	9.4	11.2	11.1	11.1	13.1	12.8	12.9	12.7	12.5	12.7
14	9.5	9.2	9.3	11.5	11.2	11.3	13.2	13.0	13.1	12.8	12.6	12.7
15	9.4	9.3	9.3	11.7	11.5	11.6	13.1	12.9	13.0	12.7	12.6	12.7
16	9.5	9.2	9.3	11.7	11.6	11.6	13.2	13.0	13.1	12.8	12.7	12.8
17	9.7	9.2	9.5	11.7	11.5	11.6	13.3	13.1	13.2	13.1	12.8	13.0
18	9.7	9.4	9.5	11.9	11.7	11.8	13.3	13.1	13.2	13.2	13.0	13.1
19	9.6	9.4	9.6	11.7	11.6	11.7	13.4	13.2	13.3	13.2	13.0	13.1
20	9.5	9.4	9.5	11.7	11.5	11.6	13.5	13.3	13.4	13.1	13.0	13.1
21	9.6	9.4	9.5	11.6	11.5	11.5	13.5	13.3	13.5	13.2	13.0	13.1
22	9.7	9.5	9.6	11.6	11.5	11.5	13.3	13.2	13.2	13.0	12.9	13.0
23	9.8	9.7	9.8	11.6	11.5	11.6	13.3	13.2	13.2	13.0	12.8	12.9
24	9.8	9.7	9.7	11.6	11.4	11.5	13.2	13.0	13.1	12.9	12.7	12.8
25	9.8	9.7	9.7	11.7	11.5	11.6	13.0	12.9	13.0	12.8	12.5	12.7
26	9.8	9.6	9.7	11.7	11.5	11.6	12.9	12.7	12.8	12.5	12.4	12.5
27	9.7	9.5	9.6	11.6	11.5	11.6	12.9	12.7	12.8	12.4	12.2	12.3
28	9.7	9.5	9.6	11.9	11.6	11.7	12.8	12.7	12.8	12.3	12.1	12.2
29	9.7	9.4	9.5	12.0	11.7	11.9	12.7	12.5	12.6	12.1	11.9	12.0
30	9.6	9.3	9.4	12.0	11.8	12.0	12.5	12.3	12.4	12.0	11.9	12.0
31	9.8	9.5	9.6	---	---	---	12.4	12.2	12.3	12.1	11.8	12.0
MONTH	9.8	7.7	9.4	12.0	9.5	11.0	13.5	12.0	12.9	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.0	11.7	12.0	13.0	12.8	12.8	12.0	11.8	11.9	10.6	10.3	10.4
2	11.9	11.9	11.9	12.9	12.7	12.8	11.8	11.7	11.8	10.6	10.4	10.5
3	11.9	11.9	11.9	12.9	12.7	12.8	11.9	11.5	11.7	10.5	10.3	10.4
4	12.0	11.9	11.9	12.9	12.6	12.8	11.9	11.6	11.7	10.4	10.2	10.3
5	12.0	11.9	12.0	13.0	12.8	12.9	11.8	11.4	11.6	10.4	9.9	10.2
6	12.1	12.0	12.0	13.0	12.9	12.9	11.5	11.2	11.4	10.3	10.0	10.2
7	12.1	12.0	12.1	13.0	12.9	12.9	11.3	10.9	11.1	10.5	10.2	10.3
8	12.3	12.1	12.2	13.0	12.7	12.9	11.1	10.7	10.9	10.4	10.1	10.2
9	12.3	12.2	12.3	12.8	12.6	12.7	10.9	10.6	10.8	10.5	10.0	10.2
10	12.3	12.2	12.3	12.8	12.6	12.7	10.6	10.3	10.5	10.2	10.0	10.1
11	12.4	12.3	12.3	13.0	12.8	12.9	10.5	10.3	10.4	10.0	9.7	9.8
12	12.5	12.4	12.4	13.1	13.0	13.0	10.6	10.3	10.5	9.9	9.7	9.8
13	12.4	12.3	12.4	13.0	12.9	13.0	10.5	10.3	10.4	9.8	9.5	9.6
14	12.4	12.2	12.3	12.9	12.7	12.8	10.4	10.2	10.3	9.5	9.4	9.5
15	12.3	12.2	12.3	12.8	12.7	12.8	10.2	10.1	10.1	9.8	9.4	9.5
16	12.5	12.3	12.4	13.1	12.8	13.0	10.2	9.9	10.1	9.7	9.5	9.6
17	12.6	12.4	12.5	13.1	13.0	13.1	10.2	9.9	10.1	9.6	9.3	9.5
18	12.4	12.3	12.3	13.2	13.1	13.1	10.1	9.7	9.9	9.5	9.2	9.4
19	12.6	12.3	12.4	13.1	13.0	13.1	10.0	9.8	9.9	9.6	9.1	9.3
20	12.8	12.5	12.7	13.0	13.0	13.0	9.9	9.5	9.7	9.7	9.4	9.6
21	12.8	12.6	12.7	13.0	12.9	13.0	9.6	9.2	9.4	9.8	9.5	9.7
22	12.8	12.6	12.7	13.0	12.9	12.9	9.4	8.9	9.2	9.7	9.4	9.6
23	12.9	12.6	12.8	12.9	12.8	12.9	9.6	9.2	9.4	9.6	9.3	9.4
24	12.7	12.5	12.6	12.9	12.7	12.8	10.0	9.5	9.7	9.4	9.0	9.3
25	12.7	12.5	12.6	12.8	12.7	12.7	10.0	9.8	9.9	9.2	8.9	9.1
26	13.0	12.7	12.8	12.8	12.7	12.8	10.2	10.0	10.2	9.1	8.9	9.0
27	13.0	12.8	12.9	12.9	12.8	12.8	10.3	10.1	10.2	9.0	8.7	8.9
28	12.9	12.7	12.8	12.8	12.6	12.7	10.4	10.2	10.3	8.9	8.7	8.8
29	---	---	---	12.7	12.5	12.6	10.3	10.2	10.3	8.8	8.5	8.7
30	---	---	---	12.5	12.3	12.4	10.3	10.1	10.2	8.8	8.4	8.7
31	---	---	---	12.4	11.9	12.1	---	---	---	8.6	8.1	8.4
MONTH	13.0	11.7	12.4	13.2	11.9	12.8	12.0	8.9	10.5	10.6	8.1	9.6

STREAMS TRIBUTARY TO LAKE HURON

04137005 AU SABLE RIVER NEAR CURTISVILLE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.7	8.2	8.4	---	---	---	7.2	6.9	7.0	7.3	6.9	7.1
2	8.7	8.4	8.5	---	---	---	7.6	6.8	7.2	7.4	6.8	7.1
3	8.6	8.2	8.4	---	---	---	7.5	7.3	7.4	---	---	---
4	8.4	8.0	8.2	---	---	---	7.4	6.9	7.2	---	---	---
5	8.1	7.8	7.9	---	---	---	7.1	6.7	6.9	---	---	---
6	8.0	7.6	7.8	---	---	---	6.8	6.2	6.4	---	---	---
7	7.7	7.1	7.4	8.3	7.8	8.0	6.6	6.1	6.3	---	---	---
8	7.4	6.9	7.1	8.2	7.9	8.1	6.7	6.1	6.4	---	---	---
9	7.0	6.6	6.8	8.5	8.1	8.3	6.7	6.2	6.4	8.4	8.1	8.2
10	6.9	6.4	6.6	8.7	8.3	8.5	6.6	6.4	6.5	8.2	7.6	7.9
11	6.6	6.0	6.3	8.8	8.4	8.6	6.7	6.2	6.5	---	---	---
12	6.3	6.0	6.2	8.7	8.4	8.6	6.6	6.0	6.2	---	---	---
13	---	---	---	8.7	8.4	8.6	6.3	5.9	6.1	---	---	---
14	---	---	---	8.4	8.2	8.3	6.6	6.2	6.4	8.5	7.9	8.1
15	---	---	---	8.2	7.5	7.9	6.6	6.4	6.5	---	---	---
16	---	---	---	7.8	7.4	7.6	6.7	6.3	6.5	---	---	---
17	---	---	---	7.7	7.4	7.5	6.8	6.4	6.6	---	---	---
18	---	---	---	7.7	7.2	7.5	7.1	6.6	6.8	---	---	---
19	---	---	---	7.6	7.2	7.5	7.2	6.5	6.8	---	---	---
20	---	---	---	7.2	6.9	7.0	6.8	6.4	6.6	---	---	---
21	---	---	---	7.3	6.9	7.0	7.1	6.2	6.6	7.7	7.2	7.5
22	---	---	---	7.4	6.9	7.1	6.9	6.4	6.7	7.9	7.2	7.4
23	---	---	---	7.3	7.0	7.2	6.8	6.4	6.6	7.9	7.4	7.6
24	---	---	---	7.1	6.4	6.8	6.7	6.3	6.5	7.7	7.2	7.5
25	---	---	---	7.1	6.6	6.8	7.0	6.6	6.8	7.8	7.0	7.3
26	---	---	---	7.4	6.4	6.9	7.3	6.8	7.1	8.2	7.7	7.9
27	---	---	---	7.4	6.8	7.1	7.5	6.9	7.2	8.1	7.7	7.9
28	---	---	---	6.9	6.5	6.7	7.3	7.0	7.2	8.0	7.4	7.8
29	---	---	---	7.2	6.6	6.9	7.1	6.9	7.0	8.4	8.0	8.1
30	---	---	---	7.3	7.0	7.2	7.0	6.8	6.9	8.2	7.9	8.0
31	---	---	---	7.5	7.0	7.2	7.2	6.8	7.0	---	---	---
MONTH	---	---	---	---	---	---	7.6	5.9	6.7	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04137020 AU SABLE RIVER NEAR SOUTH BRANCH, MI

LOCATION.--Lat 44°27'48", long 83°43'17", in SW1/4 NW1/4 sec.21, T.24 N., R.6 E., Iosco County, Hydrologic Unit 04070007, on right bank 75 ft downstream from Loud Dam, 8.4 mi east of South Branch.

DRAINAGE AREA.--1,689 mi^2.

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1996 to current year.
DISSOLVED OXYGEN: July 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Water temperature records rated excellent. Dissolved oxygen records rated excellent except the following periods: Oct. 8, Dec. 11-14, Feb. 11-19, April 8-13, Aug. 21-30 rated good; Oct. 9, 12, Dec. 15-22, Feb. 20-28, Aug. 31 to Sept. 8 rated fair; and Oct. 1-5, 10, 11, Dec. 23 to Jan. 6, Mar. 1-3 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.0°C, Aug. 8, 9, 2001, July 3, 4, 2002; minimum, 0.0°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.5 mg/L, Dec. 5, 2002; minimum, 3.3 mg/L, Aug. 1, 2003.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.0°C, July 21; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 14.0 mg/L, Jan. 19, 20, Mar. 12; minimum, 5.1 mg/L, June 30.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	16.5	16.5	10.5	10.0	10.5	3.5	3.5	3.5	0.5	0.5	0.5
2	16.5	16.0	16.0	10.0	9.5	10.0	3.5	3.0	3.5	0.5	0.5	0.5
3	16.0	15.0	15.5	9.5	9.0	9.5	3.5	3.0	3.0	0.5	0.5	0.5
4	15.0	14.0	14.5	9.0	9.0	9.0	3.0	2.5	2.5	0.5	0.5	0.5
5	14.0	13.5	14.0	9.0	8.5	8.5	2.5	2.0	2.0	0.5	0.5	0.5
6	13.5	13.0	13.5	8.5	8.0	8.0	2.0	2.0	2.0	0.5	0.5	0.5
7	13.5	13.0	13.0	8.0	8.0	8.0	2.0	2.0	2.0	0.5	0.5	0.5
8	14.0	13.5	13.5	8.0	7.5	7.5	2.5	2.0	2.0	0.5	0.0	0.5
9	14.0	13.5	13.5	7.5	6.5	7.0	2.5	2.5	2.5	0.0	0.0	0.0
10	13.5	13.0	13.5	6.5	6.0	6.5	2.5	2.5	2.5	0.5	0.0	0.5
11	13.5	13.0	13.0	6.0	6.0	6.0	2.5	2.0	2.5	0.5	0.5	0.5
12	13.0	12.5	13.0	6.0	5.5	6.0	2.0	1.5	2.0	0.5	0.5	0.5
13	13.0	12.5	12.5	6.0	5.0	5.5	1.5	1.0	1.5	0.5	0.5	0.5
14	12.5	12.5	12.5	5.0	4.5	5.0	1.0	1.0	1.0	0.5	0.5	0.5
15	12.5	12.0	12.5	4.5	4.5	4.5	1.0	1.0	1.0	0.5	0.5	0.5
16	12.0	11.5	12.0	4.5	4.5	4.5	1.0	1.0	1.0	0.5	0.0	0.5
17	11.5	10.5	11.0	5.0	4.5	5.0	1.0	0.5	0.5	0.5	0.0	0.5
18	10.5	10.0	10.5	5.5	5.0	5.0	1.0	0.5	0.5	0.5	0.0	0.5
19	10.0	9.5	10.0	5.5	5.5	5.5	0.5	0.5	0.5	0.5	0.5	0.5
20	9.5	9.5	9.5	6.0	5.5	5.5	0.5	0.5	0.5	0.5	0.0	0.5
21	10.0	9.5	10.0	6.0	5.5	5.5	0.5	0.5	0.5	0.0	0.0	0.0
22	10.0	10.0	10.0	5.5	5.5	5.5	0.5	0.5	0.5	0.0	0.0	0.0
23	10.0	10.0	10.0	5.5	5.5	5.5	0.5	0.5	0.5	0.0	0.0	0.0
24	10.5	10.0	10.0	5.5	5.0	5.0	0.5	0.5	0.5	0.0	0.0	0.0
25	10.5	10.0	10.0	5.0	4.5	4.5	0.5	0.5	0.5	0.0	0.0	0.0
26	10.5	10.0	10.0	4.5	4.0	4.0	0.5	0.5	0.5	0.0	0.0	0.0
27	10.5	10.0	10.5	4.0	4.0	4.0	0.5	0.5	0.5	0.0	0.0	0.0
28	10.0	10.0	10.0	4.0	4.0	4.0	0.5	0.5	0.5	0.0	0.0	0.0
29	10.5	10.0	10.5	4.0	4.0	4.0	0.5	0.0	0.5	0.0	0.0	0.0
30	11.0	10.5	10.5	4.0	3.5	3.5	0.5	0.0	0.0	0.0	0.0	0.0
31	10.5	10.5	10.5	---	---	---	0.5	0.0	0.5	0.0	0.0	0.0
MONTH	17.0	9.5	12.0	10.5	3.5	6.1	3.5	0.0	1.3	0.5	0.0	0.3

STREAMS TRIBUTARY TO LAKE HURON

04137020 AU SABLE RIVER NEAR SOUTH BRANCH, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.5	0.5	0.5	4.0	4.0	4.0	9.5	9.5	9.5
2	0.0	0.0	0.0	0.5	0.5	0.5	4.5	4.0	4.5	9.5	9.0	9.0
3	0.0	0.0	0.0	0.5	0.0	0.5	4.5	4.0	4.5	9.0	8.5	9.0
4	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.0	4.5	9.5	8.5	9.0
5	0.0	0.0	0.0	0.0	0.0	0.0	6.0	4.5	5.0	10.0	9.0	9.5
6	0.0	0.0	0.0	0.0	0.0	0.0	6.5	5.5	6.0	11.0	10.0	10.5
7	0.0	0.0	0.0	0.5	0.0	0.5	6.5	6.0	6.5	11.5	11.0	11.0
8	0.0	0.0	0.0	0.5	0.5	0.5	7.5	6.5	7.0	12.5	11.0	11.5
9	0.0	0.0	0.0	0.5	0.5	0.5	9.0	7.5	8.0	13.0	12.0	12.5
10	0.0	0.0	0.0	0.5	0.5	0.5	9.0	8.0	8.5	14.5	13.0	14.0
11	0.0	0.0	0.0	0.5	0.5	0.5	9.0	8.5	9.0	14.0	13.5	14.0
12	0.0	0.0	0.0	0.5	0.5	0.5	9.5	8.5	9.0	13.5	13.0	13.0
13	0.0	0.0	0.0	0.5	0.5	0.5	9.5	9.0	9.5	13.0	12.5	12.5
14	0.0	0.0	0.0	0.5	0.5	0.5	10.5	9.0	9.5	13.0	12.5	12.5
15	0.5	0.0	0.0	0.5	0.5	0.5	11.0	10.0	10.5	12.5	12.0	12.5
16	0.5	0.5	0.5	0.5	0.5	0.5	12.0	11.0	11.5	12.5	12.0	12.0
17	0.5	0.5	0.5	1.0	0.5	0.5	12.0	11.0	11.5	12.5	12.0	12.0
18	0.5	0.5	0.5	1.0	0.5	1.0	13.0	11.5	12.0	13.5	12.5	13.0
19	0.5	0.5	0.5	1.0	1.0	1.0	14.0	12.5	13.0	13.5	13.0	13.5
20	0.5	0.5	0.5	1.0	1.0	1.0	13.0	12.5	13.0	13.5	13.0	13.5
21	0.5	0.5	0.5	1.0	1.0	1.0	12.5	12.0	12.5	14.5	13.5	14.0
22	0.5	0.5	0.5	1.5	1.0	1.0	12.5	12.0	12.0	14.5	14.0	14.5
23	0.5	0.5	0.5	1.5	1.5	1.5	12.0	10.5	11.5	14.5	14.0	14.5
24	0.5	0.5	0.5	2.0	1.5	2.0	10.5	9.0	9.5	14.0	14.0	14.0
25	0.5	0.5	0.5	2.0	2.0	2.0	9.0	8.5	8.5	15.0	14.0	14.5
26	0.5	0.5	0.5	2.5	2.0	2.5	9.0	8.5	8.5	16.0	14.5	15.5
27	0.5	0.5	0.5	3.0	2.5	3.0	9.5	9.0	9.5	16.5	15.0	15.5
28	0.5	0.5	0.5	3.5	3.0	3.0	9.5	9.0	9.0	15.5	15.5	15.5
29	---	---	---	4.0	3.5	3.5	9.0	9.0	9.0	16.0	15.5	15.5
30	---	---	---	4.0	3.5	4.0	9.5	9.0	9.0	16.0	15.5	16.0
31	---	---	---	4.0	4.0	4.0	---	---	---	16.5	16.0	16.0
MONTH	0.5	0.0	0.2	4.0	0.0	1.2	14.0	4.0	8.9	16.5	8.5	12.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.5	16.5	17.0	24.0	23.0	23.5	24.0	23.0	23.5	21.5	20.5	21.0
2	18.5	17.0	17.5	23.0	22.5	22.5	24.5	23.0	23.5	21.0	20.5	21.0
3	19.0	17.5	18.0	23.0	22.0	22.5	25.0	23.0	24.0	21.0	20.5	20.5
4	19.5	18.0	18.5	23.0	22.5	22.5	25.5	23.5	24.5	20.5	20.0	20.0
5	20.5	18.5	19.5	22.5	22.0	22.5	24.5	23.5	24.0	20.5	20.0	20.5
6	21.5	19.5	20.5	22.5	22.0	22.0	24.0	23.5	24.0	21.0	20.5	20.5
7	20.5	20.0	20.0	22.5	22.0	22.5	24.5	23.5	24.0	21.5	20.5	21.0
8	21.5	20.5	21.0	23.0	22.0	22.5	25.0	23.5	24.0	21.0	20.5	21.0
9	22.5	20.5	21.5	23.5	22.5	23.0	25.0	24.0	24.5	20.5	20.5	20.5
10	23.0	21.0	22.0	24.5	22.5	23.5	25.0	24.0	24.5	21.0	20.5	20.5
11	23.5	21.5	22.5	24.5	22.5	23.5	24.5	24.0	24.0	21.5	20.5	21.0
12	24.5	22.0	23.0	24.5	23.0	24.0	24.0	23.5	24.0	21.5	20.5	21.0
13	24.0	22.5	23.5	25.0	23.5	24.0	23.5	23.0	23.5	21.5	20.5	21.5
14	24.0	23.0	23.5	24.5	23.5	24.0	23.5	23.0	23.0	21.5	21.0	21.5
15	23.5	23.0	23.5	24.5	23.5	24.0	23.5	22.5	23.0	21.0	20.5	21.0
16	23.0	22.0	22.5	25.0	24.5	24.5	23.5	22.5	23.0	20.5	20.0	20.5
17	22.0	21.0	21.5	25.5	25.0	25.0	23.0	22.5	22.5	20.0	19.5	20.0
18	21.0	20.5	21.0	25.5	25.0	25.5	22.5	22.5	22.5	20.0	19.5	19.5
19	20.5	20.5	20.5	25.5	24.5	25.0	23.0	22.5	22.5	20.0	19.5	19.5
20	22.0	20.5	21.0	25.0	24.5	25.0	22.5	21.5	22.0	19.5	19.0	19.5
21	22.0	20.5	21.5	26.0	24.5	25.0	22.0	21.5	21.5	19.5	19.0	19.0
22	21.5	21.0	21.0	25.5	24.5	25.0	21.5	21.0	21.0	19.0	19.0	19.0
23	21.5	21.0	21.5	25.5	25.0	25.0	21.0	20.5	21.0	19.0	18.5	19.0
24	22.5	21.5	22.0	25.0	25.0	25.0	20.5	20.0	20.5	18.5	18.5	18.5
25	23.0	21.5	22.5	25.0	24.5	25.0	20.5	20.5	20.5	18.5	18.0	18.0
26	23.0	21.5	22.5	25.0	24.5	24.5	20.5	20.5	20.5	18.0	17.5	18.0
27	23.5	22.0	23.0	24.5	23.0	24.0	21.5	20.0	20.5	18.0	17.5	17.5
28	24.5	22.0	23.5	23.5	23.0	23.0	21.5	20.5	21.0	17.5	17.0	17.0
29	24.0	22.5	23.0	23.5	23.0	23.0	21.5	20.5	21.0	17.0	16.0	16.5
30	24.5	23.0	23.5	23.0	22.5	23.0	21.0	20.5	21.0	16.0	15.0	15.5
31	---	---	---	23.5	22.5	23.0	21.5	20.5	21.0	---	---	---
MONTH	24.5	16.5	21.4	26.0	22.0	23.8	25.5	20.0	22.6	21.5	15.0	19.6

STREAMS TRIBUTARY TO LAKE HURON

04137020 AU SABLE RIVER NEAR SOUTH BRANCH, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.8	8.1	8.5	9.8	9.5	9.7	11.8	11.6	11.7	13.0	12.8	12.9
2	9.3	8.7	8.9	9.9	9.6	9.7	11.9	11.7	11.8	13.2	12.9	13.0
3	9.4	8.8	9.2	9.8	9.7	9.7	12.1	11.8	11.9	13.3	13.1	13.2
4	9.5	9.2	9.4	9.8	9.7	9.8	12.3	12.0	12.1	13.3	13.0	13.2
5	9.8	9.4	9.5	10.1	9.8	10.0	12.3	12.2	12.3	13.4	13.0	13.2
6	10.0	9.5	9.8	10.3	10.0	10.1	12.4	12.2	12.3	13.5	13.2	13.4
7	9.9	9.6	9.8	10.4	10.2	10.3	12.4	12.4	12.4	13.7	13.4	13.5
8	9.8	9.4	9.7	10.6	10.4	10.5	12.7	12.3	12.5	13.5	13.3	13.4
9	9.6	9.4	9.5	10.7	10.5	10.6	12.5	12.3	12.4	13.5	13.2	13.3
10	9.6	9.1	9.3	11.0	10.6	10.8	12.5	12.3	12.4	13.5	13.3	13.4
11	9.2	9.1	9.2	11.2	11.0	11.1	12.4	12.3	12.4	13.5	13.4	13.4
12	9.6	8.9	9.2	11.2	11.0	11.1	12.5	12.3	12.4	13.5	13.3	13.4
13	9.7	9.5	9.6	11.3	11.0	11.2	12.7	12.4	12.6	13.4	13.3	13.3
14	9.7	9.5	9.6	11.6	11.2	11.4	12.7	12.6	12.6	13.3	13.2	13.3
15	9.6	9.4	9.5	11.7	11.5	11.6	13.1	12.7	12.8	13.5	13.2	13.4
16	9.5	9.3	9.4	11.8	11.6	11.7	13.2	13.1	13.1	13.7	13.5	13.6
17	9.6	9.3	9.5	11.8	11.6	11.7	13.3	13.1	13.2	13.9	13.7	13.8
18	9.8	9.5	9.6	11.7	11.5	11.6	13.3	13.1	13.2	13.9	13.6	13.8
19	10.0	9.7	9.9	11.6	11.4	11.5	13.4	13.1	13.2	14.0	13.4	13.8
20	10.0	9.9	10.0	11.6	11.4	11.5	13.3	13.1	13.2	14.0	13.4	13.8
21	10.0	9.9	10.0	11.5	11.4	11.5	13.3	13.2	13.3	13.6	13.4	13.5
22	9.9	9.7	9.8	11.5	11.3	11.4	13.5	13.3	13.4	13.4	13.3	13.4
23	10.0	9.7	9.8	11.5	11.3	11.4	13.4	13.2	13.3	13.4	13.3	13.4
24	10.0	9.8	9.9	11.5	11.4	11.5	13.3	13.1	13.2	13.3	13.2	13.3
25	9.9	9.6	9.8	11.5	11.3	11.4	13.3	13.1	13.2	13.3	13.1	13.2
26	9.9	9.6	9.8	11.5	11.3	11.4	13.4	13.2	13.3	13.2	13.0	13.1
27	10.0	9.7	9.9	11.6	11.4	11.5	13.4	13.3	13.4	13.1	12.8	13.0
28	10.1	9.9	10.0	11.6	11.5	11.6	13.5	13.2	13.3	13.1	12.9	13.0
29	10.1	9.9	10.0	11.5	11.4	11.4	13.4	13.2	13.3	13.0	12.9	13.0
30	10.0	9.9	9.9	11.8	11.5	11.5	13.3	13.1	13.2	13.1	12.9	13.0
31	9.9	9.7	9.8	---	---	---	13.3	12.9	13.1	13.0	12.7	12.8
MONTH	10.1	8.1	9.6	11.8	9.5	11.0	13.5	11.6	12.8	14.0	12.7	13.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.8	12.7	12.8	13.3	13.0	13.2	12.3	12.0	12.2	10.6	9.8	10.2
2	12.8	12.6	12.7	13.1	12.9	13.0	12.3	11.9	12.1	10.6	9.9	10.2
3	12.7	12.6	12.7	---	---	---	12.2	11.9	12.1	10.5	9.9	10.2
4	12.8	12.7	12.7	---	---	---	12.2	11.9	12.1	10.6	9.9	10.3
5	12.7	12.7	12.7	---	---	---	12.2	11.9	12.0	10.7	10.1	10.4
6	12.8	12.7	12.8	---	---	---	12.0	11.7	11.9	10.9	10.0	10.5
7	12.8	12.7	12.8	---	---	---	11.9	11.4	11.7	10.9	10.0	10.5
8	12.9	12.7	12.8	13.7	13.4	13.6	11.6	11.3	11.5	10.6	9.8	10.2
9	12.9	12.8	12.8	13.5	13.4	13.5	11.5	11.3	11.4	10.5	9.8	10.1
10	13.0	12.9	12.9	13.8	13.4	13.7	11.3	10.8	11.1	10.3	9.5	9.8
11	13.1	12.9	13.0	13.9	13.6	13.8	11.2	10.6	10.9	9.9	9.3	9.5
12	13.1	13.0	13.0	14.0	13.6	13.8	11.0	10.3	10.7	9.7	9.2	9.4
13	13.1	12.9	13.0	13.7	13.5	13.7	11.0	9.7	10.7	9.7	9.1	9.4
14	13.1	13.0	13.1	13.8	13.5	13.7	11.0	10.5	10.7	9.8	9.1	9.5
15	13.2	12.8	13.1	13.9	13.8	13.8	10.8	10.4	10.5	9.7	9.1	9.4
16	12.9	12.7	12.8	13.9	13.7	13.8	10.6	10.2	10.4	9.7	9.1	9.4
17	12.9	12.7	12.8	13.8	13.6	13.7	10.4	10.0	10.2	10.0	9.1	9.4
18	13.0	12.8	12.9	13.7	13.6	13.7	10.2	10.0	10.1	9.9	9.2	9.5
19	13.2	12.9	13.1	13.7	13.6	13.6	10.1	9.7	9.8	10.0	9.2	9.6
20	13.2	13.0	13.1	13.7	13.5	13.6	9.7	9.1	9.6	9.9	9.0	9.4
21	13.1	13.0	13.1	13.7	13.3	13.5	9.4	8.9	9.1	9.8	8.7	9.3
22	13.1	12.9	13.0	13.5	13.3	13.4	9.3	9.0	9.2	9.9	8.1	9.2
23	13.0	12.8	12.9	13.6	13.3	13.5	9.4	9.1	9.3	9.6	8.6	9.1
24	13.1	12.8	12.9	13.7	13.5	13.6	9.7	9.3	9.5	9.4	8.5	9.0
25	13.1	12.9	13.0	13.8	13.6	13.7	10.2	9.6	9.9	9.5	8.5	9.1
26	13.2	13.0	13.1	13.7	13.5	13.6	10.2	9.9	10.1	9.6	8.4	9.0
27	13.1	13.0	13.0	13.6	13.4	13.5	10.3	10.0	10.1	9.6	8.4	8.9
28	13.2	13.0	13.2	13.5	13.2	13.4	10.5	10.0	10.2	9.3	8.0	8.6
29	---	---	---	13.6	12.9	13.2	10.4	9.9	10.2	9.2	7.9	8.6
30	---	---	---	13.1	12.6	12.8	10.7	10.0	10.3	9.2	8.0	8.5
31	---	---	---	13.1	12.2	12.7	---	---	---	9.2	7.4	8.3
MONTH	13.2	12.6	12.9	---	---	---	12.3	8.9	10.7	10.9	7.4	9.5

STREAMS TRIBUTARY TO LAKE HURON

04137020 AU SABLE RIVER NEAR SOUTH BRANCH, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.1	7.2	8.2	7.4	5.3	6.4	8.1	6.2	7.5	8.5	7.4	8.0
2	9.1	6.6	8.0	7.4	5.9	6.7	8.3	6.0	7.3	8.4	7.6	8.0
3	8.8	6.8	7.9	7.9	6.1	7.0	8.3	6.4	7.4	8.1	7.4	7.7
4	8.6	6.3	7.6	8.0	6.4	7.2	8.1	6.5	7.2	8.1	7.5	7.8
5	8.5	6.3	7.5	7.9	6.0	7.2	7.6	6.0	7.0	8.3	7.4	7.9
6	8.5	6.8	7.7	7.4	5.6	6.7	7.3	5.9	6.6	8.5	7.6	8.1
7	8.3	6.3	7.5	7.7	5.6	6.9	7.8	5.6	7.0	8.6	7.7	8.1
8	8.3	6.0	7.3	8.1	6.1	7.2	8.0	6.3	7.2	8.7	7.3	8.1
9	8.1	6.4	7.3	8.6	6.2	7.5	8.0	6.4	7.1	8.6	7.4	8.0
10	8.0	5.7	6.9	8.6	6.4	7.6	7.9	6.1	7.0	8.5	7.3	7.9
11	7.7	5.3	6.8	8.6	6.4	7.6	7.5	6.2	6.7	8.5	7.3	7.9
12	7.9	5.9	6.8	8.3	5.9	7.4	7.3	6.1	6.7	8.6	7.3	8.0
13	7.4	5.7	6.5	7.9	5.8	7.1	7.1	5.9	6.6	8.3	7.3	8.0
14	7.2	5.3	6.4	7.6	5.2	6.6	7.3	6.1	6.7	8.6	7.8	8.1
15	7.2	5.3	6.3	7.2	5.6	6.6	7.5	6.1	6.8	8.0	7.5	7.7
16	6.9	5.6	6.3	7.2	6.6	6.9	8.2	6.4	7.2	7.5	7.2	7.4
17	6.8	5.5	6.2	7.5	6.7	7.2	7.9	6.6	7.3	7.4	7.2	7.3
18	7.0	5.9	6.5	7.7	5.8	7.2	7.7	6.8	7.3	7.7	7.4	7.5
19	7.3	5.9	6.5	7.0	5.4	6.3	7.9	6.8	7.4	7.8	7.5	7.7
20	7.7	6.0	6.9	7.3	5.5	6.7	7.5	6.5	7.2	7.8	7.5	7.6
21	8.2	5.6	7.0	7.8	5.4	6.6	7.8	6.6	7.3	7.8	7.5	7.6
22	8.2	5.7	6.9	7.9	5.3	6.7	7.7	6.7	7.3	7.8	7.5	7.7
23	8.4	6.0	7.2	7.6	5.8	6.8	7.8	7.0	7.6	7.7	7.4	7.6
24	8.5	6.0	7.4	6.9	6.0	6.5	7.9	7.1	7.6	7.5	7.2	7.4
25	8.3	5.9	7.2	6.9	6.5	6.7	8.6	7.9	8.2	8.0	7.3	7.6
26	8.2	5.9	7.3	7.2	6.3	6.9	8.7	7.6	8.4	8.2	7.6	7.9
27	7.8	5.4	6.9	6.9	6.3	6.6	8.9	7.6	8.3	7.6	7.4	7.5
28	7.9	5.7	7.1	7.9	6.0	6.9	8.7	7.4	8.2	7.8	7.3	7.5
29	7.5	5.3	6.7	7.9	6.4	7.4	8.5	7.4	8.0	8.1	7.8	8.0
30	7.4	5.1	6.3	7.9	7.6	7.7	8.6	7.6	8.1	8.4	7.8	8.0
31	---	---	---	8.0	7.3	7.7	8.6	7.4	8.1	---	---	---
MONTH	9.1	5.1	7.0	8.6	5.2	7.0	8.9	5.6	7.4	8.7	7.2	7.8

STREAMS TRIBUTARY TO LAKE HURON

04137025 AU SABLE RIVER NEAR GLENNIE, MI

LOCATION.--Lat 44°27'15", long 83°40'28", in SW1/4 SE1/4 sec.23, T.24 N., R.6 E., Iosco County, Hydrologic Unit 04070007, center of bridge on State Highway 65, 400 ft downstream from Five-Channels Dam, 7.6 mi southeast of Glennie.

DRAINAGE AREA.--1,696 mi^2.

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1996 to current year.
DISSOLVED OXYGEN: July 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent except the following periods: Oct. 5-9, Oct. 16 to Jan. 16 rated good. Dissolved oxygen records rated excellent except the following periods: Oct. 9, 10, Nov. 10-16, Jan. 24-31, Mar. 18-24, Apr. 23-28, July 18-24, Aug. 17-24, Sept. 16-19 rated good; Oct. 11-29, Nov. 17-26, Mar. 25 to Apr. 3, Apr. 29 to May 6, July 25 to Aug. 1, Aug. 25 to Sept. 5, Sept. 20-26 rated fair; and Oct. 1-5, Nov. 27 to Dec. 2, Apr. 4-13, Sept. 6, 7, 27-30, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.0°C, Aug. 8-10, 2001, July 4, 2002; minimum, -0.5°C, on many days during winter period, 2004.
DISSOLVED OXYGEN: Maximum, 14.6 mg/L, Mar. 27, 2005; minimum, 1.6 mg/L, June 16, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.0°C, July 19, 21, 23; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 14.6 mg/L, Mar. 27; minimum, 1.6 mg/L, June 16.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	17.0	17.0	10.5	10.5	10.5	3.5	3.5	3.5	0.5	0.5	0.5
2	17.0	16.5	16.5	10.5	10.0	10.5	3.5	3.5	3.5	0.5	0.5	0.5
3	16.5	16.0	16.0	10.0	9.5	10.0	3.5	3.0	3.0	0.5	0.5	0.5
4	16.0	15.0	15.5	9.5	9.0	9.5	3.0	2.5	2.5	0.5	0.5	0.5
5	15.0	14.5	15.0	9.0	8.5	9.0	2.5	2.5	2.5	0.5	0.5	0.5
6	14.5	14.0	14.5	8.5	8.5	8.5	2.5	2.0	2.0	0.5	0.5	0.5
7	14.0	14.0	14.0	8.5	8.0	8.5	2.0	2.0	2.0	0.5	0.5	0.5
8	14.0	14.0	14.0	8.0	7.5	8.0	2.0	2.0	2.0	0.5	0.5	0.5
9	14.0	13.5	13.5	7.5	7.0	7.5	2.0	2.0	2.0	0.5	0.5	0.5
10	14.0	13.5	13.5	7.0	7.0	7.0	2.5	2.0	2.5	0.5	0.5	0.5
11	13.5	13.5	13.5	7.0	6.5	6.5	2.5	2.0	2.5	0.5	0.5	0.5
12	13.5	13.0	13.5	6.5	6.0	6.0	2.0	2.0	2.0	0.5	0.5	0.5
13	13.0	13.0	13.0	6.0	5.5	5.5	2.0	1.5	1.5	0.5	0.5	0.5
14	13.0	13.0	13.0	5.5	5.5	5.5	1.5	1.0	1.0	0.5	0.5	0.5
15	13.0	12.5	12.5	5.5	5.0	5.0	1.0	1.0	1.0	0.5	0.5	0.5
16	12.5	12.0	12.0	5.0	5.0	5.0	1.0	1.0	1.0	0.5	0.5	0.5
17	12.0	11.5	11.5	5.0	4.5	5.0	1.0	0.5	1.0	0.5	0.5	0.5
18	11.5	10.5	11.0	5.0	5.0	5.0	0.5	0.5	0.5	0.5	0.5	0.5
19	10.5	10.5	10.5	5.0	5.0	5.0	0.5	0.5	0.5	0.5	0.5	0.5
20	10.5	10.0	10.0	5.5	5.0	5.5	0.5	0.5	0.5	0.5	0.0	0.5
21	10.0	10.0	10.0	5.5	5.5	5.5	0.5	0.5	0.5	0.5	0.0	0.0
22	10.0	10.0	10.0	5.5	5.5	5.5	0.5	0.5	0.5	0.0	0.0	0.0
23	10.0	10.0	10.0	5.5	5.5	5.5	0.5	0.5	0.5	0.0	0.0	0.0
24	10.0	10.0	10.0	5.5	5.0	5.5	0.5	0.5	0.5	0.0	0.0	0.0
25	11.0	10.0	10.5	5.0	4.5	4.5	0.5	0.5	0.5	0.0	0.0	0.0
26	10.5	10.5	10.5	4.5	4.0	4.5	0.5	0.5	0.5	0.0	0.0	0.0
27	10.5	10.5	10.5	4.5	4.0	4.0	0.5	0.5	0.5	0.0	0.0	0.0
28	10.5	10.5	10.5	4.0	3.5	4.0	0.5	0.5	0.5	0.0	0.0	0.0
29	10.5	10.5	10.5	3.5	3.5	3.5	0.5	0.5	0.5	0.0	0.0	0.0
30	11.5	10.5	10.5	4.0	3.5	3.5	0.5	0.5	0.5	0.0	0.0	0.0
31	10.5	10.5	10.5	---	---	---	0.5	0.5	0.5	0.0	0.0	0.0
MONTH	17.0	10.0	12.4	10.5	3.5	6.3	3.5	0.5	1.4	0.5	0.0	0.3

STREAMS TRIBUTARY TO LAKE HURON

04137025 AU SABLE RIVER NEAR GLENNIE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.5	0.5	0.5	4.0	3.5	4.0	9.5	9.5	9.5
2	0.0	0.0	0.0	0.5	0.5	0.5	4.5	4.0	4.0	9.5	9.5	9.5
3	0.0	0.0	0.0	0.5	0.5	0.5	4.5	4.0	4.0	9.5	9.0	9.0
4	0.0	0.0	0.0	0.5	0.5	0.5	4.5	4.0	4.5	9.5	8.5	9.0
5	0.0	0.0	0.0	0.5	0.5	0.5	5.5	4.5	5.0	9.5	9.0	9.5
6	0.0	0.0	0.0	0.5	0.5	0.5	6.0	5.5	6.0	10.5	9.5	10.0
7	0.0	0.0	0.0	0.5	0.5	0.5	6.5	6.0	6.5	11.0	10.5	10.5
8	0.0	0.0	0.0	0.5	0.5	0.5	7.0	6.5	6.5	11.5	11.0	11.5
9	0.0	0.0	0.0	0.5	0.5	0.5	8.0	7.0	7.0	12.5	11.5	12.0
10	0.0	0.0	0.0	0.5	0.5	0.5	8.5	8.0	8.0	14.0	12.5	13.0
11	0.0	0.0	0.0	0.5	0.5	0.5	9.0	8.5	8.5	14.0	13.5	13.5
12	0.0	0.0	0.0	0.5	0.5	0.5	9.0	8.5	9.0	13.5	13.0	13.5
13	0.0	0.0	0.0	0.5	0.5	0.5	9.5	9.0	9.5	13.0	13.0	13.0
14	0.0	0.0	0.0	0.5	0.5	0.5	10.0	9.5	9.5	13.0	12.5	12.5
15	0.5	0.0	0.0	0.5	0.5	0.5	10.5	10.0	10.0	12.5	12.5	12.5
16	0.5	0.0	0.5	0.5	0.5	0.5	11.5	10.5	11.0	12.5	12.0	12.0
17	0.5	0.5	0.5	0.5	0.5	0.5	11.5	11.5	11.5	12.0	12.0	12.0
18	0.5	0.5	0.5	0.5	0.5	0.5	12.0	11.5	11.5	13.0	12.0	12.5
19	0.5	0.5	0.5	1.0	0.5	0.5	13.5	12.0	13.0	13.0	12.5	13.0
20	0.5	0.5	0.5	1.0	1.0	1.0	13.0	13.0	13.0	13.5	13.0	13.0
21	0.5	0.5	0.5	1.0	1.0	1.0	13.0	12.5	12.5	14.0	13.5	14.0
22	0.5	0.5	0.5	1.0	1.0	1.0	12.5	12.0	12.5	14.5	14.0	14.0
23	0.5	0.5	0.5	1.5	1.0	1.0	12.0	11.5	12.0	14.5	14.0	14.0
24	0.5	0.5	0.5	1.5	1.0	1.5	11.5	10.0	10.5	14.5	14.0	14.5
25	0.5	0.5	0.5	2.0	1.5	2.0	10.0	9.5	9.5	15.0	14.0	14.5
26	0.5	0.5	0.5	2.5	2.0	2.0	9.5	9.0	9.0	15.5	14.5	15.0
27	0.5	0.5	0.5	2.5	2.0	2.5	9.0	8.5	9.0	16.0	15.0	15.5
28	0.5	0.5	0.5	3.0	2.5	3.0	9.5	9.0	9.0	16.0	15.5	15.5
29	---	---	---	3.5	3.0	3.0	9.5	9.0	9.0	16.0	15.5	16.0
30	---	---	---	3.5	3.5	3.5	9.5	9.5	9.5	16.0	15.5	16.0
31	---	---	---	4.0	3.5	4.0	---	---	---	16.5	16.0	16.0
MONTH	0.5	0.0	0.2	4.0	0.5	1.1	13.5	3.5	8.8	16.5	8.5	12.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	16.0	16.5	24.0	23.0	23.5	24.0	23.5	23.5	21.5	21.0	21.0
2	18.0	17.0	17.5	23.5	23.0	23.5	24.5	23.5	24.0	21.0	21.0	21.0
3	18.5	17.5	18.0	23.0	22.5	23.0	25.0	23.5	24.5	21.0	20.5	21.0
4	19.0	18.5	18.5	23.0	22.5	23.0	25.0	24.5	24.5	20.5	20.5	20.5
5	20.0	18.5	19.5	23.0	22.5	22.5	25.0	24.5	24.5	21.0	20.0	20.5
6	21.0	19.5	20.0	23.0	22.5	22.5	25.0	24.0	24.5	21.0	20.0	20.5
7	21.0	20.0	20.5	22.5	22.0	22.5	24.5	24.0	24.5	21.5	20.5	21.0
8	21.0	20.5	21.0	23.0	22.0	22.5	25.0	24.0	24.5	21.0	20.5	21.0
9	21.5	20.5	21.0	23.0	22.0	22.5	25.0	24.0	24.5	21.0	20.5	20.5
10	22.5	21.5	22.0	24.0	22.5	23.0	25.0	24.5	24.5	21.0	20.5	20.5
11	23.0	22.0	22.5	24.0	23.0	23.5	24.5	24.5	24.5	21.5	20.5	21.0
12	23.5	23.0	23.0	24.5	23.5	24.0	24.5	24.0	24.5	21.5	21.0	21.0
13	23.5	23.5	23.5	24.5	24.0	24.5	24.0	23.5	24.0	21.5	21.0	21.5
14	23.5	23.5	23.5	24.5	24.0	24.5	24.0	23.5	23.5	21.5	21.5	21.5
15	23.5	23.0	23.5	24.5	24.0	24.5	24.0	23.0	23.5	21.5	21.0	21.0
16	23.0	22.5	22.5	25.0	24.5	24.5	23.5	23.0	23.5	21.0	20.5	21.0
17	22.5	21.5	22.0	25.0	25.0	25.0	23.5	23.0	23.0	20.5	20.0	20.5
18	21.5	21.0	21.5	25.5	25.0	25.5	23.0	23.0	23.0	20.5	20.0	20.0
19	21.0	20.5	20.5	26.0	25.0	25.5	23.0	22.5	23.0	20.0	19.5	20.0
20	21.5	20.5	21.0	25.5	25.0	25.5	22.5	22.0	22.5	20.0	19.5	19.5
21	21.5	21.0	21.5	26.0	25.0	25.5	22.5	22.0	22.0	20.0	19.5	19.5
22	21.5	21.0	21.5	25.5	25.0	25.5	22.0	21.0	21.5	19.5	19.5	19.5
23	22.0	21.0	21.5	26.0	25.0	25.5	21.0	21.0	21.0	19.5	19.0	19.0
24	22.5	21.5	22.0	25.5	25.0	25.0	21.0	20.5	21.0	19.0	18.5	18.5
25	22.5	22.0	22.5	25.5	25.0	25.0	21.0	20.5	20.5	18.5	18.5	18.5
26	22.5	22.5	22.5	25.5	24.5	25.0	20.5	20.5	20.5	18.5	18.0	18.5
27	23.0	22.5	22.5	24.5	24.0	24.0	21.5	20.5	21.0	18.0	17.5	18.0
28	24.0	23.0	23.5	24.0	23.5	23.5	21.0	20.5	21.0	17.5	17.5	17.5
29	24.0	23.5	23.5	23.5	23.0	23.5	21.5	21.0	21.0	17.5	16.5	17.0
30	24.0	23.5	24.0	23.5	23.0	23.0	21.0	21.0	21.0	16.5	16.0	16.0
31	---	---	---	23.5	23.0	23.0	21.5	21.0	21.0	---	---	---
MONTH	24.0	16.0	21.4	26.0	22.0	24.0	25.0	20.5	22.9	21.5	16.0	19.9

STREAMS TRIBUTARY TO LAKE HURON

04137025 AU SABLE RIVER NEAR GLENNIE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.8	8.3	8.5	10.4	10.2	10.3	11.7	11.5	11.6	11.8	11.7	11.8
2	8.8	8.3	8.6	10.2	10.1	10.2	12.4	11.6	12.0	11.8	11.6	11.7
3	8.7	8.4	8.5	10.2	10.0	10.2	12.5	12.1	12.3	11.8	11.6	11.7
4	9.1	8.5	8.8	10.3	10.1	10.2	12.5	12.4	12.4	11.9	11.8	11.8
5	9.2	8.8	9.0	10.5	10.2	10.4	12.5	12.3	12.4	12.3	11.8	12.0
6	9.1	8.9	9.0	10.8	10.5	10.6	12.8	12.5	12.6	12.3	12.2	12.3
7	9.3	9.0	9.2	10.9	10.7	10.7	12.7	12.6	12.6	12.3	12.2	12.3
8	9.6	9.3	9.4	11.1	10.8	10.9	12.7	12.6	12.7	12.4	12.2	12.3
9	9.8	9.4	9.7	11.2	11.0	11.1	12.7	12.4	12.6	12.3	12.2	12.2
10	10.0	9.5	9.7	11.3	11.1	11.2	12.5	12.3	12.4	12.2	12.1	12.2
11	9.8	9.6	9.7	11.5	11.1	11.3	12.4	12.3	12.4	12.2	12.1	12.2
12	10.2	9.7	9.9	11.9	11.4	11.6	12.4	12.3	12.3	12.2	12.1	12.2
13	10.4	9.9	10.2	11.9	11.6	11.8	12.5	12.3	12.4	12.4	12.2	12.3
14	10.3	10.2	10.2	11.9	11.6	11.7	12.9	12.5	12.7	12.4	12.3	12.4
15	10.4	10.1	10.2	12.0	11.7	11.9	12.8	12.5	12.6	12.5	12.4	12.4
16	10.3	10.1	10.2	12.1	11.9	12.0	12.7	12.5	12.6	12.5	12.4	12.4
17	10.6	10.2	10.4	12.2	11.9	12.1	13.1	12.6	12.9	12.6	12.4	12.6
18	10.6	10.2	10.4	12.3	12.0	12.1	13.0	12.9	13.0	12.9	12.6	12.8
19	10.6	10.3	10.4	12.2	12.0	12.1	12.9	12.8	12.9	13.0	12.7	12.9
20	10.7	10.3	10.5	12.1	11.8	12.0	12.8	12.6	12.7	13.0	12.5	12.9
21	10.8	10.4	10.6	11.8	11.6	11.7	12.7	12.6	12.7	13.0	12.8	12.8
22	10.7	10.4	10.6	11.8	11.6	11.6	12.7	12.6	12.7	12.8	12.5	12.6
23	10.7	10.3	10.5	11.8	11.5	11.6	12.6	12.5	12.6	12.5	12.4	12.4
24	10.5	10.1	10.3	11.6	11.3	11.4	12.5	12.2	12.4	12.5	12.4	12.5
25	10.4	10.0	10.2	11.7	11.4	11.5	12.3	12.1	12.2	12.5	12.3	12.4
26	10.4	10.0	10.3	11.8	11.6	11.7	12.2	12.1	12.2	12.4	12.3	12.3
27	10.3	10.0	10.2	11.7	11.5	11.6	12.1	11.9	12.0	12.3	12.0	12.2
28	10.3	9.9	10.1	11.8	11.5	11.6	12.0	11.9	12.0	12.1	11.9	12.0
29	10.6	9.9	10.3	11.9	11.6	11.8	12.0	11.8	11.9	12.0	11.9	11.9
30	10.6	10.4	10.5	11.9	11.5	11.7	11.9	11.8	11.8	12.1	11.9	11.9
31	10.5	10.3	10.4	---	---	---	11.8	11.7	11.8	12.1	11.9	11.9
MONTH	10.8	8.3	9.9	12.3	10.0	11.4	13.1	11.5	12.4	13.0	11.6	12.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.9	11.7	11.8	13.5	13.4	13.4	13.5	12.9	13.1	10.2	9.3	10.0
2	11.8	11.6	11.6	13.6	13.4	13.5	13.0	12.6	12.8	10.4	9.5	10.1
3	11.7	11.5	11.6	13.4	13.2	13.3	12.9	12.5	12.7	10.3	9.5	10.1
4	11.8	11.6	11.6	13.4	13.2	13.2	12.7	12.4	12.6	10.5	9.7	10.2
5	11.7	11.5	11.7	13.5	13.2	13.3	12.6	12.3	12.5	10.7	9.9	10.4
6	11.8	11.6	11.7	13.5	13.4	13.4	12.5	12.2	12.4	11.2	10.0	10.7
7	11.9	11.7	11.8	13.5	13.3	13.4	12.3	12.0	12.2	11.2	10.1	10.9
8	11.9	11.8	11.9	13.4	13.1	13.3	12.1	11.7	11.9	11.2	10.3	10.7
9	12.1	11.9	11.9	13.5	13.2	13.3	11.7	11.5	11.6	11.0	6.8	9.7
10	12.2	12.0	12.1	13.6	13.3	13.5	11.5	11.2	11.4	10.9	6.6	9.6
11	12.3	12.1	12.2	13.5	13.4	13.4	11.3	11.0	11.2	10.7	6.3	9.2
12	12.4	12.2	12.3	13.6	13.3	13.4	11.1	10.8	10.9	10.3	6.3	8.8
13	12.5	12.3	12.4	13.6	13.3	13.4	10.9	10.1	10.7	10.2	6.1	8.6
14	12.6	12.3	12.4	13.6	13.4	13.5	10.1	8.5	9.2	9.7	6.1	8.5
15	12.5	12.3	12.4	13.7	13.3	13.5	8.6	8.3	8.4	9.4	5.7	8.4
16	12.8	12.5	12.7	13.9	13.6	13.7	8.4	8.3	8.4	9.5	5.9	8.3
17	12.8	12.5	12.7	13.9	13.7	13.9	8.7	8.4	8.5	9.5	6.0	8.2
18	12.9	12.7	12.8	13.9	13.7	13.8	8.8	8.7	8.7	9.5	5.9	8.0
19	13.3	12.8	13.1	14.0	13.7	13.8	9.0	8.8	8.9	9.5	5.7	8.0
20	13.4	13.2	13.3	13.9	13.8	13.9	9.0	8.8	8.9	9.4	5.8	8.0
21	13.3	13.1	13.2	13.9	13.8	13.9	9.0	8.2	8.7	9.8	5.8	8.2
22	13.3	13.1	13.2	14.3	13.9	14.1	8.9	8.7	8.8	9.7	5.7	8.1
23	13.2	13.1	13.2	14.4	14.0	14.2	9.0	8.8	8.9	9.6	5.3	8.0
24	13.1	13.0	13.0	14.5	14.2	14.3	9.1	9.0	9.0	9.7	5.7	8.3
25	13.2	12.9	13.1	14.5	14.3	14.4	9.4	9.1	9.2	9.7	5.7	8.5
26	13.3	13.2	13.3	14.5	14.4	14.4	9.7	9.3	9.4	9.9	5.3	8.6
27	13.4	13.2	13.3	14.6	14.4	14.5	9.8	9.6	9.7	9.9	5.5	8.5
28	13.4	13.2	13.3	14.4	14.2	14.3	9.9	9.7	9.8	9.7	4.8	8.3
29	---	---	---	14.3	14.1	14.2	10.0	9.2	9.8	9.6	5.4	8.2
30	---	---	---	14.1	13.8	14.0	10.1	9.4	9.9	9.4	5.1	8.1
31	---	---	---	13.8	13.5	13.6	---	---	---	9.3	5.2	7.6
MONTH	13.4	11.5	12.5	14.6	13.1	13.7	13.5	8.2	10.3	11.2	4.8	8.9

STREAMS TRIBUTARY TO LAKE HURON

04137025 AU SABLE RIVER NEAR GLENNIE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.2	4.2	7.3	7.1	2.1	4.9	8.2	6.7	7.9	9.1	7.6	8.4
2	9.2	4.5	7.2	6.6	1.7	4.6	8.6	6.8	7.8	9.0	7.8	8.5
3	9.1	3.9	7.1	6.9	2.5	5.0	8.6	6.7	7.8	8.8	7.7	8.4
4	8.9	4.3	7.0	7.1	2.5	5.2	8.4	7.2	7.9	8.7	7.6	8.2
5	8.8	3.6	6.9	7.2	3.5	5.7	8.1	7.0	7.7	8.7	7.3	8.1
6	8.6	3.1	6.8	7.4	3.4	6.0	7.9	6.8	7.5	8.9	7.4	8.2
7	8.0	2.4	6.0	7.4	6.1	7.0	7.8	5.6	7.1	8.8	7.6	8.3
8	8.0	2.8	6.1	7.8	6.3	7.2	8.1	5.3	7.2	8.8	7.4	8.3
9	7.7	2.7	6.1	8.0	5.7	7.3	8.3	6.7	7.5	8.9	7.9	8.4
10	7.9	3.1	6.4	8.2	5.8	7.4	8.1	6.7	7.4	9.2	7.7	8.6
11	7.5	3.1	6.0	8.5	6.8	7.6	7.9	6.7	7.3	9.1	7.7	8.5
12	7.5	3.4	5.9	8.4	6.8	7.7	7.8	6.6	7.2	9.1	7.8	8.4
13	7.0	3.2	5.6	8.3	6.7	7.7	7.5	6.0	7.0	9.1	7.8	8.6
14	6.7	3.0	5.4	7.9	6.5	7.3	7.5	6.0	6.8	9.2	8.9	9.0
15	6.6	2.3	5.2	7.9	5.4	7.3	7.8	6.2	7.1	9.0	8.5	8.8
16	6.2	1.6	5.0	7.7	7.2	7.5	8.0	6.2	7.1	8.9	8.5	8.7
17	6.6	2.4	5.3	7.5	7.3	7.4	7.9	6.4	7.3	8.5	8.2	8.4
18	6.6	3.5	5.5	7.7	6.1	7.3	8.0	6.7	7.5	8.6	8.2	8.4
19	6.9	3.5	5.5	7.6	5.3	7.0	8.2	7.2	7.8	8.6	8.0	8.2
20	7.3	3.0	5.9	7.2	5.9	6.9	7.9	6.9	7.6	8.7	8.4	8.5
21	7.4	3.7	6.1	7.6	5.0	6.7	7.9	7.0	7.6	8.6	8.4	8.5
22	7.5	2.7	5.7	7.6	5.5	6.8	7.8	6.9	7.5	8.6	8.4	8.5
23	7.8	2.5	5.6	7.7	5.5	7.0	7.8	7.0	7.5	8.6	8.1	8.3
24	7.7	3.9	5.9	7.4	6.2	7.0	8.0	7.0	7.7	8.4	8.1	8.3
25	7.7	4.0	6.1	7.4	7.2	7.3	8.3	8.0	8.2	8.5	8.2	8.4
26	8.0	3.9	6.6	7.2	6.8	7.1	8.8	8.0	8.5	8.3	8.1	8.1
27	7.7	3.6	6.0	7.1	6.7	6.9	9.2	8.0	8.7	8.3	8.1	8.2
28	7.5	3.6	6.0	7.2	6.1	6.9	9.0	7.9	8.5	8.2	7.7	8.0
29	7.5	3.6	6.0	7.2	6.0	6.7	9.1	8.0	8.6	8.0	7.8	7.9
30	7.2	2.9	5.2	7.7	7.1	7.5	9.0	7.6	8.5	8.2	8.0	8.1
31	---	---	---	8.0	7.7	7.8	9.0	7.7	8.5	---	---	---
MONTH	9.2	1.6	6.0	8.5	1.7	6.8	9.2	5.3	7.7	9.2	7.3	8.4

STREAMS TRIBUTARY TO LAKE HURON

04137030 AU SABLE RIVER NEAR SIDTOWN, MI

LOCATION.--Lat 44°28'22", long 83°34'16", in NW1/4 SE1/4 sec.15, T.24 N., R.7 E., Iosco County, Hydrologic Unit 04070007, on right bank 100 ft downstream from Cooke Dam, 2 mi northeast of Sidtown.

DRAINAGE AREA.--1,718 mi^2.

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1996 to current year.
DISSOLVED OXYGEN: July 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for one hour measurement interval.

REMARKS.--Water temperature records rated excellent except the following period: Dec. 3-6 rated good. Dissolved oxygen records rated excellent except the following periods: Oct. 1-5, Nov. 14-20, May 24 to June 1, July 30 to Aug. 2, Aug. 28 to Sept. 8 rated good; Nov. 21-30, Apr. 8-11 rated fair; and Dec. 1-2 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 27.5°C, Aug. 9, 2001; minimum, 0.0°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.8 mg/L, Mar. 31, Apr. 1, 1999; minimum, 1.5 mg/L, July 12, 2004.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 27.0°C, July 21; minimum, 0.0°C, on many days during winter period.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L, Apr. 1; minimum, 4.6 mg/L, June 21, 22.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.5	19.0	19.0	11.0	11.0	11.0	4.5	4.0	4.0	0.5	0.5	0.5
2	19.0	18.5	19.0	11.0	11.0	11.0	4.0	4.0	4.0	0.5	0.5	0.5
3	18.5	18.0	18.5	11.0	10.5	11.0	4.0	3.5	3.5	1.5	0.5	0.5
4	18.0	17.5	17.5	10.5	10.5	10.5	3.5	3.5	3.5	1.0	0.5	1.0
5	17.5	17.0	17.0	10.5	10.0	10.0	3.5	3.0	3.5	1.5	0.5	0.5
6	17.0	16.5	17.0	10.0	10.0	10.0	3.5	3.0	3.0	1.0	0.5	0.5
7	16.5	16.5	16.5	10.0	9.5	10.0	3.0	3.0	3.0	1.0	0.5	0.5
8	16.5	16.0	16.0	9.5	9.0	9.5	3.0	2.5	2.5	1.0	0.5	0.5
9	16.5	15.5	16.0	9.0	8.5	9.0	2.5	2.5	2.5	1.0	0.5	0.5
10	15.5	15.0	15.5	8.5	8.5	8.5	2.5	2.5	2.5	1.0	0.5	0.5
11	15.0	14.5	15.0	8.5	8.0	8.0	2.5	2.0	2.5	1.0	0.5	0.5
12	15.0	14.5	14.5	8.0	7.5	8.0	2.5	2.0	2.0	0.5	0.0	0.5
13	14.5	14.5	14.5	7.5	7.0	7.5	2.0	1.5	2.0	1.0	0.0	0.5
14	14.5	14.0	14.0	7.0	7.0	7.0	1.5	1.5	1.5	0.5	0.0	0.0
15	14.0	14.0	14.0	7.0	6.5	7.0	1.5	1.0	1.5	1.0	0.0	0.5
16	14.0	13.5	14.0	6.5	6.5	6.5	1.5	1.0	1.0	0.5	0.0	0.5
17	13.5	13.0	13.0	6.5	6.5	6.5	1.5	1.0	1.0	1.0	0.5	0.5
18	13.0	12.5	13.0	7.0	6.5	6.5	1.5	1.0	1.0	1.0	0.5	0.5
19	12.5	12.5	12.5	6.5	6.0	6.5	1.0	1.0	1.0	1.0	0.5	0.5
20	12.5	12.0	12.0	6.5	6.0	6.0	2.0	1.0	1.0	0.5	0.5	0.5
21	12.0	11.5	12.0	6.5	6.0	6.5	1.5	1.0	1.0	0.5	0.5	0.5
22	11.5	11.5	11.5	6.0	6.0	6.0	1.5	1.0	1.0	0.5	0.5	0.5
23	11.5	11.0	11.5	6.0	6.0	6.0	1.0	0.5	1.0	0.5	0.5	0.5
24	11.5	11.0	11.5	6.0	5.5	6.0	1.5	0.5	1.0	0.5	0.0	0.5
25	12.0	11.5	11.5	5.5	5.5	5.5	1.5	0.5	1.0	0.5	0.0	0.0
26	11.5	11.0	11.5	5.5	5.0	5.5	1.5	0.5	1.0	0.5	0.0	0.0
27	11.0	11.0	11.0	5.0	5.0	5.0	1.5	0.5	1.0	1.0	0.0	0.5
28	11.0	11.0	11.0	5.0	5.0	5.0	1.5	0.5	0.5	0.5	0.0	0.5
29	11.0	11.0	11.0	5.0	5.0	5.0	0.5	0.5	0.5	0.5	0.0	0.0
30	11.5	11.0	11.5	5.0	4.5	4.5	0.5	0.5	0.5	0.5	0.0	0.0
31	11.5	11.0	11.5	---	---	---	0.5	0.0	0.5	0.5	0.0	0.0
MONTH	19.5	11.0	14.0	11.0	4.5	7.5	4.5	0.0	1.8	1.5	0.0	0.4

STREAMS TRIBUTARY TO LAKE HURON

04137030 AU SABLE RIVER NEAR SIDTOWN, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	0.0	0.0	0.5	0.0	0.5	2.5	2.0	2.5	10.5	10.0	10.0
2	0.5	0.0	0.0	1.0	0.0	0.0	3.0	2.5	3.0	10.0	10.0	10.0
3	0.5	0.0	0.0	0.5	0.0	0.5	3.5	3.0	3.0	10.0	9.5	9.5
4	0.0	0.0	0.0	0.5	0.0	0.5	3.5	3.0	3.5	10.0	9.5	9.5
5	0.0	0.0	0.0	0.5	0.0	0.5	4.0	3.5	4.0	10.5	9.5	10.0
6	0.5	0.0	0.0	0.5	0.0	0.0	4.5	4.0	4.5	10.5	10.0	10.5
7	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.5	4.5	11.0	10.5	10.5
8	0.5	0.0	0.0	0.5	0.0	0.0	5.5	5.0	5.0	11.5	10.5	11.0
9	0.5	0.0	0.0	0.5	0.0	0.5	6.5	5.0	5.5	12.0	11.0	11.5
10	0.5	0.0	0.0	0.5	0.0	0.5	6.0	6.0	6.0	14.5	12.0	13.0
11	0.5	0.0	0.0	0.5	0.0	0.5	7.0	6.0	6.0	13.5	13.0	13.0
12	0.5	0.0	0.0	0.5	0.0	0.5	7.5	6.5	7.0	13.0	12.0	12.5
13	0.5	0.0	0.0	1.0	0.0	0.5	8.0	7.5	7.5	13.0	12.0	12.5
14	0.5	0.0	0.0	0.5	0.5	0.5	8.5	7.5	8.0	13.0	12.5	12.5
15	0.5	0.0	0.0	0.5	0.5	0.5	9.0	8.0	8.5	13.0	12.5	13.0
16	0.5	0.0	0.0	1.5	0.5	0.5	10.0	9.0	9.5	13.0	12.5	12.5
17	0.5	0.0	0.5	0.5	0.5	0.5	10.5	9.5	10.0	12.5	12.5	12.5
18	0.5	0.0	0.5	0.5	0.5	0.5	11.0	10.0	10.5	13.5	12.5	13.0
19	0.5	0.5	0.5	0.5	0.5	0.5	13.0	11.0	11.5	13.5	13.0	13.0
20	0.5	0.5	0.5	1.0	0.5	0.5	12.0	11.5	11.5	13.5	13.0	13.5
21	0.5	0.5	0.5	0.5	0.5	0.5	12.0	11.0	11.5	14.0	13.5	13.5
22	0.5	0.5	0.5	1.0	0.5	0.5	12.0	11.5	11.5	15.0	13.5	14.0
23	0.5	0.5	0.5	1.0	0.5	0.5	12.0	11.0	11.5	14.5	13.5	14.0
24	0.5	0.5	0.5	1.0	0.5	0.5	11.0	10.5	10.5	14.5	14.0	14.0
25	0.5	0.5	0.5	1.0	0.5	1.0	10.5	10.0	10.5	14.5	14.0	14.5
26	0.5	0.0	0.5	1.0	0.5	1.0	10.5	10.5	10.5	16.0	14.5	15.5
27	0.5	0.0	0.5	1.0	1.0	1.0	10.5	10.5	10.5	16.0	15.0	15.5
28	0.5	0.0	0.5	1.5	1.0	1.0	10.5	10.0	10.0	16.0	15.5	15.5
29	---	---	---	1.5	1.0	1.5	10.0	9.5	10.0	16.0	15.5	16.0
30	---	---	---	2.0	1.5	1.5	10.0	9.5	9.5	16.0	15.5	16.0
31	---	---	---	2.0	1.5	2.0	---	---	---	16.5	16.0	16.0
MONTH	0.5	0.0	0.2	2.0	0.0	0.6	13.0	2.0	7.9	16.5	9.5	12.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	16.0	16.5	24.5	24.0	24.5	25.5	24.5	25.0	23.0	22.0	22.5
2	17.5	16.5	16.5	24.0	23.5	23.5	26.0	24.5	25.0	22.5	22.0	22.5
3	18.0	16.5	17.5	24.0	23.5	24.0	26.0	24.5	25.0	22.5	22.0	22.0
4	18.5	17.5	18.0	24.0	23.5	24.0	26.0	25.0	25.5	22.0	22.0	22.0
5	20.0	18.0	18.5	24.0	23.5	23.5	25.5	25.0	25.0	22.5	21.5	22.0
6	21.5	18.5	20.0	23.5	23.0	23.5	26.0	25.0	25.0	22.5	22.0	22.0
7	20.0	19.0	20.0	23.5	23.0	23.5	26.0	25.0	25.5	23.0	22.0	22.0
8	20.5	19.5	20.0	23.5	23.0	23.5	26.0	25.0	25.5	22.5	22.0	22.0
9	21.5	20.0	20.5	24.0	23.0	23.5	26.0	25.0	25.5	22.0	21.5	22.0
10	22.0	20.5	21.0	24.5	23.5	24.0	26.0	25.5	25.5	22.0	21.5	22.0
11	22.5	20.5	21.5	24.5	23.5	24.0	25.5	25.0	25.5	22.5	21.5	22.0
12	23.0	21.0	22.0	24.5	24.0	24.0	25.5	25.0	25.0	23.0	22.0	22.5
13	23.0	22.0	22.5	25.0	24.0	24.5	25.0	25.0	25.0	23.0	22.0	22.5
14	23.5	22.5	23.0	24.5	24.0	24.5	25.0	24.5	25.0	22.5	22.0	22.5
15	23.5	23.0	23.0	25.0	24.5	24.5	25.0	24.5	24.5	22.0	22.0	22.0
16	23.0	22.5	23.0	25.5	25.0	25.0	25.0	24.5	24.5	22.0	21.5	21.5
17	22.5	22.0	22.0	26.0	25.5	25.5	24.5	24.5	24.5	21.5	21.5	21.5
18	22.5	21.5	22.0	26.5	25.5	26.0	24.5	24.0	24.0	22.0	21.0	21.5
19	22.0	21.5	21.5	26.0	25.5	26.0	24.5	24.0	24.0	21.5	21.0	21.5
20	22.5	21.5	22.0	26.0	25.5	26.0	24.0	24.0	24.0	21.5	21.0	21.0
21	22.5	21.5	22.0	27.0	25.5	26.0	24.0	23.5	24.0	21.5	21.0	21.0
22	22.5	21.5	22.0	26.0	26.0	26.0	23.5	23.0	23.5	21.5	21.0	21.0
23	22.0	21.5	22.0	26.5	25.5	26.0	23.0	23.0	23.0	21.0	20.5	20.5
24	23.0	22.0	22.5	26.0	26.0	26.0	23.0	22.5	22.5	20.5	20.0	20.0
25	23.0	22.5	22.5	26.0	25.5	26.0	22.5	22.5	22.5	20.5	20.0	20.0
26	23.0	22.5	22.5	26.0	25.5	26.0	22.5	22.0	22.5	20.0	20.0	20.0
27	24.0	22.5	23.0	25.5	25.0	25.5	23.0	22.0	22.5	20.0	19.5	19.5
28	24.5	23.0	23.5	25.5	25.0	25.0	23.0	22.0	22.5	19.5	19.0	19.5
29	24.0	23.5	23.5	25.5	24.5	25.0	23.0	22.0	22.5	19.0	18.5	19.0
30	24.5	23.5	24.0	25.0	24.5	24.5	22.5	22.0	22.5	18.5	18.0	18.5
31	---	---	---	25.0	24.5	24.5	22.5	22.0	22.5	---	---	---
MONTH	24.5	16.0	21.3	27.0	23.0	24.8	26.0	22.0	24.2	23.0	18.0	21.3

STREAMS TRIBUTARY TO LAKE HURON

04137030 AU SABLE RIVER NEAR SIDTOWN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	6.4	7.2	9.7	9.4	9.6	12.1	11.8	11.9	12.3	12.0	12.1
2	7.8	6.8	7.4	9.8	9.4	9.6	12.3	11.8	12.0	12.4	11.9	12.2
3	7.7	6.6	7.3	9.9	9.5	9.7	12.3	12.0	12.1	12.3	11.4	12.0
4	8.1	6.9	7.5	9.8	9.4	9.6	12.3	12.1	12.2	12.1	11.5	11.8
5	8.2	7.1	7.8	9.9	9.5	9.8	12.3	12.2	12.2	12.1	11.2	11.8
6	---	---	---	10.0	9.5	9.7	12.2	12.1	12.2	11.9	11.3	11.7
7	---	---	---	10.0	9.6	9.8	12.3	12.2	12.2	11.9	11.4	11.7
8	---	---	---	10.0	9.7	9.9	12.5	12.2	12.4	12.0	11.4	11.7
9	---	---	---	10.0	9.7	9.8	12.6	12.4	12.5	12.0	11.6	11.8
10	---	---	---	10.0	9.8	9.9	12.5	12.2	12.3	12.0	11.2	11.6
11	---	---	---	10.3	9.9	10.1	12.3	12.2	12.3	11.8	11.1	11.6
12	---	---	---	10.5	10.1	10.3	12.3	12.2	12.3	12.2	11.6	11.9
13	---	---	---	10.6	10.2	10.4	12.3	12.2	12.3	12.3	11.3	12.0
14	---	---	---	10.7	10.3	10.5	12.4	12.3	12.3	11.9	11.5	11.8
15	---	---	---	10.8	10.4	10.6	12.5	12.3	12.4	11.8	11.2	11.6
16	---	---	---	10.9	10.6	10.8	12.5	12.3	12.4	11.8	11.3	11.6
17	---	---	---	11.2	10.7	10.9	12.6	12.3	12.5	11.8	11.3	11.7
18	---	---	---	11.3	10.9	11.1	12.6	12.3	12.5	12.2	11.3	11.8
19	---	---	---	11.5	11.1	11.3	12.7	12.4	12.6	12.2	11.6	12.0
20	---	---	---	11.4	11.1	11.3	12.9	11.9	12.5	12.2	12.0	12.1
21	---	---	---	11.3	10.9	11.1	12.7	12.1	12.4	12.3	12.0	12.2
22	---	---	---	11.4	10.9	11.1	12.6	12.1	12.3	12.5	12.1	12.3
23	---	---	---	11.5	11.1	11.3	12.6	12.3	12.5	12.2	12.1	12.2
24	---	---	---	11.7	11.2	11.4	12.6	12.0	12.4	12.4	12.2	12.3
25	---	---	---	11.7	11.3	11.5	12.4	11.8	12.3	12.7	12.3	12.5
26	---	---	---	11.6	11.3	11.5	12.4	11.7	12.3	12.7	12.2	12.4
27	---	---	---	11.9	11.4	11.6	12.4	11.8	12.1	12.6	12.1	12.3
28	---	---	---	11.8	11.5	11.6	12.4	11.7	12.2	12.6	12.4	12.5
29	---	---	---	11.7	11.5	11.6	12.5	12.2	12.3	12.7	12.3	12.6
30	9.8	9.4	9.6	11.9	11.6	11.7	12.6	12.2	12.4	12.7	12.4	12.6
31	9.8	9.4	9.6	---	---	---	13.0	12.1	12.4	12.5	12.2	12.4
MONTH	---	---	---	11.9	9.4	10.6	13.0	11.7	12.3	12.7	11.1	12.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.4	12.2	12.3	12.4	12.2	12.3	13.7	13.2	13.4	9.7	6.7	8.9
2	12.3	12.1	12.2	12.4	12.0	12.3	13.5	13.1	13.3	9.9	6.8	9.1
3	12.2	12.0	12.1	12.4	12.0	12.2	13.3	12.9	13.2	9.8	6.6	9.1
4	12.2	12.0	12.1	12.4	12.2	12.3	13.1	12.9	13.0	9.9	6.8	9.1
5	12.2	12.0	12.1	12.3	12.1	12.2	12.9	12.5	12.7	10.1	6.8	9.2
6	13.1	11.8	12.0	12.5	12.0	12.3	12.7	12.4	12.6	10.0	6.8	9.1
7	12.4	11.7	11.9	12.5	12.4	12.5	12.6	12.4	12.5	10.0	8.3	9.5
8	12.1	11.6	11.8	12.5	12.2	12.4	12.5	11.5	12.2	10.0	8.0	9.5
9	12.0	11.7	11.8	12.5	12.2	12.3	12.5	11.4	12.0	10.1	8.4	9.6
10	11.8	11.6	11.8	12.7	12.4	12.6	12.4	11.5	12.0	10.1	8.2	9.5
11	11.9	11.7	11.8	12.9	12.5	12.7	12.5	11.5	12.1	9.8	7.8	9.1
12	11.9	11.7	11.8	12.9	12.7	12.8	12.2	11.6	12.0	10.2	7.7	8.8
13	12.0	11.7	11.8	12.9	12.3	12.8	11.9	11.4	11.7	9.4	7.6	8.6
14	12.0	11.8	11.9	12.9	12.6	12.7	11.7	11.2	11.5	9.5	7.3	8.7
15	12.0	11.7	11.9	12.9	12.6	12.8	11.5	11.1	11.3	9.5	8.2	9.1
16	12.0	11.8	11.9	13.0	12.1	12.8	11.3	10.7	11.0	9.6	8.2	9.0
17	12.0	11.8	11.9	13.1	12.7	12.9	10.9	10.6	10.8	9.5	7.6	8.9
18	12.1	11.9	12.0	13.1	12.8	12.9	10.9	10.5	10.7	9.5	7.4	8.7
19	12.2	12.0	12.1	13.2	12.8	13.0	10.8	9.5	10.4	9.4	7.1	8.6
20	12.3	12.1	12.2	13.4	12.7	13.1	10.2	9.4	10.0	9.3	7.1	8.6
21	12.4	12.2	12.3	13.2	13.0	13.1	10.2	8.5	9.5	9.2	7.1	8.4
22	12.6	12.3	12.5	13.2	12.8	13.1	9.8	8.9	9.4	9.1	7.5	8.4
23	12.6	12.4	12.5	13.2	13.0	13.1	9.7	8.8	9.3	8.9	7.3	8.2
24	12.6	12.3	12.5	13.2	12.8	13.1	9.5	8.9	9.2	9.2	7.1	8.3
25	12.6	12.2	12.4	13.1	12.8	13.0	9.5	8.7	9.1	9.2	8.3	8.8
26	12.5	12.1	12.3	13.1	12.6	13.0	9.3	8.6	9.0	9.3	8.1	8.9
27	12.5	12.3	12.4	13.2	13.0	13.1	9.2	8.5	8.8	9.2	7.9	8.6
28	12.5	12.2	12.4	13.3	12.9	13.1	9.3	8.5	9.0	9.0	6.9	8.3
29	---	---	---	13.3	13.0	13.2	9.4	6.3	8.5	9.1	7.2	8.4
30	---	---	---	13.3	13.0	13.2	9.4	7.8	8.9	9.1	7.1	8.5
31	---	---	---	13.4	13.2	13.3	---	---	---	9.1	7.5	8.4
MONTH	13.1	11.6	12.1	13.4	12.0	12.8	13.7	6.3	11.0	10.2	6.6	8.8

STREAMS TRIBUTARY TO LAKE HURON

04137030 AU SABLE RIVER NEAR SIDTOWN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.0	7.2	8.4	7.3	5.5	6.6	7.4	5.0	6.8	8.3	7.0	7.6
2	8.9	7.2	8.3	7.1	5.7	6.6	7.5	5.3	6.6	8.2	6.9	7.6
3	8.9	7.0	8.2	7.1	5.6	6.6	7.5	5.4	6.7	8.2	6.7	7.6
4	9.0	7.0	8.2	7.1	6.1	6.7	7.6	5.9	6.8	7.9	7.0	7.5
5	8.6	6.4	8.0	7.0	6.0	6.6	7.5	6.2	6.9	8.2	7.2	7.7
6	8.5	6.4	7.8	7.0	5.8	6.5	7.6	6.1	6.9	8.3	7.0	7.7
7	8.4	5.9	7.5	7.1	6.2	6.6	7.7	6.0	6.9	8.1	6.6	7.5
8	8.2	6.4	7.6	7.1	5.8	6.6	7.8	6.0	6.9	8.0	6.9	7.5
9	8.2	6.2	7.5	7.3	5.3	6.7	7.9	5.9	7.0	8.0	7.1	7.5
10	8.2	5.1	7.3	7.2	5.5	6.5	7.6	6.1	6.9	8.2	6.9	7.6
11	8.1	5.9	7.3	7.1	5.2	6.3	7.6	6.3	6.9	8.3	6.6	7.7
12	7.7	5.8	7.1	6.9	5.1	6.2	7.7	6.3	7.0	8.3	6.7	7.6
13	7.7	5.8	7.1	6.9	5.0	6.2	7.6	6.2	7.0	8.2	6.9	7.7
14	7.5	6.3	7.0	6.9	5.7	6.3	7.7	6.3	7.0	8.1	7.6	7.8
15	7.2	5.8	6.7	6.9	5.8	6.5	7.5	6.0	7.0	7.9	7.7	7.9
16	7.1	6.0	6.7	7.0	6.6	6.8	7.7	6.3	7.0	8.0	7.7	7.8
17	7.1	6.0	6.6	7.0	6.7	6.9	7.5	6.1	6.9	7.9	7.7	7.8
18	6.8	5.7	6.4	7.2	6.3	6.8	7.4	6.4	6.8	8.1	7.6	7.8
19	6.7	5.4	6.2	7.0	6.4	6.7	7.2	6.1	6.8	8.0	7.4	7.7
20	6.7	5.0	6.2	7.0	6.1	6.7	7.3	6.2	6.9	8.0	7.6	7.8
21	6.7	4.6	5.8	7.0	5.4	6.5	7.6	6.4	7.1	8.0	7.6	7.8
22	6.3	4.6	5.9	7.0	5.9	6.4	7.5	6.2	7.1	7.9	7.6	7.8
23	6.9	5.3	6.1	7.2	6.1	6.7	7.8	6.3	7.0	7.8	7.5	7.7
24	7.1	5.3	6.4	7.0	6.2	6.7	7.5	6.5	7.1	7.9	7.4	7.6
25	7.1	5.0	6.4	7.0	6.5	6.7	7.3	6.9	7.2	7.9	7.4	7.7
26	7.1	6.0	6.6	7.1	6.4	6.7	7.8	6.1	7.1	7.9	7.5	7.7
27	7.0	5.8	6.5	7.0	6.5	6.8	7.9	5.7	7.2	7.9	7.6	7.8
28	7.3	5.7	6.6	7.2	5.9	6.7	8.1	5.7	7.2	8.6	7.6	7.9
29	7.2	4.8	6.5	7.0	5.5	6.4	8.0	6.0	7.1	8.6	7.7	8.0
30	7.2	5.8	6.6	7.1	6.5	6.8	8.0	6.4	7.3	8.1	7.7	7.9
31	---	---	---	7.2	6.7	7.0	8.2	6.8	7.6	---	---	---
MONTH	9.0	4.6	7.0	7.3	5.0	6.6	8.2	5.0	7.0	8.6	6.6	7.7

STREAMS TRIBUTARY TO LAKE HURON

04137500 AU SABLE RIVER NEAR AU SABLE, MI

LOCATION.--Lat 44°26'09", long 83°26'28", in NE1/4 NW1/4 sec.35, T.24 N., R.8 E., Iosco County, Hydrologic Unit 04070007, at bridge on Rea Road, 5.5 mi northwest of Au Sable, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--1,739 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1987 to current year. Records for July 1939 to September 1940, published in WSP 874, 894, and 1307, have been found to be unreliable and should not be used.

REVISED RECORDS.--WDR MI-96-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 583.93 ft above sea level.

REMARKS.--Water-discharge records good. Flow regulated by Foote Dam 0.6 mi upstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	831	1250	1410	1540	1360	1270	2370	1500	1170	1010	1140	1040
2	874	1390	1260	1640	1290	1310	2460	1520	1080	972	1090	1030
3	998	1490	1190	1840	1320	1230	2460	1460	974	930	955	1020
4	1020	1400	1170	1740	1400	1100	2420	1430	932	990	1000	997
5	980	1240	1190	1550	1330	1140	2380	1430	931	1120	1210	997
6	945	1190	1280	1460	1530	1320	2250	1320	1030	1160	1260	997
7	942	1230	1580	1360	1440	1600	2140	1240	1100	1130	1260	e994
8	1020	1250	2100	1530	1290	1250	2020	1350	1090	1060	1170	e1050
9	1430	1230	2070	1580	1530	1040	1960	1470	1160	1040	1100	1110
10	1260	1190	1830	1380	1540	1350	1980	1350	1210	1000	1020	958
11	990	1190	1930	1160	1360	1530	1890	1240	1210	983	959	925
12	1140	1200	1780	1270	1310	1400	1790	1220	1210	961	1040	957
13	1280	1200	1670	1860	1380	1340	1710	1200	1220	910	1200	1130
14	1140	1200	1440	2240	1470	1180	1620	1260	1460	930	1260	1270
15	1080	1180	1240	1750	1530	1120	1490	1360	1530	1040	1110	1140
16	1230	1090	1380	1410	1380	1190	1500	1390	1400	1100	972	1060
17	1240	1010	1480	1370	1300	1220	1560	1140	1300	1100	889	1060
18	1250	1120	1450	876	1220	1220	1460	996	1170	1130	978	1020
19	1240	1200	1290	1150	1270	1260	1390	1120	1020	1180	1640	1010
20	1240	1220	855	1650	1320	1290	1480	1190	1060	1080	1860	941
21	1240	1240	674	1460	1320	1290	1640	1220	1130	948	1700	814
22	1160	1240	1040	1320	1320	1140	1680	1230	1110	962	1530	853
23	1110	1240	1220	1310	1250	1020	1640	1390	1070	989	1370	884
24	1190	1200	1210	1160	1210	1090	1660	1510	1070	1160	1290	852
25	1270	1180	1040	1300	1240	1170	1680	1480	1070	1590	1240	1070
26	1240	1200	1050	1410	1260	1220	1680	1420	1080	1810	1150	2400
27	1220	1320	1180	1110	1190	1370	1710	1290	1080	1760	1020	2130
28	1220	1700	1450	979	1210	1470	1690	1170	1080	1450	963	1850
29	1240	1730	1590	1260	---	1570	1410	1180	1080	1340	961	1820
30	1260	1600	1390	1610	---	1790	1380	1240	1050	1330	1010	1830
31	1250	---	1600	1510	---	2070	---	1210	---	1190	1040	---
TOTAL	35530	38120	43039	44785	37570	40560	54500	40526	34077	35355	36387	35209
MEAN	1146	1271	1388	1445	1342	1308	1817	1307	1136	1140	1174	1174
MAX	1430	1730	2100	2240	1540	2070	2460	1520	1530	1810	1860	2400
MIN	831	1010	674	876	1190	1020	1380	996	931	910	889	814
CFSM	0.66	0.73	0.80	0.83	0.77	0.75	1.04	0.75	0.65	0.66	0.67	0.67
IN.	0.76	0.82	0.92	0.96	0.80	0.87	1.17	0.87	0.73	0.76	0.78	0.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2005, BY WATER YEAR (WY)

MEAN	1311	1443	1375	1306	1296	1589	1962	1591	1375	1245	1220	1184
MAX	1770	1944	1870	1596	1618	2097	2749	2084	1952	2205	1834	1605
(WY)	1992	1992	1992	1997	1997	1990	1997	1997	1993	1994	1994	1994
MIN	938	998	972	871	903	1090	1187	1111	1062	916	934	912
(WY)	2001	2003	2003	2003	2003	2003	2000	1999	2003	2001	2001	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1987 - 2005	
ANNUAL TOTAL	504888		475658			
ANNUAL MEAN	1379		1303		1406	
HIGHEST ANNUAL MEAN					1640	1994
LOWEST ANNUAL MEAN					1057	2003
HIGHEST DAILY MEAN	3790	May 25	2460	Apr 2	5740	Apr 1 1998
LOWEST DAILY MEAN	674	Dec 21	674	Dec 21	455	Oct 29 1993
ANNUAL SEVEN-DAY MINIMUM	820	Aug 18	911	Sep 18	656	Jun 7 1988
MAXIMUM PEAK FLOW			3060	Sep 26	5850	Mar 28 1991
MAXIMUM PEAK STAGE			12.13	Sep 26	16.27	Mar 28 1991
INSTANTANEOUS LOW FLOW			461	(a)	135	Aug 27 1993
ANNUAL RUNOFF (CFSM)	0.793		0.749		0.808	
ANNUAL RUNOFF (INCHES)	10.80		10.18		10.98	
10 PERCENT EXCEEDS	1970		1700		1930	
50 PERCENT EXCEEDS	1240		1240		1300	
90 PERCENT EXCEEDS	950		990		966	

(a) Part of each day Jan. 18, 19.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04137500 AU SABLE RIVER NEAR AU SABLE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978-94, 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1978 to September 1981.
WATER TEMPERATURE: April 1978 to September 1981, July 1996 to current year.
DISSOLVED OXYGEN: July 1996 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter from July 11, 1996, set for one hour measurement interval.

REMARKS.--Water temperature records rated excellent except the following periods: Oct. 29 to Jan. 23, Feb. 13 to Mar. 23 rated good. Dissolved oxygen records rated excellent except the following periods: Oct. 1-3, 26-29, Dec. 26 to Jan. 5, Mar. 24 to Apr. 3, June 14-20, Sept. 27-30 rated good; Oct. 4-6, Apr. 4-13, June 21-30 rated fair; and July 1-6 rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1978-79): Maximum daily, 346 microsiemens, Nov. 21, 1978; minimum daily, 229 microsiemens, Apr. 19, 21, 1979.
WATER TEMPERATURE (water years 1979-80, 1996-2005): Maximum measured, 28.0°C, Aug. 8, 1979; minimum, 0.0°C, on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L, Jan. 8, 9, 2004, Apr. 2, 2005; minimum, 5.5 mg/L, July 19, 2002.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--Specific conductance of 354 microsiemens was measured Feb. 3, 1988.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.5°C, on several days during summer period; minimum, 0.0°C, on several days during winter period.
DISSOLVED OXYGEN: Maximum, 13.7 mg/L, Apr. 2; minimum, 5.9 mg/L, July 31.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.5	19.0	19.5	12.0	12.0	12.0	5.0	5.0	5.0	1.0	1.0	1.0
2	19.0	18.5	19.0	12.0	11.5	11.5	5.0	4.5	4.5	1.0	1.0	1.0
3	18.5	18.0	18.5	11.5	11.0	11.5	4.5	4.0	4.5	1.0	1.0	1.0
4	18.0	17.5	17.5	11.0	11.0	11.0	4.0	4.0	4.0	1.0	1.0	1.0
5	17.5	17.0	17.0	11.0	10.5	10.5	4.0	3.5	4.0	1.0	1.0	1.0
6	17.5	16.5	17.0	10.5	10.5	10.5	4.0	3.5	3.5	1.0	1.0	1.0
7	17.0	16.5	17.0	10.5	10.0	10.0	3.5	3.5	3.5	1.0	1.0	1.0
8	17.0	16.5	16.5	10.0	9.5	9.5	3.5	3.5	3.5	1.0	1.0	1.0
9	16.5	16.0	16.5	9.5	9.0	9.5	3.5	3.5	3.5	1.0	1.0	1.0
10	16.5	15.5	16.0	9.0	9.0	9.0	3.5	3.5	3.5	1.0	1.0	1.0
11	16.0	15.5	15.5	9.0	8.5	8.5	3.5	3.0	3.0	1.0	1.0	1.0
12	16.0	15.5	15.5	8.5	8.0	8.5	3.0	2.5	3.0	1.0	1.0	1.0
13	15.5	15.5	15.5	8.0	8.0	8.0	3.0	2.5	2.5	1.0	1.0	1.0
14	15.5	15.0	15.0	8.0	7.5	8.0	2.5	2.0	2.0	1.0	0.5	0.5
15	15.0	15.0	15.0	7.5	7.5	7.5	2.0	1.5	1.5	1.0	0.5	0.5
16	15.0	14.0	14.5	7.5	7.5	7.5	2.0	1.5	1.5	1.0	0.5	0.5
17	14.0	13.5	14.0	7.5	7.5	7.5	1.5	1.0	1.5	1.0	0.5	0.5
18	13.5	13.5	13.5	8.0	7.5	7.5	1.5	1.0	1.0	1.0	0.5	0.5
19	13.5	13.0	13.0	7.5	7.5	7.5	1.0	0.0	0.5	1.0	0.5	1.0
20	13.0	12.5	13.0	7.5	7.5	7.5	0.5	0.0	0.0	1.0	1.0	1.0
21	13.0	12.5	12.5	7.5	7.5	7.5	0.5	0.5	0.5	1.0	0.5	1.0
22	12.5	12.5	12.5	7.5	7.0	7.5	0.5	0.5	0.5	1.0	0.5	0.5
23	12.5	12.5	12.5	7.0	7.0	7.0	0.5	0.5	0.5	0.5	0.5	0.5
24	12.5	12.5	12.5	7.0	6.5	7.0	0.5	0.5	0.5	0.5	0.5	0.5
25	13.0	12.5	12.5	6.5	6.0	6.5	1.0	0.5	0.5	0.5	0.5	0.5
26	12.5	12.0	12.5	6.0	6.0	6.0	1.0	0.5	0.5	0.5	0.5	0.5
27	12.5	12.0	12.0	6.0	6.0	6.0	1.0	0.5	0.5	0.5	0.0	0.5
28	12.5	12.0	12.0	6.0	5.5	6.0	1.0	0.5	1.0	0.5	0.0	0.5
29	12.5	12.0	12.0	5.5	5.5	5.5	1.0	1.0	1.0	0.5	0.0	0.5
30	13.0	12.0	12.5	5.5	5.0	5.0	1.0	1.0	1.0	0.5	0.5	0.5
31	12.5	12.0	12.0	---	---	---	1.0	1.0	1.0	0.5	0.5	0.5
MONTH	19.5	12.0	14.7	12.0	5.0	8.2	5.0	0.0	2.0	1.0	0.0	0.8

STREAMS TRIBUTARY TO LAKE HURON

04137500 AU SABLE RIVER NEAR AU SABLE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.5	0.5	0.5	0.5	0.5	0.5	2.0	1.5	1.5	10.0	9.5	9.5
2	0.5	0.0	0.5	0.5	0.5	0.5	2.0	2.0	2.0	10.0	9.5	10.0
3	0.5	0.0	0.5	1.0	0.5	0.5	2.5	2.0	2.5	10.0	9.5	9.5
4	0.5	0.5	0.5	1.0	0.5	0.5	3.0	2.5	2.5	10.5	9.5	10.0
5	0.5	0.0	0.5	1.0	0.5	0.5	3.5	3.0	3.0	11.0	10.0	10.0
6	0.5	0.0	0.5	1.0	0.5	0.5	3.5	3.0	3.5	11.0	10.0	10.5
7	0.5	0.5	0.5	0.5	0.5	0.5	4.0	3.5	3.5	11.5	10.5	11.0
8	0.5	0.0	0.5	0.5	0.5	0.5	4.5	4.0	4.0	11.5	11.0	11.0
9	0.5	0.5	0.5	0.5	0.5	0.5	4.5	4.0	4.5	12.0	11.5	11.5
10	0.5	0.0	0.5	1.0	0.5	0.5	5.0	4.5	4.5	13.5	11.5	12.5
11	0.5	0.5	0.5	0.5	0.5	0.5	5.0	4.5	5.0	13.5	12.5	13.5
12	0.5	0.5	0.5	1.0	0.5	0.5	5.5	5.0	5.0	13.0	12.0	12.5
13	0.5	0.5	0.5	1.0	0.5	0.5	5.5	5.5	5.5	12.0	11.5	11.5
14	0.5	0.5	0.5	1.0	0.5	0.5	6.0	5.5	6.0	12.5	12.0	12.0
15	0.5	0.5	0.5	0.5	0.5	0.5	6.5	6.0	6.0	12.5	12.0	12.0
16	0.5	0.5	0.5	1.0	0.5	0.5	7.5	6.0	7.0	12.0	12.0	12.0
17	0.5	0.5	0.5	0.5	0.5	0.5	8.5	6.5	7.5	12.5	12.0	12.0
18	1.0	0.5	0.5	1.0	0.5	0.5	9.0	7.5	8.0	13.0	12.0	12.5
19	1.0	0.5	0.5	0.5	0.5	0.5	10.5	8.5	9.5	12.5	12.5	12.5
20	1.0	0.5	0.5	0.5	0.5	0.5	10.5	10.0	10.5	13.0	12.5	13.0
21	1.0	0.5	1.0	1.0	0.5	0.5	10.0	9.5	10.0	14.0	13.0	13.5
22	1.0	0.5	1.0	1.0	0.5	0.5	10.0	9.5	10.0	14.5	13.5	14.0
23	1.0	0.5	0.5	1.0	0.5	0.5	10.0	9.0	9.5	14.0	13.0	13.5
24	1.0	0.5	0.5	1.0	0.5	0.5	9.0	8.5	8.5	14.5	13.5	14.0
25	1.0	0.5	0.5	1.0	0.5	0.5	9.0	8.5	8.5	15.0	14.0	14.5
26	1.0	0.5	0.5	1.0	0.5	0.5	9.0	8.5	9.0	15.5	14.5	15.0
27	1.0	0.5	0.5	1.0	0.5	1.0	9.0	8.5	9.0	16.0	15.0	15.5
28	0.5	0.5	0.5	1.0	1.0	1.0	9.0	9.0	9.0	16.0	15.5	15.5
29	---	---	---	1.5	1.0	1.0	9.5	9.0	9.0	16.0	15.5	15.5
30	---	---	---	1.5	1.0	1.5	9.5	9.0	9.0	16.0	15.5	15.5
31	---	---	---	1.5	1.5	1.5	---	---	---	16.0	15.5	15.5
MONTH	1.0	0.0	0.5	1.5	0.5	0.6	10.5	1.5	6.4	16.0	9.5	12.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.5	15.5	16.0	24.5	23.5	24.0	25.5	24.5	25.0	23.5	22.5	23.0
2	17.0	16.0	16.5	24.0	23.0	23.5	26.0	25.0	25.5	23.0	22.5	22.5
3	17.0	16.0	16.5	23.5	23.0	23.0	26.5	25.5	25.5	22.5	22.0	22.5
4	18.0	16.5	17.0	23.5	23.0	23.5	26.0	25.5	25.5	22.5	22.0	22.0
5	19.0	17.0	18.0	23.5	23.0	23.5	26.0	25.5	25.5	22.5	22.0	22.0
6	21.0	17.5	19.5	23.5	23.0	23.0	26.0	25.0	25.5	22.5	22.0	22.0
7	20.5	18.5	19.0	23.5	23.0	23.0	26.0	25.0	25.5	---	---	---
8	20.0	18.5	19.5	23.5	23.0	23.5	26.5	25.5	25.5	---	---	---
9	20.5	19.0	20.0	24.0	23.0	23.5	26.5	25.5	26.0	22.5	22.0	22.5
10	21.0	19.5	20.5	24.5	23.5	24.0	26.0	25.5	26.0	22.5	22.0	22.5
11	21.5	20.5	21.0	25.0	24.0	24.5	25.5	25.5	25.5	23.0	22.0	22.5
12	22.0	21.0	21.5	25.0	24.0	24.5	25.5	25.0	25.5	23.0	22.5	22.5
13	22.0	21.0	21.5	25.5	24.5	25.0	25.5	25.0	25.0	23.0	22.5	23.0
14	22.0	21.5	22.0	25.5	24.5	25.0	25.0	24.5	25.0	23.0	23.0	23.0
15	23.0	22.0	22.5	25.5	24.5	25.0	25.0	24.5	24.5	23.0	22.5	22.5
16	22.5	22.0	22.5	25.5	24.5	25.0	25.0	24.5	25.0	22.5	22.0	22.0
17	22.0	21.0	21.5	26.0	25.0	25.5	25.0	24.5	24.5	22.0	21.5	22.0
18	21.0	20.5	21.0	26.0	25.5	25.5	24.5	24.5	24.5	22.5	21.5	22.0
19	21.5	20.5	21.0	26.5	25.5	25.5	24.5	24.0	24.0	22.0	21.5	21.5
20	21.5	20.5	21.0	26.0	25.0	25.5	24.0	24.0	24.0	22.0	21.5	21.5
21	22.0	21.0	21.5	26.5	25.5	26.0	24.0	23.5	24.0	22.0	21.0	21.5
22	22.0	21.0	21.5	26.5	25.5	26.0	23.5	23.0	23.0	21.5	21.0	21.5
23	22.0	21.0	21.5	26.5	25.5	26.0	23.0	22.5	23.0	21.0	20.5	21.0
24	23.0	21.5	22.0	26.0	25.5	25.5	23.0	22.5	22.5	21.0	20.5	20.5
25	23.0	22.5	22.5	26.0	25.5	26.0	23.0	22.5	22.5	21.0	20.5	20.5
26	23.0	22.5	22.5	26.0	25.5	26.0	23.0	22.5	22.5	20.5	20.0	20.5
27	23.5	22.5	23.0	25.5	25.0	25.5	23.0	22.5	23.0	20.5	20.0	20.0
28	24.0	23.0	23.5	25.5	25.0	25.0	23.5	22.5	23.0	20.0	19.5	20.0
29	24.0	23.0	23.5	25.0	24.5	25.0	23.5	23.0	23.0	19.5	19.0	19.5
30	24.0	23.0	23.5	25.0	24.5	24.5	23.5	23.0	23.0	19.0	18.5	19.0
31	---	---	---	25.0	24.5	24.5	23.0	22.5	23.0	---	---	---
MONTH	24.0	15.5	20.8	26.5	23.0	24.7	26.5	22.5	24.4	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04137500 AU SABLE RIVER NEAR AU SABLE, MI–Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.6	7.8	9.6	9.5	9.5	10.8	10.7	10.7	12.6	12.3	12.4
2	8.5	7.7	8.0	9.7	9.4	9.6	11.1	10.8	10.9	12.6	12.2	12.4
3	8.4	7.9	8.1	9.8	9.6	9.7	11.2	10.9	11.0	12.6	12.3	12.4
4	8.5	7.8	8.1	9.7	9.5	9.6	11.1	10.9	11.0	12.6	12.2	12.3
5	8.7	8.1	8.4	10.0	9.6	9.8	11.4	10.9	11.1	12.5	12.2	12.3
6	8.8	8.2	8.5	10.1	9.8	9.9	11.4	11.1	11.2	12.5	12.4	12.4
7	9.1	8.4	8.7	10.2	9.8	10.0	11.2	11.1	11.1	12.5	12.3	12.4
8	9.0	8.6	8.8	10.2	10.0	10.1	11.6	11.2	11.4	12.5	12.3	12.4
9	8.8	8.5	8.7	10.2	9.9	10.1	11.6	11.1	11.4	12.4	12.2	12.4
10	9.1	8.6	8.8	10.4	10.0	10.2	11.3	11.2	11.2	12.4	12.3	12.3
11	9.3	8.7	8.9	10.4	10.1	10.2	11.5	11.2	11.4	12.5	12.3	12.4
12	9.3	8.7	9.0	10.6	10.2	10.3	11.8	11.4	11.6	12.5	12.2	12.3
13	9.2	8.9	9.0	10.6	10.2	10.4	12.0	11.5	11.7	12.3	12.1	12.2
14	9.1	8.9	9.0	10.7	10.4	10.5	12.1	11.7	12.0	12.3	12.2	12.3
15	8.9	8.8	8.8	10.6	10.4	10.5	12.3	11.9	12.2	12.4	12.2	12.3
16	9.1	8.8	8.9	10.7	10.4	10.5	12.3	11.9	12.2	12.4	12.2	12.3
17	9.1	8.6	8.8	10.6	10.3	10.5	12.4	12.0	12.3	12.4	12.2	12.3
18	9.1	8.8	8.9	10.7	10.3	10.4	12.4	12.3	12.3	12.6	12.3	12.4
19	9.2	8.9	9.0	10.6	10.3	10.5	12.8	12.4	12.6	12.4	12.2	12.3
20	9.3	8.9	9.1	10.7	10.3	10.4	13.1	12.6	12.8	12.3	12.2	12.3
21	9.4	8.9	9.0	10.7	10.2	10.5	12.7	12.5	12.6	12.4	12.2	12.3
22	9.2	8.9	9.0	11.2	10.3	10.5	12.9	12.6	12.8	12.3	12.2	12.2
23	9.1	8.9	9.0	10.6	10.3	10.5	12.9	12.4	12.5	12.4	12.2	12.3
24	9.2	8.9	9.0	10.5	10.3	10.4	12.7	12.4	12.5	12.3	12.2	12.2
25	9.1	8.6	8.9	10.8	10.3	10.6	12.6	12.4	12.5	12.3	12.2	12.2
26	9.2	8.6	8.9	10.8	10.3	10.6	12.9	12.4	12.6	12.4	12.2	12.3
27	9.0	8.6	8.8	11.1	10.4	10.7	12.8	12.5	12.6	12.6	12.2	12.4
28	9.2	8.6	8.9	11.1	10.6	10.9	12.8	12.4	12.6	12.5	12.3	12.4
29	9.5	9.1	9.3	11.1	10.6	10.9	12.6	12.3	12.5	12.4	12.2	12.3
30	9.6	9.2	9.4	10.8	10.6	10.7	12.6	12.3	12.5	12.3	12.1	12.2
31	9.7	9.3	9.5	---	---	---	12.5	12.3	12.4	12.3	12.2	12.2
MONTH	9.7	7.6	8.8	11.2	9.4	10.3	13.1	10.7	11.9	12.6	12.1	12.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.3	12.2	12.2	12.1	11.7	11.9	13.0	12.7	12.9	9.9	9.6	9.8
2	12.3	12.2	12.3	12.1	11.8	11.9	13.7	12.9	13.1	9.8	9.6	9.7
3	12.3	12.2	12.2	12.3	11.8	12.0	13.2	12.8	13.1	9.7	9.4	9.6
4	12.4	12.1	12.2	12.2	11.9	12.0	13.2	12.9	13.0	9.7	9.3	9.5
5	12.4	12.2	12.3	12.1	11.8	12.0	13.2	12.5	12.9	9.6	9.2	9.4
6	12.3	12.1	12.2	12.1	11.8	12.0	13.1	12.5	12.9	9.7	9.1	9.5
7	12.2	12.0	12.1	12.0	11.8	11.9	13.1	12.6	13.0	9.6	9.3	9.4
8	12.3	12.0	12.1	12.3	11.8	12.1	13.1	12.9	13.0	9.5	9.3	9.4
9	12.1	11.9	12.0	12.3	12.0	12.1	13.0	12.8	12.9	9.5	9.2	9.3
10	12.1	11.9	12.0	12.2	11.9	12.0	12.9	12.3	12.7	9.3	8.9	9.1
11	12.1	11.9	12.0	12.1	11.8	11.9	12.7	12.2	12.4	9.2	8.9	9.0
12	12.1	11.9	12.0	12.2	11.8	12.0	12.4	12.0	12.2	9.3	8.9	9.1
13	12.2	11.9	12.0	12.2	11.9	12.1	12.6	11.8	12.3	9.0	8.7	8.8
14	12.0	11.9	11.9	12.5	12.0	12.2	12.3	12.0	12.2	9.2	8.8	9.0
15	12.0	11.8	11.9	12.5	12.1	12.3	12.2	11.9	12.1	9.1	8.8	8.9
16	12.1	11.8	11.9	12.5	12.1	12.3	12.0	11.8	11.9	9.1	8.7	9.0
17	12.1	11.8	11.9	12.4	12.1	12.3	11.9	11.5	11.7	9.1	8.7	9.0
18	12.1	11.7	11.9	12.5	12.2	12.4	11.7	11.3	11.5	9.0	8.6	8.8
19	11.9	11.7	11.8	12.6	12.2	12.4	11.4	11.0	11.2	8.9	8.5	8.7
20	12.0	11.7	11.8	12.5	12.2	12.3	11.1	10.7	10.9	8.9	8.5	8.7
21	11.9	11.6	11.7	12.6	12.2	12.4	10.9	10.8	10.8	9.1	8.4	8.8
22	11.9	11.7	11.8	12.8	12.2	12.5	10.9	10.6	10.7	8.9	8.4	8.7
23	12.0	11.7	11.8	12.7	12.4	12.5	10.7	10.3	10.5	8.7	8.3	8.4
24	11.9	11.7	11.8	12.8	12.5	12.7	10.6	10.3	10.5	8.7	8.2	8.5
25	11.9	11.7	11.8	12.8	12.4	12.7	10.5	10.2	10.4	8.9	8.4	8.6
26	12.0	11.7	11.8	12.7	12.5	12.6	10.5	10.2	10.4	8.7	8.4	8.5
27	12.1	11.8	11.9	12.8	12.5	12.6	10.4	10.1	10.3	8.8	8.2	8.5
28	11.9	11.7	11.8	12.7	12.4	12.6	10.3	9.9	10.2	8.8	8.4	8.5
29	---	---	---	12.8	12.4	12.6	10.1	9.9	10.0	8.6	8.3	8.5
30	---	---	---	12.8	12.5	12.7	10.0	9.5	9.8	8.5	8.2	8.4
31	---	---	---	12.9	12.5	12.7	---	---	---	8.5	8.1	8.3
MONTH	12.4	11.6	12.0	12.9	11.7	12.3	13.7	9.5	11.7	9.9	8.1	8.9

STREAMS TRIBUTARY TO LAKE HURON

04137500 AU SABLE RIVER NEAR AU SABLE, MI—Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	8.1	8.3	7.5	6.9	7.2	8.1	6.0	6.9	7.7	6.4	7.1
2	8.8	8.2	8.4	7.3	6.7	7.1	8.0	6.3	7.0	7.5	6.2	7.0
3	8.8	8.1	8.4	7.1	6.6	6.8	7.8	6.4	6.9	7.2	6.4	6.9
4	8.8	8.1	8.4	6.9	6.6	6.8	8.4	6.1	6.9	8.1	6.3	6.9
5	8.6	8.1	8.4	7.1	6.7	6.9	7.9	6.5	6.9	8.3	6.3	7.0
6	8.3	8.0	8.1	7.3	6.7	7.0	7.6	6.5	6.9	9.4	6.7	7.4
7	8.2	7.7	8.0	7.3	6.7	7.0	8.1	6.2	7.0	---	---	---
8	8.1	7.7	7.9	7.3	6.7	7.0	8.0	6.5	7.4	---	---	---
9	8.2	7.7	7.9	7.3	6.8	7.0	8.2	6.3	6.8	7.8	7.0	7.3
10	8.0	7.6	7.8	7.3	6.7	6.9	7.3	6.3	6.8	7.8	7.0	7.3
11	7.9	7.5	7.8	7.2	6.5	6.8	7.5	6.3	6.8	8.0	7.0	7.3
12	8.0	7.5	7.7	7.2	6.4	6.7	7.5	6.4	6.9	7.8	7.1	7.3
13	7.6	7.3	7.5	7.0	6.3	6.6	7.5	6.4	6.9	7.7	7.1	7.3
14	7.6	7.2	7.4	7.0	6.3	6.6	7.5	6.5	7.0	7.5	7.1	7.3
15	7.4	7.1	7.2	7.7	6.3	6.9	8.1	6.5	7.0	7.8	7.1	7.3
16	7.4	7.0	7.2	7.5	6.9	7.2	8.0	6.4	7.1	7.5	7.1	7.2
17	7.2	6.9	7.1	7.3	6.9	7.1	8.8	6.3	7.3	7.6	7.0	7.2
18	7.2	6.9	7.1	7.3	6.6	6.9	7.9	6.1	6.9	7.6	7.0	7.2
19	7.3	6.8	7.0	7.4	6.5	6.9	8.3	6.3	7.3	7.5	7.0	7.2
20	7.3	6.8	7.0	7.3	6.4	6.7	6.7	6.2	6.4	7.7	6.9	7.2
21	7.3	6.7	7.0	7.2	6.3	6.6	6.8	6.2	6.5	7.9	6.9	7.3
22	7.4	6.8	7.1	8.4	6.4	7.1	6.6	6.1	6.3	7.5	7.0	7.1
23	7.2	6.8	7.0	7.9	6.2	7.0	6.9	6.2	6.5	7.6	7.0	7.2
24	7.4	6.9	7.1	7.5	6.2	6.8	7.2	6.3	6.8	7.8	7.2	7.4
25	7.3	6.7	7.0	7.2	6.2	6.7	7.2	6.2	6.8	7.4	7.1	7.2
26	7.3	6.7	6.9	7.7	6.2	6.7	7.2	6.1	6.6	7.4	6.9	7.2
27	7.4	6.8	7.1	7.2	6.2	6.5	7.4	6.0	6.7	7.6	7.1	7.3
28	7.7	6.9	7.2	7.1	6.3	6.6	7.7	6.1	6.9	7.4	7.2	7.3
29	7.5	6.8	7.2	7.0	6.2	6.6	7.8	6.4	7.0	7.6	7.3	7.4
30	7.4	6.9	7.2	7.4	6.3	6.8	7.3	6.6	6.9	7.7	7.4	7.5
31	---	---	---	7.4	5.9	6.6	7.4	6.3	7.0	---	---	---
MONTH	8.8	6.7	7.5	8.4	5.9	6.8	8.8	6.0	6.9	---	---	---

STREAMS TRIBUTARY TO LAKE HURON

04142000 RIFLE RIVER NEAR STERLING, MI

LOCATION.--Lat 44°04'21", long 84°01'12", in NE1/4 SW1/4 sec.5, T.19 N., R.4 E., Arenac County, Hydrologic Unit 04080101, on left bank 30 ft downstream from bridge on Melita Road, 2.8 mi north of Sterling, and 20 mi upstream from mouth.

DRAINAGE AREA.--320 mi^2, approximately.

PERIOD OF RECORD.--November 1905 to December 1908 (gage heights and discharge measurements only), October 1936 to current year. Monthly discharge only for some periods, published in WSP 1307. Published as Rifle River at Michigan Highway 70 near Sterling 1936-61.

REVISED RECORDS.--WSP 1437: 1937(M), 1939-40(M).

GAGE.--Water-stage recorder. Datum of gage is 649.48 ft above sea level. November 1905 to December 1908, nonrecording gage at site 400 ft downstream at different datum. Jan. 13, 1937 to Jan. 10, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Occasional regulation by dams upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	216	262	e327	e229	e273	1450	256	201	178	155	145
2	143	263	253	e429	e229	e270	1260	252	191	163	149	142
3	150	270	235	e475	e234	e268	1070	254	184	154	144	140
4	147	242	220	e521	e234	e277	917	247	180	165	161	139
5	146	238	226	e433	e234	e285	848	239	178	265	209	138
6	146	224	227	e435	e234	e309	779	231	191	247	198	137
7	143	204	300	e431	e266	e366	705	237	184	191	153	138
8	146	206	721	e325	e294	e408	618	232	215	168	146	153
9	206	226	574	e280	e275	e441	528	225	236	156	143	148
10	218	211	411	e292	e260	e441	465	228	335	149	140	140
11	172	206	398	e290	e247	e426	415	229	500	164	140	138
12	161	196	351	e322	e238	e384	369	220	549	156	146	138
13	158	189	310	e501	e252	e343	340	219	565	145	155	136
14	162	184	272	e635	e287	e328	317	262	633	148	148	160
15	167	182	256	e663	e404	e317	299	298	456	143	141	165
16	187	183	e239	e512	e334	e302	285	267	362	159	138	150
17	193	187	e215	e411	e293	e299	280	244	300	161	133	151
18	182	191	e218	e357	e268	e288	276	230	251	159	132	149
19	176	188	e220	e324	e255	e286	270	224	230	200	320	145
20	171	203	e245	e302	e257	e286	312	239	193	174	457	147
21	169	221	e247	e290	e278	e286	389	224	183	149	292	144
22	168	200	e258	e280	e287	e284	320	216	202	162	227	142
23	173	209	e258	e264	e257	e291	289	314	204	149	189	146
24	223	235	e258	e258	e255	e306	297	410	194	188	172	146
25	225	225	e256	e224	e255	e325	341	306	172	348	161	167
26	192	211	e258	e231	e248	402	376	245	156	417	156	823
27	184	244	e264	e229	e248	474	334	225	163	402	170	838
28	182	461	e264	e229	e262	607	305	224	161	237	170	552
29	257	403	e264	e229	---	867	286	240	197	190	157	498
30	295	288	e277	e229	---	1220	267	234	176	170	151	504
31	220	---	e328	e229	---	1510	---	215	---	159	147	---
TOTAL	5598	6906	9085	10957	7414	13169	15007	7686	7942	6016	5500	6859
MEAN	181	230	293	353	265	425	500	248	265	194	177	229
MAX	295	461	721	663	404	1510	1450	410	633	417	457	838
MIN	136	182	215	224	229	268	267	215	156	143	132	136
CFSM	0.56	0.72	0.92	1.10	0.83	1.33	1.56	0.77	0.83	0.61	0.55	0.71
IN.	0.65	0.80	1.06	1.27	0.86	1.53	1.74	0.89	0.92	0.70	0.64	0.80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2005, BY WATER YEAR (WY)

MEAN	236	290	283	252	288	554	621	401	289	194	180	202
MAX	741	826	579	538	741	1035	1160	1069	842	335	339	712
(WY)	1987	1993	1992	1973	1938	1991	1959	2004	1945	1969	1995	1986
MIN	142	160	156	150	138	206	262	175	124	126	122	124
(WY)	1964	1964	1964	2003	2003	1964	1945	1977	1964	1966	1964	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1937 - 2005	
ANNUAL TOTAL	136309		102139			
ANNUAL MEAN	372		280		(a)316	
HIGHEST ANNUAL MEAN					501	1991
LOWEST ANNUAL MEAN					166	1964
HIGHEST DAILY MEAN	2480	May 24	1510	Mar 31	4500	Mar 28 1950
LOWEST DAILY MEAN	132	Sep 24	132	Aug 18	98	Jul 30 1964
ANNUAL SEVEN-DAY MINIMUM	134	Sep 20	140	Sep 1	105	Jul 26 1964
MAXIMUM PEAK FLOW			(b)1560	Mar 31	(c)5340	Mar 28 1950
MAXIMUM PEAK STAGE			(d)8.50	Jan 14	13.74	Mar 28 1950
INSTANTANEOUS LOW FLOW			131	(f)	(g)75	Nov 22 1964
ANNUAL RUNOFF (CFSM)	1.16		0.874		0.988	
ANNUAL RUNOFF (INCHES)	15.85		11.87		13.43	
10 PERCENT EXCEEDS	756		441		558	
50 PERCENT EXCEEDS	233		235		230	
90 PERCENT EXCEEDS	146		147		150	

(a) Does not include water year 1937.
(b) Gage height 5.69 ft.
(c) From rating curve extended above 3,800 ft^3/s.
(d) Backwater from ice.
(e) Estimated.
(f) Part of each day Aug. 17, 18.
(g) Result of freezeup.

STREAMS TRIBUTARY TO LAKE HURON

04144500 SHIAWASSEE RIVER AT OWOSSO, MI

LOCATION.--Lat 43°00'54", long 84°10'52", in SW1/4 sec.12, T.7 N., R.2 E., Shiawassee County, Hydrologic Unit 04080203, on right bank on grounds of sewage-treatment plant, 1.5 mi north of Owosso.

DRAINAGE AREA.--538 mi^2.

PERIOD OF RECORD.--March 1931 to current year. Gage-height records for flood seasons collected in this vicinity 1904, 1910-30 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1307: 1949(M). WSP 1337: 1932, 1934, 1936-38, 1944.

GAGE.--Water-stage recorder. Datum of gage is 707.25 ft above sea level. Prior to Oct. 15, 1933, at site 1.5 mi upstream at datum 5.46 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated below approximately 800 ft^3/s by powerplant at Shiawasseetown prior to February 1953; occasional regulation at low stages since. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	182	718	820	e341	504	922	617	186	107	326	81
2	73	323	828	919	e341	479	870	533	177	108	168	100
3	72	279	737	1100	e341	439	802	450	156	100	86	77
4	68	318	678	968	328	397	715	422	138	127	100	56
5	67	373	665	974	316	535	661	392	138	217	127	49
6	65	357	615	938	335	546	557	353	122	170	125	46
7	63	366	770	856	420	1030	510	281	106	139	119	45
8	62	352	1020	927	590	1500	450	240	133	135	109	46
9	84	323	833	863	709	1140	459	258	106	116	104	48
10	105	294	787	769	621	920	416	249	97	99	91	44
11	109	262	880	736	621	908	370	241	84	88	81	43
12	109	231	854	976	633	814	264	310	92	80	87	43
13	93	182	820	2490	701	696	263	322	144	76	81	43
14	73	169	753	e2380	1030	649	273	323	177	72	78	41
15	81	192	714	e1940	1360	650	261	331	204	111	74	40
16	83	217	708	e1670	1680	587	247	360	242	156	72	45
17	86	204	689	e1470	1590	550	236	303	242	204	70	42
18	102	181	638	e1330	1370	482	227	351	288	205	68	44
19	111	174	412	e1150	1310	597	217	317	222	246	66	49
20	112	214	249	e1000	1400	830	217	292	218	213	66	47
21	108	216	259	e845	1260	861	209	265	203	216	65	45
22	108	196	347	726	1070	897	214	236	188	187	62	81
23	116	160	372	592	820	1010	241	226	153	169	61	107
24	119	172	352	576	694	916	291	211	114	188	62	71
25	120	204	e352	e569	625	978	420	202	94	188	59	107
26	124	205	e352	e554	585	967	669	167	96	203	58	221
27	126	358	e352	e446	541	944	649	153	96	208	57	135
28	127	613	e352	e390	571	1020	752	158	97	213	54	186
29	197	569	e352	e357	---	1000	708	164	103	234	57	182
30	174	593	e374	e357	---	982	674	202	97	227	54	155
31	168	---	634	e349	---	969	---	244	---	270	54	---
TOTAL	3172	8479	18466	30037	22203	24797	13764	9173	4513	5072	2741	2319
MEAN	102	283	596	969	793	800	459	296	150	164	88.4	77.3
MAX	197	613	1020	2490	1680	1500	922	617	288	270	326	221
MIN	62	160	249	349	316	397	209	153	84	72	54	40
CFSM	0.19	0.53	1.11	1.80	1.47	1.49	0.85	0.55	0.28	0.30	0.16	0.14
IN.	0.22	0.59	1.28	2.08	1.54	1.71	0.95	0.63	0.31	0.35	0.19	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	197	263	320	357	465	752	704	468	281	167	124	146
MAX	1442	985	922	1066	1728	1682	2060	1950	1051	868	578	922
(WY)	1982	1993	1976	1993	1938	1948	1947	1956	1989	1994	1992	1975
MIN	32.6	52.1	56.6	66.9	65.5	119	162	119	34.0	24.0	13.2	25.0
(WY)	1964	1964	1964	1940	1940	1964	1931	1958	1934	1934	1931	1931

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	160800		144736			
ANNUAL MEAN	439		397		355	
HIGHEST ANNUAL MEAN					629	1993
LOWEST ANNUAL MEAN					97.7	1964
HIGHEST DAILY MEAN	3970	May 24	2490	Jan 13	5920	Apr 6 1947
LOWEST DAILY MEAN	53	Sep 27	40	Sep 15	2.0	Jul 28 1934
ANNUAL SEVEN-DAY MINIMUM	55	Sep 24	42	Sep 11	7.7	Aug 11 1936
MAXIMUM PEAK FLOW			2770	Jan 13	6240	Apr 6 1947
MAXIMUM PEAK STAGE			7.25	Jan 13	10.35	Apr 6 1947
INSTANTANEOUS LOW FLOW					0.20	Jul 27 1934
ANNUAL RUNOFF (CFSM)	0.817		0.737		0.660	
ANNUAL RUNOFF (INCHES)	11.12		10.01		8.97	
10 PERCENT EXCEEDS	844		921		800	
50 PERCENT EXCEEDS	323		242		206	
90 PERCENT EXCEEDS	104		68		65	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04145000 SHIAWASSEE RIVER NEAR FERGUS, MI

LOCATION.--Lat 43°15'17", long 84°06'20", in SE 1/4 NW 1/4 sec.22, T.10 N., R.3 E., Saginaw County, Hydrologic Unit 04080203, on right bank at downstream side of bridge on Fergus Road, 1.2 mi east of Fergus, 1.8 mi upstream from Bear Creek, and 14 mi upstream from mouth.

DRAINAGE AREA.--637 mi^2.

PERIOD OF RECORD.--October 1939 to September 1984, October 1988 to September 1994, October 2001 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1337: 1940(M), 1941-42, 1943(M), 1944, 1945(M), 1946, 1947(M), 1948, 1950. WSP 1627: 1952, 1954(M), 1957.

GAGE.--Water-stage recorder. Datum of gage is 585.80 ft above sea level. Prior to Aug. 22, 1968, nonrecording gage at same site and datum. Prior to Oct. 1, 1970, at datum 2.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation at low stages by powerplant at Shiawasseetown prior to February 1953; occasional regulation at low stages since. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	175	779	e1080	e462	e710	1330	768	308	134	310	62
2	101	230	1170	e1300	e458	e683	1270	678	232	137	290	75
3	104	332	1030	e1460	e458	e649	1200	555	221	136	176	106
4	102	296	844	e1460	e458	e590	1070	483	199	130	107	93
5	99	348	788	1390	e438	e590	953	458	186	162	101	74
6	95	377	745	e1320	e497	e719	848	431	230	267	119	65
7	94	360	769	e1220	e551	e949	709	404	207	194	121	61
8	92	360	1440	e1260	e838	e1580	639	317	249	164	114	60
9	95	339	1220	e1260	e838	e1820	566	307	301	155	106	62
10	105	310	1010	e1150	e838	e1470	560	317	207	137	102	62
11	124	288	1100	e1030	e859	e1260	494	310	175	121	96	60
12	130	251	1170	1090	e859	e1160	432	320	161	110	89	57
13	135	224	1080	e3030	e927	e1110	332	390	171	104	89	55
14	126	179	1000	e3090	e1140	e977	342	420	269	99	87	55
15	114	175	864	e2490	e1570	e920	342	410	374	95	83	55
16	113	194	1010	e2120	e1880	e891	323	422	387	118	80	56
17	111	223	999	e1840	e2030	e819	306	431	405	181	77	60
18	109	216	e944	e1640	e1820	e741	294	374	376	209	74	59
19	116	197	e787	e1390	e1750	e697	281	428	396	214	73	56
20	122	198	e517	e1210	e1750	e927	274	396	311	270	73	60
21	126	226	e431	e1090	e1700	e1120	272	369	298	219	71	61
22	129	217	e502	e965	e1540	e1250	263	334	276	219	69	63
23	130	203	e573	e814	e1250	e1450	287	322	245	187	68	196
24	138	179	e588	e759	e1100	1440	332	305	204	191	68	131
25	140	199	e545	e704	e882	1460	450	287	164	217	68	98
26	138	209	555	e704	e748	1460	703	272	139	208	68	188
27	141	238	590	e704	e710	1410	858	231	138	227	66	251
28	139	662	608	e587	e710	1440	854	221	135	211	65	155
29	156	732	619	e513	---	1470	879	223	153	223	64	258
30	198	644	587	e484	---	1410	830	231	148	239	63	194
31	177	---	790	e467	---	1390	---	266	---	233	64	---
TOTAL	3795	8781	25654	39621	29061	34562	18293	11680	7265	5511	3101	2888
MEAN	122	293	828	1278	1038	1115	610	377	242	178	100	96.3
MAX	198	732	1440	3090	2030	1820	1330	768	405	270	310	258
MIN	92	175	431	467	438	590	263	221	135	95	63	55
CFSM	0.19	0.46	1.30	2.01	1.63	1.75	0.96	0.59	0.38	0.28	0.16	0.15
IN.	0.22	0.51	1.50	2.31	1.70	2.02	1.07	0.68	0.42	0.32	0.18	0.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)

MEAN	244	324	404	438	554	998	915	612	350	221	149	168
MAX	1921	1286	1274	1358	1843	2047	2564	2532	1212	1135	669	1271
(WY)	1982	1993	1976	1993	1976	1976	1947	1956	1989	1994	1992	1975
MIN	40.6	58.9	62.9	80.5	76.4	140	253	155	86.1	42.1	42.2	42.1
(WY)	1965	1965	1964	1940	1940	1964	1946	1958	1941	1965	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005	
ANNUAL TOTAL	210817		190212			
ANNUAL MEAN	576		521		(a)451	
HIGHEST ANNUAL MEAN					797	1993
LOWEST ANNUAL MEAN					118	1964
HIGHEST DAILY MEAN	4870	May 25	3090	Jan 14	7290	Apr 6 1947
LOWEST DAILY MEAN	92	Sep 27	55	Sep 13	29	Aug 8 1966
ANNUAL SEVEN-DAY MINIMUM	94	Sep 24	57	Sep 13	35	Aug 4 1966
MAXIMUM PEAK FLOW			(b)		(c)7500	Apr 6 1947
MAXIMUM PEAK STAGE			(d)12.08	Jan 14	(f)15.44	Mar 29 1960
INSTANTANEOUS LOW FLOW			54	(g)	27	Aug 8 1966
ANNUAL RUNOFF (CFSM)	0.904		0.818		0.708	
ANNUAL RUNOFF (INCHES)	12.31		11.11		9.62	
10 PERCENT EXCEEDS	1210		1260		1050	
50 PERCENT EXCEEDS	393		310		247	
90 PERCENT EXCEEDS	126		82		79	

(a) Does not include water year 1940.
(b) Not determined.
(c) Including overflow by-passing gage.
(d) Backwater from ice.
(e) Estimated.
(f) Present datum.
(g) Part of each day Sept. 14-16.

STREAMS TRIBUTARY TO LAKE HURON

04146000 FARMERS CREEK NEAR LAPEER, MI

LOCATION.--Lat 43°02'41", long 83°20'14", in sec.6, T.7 N., R.10 E., Lapeer County, Hydrologic Unit 04080204, on left bank 350 ft downstream from bridge on DeMille Boulevard, 2.0 mi west of Lapeer.

DRAINAGE AREA.--55.3 mi^2.

PERIOD OF RECORD.--October 1932 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 924: 1940. WSP 1084: 1942(M), 1943. WSP 1337: 1934-38, 1940(M), 1944(M), 1945, 1946(M), 1948-51(M). WSP 1727: 1952(M). WDR MI-78-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 12, 1938. Datum of gage is 805.79 ft above sea level. Prior to May 25, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Prior to 1941, occasional regulation caused by dam upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	35	54	56	e33	48	80	66	16	9.4	14	3.3
2	1.7	35	56	75	e29	45	78	64	14	8.3	11	3.3
3	1.3	31	59	92	34	49	73	59	13	7.1	9.5	3.1
4	1.2	32	62	102	33	46	68	53	12	6.4	8.2	2.8
5	1.4	32	61	104	34	47	63	46	12	6.4	7.0	2.6
6	1.6	32	59	95	39	43	57	41	13	5.9	5.9	2.5
7	1.5	31	68	101	40	57	52	36	12	5.7	5.2	2.5
8	1.5	30	69	83	44	58	47	33	12	5.3	4.5	3.0
9	2.1	27	82	75	51	81	42	28	10	4.9	3.9	3.0
10	12	25	96	68	58	112	39	24	10	4.6	3.6	2.7
11	12	24	97	62	58	99	37	22	10	4.3	3.3	2.6
12	9.2	23	93	68	62	88	33	20	9.0	3.7	3.7	2.6
13	7.0	21	93	90	56	77	30	21	13	3.3	4.1	3.2
14	5.7	19	88	124	64	68	27	26	17	3.1	4.5	3.2
15	6.8	18	83	e176	77	61	24	32	20	9.6	4.5	3.1
16	10	16	73	e200	e96	56	22	39	22	18	4.4	3.9
17	19	16	67	e190	e117	52	21	42	23	19	4.2	3.9
18	25	15	59	e138	e137	50	20	38	22	21	4.0	4.0
19	27	16	45	e103	e149	49	19	32	20	21	3.9	4.0
20	25	17	43	e67	e117	52	19	27	17	19	3.7	4.0
21	21	17	40	e60	93	56	19	24	15	17	3.4	2.9
22	18	18	38	e49	83	63	15	22	14	16	3.2	12
23	16	17	33	e41	77	68	16	26	12	14	2.9	18
24	19	18	32	e38	68	72	19	26	10	16	2.6	24
25	27	20	31	e39	60	75	29	27	9.3	17	2.5	27
26	30	21	33	e40	55	76	41	28	7.9	24	2.4	29
27	27	28	35	e40	47	78	45	26	6.9	25	3.0	25
28	24	32	34	e41	57	78	44	24	6.3	27	2.9	22
29	34	35	33	e46	---	78	51	23	8.1	26	3.0	20
30	40	39	32	e44	---	79	63	20	9.8	22	3.1	18
31	38	---	52	e41	---	80	---	18	---	18	3.3	---
TOTAL	466.1	740	1800	2548	1868	2041	1193	1013	396.3	408.0	145.4	261.2
MEAN	15.0	24.7	58.1	82.2	66.7	65.8	39.8	32.7	13.2	13.2	4.69	8.71
MAX	40	39	97	200	149	112	80	66	23	27	14	29
MIN	1.1	15	31	38	29	43	15	18	6.3	3.1	2.4	2.5
CFSM	0.27	0.45	1.05	1.49	1.21	1.19	0.72	0.59	0.24	0.24	0.08	0.16
IN.	0.31	0.50	1.21	1.71	1.26	1.37	0.80	0.68	0.27	0.27	0.10	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2005, BY WATER YEAR (WY)

MEAN	19.2	25.4	29.4	32.6	43.7	72.7	67.0	40.1	22.9	11.4	9.38	15.0
MAX	134	101	93.3	132	174	154	226	188	127	52.4	49.8	226
(WY)	1987	1986	1951	1973	1938	1948	1947	1956	1943	2004	1937	1985
MIN	2.36	3.84	3.99	3.58	5.62	14.2	19.2	7.49	2.12	1.60	1.48	0.89
(WY)	1939	1939	1964	1940	1940	1964	1946	1988	1988	1941	1944	1941

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1933 - 2005	
ANNUAL TOTAL	14933.2		12880.0			
ANNUAL MEAN	40.8		35.3		(a)32.3	
HIGHEST ANNUAL MEAN					71.7	1985
LOWEST ANNUAL MEAN					9.05	1964
HIGHEST DAILY MEAN	446	May 25	200	Jan 16	1300	Sep 9 1985
LOWEST DAILY MEAN	1.1	Oct 1	1.1	Oct 1	0.26	Sep 16 1970
ANNUAL SEVEN-DAY MINIMUM	1.4	Sep 29	1.4	Oct 1	0.50	Jul 3 1988
MAXIMUM PEAK FLOW			(b)		1380	Sep 9 1985
MAXIMUM PEAK STAGE			(c)17.64	Jan 16	(d)20.95	Sep 9 1985
INSTANTANEOUS LOW FLOW			1.1	(f)	0.14	(g)
ANNUAL RUNOFF (CFSM)	0.738		0.638		0.584	
ANNUAL RUNOFF (INCHES)	10.05		8.66		7.93	
10 PERCENT EXCEEDS	86		78		73	
50 PERCENT EXCEEDS	26		26		17	
90 PERCENT EXCEEDS	7.5		3.3		3.8	

(a) Does not include water year 1933.
(b) Not determined.
(c) Backwater from ice.
(d) From floodmark.
(e) Estimated.
(f) Part of each day Oct. 1, 2.
(g) Sept. 16, 18, 1970.

STREAMS TRIBUTARY TO LAKE HURON

04146063 SOUTH BRANCH FLINT RIVER NEAR COLUMBIAVILLE, MI

LOCATION.--Lat 43°09'34", long 83°21'03", in NE1/4 NE1/4 sec.36, T.9 N., R.9 E., Lapeer County, Hydrologic Unit 04080204, on right bank at upstream side of bridge on Columbiaville Road, 3.0 mi east of Columbiaville, and 3.2 mi upstream from confluence of North and South Branches.

DRAINAGE AREA.--221 mi^2.

PERIOD OF RECORD.--March 1980 to current year.

REVISED RECORDS.--WDR MI-00-1: 1999 (M).

GAGE.--Water-stage recorder. Elevation of gage is 765 ft above sea level, from topographic map. Jan. 9, 1996 to Jan. 15, 1997, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	111	262	e373	e136	200	358	281	84	61	59	32
2	32	140	375	486	e127	183	338	245	77	55	53	30
3	36	148	342	504	e128	182	307	220	70	50	47	30
4	33	144	285	509	e133	e192	270	200	68	48	44	28
5	33	177	247	457	e143	e199	242	184	68	52	44	27
6	32	149	219	393	e177	183	225	173	92	49	40	25
7	32	134	234	e338	e207	235	211	164	92	48	38	25
8	32	117	443	290	e268	e326	202	151	80	45	35	25
9	37	102	465	273	e309	e408	186	138	69	43	33	26
10	38	91	401	246	e307	401	173	124	79	41	32	26
11	46	84	389	226	e286	362	167	115	117	42	32	26
12	47	78	389	239	e264	299	153	108	103	40	35	25
13	49	75	360	484	e275	250	141	110	118	37	38	25
14	51	70	335	779	e342	229	129	147	181	35	39	25
15	54	66	291	790	e492	212	126	203	204	35	37	25
16	71	65	246	e575	618	201	122	210	176	57	35	27
17	80	66	224	e467	681	199	113	195	166	78	34	33
18	79	67	240	e434	575	203	106	170	147	90	34	32
19	77	69	173	e427	e492	200	102	147	125	96	41	33
20	73	80	e195	e411	e438	229	106	136	110	81	34	32
21	67	82	e173	e379	e353	263	106	124	97	63	33	30
22	61	79	e160	e335	304	288	104	115	92	60	30	35
23	59	78	e160	e288	261	322	109	128	79	55	29	182
24	58	77	e160	e261	231	313	157	170	72	68	28	134
25	62	91	e147	e291	222	319	226	164	66	96	27	101
26	71	106	e142	e298	209	322	393	148	57	108	27	99
27	73	132	e142	e266	203	322	493	118	55	128	29	91
28	69	225	e142	e211	208	326	477	115	52	108	47	79
29	101	220	e142	e180	---	341	399	111	65	92	33	82
30	142	206	e156	e165	---	353	333	104	65	78	32	71
31	119	---	e264	e145	---	363	---	92	---	66	33	---
TOTAL	1845	3329	7903	11520	8389	8425	6574	4810	2926	2005	1132	1461
MEAN	59.5	111	255	372	300	272	219	155	97.5	64.7	36.5	48.7
MAX	142	225	465	790	681	408	493	281	204	128	59	182
MIN	31	65	142	145	127	182	102	92	52	35	27	25
CFSM	0.27	0.50	1.15	1.68	1.36	1.23	0.99	0.70	0.44	0.29	0.17	0.22
IN.	0.31	0.56	1.33	1.94	1.41	1.42	1.11	0.81	0.49	0.34	0.19	0.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2005, BY WATER YEAR (WY)

MEAN	134	164	171	175	222	320	291	185	127	80.0	65.0	111
MAX	583	474	349	372	577	712	630	549	325	220	166	635
(WY)	1987	1986	1988	2005	2001	1985	1985	2004	1996	2004	1992	1985
MIN	35.9	50.8	58.0	40.3	36.8	99.5	114	82.4	31.2	38.2	26.8	24.2
(WY)	2003	1999	2003	2003	2003	2000	2004	1999	1988	2002	1999	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1980 - 2005	
ANNUAL TOTAL	67602		60319			
ANNUAL MEAN	185		165		169	
HIGHEST ANNUAL MEAN					295	1985
LOWEST ANNUAL MEAN					81.8	2003
HIGHEST DAILY MEAN	1420	May 25	790	Jan 15	2950	Sep 10 1985
LOWEST DAILY MEAN	30	Sep 25	25	Sep 6	14	Aug 27 1984
ANNUAL SEVEN-DAY MINIMUM	31	Sep 23	25	Sep 6	16	Jul 10 1988
MAXIMUM PEAK FLOW			885	Jan 14	(a)3090	Sep 9 1985
MAXIMUM PEAK STAGE			5.04	Jan 14	(b)9.61	Feb 26 1985
INSTANTANEOUS LOW FLOW			24	(c)	12	Jul 11 1988
ANNUAL RUNOFF (CFSM)	0.836		0.748		0.765	
ANNUAL RUNOFF (INCHES)	11.38		10.15		10.40	
10 PERCENT EXCEEDS	379		359		344	
50 PERCENT EXCEEDS	126		125		115	
90 PERCENT EXCEEDS	54		33		41	

(a) Gage height 9.60 ft.
(b) Backwater from ice.
(c) Part of each day Sept. 6-8, 12-15.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04147500 FLINT RIVER NEAR OTISVILLE, MI

LOCATION.--Lat 43°06'40", long 83°31'10", in SE1/4 sec.9, T.8 N., R.8 E., Genesee County, Hydrologic Unit 04080204, on left bank 20 ft downstream from bridge on State Highway 15, 1.5 mi downstream from Holloway Reservoir, 3.5 mi upstream from Powers-Cullen Drain, and 3.8 mi south of Otisville.

DRAINAGE AREA.--530 mi^2.

PERIOD OF RECORD.--October 1952 to September 1989, October 1990 to current year.

REVISED RECORDS.--WDR MI-78-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 721.39 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Holloway Reservoir, 1.5 mi upstream from station. From 1954 to 1991 annual mean discharge and runoff figures adjusted for change in contents in Holloway Reservoir. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	e171	499	547	129	506	959	174	230	148	122	85
2	102	e192	619	861	149	504	935	348	219	144	116	95
3	101	e205	696	1170	191	450	853	509	200	138	110	108
4	100	e562	649	1420	211	301	804	547	188	137	106	107
5	99	e607	632	1400	224	299	736	518	181	142	105	105
6	98	485	656	1230	238	300	502	477	182	140	104	105
7	97	374	655	1040	268	317	407	439	185	136	103	102
8	96	308	753	951	375	561	437	393	188	131	102	100
9	96	262	917	868	484	919	437	362	161	128	103	104
10	94	223	1020	782	516	981	424	326	139	126	95	104
11	93	209	982	721	505	1050	408	309	203	122	87	104
12	92	189	953	713	484	1020	328	293	293	122	88	101
13	91	175	848	838	480	926	195	272	346	120	88	91
14	92	164	775	1210	593	854	203	276	381	119	87	91
15	91	156	692	1590	888	674	226	329	435	118	88	90
16	91	151	574	1640	1360	476	227	390	499	117	88	90
17	90	149	586	1490	1540	476	233	422	528	116	87	90
18	88	159	513	1050	1530	475	230	412	547	116	87	92
19	86	173	459	867	e1330	474	219	390	550	117	86	91
20	84	164	347	865	1190	480	228	345	532	124	85	91
21	84	165	306	726	1040	482	229	300	494	125	84	91
22	84	166	337	612	898	515	223	283	455	126	86	92
23	84	163	342	428	619	693	233	297	371	123	86	91
24	84	177	306	502	444	849	283	308	312	131	85	90
25	84	191	281	702	579	999	395	327	277	146	85	91
26	84	195	270	672	538	1000	625	333	235	154	86	92
27	84	224	260	388	512	960	870	324	200	173	84	91
28	84	284	234	134	506	936	1070	305	180	171	80	91
29	e128	387	223	122	---	927	599	286	175	164	84	91
30	e140	420	234	122	---	939	138	266	165	151	85	91
31	e153	---	321	126	---	940	---	247	---	136	85	---
TOTAL	2976	7450	16939	25787	17821	21283	13656	10807	9051	4161	2867	2857
MEAN	96.0	248	546	832	636	687	455	349	302	134	92.5	95.2
MAX	153	607	1020	1640	1540	1050	1070	547	550	173	122	108
MIN	84	149	223	122	129	299	138	174	139	116	80	85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2005, BY WATER YEAR (WY)

MEAN	209	281	308	309	404	782	619	397	267	167	132	203
MAX	1688	911	900	1153	1323	1984	1549	1789	1668	839	369	1507
(WY)	1987	1993	1988	1973	2001	1976	1960	1956	1996	1994	1994	1986
MIN	59.4	19.1	14.0	49.7	66.4	76.5	175	43.6	20.3	47.4	36.3	42.3
(WY)	1966	1972	1972	1961	1964	1964	1964	1977	1977	1977	1977	1954

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1953 - 2005	
ANNUAL TOTAL	159154		135655			
ANNUAL MEAN	435		372		339	
HIGHEST ANNUAL MEAN					638	1985
LOWEST ANNUAL MEAN					82.7	1964
HIGHEST DAILY MEAN	3790	May 26	1640	Jan 16	7240	Jun 24 1996
LOWEST DAILY MEAN	84	Oct 20	80	Aug 28	2.1	Oct 11 1971
ANNUAL SEVEN-DAY MINIMUM	84	Oct 20	84	Oct 20	3.6	Dec 1 1971
MAXIMUM PEAK FLOW			1670	Jan 16	7470	Jun 24 1996
MAXIMUM PEAK STAGE			9.83	Jan 16	15.73	Jun 24 1996
INSTANTANEOUS LOW FLOW					2.1	(a)
10 PERCENT EXCEEDS	917		906		780	
50 PERCENT EXCEEDS	248		234		182	
90 PERCENT EXCEEDS	103		90		67	

(a) Oct. 11, 12, 1971.

STREAMS TRIBUTARY TO LAKE HURON

04148140 KEARSLEY CREEK NEAR DAVISON, MI

LOCATION.--Lat 43°02'01", long 83°34'53", in NE1/4 sec.12, T.7 N., R.7 E., Genesee County, Hydrologic Unit 04080204, on right bank 10 ft upstream from bridge on Davison Road, 1.4 mi downstream from Black Creek, and 3.3 mi west of Davison.

DRAINAGE AREA.--99.4 mi^2.

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR MI-78-1: Drainage area. WDR MI-85-1: 1968(M), 1973(M), 1975, 1982(P).

GAGE.--Water-stage recorder. Datum of gage is 747.39 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some diurnal fluctuation caused by small dams, and occasional diversion for irrigation upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	35	158	e146	e63	79	153	150	27	11	14	4.9
2	8.9	63	162	e168	e61	79	147	116	27	7.1	9.6	4.5
3	7.5	47	147	e220	e63	87	135	98	25	5.8	8.2	4.5
4	7.3	67	135	e203	e63	90	116	84	21	8.5	8.2	4.3
5	8.1	75	123	e200	e68	90	95	75	22	12	7.7	4.3
6	7.8	64	110	e176	e72	95	80	66	29	10	7.7	4.0
7	7.5	61	180	152	e82	e126	81	61	19	10	6.4	3.9
8	7.1	54	254	e142	e87	e139	79	57	19	19	5.7	6.8
9	12	47	187	e124	e90	e176	82	51	17	8.9	5.2	5.1
10	9.2	43	184	e116	e106	e186	70	48	15	7.0	5.3	4.6
11	9.0	38	195	e113	e119	e152	57	43	28	6.5	5.3	4.1
12	9.8	30	167	e127	e119	133	53	39	17	5.9	7.2	3.7
13	10	26	172	e269	e117	109	47	46	38	5.6	7.1	3.5
14	11	24	157	e357	e129	101	41	54	30	6.8	7.2	3.4
15	16	23	133	e306	e155	95	38	64	32	6.3	6.7	3.3
16	18	22	132	282	e191	83	35	75	43	17	6.0	5.6
17	17	23	108	e221	e231	87	33	73	42	12	5.5	4.3
18	16	23	98	e194	e258	85	31	66	41	14	5.0	4.6
19	19	26	e85	e165	e236	87	31	58	37	20	6.8	5.7
20	19	29	e77	e134	175	127	36	47	28	19	5.5	5.9
21	19	28	e71	e124	161	135	49	40	22	18	5.0	5.6
22	18	29	e71	e105	145	153	31	39	19	13	4.6	65
23	18	29	e63	e92	132	165	30	47	16	9.2	4.3	104
24	19	30	e60	e83	108	155	63	53	15	35	4.3	50
25	18	41	e60	e83	95	160	153	57	14	26	4.1	41
26	19	42	e60	e83	91	156	261	55	13	88	4.0	44
27	19	83	61	e83	91	153	252	47	13	57	7.2	40
28	19	104	60	e83	81	151	252	42	18	42	6.3	41
29	44	92	61	e83	---	155	225	38	23	36	5.6	36
30	33	98	62	e83	---	159	196	33	15	23	5.2	22
31	29	---	e97	e73	---	164	---	30	---	16	5.3	---
TOTAL	481.5	1396	3690	4790	3389	3912	2952	1852	725	575.6	196.2	539.6
MEAN	15.5	46.5	119	155	121	126	98.4	59.7	24.2	18.6	6.33	18.0
MAX	44	104	254	357	258	186	261	150	43	88	14	104
MIN	6.3	22	60	73	61	79	30	30	13	5.6	4.0	3.3
CFSM	0.16	0.47	1.20	1.55	1.22	1.27	0.99	0.60	0.24	0.19	0.06	0.18
IN.	0.18	0.52	1.38	1.79	1.27	1.46	1.10	0.69	0.27	0.22	0.07	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2005, BY WATER YEAR (WY)

MEAN	40.7	59.2	73.1	71.2	96.4	159	147	84.2	48.7	27.8	21.1	40.4
MAX	236	181	213	192	307	317	350	302	159	93.2	107	314
(WY)	1982	1986	1976	1973	2001	1973	1975	2004	1996	1994	1975	1985
MIN	8.01	13.8	15.3	10.9	10.5	41.2	45.9	24.7	7.39	5.48	4.63	3.31
(WY)	1999	1999	2003	2003	2003	2000	2004	1977	1988	1966	2001	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1966 - 2005	
ANNUAL TOTAL	31428.6		24498.9			
ANNUAL MEAN	85.9		67.1		72.2	
HIGHEST ANNUAL MEAN					122	1985
LOWEST ANNUAL MEAN					31.0	2003
HIGHEST DAILY MEAN	831	May 24	357	Jan 14	1370	Sep 9 1985
LOWEST DAILY MEAN	5.8	Sep 28	3.3	Sep 15	0.96	Jul 19 2002
ANNUAL SEVEN-DAY MINIMUM	6.4	Sep 25	4.0	Sep 9	1.2	Sep 8 2002
MAXIMUM PEAK FLOW			(a)		1500	Sep 9 1985
MAXIMUM PEAK STAGE			(b)8.93	Jan 14	(c)11.85	Sep 9 1985
INSTANTANEOUS LOW FLOW			2.4	Sep 15	0.62	Jul 19 2002
ANNUAL RUNOFF (CFSM)	0.864		0.675		0.726	
ANNUAL RUNOFF (INCHES)	11.76		9.17		9.87	
10 PERCENT EXCEEDS	176		159		165	
50 PERCENT EXCEEDS	50		44		40	
90 PERCENT EXCEEDS	12		5.8		10	

(a) Not determined.
(b) Backwater from ice.
(c) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04148500 FLINT RIVER NEAR FLINT, MI

LOCATION.--Lat 43°02'20", long 83°46'18", in SW1/4 sec.4, T.7 N., R.6 E., Genesee County, Hydrologic Unit 04080204, on left bank on grounds of sewage-treatment plant, 1.2 mi upstream from Pirnie Creek, and 5.0 mi downstream from Swartz Creek.

DRAINAGE AREA.--956 mi^2.

PERIOD OF RECORD.--September 1903 to March 1904 (gage heights only), August 1932 to current year. Gage-height records for flood seasons collected in this vicinity 1911-32, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 954: 1941. WSP 1337: 1933-34(M), 1935-37. WDR MI-78-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 678.80 ft above sea level (levels by the National Weather Service and City of Flint).

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation by small reservoirs upstream from station and by Holloway Reservoir. From 1954 to 1991 annual mean discharge and runoff figures adjusted for change in contents in Holloway Reservoir. Occasional diversion for industrial use. Since Dec. 17, 1967, flow contains up to 50 ft^3/s as sewage effluent which originates outside the basin. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	196	1490	1660	348	981	1730	1080	363	236	223	121
2	157	581	1520	2240	327	964	1680	858	349	227	213	118
3	139	507	1340	2550	343	915	1590	744	328	216	201	121
4	136	2530	1100	2580	418	851	1480	822	302	414	219	136
5	135	1410	1050	2410	455	771	1370	810	289	429	240	136
6	137	846	1140	2260	497	737	1260	778	327	264	175	136
7	141	621	1910	1990	570	857	1060	740	304	244	168	138
8	172	553	2400	1620	870	1390	883	699	295	261	167	205
9	248	491	1740	1490	1200	1690	797	642	296	230	e170	144
10	184	401	1730	1480	1160	1810	749	532	261	213	e165	136
11	175	387	2040	1350	1060	1830	708	534	253	210	161	133
12	165	353	1860	1790	1000	1830	673	514	327	199	177	134
13	147	328	1600	3250	962	1790	602	513	539	204	160	130
14	150	305	1520	4030	1310	1720	481	572	606	208	147	128
15	186	293	1320	3510	2060	1620	427	588	594	208	140	127
16	222	287	987	3000	2680	1470	423	586	686	333	141	149
17	201	296	1070	2760	3010	1270	430	601	695	305	135	128
18	171	269	983	2420	2990	1160	430	633	674	308	156	118
19	164	306	875	1710	2810	1120	425	620	655	277	250	126
20	155	346	728	1480	2630	1170	406	603	622	249	178	116
21	197	289	662	1390	2430	1230	380	559	572	320	127	119
22	182	299	588	1230	2140	1280	311	505	531	263	129	1450
23	185	334	597	1040	1890	1410	372	427	462	211	128	1280
24	191	378	593	844	1640	1490	492	489	409	643	128	362
25	181	457	543	968	1410	1560	688	496	381	473	131	322
26	182	440	520	1080	1240	1670	1060	492	336	987	127	425
27	183	832	507	947	1090	1730	1420	485	300	455	174	244
28	162	872	524	640	998	1730	1540	471	302	340	149	192
29	593	773	483	472	---	1740	1660	466	499	276	144	370
30	330	763	498	436	---	1780	1440	430	324	254	151	213
31	261	---	1140	414	---	1730	---	400	---	231	133	---
TOTAL	5967	16743	35058	55041	39538	43296	26967	18689	12881	9688	5107	7657
MEAN	192	558	1131	1776	1412	1397	899	603	429	313	165	255
MAX	593	2530	2400	4030	3010	1830	1730	1080	695	987	250	1450
MIN	135	196	483	414	327	737	311	400	253	199	127	116
CFSM	0.20	0.58	1.18	1.86	1.48	1.46	0.94	0.63	0.45	0.33	0.17	0.27
IN.	0.23	0.65	1.36	2.14	1.54	1.68	1.05	0.73	0.50	0.38	0.20	0.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2005, BY WATER YEAR (WY)

MEAN	343	476	554	606	812	1484	1273	793	492	281	237	339
MAX	2764	1734	1739	2008	2890	3514	4209	3575	2512	1294	868	2635
(WY)	1987	1993	1976	1973	2001	1985	1947	1956	1996	1994	1975	1986
MIN	60.6	69.9	70.8	84.8	87.6	187	335	110	81.3	56.1	31.3	45.9
(WY)	1936	1965	1964	1940	1940	1964	1946	1958	1934	1936	1936	1941

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1932 - 2005	
ANNUAL TOTAL	323908		276632			
ANNUAL MEAN	885		758		639	
HIGHEST ANNUAL MEAN					1258	1985
LOWEST ANNUAL MEAN					153	1964
HIGHEST DAILY MEAN	7720	May 24	4030	Jan 14	14500	Apr 6 1947
LOWEST DAILY MEAN	127	Sep 18	116	Sep 20	14	Aug 7 1934
ANNUAL SEVEN-DAY MINIMUM	136	Sep 16	126	Sep 15	23	Aug 14 1936
MAXIMUM PEAK FLOW			4870	Sep 22	(a)14900	Apr 6 1947
MAXIMUM PEAK STAGE			10.55	Sep 22	16.95	Sep 6 1985
INSTANTANEOUS LOW FLOW			90	Nov 1	9.0	Aug 7 1934
ANNUAL RUNOFF (CFSM)	0.926		0.793		0.669	
ANNUAL RUNOFF (INCHES)	12.60		10.76		9.08	
10 PERCENT EXCEEDS	1750		1730		1480	
50 PERCENT EXCEEDS	529		492		344	
90 PERCENT EXCEEDS	182		146		105	

(a) Gage height 16.35 ft.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04149000 FLINT RIVER NEAR FOSTERS, MI

LOCATION.--Lat 43°18'30", long 83°57'13", in SE 1/4 SE 1/4 sec.35, T.11 N., R.4 E., Saginaw County, Hydrologic Unit 04080204, on left bank 20 ft downstream from bridge on State Highway 13, 2.0 mi west of Fosters, and 6.5 mi downstream from Silver Creek.

DRAINAGE AREA.--1,153 mi^2.

PERIOD OF RECORD.--October 1939 to September 1984, October 1987 to September 1992, October 2001 to current year. Gage-height records for flood seasons collected in this vicinity 1910-20, 1922-27 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 954: 1941. WSP 1337: 1940, 1942, 1943-44(M), 1945, 1946-47(M), 1948-50. WDR MI-78: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above sea level, from topographic map. Prior to Oct. 1, 1969, nonrecording gage at site 2.2 mi upstream at datum 582.22 ft above sea level. Oct. 1, 1969 to Sept. 30, 1992, water-stage recorder at datum 5.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Prior to Oct. 1, 1992 records include flow of Birch Run. Some regulation by reservoirs upstream from the City of Flint. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1904 reached a stage of 18.4 ft, from National Weather Service data, site and datum then in use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	319	1200	e1890	e464	e1260	e2160	e1620	465	353	241	171
2	181	448	1960	2290	e436	e1210	e2130	e1250	411	272	234	162
3	197	634	1680	3210	e455	e1160	e2030	e1040	395	247	224	158
4	189	1180	1410	2810	e493	e1100	e1880	e1050	342	238	217	159
5	180	2330	1240	2680	e549	e1030	e1780	e1050	337	606	226	171
6	178	1210	1200	2450	e624	e945	e1660	1010	440	450	250	176
7	183	890	1460	2290	e662	e1030	e1460	945	376	300	203	177
8	183	683	3040	1940	e990	e1510	e1230	909	361	263	193	178
9	228	621	2380	1690	e1410	e1950	e1030	850	351	263	193	229
10	285	557	1870	1580	e1460	e2150	e969	660	350	241	195	189
11	230	477	2200	1620	e1350	e2210	e886	711	309	221	190	179
12	220	458	2220	1570	e1310	e2200	e844	697	337	224	198	176
13	213	422	2020	e3790	e1260	e2180	e818	649	597	218	211	181
14	199	393	1780	e4820	e1360	e2110	e661	e677	e952	210	208	181
15	205	372	1610	e4130	e1940	e2030	e522	e719	e855	205	189	172
16	250	355	1330	e3530	e2780	e1880	e522	e730	e871	211	182	174
17	284	347	1220	e3180	e3390	e1720	e522	e751	1000	319	180	190
18	257	354	1200	e2960	e3660	e1540	e522	e762	854	292	174	181
19	228	328	e1140	e2400	e3530	e1410	e522	e783	806	329	181	169
20	215	403	e954	e1850	e3320	e1440	e488	798	772	282	277	172
21	206	416	e861	e1740	e3030	e1500	e488	755	716	255	232	172
22	240	354	e783	e1600	e2740	e1560	e409	683	665	310	171	178
23	228	365	e777	e1400	e2430	e1660	461	562	607	249	168	2130
24	236	405	e764	e1150	e2180	e1830	e505	726	500	233	166	934
25	237	503	e719	e1150	e1870	e1910	e721	698	445	818	163	449
26	227	544	e671	e1270	e1680	e2000	e972	661	403	648	165	526
27	227	603	e632	e1190	e1470	e2100	e1480	645	345	1030	167	553
28	225	1360	e619	e930	e1330	e2130	e1760	612	320	469	187	333
29	252	1030	e594	e613	---	e2140	e1940	579	399	337	190	355
30	717	930	e685	e562	---	e2150	e2030	506	598	279	170	445
31	398	---	e1340	e549	---	e2180	---	534	---	259	192	---
TOTAL	7475	19291	41559	64834	48173	53225	33402	24622	16179	10631	6137	9620
MEAN	241	643	1341	2091	1720	1717	1113	794	539	343	198	321
MAX	717	2330	3040	4820	3660	2210	2160	1620	1000	1030	277	2130
MIN	177	319	594	549	436	945	409	506	309	205	163	158
CFSM	0.21	0.56	1.16	1.81	1.49	1.49	0.97	0.69	0.47	0.30	0.17	0.28
IN.	0.24	0.62	1.34	2.09	1.55	1.72	1.08	0.79	0.52	0.34	0.20	0.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)

MEAN	360	499	679	705	912	1841	1584	1018	601	343	289	340
MAX	2781	1433	2311	2348	3249	4351	4963	4160	2039	1470	1331	1781
(WY)	1982	1991	1976	1973	1976	1976	1947	1956	1943	1957	1975	1975
MIN	75.4	85.5	78.2	93.1	98.3	219	404	166	106	71.6	56.0	50.3
(WY)	1964	1965	1964	1940	1940	1964	1946	1958	1941	1941	1941	1941

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005	
ANNUAL TOTAL	401220		335148			
ANNUAL MEAN	1096		918		763	
HIGHEST ANNUAL MEAN					1460	1976
LOWEST ANNUAL MEAN					180	1964
HIGHEST DAILY MEAN	10700	May 24	4820	Jan 14	18200	Apr 7 1947
LOWEST DAILY MEAN	170	Sep 20	158	Sep 3	28	Aug 6 1941
ANNUAL SEVEN-DAY MINIMUM	179	Sep 17	168	Sep 1	35	Aug 1 1941
MAXIMUM PEAK FLOW			(a)		(b)19000	Apr 7 1947
MAXIMUM PEAK STAGE			(c)17.97	Jan 14	(d)21.59	May 24 2004
INSTANTANEOUS LOW FLOW			152	Sep 3	(f)27	Aug 6 1941
ANNUAL RUNOFF (CFSM)	0.951		0.796		0.662	
ANNUAL RUNOFF (INCHES)	12.94		10.81		8.99	
10 PERCENT EXCEEDS	2230		2130		1760	
50 PERCENT EXCEEDS	664		619		400	
90 PERCENT EXCEEDS	229		185		127	

(a) Not determined.
(b) Including flow by-passing gage.
(c) Backwater from ice.
(d) Present site and datum; peak stage at previous site and datum, 18.60 ft, Feb. 2, 1968.
(e) Estimated.
(f) Observed.

STREAMS TRIBUTARY TO LAKE HURON

04150500 CASS RIVER AT CASS CITY, MI

LOCATION.--Lat 43°35'03", long 83°10'34", in NE1/4 NE1/4 sec.4, T.13 N., R.11 E., Tuscola County, Hydrologic Unit 04080205, on left bank 600 ft downstream from bridge on Cemetery Road, 0.3 mi downstream from confluence of North and South Branches, and 1.1 mi south of Cass City.

DRAINAGE AREA.--359 mi^2.

PERIOD OF RECORD.--October 1947 to September 1997, August 2001 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1337: 1949-50. WSP 1727: 1948(M), 1950. WDR MI-78-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 697.92 ft above sea level. Prior to Nov. 14, 1952, nonrecording gage at site 600 ft upstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	35	135	1370	e86	e114	690	460	129	96	43	25
2	5.7	40	430	986	e86	e115	538	363	122	68	35	16
3	5.6	77	342	1640	e88	e116	427	305	113	52	31	12
4	5.6	87	215	1020	e90	e117	340	261	111	45	28	11
5	5.6	79	157	e613	e96	e122	278	227	119	45	25	9.0
6	5.6	98	128	e398	e108	131	242	198	563	45	23	7.9
7	5.6	79	139	e317	169	158	220	185	422	46	19	7.5
8	5.7	57	925	e293	e234	803	200	173	310	73	17	7.1
9	6.7	44	667	e253	e349	843	182	155	256	54	16	7.3
10	7.3	35	372	223	e325	531	168	142	193	42	15	7.1
11	8.4	31	325	199	e293	355	149	130	389	34	14	6.5
12	8.6	27	374	209	257	319	136	119	298	30	17	6.2
13	7.4	23	308	e723	e249	298	127	115	322	27	20	5.4
14	7.1	22	237	e2520	e421	243	118	161	633	24	20	5.4
15	8.7	21	e202	e3340	e1960	207	109	233	1080	23	19	5.5
16	16	20	e174	e2090	1720	191	102	252	967	137	16	6.2
17	21	19	e147	e1040	1130	217	94	211	798	578	15	6.3
18	24	19	e113	e405	692	313	91	180	624	279	14	6.3
19	18	20	e89	e349	e546	308	89	160	427	202	12	6.3
20	16	22	e77	e261	e442	362	94	150	306	168	12	6.3
21	14	24	e101	e234	e331	797	100	138	232	102	17	6.3
22	11	25	e108	e186	e228	1230	98	129	186	96	16	6.4
23	8.8	24	e101	e159	e159	1240	97	140	147	86	14	6.6
24	8.6	23	e84	e135	e150	774	130	202	120	76	13	6.4
25	9.0	28	e77	e122	e140	927	252	212	98	139	11	8.7
26	13	29	e74	e113	e133	821	881	181	79	142	9.8	26
27	13	40	e76	e108	e123	779	1510	164	68	157	10	50
28	11	154	e76	e103	e117	811	1140	149	58	133	12	44
29	18	221	e80	e97	---	928	842	147	98	95	13	40
30	33	149	e89	e93	---	911	616	142	120	73	23	39
31	55	---	e195	e88	---	849	---	134	---	54	32	---
TOTAL	388.2	1572	6617	19687	10722	15930	10060	5918	9388	3221	581.8	403.7
MEAN	12.5	52.4	213	635	383	514	335	191	313	104	18.8	13.5
MAX	55	221	925	3340	1960	1240	1510	460	1080	578	43	50
MIN	5.2	19	74	88	86	114	89	115	58	23	9.8	5.4
CFSM	0.03	0.15	0.59	1.77	1.07	1.43	0.93	0.53	0.87	0.29	0.05	0.04
IN.	0.04	0.16	0.69	2.04	1.11	1.65	1.04	0.61	0.97	0.33	0.06	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

MEAN	88.1	145	197	192	285	741	506	253	142	71.2	34.0	96.6
MAX	952	683	653	840	1100	2260	1296	1157	1087	629	201	2239
(WY)	1987	1993	1985	1952	1997	1985	1960	1996	1996	1994	1953	1986
MIN	2.58	7.23	6.26	5.16	6.36	59.8	100	27.5	12.9	5.04	2.48	1.33
(WY)	1949	1950	1959	1959	1959	1964	1964	1958	1964	1966	1963	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	83475.3		84488.7			
ANNUAL MEAN	228		231		(a)229	
HIGHEST ANNUAL MEAN					471	1985
LOWEST ANNUAL MEAN					27.6	1964
HIGHEST DAILY MEAN	5920	Mar 6	3340	Jan 15	11800	Sep 12 1986
LOWEST DAILY MEAN	5.1	Sep 29	5.2	Oct 1	0.50	Sep 26 1948
ANNUAL SEVEN-DAY MINIMUM	5.4	Sep 27	5.6	Oct 1	0.76	Sep 21 1948
MAXIMUM PEAK FLOW			(b)		12500	Sep 12 1986
MAXIMUM PEAK STAGE			(b)		(c)19.82	Sep 12 1986
INSTANTANEOUS LOW FLOW			5.0	(d)	0.50	Sep 26 1948
ANNUAL RUNOFF (CFSM)	0.635		0.645		0.637	
ANNUAL RUNOFF (INCHES)	8.65		8.75		8.66	
10 PERCENT EXCEEDS	478		647		549	
50 PERCENT EXCEEDS	78		114		66	
90 PERCENT EXCEEDS	10		8.8		8.1	

(a) Does not include water year 1948.
(b) Not determined.
(c) From floodmark.
(d) Oct. 1, Sept. 14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04151500 CASS RIVER AT FRANKENMUTH, MI

LOCATION.--Lat 43°19'40", long 83°44'53", in NW1/4 SE1/4 sec.27, T.11 N., R.6 E., Saginaw County, Hydrologic Unit 04080205, on right bank 2,000 ft downstream from dam in Frankenmuth, 3,600 ft upstream from highway bridge on Dehmel Road, 3.4 mi upstream from Dead Creek, and 17 mi upstream from mouth.

DRAINAGE AREA.--841 mi^2.

PERIOD OF RECORD.--February 1908 to March 1909, July 1935 to September 1936, June 1939 to current year.

REVISED RECORDS.--WSP 1307: 1936(M), 1940(M). WSP 1727: 1952. WSP 1911: 1952. WDR MI-78-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 583.96 ft above sea level (levels by Michigan Department of Natural Resources). February 1908 to March 1909, nonrecording gage at site 2,000 ft upstream at datum 1.81 ft lower. July 18 to Sept. 11, 1935, nonrecording gage, Sept. 12, 1935 to Sept. 30, 1936, and June 20, 1939 to Sept. 30, 1949, water-stage recorder, at site 3,600 ft downstream at datum 0.04 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Occasional regulation by dams upstream from station. Prior to 1950, regulation at low and medium flows by mill upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	135	486	1260	e286	e397	1750	1320	274	286	e145	57
2	42	198	571	2820	e288	e393	1460	1120	239	234	e130	64
3	40	213	897	2910	e293	e397	1220	981	218	188	e112	67
4	39	196	765	2800	e302	e406	1040	884	202	163	e96	60
5	40	234	546	1770	e326	e439	906	784	202	177	e88	55
6	40	215	431	1330	e350	492	809	683	462	178	e85	52
7	41	204	473	975	e452	706	725	645	1080	164	e85	51
8	38	190	939	935	958	1350	656	602	907	150	e80	50
9	43	160	1690	875	1120	1970	581	538	743	151	69	50
10	41	136	1270	761	1050	1800	513	484	668	142	65	48
11	39	123	1030	684	921	1360	466	435	1830	121	63	47
12	38	114	976	807	876	1070	424	388	1280	108	67	46
13	38	107	986	2560	790	944	374	392	1110	98	68	45
14	39	100	858	e6300	1180	824	347	700	1480	93	70	46
15	43	96	642	e6800	2730	691	329	940	1870	87	74	46
16	69	94	554	e5050	5140	603	307	919	2320	94	73	47
17	81	94	e466	e2800	4010	599	294	806	2090	103	69	48
18	70	100	e352	e1600	2280	717	281	647	1720	636	76	47
19	68	106	e263	e1100	1720	848	272	528	1310	400	69	46
20	71	113	e227	e861	1400	961	282	479	1000	250	62	45
21	71	117	e273	e747	1080	1280	308	424	794	196	61	44
22	68	114	e327	e622	997	2050	300	375	616	141	62	47
23	67	110	e280	e535	908	2560	311	439	472	121	62	53
24	65	112	e245	e464	746	2160	509	760	382	156	63	50
25	62	124	e225	e413	e597	1920	963	775	317	181	60	57
26	59	127	e216	e386	e492	2000	1990	622	264	219	58	86
27	58	159	e216	e358	e422	1850	3210	483	221	e270	58	76
28	58	280	e219	e343	e403	1860	3210	399	199	e240	57	97
29	79	378	e227	e327	---	1990	2150	349	197	e212	56	123
30	126	492	e250	e308	---	2050	1650	336	275	e190	59	120
31	136	---	561	e293	---	1960	---	312	---	e165	56	---
TOTAL	1809	4941	17461	49794	32117	38647	27637	19549	24742	5914	2298	1770
MEAN	58.4	165	563	1606	1147	1247	921	631	825	191	74.1	59.0
MAX	136	492	1690	6800	5140	2560	3210	1320	2320	636	145	123
MIN	38	94	216	293	286	393	272	312	197	87	56	44
CFSM	0.07	0.20	0.67	1.91	1.36	1.48	1.10	0.75	0.98	0.23	0.09	0.07
IN.	0.08	0.22	0.77	2.20	1.42	1.71	1.22	0.86	1.09	0.26	0.10	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2005, BY WATER YEAR (WY)

MEAN	223	324	421	463	683	1618	1128	676	399	190	105	218
MAX	2637	1374	1335	2185	2790	4943	3122	2715	3217	1884	523	5000
(WY)	1987	1993	1985	1973	2001	1976	1947	1996	1996	1994	1953	1986
MIN	31.7	43.1	50.7	45.1	55.6	179	202	104	60.4	20.4	20.1	23.5
(WY)	1947	1965	1940	1959	1959	1964	1946	1941	1964	1936	1944	1941

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1908 - 2005	
ANNUAL TOTAL	215057		226679			
ANNUAL MEAN	588		621		533	
HIGHEST ANNUAL MEAN					1063	1985
LOWEST ANNUAL MEAN					96.6	1964
HIGHEST DAILY MEAN	10500	Mar 7	6800	Jan 15	21700	Sep 12 1986
LOWEST DAILY MEAN	38	Oct 8	38	Oct 8	(a)1.5	Aug 6 1944
ANNUAL SEVEN-DAY MINIMUM	39	Oct 8	39	Oct 8	4.4	Jul 6 1936
MAXIMUM PEAK FLOW			7070	Jan 15	22200	Sep 12 1986
MAXIMUM PEAK STAGE			(b)17.90	Jan 15	27.52	Sep 12 1986
INSTANTANEOUS LOW FLOW			37	(c)		
ANNUAL RUNOFF (CFSM)	0.699		0.738		0.634	
ANNUAL RUNOFF (INCHES)	9.51		10.03		8.61	
10 PERCENT EXCEEDS	1200		1700		1240	
50 PERCENT EXCEEDS	206		308		195	
90 PERCENT EXCEEDS	57		56		50	

(a) Approximately.
(b) From floodmark.
(c) Part of each day Oct. 12, 13.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04152238 SOUTH BRANCH TOBACCO RIVER NEAR BEAVERTON, MI

LOCATION.--Lat 43°52'01", long 84°32'43", in SE1/4 NE1/4 sec.16, T.17 N., R.2 W., Gladwin County, Hydrologic Unit 04080201, on left bank 40 ft upstream from bridge on Grout Road, 3.0 mi upstream from Ross Lake, and 3.2 mi southwest of Beaverton.

DRAINAGE AREA.--160 mi^2.

PERIOD OF RECORD.--January 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 709.92 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	115	142	e215	e97	e114	870	108	76	66	72	50
2	66	117	142	e247	e99	e114	614	106	73	59	67	47
3	70	146	133	e258	e101	e114	414	105	70	55	66	49
4	69	122	121	e251	e103	e113	316	104	68	56	66	50
5	68	118	122	e230	e105	e113	263	100	69	68	101	49
6	69	108	128	e171	e106	e117	247	97	69	75	96	49
7	70	96	174	e160	e136	e126	233	100	67	67	74	49
8	71	89	521	e143	e181	e137	210	103	67	59	66	54
9	80	83	572	e135	e144	e140	186	99	65	55	61	58
10	88	80	321	e134	e132	e138	171	94	64	53	58	54
11	74	79	245	e131	e125	e138	161	91	63	50	57	52
12	67	78	210	e137	e123	e135	149	90	62	50	58	56
13	62	75	190	e319	e123	e131	139	90	68	53	60	55
14	62	73	e127	e598	e184	e126	131	119	118	56	58	50
15	63	72	e119	e531	e226	e120	126	133	102	52	55	57
16	67	72	e107	e331	e203	e117	121	119	87	49	53	55
17	71	74	e96	e236	e177	e118	118	107	79	57	54	62
18	70	76	e95	e168	e163	e118	116	100	71	53	51	63
19	69	76	e95	e145	e152	e119	117	95	70	54	62	59
20	68	81	e93	e136	e143	e119	124	101	67	49	87	62
21	68	97	e91	e124	e138	e119	147	103	74	50	81	60
22	68	90	e95	e117	e133	e119	132	93	63	50	71	57
23	69	82	e95	e110	e129	e124	122	106	58	47	65	61
24	122	80	e95	e99	e122	e142	122	109	64	54	62	62
25	131	81	e95	e94	e118	195	129	99	58	83	58	68
26	96	81	e97	e90	e115	258	133	91	58	139	54	168
27	83	89	e99	e89	e114	315	125	87	64	235	54	275
28	78	213	e99	e89	e114	391	122	83	58	e150	66	129
29	103	241	e107	e89	---	493	118	82	56	87	59	130
30	208	164	e114	e92	---	548	112	86	60	90	51	141
31	152	---	e148	e95	---	715	---	82	---	80	53	---
TOTAL	2566	3048	4888	5764	3806	5886	6088	3082	2088	2201	1996	2231
MEAN	82.8	102	158	186	136	190	203	99.4	69.6	71.0	64.4	74.4
MAX	208	241	572	598	226	715	870	133	118	235	101	275
MIN	62	72	91	89	97	113	112	82	56	47	51	47
CFSM	0.52	0.64	0.99	1.16	0.85	1.19	1.27	0.62	0.43	0.44	0.40	0.46
IN.	0.60	0.71	1.14	1.34	0.88	1.37	1.42	0.72	0.49	0.51	0.46	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2005, BY WATER YEAR (WY)

MEAN	98.1	138	122	108	127	215	209	159	117	70.5	71.2	70.9
MAX	202	364	253	186	213	371	478	415	282	92.3	86.6	127
(WY)	1991	1993	1992	2005	2000	2004	1991	2004	1996	1992	1996	1992
MIN	56.2	62.7	61.2	49.9	43.8	86.5	115	77.6	57.2	47.9	52.2	41.5
(WY)	2004	2000	1990	2003	2003	2003	1987	1999	1988	2001	1999	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1987 - 2005	
ANNUAL TOTAL	55232		43644			
ANNUAL MEAN	151		120		126	
HIGHEST ANNUAL MEAN					184	1991
LOWEST ANNUAL MEAN					75.4	2003
HIGHEST DAILY MEAN	1320	Mar 6	870	Apr 1	1340	Apr 16 1991
LOWEST DAILY MEAN	35	Aug 25	47	Jul 23	33	Sep 7 2003
ANNUAL SEVEN-DAY MINIMUM	58	Aug 5	49	Sep 1	33	Sep 7 2003
MAXIMUM PEAK FLOW			(a)924	Apr 1	(b)1450	Apr 16 1991
MAXIMUM PEAK STAGE			(c)9.78	Jan 14	(c)12.75	Mar 6 2004
INSTANTANEOUS LOW FLOW			46	(d)	30	Aug 25 2004
ANNUAL RUNOFF (CFSM)	0.943		0.747		0.790	
ANNUAL RUNOFF (INCHES)	12.84		10.15		10.74	
10 PERCENT EXCEEDS	255		198		224	
50 PERCENT EXCEEDS	92		96		90	
90 PERCENT EXCEEDS	63		56		56	

(a) Gage height 9.30 ft.
(b) Gage height 10.74 ft.
(c) Backwater from ice.
(d) Part of each day July 24, Sept. 2.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04154000 CHIPPEWA RIVER NEAR MOUNT PLEASANT, MI

LOCATION.--Lat 43°37'32", long 84°42'28", in NW1/4 NW1/4 sec.8, T.14 N., R.3 W., Isabella County, Hydrologic Unit 04080202, on right bank 12 ft downstream from bridge on South Leaton Road, 3.8 mi northeast of Mount Pleasant, and 36 mi upstream from mouth.

DRAINAGE AREA.--416 mi^2.

PERIOD OF RECORD.--October 1930 to September 1931, October 1932 to current year. Gage-height records for flood seasons collected in this vicinity 1910-27, are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 744: Drainage area. WSP 1337: 1931, 1933-40, 1945, 1948-49.

GAGE.--Water-stage recorder. Datum of gage is 710.38 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Oct. 21, 1938, nonrecording gage at site 30 ft upstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diurnal fluctuation below 750 ft^3/s caused by powerplant at Mount Pleasant prior to 1962, occasional regulation at low flow since. Since July 30, 1968, occasional regulation by control structures on lake outlets. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	344	423	549	e306	318	1460	297	222	235	228	145
2	146	380	413	599	e306	315	1410	291	219	231	203	141
3	146	377	381	649	e306	315	1320	280	216	217	189	134
4	144	374	359	605	e310	e312	1140	271	216	228	229	129
5	137	375	359	566	e317	296	980	263	219	243	277	127
6	138	350	359	513	e320	307	868	256	229	239	277	126
7	136	324	451	e450	e368	376	791	267	225	219	271	128
8	143	301	915	406	e593	575	729	266	222	204	238	159
9	177	284	989	387	422	603	670	263	221	191	216	164
10	178	273	911	381	379	486	618	257	217	176	199	148
11	182	264	843	372	351	428	571	253	215	166	185	143
12	178	255	761	389	341	402	524	245	214	159	200	142
13	167	249	697	865	339	365	480	254	442	157	197	138
14	169	242	622	1340	508	337	446	285	495	159	186	148
15	179	235	562	e924	872	327	421	317	390	154	175	141
16	186	231	498	e734	670	314	399	319	331	151	168	141
17	187	233	466	e606	581	304	378	306	294	153	163	148
18	185	235	440	e527	e456	299	364	290	273	195	159	153
19	182	234	e314	e437	e419	298	349	280	261	208	166	153
20	181	259	e313	e418	392	303	350	275	253	183	188	147
21	182	265	e312	e390	e374	297	353	272	241	164	194	138
22	181	265	e316	e396	369	300	345	273	234	168	192	143
23	200	263	e312	e381	353	329	331	274	221	151	184	145
24	240	257	e311	e375	334	329	329	266	214	253	172	140
25	309	263	e309	e370	325	425	332	260	207	257	166	183
26	306	261	e301	e359	314	531	334	253	209	398	162	370
27	284	287	e303	e348	298	625	324	249	215	413	168	352
28	264	439	e303	e332	301	794	322	239	218	389	162	350
29	323	464	e303	e322	---	969	314	236	243	347	155	371
30	356	440	e338	e306	---	1030	304	233	228	294	149	331
31	372	---	450	e296	---	1250	---	228	---	254	148	---
TOTAL	6301	9023	14634	15592	11224	14159	17556	8318	7604	6956	5966	5378
MEAN	203	301	472	503	401	457	585	268	253	224	192	179
MAX	372	464	989	1340	872	1250	1460	319	495	413	277	371
MIN	136	231	301	296	298	296	304	228	207	151	148	126
CFSM	0.49	0.72	1.13	1.21	0.96	1.10	1.41	0.65	0.61	0.54	0.46	0.43
IN.	0.56	0.81	1.31	1.39	1.00	1.27	1.57	0.74	0.68	0.62	0.53	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	249	304	304	281	333	567	577	398	288	194	174	221
MAX	1058	836	627	655	1401	1709	1204	980	711	694	585	1682
(WY)	1987	1986	1992	1973	1938	1976	1967	2004	1943	1969	1972	1986
MIN	117	151	144	112	124	204	231	175	117	77.3	70.6	97.7
(WY)	1947	1939	1931	1945	1940	1937	1945	1977	1941	1936	1931	1931

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	144371		122711			
ANNUAL MEAN	394		336		324	
HIGHEST ANNUAL MEAN					585	1976
LOWEST ANNUAL MEAN					163	1931
HIGHEST DAILY MEAN	2120	Mar 7	1460	Apr 1	6210	Sep 12 1986
LOWEST DAILY MEAN	132	Aug 8	126	Sep 6	19	Aug 16 1936
ANNUAL SEVEN-DAY MINIMUM	134	Aug 6	133	Sep 1	49	Aug 10 1936
MAXIMUM PEAK FLOW			1480	Apr 1	6660	Sep 12 1986
MAXIMUM PEAK STAGE			7.14	Apr 1	(a)15.58	Sep 12 1986
INSTANTANEOUS LOW FLOW			122	(b)	12	Aug 18 1945
ANNUAL RUNOFF (CFSM)	0.948		0.808		0.779	
ANNUAL RUNOFF (INCHES)	12.91		10.97		10.58	
10 PERCENT EXCEEDS	785		573		583	
50 PERCENT EXCEEDS	288		296		245	
90 PERCENT EXCEEDS	148		155		134	

(a) From floodmark.
(b) Part of each day Sept. 6, 7.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04155000 PINE RIVER AT ALMA, MI

LOCATION.--Lat 43°22'46", long 84°39'20", in SW1/4 SE1/4 sec.34, T.12 N., R.3 W., Gratiot County, Hydrologic Unit 04080202, on right bank 270 ft downstream from Superior Street Bridge in Alma, 0.6 mi downstream from municipal reservoir, and 38 mi upstream from mouth.

DRAINAGE AREA.--288 mi^2.

PERIOD OF RECORD.--October 1930 to current year. Gage-height records for flood seasons collected in this vicinity 1910-28 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 744: Drainage area. WSP 1307: 1945(M). WSP 1337: 1931, 1932-34(M), 1936, 1939, 1945, 1949.

GAGE.--Water-stage recorder. Datum of gage is 718.37 ft above sea level. Prior to Dec. 10, 1930, nonrecording gage at Superior Street Bridge at different datum. Dec. 10, 1930 to June 15, 1938, nonrecording gage at site 70 ft downstream from bridge, and June 16 to Oct. 25, 1938, nonrecording gage at bridge at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by dam 0.6 mi upstream from station, and by variable backwater from powerplant at St. Louis, 5.2 mi downstream. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	221	394	282	255	257	1310	255	158	132	144	103
2	98	240	329	349	257	248	1280	237	144	115	118	98
3	96	212	285	418	260	244	1140	215	137	133	96	97
4	95	246	266	436	259	223	940	201	147	139	113	98
5	94	245	252	449	241	235	786	197	171	139	141	100
6	93	211	246	447	236	268	659	202	186	151	166	102
7	91	198	343	311	292	344	587	204	139	163	151	104
8	98	173	539	259	347	505	526	195	140	142	120	106
9	115	155	501	295	311	455	481	192	127	116	100	111
10	105	139	571	339	348	363	429	195	111	101	88	128
11	109	143	660	330	355	368	380	191	96	113	94	135
12	117	147	646	338	281	386	343	187	117	125	124	113
13	105	135	555	1220	285	328	338	219	377	119	145	88
14	94	122	477	e1100	577	259	296	276	652	112	191	94
15	107	107	383	e877	713	244	261	297	698	104	144	114
16	121	103	346	e708	591	252	246	301	706	102	122	139
17	94	120	293	e525	617	238	240	269	608	111	110	138
18	90	134	307	e445	599	230	236	228	445	134	121	135
19	92	146	284	e345	421	227	228	207	285	154	134	133
20	95	133	155	e330	388	223	227	198	226	139	140	128
21	97	126	162	e344	317	220	234	194	204	117	133	119
22	99	139	201	e317	236	266	270	186	179	108	122	124
23	115	128	243	e288	258	367	292	174	158	117	109	110
24	104	138	253	e267	280	325	265	173	138	162	114	140
25	101	153	e233	e243	254	455	288	192	130	193	123	173
26	149	142	e201	e223	240	460	306	202	124	281	131	152
27	147	182	204	e222	229	566	282	171	118	258	130	207
28	126	259	203	e206	202	651	291	141	128	294	123	266
29	169	303	191	e180	---	748	263	131	148	234	115	252
30	136	320	186	e182	---	887	262	152	154	196	110	212
31	169	---	266	e200	---	1190	---	172	---	161	104	---
TOTAL	3414	5220	10175	12475	9649	12032	13686	6354	7151	4665	3876	4019
MEAN	110	174	328	402	345	388	456	205	238	150	125	134
MAX	169	320	660	1220	713	1190	1310	301	706	294	191	266
MIN	90	103	155	180	202	220	227	131	96	101	88	88
CFSM	0.38	0.60	1.14	1.40	1.20	1.35	1.58	0.71	0.83	0.52	0.43	0.47
IN.	0.44	0.67	1.31	1.61	1.25	1.55	1.77	0.82	0.92	0.60	0.50	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	161	208	214	198	245	466	427	293	194	111	98.0	136
MAX	894	574	488	680	997	1214	1054	767	575	420	276	1364
(WY)	1987	1993	1983	1973	1938	1976	1967	2004	1989	1994	1994	1986
MIN	66.4	82.6	78.4	66.6	72.6	161	159	109	50.8	35.6	34.7	46.7
(WY)	1939	1931	1940	1945	1940	1937	1945	1949	1934	1934	1936	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	102738		92716			
ANNUAL MEAN	281		254		229	
HIGHEST ANNUAL MEAN					398	1986
LOWEST ANNUAL MEAN					97.8	1931
HIGHEST DAILY MEAN	1730	Mar 6	1310	Apr 1	4960	Sep 12 1986
LOWEST DAILY MEAN	76	Sep 18	88	Aug 10	0.40	Sep 6 1964
ANNUAL SEVEN-DAY MINIMUM	90	Sep 13	94	Oct 1	10	Jul 6 1988
MAXIMUM PEAK FLOW			1570	Jan 13	5160	Sep 12 1986
MAXIMUM PEAK STAGE			6.98	Jan 13	(a)12.82	Sep 12 1986
INSTANTANEOUS LOW FLOW			70	Sep 14	(b)0.40	Sep 6 1964
ANNUAL RUNOFF (CFSM)	0.975		0.882		0.795	
ANNUAL RUNOFF (INCHES)	13.27		11.98		10.81	
10 PERCENT EXCEEDS	641		467		469	
50 PERCENT EXCEEDS	170		201		154	
90 PERCENT EXCEEDS	101		105		70	

(a) From floodmark.
(b) Caused by closing dam during construction of waterworks.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04155500 PINE RIVER NEAR MIDLAND, MI

LOCATION.--Lat 43°33'52", long 84°22'09", in SW1/4 NW1/4 sec.4, T.13 N., R.1 E., Midland County, Hydrologic Unit 04080202, on left bank at downstream side of bridge on Meridian Road, 7.2 mi southwest of Midland, and 7.8 mi upstream from Chippewa River.

DRAINAGE AREA.--390 mi^2, approximately.

PERIOD OF RECORD.--May 1934 to September 1938, February 1948 to September 1997, October 2000 to current year.

REVISED RECORDS.--WSP 1207: Drainage area. WSP 1307: 1935(M). WSP 1337: 1936-38, 1948-49.

GAGE.--Water-stage recorder. Datum of gage is 623.94 ft above sea level. Prior to Sept. 30, 1938, nonrecording gage at same site at datum 5.55 ft lower. Feb. 3, 1948 to Dec. 13, 1951, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Regulation at low and medium flows by hydroelectric powerplant at St. Louis. Some diversion upstream from station for irrigation. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	134	306	e286	e276	e307	1540	250	151	147	153	173
2	88	222	498	e370	e316	e328	1420	247	144	140	148	146
3	85	275	387	e452	e309	e354	1330	244	145	105	145	139
4	94	217	340	e496	e309	e362	1160	229	125	86	130	125
5	92	252	342	e515	e306	e376	900	204	137	112	105	124
6	101	268	346	e524	e306	e385	859	182	174	117	107	124
7	97	209	345	e423	e336	e438	651	194	244	113	162	125
8	95	197	869	e288	e413	e577	635	210	230	123	191	127
9	101	162	705	e328	e413	e730	568	200	200	126	157	131
10	110	158	565	e357	e423	e583	502	185	195	116	146	132
11	125	116	719	e373	e450	e531	447	185	197	78	103	132
12	99	111	e690	e366	e377	e544	414	184	132	55	110	187
13	119	127	e613	e1800	e358	e530	305	194	192	62	206	212
14	123	126	e539	2340	e537	e431	363	244	1320	90	110	211
15	106	126	e463	1540	e756	e326	332	356	978	93	274	145
16	84	124	e392	e1020	e787	e301	278	353	900	88	256	100
17	119	84	e337	e820	e801	e289	250	343	787	89	216	150
18	126	94	e311	e673	e753	e289	248	320	689	84	150	178
19	99	102	e311	e454	e639	e289	246	252	520	100	131	161
20	93	162	e216	e409	e547	e289	254	248	233	125	132	152
21	93	166	e205	e392	e471	e289	244	223	221	137	181	143
22	93	139	e205	e392	e388	e338	242	222	215	129	209	145
23	97	163	e256	e384	e346	e410	250	227	192	88	212	218
24	128	135	e273	e336	e336	e486	357	218	179	104	181	127
25	213	98	e248	e298	e357	e573	272	165	141	170	123	139
26	59	129	e220	e278	e371	e659	293	159	136	247	124	400
27	117	143	e209	e270	e336	787	366	199	129	413	145	242
28	142	332	e209	e241	e352	1080	265	209	125	256	209	232
29	152	277	e202	e239	---	1090	314	177	105	381	204	463
30	228	356	e202	e217	---	1160	268	116	115	248	198	346
31	155	---	e276	e236	---	1320	---	91	---	219	179	---
TOTAL	3518	5204	11799	17117	12369	16451	15573	6830	9251	4441	5097	5429
MEAN	113	173	381	552	442	531	519	220	308	143	164	181
MAX	228	356	869	2340	801	1320	1540	356	1320	413	274	463
MIN	59	84	202	217	276	289	242	91	105	55	103	100
CFSM	0.29	0.44	0.98	1.42	1.13	1.36	1.33	0.56	0.79	0.37	0.42	0.46
IN.	0.34	0.50	1.13	1.63	1.18	1.57	1.49	0.65	0.88	0.42	0.49	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2005, BY WATER YEAR (WY)

MEAN	222	271	297	265	349	681	604	383	259	149	136	194
MAX	1238	784	647	865	1356	1725	1549	1125	900	655	421	2034
(WY)	1987	1993	1983	1973	1938	1976	1967	2004	1989	1994	1972	1986
MIN	69.8	94.8	96.9	70.5	87.2	207	212	106	43.9	35.5	37.4	54.5
(WY)	2004	1950	1963	1977	2003	1964	1963	1958	1934	1934	1936	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1934 - 2005	
ANNUAL TOTAL	133929		113079			
ANNUAL MEAN	366		310		317	
HIGHEST ANNUAL MEAN					541	1986
LOWEST ANNUAL MEAN					150	1963
HIGHEST DAILY MEAN	3350	Mar 6	2340	Jan 14	8750	Sep 12 1986
LOWEST DAILY MEAN	36	Aug 11	55	Jul 12	7.8	Jul 2 1988
ANNUAL SEVEN-DAY MINIMUM	63	Aug 19	79	Jul 11	17	Aug 13 1936
MAXIMUM PEAK FLOW			2800	Jan 13	(a)9360	Sep 12 1986
MAXIMUM PEAK STAGE			6.65	Jan 13	(b)13.81	Feb 22 1997
INSTANTANEOUS LOW FLOW			23	Sep 25	(c)7.6	(d)
ANNUAL RUNOFF (CFSM)	0.938		0.794		0.814	
ANNUAL RUNOFF (INCHES)	12.77		10.79		11.06	
10 PERCENT EXCEEDS	845		595		659	
50 PERCENT EXCEEDS	197		223		200	
90 PERCENT EXCEEDS	93		105		85	

(a) Gage height 11.74 ft.
(b) Backwater from ice.
(c) Does not include water years 1934-52.
(d) Part of each day July 1, 2, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04156000 TITTABAWASSEE RIVER AT MIDLAND, MI

LOCATION.--Lat 43°35'43", long 84°14'08", in NW1/4 NE1/4 sec.28, T.14 N., R.2 E., Midland County, Hydrologic Unit 04080201, on right bank 2,000 ft downstream from dam at Dow Chemical Co. in Midland, 0.7 mi upstream from Bullock Creek, 1.4 mi downstream from Chippewa River, and 23 mi upstream from mouth.

DRAINAGE AREA.--2,400 mi^2, approximately.

PERIOD OF RECORD.--March 1936 to current year. Gage-height records for flood seasons collected in this vicinity 1910-26, 1928, are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1045: 1945. WSP 1144: 1948.

GAGE.--Water-stage recorder. Datum of gage is 580.08 ft above sea level (levels by Wade-Trim Assoc.). Prior to Sept. 30, 1955, at datum 10.20 ft higher, Oct. 1, 1955 to Sept. 30, 1993, at datum 0.20 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Prior to 1992 water year, diversion was used in computing annual mean discharge and runoff figures, extremes and daily discharge were not adjusted for diversion. Prior to May 20, 1970, discharge below 4,000 ft^3/s regulated by dam 2,000 ft upstream from station; fixed crest dam since. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	441	843	1910	1230	e1920	e1030	12800	1120	1050	742	792	477
2	393	1480	1870	1620	e1880	e1140	e12100	1320	972	606	657	452
3	373	1510	1750	2390	e2050	e1100	e10600	1490	883	519	621	441
4	379	1240	1160	3110	e1910	e1220	e9370	1360	840	479	639	411
5	379	1190	1050	2850	e1380	e872	e7510	1240	633	616	811	384
6	379	887	1270	2640	e1200	e777	e5970	1140	850	766	782	363
7	381	774	1920	2350	e1880	e1500	e4740	1230	783	980	696	358
8	474	809	3950	1730	e2970	e2330	e3510	981	830	849	653	350
9	415	889	4990	1230	e3830	e2550	3100	1150	728	565	635	359
10	431	1090	4470	1730	e3170	2770	2640	1220	725	471	577	373
11	557	786	4060	2130	e2520	2560	2280	1170	689	474	528	371
12	761	785	2570	2490	e1760	1640	2620	1130	576	283	530	364
13	733	653	2710	6000	e1480	1370	2360	1160	1330	238	586	369
14	572	613	2680	11900	2460	1940	1890	1420	5470	412	561	374
15	585	685	e2490	e9650	5970	2210	1890	1350	4600	650	537	389
16	472	775	e2150	e5570	7250	2010	1750	1710	3320	639	557	415
17	445	823	e1830	e4090	e5350	1570	1250	1600	2530	564	563	418
18	495	695	e1460	e5070	e3160	1320	1260	1460	1620	444	527	411
19	599	717	e1020	e7570	e2130	1070	1580	1340	1380	433	505	403
20	579	646	e1680	e7620	e1160	988	1780	1550	1090	482	527	394
21	584	670	e2030	e6710	e879	1090	1670	1470	1100	501	550	389
22	664	750	e1790	e4080	e1580	1360	1710	931	1200	480	546	385
23	530	857	e1700	e2980	e1820	1930	1830	1480	831	488	572	389
24	511	1140	e1140	e4010	e1880	2620	1450	1940	691	454	581	392
25	722	738	e990	e4960	e1490	2400	1820	2460	588	567	578	394
26	1090	1050	e956	e5080	e985	3410	2350	1660	535	875	560	437
27	1020	1020	e1450	e3530	e773	3800	2360	1330	535	1390	553	1570
28	771	949	e2210	e2690	e851	5780	1680	855	719	1700	522	1820
29	1290	1640	e2250	e2000	---	8990	1690	1120	655	1570	498	1280
30	1140	1990	e2230	e1650	---	11800	1480	868	778	1260	503	1180
31	797	---	e1530	e1920	---	12200	---	864	---	1020	508	---
TOTAL	18962	28694	65266	122580	65688	87347	109040	41119	38531	21517	18255	16112
MEAN	612	956	2105	3954	2346	2818	3635	1326	1284	694	589	537
MAX	1290	1990	4990	11900	7250	12200	12800	2460	5470	1700	811	1820
MIN	373	613	956	1230	773	777	1250	855	535	238	498	350
CFSM	0.25	0.40	0.88	1.65	0.98	1.17	1.51	0.55	0.54	0.29	0.25	0.22
IN.	0.29	0.44	1.01	1.90	1.02	1.35	1.69	0.64	0.60	0.33	0.28	0.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2005, BY WATER YEAR (WY)

MEAN	1039	1441	1522	1442	1786	3850	3585	2257	1422	729	601	878
MAX	6318	6097	3907	5564	6455	10660	8096	8080	5270	4492	2236	10300
(WY)	1987	1986	1992	1973	1938	1976	1967	2004	1945	1957	1972	1986
MIN	344	493	462	388	466	1027	969	567	355	234	217	250
(WY)	1949	1950	1964	1945	1963	1964	1945	1977	1964	1941	1936	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1936 - 2005	
ANNUAL TOTAL	816807		633111			
ANNUAL MEAN	2232		1735		1717	
HIGHEST ANNUAL MEAN					3318	1986
LOWEST ANNUAL MEAN					699	1964
HIGHEST DAILY MEAN	23300	Mar 7	12800	Apr 1	36200	Sep 13 1986
LOWEST DAILY MEAN	359	Sep 21	238	Jul 13	111	Aug 21 1949
ANNUAL SEVEN-DAY MINIMUM	382	Sep 21	363	Sep 6	126	Aug 11 1936
MAXIMUM PEAK FLOW			13000	Apr 1	38700	Sep 13 1986
MAXIMUM PEAK STAGE			21.39	Apr 1	(a)33.89	Sep 13 1986
INSTANTANEOUS LOW FLOW			226	(b)	39	Oct 1 1942
ANNUAL RUNOFF (CFSM)	0.930		0.723		0.716	
ANNUAL RUNOFF (INCHES)	12.66		9.81		9.72	
10 PERCENT EXCEEDS	3970		3520		3910	
50 PERCENT EXCEEDS	1220		1140		965	
90 PERCENT EXCEEDS	458		441		382	

(a) From floodmark.
(b) Part of each day July 13, 14.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04157000 SAGINAW RIVER AT SAGINAW, MI

LOCATION.--Lat 43°24'46", long 83°57'47", in NW1/4 SE1/4 sec.26, T.12 N., R.4 E., Saginaw County, Hydrologic Unit 04080206, on right bank 1,000 ft downstream from bridge on Rust Avenue in Saginaw, 1.9 mi downstream from Tittabawassee River, and 20.3 mi upstream from mouth.

DRAINAGE AREA.--6,060 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1904, 1908-9, 1912-13, 1916, 1918-19, 1929-30, and 1942 (flood discharge for certain periods only) in WSP 1084; December 1942 to September 1991 and October 1994 to September 1996, daily discharges greater than 10,000 ft^3/s only; no daily discharges greater than 10,000 ft^3/s water years 1944, 1949, 1953, 1955, 1958, 1961, 1963, 1964, 1966. Continuous-record station October 1991 to July 1994, and October 1996 to current year. Gage-height records for flood seasons 1910-20 are contained in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 565.05 ft, International Great Lakes datum. Prior to Oct. 1, 1972, nonrecording gage at site 1.9 mi downstream at same datum. Auxiliary water-stage recorder, Saginaw River at Essexville (04157065).

REMARKS.--Water-discharge records good except for estimated daily discharges, which are poor. Minimum flows affected by wind direction and seiche on Saginaw Bay, 20.3 mi downstream. Considerable diversion through metropolitan area of Saginaw. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e933	e1950	e5930	e5160	e3770	e3520	17000	6010	e2560	e1880	e2030	e1060
2	e890	2090	4380	8360	e3690	e3670	18400	4100	e2390	e1640	e1660	e1070
3	e890	e3410	4780	9910	e3890	e3540	15700	4480	e2190	e1450	e1440	e1030
4	e890	e3790	e4230	10900	e3870	e3660	12000	3760	e2060	e1560	e1480	e961
5	e904	e3350	3210	11800	e3330	e3180	9920	3950	e1770	e1920	e1730	e900
6	e904	e2830	e3970	e9730	e3200	e3030	9310	e3680	e2300	e1940	e1600	e861
7	e918	e2500	3240	e8340	e4380	e4940	8930	e3660	e2390	e2100	e1490	e852
8	e1020	e2350	6650	e7020	e6820	e7620	8510	e3140	e2470	e1940	e1420	e896
9	e1020	e2390	9000	e5360	e8520	e8330	8170	e3340	e2190	e1510	e1360	e863
10	e1140	e2620	9230	e6080	e7500	e8460	7310	e3280	e2090	e1330	e1260	e860
11	e1250	2470	9520	e6630	e6460	e7830	6100	e3160	e2270	e1280	e1180	e850
12	e1390	e1950	6840	7180	e5310	e5960	6700	e3130	2400	e948	e1220	e838
13	e1370	e1730	6170	11200	e4830	e5210	7150	e3200	2050	e855	e1260	e837
14	1190	e1650	e5470	20100	e7260	e6030	5050	e3880	e7370	e1120	e1210	e840
15	1030	e1680	e4600	25000	e14200	e6250	5640	e3980	8180	e1480	e1180	e854
16	e1210	e1780	4090	e19000	e18200	e5680	3480	e4510	8970	e1660	e1190	e922
17	e1230	e1950	e4200	e13400	e15300	e4850	3660	e4220	8540	e1610	e1180	e897
18	e1230	e1780	4540	e12400	e10600	e4420	2950	e4010	7570	e1820	e1180	e882
19	e1330	e1780	e3510	e13500	e8220	e4130	e3430	e3680	e6570	e1700	e1220	e889
20	e1330	e1840	e4030	e12600	e5860	e4240	e3900	e3850	5810	e1630	e1160	e861
21	e1390	e1840	e4290	e11300	e4780	e4680	4470	e3610	e5160	e1680	e1120	e853
22	e1460	e1920	e4290	e8200	e6140	e5640	e3730	e2720	e4610	e1500	e1120	e1350
23	e1230	e2050	e4160	e6510	e6180	e7170	e3900	e3270	4210	e1410	e1140	e1410
24	e1330	e2350	e3200	e7170	e5870	e8180	e4220	e5160	2510	e1690	e1160	e1100
25	e1550	2770	e2960	e8030	e4880	e8060	e5320	7340	e1860	e1850	e1140	e1150
26	1700	e2540	e2960	e8170	e3740	10000	e7450	4090	e1640	e2670	e1110	e1470
27	2000	e2960	e3570	e6400	e3140	10900	e8160	2970	e1580	e3100	e1160	e2410
28	e1480	e3510	e4430	e5120	e3260	11400	8680	3070	e1810	e3250	e1080	e2680
29	e2660	e4430	e4430	e4130	---	13200	8660	2380	e1880	e3000	e1060	e2550
30	e2280	e5410	e4360	e3670	---	15100	8470	e2480	e1990	e2590	e1070	e2250
31	e1900	---	4820	e3890	---	16000	---	e2480	---	e2300	e1050	---
TOTAL	41049	75670	151060	296260	183200	214880	226370	116590	109390	56413	39660	35246
MEAN	1324	2522	4873	9557	6543	6932	7546	3761	3646	1820	1279	1175
MAX	2660	5410	9520	25000	18200	16000	18400	7340	8970	3250	2030	2680
MIN	890	1650	2960	3670	3140	3030	2950	2380	1580	855	1050	837
CFSM	0.22	0.42	0.80	1.58	1.08	1.14	1.25	0.62	0.60	0.30	0.21	0.19
IN.	0.25	0.46	0.93	1.82	1.12	1.32	1.39	0.72	0.67	0.35	0.24	0.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2005, BY WATER YEAR (WY)

MEAN	2499	3667	3890	4931	6049	8830	7786	6421	3781	2486	1859	1930
MAX	4471	11430	7638	10950	12550	14310	16440	17180	6578	7758	4133	5202
(WY)	1994	1993	1992	1993	1997	1997	1993	2004	2004	1994	1992	1992
MIN	934	1210	1419	1348	1086	3263	3631	2595	1998	1039	960	767
(WY)	2004	2000	2003	2003	2003	2003	2000	1999	1999	2001	2003	2003

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1992 - 2005	
ANNUAL TOTAL	1892740		1545788			
ANNUAL MEAN	5171		4235		(a)4475	
HIGHEST ANNUAL MEAN					6769	1993
LOWEST ANNUAL MEAN					2112	2003
HIGHEST DAILY MEAN	37500	Mar 8	25000	Jan 15	(b)67800	Mar 29 1904
LOWEST DAILY MEAN	548	Sep 22	837	Sep 13	-1980	Jun 19 1992
ANNUAL SEVEN-DAY MINIMUM	750	Sep 21	849	Sep 9	557	Aug 7 2001
MAXIMUM PEAK FLOW			25900	Jan 15	(b)68000	Mar 29 1904
MAXIMUM PEAK STAGE			16.94	Jan 15	24.90	Mar 29 1904
ANNUAL RUNOFF (CFSM)	0.853		0.699		0.738	
ANNUAL RUNOFF (INCHES)	11.62		9.49		10.03	
10 PERCENT EXCEEDS	10100		8590		9190	
50 PERCENT EXCEEDS	2960		3200		3180	
90 PERCENT EXCEEDS	1120		1080		1000	

(a) Does not include water years 1995, 1996.
(b) Includes water years 1904-1991.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE HURON

04157000 SAGINAW RIVER AT SAGINAW, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967, 1975-86, 1989 to July 2005 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to September 1981.
WATER TEMPERATURE: November 1974 to September 1981.

INSTRUMENTATION.--Water-quality monitor from Nov. 6, 1976 to Sept. 30, 1981.

REMARKS.--Cross-sectional samples were collected at Rust Avenue bridge.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975, 1977, 1979): Maximum recorded (more than 20 percent missing record), 1,230 microsiemens, Jan. 5, 1977; minimum recorded (more than 20 percent missing record), 224 microsiemens, Mar. 13, 1977.
WATER TEMPERATURE (water years 1975-77, 1979): Maximum, 30.0°C, July 10, 14, 20, 1977; minimum, 0.0°C, on many days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, uS/cm 25 degC (90095)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Noncarb hardness, wat flt field, mg/L as CaCO3 (00904)
OCT 2004											
19...	1400	1830	9.8	87	8.0	8.2	728	792	9.0	240	64
APR 2005											
14...	1230	1890	10.0	92	8.2	8.1	521	512	10.5	230	--
JUL											
21...	1300	1980	7.6	100	8.2	8.3	720	773	27.5	240	79

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)
OCT 2004											
19...	61.2	20.6	3.90	66.8	179	173	210	1	113	.4	4.52
APR 2005											
14...	64.4	16.9	2.69	27.5	163	--	--	--	51.6	.2	3.27
JUL											
21...	60.4	20.6	3.97	59.9	170	158	184	4	110	.3	5.47

Date	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)
OCT 2004											
19...	6.6	42.1	.61	2220	450	.63	.09	1.14	.018	E.01	E.03
APR 2005											
14...	9.6	37.3	.43	1600	314	.66	<.04	.94	.010	<.02	E.02
JUL											
21...	22	42.2	.59	2320	434	.90	<.04	.91	.015	.02	E.03

STREAMS TRIBUTARY TO LAKE HURON

04157000 SAGINAW RIVER AT SAGINAW, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Phosphorus, water, unfltrd mg/L (00665)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Aluminum, water, fltrd, ug/L (01106)	Barium, water, fltrd, ug/L (01005)	Cobalt water, fltrd, ug/L (01035)	Iron, water, fltrd, ug/L (01046)	Lithium water, fltrd, ug/L (01130)	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)
OCT 2004 19...	.06	--	60	E1	38	.304	15	5.7	9.4	3.9	2.88
APR 2005 14...	.05	E10	E10	7	38	.262	52	2.3	12.7	1.8	3.24
JUL 21...	.10	E36	E7	<2	55	.978	14	1.2	E.1	<.4	5.

Date	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Vanadium, water, fltrd, ug/L (01085)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT 2004 19...	.8	<.2	304	.6	76	10	49
APR 2005 14...	.6	<.2	238	.9	90	14	71
JUL 21...	.8	<.2	316	6.0	98	23	123

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI

LOCATION.--Lat 43°09'09", long 82°37'27", in SE1/4 SE1/4 sec.6, T.8 N., R.16 E., St. Clair County, Hydrologic Unit 04090001, on right bank 650 ft upstream from bridge on Jeddo Road, 0.4 mi downstream from Silver Creek, and 2.2 mi west of Jeddo.

DRAINAGE AREA.--464 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1944 to current year. Published as "near Fargo" prior to October 1991.

REVISED RECORDS.--WSP 1307: 1950(M). WSP 1627: 1956-58. WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 655 ft above sea level, from topographic map. Prior to July 9, 1954, nonrecording gage and July 10, 1954 to September 1991 water-stage recorder, at site 7.6 mi downstream, at different datum (station 04159500).

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Diurnal fluctuation, principally during low flow, caused by an unknown source upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	63	705	3520	e125	e140	852	450	90	83	42	26
2	25	96	1180	2430	e120	e130	610	357	79	67	37	26
3	27	181	621	3070	e115	e125	478	312	73	57	33	24
4	20	181	350	1730	111	e130	366	279	73	50	31	23
5	22	284	242	1020	108	e135	304	250	73	47	30	20
6	21	219	182	649	111	149	272	220	119	48	33	15
7	19	142	653	e420	119	243	249	204	300	50	33	15
8	18	96	2590	e340	146	984	228	186	215	45	25	15
9	23	73	1290	e310	232	1330	200	163	139	43	23	15
10	24	61	664	e295	275	838	180	153	106	42	22	16
11	21	55	904	287	239	542	161	144	89	35	22	17
12	22	52	930	490	218	386	148	129	85	32	29	13
13	22	51	610	3920	188	e280	138	123	107	32	28	14
14	32	47	432	5360	500	e220	126	211	256	29	29	13
15	36	44	e290	e2900	e2850	e200	115	382	398	28	29	16
16	50	40	e260	e1650	e3320	e190	105	338	366	30	26	17
17	55	40	e230	e1100	e2150	291	101	255	332	127	25	23
18	49	41	e205	e800	965	419	100	199	326	211	20	23
19	38	40	e195	e550	636	461	98	169	264	149	28	22
20	39	40	e175	e347	446	837	99	154	197	165	31	19
21	29	41	e155	e295	311	1730	107	147	154	115	36	16
22	30	40	e145	e259	342	2380	106	126	127	80	26	18
23	29	39	e135	e217	271	2320	114	136	106	82	24	21
24	29	41	e120	e193	e220	1140	169	257	90	92	24	22
25	30	85	e115	e181	e200	1240	377	233	81	81	19	23
26	29	115	e115	e164	e180	1140	1970	175	74	86	21	29
27	28	187	e110	e154	e165	1080	3140	144	63	85	24	32
28	25	429	e105	e144	e150	1160	1680	127	58	82	28	36
29	41	400	e110	e142	---	1390	930	117	65	69	30	31
30	77	253	112	e133	---	1280	612	112	136	59	31	26
31	81	---	999	e129	---	1140	---	100	---	50	27	---
TOTAL	1013	3476	14929	33199	14813	24030	14135	6352	4641	2251	866	626
MEAN	32.7	116	482	1071	529	775	471	205	155	72.6	27.9	20.9
MAX	81	429	2590	5360	3320	2380	3140	450	398	211	42	36
MIN	18	39	105	129	108	125	98	100	58	28	19	13
CFSM	0.07	0.25	1.04	2.31	1.14	1.67	1.02	0.44	0.33	0.16	0.06	0.04
IN.	0.08	0.28	1.20	2.66	1.19	1.93	1.13	0.51	0.37	0.18	0.07	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2005, BY WATER YEAR (WY)

MEAN	122	171	254	271	449	969	620	318	192	81.9	58.7	108
MAX	1316	972	1031	1315	1855	3218	2102	1511	1625	517	559	2237
(WY)	1987	1993	1951	1952	1954	1985	1947	1956	1996	1994	1953	1986
MIN	7.62	10.5	10.3	8.37	15.8	48.9	54.2	40.4	22.4	13.1	8.34	5.53
(WY)	1964	1945	1959	1945	1959	1964	1946	1958	1949	1966	1948	1948

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1944 - 2005	
ANNUAL TOTAL		124846		120331		
ANNUAL MEAN		341		330		301
HIGHEST ANNUAL MEAN					705	1985
LOWEST ANNUAL MEAN					28.7	1964
HIGHEST DAILY MEAN	7770	May 24	5360	Jan 14	10100	Apr 6 1947
LOWEST DAILY MEAN	18	Oct 8	13	Sep 12	2.0	Aug 17 1948
ANNUAL SEVEN-DAY MINIMUM	21	Oct 4	15	Sep 8	2.7	Sep 13 1946
MAXIMUM PEAK FLOW			5920	Jan 14	(a)14400	Apr 5 1947
MAXIMUM PEAK STAGE			12.64	Jan 14	(b)16.72	Feb 22 1997
INSTANTANEOUS LOW FLOW			7.3	Sep 12	(c)1.8	(d)
ANNUAL RUNOFF (CFSM)	0.735		0.711		0.650	
ANNUAL RUNOFF (INCHES)	10.01		9.65		8.83	
10 PERCENT EXCEEDS	687		914		666	
50 PERCENT EXCEEDS	115		123		67	
90 PERCENT EXCEEDS	32		23		16	

(a) Gage height 16.06 ft, from floodmark, site and datum then in use; from rating curve extended above 9,500 ft^3/s.
(b) Present site and datum; peak stage observed at previous site and datum, 18.05 ft, Feb. 20, 1951, backwater from ice.
(c) Observed; site then in use.
(d) Sept. 18, 19, 1946.
(e) Estimated.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to 1998, 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: November 1996 to April 1997, June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water temperature recorder from Nov. 1996 to Apr. 1997. Water-quality monitor telemeter, set for 15 minute measurement interval, from June 2004 to October 2005, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 20 to Nov. 5, Nov. 9-20, Dec. 1, Apr. 6, 10-13, 22-27, Apr. 30 to May 4, May 12, 13, 17, 18, 29-31, June 4-7, July 2-12, July 21 to Aug. 2, Aug. 6-10, 16, 17, Oct. 19-31, 2005, rated good; Mar. 31, rated fair; Apr. 1, rated poor. pH records rated excellent except for the following periods: Apr. 2-5, July 7-12, Aug. 9, 10, Sept. 6, 7, rated good. Water temperature records rated excellent except for the following period: Mar. 30 to Apr. 5, rated fair. Dissolved oxygen records rated excellent except for the following periods: Oct. 17, 24, 25, Nov. 8, 9, 23, Apr. 1, 6, 13, May 4, 14, 15, 19, 20, Aug. 15-17, 22-24, 27, 28, 31, Sept. 10, 11, Oct. 3-5, 13-17, 24, 25, 2005, rated good; Oct. 18-20, 26, Apr. 2, 7, 14, 27, May 5, 16, 17, 21, 22, June 1-4, June 29 to July 4, Aug. 3-7, 29, 30, Sept. 1, 12, 13, Oct. 18, 19, 2005, rated fair; Apr. 3-5, 8-12, 15-19, 28-30, May 6-10, 23-31, June 8, 13-27, July 13-31, Sept. 2-5, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 911 microsiemens, Oct. 2, 3, 2004; minimum, 319 microsiemens, June 15, 2004.
pH: Maximum, 8.8 std. units, May 7-9, 2005; minimum, 7.6 std. units, June 15, 16, July 8, 2004.
WATER TEMPERATURE: Maximum, 28.5°C, Aug. 3, 2005; minimum, 0.0°C, on many days during 1997 winter period.
DISSOLVED OXYGEN: Maximum, 15.8 mg/L, May 7, 2005; minimum, 5.2 mg/L, July 22, 23, 2004.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 911 microsiemens, Oct. 2, 3; minimum, 414 microsiemens, Apr. 27.
pH: Maximum, 8.8 std. units, May 7-9; minimum, 7.7 std. units, Apr. 26-28.
WATER TEMPERATURE: Maximum, 28.5°C, Aug. 3; minimum, 2.3°C, Nov. 26.
DISSOLVED OXYGEN: Maximum, 15.8 mg/L, May 7; minimum, 5.7 mg/L, June 13.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	892	867	875	818	814	816	742	422	578	---	---	---
2	911	866	885	815	743	775	---	---	---	---	---	---
3	911	862	879	759	690	730	---	---	---	---	---	---
4	884	861	869	707	668	693	---	---	---	---	---	---
5	895	865	880	695	609	640	---	---	---	---	---	---
6	906	866	881	719	631	676	---	---	---	---	---	---
7	905	867	884	762	719	749	---	---	---	---	---	---
8	895	862	877	771	762	768	---	---	---	---	---	---
9	896	862	876	775	770	772	---	---	---	---	---	---
10	886	863	870	785	773	779	---	---	---	---	---	---
11	887	858	872	797	785	789	---	---	---	---	---	---
12	890	868	875	824	797	809	---	---	---	---	---	---
13	908	876	890	840	821	826	---	---	---	---	---	---
14	894	852	872	843	831	836	---	---	---	---	---	---
15	852	825	841	852	840	846	---	---	---	---	---	---
16	840	817	827	850	834	843	---	---	---	---	---	---
17	872	840	856	862	837	845	---	---	---	---	---	---
18	851	835	841	862	839	849	---	---	---	---	---	---
19	868	847	859	862	839	849	---	---	---	---	---	---
20	871	850	859	855	838	847	---	---	---	---	---	---
21	885	851	867	874	845	860	---	---	---	---	---	---
22	872	837	851	899	869	880	---	---	---	---	---	---
23	857	836	846	906	879	888	---	---	---	---	---	---
24	874	841	854	910	879	891	---	---	---	---	---	---
25	875	860	865	879	801	824	---	---	---	---	---	---
26	893	860	875	812	789	799	---	---	---	---	---	---
27	864	846	861	796	687	744	---	---	---	---	---	---
28	846	822	832	690	632	666	---	---	---	---	---	---
29	836	769	803	733	686	711	---	---	---	---	---	---
30	780	745	766	742	699	724	---	---	---	---	---	---
31	818	770	794	---	---	---	---	---	---	---	---	---
MONTH	911	745	857	910	609	791	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	594	537	566	666	627	646
2	---	---	---	---	---	---	---	---	---	706	664	679
3	---	---	---	---	---	---	---	---	---	714	670	688
4	---	---	---	---	---	---	---	---	---	684	672	678
5	---	---	---	---	---	---	---	---	---	694	682	688
6	---	---	---	---	---	---	646	621	634	700	688	693
7	---	---	---	---	---	---	664	645	657	706	683	696
8	---	---	---	---	---	---	684	663	676	716	683	699
9	---	---	---	---	---	---	707	684	697	728	710	718
10	---	---	---	---	---	---	722	706	715	732	717	725
11	---	---	---	---	---	---	732	721	728	741	726	734
12	---	---	---	---	---	---	739	717	725	746	725	737
13	---	---	---	---	---	---	729	718	724	765	725	749
14	---	---	---	---	---	---	744	726	738	748	682	725
15	---	---	---	---	---	---	754	737	748	682	639	665
16	---	---	---	---	---	---	764	749	759	688	652	668
17	---	---	---	---	---	---	773	757	765	685	676	681
18	---	---	---	---	---	---	788	770	779	712	685	701
19	---	---	---	---	---	---	807	777	790	727	712	721
20	---	---	---	---	---	---	803	783	791	739	727	732
21	---	---	---	---	---	---	823	790	804	750	739	746
22	---	---	---	---	---	---	818	760	780	766	750	761
23	---	---	---	---	---	---	763	725	748	769	736	754
24	---	---	---	---	---	---	744	715	727	763	745	753
25	---	---	---	---	---	---	745	561	694	763	685	730
26	---	---	---	---	---	---	561	422	488	727	700	720
27	---	---	---	---	---	---	449	414	427	759	727	745
28	---	---	---	---	---	---	526	449	488	773	759	769
29	---	---	---	---	---	---	584	526	557	788	772	782
30	---	---	---	---	---	---	628	583	608	803	784	795
31	---	---	---	538	481	510	---	---	---	811	803	809
MONTH	---	---	---	---	---	---	---	---	---	811	627	722

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	833	810	821	811	788	803	723	714	717	852	834	845
2	820	802	815	788	631	713	728	701	714	843	833	840
3	815	797	804	636	608	623	753	726	739	835	826	830
4	817	797	808	636	609	623	769	745	760	833	813	818
5	817	776	806	663	604	634	781	756	767	825	814	818
6	814	749	783	713	662	682	774	760	767	828	816	821
7	828	675	775	763	713	734	776	762	769	829	816	822
8	675	585	623	787	760	770	779	746	766	837	820	829
9	628	587	605	792	774	784	777	752	770	844	828	835
10	681	628	657	790	771	780	784	769	780	848	830	836
11	705	681	693	799	783	788	788	784	787	833	815	823
12	727	705	719	812	799	803	796	779	785	828	801	810
13	731	694	710	823	812	817	781	766	772	811	791	798
14	728	691	715	826	810	818	783	772	778	800	787	793
15	704	625	664	817	810	813	803	782	796	800	785	792
16	668	624	639	819	809	814	819	801	811	794	771	784
17	699	668	685	847	809	818	814	792	804	785	767	775
18	750	698	724	867	493	727	796	785	792	775	765	769
19	747	735	740	498	459	478	798	785	794	784	775	781
20	755	745	750	618	498	560	838	798	818	792	782	788
21	771	746	753	636	618	624	853	823	843	806	792	798
22	791	768	777	660	636	650	831	820	824	798	787	792
23	792	781	788	674	660	668	841	829	837	791	779	785
24	805	788	796	679	670	674	845	826	833	790	776	783
25	824	801	811	719	679	702	856	830	839	801	789	797
26	808	789	800	734	681	711	856	810	827	795	745	769
27	824	799	811	693	669	676	825	800	814	771	749	759
28	823	800	810	689	671	676	800	779	789	775	757	768
29	815	791	806	690	681	685	787	780	783	786	770	776
30	826	792	814	715	681	696	807	779	786	774	763	767
31	---	---	---	724	714	719	838	807	828	---	---	---
MONTH	833	585	750	867	459	712	856	701	790	852	745	800

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	8.1	8.1	8.0	8.0	8.0	8.1	7.9	8.0	---	---	---
2	8.2	8.1	8.2	8.1	8.0	8.0	---	---	---	---	---	---
3	8.3	8.1	8.2	8.0	7.9	7.9	---	---	---	---	---	---
4	8.4	8.2	8.2	8.0	7.9	8.0	---	---	---	---	---	---
5	8.3	8.2	8.3	8.0	7.9	7.9	---	---	---	---	---	---
6	8.3	8.1	8.2	8.0	7.9	8.0	---	---	---	---	---	---
7	8.3	8.1	8.2	8.1	8.0	8.0	---	---	---	---	---	---
8	8.2	8.1	8.2	8.1	8.0	8.1	---	---	---	---	---	---
9	8.2	8.0	8.2	8.2	8.1	8.2	---	---	---	---	---	---
10	8.2	8.1	8.2	8.3	8.2	8.2	---	---	---	---	---	---
11	8.2	8.1	8.2	8.3	8.2	8.2	---	---	---	---	---	---
12	8.2	8.1	8.1	8.3	8.2	8.3	---	---	---	---	---	---
13	8.2	8.1	8.1	8.3	8.2	8.3	---	---	---	---	---	---
14	8.2	8.0	8.1	8.3	8.2	8.3	---	---	---	---	---	---
15	8.1	8.0	8.0	8.4	8.2	8.3	---	---	---	---	---	---
16	8.1	8.0	8.1	8.4	8.2	8.3	---	---	---	---	---	---
17	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
18	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
19	8.2	8.1	8.1	8.3	8.2	8.2	---	---	---	---	---	---
20	8.1	8.0	8.1	8.4	8.2	8.2	---	---	---	---	---	---
21	8.1	8.0	8.1	8.4	8.2	8.3	---	---	---	---	---	---
22	8.1	8.0	8.1	8.4	8.2	8.3	---	---	---	---	---	---
23	8.2	8.0	8.1	8.4	8.2	8.3	---	---	---	---	---	---
24	8.1	8.0	8.1	8.3	8.2	8.3	---	---	---	---	---	---
25	8.1	8.0	8.1	8.4	8.2	8.3	---	---	---	---	---	---
26	8.1	8.0	8.1	8.4	8.3	8.3	---	---	---	---	---	---
27	8.2	8.0	8.1	8.3	8.2	8.3	---	---	---	---	---	---
28	8.1	8.0	8.1	8.2	8.1	8.1	---	---	---	---	---	---
29	8.1	8.0	8.0	8.1	8.1	8.1	---	---	---	---	---	---
30	8.1	8.0	8.0	8.2	8.1	8.1	---	---	---	---	---	---
31	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
MAX	8.4	8.2	8.3	8.4	8.3	8.3	---	---	---	---	---	---
MIN	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.2	8.1	8.2	8.2	8.0	8.1
2	---	---	---	---	---	---	8.2	8.1	8.2	8.3	8.1	8.2
3	---	---	---	---	---	---	8.2	8.1	8.2	8.3	8.1	8.3
4	---	---	---	---	---	---	8.1	8.0	8.1	8.5	8.3	8.4
5	---	---	---	---	---	---	8.3	8.0	8.2	8.6	8.4	8.6
6	---	---	---	---	---	---	8.3	8.2	8.2	8.7	8.5	8.6
7	---	---	---	---	---	---	8.3	8.1	8.2	8.8	8.5	8.7
8	---	---	---	---	---	---	8.3	8.2	8.2	8.8	8.6	8.8
9	---	---	---	---	---	---	8.4	8.2	8.3	8.8	8.5	8.7
10	---	---	---	---	---	---	8.4	8.2	8.3	8.7	8.5	8.6
11	---	---	---	---	---	---	8.5	8.2	8.4	8.6	8.4	8.5
12	---	---	---	---	---	---	8.5	8.2	8.4	8.6	8.4	8.5
13	---	---	---	---	---	---	8.6	8.5	8.5	8.6	8.4	8.5
14	---	---	---	---	---	---	8.6	8.4	8.5	8.4	8.3	8.4
15	---	---	---	---	---	---	8.6	8.4	8.5	8.4	8.0	8.1
16	---	---	---	---	---	---	8.6	8.5	8.5	8.2	8.0	8.0
17	---	---	---	---	---	---	8.7	8.5	8.6	8.3	8.0	8.2
18	---	---	---	---	---	---	8.6	8.4	8.5	8.4	8.0	8.2
19	---	---	---	---	---	---	8.6	8.4	8.5	8.2	8.1	8.1
20	---	---	---	---	---	---	8.5	8.5	8.5	8.3	8.0	8.2
21	---	---	---	---	---	---	8.6	8.4	8.5	8.3	8.1	8.2
22	---	---	---	---	---	---	8.5	8.3	8.4	8.2	8.1	8.1
23	---	---	---	---	---	---	8.5	8.4	8.4	8.2	8.0	8.1
24	---	---	---	---	---	---	8.5	8.5	8.5	8.1	8.0	8.1
25	---	---	---	---	---	---	8.5	8.3	8.4	8.1	8.0	8.0
26	---	---	---	---	---	---	8.3	7.7	8.0	8.1	7.9	8.0
27	---	---	---	---	---	---	7.7	7.7	7.7	8.2	8.0	8.1
28	---	---	---	---	---	---	7.8	7.7	7.8	8.2	8.1	8.1
29	---	---	---	---	---	---	8.0	7.8	7.9	8.2	8.1	8.1
30	---	---	---	---	---	---	8.1	8.0	8.0	8.2	8.1	8.2
31	---	---	---	8.2	8.0	8.1	---	---	---	8.4		8.2
MAX	---	---	---	---	---	---	8.7	8.5	8.6	8.8	8.6	8.8
MIN	---	---	---	---	---	---	7.7	7.7	7.7	8.1	7.9	8.0

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.4	8.2	8.3	8.4	8.3	8.3	8.4	8.2	8.3	8.6	8.3	8.4
2	8.4	8.2	8.3	8.3	8.3	8.3	8.5	8.2	8.3	8.5	8.3	8.4
3	8.4	8.2	8.3	8.4	8.3	8.3	8.5	8.2	8.3	8.5	8.3	8.5
4	8.4	8.1	8.3	8.7	8.4	8.6	8.4	8.3	8.3	8.5	8.4	8.4
5	8.4	8.2	8.3	8.6	8.4	8.5	8.4	8.2	8.3	8.5	8.3	8.4
6	8.3	8.1	8.2	8.4	8.2	8.3	8.5	8.2	8.4	8.6	8.3	8.5
7	8.2	7.9	8.1	8.6	8.3	8.6	8.6	8.5	8.6	8.5	8.2	8.3
8	8.0	7.9	7.9	8.5	8.3	8.5	8.6	8.5	8.5	8.4	8.2	8.3
9	8.0	7.8	7.9	8.4	8.2	8.3	8.6	8.4	8.5	8.4	8.2	8.3
10	8.1	7.9	8.0	8.3	8.1	8.2	8.5	8.3	8.4	8.4	8.2	8.3
11	8.1	7.9	8.0	8.3	8.1	8.1	8.4	8.2	8.3	8.4	8.2	8.3
12	8.1	8.0	8.1	8.2	8.0	8.1	8.2	8.1	8.2	8.4	8.2	8.3
13	8.1	7.9	8.0	8.1	8.0	8.1	8.3	8.1	8.2	8.4	8.2	8.3
14	8.0	7.8	7.9	8.2	8.0	8.1	8.3	8.1	8.2	8.3	8.2	8.3
15	8.0	7.9	7.9	8.2	8.1	8.1	8.2	8.1	8.2	8.3	8.2	8.3
16	8.0	7.9	7.9	8.1	8.0	8.1	8.3	8.1	8.2	8.3	8.2	8.2
17	8.0	8.0	8.0	8.2	8.0	8.1	8.3	8.2	8.2	8.3	8.2	8.2
18	8.1	8.0	8.1	8.2	7.9	8.1	8.3	8.2	8.2	8.3	8.1	8.2
19	8.1	8.1	8.1	8.0	7.8	7.9	8.3	8.1	8.2	8.3	8.2	8.2
20	8.1	8.1	8.1	8.1	7.9	8.0	8.3	8.1	8.2	8.2	8.2	8.2
21	8.1	8.1	8.1	8.0	7.9	8.0	8.3	8.1	8.2	8.3	8.2	8.2
22	8.2	8.1	8.2	8.1	8.0	8.0	8.3	8.1	8.2	8.2	8.1	8.2
23	8.2	8.1	8.2	8.1	8.0	8.1	8.3	8.1	8.2	8.2	8.1	8.2
24	8.2	8.1	8.2	8.1	8.0	8.1	8.4	8.1	8.3	8.2	8.1	8.2
25	8.2	8.1	8.2	8.2	8.0	8.1	8.4	8.2	8.3	8.3	8.1	8.2
26	8.3	8.1	8.2	8.2	8.1	8.2	8.4	8.2	8.3	8.2	8.2	8.2
27	8.3	8.2	8.3	8.2	8.1	8.2	8.3	8.2	8.2	8.3	8.1	8.3
28	8.4	8.2	8.3	8.2	8.1	8.2	8.3	8.1	8.2	8.3	8.2	8.3
29	8.5	8.3	8.4	8.2	8.2	8.2	8.3	8.1	8.2	8.4	8.2	8.3
30	8.5	8.3	8.4	8.2	8.2	8.2	8.3	8.1	8.2	8.4	8.2	8.3
31	---	---	---	8.3	8.2	8.3	8.4	8.1	8.2	---	---	---
MAX	8.5	8.3	8.4	8.7	8.4	8.6	8.6	8.5	8.6	8.6	8.4	8.5
MIN	8.0	7.8	7.9	8.0	7.8	7.9	8.2	8.1	8.2	8.2	8.1	8.2

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	13.1	14.6	11.9	10.7	11.2	4.0	3.6	3.8	---	---	---
2	15.5	14.1	14.9	10.7	9.9	10.4	---	---	---	---	---	---
3	14.8	12.5	13.7	9.9	9.2	9.6	---	---	---	---	---	---
4	13.8	11.9	13.0	9.2	8.0	8.5	---	---	---	---	---	---
5	12.6	10.6	11.6	8.0	6.8	7.4	---	---	---	---	---	---
6	13.2	10.5	11.8	8.1	6.5	7.3	---	---	---	---	---	---
7	13.7	11.5	12.7	8.0	7.2	7.6	---	---	---	---	---	---
8	14.9	12.5	13.8	7.4	5.4	6.2	---	---	---	---	---	---
9	15.5	14.1	14.7	5.4	4.5	5.0	---	---	---	---	---	---
10	14.4	13.0	13.6	5.9	4.7	5.3	---	---	---	---	---	---
11	13.8	12.2	12.9	6.7	5.8	6.4	---	---	---	---	---	---
12	13.1	11.1	12.1	5.8	4.4	5.2	---	---	---	---	---	---
13	13.2	11.3	12.3	5.0	3.5	4.5	---	---	---	---	---	---
14	12.6	12.2	12.4	4.5	3.1	3.8	---	---	---	---	---	---
15	12.2	11.6	12.0	4.2	2.7	3.5	---	---	---	---	---	---
16	11.6	10.1	10.9	5.8	3.8	4.8	---	---	---	---	---	---
17	10.1	8.6	9.4	7.4	5.8	6.7	---	---	---	---	---	---
18	9.3	8.4	8.8	9.1	7.2	8.2	---	---	---	---	---	---
19	9.1	8.4	8.8	9.0	8.4	8.7	---	---	---	---	---	---
20	9.6	8.9	9.3	9.3	8.3	8.8	---	---	---	---	---	---
21	10.2	9.5	9.8	9.0	8.3	8.7	---	---	---	---	---	---
22	10.9	9.9	10.3	8.3	6.8	7.6	---	---	---	---	---	---
23	11.4	10.1	10.7	7.1	6.3	6.8	---	---	---	---	---	---
24	11.7	11.2	11.5	6.4	4.3	5.9	---	---	---	---	---	---
25	12.9	11.5	12.2	4.3	2.9	3.3	---	---	---	---	---	---
26	12.7	11.6	12.2	3.5	2.3	2.9	---	---	---	---	---	---
27	12.6	11.7	12.1	4.6	3.5	4.1	---	---	---	---	---	---
28	12.5	11.0	11.9	4.7	4.1	4.6	---	---	---	---	---	---
29	12.4	11.5	12.0	4.2	3.7	3.9	---	---	---	---	---	---
30	14.7	12.4	13.6	4.0	3.7	3.8	---	---	---	---	---	---
31	13.7	11.9	12.6	---	---	---	---	---	---	---	---	---
MONTH	16.0	8.4	12.0	11.9	2.3	6.4	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.2	6.8	7.5	10.8	8.5	9.6
2	---	---	---	---	---	---	7.1	5.7	6.3	10.5	9.1	9.8
3	---	---	---	---	---	---	7.1	4.7	5.8	9.8	8.7	9.1
4	---	---	---	---	---	---	8.4	4.8	6.4	11.7	7.5	9.5
5	---	---	---	---	---	---	10.9	6.1	8.5	13.1	8.5	10.7
6	---	---	---	---	---	---	12.9	9.1	11.0	14.4	9.9	12.2
7	---	---	---	---	---	---	12.6	11.2	11.8	16.6	12.5	14.5
8	---	---	---	---	---	---	13.4	9.9	11.5	17.9	13.6	15.6
9	---	---	---	---	---	---	13.3	9.5	11.5	18.7	15.4	17.0
10	---	---	---	---	---	---	13.5	10.0	11.8	20.1	16.9	18.4
11	---	---	---	---	---	---	13.6	11.2	12.5	19.5	15.6	17.3
12	---	---	---	---	---	---	12.8	10.6	11.8	16.2	13.6	15.1
13	---	---	---	---	---	---	12.3	10.2	11.4	15.7	13.1	13.9
14	---	---	---	---	---	---	12.4	10.0	11.4	14.6	12.9	13.7
15	---	---	---	---	---	---	12.7	10.0	11.6	13.6	12.0	12.6
16	---	---	---	---	---	---	13.7	10.1	12.2	13.7	11.4	12.5
17	---	---	---	---	---	---	13.7	11.6	12.9	14.9	11.4	13.1
18	---	---	---	---	---	---	15.4	11.3	13.4	16.3	12.2	14.2
19	---	---	---	---	---	---	17.0	13.5	15.5	15.5	14.3	14.6
20	---	---	---	---	---	---	17.0	13.5	15.6	17.9	13.3	15.5
21	---	---	---	---	---	---	14.4	11.5	13.2	18.7	15.2	16.9
22	---	---	---	---	---	---	14.2	11.7	12.5	17.9	16.1	16.6
23	---	---	---	---	---	---	11.7	6.3	9.0	16.2	15.2	15.6
24	---	---	---	---	---	---	6.3	4.1	5.0	16.0	14.4	15.2
25	---	---	---	---	---	---	6.8	3.6	5.0	18.2	13.6	15.8
26	---	---	---	---	---	---	5.8	5.1	5.5	18.3	15.1	16.7
27	---	---	---	---	---	---	6.4	5.7	6.0	19.3	16.3	17.8
28	---	---	---	---	---	---	8.0	6.3	7.2	18.8	16.9	18.0
29	---	---	---	---	---	---	9.3	6.5	7.8	19.2	16.5	18.0
30	---	---	---	---	---	---	10.1	7.9	9.0	19.9	17.0	18.6
31	---	---	---	8.4	6.6	7.4	---	---	---	21.1	17.6	19.6
MONTH	---	---	---	---	---	---	17.0	3.6	10.0	21.1	7.5	14.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.6	18.1	20.2	25.3	23.6	24.6	26.9	22.9	25.0	23.7	20.4	22.2
2	22.2	19.1	20.9	23.9	21.8	22.9	28.2	24.7	26.4	22.9	20.3	21.8
3	22.3	20.7	21.2	24.0	22.3	23.1	28.5	25.5	27.0	22.2	19.8	21.2
4	22.7	19.5	21.3	25.8	23.1	24.4	27.4	25.8	26.7	21.6	19.4	20.6
5	24.7	22.1	23.4	25.4	23.7	24.7	27.4	24.2	26.0	21.6	19.3	20.5
6	25.3	22.5	24.1	23.7	21.1	22.7	26.4	23.4	25.2	22.5	19.1	20.9
7	26.1	22.4	24.3	23.6	20.3	21.8	26.7	23.4	25.3	23.0	19.8	21.5
8	26.6	22.5	24.4	25.3	21.8	23.5	27.2	23.7	25.7	23.3	21.0	22.0
9	26.7	23.3	25.0	26.0	22.8	24.2	27.9	24.2	26.2	23.4	19.9	21.6
10	27.9	24.6	26.3	26.5	22.9	24.6	27.8	25.1	26.5	22.7	19.1	21.1
11	27.9	25.9	27.1	27.6	23.9	25.6	26.5	24.4	25.5	22.5	19.4	21.2
12	27.3	25.7	26.5	27.2	25.0	26.0	25.1	23.0	24.2	23.4	20.1	21.9
13	26.7	24.4	25.1	26.8	25.1	26.0	25.1	23.7	24.4	23.7	21.0	22.5
14	27.1	23.4	25.1	28.0	25.2	26.5	24.3	22.8	23.8	23.0	21.7	22.4
15	24.6	22.2	23.2	28.4	25.2	26.9	24.0	22.0	23.0	21.8	20.1	21.1
16	22.2	19.8	21.1	27.2	25.2	26.0	23.2	21.4	22.4	20.1	18.6	19.4
17	19.8	18.3	19.1	26.8	24.0	25.4	24.1	21.8	22.9	19.9	18.2	19.0
18	19.9	17.7	18.7	27.0	24.8	25.8	23.9	22.1	23.2	20.2	17.3	18.9
19	20.9	17.5	19.1	26.9	24.2	25.5	25.1	22.0	23.7	19.7	18.6	19.2
20	21.8	17.9	19.9	27.2	23.8	25.5	24.1	22.3	23.2	20.8	18.5	19.7
21	21.3	19.5	20.4	27.6	25.1	26.4	24.5	21.3	22.9	21.5	18.4	19.9
22	22.9	19.4	21.2	27.9	25.8	26.9	22.8	21.0	22.0	20.0	19.0	19.4
23	22.3	19.3	21.0	26.6	24.8	25.9	21.6	19.9	20.8	19.4	17.9	18.6
24	25.4	20.6	23.1	26.3	24.2	25.2	22.1	18.5	20.6	18.8	16.8	18.0
25	26.7	23.8	25.4	28.0	24.9	26.6	21.7	19.0	20.6	20.1	18.4	19.3
26	25.7	23.1	24.6	27.7	25.6	26.5	22.9	19.7	21.5	20.2	18.7	19.7
27	27.1	24.0	25.7	26.0	23.7	24.6	22.4	21.5	22.0	19.2	17.4	18.5
28	27.8	26.2	26.9	23.7	21.4	22.9	23.9	20.7	22.4	18.6	16.5	17.8
29	27.9	25.7	26.7	23.6	22.0	22.7	24.6	21.0	22.8	17.8	15.5	16.3
30	27.6	25.1	25.9	23.5	21.0	22.2	24.1	22.2	23.0	15.6	13.7	14.9
31	---	---	---	24.4	21.9	23.0	23.2	21.4	22.2	---	---	---
MONTH	27.9	17.5	23.2	28.4	20.3	24.8	28.5	18.5	23.8	23.7	13.7	20.0

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	7.4	10.0	10.0	9.3	9.6	12.4	12.1	12.2	---	---	---
2	10.4	9.0	9.6	10.0	9.7	9.9	---	---	---	---	---	---
3	11.2	9.5	10.2	9.9	9.5	9.7	---	---	---	---	---	---
4	11.5	9.5	10.5	10.3	9.8	10.1	---	---	---	---	---	---
5	11.8	10.3	11.0	10.7	10.3	10.5	---	---	---	---	---	---
6	12.7	10.3	11.3	11.0	10.6	10.8	---	---	---	---	---	---
7	12.0	10.2	10.9	11.2	10.8	11.0	---	---	---	---	---	---
8	11.8	10.3	10.8	12.0	11.0	11.5	---	---	---	---	---	---
9	10.6	8.8	9.8	12.4	11.9	12.1	---	---	---	---	---	---
10	11.0	8.8	10.0	12.6	11.8	12.1	---	---	---	---	---	---
11	11.3	9.7	10.4	12.4	11.4	11.9	---	---	---	---	---	---
12	11.6	10.1	10.7	13.0	11.8	12.4	---	---	---	---	---	---
13	11.8	10.0	10.8	13.4	12.4	12.8	---	---	---	---	---	---
14	10.5	9.3	9.8	13.8	12.8	13.2	---	---	---	---	---	---
15	9.6	8.9	9.2	14.3	12.9	13.5	---	---	---	---	---	---
16	10.3	9.1	9.6	14.3	12.1	13.3	---	---	---	---	---	---
17	10.8	9.2	10.0	12.7	11.2	12.0	---	---	---	---	---	---
18	11.4	10.3	10.9	12.9	10.9	11.6	---	---	---	---	---	---
19	11.5	10.6	11.0	12.9	10.8	11.6	---	---	---	---	---	---
20	10.9	10.2	10.6	12.7	10.7	11.4	---	---	---	---	---	---
21	10.9	10.0	10.3	13.5	10.5	11.8	---	---	---	---	---	---
22	11.6	9.9	10.6	14.1	11.2	12.5	---	---	---	---	---	---
23	11.4	10.0	10.6	12.9	11.5	12.1	---	---	---	---	---	---
24	10.8	9.8	10.3	12.3	11.2	11.6	---	---	---	---	---	---
25	11.3	9.6	10.4	13.8	11.6	12.9	---	---	---	---	---	---
26	11.2	9.8	10.3	13.8	12.8	13.3	---	---	---	---	---	---
27	11.5	9.3	10.2	13.4	12.1	12.6	---	---	---	---	---	---
28	11.4	9.5	10.3	12.1	11.8	12.0	---	---	---	---	---	---
29	10.3	9.2	9.8	12.4	12.1	12.3	---	---	---	---	---	---
30	9.4	8.9	9.2	12.6	12.3	12.4	---	---	---	---	---	---
31	9.3	8.6	9.0	---	---	---	---	---	---	---	---	---
MONTH	12.7	7.4	10.3	14.3	9.3	11.8	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.7	8.1	8.4	---	---	---
2	---	---	---	---	---	---	8.4	7.5	8.0	---	---	---
3	---	---	---	---	---	---	7.5	6.9	7.2	---	---	---
4	---	---	---	---	---	---	10.5	7.2	9.4	13.5	9.9	11.4
5	---	---	---	---	---	---	11.4	10.2	10.9	14.3	10.7	12.3
6	---	---	---	---	---	---	10.8	10.0	10.3	14.7	10.8	12.6
7	---	---	---	---	---	---	10.8	9.6	10.1	15.8	10.2	12.9
8	---	---	---	---	---	---	11.9	10.0	10.9	15.7	9.6	12.3
9	---	---	---	---	---	---	12.9	10.3	11.4	14.1	9.0	11.6
10	---	---	---	---	---	---	13.6	10.5	11.8	13.3	8.1	10.7
11	---	---	---	---	---	---	13.2	10.3	11.7	---	---	---
12	---	---	---	---	---	---	12.8	10.5	11.6	---	---	---
13	---	---	---	---	---	---	13.0	10.4	11.6	11.6	9.7	10.7
14	---	---	---	---	---	---	13.8	10.6	12.1	11.5	9.5	10.6
15	---	---	---	---	---	---	14.2	10.7	12.5	10.5	9.2	9.8
16	---	---	---	---	---	---	13.8	11.4	12.9	11.5	9.6	10.5
17	---	---	---	---	---	---	13.5	11.1	12.3	12.8	10.1	11.2
18	---	---	---	---	---	---	14.0	11.1	12.6	13.0	9.6	11.1
19	---	---	---	---	---	---	13.4	10.2	11.6	11.1	9.2	10.2
20	---	---	---	---	---	---	---	---	---	12.7	9.3	10.9
21	---	---	---	---	---	---	---	---	---	12.5	9.0	10.8
22	---	---	---	---	---	---	---	---	---	11.6	8.9	10.3
23	---	---	---	---	---	---	8.4	7.3	8.0	11.3	9.0	10.1
24	---	---	---	---	---	---	11.4	7.3	8.3	11.3	9.4	10.3
25	---	---	---	---	---	---	12.7	11.3	11.9	12.0	9.7	10.6
26	---	---	---	---	---	---	12.1	10.8	11.4	11.6	9.4	10.5
27	---	---	---	---	---	---	10.9	10.6	10.8	12.0	9.4	10.6
28	---	---	---	---	---	---	11.1	10.7	10.9	11.8	9.2	10.5
29	---	---	---	---	---	---	12.0	11.1	11.5	11.8	9.4	10.7
30	---	---	---	---	---	---	12.3	11.2	11.8	12.1	9.5	10.7
31	---	---	---	10.1	8.6	9.3	---	---	---	11.0	8.4	9.9
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.7	7.8	9.3	8.2	6.8	7.5	---	---	---	12.0	8.2	10.0
2	10.6	7.7	9.2	8.4	6.8	7.6	---	---	---	11.3	8.6	9.9
3	9.1	7.4	8.3	8.4	6.5	7.7	9.4	6.7	7.9	11.5	8.9	10.2
4	10.8	7.3	8.9	8.9	7.0	7.9	8.8	6.5	7.4	11.9	9.4	10.5
5	---	---	---	---	---	---	9.3	6.3	7.6	12.0	9.2	10.6
6	---	---	---	---	---	---	9.5	6.5	8.1	---	---	---
7	---	---	---	---	---	---	10.5	7.3	8.7	---	---	---
8	7.2	6.1	6.6	---	---	---	---	---	---	10.7	8.0	9.2
9	---	---	---	---	---	---	---	---	---	11.0	8.1	9.3
10	---	---	---	---	---	---	---	---	---	11.1	8.5	9.6
11	---	---	---	---	---	---	8.4	6.5	7.4	11.0	8.7	9.6
12	---	---	---	---	---	---	8.2	6.8	7.4	11.4	8.7	9.9
13	7.1	5.7	6.4	8.2	6.1	7.1	8.6	6.6	7.5	10.9	8.8	9.7
14	7.0	6.1	6.5	8.6	6.2	7.2	8.7	6.6	7.6	9.8	8.1	8.8
15	6.8	6.3	6.6	8.8	6.2	7.2	9.1	6.9	8.0	10.4	8.0	9.1
16	7.3	6.6	7.0	7.1	6.0	6.5	9.3	7.2	8.3	8.9	7.9	8.5
17	7.9	7.3	7.7	8.0	6.3	7.1	9.4	6.9	8.3	9.7	8.2	8.8
18	8.3	7.8	8.1	8.9	6.4	7.4	9.6	7.3	8.2	10.0	8.4	9.1
19	8.4	7.8	8.2	7.4	6.3	6.8	9.1	7.1	8.0	9.9	8.3	9.1
20	8.6	7.7	8.2	7.8	6.5	7.1	8.2	7.1	7.5	9.9	8.2	8.9
21	8.2	7.5	7.9	7.5	6.4	7.0	9.1	7.2	8.0	10.0	8.1	8.9
22	8.5	7.5	8.0	7.6	6.2	6.9	9.6	7.5	8.4	9.4	8.1	8.5
23	8.7	7.4	8.1	8.0	6.6	7.3	9.8	7.8	8.8	9.4	8.0	8.6
24	8.6	7.4	8.0	7.6	6.7	7.1	10.2	7.5	9.0	10.3	8.6	9.3
25	9.0	6.9	8.0	8.0	6.4	7.3	10.8	8.1	9.4	10.4	8.7	9.4
26	9.9	7.1	8.5	8.2	6.5	7.3	11.0	8.2	9.5	9.1	8.2	8.6
27	10.1	6.9	8.4	8.0	6.8	7.4	9.1	8.0	8.4	9.8	8.1	8.9
28	---	---	---	8.4	7.2	7.8	9.7	7.5	8.5	10.2	8.7	9.3
29	9.6	7.1	8.5	8.4	7.3	8.0	10.0	7.8	8.7	10.5	8.5	9.5
30	9.1	6.8	8.0	9.0	7.5	8.2	9.0	7.6	8.1	11.5	9.3	10.3
31	---	---	---	9.1	7.5	8.3	10.0	7.4	8.6	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	780	772	777	---	---	---	---	---	---	---	---	---
2	772	762	768	---	---	---	---	---	---	---	---	---
3	762	750	758	---	---	---	---	---	---	---	---	---
4	756	747	750	---	---	---	---	---	---	---	---	---
5	807	756	786	---	---	---	---	---	---	---	---	---
6	808	752	783	---	---	---	---	---	---	---	---	---
7	752	715	731	---	---	---	---	---	---	---	---	---
8	725	717	721	---	---	---	---	---	---	---	---	---
9	739	725	734	---	---	---	---	---	---	---	---	---
10	744	739	741	---	---	---	---	---	---	---	---	---
11	743	737	741	---	---	---	---	---	---	---	---	---
12	751	740	746	---	---	---	---	---	---	---	---	---
13	756	748	752	---	---	---	---	---	---	---	---	---
14	784	754	771	---	---	---	---	---	---	---	---	---
15	776	749	761	---	---	---	---	---	---	---	---	---
16	749	704	725	---	---	---	---	---	---	---	---	---
17	707	699	704	---	---	---	---	---	---	---	---	---
18	705	689	695	---	---	---	---	---	---	---	---	---
19	719	701	708	---	---	---	---	---	---	---	---	---
20	726	712	719	---	---	---	---	---	---	---	---	---
21	723	713	720	---	---	---	---	---	---	---	---	---
22	735	717	725	---	---	---	---	---	---	---	---	---
23	738	732	734	---	---	---	---	---	---	---	---	---
24	761	737	749	---	---	---	---	---	---	---	---	---
25	760	746	751	---	---	---	---	---	---	---	---	---
26	762	749	753	---	---	---	---	---	---	---	---	---
27	767	758	761	---	---	---	---	---	---	---	---	---
28	778	758	771	---	---	---	---	---	---	---	---	---
29	803	773	785	---	---	---	---	---	---	---	---	---
30	803	787	792	---	---	---	---	---	---	---	---	---
31	802	773	789	---	---	---	---	---	---	---	---	---
MONTH	808	689	748	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.4	8.2	8.3	---	---	---	---	---	---	---	---	---
2	8.3	8.2	8.3	---	---	---	---	---	---	---	---	---
3	8.3	8.2	8.2	---	---	---	---	---	---	---	---	---
4	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
5	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
6	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
7	8.4	8.1	8.2	---	---	---	---	---	---	---	---	---
8	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
9	8.3	8.2	8.2	---	---	---	---	---	---	---	---	---
10	8.3	8.2	8.2	---	---	---	---	---	---	---	---	---
11	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
12	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
13	8.3	8.1	8.1	---	---	---	---	---	---	---	---	---
14	8.3	8.1	8.1	---	---	---	---	---	---	---	---	---
15	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
16	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
17	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
18	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
19	8.5	8.1	8.3	---	---	---	---	---	---	---	---	---
20	8.4	8.2	8.3	---	---	---	---	---	---	---	---	---
21	8.4	8.2	8.3	---	---	---	---	---	---	---	---	---
22	8.3	8.2	8.3	---	---	---	---	---	---	---	---	---
23	8.4	8.2	8.3	---	---	---	---	---	---	---	---	---
24	8.3	8.2	8.3	---	---	---	---	---	---	---	---	---
25	8.4	8.2	8.3	---	---	---	---	---	---	---	---	---
26	8.4	8.3	8.3	---	---	---	---	---	---	---	---	---
27	8.3	8.3	8.3	---	---	---	---	---	---	---	---	---
28	8.4	8.3	8.3	---	---	---	---	---	---	---	---	---
29	8.3	8.3	8.3	---	---	---	---	---	---	---	---	---
30	8.3	8.3	8.3	---	---	---	---	---	---	---	---	---
31	8.3	8.2	8.3	---	---	---	---	---	---	---	---	---
MAX	8.5	8.3	8.3	---	---	---	---	---	---	---	---	---
MIN	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159492 BLACK RIVER NEAR JEDDO, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.1	13.7	15.1	---	---	---	---	---	---	---	---	---
2	17.6	14.7	16.4	---	---	---	---	---	---	---	---	---
3	19.4	17.2	18.3	---	---	---	---	---	---	---	---	---
4	20.9	18.6	19.8	---	---	---	---	---	---	---	---	---
5	21.3	19.5	20.4	---	---	---	---	---	---	---	---	---
6	21.3	18.9	20.1	---	---	---	---	---	---	---	---	---
7	18.9	15.7	17.5	---	---	---	---	---	---	---	---	---
8	15.7	13.2	14.4	---	---	---	---	---	---	---	---	---
9	13.8	11.9	12.9	---	---	---	---	---	---	---	---	---
10	12.8	12.3	12.6	---	---	---	---	---	---	---	---	---
11	14.0	12.6	13.2	---	---	---	---	---	---	---	---	---
12	14.7	13.4	14.0	---	---	---	---	---	---	---	---	---
13	15.8	14.2	14.9	---	---	---	---	---	---	---	---	---
14	16.7	14.3	15.5	---	---	---	---	---	---	---	---	---
15	15.9	14.4	15.2	---	---	---	---	---	---	---	---	---
16	14.4	13.0	13.6	---	---	---	---	---	---	---	---	---
17	13.1	11.6	12.5	---	---	---	---	---	---	---	---	---
18	13.4	11.8	12.6	---	---	---	---	---	---	---	---	---
19	12.6	11.1	12.0	---	---	---	---	---	---	---	---	---
20	12.0	9.9	11.0	---	---	---	---	---	---	---	---	---
21	11.8	10.5	11.0	---	---	---	---	---	---	---	---	---
22	10.5	9.7	10.1	---	---	---	---	---	---	---	---	---
23	10.3	9.4	9.8	---	---	---	---	---	---	---	---	---
24	10.6	9.4	9.9	---	---	---	---	---	---	---	---	---
25	9.9	9.0	9.5	---	---	---	---	---	---	---	---	---
26	9.6	8.5	9.0	---	---	---	---	---	---	---	---	---
27	9.3	7.9	8.6	---	---	---	---	---	---	---	---	---
28	8.9	7.7	8.3	---	---	---	---	---	---	---	---	---
29	8.6	7.1	7.8	---	---	---	---	---	---	---	---	---
30	8.7	7.1	7.9	---	---	---	---	---	---	---	---	---
31	9.8	7.9	8.8	---	---	---	---	---	---	---	---	---
MONTH	21.3	7.1	13.0	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	9.6	10.5	---	---	---	---	---	---	---	---	---
2	11.4	9.4	10.3	---	---	---	---	---	---	---	---	---
3	10.9	9.1	9.8	---	---	---	---	---	---	---	---	---
4	10.7	8.4	9.5	---	---	---	---	---	---	---	---	---
5	9.3	7.9	8.7	---	---	---	---	---	---	---	---	---
6	9.8	7.6	8.6	---	---	---	---	---	---	---	---	---
7	10.1	7.9	8.9	---	---	---	---	---	---	---	---	---
8	10.5	8.4	9.4	---	---	---	---	---	---	---	---	---
9	11.3	9.4	10.3	---	---	---	---	---	---	---	---	---
10	11.0	9.8	10.3	---	---	---	---	---	---	---	---	---
11	11.7	9.5	10.4	---	---	---	---	---	---	---	---	---
12	11.4	9.5	10.2	---	---	---	---	---	---	---	---	---
13	11.4	9.3	10.1	---	---	---	---	---	---	---	---	---
14	11.9	9.3	10.2	---	---	---	---	---	---	---	---	---
15	10.8	9.2	9.9	---	---	---	---	---	---	---	---	---
16	11.3	9.3	10.1	---	---	---	---	---	---	---	---	---
17	12.0	9.9	10.5	---	---	---	---	---	---	---	---	---
18	12.3	9.9	10.9	---	---	---	---	---	---	---	---	---
19	12.3	10.2	10.9	---	---	---	---	---	---	---	---	---
20	12.8	10.1	11.2	---	---	---	---	---	---	---	---	---
21	12.1	10.5	11.2	---	---	---	---	---	---	---	---	---
22	11.8	10.8	11.2	---	---	---	---	---	---	---	---	---
23	12.4	10.5	11.3	---	---	---	---	---	---	---	---	---
24	12.5	10.7	11.5	---	---	---	---	---	---	---	---	---
25	11.9	10.7	11.2	---	---	---	---	---	---	---	---	---
26	11.9	10.5	11.1	---	---	---	---	---	---	---	---	---
27	12.1	10.9	11.4	---	---	---	---	---	---	---	---	---
28	12.2	11.0	11.5	---	---	---	---	---	---	---	---	---
29	12.4	11.2	11.7	---	---	---	---	---	---	---	---	---
30	12.5	11.4	11.9	---	---	---	---	---	---	---	---	---
31	12.1	10.9	11.5	---	---	---	---	---	---	---	---	---
MONTH	12.8	7.6	10.5	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04159900 MILL CREEK NEAR AVOCA, MI

LOCATION.--Lat 43°03'16", long 82°44'05", in NW1/4 sec.8, T.7 N., R.15 E., St. Clair County, Hydrologic Unit 04090001, on left bank at downstream side of bridge on Bricker Road, 0.2 mi upstream from Gleason Drain, and 2.3 mi west of Avoca.

DRAINAGE AREA.--169 mi^2.

PERIOD OF RECORD.--April 1963 to September 1975, October 1975 to September 1978 (operated as a crest-stage partial-record station), October 1978 to September 1979 (operated as a low-flow and crest-stage partial-record station), October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 711.31 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	31	231	784	e55	e66	279	217	33	18	9.0	7.8
2	9.0	42	326	e866	e54	e66	229	161	30	17	8.6	8.6
3	9.4	47	283	847	e54	e66	190	130	26	16	8.0	7.3
4	8.7	67	200	670	e54	e71	153	108	25	15	7.3	6.1
5	13	77	137	500	e60	e75	127	90	24	15	7.1	5.9
6	12	78	101	352	e70	e84	113	78	26	14	7.0	5.6
7	12	60	298	e225	e85	214	105	70	52	14	6.5	5.3
8	12	45	673	e175	134	584	95	66	44	14	6.5	5.2
9	13	36	624	e140	191	757	86	62	32	12	7.5	5.0
10	12	30	455	e125	190	613	77	57	28	11	7.7	4.9
11	14	27	424	124	169	470	68	55	40	10	6.4	4.8
12	14	25	380	245	151	358	61	51	42	10	6.6	4.5
13	14	23	316	989	144	e270	57	58	52	10	7.2	4.3
14	17	22	249	1270	325	e197	57	90	74	9.7	6.9	4.5
15	19	21	e185	997	672	e167	52	141	123	8.9	7.6	4.8
16	23	20	e140	656	1020	e157	44	149	111	9.4	7.4	4.5
17	20	20	e115	442	946	e152	42	119	107	11	7.0	4.8
18	20	20	e87	339	667	e152	41	95	111	11	6.6	5.0
19	19	20	e75	e253	518	168	44	77	98	11	12	5.1
20	23	22	e70	e198	383	224	47	65	76	10	11	5.5
21	23	23	e65	e154	e247	393	43	56	57	9.7	11	5.3
22	18	24	e60	e130	e169	496	44	49	43	8.5	8.8	10
23	16	23	e55	e111	e137	544	47	76	34	7.7	7.7	9.9
24	17	24	e51	e96	e122	404	64	102	29	8.4	6.8	14
25	16	31	e48	e84	e105	370	141	94	24	9.3	6.3	19
26	17	37	e47	e75	e89	345	526	74	21	12	6.6	16
27	17	74	e46	e68	e76	319	861	57	20	13	9.2	12
28	17	151	e45	e64	e66	320	640	49	19	16	10	17
29	27	163	e44	e61	---	357	430	43	19	14	9.5	14
30	29	124	e48	e58	---	356	306	40	18	12	8.6	9.9
31	38	---	e373	e56	---	331	---	37	---	9.9	7.4	---
TOTAL	527.8	1407	6251	11154	6953	9146	5069	2616	1438	367.5	245.8	236.6
MEAN	17.0	46.9	202	360	248	295	169	84.4	47.9	11.9	7.93	7.89
MAX	38	163	673	1270	1020	757	861	217	123	18	12	19
MIN	8.7	20	44	56	54	66	41	37	18	7.7	6.3	4.3
CFSM	0.10	0.28	1.19	2.13	1.47	1.75	1.00	0.50	0.28	0.07	0.05	0.05
IN.	0.12	0.31	1.38	2.46	1.53	2.01	1.12	0.58	0.32	0.08	0.05	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2005, BY WATER YEAR (WY)

MEAN	27.5	56.1	89.3	113	156	264	212	114	75.9	24.1	15.3	15.0
MAX	269	261	266	404	586	664	715	529	659	89.9	57.3	95.9
(WY)	2002	1993	1988	1974	2001	1973	1975	2004	1996	2004	1973	1992
MIN	2.76	5.25	3.72	5.74	6.21	11.2	26.1	16.2	5.91	2.36	3.17	2.39
(WY)	1964	1965	1964	2003	1964	1964	1964	1964	1964	1963	1964	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1963 - 2005	
ANNUAL TOTAL	47775.3		45411.7			
ANNUAL MEAN	131		124		97.5	
HIGHEST ANNUAL MEAN					174	1974
LOWEST ANNUAL MEAN					7.84	1964
HIGHEST DAILY MEAN	2070	May 24	1270	Jan 14	3940	Apr 19 1975
LOWEST DAILY MEAN	8.7	Oct 1	4.3	Sep 13	0.90	Aug 9 1964
ANNUAL SEVEN-DAY MINIMUM	9.5	Sep 28	4.6	Sep 11	1.2	Jul 6 1963
MAXIMUM PEAK FLOW			1340	Jan 14	(a)4570	Apr 19 1975
MAXIMUM PEAK STAGE			6.83	Jan 14	(b)9.33	Feb 10 2001
INSTANTANEOUS LOW FLOW			4.2	(c)	0.80	(d)
ANNUAL RUNOFF (CFSM)	0.772		0.736		0.577	
ANNUAL RUNOFF (INCHES)	10.52		10.00		7.84	
10 PERCENT EXCEEDS	319		357		240	
50 PERCENT EXCEEDS	48		49		29	
90 PERCENT EXCEEDS	15		7.6		5.9	

(a) Gage height 8.87 ft.
(b) Backwater from ice.
(c) Part of each day Sept. 13-17.
(d) Part of each day Aug. 9-11, 1964.
(e) Estimated.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI

LOCATION.--Lat 42°51'31", long 82°32'17", in NE1/4 sec.22, T.5 N., R.16 E., St. Clair County, Hydrologic Unit 04090001, on right bank at upstream side of bridge on Neuman Road, 4.8 mi southwest of Marysville.

DRAINAGE AREA.--170 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 2004 to October 2005 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,470 ft^3/s, Feb. 16, 2005, gage height, 17.52 ft; minimum, 0.10 ft^3/s, Sept. 15, 16, 2005.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	32	379	1750	e31	e46	360	149	21	99	4.8	1.4
2	1.6	29	662	1730	e30	e46	316	112	17	39	3.6	1.2
3	1.3	42	405	1310	e30	e46	477	89	14	17	2.9	1.1
4	e1.3	66	184	834	e38	e50	300	73	13	10	2.5	0.84
5	1.2	160	114	479	e50	e60	184	60	12	8.0	2.0	0.65
6	1.2	142	82	e260	64	e75	139	51	11	6.4	1.7	0.56
7	1.1	84	378	e175	70	262	113	45	15	6.1	1.6	0.46
8	1.0	48	1400	e135	105	726	96	41	15	6.7	1.4	0.52
9	1.0	30	1000	e115	175	777	79	38	12	5.3	1.3	0.40
10	0.98	22	387	112	196	618	67	33	9.7	4.5	1.3	0.34
11	1.3	17	343	116	190	418	57	29	8.3	3.8	1.2	0.30
12	1.5	14	444	296	164	288	49	26	7.0	3.3	1.4	0.31
13	1.4	13	371	1470	151	e205	44	25	6.4	3.0	1.5	0.44
14	2.6	11	266	2090	447	e165	38	54	6.3	2.8	1.9	0.41
15	5.8	10	e135	1100	1770	e145	33	94	12	2.9	2.0	0.18
16	17	9.4	e100	348	2420	e145	31	86	24	672	1.7	0.51
17	15	e8.8	e80	e210	2130	e160	28	69	39	1270	1.5	0.60
18	9.8	e8.8	e58	e155	1070	e190	27	50	51	178	1.3	0.90
19	7.1	e9.0	e43	e115	510	e250	25	38	34	104	1.2	1.0
20	5.4	e9.0	e39	e90	e260	e540	26	33	23	45	1.1	0.89
21	3.7	e9.0	e37	e70	e175	e895	30	30	16	22	2.1	0.81
22	3.0	e11	e34	e55	e110	e925	28	26	12	13	1.8	1.5
23	3.0	12	e32	e50	e80	e960	43	41	10	7.5	1.4	8.2
24	3.4	13	e30	e46	e60	e905	217	136	8.2	6.3	1.00	17
25	3.3	122	e29	e43	e55	880	639	136	6.9	6.7	0.87	6.8
26	4.2	151	e28	e40	e50	868	1290	88	5.8	33	0.85	8.9
27	5.0	112	e27	e38	e48	618	1610	57	5.2	109	1.3	12
28	4.6	243	e26	e36	e47	528	1050	40	12	50	1.2	9.2
29	10	284	e26	e34	---	607	404	32	92	20	3.2	8.5
30	72	167	e40	e33	---	578	220	27	66	11	2.8	10
31	55	---	474	e32	---	492	---	24	---	6.7	1.9	---
TOTAL	246.18	1889.0	7653	13367	10526	13468	8020	1832	584.8	2772.0	56.32	95.92
MEAN	7.94	63.0	247	431	376	434	267	59.1	19.5	89.4	1.82	3.20
MAX	72	284	1400	2090	2420	960	1610	149	92	1270	4.8	17
MIN	0.98	8.8	26	32	30	46	25	24	5.2	2.8	0.85	0.18
CFSM	0.05	0.37	1.45	2.54	2.21	2.56	1.57	0.35	0.11	0.53	0.01	0.02
IN.	0.05	0.41	1.67	2.93	2.30	2.95	1.75	0.40	0.13	0.61	0.01	0.02

WTR YR 2005 TOTAL 60510.22 MEAN 166 MAX 2420 MIN 0.18 CFSM 0.98 IN. 13.24

(e) Estimated.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	---	---	---	---	---	---	---	---	---	---	---
2	5.5	---	---	---	---	---	---	---	---	---	---	---
3	6.1	---	---	---	---	---	---	---	---	---	---	---
4	5.9	---	---	---	---	---	---	---	---	---	---	---
5	6.6	---	---	---	---	---	---	---	---	---	---	---
6	5.2	---	---	---	---	---	---	---	---	---	---	---
7	3.6	---	---	---	---	---	---	---	---	---	---	---
8	3.2	---	---	---	---	---	---	---	---	---	---	---
9	3.2	---	---	---	---	---	---	---	---	---	---	---
10	3.0	---	---	---	---	---	---	---	---	---	---	---
11	2.9	---	---	---	---	---	---	---	---	---	---	---
12	3.3	---	---	---	---	---	---	---	---	---	---	---
13	e3.3	---	---	---	---	---	---	---	---	---	---	---
14	e3.7	---	---	---	---	---	---	---	---	---	---	---
15	e3.7	---	---	---	---	---	---	---	---	---	---	---
16	e3.8	---	---	---	---	---	---	---	---	---	---	---
17	4.0	---	---	---	---	---	---	---	---	---	---	---
18	3.7	---	---	---	---	---	---	---	---	---	---	---
19	3.5	---	---	---	---	---	---	---	---	---	---	---
20	3.5	---	---	---	---	---	---	---	---	---	---	---
21	3.3	---	---	---	---	---	---	---	---	---	---	---
22	3.2	---	---	---	---	---	---	---	---	---	---	---
23	3.2	---	---	---	---	---	---	---	---	---	---	---
24	e3.2	---	---	---	---	---	---	---	---	---	---	---
25	e3.1	---	---	---	---	---	---	---	---	---	---	---
26	e3.0	---	---	---	---	---	---	---	---	---	---	---
27	e2.9	---	---	---	---	---	---	---	---	---	---	---
28	e3.0	---	---	---	---	---	---	---	---	---	---	---
29	e3.2	---	---	---	---	---	---	---	---	---	---	---
30	e3.1	---	---	---	---	---	---	---	---	---	---	---
31	e2.9	---	---	---	---	---	---	---	---	---	---	---
TOTAL	120.6	---	---	---	---	---	---	---	---	---	---	---
MEAN	3.89	---	---	---	---	---	---	---	---	---	---	---
MAX	8.8	---	---	---	---	---	---	---	---	---	---	---
MIN	2.9	---	---	---	---	---	---	---	---	---	---	---
CFSM	0.02	---	---	---	---	---	---	---	---	---	---	---
IN.	0.03	---	---	---	---	---	---	---	---	---	---	---

(e) Estimated.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 20-31, Nov. 3 to Dec. 1, Mar. 31 to Apr. 17, Apr. 26, 27, May 1-5, 18, 19, July 16 to Aug. 2, Oct. 2-5, 19-31, 2005, rated good; May 6-9, rated fair; May 10-17, rated poor. pH and water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Nov. 1-3, 12-16, Apr. 17-23, June 4-7, 25-28, July 7-10, July 30 to Aug. 2, Oct. 22-25, 2005, rated good; Apr. 24-26, July 11, 12, rated fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 839 microsiemens, Oct. 15, 2004; minimum, 133 microsiemens, July 16, 2005.
pH: Maximum, 8.6 std. units, July 25, 2004; minimum, 7.5 std. units, July 17, 18, 2005.
WATER TEMPERATURE: Maximum, 27.5°C, June 10, 2005; minimum, 1.2°C, Nov. 15, 2004.
DISSOLVED OXYGEN: Maximum, 14.2 mg/L, Nov. 15, 2004; minimum, 4.7 mg/L, June 11, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 839 microsiemens, Oct. 15; minimum, 133 microsiemens, July 16.
pH: Maximum, 8.5 std units, May 6, 7; minimum, 7.5 std. units, July 17, 18.
WATER TEMPERATURE: Maximum, 27.5°C, June 10, minimum, 1.2°C, Nov. 15.
DISSOLVED OXYGEN: Maximum, 14.2 mg/L, Nov. 15; minimum, 4.7 mg/L, June 11.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	636	632	635	616	601	611	571	404	500	---	---	---
2	637	623	628	694	576	624	---	---	---	---	---	---
3	627	624	626	703	653	668	---	---	---	---	---	---
4	630	627	629	677	630	656	---	---	---	---	---	---
5	632	628	630	648	613	622	---	---	---	---	---	---
6	637	630	634	641	619	629	---	---	---	---	---	---
7	636	631	633	626	610	617	---	---	---	---	---	---
8	635	630	632	642	617	632	---	---	---	---	---	---
9	630	623	626	645	642	644	---	---	---	---	---	---
10	643	628	634	648	644	646	---	---	---	---	---	---
11	642	635	638	656	647	651	---	---	---	---	---	---
12	646	638	641	663	656	659	---	---	---	---	---	---
13	649	635	647	670	663	666	---	---	---	---	---	---
14	636	624	629	676	670	673	---	---	---	---	---	---
15	839	578	670	681	676	678	---	---	---	---	---	---
16	838	612	679	682	679	681	---	---	---	---	---	---
17	659	618	639	685	680	682	---	---	---	---	---	---
18	713	643	689	688	684	686	---	---	---	---	---	---
19	669	641	650	692	686	689	---	---	---	---	---	---
20	650	643	648	707	688	701	---	---	---	---	---	---
21	657	650	653	717	707	713	---	---	---	---	---	---
22	661	657	659	717	705	710	---	---	---	---	---	---
23	659	640	654	713	707	709	---	---	---	---	---	---
24	698	641	669	754	698	718	---	---	---	---	---	---
25	688	665	673	763	585	674	---	---	---	---	---	---
26	677	660	666	600	567	584	---	---	---	---	---	---
27	668	660	664	603	593	598	---	---	---	---	---	---
28	666	650	658	603	571	590	---	---	---	---	---	---
29	822	484	663	580	568	573	---	---	---	---	---	---
30	736	592	634	568	559	563	---	---	---	---	---	---
31	614	546	592	---	---	---	---	---	---	---	---	---
MONTH	839	484	646	763	559	652	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	321	295	308	427	402	416
2	---	---	---	---	---	---	386	321	349	450	427	439
3	---	---	---	---	---	---	393	379	385	469	450	459
4	---	---	---	---	---	---	404	393	398	483	469	477
5	---	---	---	---	---	---	426	404	415	501	483	494
6	---	---	---	---	---	---	448	426	437	513	501	508
7	---	---	---	---	---	---	470	448	460	525	513	519
8	---	---	---	---	---	---	486	470	478	538	525	530
9	---	---	---	---	---	---	501	486	494	542	535	538
10	---	---	---	---	---	---	515	501	509	554	541	548
11	---	---	---	---	---	---	525	515	520	564	553	559
12	---	---	---	---	---	---	538	510	530	574	564	569
13	---	---	---	---	---	---	541	500	527	582	569	575
14	---	---	---	---	---	---	550	526	541	619	579	593
15	---	---	---	---	---	---	558	537	550	586	548	564
16	---	---	---	---	---	---	561	554	558	548	530	536
17	---	---	---	---	---	---	560	547	556	536	527	531
18	---	---	---	---	---	---	560	549	554	553	529	541
19	---	---	---	---	---	---	563	555	560	572	553	564
20	---	---	---	---	---	---	572	556	565	578	572	577
21	---	---	---	---	---	---	571	565	568	579	576	577
22	---	---	---	---	---	---	574	569	572	580	578	579
23	---	---	---	---	---	---	622	567	585	653	565	593
24	---	---	---	---	---	---	624	506	557	603	530	565
25	---	---	---	---	---	---	506	351	436	549	526	540
26	---	---	---	---	---	---	398	349	368	564	538	547
27	---	---	---	---	---	---	356	317	328	571	564	568
28	---	---	---	---	---	---	322	310	315	572	566	568
29	---	---	---	---	---	---	364	322	343	574	571	572
30	---	---	---	---	---	---	402	364	385	582	574	580
31	---	---	---	295	281	288	---	---	---	588	582	585
MONTH	---	---	---	---	---	---	624	295	472	653	402	542

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	597	588	591	541	378	452	588	578	583	576	573	574
2	603	597	601	555	541	550	587	581	584	584	573	578
3	612	603	608	561	551	557	581	573	578	575	571	573
4	621	612	618	560	555	557	574	564	569	576	574	575
5	624	616	621	556	547	553	566	562	565	577	574	575
6	631	616	625	547	532	540	562	559	561	579	576	578
7	630	626	628	532	510	521	559	553	556	581	578	580
8	635	627	631	524	513	519	565	553	557	583	577	580
9	634	611	629	540	521	533	558	552	554	582	579	581
10	631	622	627	543	540	542	558	555	557	584	580	582
11	623	613	617	550	543	546	561	557	559	585	580	582
12	631	617	625	553	545	551	561	557	559	587	582	585
13	633	611	622	559	550	556	563	560	562	588	584	586
14	629	618	623	563	555	560	567	562	564	588	577	585
15	622	549	603	565	546	558	568	561	563	584	577	581
16	684	605	633	563	133	346	573	568	570	581	518	563
17	648	612	629	296	147	219	581	573	577	560	549	552
18	623	595	603	391	296	345	588	581	584	581	558	569
19	632	596	617	419	391	410	596	577	591	565	558	560
20	619	612	615	467	417	441	599	593	597	566	562	565
21	653	618	636	496	467	484	601	596	599	568	565	567
22	676	649	661	521	495	511	600	506	586	565	403	541
23	694	672	680	536	521	527	506	405	426	737	493	570
24	701	686	692	574	526	542	547	427	504	542	492	520
25	708	691	697	592	558	573	562	466	497	535	468	490
26	714	696	702	621	491	548	595	562	585	727	481	589
27	710	694	700	494	436	456	597	538	587	620	538	558
28	754	540	679	517	470	501	590	574	581	602	540	571
29	592	366	438	535	516	526	603	575	585	708	532	585
30	535	376	457	557	535	547	585	574	579	621	578	595
31	---	---	---	578	557	570	575	573	574	---	---	---
MONTH	754	366	624	621	133	505	603	405	564	737	403	570

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	8.0	8.0	7.8	7.7	7.8	8.0	7.8	7.9	---	---	---
2	8.1	8.0	8.0	7.8	7.8	7.8	---	---	---	---	---	---
3	8.1	8.0	8.0	7.9	7.8	7.8	---	---	---	---	---	---
4	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---	---	---
5	8.1	8.0	8.0	7.9	7.9	7.9	---	---	---	---	---	---
6	8.1	8.0	8.0	8.0	7.9	8.0	---	---	---	---	---	---
7	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---	---	---
8	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---	---	---
9	8.0	7.9	8.0	8.0	7.9	8.0	---	---	---	---	---	---
10	7.9	7.9	7.9	8.0	8.0	8.0	---	---	---	---	---	---
11	8.0	7.9	7.9	8.0	7.9	8.0	---	---	---	---	---	---
12	8.0	7.9	7.9	8.0	8.0	8.0	---	---	---	---	---	---
13	8.0	7.9	7.9	8.1	8.0	8.0	---	---	---	---	---	---
14	7.9	7.8	7.8	8.1	8.0	8.0	---	---	---	---	---	---
15	7.8	7.8	7.8	8.1	8.0	8.1	---	---	---	---	---	---
16	7.8	7.7	7.7	8.1	8.0	8.1	---	---	---	---	---	---
17	7.8	7.7	7.8	8.1	8.0	8.0	---	---	---	---	---	---
18	7.9	7.8	7.8	8.1	8.0	8.0	---	---	---	---	---	---
19	7.9	7.8	7.8	8.2	8.0	8.1	---	---	---	---	---	---
20	7.9	7.8	7.8	8.2	8.0	8.1	---	---	---	---	---	---
21	7.9	7.8	7.8	8.2	8.0	8.1	---	---	---	---	---	---
22	7.9	7.8	7.8	8.3	8.1	8.2	---	---	---	---	---	---
23	7.8	7.8	7.8	8.2	8.1	8.2	---	---	---	---	---	---
24	7.8	7.7	7.7	8.2	8.1	8.1	---	---	---	---	---	---
25	7.7	7.7	7.7	8.1	8.0	8.0	---	---	---	---	---	---
26	7.7	7.7	7.7	8.1	8.0	8.0	---	---	---	---	---	---
27	7.7	7.7	7.7	8.1	8.1	8.1	---	---	---	---	---	---
28	7.7	7.7	7.7	8.1	8.0	8.0	---	---	---	---	---	---
29	7.8	7.6	7.7	8.0	8.0	8.0	---	---	---	---	---	---
30	7.7	7.6	7.7	8.0	8.0	8.0	---	---	---	---	---	---
31	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
MAX	8.1	8.0	8.0	8.3	8.1	8.2	---	---	---	---	---	---
MIN	7.7	7.6	7.7	7.8	7.7	7.8	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	7.9	7.9	7.9	8.0	7.9	7.9
2	---	---	---	---	---	---	7.9	7.9	7.9	8.1	8.0	8.0
3	---	---	---	---	---	---	8.0	7.9	8.0	8.1	8.0	8.1
4	---	---	---	---	---	---	8.0	8.0	8.0	8.3	8.1	8.1
5	---	---	---	---	---	---	8.0	7.9	8.0	8.4	8.1	8.2
6	---	---	---	---	---	---	8.0	8.0	8.0	8.5	8.2	8.3
7	---	---	---	---	---	---	8.1	8.0	8.0	8.5	8.2	8.3
8	---	---	---	---	---	---	8.1	8.1	8.1	8.4	8.1	8.3
9	---	---	---	---	---	---	8.2	8.1	8.1	8.3	8.1	8.2
10	---	---	---	---	---	---	8.2	8.1	8.2	8.2	8.0	8.1
11	---	---	---	---	---	---	8.3	8.2	8.2	8.1	8.0	8.0
12	---	---	---	---	---	---	8.3	8.2	8.3	8.3	8.0	8.1
13	---	---	---	---	---	---	8.3	8.2	8.3	8.2	8.0	8.1
14	---	---	---	---	---	---	8.4	8.2	8.3	8.0	8.0	8.0
15	---	---	---	---	---	---	8.4	8.2	8.3	8.1	8.0	8.0
16	---	---	---	---	---	---	8.4	8.2	8.3	8.2	8.0	8.1
17	---	---	---	---	---	---	8.3	8.2	8.2	8.3	8.1	8.2
18	---	---	---	---	---	---	8.3	8.2	8.2	8.4	8.1	8.2
19	---	---	---	---	---	---	8.3	8.1	8.2	8.2	8.0	8.1
20	---	---	---	---	---	---	8.2	8.1	8.1	8.3	8.0	8.1
21	---	---	---	---	---	---	8.3	8.1	8.2	8.2	8.0	8.1
22	---	---	---	---	---	---	8.3	8.2	8.2	8.1	8.0	8.1
23	---	---	---	---	---	---	8.2	8.1	8.2	8.0	7.9	8.0
24	---	---	---	---	---	---	8.1	8.1	8.1	8.0	7.9	8.0
25	---	---	---	---	---	---	8.1	7.9	8.0	8.1	8.0	8.0
26	---	---	---	---	---	---	7.9	7.8	7.9	8.1	8.0	8.0
27	---	---	---	---	---	---	7.8	7.8	7.8	8.1	7.9	8.0
28	---	---	---	---	---	---	7.8	7.8	7.8	8.3	7.9	8.1
29	---	---	---	---	---	---	7.9	7.8	7.8	8.3	8.0	8.1
30	---	---	---	---	---	---	7.9	7.9	7.9	8.3	8.0	8.2
31	---	---	---	7.9	7.8	7.9	---	---	---	8.4	8.0	8.2
MAX	---	---	---	---	---	---	8.4	8.2	8.3	8.5	8.2	8.3
MIN	---	---	---	---	---	---	7.8	7.8	7.8	8.0	7.9	7.9

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.4	8.0	8.2	7.9	7.7	7.7	8.0	7.9	7.9	8.2	8.1	8.2
2	8.3	8.0	8.2	8.0	7.9	7.9	8.1	7.9	8.0	8.2	8.1	8.1
3	8.1	7.9	8.0	8.0	7.9	8.0	8.1	7.9	8.0	8.2	8.1	8.1
4	8.2	7.9	8.0	8.1	7.9	8.0	8.1	7.9	8.0	8.2	8.1	8.2
5	8.1	7.9	8.0	8.0	7.9	7.9	8.1	8.0	8.0	8.2	8.1	8.1
6	8.0	7.9	7.9	8.0	7.8	7.9	8.1	8.0	8.0	8.2	8.1	8.1
7	8.1	7.9	7.9	8.1	7.9	8.0	8.1	8.0	8.1	8.2	8.1	8.1
8	8.1	7.9	8.0	8.1	7.8	8.0	8.2	8.0	8.1	8.2	8.1	8.1
9	8.1	7.8	7.9	8.1	7.9	8.0	8.2	8.0	8.1	8.2	8.1	8.1
10	8.1	7.9	7.9	8.1	7.9	8.0	8.2	8.0	8.1	8.2	8.1	8.1
11	8.0	7.8	7.9	8.2	7.9	8.0	8.2	8.0	8.1	8.2	8.1	8.1
12	8.0	7.8	7.9	8.2	7.9	8.1	8.2	8.0	8.1	8.3	8.0	8.1
13	7.9	7.8	7.9	8.2	8.0	8.1	8.1	8.0	8.0	8.2	8.0	8.1
14	8.0	7.8	7.9	8.2	8.0	8.1	8.1	8.0	8.1	8.2	8.1	8.1
15	8.1	7.9	7.9	8.1	8.0	8.1	8.2	8.1	8.1	8.3	8.0	8.1
16	8.0	7.9	8.0	8.4	7.7	7.9	8.2	8.1	8.1	8.1	8.0	8.1
17	8.0	8.0	8.0	7.7	7.5	7.5	8.2	8.1	8.1	8.2	8.0	8.1
18	8.0	8.0	8.0	7.6	7.5	7.6	8.2	8.0	8.1	8.2	8.0	8.1
19	8.1	8.0	8.0	7.7	7.6	7.6	8.2	8.1	8.1	8.2	8.0	8.1
20	8.1	8.0	8.0	7.7	7.7	7.7	8.2	8.1	8.1	8.2	8.0	8.1
21	8.1	8.0	8.0	7.8	7.7	7.7	8.2	8.0	8.1	8.1	8.0	8.0
22	8.1	8.0	8.1	7.8	7.7	7.8	8.3	8.1	8.2	8.1	8.0	8.0
23	8.2	8.0	8.1	7.8	7.8	7.8	8.3	8.1	8.2	8.0	7.9	7.9
24	8.2	8.0	8.1	7.8	7.8	7.8	8.3	8.2	8.2	8.1	7.9	8.0
25	8.2	8.0	8.1	7.9	7.8	7.8	8.3	8.1	8.2	8.1	7.9	8.0
26	8.2	8.0	8.1	7.8	7.8	7.8	8.3	8.1	8.2	8.0	7.9	7.9
27	8.2	8.0	8.1	7.8	7.8	7.8	8.2	8.0	8.1	8.0	7.9	7.9
28	8.2	7.9	8.1	7.9	7.8	7.8	8.1	8.0	8.0	8.1	7.9	8.0
29	7.9	7.6	7.6	7.9	7.9	7.9	8.2	8.0	8.1	8.1	7.9	8.0
30	7.8	7.6	7.7	7.9	7.9	7.9	8.1	8.0	8.1	8.1	7.9	8.0
31	---	---	---	8.0	7.9	7.9	8.2	8.1	8.1	---	---	---
MAX	8.4	8.0	8.2	8.4	8.0	8.1	8.3	8.2	8.2	8.3	8.1	8.2
MIN	7.8	7.6	7.6	7.6	7.5	7.5	8.0	7.9	7.9	8.0	7.9	7.9

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.2	11.4	12.8	11.8	10.9	11.3	3.8	3.4	3.6	---	---	---
2	15.3	12.2	13.6	10.9	9.9	10.5	---	---	---	---	---	---
3	12.9	10.2	11.5	9.9	8.7	9.4	---	---	---	---	---	---
4	12.5	10.4	11.4	8.7	7.8	8.3	---	---	---	---	---	---
5	11.3	8.7	9.8	7.8	6.9	7.2	---	---	---	---	---	---
6	11.0	8.2	9.6	7.4	6.5	7.0	---	---	---	---	---	---
7	12.3	9.7	11.0	7.8	6.9	7.3	---	---	---	---	---	---
8	13.9	10.9	12.6	7.0	5.3	6.0	---	---	---	---	---	---
9	15.4	13.3	14.1	5.3	4.1	4.7	---	---	---	---	---	---
10	13.6	11.4	12.4	5.9	3.7	4.8	---	---	---	---	---	---
11	12.1	10.2	11.0	6.3	5.1	5.9	---	---	---	---	---	---
12	11.4	9.0	10.1	5.1	3.5	4.1	---	---	---	---	---	---
13	11.6	9.1	10.4	4.0	2.7	3.4	---	---	---	---	---	---
14	11.6	11.1	11.3	2.8	1.4	2.2	---	---	---	---	---	---
15	11.2	10.7	11.0	2.7	1.2	2.1	---	---	---	---	---	---
16	10.7	9.4	10.2	5.1	2.7	4.0	---	---	---	---	---	---
17	9.4	8.3	8.8	6.5	5.1	5.8	---	---	---	---	---	---
18	8.4	7.3	8.0	8.7	6.5	7.6	---	---	---	---	---	---
19	8.6	7.7	8.2	8.2	7.9	8.1	---	---	---	---	---	---
20	9.5	8.5	9.0	8.9	7.9	8.4	---	---	---	---	---	---
21	10.4	9.4	9.8	8.8	7.5	8.3	---	---	---	---	---	---
22	10.9	9.8	10.3	7.5	5.9	6.6	---	---	---	---	---	---
23	11.5	9.9	10.7	6.7	5.8	6.2	---	---	---	---	---	---
24	12.0	11.4	11.7	6.3	3.7	5.4	---	---	---	---	---	---
25	12.8	11.4	12.0	3.7	2.5	2.9	---	---	---	---	---	---
26	12.6	10.7	11.6	3.0	2.2	2.5	---	---	---	---	---	---
27	13.0	11.6	12.1	4.4	3.0	3.6	---	---	---	---	---	---
28	12.1	10.3	11.2	4.9	4.4	4.7	---	---	---	---	---	---
29	12.3	10.9	11.5	4.4	3.7	3.9	---	---	---	---	---	---
30	13.7	12.2	13.0	3.7	3.4	3.5	---	---	---	---	---	---
31	12.9	11.8	12.4	---	---	---	---	---	---	---	---	---
MONTH	15.4	7.3	11.1	11.8	1.2	5.9	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.1	7.0	7.6	10.1	9.0	9.6
2	---	---	---	---	---	---	7.6	4.7	6.2	10.2	8.9	9.6
3	---	---	---	---	---	---	5.8	3.9	4.8	9.4	8.2	8.6
4	---	---	---	---	---	---	7.7	5.0	6.2	11.0	7.1	9.1
5	---	---	---	---	---	---	9.6	6.5	8.0	12.3	8.4	10.5
6	---	---	---	---	---	---	12.4	9.0	10.6	13.5	9.6	11.7
7	---	---	---	---	---	---	12.2	10.7	11.7	16.1	12.0	13.9
8	---	---	---	---	---	---	11.7	9.0	10.5	17.2	12.6	15.0
9	---	---	---	---	---	---	11.8	8.7	10.5	18.2	14.3	16.3
10	---	---	---	---	---	---	12.5	9.2	11.0	19.6	15.9	17.8
11	---	---	---	---	---	---	13.1	10.2	11.6	18.5	14.6	16.6
12	---	---	---	---	---	---	12.3	9.4	10.8	16.0	12.5	14.2
13	---	---	---	---	---	---	12.1	8.7	10.4	13.7	12.2	12.8
14	---	---	---	---	---	---	12.5	8.8	10.6	14.3	12.6	13.3
15	---	---	---	---	---	---	12.7	8.9	10.8	13.6	12.1	12.7
16	---	---	---	---	---	---	13.4	9.0	11.3	12.1	11.0	11.7
17	---	---	---	---	---	---	12.9	10.5	11.7	13.8	11.2	12.4
18	---	---	---	---	---	---	15.2	10.3	12.8	15.1	11.5	13.3
19	---	---	---	---	---	---	17.1	12.5	14.9	14.0	13.1	13.5
20	---	---	---	---	---	---	16.0	12.7	14.9	16.9	12.2	14.4
21	---	---	---	---	---	---	14.8	10.8	12.7	17.9	13.5	15.7
22	---	---	---	---	---	---	12.4	10.5	11.2	16.4	14.4	15.3
23	---	---	---	---	---	---	10.5	4.7	7.9	14.9	13.2	13.9
24	---	---	---	---	---	---	4.7	2.4	3.4	13.9	12.7	13.3
25	---	---	---	---	---	---	7.8	2.3	4.2	15.3	12.6	14.0
26	---	---	---	---	---	---	7.8	7.0	7.5	16.3	13.7	15.1
27	---	---	---	---	---	---	8.0	7.2	7.6	17.0	14.7	15.9
28	---	---	---	---	---	---	8.6	7.4	8.0	17.5	14.9	16.1
29	---	---	---	---	---	---	9.7	7.5	8.6	17.5	14.6	16.1
30	---	---	---	---	---	---	10.5	9.1	9.8	17.4	14.8	16.2
31	---	---	---	8.4	6.6	7.4	---	---	---	19.6	15.4	17.5
MONTH	---	---	---	---	---	---	17.1	2.3	9.6	19.6	7.1	13.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.4	15.8	18.2	22.8	21.5	22.2	24.6	20.6	22.5	21.7	19.3	20.7
2	21.0	16.8	19.0	22.2	19.8	21.0	25.7	22.0	23.9	21.8	19.4	20.5
3	20.2	18.4	18.9	22.1	18.5	20.4	26.3	23.1	24.8	20.9	18.5	19.7
4	21.9	17.7	19.7	24.3	19.9	22.1	25.5	23.9	24.7	20.2	17.6	18.8
5	23.8	19.6	21.7	23.0	21.8	22.4	25.5	23.3	24.5	20.2	16.8	18.5
6	24.6	21.2	22.9	21.8	20.1	20.9	24.1	21.6	23.0	20.8	17.2	18.9
7	24.9	21.0	23.1	21.4	18.5	20.0	24.7	21.8	23.3	21.3	17.9	19.6
8	25.9	21.9	23.9	23.4	19.5	21.4	25.1	22.2	23.7	21.4	19.4	20.2
9	26.2	22.6	24.5	24.0	19.7	21.8	26.1	23.3	24.7	21.4	18.3	19.5
10	27.5	23.6	25.5	24.6	19.9	22.4	26.2	24.4	25.1	20.6	17.0	18.7
11	26.9	24.8	25.9	25.5	21.4	23.5	24.9	23.2	24.1	21.0	17.2	19.0
12	26.6	24.3	25.5	24.6	22.9	23.8	24.2	22.2	23.1	21.7	17.8	19.6
13	25.6	23.8	24.5	25.7	23.0	24.4	23.9	22.8	23.4	21.9	18.8	20.3
14	26.6	22.6	24.5	27.0	23.8	25.3	23.2	21.8	22.6	22.1	20.5	21.1
15	24.6	21.6	23.0	26.2	23.9	25.1	22.9	20.3	21.7	20.8	18.7	19.9
16	21.6	19.1	20.4	25.2	21.9	23.5	22.4	20.1	21.4	18.7	17.8	18.1
17	19.1	17.5	18.3	24.1	22.9	23.3	23.3	20.6	22.0	19.8	17.7	18.5
18	18.2	16.9	17.5	25.0	23.7	24.2	22.8	20.4	21.8	18.9	16.8	18.0
19	19.1	16.2	17.5	24.5	23.1	23.8	24.6	21.8	23.1	19.0	17.4	18.2
20	20.1	16.1	18.2	24.6	22.1	23.4	23.2	21.7	22.3	20.1	17.8	18.8
21	20.8	17.6	19.3	25.4	22.6	24.1	24.1	21.1	22.5	19.5	16.9	18.3
22	22.2	18.3	20.1	26.3	23.5	24.7	21.8	19.3	20.2	18.6	17.8	18.1
23	21.1	17.0	19.2	25.1	21.8	23.5	20.0	18.3	19.0	18.1	16.5	17.5
24	23.9	18.9	21.3	24.3	21.9	23.2	20.3	17.0	18.8	17.5	15.5	16.6
25	25.7	22.2	23.7	26.8	23.2	24.9	19.7	17.6	18.8	18.9	17.1	18.0
26	24.6	21.4	23.0	25.0	23.7	24.2	21.7	18.4	20.1	19.4	17.8	18.8
27	26.1	21.5	23.9	23.7	21.1	22.4	21.5	20.5	20.9	17.8	16.0	16.7
28	25.9	22.6	24.5	21.5	19.6	20.6	22.3	19.2	20.9	16.8	14.7	15.9
29	23.4	21.1	22.1	21.5	19.3	20.5	22.6	20.3	21.5	16.7	13.4	15.1
30	23.1	21.9	22.4	22.4	19.1	20.7	21.9	20.9	21.4	13.5	11.8	12.8
31	---	---	---	22.6	18.7	20.7	22.2	20.8	21.5	---	---	---
MONTH	27.5	15.8	21.7	27.0	18.5	22.7	26.3	17.0	22.3	22.1	11.8	18.5

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.5	8.1	8.6	8.6	8.0	8.4	12.2	11.8	11.9	---	---	---
2	9.1	8.1	8.4	9.0	8.6	8.8	---	---	---	---	---	---
3	9.4	7.9	8.6	9.7	9.0	9.4	---	---	---	---	---	---
4	9.5	8.2	8.8	9.8	9.3	9.6	---	---	---	---	---	---
5	10.2	8.9	9.5	10.4	9.8	10.2	---	---	---	---	---	---
6	10.4	9.6	9.9	10.6	10.4	10.5	---	---	---	---	---	---
7	10.2	9.3	9.7	10.6	10.4	10.5	---	---	---	---	---	---
8	10.2	8.8	9.4	11.1	10.4	10.9	---	---	---	---	---	---
9	8.8	7.3	8.1	11.9	11.1	11.5	---	---	---	---	---	---
10	8.1	7.1	7.6	12.2	11.4	11.8	---	---	---	---	---	---
11	8.6	7.5	8.1	11.9	11.1	11.4	---	---	---	---	---	---
12	9.0	8.1	8.6	12.5	11.4	11.9	---	---	---	---	---	---
13	9.2	8.4	8.7	13.1	12.2	12.6	---	---	---	---	---	---
14	8.7	7.4	8.1	13.7	12.7	13.2	---	---	---	---	---	---
15	8.5	7.2	7.9	14.2	13.1	13.6	---	---	---	---	---	---
16	8.5	7.9	8.3	13.4	12.0	13.0	---	---	---	---	---	---
17	9.2	8.1	8.8	12.0	10.9	11.5	---	---	---	---	---	---
18	9.9	9.0	9.4	12.3	10.6	11.2	---	---	---	---	---	---
19	9.8	9.3	9.5	11.8	10.1	10.8	---	---	---	---	---	---
20	9.4	8.7	9.1	11.6	10.0	10.6	---	---	---	---	---	---
21	9.0	8.3	8.6	12.6	9.8	11.0	---	---	---	---	---	---
22	9.0	8.1	8.5	13.1	10.5	11.6	---	---	---	---	---	---
23	8.7	7.9	8.3	12.2	10.9	11.4	---	---	---	---	---	---
24	7.9	6.6	7.1	11.9	10.6	11.2	---	---	---	---	---	---
25	7.2	6.5	6.8	12.3	11.5	12.0	---	---	---	---	---	---
26	7.3	6.7	7.0	12.6	12.3	12.5	---	---	---	---	---	---
27	6.9	6.4	6.7	12.5	12.0	12.3	---	---	---	---	---	---
28	7.1	6.6	6.9	12.0	11.5	11.7	---	---	---	---	---	---
29	8.6	6.8	7.3	12.1	11.7	12.0	---	---	---	---	---	---
30	7.8	7.0	7.5	12.2	12.1	12.2	---	---	---	---	---	---
31	8.0	7.4	7.7	---	---	---	---	---	---	---	---	---
MONTH	10.4	6.4	8.3	14.2	8.0	11.3	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	11.3	10.9	11.1	10.8	10.3	10.5
2	---	---	---	---	---	---	12.0	11.1	11.5	11.1	10.5	10.8
3	---	---	---	---	---	---	12.3	12.0	12.2	11.5	10.8	11.2
4	---	---	---	---	---	---	12.1	11.5	11.9	12.4	11.2	11.8
5	---	---	---	---	---	---	11.5	10.8	11.3	12.8	11.1	11.8
6	---	---	---	---	---	---	10.8	10.1	10.5	13.1	10.6	11.7
7	---	---	---	---	---	---	10.1	9.7	9.9	12.7	9.9	11.1
8	---	---	---	---	---	---	10.6	10.1	10.4	12.0	9.3	10.4
9	---	---	---	---	---	---	10.9	10.4	10.7	10.9	8.6	9.6
10	---	---	---	---	---	---	11.1	10.4	10.7	9.9	7.9	8.8
11	---	---	---	---	---	---	11.1	10.1	10.6	9.5	7.6	8.5
12	---	---	---	---	---	---	11.5	10.2	10.8	11.3	8.5	9.8
13	---	---	---	---	---	---	11.8	10.4	11.0	10.4	9.0	9.8
14	---	---	---	---	---	---	12.0	10.4	11.1	9.6	8.9	9.2
15	---	---	---	---	---	---	12.3	10.4	11.2	9.8	9.0	9.4
16	---	---	---	---	---	---	12.4	10.3	11.1	11.1	9.6	10.3
17	---	---	---	---	---	---	11.9	9.9	10.7	11.6	9.8	10.6
18	---	---	---	---	---	---	11.7	9.6	10.5	12.4	9.4	10.6
19	---	---	---	---	---	---	10.8	8.8	9.8	10.3	8.9	9.5
20	---	---	---	---	---	---	9.2	8.4	8.7	11.6	8.9	10.0
21	---	---	---	---	---	---	11.2	8.9	9.9	11.1	8.6	9.7
22	---	---	---	---	---	---	11.1	9.3	10.1	10.0	8.3	9.1
23	---	---	---	---	---	---	11.6	9.6	10.5	9.0	8.2	8.6
24	---	---	---	---	---	---	12.7	11.6	12.2	9.2	8.8	9.0
25	---	---	---	---	---	---	12.8	10.7	12.2	9.7	9.1	9.4
26	---	---	---	---	---	---	10.8	10.4	10.6	10.1	8.8	9.4
27	---	---	---	---	---	---	10.5	10.4	10.4	10.3	8.6	9.3
28	---	---	---	---	---	---	10.5	10.4	10.5	11.2	8.3	9.5
29	---	---	---	---	---	---	10.8	10.4	10.6	11.8	8.4	9.8
30	---	---	---	---	---	---	10.5	10.3	10.4	12.0	8.3	10.0
31	---	---	---	11.3	10.9	11.2	---	---	---	12.9	8.3	10.2
MONTH	---	---	---	---	---	---	12.8	8.4	10.8	13.1	7.6	10.0

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.6	8.1	10.0	6.9	6.7	6.8	8.9	7.4	8.0	9.0	7.5	8.1
2	11.8	7.9	9.5	7.7	6.8	7.1	8.9	6.9	7.8	8.9	7.5	8.0
3	9.0	7.2	8.0	8.2	6.9	7.5	9.2	6.7	7.9	9.0	7.4	8.1
4	10.5	7.1	8.5	8.8	6.7	7.5	8.9	6.7	7.7	9.4	7.6	8.4
5	9.9	6.7	7.9	7.6	6.2	6.8	8.5	6.8	7.7	9.6	7.8	8.5
6	8.3	5.6	6.8	8.4	6.5	7.4	9.1	7.1	8.0	9.6	7.8	8.4
7	8.0	5.7	6.6	8.8	6.9	7.8	9.4	7.3	8.3	9.7	7.6	8.4
8	7.9	5.6	6.4	9.6	6.9	8.0	9.5	7.4	8.3	9.4	7.3	8.0
9	8.1	5.2	6.4	9.6	6.8	8.1	9.6	7.2	8.2	9.3	7.1	7.9
10	8.0	5.0	6.1	9.9	6.8	8.3	8.7	6.9	7.6	9.7	7.0	8.2
11	7.1	4.7	5.7	10.3	6.6	8.4	8.7	6.5	7.5	9.9	6.8	8.3
12	7.5	4.8	6.0	9.4	6.7	8.1	8.7	6.9	7.6	10.3	7.4	8.4
13	6.4	4.9	5.6	9.6	6.8	8.2	8.4	6.9	7.5	9.5	7.3	8.0
14	7.6	5.2	6.2	9.4	6.4	7.9	8.6	6.9	7.6	8.8	6.8	7.5
15	7.6	5.3	6.4	8.9	6.5	7.4	9.1	7.6	8.2	10.0	6.3	7.7
16	7.7	6.3	7.1	8.2	5.6	6.6	9.4	7.5	8.4	7.9	6.9	7.3
17	8.2	7.5	8.0	6.5	6.1	6.3	9.1	7.6	8.3	9.6	6.8	7.8
18	8.8	8.2	8.6	7.1	6.5	6.8	9.4	7.4	8.3	9.0	7.1	8.0
19	9.4	8.6	8.9	7.2	6.9	7.1	8.7	7.1	7.8	9.5	7.4	8.3
20	9.5	8.3	8.9	7.4	7.0	7.2	8.2	6.8	7.3	9.1	7.3	8.0
21	9.4	8.0	8.6	7.3	6.7	7.1	8.6	6.8	7.6	8.5	7.0	7.6
22	9.6	7.9	8.5	7.3	6.7	6.9	9.4	7.2	8.1	8.3	6.9	7.4
23	10.3	7.8	8.9	7.8	6.7	7.1	10.3	7.9	8.9	8.2	7.0	7.5
24	10.6	7.7	8.9	7.4	6.6	7.0	9.9	8.3	9.0	9.3	7.6	8.6
25	10.4	6.9	8.4	7.6	6.4	6.9	10.0	8.0	8.9	8.8	7.7	8.2
26	10.5	6.7	8.4	7.0	6.2	6.7	10.0	8.1	8.9	8.3	7.5	7.8
27	10.8	6.8	8.6	7.6	6.9	7.3	8.3	7.0	7.6	8.7	7.5	8.1
28	9.0	6.2	7.6	8.0	7.6	7.8	8.3	6.8	7.4	9.7	8.1	8.8
29	7.0	6.6	6.6	8.2	7.6	7.9	8.8	6.9	7.8	9.6	7.9	8.7
30	7.1	6.6	6.7	8.4	7.6	7.9	8.2	7.0	7.5	10.3	8.6	9.3
31	---	---	---	8.9	7.7	8.2	8.7	6.9	7.8	---	---	---
MONTH	12.6	4.7	7.6	10.3	5.6	7.4	10.3	6.5	8.0	10.3	6.3	8.1

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	588	555	571	---	---	---	---	---	---	---	---	---
2	584	540	559	---	---	---	---	---	---	---	---	---
3	699	451	600	---	---	---	---	---	---	---	---	---
4	701	608	660	---	---	---	---	---	---	---	---	---
5	608	589	594	---	---	---	---	---	---	---	---	---
6	595	590	593	---	---	---	---	---	---	---	---	---
7	598	595	597	---	---	---	---	---	---	---	---	---
8	599	594	596	---	---	---	---	---	---	---	---	---
9	617	595	607	---	---	---	---	---	---	---	---	---
10	618	612	616	---	---	---	---	---	---	---	---	---
11	612	604	608	---	---	---	---	---	---	---	---	---
12	604	601	602	---	---	---	---	---	---	---	---	---
13	604	601	603	---	---	---	---	---	---	---	---	---
14	625	503	552	---	---	---	---	---	---	---	---	---
15	596	561	587	---	---	---	---	---	---	---	---	---
16	625	594	604	---	---	---	---	---	---	---	---	---
17	630	608	617	---	---	---	---	---	---	---	---	---
18	610	608	609	---	---	---	---	---	---	---	---	---
19	611	609	610	---	---	---	---	---	---	---	---	---
20	613	611	612	---	---	---	---	---	---	---	---	---
21	614	611	613	---	---	---	---	---	---	---	---	---
22	616	613	614	---	---	---	---	---	---	---	---	---
23	619	616	617	---	---	---	---	---	---	---	---	---
24	619	618	619	---	---	---	---	---	---	---	---	---
25	619	616	618	---	---	---	---	---	---	---	---	---
26	619	617	618	---	---	---	---	---	---	---	---	---
27	619	613	617	---	---	---	---	---	---	---	---	---
28	613	610	612	---	---	---	---	---	---	---	---	---
29	613	611	612	---	---	---	---	---	---	---	---	---
30	619	613	617	---	---	---	---	---	---	---	---	---
31	617	613	616	---	---	---	---	---	---	---	---	---
MONTH	701	451	605	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
2	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
3	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
4	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
5	8.0	7.9	7.9	---	---	---	---	---	---	---	---	---
6	8.0	7.8	7.9	---	---	---	---	---	---	---	---	---
7	8.0	7.8	7.9	---	---	---	---	---	---	---	---	---
8	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
9	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
10	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
11	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
12	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
13	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
14	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
15	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
16	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
17	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
18	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
19	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
20	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
21	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
22	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
23	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
24	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
25	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
26	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
27	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
28	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
29	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
30	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
31	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
MAX	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
MIN	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160398 PINE RIVER NEAR MARYSVILLE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.4	12.2	13.3	---	---	---	---	---	---	---	---	---
2	15.6	13.1	14.4	---	---	---	---	---	---	---	---	---
3	17.4	15.3	16.4	---	---	---	---	---	---	---	---	---
4	18.6	16.7	17.7	---	---	---	---	---	---	---	---	---
5	18.6	17.0	17.9	---	---	---	---	---	---	---	---	---
6	18.9	17.1	17.9	---	---	---	---	---	---	---	---	---
7	17.6	14.5	15.8	---	---	---	---	---	---	---	---	---
8	14.5	12.1	13.2	---	---	---	---	---	---	---	---	---
9	12.1	10.8	11.6	---	---	---	---	---	---	---	---	---
10	12.0	11.2	11.6	---	---	---	---	---	---	---	---	---
11	13.3	12.0	12.6	---	---	---	---	---	---	---	---	---
12	14.1	13.1	13.7	---	---	---	---	---	---	---	---	---
13	15.2	13.9	14.5	---	---	---	---	---	---	---	---	---
14	15.2	13.6	14.5	---	---	---	---	---	---	---	---	---
15	14.6	13.1	14.0	---	---	---	---	---	---	---	---	---
16	13.1	11.7	12.4	---	---	---	---	---	---	---	---	---
17	11.7	10.2	11.1	---	---	---	---	---	---	---	---	---
18	12.0	10.7	11.3	---	---	---	---	---	---	---	---	---
19	11.7	10.1	10.9	---	---	---	---	---	---	---	---	---
20	10.1	8.5	9.5	---	---	---	---	---	---	---	---	---
21	9.7	8.5	9.1	---	---	---	---	---	---	---	---	---
22	9.1	8.2	8.6	---	---	---	---	---	---	---	---	---
23	9.2	8.1	8.5	---	---	---	---	---	---	---	---	---
24	8.5	7.4	8.1	---	---	---	---	---	---	---	---	---
25	8.9	7.8	8.3	---	---	---	---	---	---	---	---	---
26	8.3	7.3	7.8	---	---	---	---	---	---	---	---	---
27	7.7	6.6	7.2	---	---	---	---	---	---	---	---	---
28	7.7	6.4	7.1	---	---	---	---	---	---	---	---	---
29	7.0	5.1	6.1	---	---	---	---	---	---	---	---	---
30	7.0	5.1	6.0	---	---	---	---	---	---	---	---	---
31	8.9	6.5	7.8	---	---	---	---	---	---	---	---	---
MONTH	18.9	5.1	11.6	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.6	9.0	9.6	---	---	---	---	---	---	---	---	---
2	11.1	8.8	9.8	---	---	---	---	---	---	---	---	---
3	9.8	8.5	9.1	---	---	---	---	---	---	---	---	---
4	9.8	7.5	8.6	---	---	---	---	---	---	---	---	---
5	9.1	7.3	8.1	---	---	---	---	---	---	---	---	---
6	8.7	7.0	7.8	---	---	---	---	---	---	---	---	---
7	8.5	6.8	7.7	---	---	---	---	---	---	---	---	---
8	8.5	7.5	8.1	---	---	---	---	---	---	---	---	---
9	8.9	8.1	8.5	---	---	---	---	---	---	---	---	---
10	9.0	8.3	8.6	---	---	---	---	---	---	---	---	---
11	9.2	8.2	8.7	---	---	---	---	---	---	---	---	---
12	8.8	7.9	8.3	---	---	---	---	---	---	---	---	---
13	8.5	7.5	8.0	---	---	---	---	---	---	---	---	---
14	8.4	7.6	8.0	---	---	---	---	---	---	---	---	---
15	8.0	7.3	7.7	---	---	---	---	---	---	---	---	---
16	8.4	7.4	7.9	---	---	---	---	---	---	---	---	---
17	8.7	8.1	8.3	---	---	---	---	---	---	---	---	---
18	8.6	8.1	8.3	---	---	---	---	---	---	---	---	---
19	8.7	8.0	8.3	---	---	---	---	---	---	---	---	---
20	9.0	8.3	8.6	---	---	---	---	---	---	---	---	---
21	9.0	8.6	8.8	---	---	---	---	---	---	---	---	---
22	9.2	8.6	8.9	---	---	---	---	---	---	---	---	---
23	9.3	8.9	9.1	---	---	---	---	---	---	---	---	---
24	9.4	8.8	9.1	---	---	---	---	---	---	---	---	---
25	9.3	8.8	9.1	---	---	---	---	---	---	---	---	---
26	9.1	8.7	8.9	---	---	---	---	---	---	---	---	---
27	9.3	8.9	9.1	---	---	---	---	---	---	---	---	---
28	9.4	9.0	9.2	---	---	---	---	---	---	---	---	---
29	9.9	9.4	9.7	---	---	---	---	---	---	---	---	---
30	10.0	9.7	9.9	---	---	---	---	---	---	---	---	---
31	9.9	9.1	9.6	---	---	---	---	---	---	---	---	---
MONTH	11.1	6.8	8.7	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160600 BELLE RIVER AT MEMPHIS, MI

LOCATION.--Lat 42°54'03", long 82°46'09", in NW1/4 SE1/4 sec.35, T.6 N., R.14 E., St. Clair County, Hydrologic Unit 04090001, on right bank at downstream side of bridge on State Highway 19 in Memphis.

DRAINAGE AREA.--151 mi^2.

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 705.41 ft above sea level (Michigan Department of Transportation bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1947 reached a stage of about 9 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	41	179	805	e63	e76	253	158	48	26	18	13
2	15	38	301	747	e63	e75	227	128	40	23	16	12
3	13	72	226	670	e62	e76	206	110	36	21	14	10
4	14	71	135	512	e62	e80	157	98	34	20	13	9.6
5	13	95	94	341	e65	e82	125	87	33	20	13	9.4
6	13	91	77	238	e68	85	109	78	32	19	14	9.2
7	12	66	250	175	73	151	101	72	33	19	12	8.9
8	13	51	662	e160	94	490	93	67	36	18	12	8.4
9	13	43	603	130	170	704	85	60	33	18	12	8.3
10	14	38	330	119	173	437	77	57	30	17	11	7.7
11	14	35	283	116	138	e200	71	54	29	18	11	8.0
12	14	32	310	229	106	e155	65	51	33	16	12	8.0
13	13	27	251	1090	106	e130	64	51	39	16	13	8.2
14	17	26	208	1590	336	e110	61	81	55	16	14	8.2
15	21	26	146	878	780	e98	57	163	91	15	12	8.7
16	21	26	e130	425	1090	e93	54	147	81	24	11	11
17	26	27	e110	274	887	105	52	104	77	21	12	12
18	27	26	e98	220	507	142	50	83	76	25	11	13
19	23	26	e90	e190	337	150	51	70	66	25	9.7	12
20	21	29	e82	e160	251	241	50	64	54	22	9.8	12
21	20	34	e75	e140	150	352	50	60	46	19	9.5	11
22	19	34	e68	e120	127	390	51	55	40	18	9.4	14
23	19	34	e62	e105	116	454	51	65	36	16	10	36
24	19	34	e58	e96	e106	321	65	89	33	17	8.7	73
25	19	37	e56	e90	e95	301	174	104	29	24	9.0	42
26	20	51	e54	e85	e89	301	535	88	27	47	9.5	30
27	20	68	e54	e80	e85	280	750	77	25	44	13	28
28	19	140	e53	e75	e80	278	531	66	23	38	14	28
29	22	151	e52	e70	---	304	317	59	25	29	15	24
30	46	102	e57	e66	---	304	211	54	27	23	13	22
31	52	---	308	e64	---	290	---	51	---	21	13	---
TOTAL	606	1571	5462	10060	6279	7255	4743	2551	1267	695	374.6	505.6
MEAN	19.5	52.4	176	325	224	234	158	82.3	42.2	22.4	12.1	16.9
MAX	52	151	662	1590	1090	704	750	163	91	47	18	73
MIN	12	26	52	64	62	75	50	51	23	15	8.7	7.7
CFSM	0.13	0.35	1.17	2.15	1.49	1.55	1.05	0.54	0.28	0.15	0.08	0.11
IN.	0.15	0.39	1.35	2.48	1.55	1.79	1.17	0.63	0.31	0.17	0.09	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2005, BY WATER YEAR (WY)

MEAN	43.0	67.8	93.0	90.5	146	247	192	103	60.6	30.0	20.8	32.4
MAX	330	375	247	325	567	595	617	506	300	143	91.3	256
(WY)	1982	1986	1988	2005	2001	1973	1975	2004	1996	2004	1992	1985
MIN	5.00	7.62	5.50	8.92	8.00	15.8	25.9	20.9	6.44	5.21	5.08	5.54
(WY)	1964	1965	1964	1964	1963	1964	1964	1977	1964	1965	1963	1979

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1963 - 2005	
ANNUAL TOTAL	47752		41369.2			
ANNUAL MEAN	130		113		93.5	
HIGHEST ANNUAL MEAN					168	1985
LOWEST ANNUAL MEAN					11.3	1964
HIGHEST DAILY MEAN	2580	May 23	1590	Jan 14	3320	Apr 19 1975
LOWEST DAILY MEAN	12	Oct 7	7.7	Sep 10	2.4	Sep 6 1978
ANNUAL SEVEN-DAY MINIMUM	13	Oct 3	8.1	Sep 8	2.6	Sep 5 1978
MAXIMUM PEAK FLOW			1760	Jan 13	(a)4520	Apr 19 1975
MAXIMUM PEAK STAGE			6.70	Jan 13	8.98	Feb 10 2001
INSTANTANEOUS LOW FLOW			7.3	(b)	2.3	(c)
ANNUAL RUNOFF (CFSM)	0.864		0.751		0.619	
ANNUAL RUNOFF (INCHES)	11.76		10.19		8.42	
10 PERCENT EXCEEDS	273		294		221	
50 PERCENT EXCEEDS	55		54		33	
90 PERCENT EXCEEDS	19		12		9.8	

(a) Gage height 8.96 ft.
(b) Part of each day Sept. 10-14.
(c) Sept. 6, 10, 1978.
(e) Estimated.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI

LOCATION.--Lat 42°46'06", long 82°30'44", in NE1/4 sec.23, T.4 N., R.16 E., St. Clair County, Hydrologic Unit 04090001, on left bank at upstream side of bridge on King Road, 3.6 mi north of Marine City.

DRAINAGE AREA.--213 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- June 2004 to October 2005 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 590 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,870 ft^3/s, Feb. 17, 2005, gage height, 11.68 ft; minimum, 6.6 ft^3/s, Sept. 12, 13, 14, 15, 2005

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	75	216	788	e80	e100	355	243	63	54	35	16
2	15	69	458	1200	e79	e98	315	185	60	48	29	15
3	15	64	435	1620	e79	e96	396	153	54	37	25	14
4	16	85	314	1250	80	94	270	134	50	31	23	13
5	12	124	191	898	79	98	195	120	46	29	22	12
6	14	123	132	506	81	112	159	109	45	29	20	11
7	12	116	211	e280	82	200	141	100	49	28	19	10
8	12	85	818	e210	95	544	129	93	44	28	19	10
9	12	67	1020	e175	127	793	119	86	48	25	17	10
10	12	56	882	161	206	896	109	79	48	24	16	9.0
11	13	49	520	152	230	784	101	77	42	22	15	8.6
12	12	44	443	233	180	433	94	74	40	21	16	7.6
13	14	40	459	932	e150	264	87	71	41	21	15	7.5
14	17	35	355	1460	317	e180	85	77	51	19	17	8.0
15	22	31	241	1800	972	e150	81	107	57	19	19	7.6
16	33	30	203	1250	1580	e130	77	164	92	102	18	10
17	41	32	173	617	1830	e150	74	151	88	887	16	13
18	31	33	142	379	1670	211	71	117	85	283	14	15
19	35	32	116	302	1150	274	69	99	83	108	15	14
20	35	32	81	e260	547	442	70	88	75	78	14	15
21	31	32	79	e210	e295	690	69	82	64	57	14	14
22	28	36	e77	e180	e220	797	68	75	56	46	13	16
23	27	38	e75	e150	e175	934	72	80	50	38	13	31
24	25	40	e73	e130	e155	799	111	115	46	36	12	41
25	27	67	e70	e115	e130	531	260	117	43	38	12	74
26	28	73	e69	e110	e120	483	592	119	38	47	11	57
27	28	65	e68	e100	e105	457	961	102	35	125	13	50
28	31	112	e67	e95	e102	425	1130	90	33	84	18	35
29	35	204	e70	e90	---	462	748	80	83	65	21	39
30	42	197	72	e86	---	458	383	74	78	50	20	40
31	58	---	217	e82	---	423	---	68	---	41	18	---
TOTAL	747	2086	8347	15821	10916	12508	7391	3329	1687	2520	549	623.3
MEAN	24.1	69.5	269	510	390	403	246	107	56.2	81.3	17.7	20.8
MAX	58	204	1020	1800	1830	934	1130	243	92	887	35	74
MIN	12	30	67	82	79	94	68	68	33	19	11	7.5
CFSM	0.11	0.33	1.26	2.40	1.83	1.89	1.16	0.50	0.26	0.38	0.08	0.10
IN.	0.13	0.36	1.46	2.76	1.91	2.18	1.29	0.58	0.29	0.44	0.10	0.11

WTR YR 2005 TOTAL 66524.3 MEAN 182 MAX 1830 MIN 7.5 CFSM 0.86 IN. 11.62

(e) Estimated.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	---	---	---	---	---	---	---	---	---	---	---
2	27	---	---	---	---	---	---	---	---	---	---	---
3	25	---	---	---	---	---	---	---	---	---	---	---
4	24	---	---	---	---	---	---	---	---	---	---	---
5	24	---	---	---	---	---	---	---	---	---	---	---
6	23	---	---	---	---	---	---	---	---	---	---	---
7	20	---	---	---	---	---	---	---	---	---	---	---
8	18	---	---	---	---	---	---	---	---	---	---	---
9	16	---	---	---	---	---	---	---	---	---	---	---
10	15	---	---	---	---	---	---	---	---	---	---	---
11	14	---	---	---	---	---	---	---	---	---	---	---
12	13	---	---	---	---	---	---	---	---	---	---	---
13	13	---	---	---	---	---	---	---	---	---	---	---
14	13	---	---	---	---	---	---	---	---	---	---	---
15	13	---	---	---	---	---	---	---	---	---	---	---
16	13	---	---	---	---	---	---	---	---	---	---	---
17	12	---	---	---	---	---	---	---	---	---	---	---
18	13	---	---	---	---	---	---	---	---	---	---	---
19	12	---	---	---	---	---	---	---	---	---	---	---
20	12	---	---	---	---	---	---	---	---	---	---	---
21	12	---	---	---	---	---	---	---	---	---	---	---
22	11	---	---	---	---	---	---	---	---	---	---	---
23	11	---	---	---	---	---	---	---	---	---	---	---
24	11	---	---	---	---	---	---	---	---	---	---	---
25	12	---	---	---	---	---	---	---	---	---	---	---
26	12	---	---	---	---	---	---	---	---	---	---	---
27	11	---	---	---	---	---	---	---	---	---	---	---
28	12	---	---	---	---	---	---	---	---	---	---	---
29	12	---	---	---	---	---	---	---	---	---	---	---
30	13	---	---	---	---	---	---	---	---	---	---	---
31	12	---	---	---	---	---	---	---	---	---	---	---
TOTAL	479	---	---	---	---	---	---	---	---	---	---	---
MEAN	15.5	---	---	---	---	---	---	---	---	---	---	---
MAX	30	---	---	---	---	---	---	---	---	---	---	---
MIN	11	---	---	---	---	---	---	---	---	---	---	---
CFSM	0.07	---	---	---	---	---	---	---	---	---	---	---
IN.	0.08	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 20 to Nov. 8, Nov. 14 to Dec. 1, Mar. 30 to Apr. 2, Apr. 5, 6, 26-29, May 3-6, 17, 18, July 27 to Aug. 2, rated good. pH and water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 17, 25, 26, Nov. 27 to Dec. 1, Apr. 29, May 15-17, Sept. 21-25, Oct. 16-19, 25-27, 2005, rated good; Oct. 18-20, Apr. 30 to May 1, Sept. 26, 27, Oct. 28-31, 2005, rated fair; May 2, 3, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,730 microsiemens, Aug. 25, 2005; minimum, 366 microsiemens, July 20, 2004.
pH: Maximum, 8.7 std. units, May 6, 2005; minimum, 7.6 std. units, June 30, July 1, 2005.
WATER TEMPERATURE: Maximum, 26.3°C, June 10, 2005; minimum, 2.2°C, Nov. 15, 2004.
DISSOLVED OXYGEN: Maximum, 13.6 mg/L, Apr. 15, 18, 2005; minimum, 5.1 mg/L, June 13, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,730 microsiemens, Aug. 25; minimum, 463 microsiemens, June 30.
pH: Maximum, 8.7 std. units, May 6; minimum, 7.6 std. units, June 30, July 1.
WATER TEMPERATURE: Maximum, 26.3°C, June 10; minimum, 2.2°C, Nov. 15.
DISSOLVED OXYGEN: Maximum, 13.6 mg/L, Apr. 15, 18; minimum, 5.1 mg/L, June 13.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1670	1630	1650	1260	978	1170	772	650	728	---	---	---
2	1680	1670	1670	1160	935	1030	---	---	---	---	---	---
3	1680	1670	1670	1200	1140	1160	---	---	---	---	---	---
4	1670	1660	1670	1200	830	1030	---	---	---	---	---	---
5	1670	1660	1670	937	880	915	---	---	---	---	---	---
6	1660	1630	1640	993	864	928	---	---	---	---	---	---
7	1640	1630	1630	955	864	916	---	---	---	---	---	---
8	1670	1640	1650	963	931	952	---	---	---	---	---	---
9	1700	1670	1680	937	900	916	---	---	---	---	---	---
10	1700	1700	1700	999	937	967	---	---	---	---	---	---
11	1710	1690	1700	1060	999	1030	---	---	---	---	---	---
12	1690	1620	1660	1110	1060	1080	---	---	---	---	---	---
13	1660	1620	1630	1150	1110	1130	---	---	---	---	---	---
14	1660	1640	1650	1180	1150	1170	---	---	---	---	---	---
15	1660	1420	1570	1200	1180	1190	---	---	---	---	---	---
16	1420	992	1190	1210	1200	1210	---	---	---	---	---	---
17	992	907	941	1220	1210	1220	---	---	---	---	---	---
18	1000	905	941	1220	1190	1210	---	---	---	---	---	---
19	1310	1000	1160	1190	1180	1190	---	---	---	---	---	---
20	1400	1310	1380	1270	1190	1210	---	---	---	---	---	---
21	1410	1350	1400	1300	1270	1300	---	---	---	---	---	---
22	1350	1300	1310	1300	1270	1290	---	---	---	---	---	---
23	1320	1300	1320	1270	1250	1260	---	---	---	---	---	---
24	1300	1200	1240	1250	1140	1210	---	---	---	---	---	---
25	1310	1210	1270	1140	1030	1060	---	---	---	---	---	---
26	1310	1260	1290	1110	919	1040	---	---	---	---	---	---
27	1260	1160	1210	984	908	951	---	---	---	---	---	---
28	1160	1100	1120	984	920	966	---	---	---	---	---	---
29	1120	1100	1110	920	833	870	---	---	---	---	---	---
30	1150	1090	1120	865	772	797	---	---	---	---	---	---
31	1220	1150	1180	---	---	---	---	---	---	---	---	---
MONTH	1710	905	1420	1300	772	1080	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	547	514	529	722	662	687
2	---	---	---	---	---	---	567	547	560	745	722	737
3	---	---	---	---	---	---	593	561	575	774	745	761
4	---	---	---	---	---	---	646	586	615	789	774	785
5	---	---	---	---	---	---	695	645	674	799	787	794
6	---	---	---	---	---	---	729	693	709	821	780	797
7	---	---	---	---	---	---	744	729	737	834	821	826
8	---	---	---	---	---	---	763	732	754	845	830	839
9	---	---	---	---	---	---	772	749	762	872	836	860
10	---	---	---	---	---	---	775	751	763	910	871	889
11	---	---	---	---	---	---	805	763	780	916	894	905
12	---	---	---	---	---	---	819	801	807	916	897	905
13	---	---	---	---	---	---	832	819	826	903	892	898
14	---	---	---	---	---	---	825	798	804	912	892	903
15	---	---	---	---	---	---	818	804	810	912	875	900
16	---	---	---	---	---	---	881	818	836	1100	873	1010
17	---	---	---	---	---	---	901	881	893	945	758	820
18	---	---	---	---	---	---	903	888	895	786	753	769
19	---	---	---	---	---	---	905	889	901	807	786	797
20	---	---	---	---	---	---	913	901	908	820	807	813
21	---	---	---	---	---	---	941	910	931	858	820	837
22	---	---	---	---	---	---	954	930	945	871	858	864
23	---	---	---	---	---	---	968	948	961	876	828	857
24	---	---	---	---	---	---	951	814	902	875	831	859
25	---	---	---	---	---	---	817	548	686	882	768	825
26	---	---	---	---	---	---	614	481	566	885	798	862
27	---	---	---	---	---	---	540	474	503	897	820	873
28	---	---	---	---	---	---	526	481	497	859	820	844
29	---	---	---	---	---	---	597	526	563	922	856	876
30	---	---	---	490	470	480	662	597	632	966	921	940
31	---	---	---	514	487	499	---	---	---	991	966	983
MONTH	---	---	---	---	---	---	968	474	744	1100	662	849

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1030	991	1010	667	494	595	1120	946	1030	1240	1160	1220
2	1080	1030	1050	889	662	793	980	946	965	1160	918	1020
3	1080	1060	1070	939	889	920	1020	980	997	1150	881	952
4	1100	1080	1090	965	896	918	1060	1020	1040	1370	1150	1320
5	1110	1080	1100	1040	965	1020	1100	1060	1090	1330	1260	1280
6	1090	1070	1080	1030	961	1010	1130	1060	1110	1430	1260	1320
7	1080	1020	1050	961	846	901	1160	1050	1120	1630	1430	1550
8	1020	991	1010	853	827	836	1240	1140	1190	1650	1550	1620
9	1020	980	996	865	846	853	1270	1240	1260	1550	1140	1350
10	1020	978	994	867	854	859	1270	1230	1260	1140	979	1040
11	1120	1020	1080	879	864	870	1260	1140	1190	991	969	976
12	1180	1120	1160	889	875	881	1140	1090	1110	1070	991	1030
13	1170	1080	1130	890	878	884	1310	1110	1200	1230	1070	1140
14	1080	931	1010	889	876	882	1340	1200	1280	1360	1230	1320
15	945	930	937	886	873	880	1440	1190	1300	1420	1360	1370
16	1150	945	1050	---	---	---	1550	1440	1510	1450	1400	1430
17	1140	851	1010	---	---	---	1560	1540	1550	1480	1430	1460
18	851	791	801	---	---	---	1550	1540	1540	1530	1470	1510
19	812	752	782	---	---	---	1540	1410	1490	1510	1350	1430
20	954	752	869	---	---	---	1410	1330	1350	1350	1300	1310
21	980	949	959	1040	833	937	1580	1360	1470	1390	1310	1350
22	993	974	984	1140	1040	1090	1660	1580	1620	1450	1280	1390
23	976	860	918	1130	1040	1090	1700	1660	1680	1280	926	1120
24	864	854	859	1040	933	984	1720	1700	1710	926	677	868
25	875	850	863	996	922	938	1730	1670	1720	1280	600	1040
26	950	864	897	1030	869	932	1670	1510	1570	1390	781	1240
27	983	940	962	1270	869	1080	1520	1470	1500	781	602	655
28	999	960	980	869	717	746	1470	1250	1370	680	664	673
29	1100	958	1010	849	763	819	1450	1220	1290	812	677	737
30	974	463	547	967	749	826	1600	1450	1550	955	812	882
31	---	---	---	1120	967	1050	1480	1230	1310	---	---	---
MONTH	1180	463	975	---	---	---	1730	946	1330	1650	600	1190

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	8.1	8.1	7.9	7.8	7.8	8.1	7.9	8.0	---	---	---
2	8.1	8.0	8.1	7.9	7.9	7.9	---	---	---	---	---	---
3	8.1	8.0	8.0	8.0	7.9	7.9	---	---	---	---	---	---
4	8.1	8.0	8.1	8.0	7.9	7.9	---	---	---	---	---	---
5	8.1	8.0	8.1	8.0	7.9	8.0	---	---	---	---	---	---
6	8.1	8.1	8.1	8.0	8.0	8.0	---	---	---	---	---	---
7	8.1	8.1	8.1	8.0	8.0	8.0	---	---	---	---	---	---
8	8.1	8.1	8.1	8.0	8.0	8.0	---	---	---	---	---	---
9	8.1	8.0	8.0	8.1	8.0	8.0	---	---	---	---	---	---
10	8.0	7.9	8.0	8.1	8.0	8.1	---	---	---	---	---	---
11	8.0	8.0	8.0	8.1	8.1	8.1	---	---	---	---	---	---
12	8.0	8.0	8.0	8.2	8.1	8.1	---	---	---	---	---	---
13	8.0	8.0	8.0	8.2	8.1	8.2	---	---	---	---	---	---
14	8.0	7.9	8.0	8.2	8.2	8.2	---	---	---	---	---	---
15	7.9	7.9	7.9	8.2	8.2	8.2	---	---	---	---	---	---
16	7.9	7.9	7.9	8.2	8.2	8.2	---	---	---	---	---	---
17	8.0	7.9	8.0	8.2	8.2	8.2	---	---	---	---	---	---
18	7.9	7.8	7.9	8.2	8.2	8.2	---	---	---	---	---	---
19	7.9	7.8	7.8	8.2	8.2	8.2	---	---	---	---	---	---
20	8.0	7.9	7.9	8.2	8.2	8.2	---	---	---	---	---	---
21	8.0	7.9	7.9	8.3	8.2	8.2	---	---	---	---	---	---
22	8.0	7.9	7.9	8.3	8.2	8.3	---	---	---	---	---	---
23	7.9	7.9	7.9	8.3	8.2	8.3	---	---	---	---	---	---
24	7.9	7.8	7.8	8.3	8.2	8.3	---	---	---	---	---	---
25	7.8	7.8	7.8	8.3	8.2	8.2	---	---	---	---	---	---
26	7.8	7.8	7.8	8.2	8.2	8.2	---	---	---	---	---	---
27	7.8	7.8	7.8	8.3	8.2	8.2	---	---	---	---	---	---
28	7.8	7.8	7.8	8.3	8.2	8.2	---	---	---	---	---	---
29	7.8	7.7	7.8	8.2	8.1	8.1	---	---	---	---	---	---
30	7.8	7.7	7.7	8.1	8.1	8.1	---	---	---	---	---	---
31	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
MAX	8.1	8.1	8.1	8.3	8.2	8.3	---	---	---	---	---	---
MIN	7.8	7.7	7.7	7.9	7.8	7.8	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
2	---	---	---	---	---	---	8.1	8.0	8.1	8.3	8.2	8.2
3	---	---	---	---	---	---	8.1	8.0	8.1	8.5	8.3	8.3
4	---	---	---	---	---	---	8.1	8.0	8.1	8.5	8.4	8.5
5	---	---	---	---	---	---	8.2	8.1	8.1	8.6	8.5	8.5
6	---	---	---	---	---	---	8.2	8.1	8.1	8.7	8.6	8.6
7	---	---	---	---	---	---	8.3	8.1	8.2	8.6	8.5	8.6
8	---	---	---	---	---	---	8.4	8.2	8.3	8.5	8.4	8.5
9	---	---	---	---	---	---	8.4	8.3	8.4	8.4	8.3	8.3
10	---	---	---	---	---	---	8.4	8.4	8.4	8.3	8.2	8.2
11	---	---	---	---	---	---	8.4	8.4	8.4	8.2	8.1	8.2
12	---	---	---	---	---	---	8.5	8.4	8.4	8.3	8.1	8.2
13	---	---	---	---	---	---	8.5	8.4	8.4	8.3	8.2	8.2
14	---	---	---	---	---	---	8.5	8.4	8.4	8.2	8.1	8.2
15	---	---	---	---	---	---	8.5	8.4	8.5	8.2	8.2	8.2
16	---	---	---	---	---	---	8.5	8.3	8.4	8.3	8.2	8.3
17	---	---	---	---	---	---	8.5	8.3	8.4	8.2	8.1	8.2
18	---	---	---	---	---	---	8.6	8.3	8.5	8.2	8.1	8.1
19	---	---	---	---	---	---	8.5	8.3	8.4	8.2	8.1	8.2
20	---	---	---	---	---	---	8.4	8.2	8.3	8.3	8.1	8.2
21	---	---	---	---	---	---	8.3	8.2	8.3	8.2	8.1	8.2
22	---	---	---	---	---	---	8.3	8.2	8.3	8.3	8.1	8.2
23	---	---	---	---	---	---	8.3	8.2	8.2	8.2	8.0	8.1
24	---	---	---	---	---	---	8.2	8.1	8.2	8.2	8.0	8.1
25	---	---	---	---	---	---	8.1	7.8	8.0	8.1	8.1	8.1
26	---	---	---	---	---	---	8.1	7.8	7.9	8.2	8.1	8.2
27	---	---	---	---	---	---	7.9	7.8	7.8	8.3	8.2	8.3
28	---	---	---	---	---	---	7.9	7.8	7.9	8.3	8.2	8.2
29	---	---	---	---	---	---	8.0	7.9	8.0	8.3	8.2	8.2
30	---	---	---	8.1	8.0	8.0	8.1	8.0	8.1	8.3	8.1	8.2
31	---	---	---	8.1	8.0	8.1	---	---	---	8.2	8.1	8.2
MAX	---	---	---	---	---	---	8.6	8.4	8.5	8.7	8.6	8.6
MIN	---	---	---	---	---	---	7.9	7.8	7.8	8.1	8.0	8.1

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	8.1	8.2	7.8	7.6	7.7	8.1	8.0	8.1	8.2	8.1	8.1
2	8.2	8.1	8.2	7.9	7.8	7.9	8.2	8.0	8.0	8.2	8.1	8.2
3	8.1	8.1	8.1	8.0	7.9	7.9	8.2	8.1	8.2	8.2	8.1	8.2
4	8.1	8.0	8.1	8.0	7.9	8.0	8.2	8.1	8.1	8.2	8.1	8.2
5	8.1	8.0	8.0	8.0	8.0	8.0	8.2	8.1	8.2	8.2	8.1	8.2
6	8.0	8.0	8.0	8.1	8.0	8.0	8.2	8.1	8.2	8.2	8.1	8.2
7	8.0	8.0	8.0	8.1	8.0	8.0	8.3	8.1	8.2	8.3	8.1	8.1
8	8.0	8.0	8.0	8.1	8.0	8.0	8.4	8.1	8.2	8.3	8.2	8.2
9	8.0	8.0	8.0	8.1	8.0	8.0	8.4	8.1	8.2	8.3	8.2	8.2
10	8.0	8.0	8.0	8.1	8.0	8.0	8.3	8.1	8.2	8.3	8.2	8.2
11	8.0	8.0	8.0	8.2	8.0	8.0	8.3	8.1	8.2	8.3	8.2	8.2
12	8.0	8.0	8.0	8.2	8.0	8.1	8.3	8.2	8.2	8.3	8.2	8.2
13	8.0	8.0	8.0	8.3	8.1	8.2	8.3	8.1	8.2	8.3	8.2	8.2
14	8.0	8.0	8.0	8.3	8.1	8.2	8.3	8.1	8.2	8.2	8.1	8.2
15	8.1	8.0	8.0	8.3	8.1	8.2	8.3	8.2	8.2	8.2	8.1	8.1
16	8.1	8.1	8.1	---	---	---	8.3	8.2	8.3	8.2	8.1	8.2
17	8.1	8.1	8.1	---	---	---	8.3	8.2	8.2	8.2	8.0	8.1
18	8.1	8.1	8.1	---	---	---	8.4	8.2	8.3	8.2	8.1	8.1
19	8.2	8.1	8.2	---	---	---	8.3	8.2	8.3	8.3	8.2	8.2
20	8.3	8.2	8.2	---	---	---	8.3	8.2	8.3	8.2	8.2	8.2
21	8.3	8.2	8.2	7.9	7.8	7.9	8.3	8.2	8.2	8.2	8.1	8.2
22	8.2	8.2	8.2	8.0	7.9	7.9	8.3	8.2	8.2	8.2	8.1	8.1
23	8.3	8.2	8.2	8.0	7.9	8.0	8.3	8.2	8.3	8.1	8.0	8.0
24	8.3	8.2	8.2	8.2	8.0	8.0	8.3	8.2	8.2	8.2	8.1	8.1
25	8.2	8.2	8.2	8.1	8.0	8.1	8.3	8.2	8.2	8.2	7.9	8.1
26	8.2	8.2	8.2	8.1	7.9	7.9	8.3	8.2	8.2	8.1	7.9	8.1
27	8.2	8.1	8.2	8.2	7.9	8.0	8.2	8.1	8.1	8.0	7.8	7.9
28	8.2	8.1	8.2	7.9	7.8	7.8	8.1	8.0	8.1	8.0	7.9	8.0
29	8.1	8.0	8.0	8.0	7.8	7.9	8.2	8.1	8.1	8.1	8.0	8.0
30	8.0	7.6	7.6	8.1	7.9	8.0	8.2	8.1	8.1	8.2	8.1	8.1
31	---	---	---	8.2	8.0	8.1	8.2	8.0	8.1	---	---	---
MAX	8.3	8.2	8.2	---	---	---	8.4	8.2	8.3	8.3	8.2	8.2
MIN	8.0	7.6	7.6	---	---	---	8.1	8.0	8.0	8.0	7.8	7.9

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.0	12.3	13.2	12.2	11.4	11.7	4.0	3.6	3.8	---	---	---
2	14.7	13.2	13.9	11.5	10.3	11.0	---	---	---	---	---	---
3	13.2	11.4	12.1	10.3	9.2	9.8	---	---	---	---	---	---
4	12.5	11.3	11.9	9.2	8.2	8.6	---	---	---	---	---	---
5	11.3	9.8	10.4	8.2	7.3	7.7	---	---	---	---	---	---
6	10.8	8.9	9.9	7.7	6.8	7.3	---	---	---	---	---	---
7	12.5	10.5	11.4	8.1	7.2	7.6	---	---	---	---	---	---
8	13.8	11.5	12.6	7.3	5.9	6.5	---	---	---	---	---	---
9	14.8	13.8	14.2	5.9	4.7	5.3	---	---	---	---	---	---
10	13.9	12.2	13.0	6.1	4.3	5.2	---	---	---	---	---	---
11	12.2	10.9	11.5	6.2	5.4	5.9	---	---	---	---	---	---
12	11.3	9.9	10.6	5.4	4.1	4.6	---	---	---	---	---	---
13	11.6	10.1	10.8	4.3	3.5	4.0	---	---	---	---	---	---
14	12.0	11.4	11.6	3.8	2.4	3.1	---	---	---	---	---	---
15	11.7	11.0	11.4	3.1	2.2	2.7	---	---	---	---	---	---
16	11.0	9.7	10.4	5.0	3.1	4.0	---	---	---	---	---	---
17	9.7	8.5	9.1	6.2	5.0	5.6	---	---	---	---	---	---
18	8.5	7.8	8.2	7.8	6.2	7.0	---	---	---	---	---	---
19	8.5	8.0	8.3	8.0	7.5	7.7	---	---	---	---	---	---
20	9.3	8.4	8.9	9.1	8.0	8.5	---	---	---	---	---	---
21	10.2	9.3	9.7	9.1	8.3	8.8	---	---	---	---	---	---
22	10.6	9.9	10.2	8.3	6.9	7.4	---	---	---	---	---	---
23	11.2	10.0	10.5	7.3	6.6	6.9	---	---	---	---	---	---
24	11.8	11.2	11.6	7.2	4.7	6.3	---	---	---	---	---	---
25	12.6	11.5	12.0	4.7	3.1	3.7	---	---	---	---	---	---
26	12.5	11.4	11.9	3.1	2.7	2.9	---	---	---	---	---	---
27	13.0	11.9	12.3	4.3	3.0	3.6	---	---	---	---	---	---
28	12.2	11.2	11.8	4.6	4.1	4.4	---	---	---	---	---	---
29	12.4	11.5	11.9	4.1	3.8	3.9	---	---	---	---	---	---
30	14.6	12.4	13.6	3.8	3.4	3.5	---	---	---	---	---	---
31	13.7	12.2	12.8	---	---	---	---	---	---	---	---	---
MONTH	14.8	7.8	11.3	12.2	2.2	6.2	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.9	8.0	8.5	10.4	9.2	9.9
2	---	---	---	---	---	---	8.3	5.6	7.1	10.2	9.1	9.7
3	---	---	---	---	---	---	6.2	4.7	5.5	9.7	8.8	9.1
4	---	---	---	---	---	---	8.2	5.4	6.7	10.7	7.8	9.3
5	---	---	---	---	---	---	9.8	6.6	8.2	12.0	9.0	10.5
6	---	---	---	---	---	---	12.1	8.8	10.4	13.2	10.6	12.0
7	---	---	---	---	---	---	12.0	11.2	11.7	15.3	12.6	13.9
8	---	---	---	---	---	---	12.3	10.0	11.1	16.4	13.2	14.8
9	---	---	---	---	---	---	12.3	9.7	11.1	17.7	15.0	16.3
10	---	---	---	---	---	---	13.1	10.6	11.9	19.0	16.1	17.6
11	---	---	---	---	---	---	13.6	11.5	12.4	18.3	15.2	17.0
12	---	---	---	---	---	---	12.5	10.8	11.6	15.8	13.6	14.7
13	---	---	---	---	---	---	12.4	9.9	11.1	14.2	12.9	13.4
14	---	---	---	---	---	---	12.7	9.8	11.2	14.5	12.9	13.7
15	---	---	---	---	---	---	13.0	10.0	11.5	13.9	12.9	13.2
16	---	---	---	---	---	---	13.7	10.1	12.0	12.9	12.1	12.4
17	---	---	---	---	---	---	13.5	11.2	12.4	13.3	11.6	12.5
18	---	---	---	---	---	---	15.2	11.3	13.3	14.4	12.2	13.4
19	---	---	---	---	---	---	17.4	13.1	15.3	14.1	13.5	13.8
20	---	---	---	---	---	---	16.5	13.9	15.6	15.9	13.1	14.5
21	---	---	---	---	---	---	15.3	12.3	13.8	16.8	14.1	15.5
22	---	---	---	---	---	---	13.7	11.3	12.3	16.1	15.2	15.7
23	---	---	---	---	---	---	11.3	6.7	9.2	15.3	13.7	14.6
24	---	---	---	---	---	---	6.7	3.5	4.9	14.5	13.2	13.9
25	---	---	---	---	---	---	8.0	3.1	5.2	15.6	13.3	14.5
26	---	---	---	---	---	---	8.4	7.4	7.8	16.7	14.8	15.7
27	---	---	---	---	---	---	8.0	6.9	7.5	17.4	16.0	16.7
28	---	---	---	---	---	---	8.6	7.3	8.0	17.2	16.2	16.6
29	---	---	---	---	---	---	9.8	8.2	8.9	16.9	15.8	16.4
30	---	---	---	7.7	5.4	6.5	10.7	9.2	9.9	17.6	15.7	16.7
31	---	---	---	9.0	7.3	8.2	---	---	---	19.0	16.4	17.7
MONTH	---	---	---	---	---	---	17.4	3.1	10.2	19.0	7.8	14.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.4	16.9	18.3	24.1	22.6	23.3	23.6	21.2	22.4	21.7	19.9	20.9
2	20.4	17.7	19.1	22.6	20.8	21.8	24.7	22.6	23.7	21.5	19.7	20.5
3	19.8	19.0	19.4	22.2	20.0	21.2	25.6	23.7	24.6	20.6	19.0	19.8
4	21.2	18.3	19.7	23.6	21.0	22.3	25.4	24.4	24.8	19.9	18.1	19.0
5	23.0	20.1	21.5	23.0	22.2	22.8	25.5	23.7	24.5	19.8	17.6	18.7
6	23.6	21.6	22.6	22.2	20.6	21.5	23.8	22.2	23.1	20.2	18.1	19.1
7	24.3	21.7	23.0	21.0	19.6	20.4	24.2	22.0	23.1	20.6	18.5	19.5
8	24.8	22.7	23.8	22.5	19.9	21.1	24.9	22.4	23.6	20.6	19.6	20.0
9	25.2	23.1	24.3	23.2	20.3	21.7	25.5	23.0	24.2	20.4	18.7	19.4
10	26.3	23.9	25.1	23.9	20.7	22.3	25.5	24.2	24.8	19.8	17.8	18.9
11	26.2	24.9	25.6	24.7	21.8	23.2	24.8	23.4	24.1	20.1	18.1	19.1
12	26.0	24.7	25.4	24.3	23.0	23.7	23.7	22.3	23.0	20.5	18.4	19.5
13	25.4	24.1	24.8	25.4	23.2	24.3	23.8	22.9	23.3	21.2	19.3	20.2
14	25.2	23.3	24.3	26.2	23.9	25.0	23.3	21.9	22.6	21.5	20.5	21.0
15	24.4	22.5	23.4	25.7	24.0	24.8	22.6	20.7	21.6	21.1	19.4	20.2
16	22.5	20.5	21.6	---	---	---	22.5	20.5	21.5	19.4	17.8	18.2
17	20.5	18.6	19.5	---	---	---	23.0	20.8	21.8	18.9	17.7	18.2
18	18.6	17.8	18.2	---	---	---	22.6	20.7	21.7	18.9	17.4	18.2
19	18.3	17.1	17.8	---	---	---	24.1	21.8	22.8	19.1	17.8	18.5
20	19.4	17.3	18.4	---	---	---	23.4	21.9	22.6	19.8	18.5	19.0
21	20.1	18.3	19.4	25.1	23.4	24.3	23.6	21.7	22.5	19.2	17.5	18.4
22	21.4	19.1	20.2	25.7	23.9	24.8	22.0	19.8	20.6	18.7	18.2	18.4
23	20.6	18.2	19.6	24.5	22.7	23.7	20.0	18.7	19.3	18.5	17.4	18.0
24	22.8	19.3	21.0	24.1	22.6	23.5	20.1	17.6	18.8	17.5	16.3	17.0
25	24.6	22.3	23.4	26.0	24.1	25.0	19.5	18.0	18.8	18.2	17.3	17.8
26	23.9	21.9	23.0	25.2	24.0	24.5	21.3	18.6	19.8	18.9	18.0	18.5
27	25.0	22.4	23.8	24.1	22.6	23.5	21.3	20.4	20.8	18.0	16.8	17.3
28	25.7	24.1	24.7	22.6	21.0	21.6	21.8	19.7	20.8	17.2	15.8	16.6
29	25.2	23.5	24.4	21.7	20.7	21.3	22.3	20.5	21.4	17.2	14.5	15.7
30	24.9	23.2	23.7	22.0	20.2	21.2	22.0	21.3	21.6	14.5	13.1	13.7
31	---	---	---	22.0	19.8	21.0	22.1	21.2	21.6	---	---	---
MONTH	26.3	16.9	22.0	---	---	---	25.6	17.6	22.3	21.7	13.1	18.6

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.2	8.2	8.5	7.8	6.9	7.4	12.1	11.6	11.8	---	---	---
2	8.5	7.7	8.1	8.1	7.7	7.9	---	---	---	---	---	---
3	9.0	7.7	8.3	8.9	8.1	8.6	---	---	---	---	---	---
4	9.2	8.5	8.8	9.1	8.6	8.9	---	---	---	---	---	---
5	9.6	8.8	9.1	9.7	9.1	9.5	---	---	---	---	---	---
6	10.1	9.3	9.6	10.2	9.7	9.9	---	---	---	---	---	---
7	9.6	8.9	9.2	10.1	10.0	10.0	---	---	---	---	---	---
8	9.3	8.5	8.8	10.7	10.0	10.4	---	---	---	---	---	---
9	8.5	7.2	7.8	11.4	10.6	11.0	---	---	---	---	---	---
10	7.9	7.1	7.5	11.7	11.1	11.3	---	---	---	---	---	---
11	8.8	7.7	8.2	11.3	10.7	11.0	---	---	---	---	---	---
12	9.2	8.3	8.7	12.0	11.0	11.5	---	---	---	---	---	---
13	9.2	8.6	8.9	12.4	11.6	12.0	---	---	---	---	---	---
14	8.8	7.2	8.0	13.1	11.9	12.5	---	---	---	---	---	---
15	7.8	7.2	7.5	13.5	12.3	12.9	---	---	---	---	---	---
16	8.1	7.4	7.7	13.0	11.6	12.4	---	---	---	---	---	---
17	9.0	8.0	8.7	11.6	10.5	11.0	---	---	---	---	---	---
18	9.4	9.0	9.1	11.4	10.1	10.6	---	---	---	---	---	---
19	9.6	9.3	9.4	10.8	9.7	10.2	---	---	---	---	---	---
20	9.7	9.0	9.4	10.4	9.2	9.7	---	---	---	---	---	---
21	9.3	8.7	9.0	11.4	8.9	10.0	---	---	---	---	---	---
22	9.2	8.5	8.8	11.8	9.6	10.6	---	---	---	---	---	---
23	8.9	8.0	8.5	10.9	10.0	10.4	---	---	---	---	---	---
24	8.0	6.9	7.3	10.8	9.9	10.3	---	---	---	---	---	---
25	7.6	6.8	7.2	11.9	10.5	11.2	---	---	---	---	---	---
26	7.4	6.9	7.2	12.2	11.6	11.9	---	---	---	---	---	---
27	6.9	6.5	6.7	12.7	11.9	12.2	---	---	---	---	---	---
28	7.0	6.4	6.6	11.9	11.6	11.7	---	---	---	---	---	---
29	6.9	6.2	6.7	11.9	11.6	11.7	---	---	---	---	---	---
30	6.2	5.7	6.0	12.3	11.7	12.1	---	---	---	---	---	---
31	6.9	5.7	6.2	---	---	---	---	---	---	---	---	---
MONTH	10.1	5.7	8.1	13.5	6.9	10.7	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	11.3	10.8	11.1	11.1	10.1	10.6
2	---	---	---	---	---	---	11.6	11.0	11.3	11.6	10.3	10.9
3	---	---	---	---	---	---	12.3	11.6	12.0	11.9	10.6	11.2
4	---	---	---	---	---	---	12.1	11.5	11.9	12.8	10.6	11.6
5	---	---	---	---	---	---	11.8	10.6	11.4	13.0	10.8	11.7
6	---	---	---	---	---	---	10.7	10.0	10.5	13.0	10.1	11.4
7	---	---	---	---	---	---	10.1	9.6	9.9	12.7	9.5	10.9
8	---	---	---	---	---	---	10.7	9.9	10.3	11.9	9.0	10.3
9	---	---	---	---	---	---	11.1	10.3	10.7	10.8	8.4	9.5
10	---	---	---	---	---	---	11.2	10.2	10.6	9.8	7.8	8.7
11	---	---	---	---	---	---	11.4	10.0	10.7	9.0	6.8	8.0
12	---	---	---	---	---	---	12.0	10.2	11.1	10.9	7.9	9.2
13	---	---	---	---	---	---	12.6	10.5	11.5	9.8	7.9	8.9
14	---	---	---	---	---	---	13.0	10.6	11.8	9.9	7.6	8.9
15	---	---	---	---	---	---	13.6	10.6	12.0	9.4	8.2	8.7
16	---	---	---	---	---	---	13.5	10.5	11.9	9.9	8.7	9.3
17	---	---	---	---	---	---	13.4	10.1	11.7	10.0	9.2	9.6
18	---	---	---	---	---	---	13.6	9.9	11.6	10.5	8.9	9.6
19	---	---	---	---	---	---	12.1	9.3	10.6	9.5	8.7	9.1
20	---	---	---	---	---	---	9.6	8.1	8.9	10.7	8.6	9.5
21	---	---	---	---	---	---	10.9	8.5	9.6	10.8	8.6	9.5
22	---	---	---	---	---	---	10.4	8.8	9.6	9.7	8.2	8.9
23	---	---	---	---	---	---	10.8	9.2	9.9	8.6	8.1	8.3
24	---	---	---	---	---	---	11.9	10.6	11.3	9.6	8.3	8.9
25	---	---	---	---	---	---	12.2	10.3	11.6	10.1	9.0	9.4
26	---	---	---	---	---	---	10.5	10.1	10.3	10.3	8.8	9.4
27	---	---	---	---	---	---	10.5	10.2	10.4	10.3	8.5	9.2
28	---	---	---	---	---	---	10.6	10.3	10.4	10.1	8.2	9.1
29	---	---	---	---	---	---	10.6	10.0	10.4	9.7	8.3	9.0
30	---	---	---	11.9	11.3	11.7	10.7	10.3	10.5	10.0	8.3	9.1
31	---	---	---	11.3	10.8	11.1	---	---	---	10.0	8.1	8.9
MONTH	---	---	---	---	---	---	13.6	8.1	10.8	13.0	6.8	9.6

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.8	7.8	8.7	6.5	5.9	6.2	9.3	7.3	8.0	9.2	6.5	7.7
2	9.7	7.7	8.6	7.4	6.3	6.8	8.9	6.4	7.5	9.0	6.8	7.7
3	8.0	7.3	7.6	7.9	6.7	7.2	8.8	6.2	7.2	9.2	6.2	7.7
4	8.5	7.3	7.8	8.0	6.5	7.1	7.9	6.0	6.8	10.0	6.7	8.2
5	8.0	6.8	7.3	7.0	6.0	6.5	8.3	6.1	7.0	9.4	7.4	8.4
6	7.3	6.2	6.7	7.6	6.3	6.8	8.5	6.3	7.2	9.3	7.3	8.2
7	6.9	5.9	6.4	8.2	6.9	7.3	9.2	6.3	7.4	---	---	---
8	6.4	5.6	5.9	8.5	6.6	7.3	9.2	6.3	7.5	8.6	7.4	8.0
9	6.5	5.6	6.0	9.2	6.5	7.4	9.2	6.2	7.5	8.7	7.2	7.8
10	6.5	5.6	6.0	9.8	6.5	7.6	8.2	5.4	6.9	8.9	7.4	8.1
11	6.0	5.4	5.7	10.8	6.3	7.8	8.6	6.0	7.1	8.9	7.5	8.2
12	6.0	5.3	5.6	8.4	6.0	7.1	7.8	6.4	7.0	8.8	7.3	8.0
13	5.6	5.1	5.4	8.9	6.0	7.2	8.1	5.9	7.0	8.7	7.1	7.9
14	6.3	5.5	5.8	9.1	5.8	7.1	8.1	6.2	7.1	7.9	6.9	7.3
15	6.2	5.5	5.8	8.0	5.7	6.7	9.3	6.8	7.8	8.1	6.3	7.2
16	7.0	5.8	6.4	---	---	---	9.4	6.9	8.0	8.1	7.4	7.7
17	7.5	6.8	7.1	---	---	---	10.0	6.8	8.0	8.7	7.2	7.8
18	8.0	7.1	7.6	---	---	---	9.4	6.9	8.1	9.2	7.7	8.4
19	8.8	7.9	8.3	---	---	---	8.9	6.7	7.6	9.3	7.9	8.6
20	9.5	8.1	8.8	---	---	---	8.1	6.4	7.2	9.0	7.9	8.3
21	9.0	8.0	8.5	6.7	6.2	6.4	9.5	6.4	7.4	9.0	7.8	8.3
22	8.8	7.7	8.2	6.8	6.1	6.4	9.0	6.4	7.7	8.6	7.7	8.1
23	8.9	7.7	8.2	7.4	6.3	6.7	9.7	6.9	8.4	8.5	7.3	7.9
24	9.0	7.4	8.1	8.5	6.3	7.1	9.2	7.8	8.4	9.4	8.5	8.9
25	8.7	6.4	7.5	8.3	6.2	7.1	9.2	7.6	8.4	9.0	8.3	8.7
26	8.6	6.6	7.4	6.7	6.0	6.3	9.3	7.6	8.3	8.5	8.1	8.4
27	9.0	6.6	7.5	8.6	6.1	7.3	8.2	6.7	7.3	8.8	8.1	8.3
28	8.4	6.1	7.0	7.7	6.8	7.3	8.1	6.5	7.2	8.7	8.0	8.3
29	7.7	5.8	6.4	8.1	7.2	7.6	8.5	6.9	7.6	8.9	7.9	8.4
30	6.2	5.9	6.1	8.5	7.4	7.9	7.6	6.6	7.1	9.8	8.6	9.2
31	---	---	---	9.5	7.4	8.3	8.2	6.3	7.2	---	---	---
MONTH	9.8	5.1	7.1	---	---	---	10.0	5.4	7.5	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	968	884	929	---	---	---	---	---	---	---	---	---
2	939	884	908	---	---	---	---	---	---	---	---	---
3	966	939	956	---	---	---	---	---	---	---	---	---
4	941	886	904	---	---	---	---	---	---	---	---	---
5	959	903	939	---	---	---	---	---	---	---	---	---
6	966	958	962	---	---	---	---	---	---	---	---	---
7	1020	963	990	---	---	---	---	---	---	---	---	---
8	1040	1010	1030	---	---	---	---	---	---	---	---	---
9	1130	996	1040	---	---	---	---	---	---	---	---	---
10	1230	1130	1190	---	---	---	---	---	---	---	---	---
11	1250	1200	1240	---	---	---	---	---	---	---	---	---
12	1200	1090	1130	---	---	---	---	---	---	---	---	---
13	1090	1080	1090	---	---	---	---	---	---	---	---	---
14	1100	1080	1090	---	---	---	---	---	---	---	---	---
15	1100	1100	1100	---	---	---	---	---	---	---	---	---
16	1120	1100	1110	---	---	---	---	---	---	---	---	---
17	1240	1120	1160	---	---	---	---	---	---	---	---	---
18	1410	1240	1330	---	---	---	---	---	---	---	---	---
19	1460	1410	1440	---	---	---	---	---	---	---	---	---
20	1460	1350	1430	---	---	---	---	---	---	---	---	---
21	1350	1220	1280	---	---	---	---	---	---	---	---	---
22	1220	1190	1210	---	---	---	---	---	---	---	---	---
23	1200	1180	1190	---	---	---	---	---	---	---	---	---
24	1190	1180	1180	---	---	---	---	---	---	---	---	---
25	1180	1180	1180	---	---	---	---	---	---	---	---	---
26	1180	1170	1180	---	---	---	---	---	---	---	---	---
27	1170	1170	1170	---	---	---	---	---	---	---	---	---
28	1320	1170	1220	---	---	---	---	---	---	---	---	---
29	1400	1320	1380	---	---	---	---	---	---	---	---	---
30	1370	1200	1280	---	---	---	---	---	---	---	---	---
31	1200	1150	1170	---	---	---	---	---	---	---	---	---
MONTH	1460	884	1140	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
2	8.2	8.2	8.2	---	---	---	---	---	---	---	---	---
3	8.2	8.2	8.2	---	---	---	---	---	---	---	---	---
4	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
5	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
6	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
7	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
8	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
9	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
10	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
11	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
12	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
13	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
14	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
15	8.1	8.0	8.1	---	---	---	---	---	---	---	---	---
16	8.1	7.7	8.0	---	---	---	---	---	---	---	---	---
17	7.9	7.7	7.9	---	---	---	---	---	---	---	---	---
18	7.9	7.9	7.9	---	---	---	---	---	---	---	---	---
19	8.1	7.8	7.9	---	---	---	---	---	---	---	---	---
20	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
21	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
22	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
23	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
24	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
25	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
26	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
27	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
28	8.1	8.0	8.1	---	---	---	---	---	---	---	---	---
29	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
30	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
31	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
MAX	8.2	8.2	8.2	---	---	---	---	---	---	---	---	---
MIN	7.9	7.7	7.9	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO ST. CLAIR RIVER

04160625 BELLE RIVER NEAR MARINE CITY, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.4	13.1	13.8	---	---	---	---	---	---	---	---	---
2	15.5	14.0	14.7	---	---	---	---	---	---	---	---	---
3	17.2	15.5	16.5	---	---	---	---	---	---	---	---	---
4	18.4	17.1	17.7	---	---	---	---	---	---	---	---	---
5	18.7	17.5	18.1	---	---	---	---	---	---	---	---	---
6	19.0	17.9	18.4	---	---	---	---	---	---	---	---	---
7	18.0	15.0	16.4	---	---	---	---	---	---	---	---	---
8	15.0	12.7	13.7	---	---	---	---	---	---	---	---	---
9	12.7	11.6	12.1	---	---	---	---	---	---	---	---	---
10	12.5	11.9	12.2	---	---	---	---	---	---	---	---	---
11	13.1	12.3	12.6	---	---	---	---	---	---	---	---	---
12	13.9	13.0	13.5	---	---	---	---	---	---	---	---	---
13	14.9	13.8	14.3	---	---	---	---	---	---	---	---	---
14	15.1	13.9	14.5	---	---	---	---	---	---	---	---	---
15	14.8	13.6	14.3	---	---	---	---	---	---	---	---	---
16	13.6	12.1	12.8	---	---	---	---	---	---	---	---	---
17	12.1	10.8	11.5	---	---	---	---	---	---	---	---	---
18	12.4	11.1	11.7	---	---	---	---	---	---	---	---	---
19	12.2	11.1	11.6	---	---	---	---	---	---	---	---	---
20	11.1	9.5	10.2	---	---	---	---	---	---	---	---	---
21	10.1	9.0	9.5	---	---	---	---	---	---	---	---	---
22	9.4	8.8	9.1	---	---	---	---	---	---	---	---	---
23	9.0	8.5	8.8	---	---	---	---	---	---	---	---	---
24	8.5	7.7	8.1	---	---	---	---	---	---	---	---	---
25	8.6	7.7	8.1	---	---	---	---	---	---	---	---	---
26	8.3	7.4	7.8	---	---	---	---	---	---	---	---	---
27	7.6	6.8	7.3	---	---	---	---	---	---	---	---	---
28	7.8	6.9	7.3	---	---	---	---	---	---	---	---	---
29	7.1	5.8	6.5	---	---	---	---	---	---	---	---	---
30	7.3	5.8	6.6	---	---	---	---	---	---	---	---	---
31	9.2	7.2	8.2	---	---	---	---	---	---	---	---	---
MONTH	19.0	5.8	11.9	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.2	9.1	9.5	---	---	---	---	---	---	---	---	---
2	10.3	9.0	9.6	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	9.8	8.1	8.8	---	---	---	---	---	---	---	---	---
5	9.4	7.8	8.5	---	---	---	---	---	---	---	---	---
6	9.1	7.7	8.3	---	---	---	---	---	---	---	---	---
7	9.0	7.6	8.2	---	---	---	---	---	---	---	---	---
8	9.2	8.2	8.7	---	---	---	---	---	---	---	---	---
9	9.9	8.7	9.3	---	---	---	---	---	---	---	---	---
10	9.9	9.1	9.5	---	---	---	---	---	---	---	---	---
11	10.1	9.0	9.5	---	---	---	---	---	---	---	---	---
12	9.7	9.0	9.3	---	---	---	---	---	---	---	---	---
13	9.4	8.5	8.9	---	---	---	---	---	---	---	---	---
14	9.2	8.3	8.7	---	---	---	---	---	---	---	---	---
15	8.5	7.9	8.2	---	---	---	---	---	---	---	---	---
16	9.0	7.9	8.4	---	---	---	---	---	---	---	---	---
17	9.4	8.5	8.9	---	---	---	---	---	---	---	---	---
18	9.0	8.5	8.7	---	---	---	---	---	---	---	---	---
19	8.8	8.3	8.5	---	---	---	---	---	---	---	---	---
20	9.0	8.2	8.6	---	---	---	---	---	---	---	---	---
21	9.3	8.7	9.0	---	---	---	---	---	---	---	---	---
22	9.5	9.0	9.3	---	---	---	---	---	---	---	---	---
23	9.7	9.1	9.4	---	---	---	---	---	---	---	---	---
24	9.9	9.4	9.6	---	---	---	---	---	---	---	---	---
25	10.0	9.5	9.8	---	---	---	---	---	---	---	---	---
26	9.7	9.3	9.5	---	---	---	---	---	---	---	---	---
27	10.0	9.5	9.8	---	---	---	---	---	---	---	---	---
28	10.2	9.6	9.9	---	---	---	---	---	---	---	---	---
29	10.5	9.9	10.2	---	---	---	---	---	---	---	---	---
30	10.6	10.1	10.4	---	---	---	---	---	---	---	---	---
31	10.2	9.4	9.8	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI

LOCATION.--Lat 42°40'32", long 82°30'39", in NE1/4 SE1/4 sec.23, T.3 N., R.16 E., St. Clair County, Hydrologic Unit 04090001, on right bank 1.1 mi north of Roberts Landing.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 2004 to October 2005.
pH: July 2004 to October 2005.
WATER TEMPERATURE: July 2004 to October 2005.
DISSOLVED OXYGEN: July 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 20 to Dec. 2, Mar. 23 to May 20, Oct. 1-5, 2005, rated good. pH records rated excellent except for the following period: Oct. 31 to Nov. 3, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 4-6, 14-18, 27-31, Apr. 20-26, June 1-7, Sept. 30, Oct. 1-5, 24-31, 2005, rated good; Oct. 19, 20, Nov. 1-3, rated fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 288 microsiemens, Apr. 27, 2005; minimum, 203 microsiemens, Aug. 15, 2004.
pH: Maximum, 8.5 std. units, Aug. 7-9, 14-19, 21-25, 2004, July 29, 30, Aug. 15, 24, 26, 2005; minimum, 7.8 std. units, Apr. 26, 2005.
WATER TEMPERATURE: Maximum, 25.4°C, July 22, 25, Aug. 9, 2005; minimum, 0.1°C, Mar. 30, 2005.
DISSOLVED OXYGEN: Maximum, 13.9 mg/L, Mar. 26, 2005; minimum, 7.4 mg/L, July 17, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 288 microsiemens, Apr. 27; minimum, 204 microsiemens, May 12.
pH: Maximum, 8.5 std. units, July 29, 30, Aug. 15, 24, 26; minimum, 7.8 std. units, Apr. 26.
WATER TEMPERATURE: Maximum, 25.4°C, July 22, 25, Aug. 9; minimum, 0.1°C, Mar. 30.
DISSOLVED OXYGEN: Maximum, 13.9 mg/L, Mar. 26; minimum, 7.4 mg/L, July 17.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	221	219	220	223	215	218	238	214	225	---	---	---
2	220	215	217	222	212	215	249	238	245	---	---	---
3	220	215	216	222	213	217	---	---	---	---	---	---
4	219	215	217	220	209	214	---	---	---	---	---	---
5	223	217	220	235	212	225	---	---	---	---	---	---
6	220	215	217	230	220	225	---	---	---	---	---	---
7	217	214	216	226	211	222	---	---	---	---	---	---
8	215	213	214	221	212	218	---	---	---	---	---	---
9	215	211	212	218	214	216	---	---	---	---	---	---
10	213	211	212	217	211	213	---	---	---	---	---	---
11	215	212	213	214	207	211	---	---	---	---	---	---
12	216	212	214	214	210	212	---	---	---	---	---	---
13	216	213	214	214	209	211	---	---	---	---	---	---
14	220	213	216	216	212	214	---	---	---	---	---	---
15	219	212	216	217	213	214	---	---	---	---	---	---
16	220	214	217	217	212	215	---	---	---	---	---	---
17	221	215	218	214	212	213	---	---	---	---	---	---
18	222	216	219	215	206	211	---	---	---	---	---	---
19	218	212	214	212	206	209	---	---	---	---	---	---
20	217	213	215	213	209	211	---	---	---	---	---	---
21	215	211	212	212	206	210	---	---	---	---	---	---
22	213	211	212	212	208	210	---	---	---	---	---	---
23	212	209	211	213	208	211	---	---	---	---	---	---
24	213	210	212	213	205	209	---	---	---	---	---	---
25	215	211	212	233	206	222	---	---	---	---	---	---
26	213	209	211	234	216	224	---	---	---	---	---	---
27	211	209	210	220	210	214	---	---	---	---	---	---
28	214	210	212	234	208	222	---	---	---	---	---	---
29	216	209	212	243	221	232	---	---	---	---	---	---
30	218	209	213	239	219	228	---	---	---	---	---	---
31	220	211	216	---	---	---	---	---	---	---	---	---
MONTH	223	209	215	243	205	216	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	244	225	234	253	243	249
2	---	---	---	---	---	---	242	226	233	248	236	243
3	---	---	---	---	---	---	262	235	252	242	231	237
4	---	---	---	---	---	---	257	236	249	236	222	229
5	---	---	---	---	---	---	237	223	229	229	219	224
6	---	---	---	---	---	---	232	225	227	227	218	223
7	---	---	---	---	---	---	238	221	230	226	215	219
8	---	---	---	---	---	---	230	217	224	224	214	217
9	---	---	---	---	---	---	235	222	228	216	209	212
10	---	---	---	---	---	---	235	217	227	215	208	212
11	---	---	---	---	---	---	230	219	224	215	207	211
12	---	---	---	---	---	---	230	218	223	212	204	208
13	---	---	---	---	---	---	227	216	222	227	206	210
14	---	---	---	---	---	---	236	221	227	228	209	217
15	---	---	---	---	---	---	232	223	228	231	212	219
16	---	---	---	---	---	---	234	219	226	236	218	230
17	---	---	---	---	---	---	226	213	217	237	225	233
18	---	---	---	---	---	---	219	211	215	236	216	225
19	---	---	---	---	---	---	219	213	216	220	211	216
20	---	---	---	---	---	---	227	209	217	218	207	212
21	---	---	---	---	---	---	221	209	216	217	209	213
22	---	---	---	---	---	---	224	211	216	217	210	214
23	---	---	---	240	231	237	225	211	217	223	210	217
24	---	---	---	241	228	233	254	210	233	230	216	222
25	---	---	---	243	234	237	275	247	259	233	225	229
26	---	---	---	240	232	235	279	251	262	235	225	230
27	---	---	---	237	231	234	288	271	279	230	219	224
28	---	---	---	235	228	231	285	267	278	230	215	221
29	---	---	---	235	230	232	274	258	264	225	215	219
30	---	---	---	235	230	232	260	242	249	224	215	218
31	---	---	---	242	227	232	---	---	---	222	214	218
MONTH	---	---	---	---	---	---	288	209	234	253	204	222

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	221	213	216	230	219	223	222	219	220	221	217	219
2	220	213	216	230	223	226	223	219	221	221	216	218
3	221	214	218	226	219	221	223	218	221	218	215	217
4	219	211	215	222	219	220	222	212	219	220	215	218
5	222	211	216	222	218	220	222	216	219	220	216	218
6	223	209	214	222	219	220	222	206	217	219	216	218
7	222	215	218	222	218	220	220	216	218	218	215	216
8	224	213	217	224	219	221	220	218	219	216	214	215
9	224	215	219	223	219	220	225	217	219	215	213	214
10	222	214	217	222	219	220	225	217	220	218	214	216
11	220	213	216	225	219	221	221	218	220	219	214	216
12	220	214	217	227	220	221	223	218	220	217	212	216
13	220	215	217	223	219	221	221	218	219	216	211	213
14	223	216	219	225	221	222	222	218	219	214	211	213
15	224	217	219	224	220	222	221	218	219	215	212	213
16	235	223	229	239	219	224	222	218	220	215	211	214
17	237	230	233	279	220	244	221	218	219	216	214	215
18	239	230	234	222	220	221	222	217	219	218	215	216
19	240	228	234	223	220	222	220	217	219	219	214	216
20	240	226	231	225	222	223	223	218	219	218	214	216
21	230	220	227	225	220	223	221	217	219	218	215	216
22	227	221	224	225	221	222	219	217	218	217	213	215
23	233	220	224	223	219	221	220	219	220	217	213	215
24	228	220	223	226	219	222	220	217	218	218	214	216
25	231	222	226	223	219	221	220	217	218	228	217	222
26	227	220	224	242	219	224	221	218	219	227	218	222
27	225	219	222	245	223	235	221	218	220	222	214	217
28	229	219	222	234	228	231	220	217	218	219	215	217
29	231	220	223	235	225	231	220	218	219	221	212	217
30	233	220	226	227	221	224	220	217	218	220	214	217
31	---	---	---	226	219	222	219	216	217	---	---	---
MONTH	240	209	222	279	218	223	225	206	219	228	211	216

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	8.2	8.2	8.4	8.3	8.3	8.2	8.1	8.2	---	---	---
2	8.3	8.2	8.2	8.4	8.3	8.3	8.2	8.1	8.2	---	---	---
3	8.4	8.1	8.2	8.4	8.2	8.3	---	---	---	---	---	---
4	8.3	8.1	8.2	8.2	8.2	8.2	---	---	---	---	---	---
5	8.3	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
6	8.3	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
7	8.4	8.2	8.3	8.3	8.2	8.2	---	---	---	---	---	---
8	8.3	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
9	8.4	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
10	8.4	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
11	8.4	8.2	8.3	8.3	8.2	8.2	---	---	---	---	---	---
12	8.3	8.2	8.3	8.4	8.2	8.2	---	---	---	---	---	---
13	8.4	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
14	8.3	8.2	8.2	8.3	8.2	8.2	---	---	---	---	---	---
15	8.2	8.2	8.2	8.4	8.2	8.3	---	---	---	---	---	---
16	8.3	8.1	8.2	8.4	8.1	8.3	---	---	---	---	---	---
17	8.2	8.1	8.1	8.2	8.2	8.2	---	---	---	---	---	---
18	8.2	8.1	8.1	8.3	8.1	8.2	---	---	---	---	---	---
19	8.2	8.1	8.1	8.2	8.2	8.2	---	---	---	---	---	---
20	8.2	8.1	8.1	8.2	8.2	8.2	---	---	---	---	---	---
21	8.2	8.0	8.1	8.3	8.1	8.2	---	---	---	---	---	---
22	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
23	8.2	8.1	8.2	8.2	8.2	8.2	---	---	---	---	---	---
24	8.2	8.1	8.2	8.2	8.2	8.2	---	---	---	---	---	---
25	8.3	8.1	8.2	8.2	8.2	8.2	---	---	---	---	---	---
26	8.2	8.1	8.1	8.2	8.2	8.2	---	---	---	---	---	---
27	8.4	8.1	8.2	8.2	8.2	8.2	---	---	---	---	---	---
28	8.4	8.2	8.2	8.2	8.2	8.2	---	---	---	---	---	---
29	8.3	8.2	8.2	8.2	8.2	8.2	---	---	---	---	---	---
30	8.3	8.2	8.2	8.2	8.2	8.2	---	---	---	---	---	---
31	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
MAX	8.4	8.2	8.3	8.4	8.3	8.3	---	---	---	---	---	---
MIN	8.2	8.0	8.1	8.2	8.1	8.2	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.2	8.1	8.2	8.2	8.0	8.1
2	---	---	---	---	---	---	8.2	8.0	8.1	8.2	8.1	8.1
3	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
4	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.2
5	---	---	---	---	---	---	8.2	8.0	8.1	8.2	8.1	8.2
6	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.1	8.2
7	---	---	---	---	---	---	8.1	8.1	8.1	8.2	8.1	8.2
8	---	---	---	---	---	---	8.2	8.1	8.1	8.3	8.1	8.2
9	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.1	8.2
10	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.1	8.2
11	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.2
12	---	---	---	---	---	---	8.1	8.0	8.1	8.3	8.1	8.2
13	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.1
14	---	---	---	---	---	---	8.2	8.0	8.1	8.2	8.1	8.2
15	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.1	8.2
16	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.2
17	---	---	---	---	---	---	8.1	8.0	8.1	8.2	8.1	8.2
18	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.2	8.2
19	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.1	8.2
20	---	---	---	---	---	---	8.1	8.0	8.1	8.3	8.1	8.2
21	---	---	---	---	---	---	8.1	7.9	8.0	8.3	8.1	8.2
22	---	---	---	---	---	---	8.0	7.9	8.0	8.3	8.1	8.2
23	---	---	---	8.2	8.1	8.1	8.0	7.9	8.0	8.2	8.2	8.2
24	---	---	---	8.2	8.1	8.2	8.0	7.9	7.9	8.3	8.2	8.2
25	---	---	---	8.2	8.1	8.2	7.9	7.9	7.9	8.3	8.2	8.2
26	---	---	---	8.2	8.1	8.1	8.0	7.8	7.9	8.3	8.2	8.2
27	---	---	---	8.2	8.1	8.1	8.0	8.0	8.0	8.3	8.2	8.2
28	---	---	---	8.2	8.1	8.1	8.0	7.9	8.0	8.2	8.1	8.1
29	---	---	---	8.2	8.1	8.2	8.0	8.0	8.0	8.2	8.1	8.1
30	---	---	---	8.2	8.1	8.2	8.1	8.0	8.1	8.3	8.1	8.1
31	---	---	---	8.2	8.1	8.2	---	---	---	8.3	8.1	8.2
MAX	---	---	---	---	---	---	8.2	8.1	8.2	8.3	8.2	8.2
MIN	---	---	---	---	---	---	7.9	7.8	7.9	8.2	8.0	8.1

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.3	8.1	8.1	8.3	8.1	8.2	8.4	8.1	8.2	8.4	8.2	8.2
2	8.3	8.1	8.1	8.3	8.1	8.2	8.4	8.1	8.2	8.4	8.2	8.3
3	8.2	8.1	8.1	8.3	8.1	8.2	8.4	8.1	8.2	8.4	8.2	8.3
4	8.3	8.1	8.2	8.3	8.1	8.2	8.4	8.1	8.2	8.4	8.2	8.3
5	8.3	8.1	8.2	8.3	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.3
6	8.3	8.1	8.2	8.3	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.3
7	8.2	8.1	8.1	8.2	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.3
8	8.2	8.1	8.1	8.3	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.2
9	8.2	8.1	8.1	8.3	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.3
10	8.3	8.1	8.2	8.3	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.3
11	8.2	8.1	8.2	8.3	8.0	8.1	8.4	8.1	8.2	8.4	8.2	8.3
12	8.3	8.1	8.2	8.4	8.0	8.2	8.4	8.1	8.2	8.4	8.2	8.3
13	8.2	8.1	8.2	8.4	8.1	8.2	8.4	8.2	8.2	8.4	8.2	8.3
14	8.2	8.1	8.2	8.4	8.1	8.2	8.4	8.1	8.2	8.4	8.2	8.3
15	8.2	8.1	8.1	8.4	8.1	8.2	8.5	8.1	8.2	8.4	8.2	8.3
16	8.2	8.1	8.1	8.2	8.1	8.1	8.4	8.2	8.2	8.3	8.2	8.2
17	8.2	8.1	8.1	8.1	8.0	8.0	8.4	8.2	8.2	8.3	8.2	8.2
18	8.3	8.1	8.2	8.2	8.0	8.1	8.4	8.2	8.3	8.4	8.2	8.2
19	8.4	8.2	8.2	8.3	8.1	8.2	8.4	8.2	8.2	8.3	8.2	8.2
20	8.4	8.2	8.2	8.4	8.1	8.2	8.3	8.2	8.2	8.4	8.2	8.3
21	8.4	8.2	8.2	8.4	8.1	8.2	8.4	8.2	8.3	8.4	8.2	8.3
22	8.4	8.2	8.3	8.4	8.1	8.2	8.4	8.2	8.3	8.3	8.2	8.2
23	8.4	8.2	8.2	8.4	8.1	8.2	8.4	8.2	8.3	8.4	8.2	8.2
24	8.4	8.2	8.2	8.4	8.0	8.2	8.5	8.2	8.3	8.3	8.2	8.2
25	8.4	8.2	8.3	8.4	8.1	8.2	8.4	8.2	8.3	8.3	8.2	8.2
26	8.4	8.2	8.2	8.3	8.1	8.2	8.5	8.2	8.3	8.3	8.2	8.2
27	8.4	8.2	8.2	8.4	8.1	8.2	8.4	8.2	8.3	8.4	8.2	8.2
28	8.4	8.2	8.2	8.4	8.1	8.2	8.4	8.2	8.3	8.4	8.2	8.2
29	8.3	8.1	8.2	8.5	8.1	8.2	8.4	8.2	8.3	8.4	8.2	8.2
30	8.3	8.1	8.2	8.5	8.1	8.2	8.4	8.2	8.3	8.3	8.2	8.2
31	—	—	—	8.4	8.1	8.2	8.4	8.2	8.3	—	—	—
MAX	8.4	8.2	8.3	8.5	8.1	8.2	8.5	8.2	8.3	8.4	8.2	8.3
MIN	8.2	8.1	8.1	8.1	8.0	8.0	8.3	8.1	8.2	8.3	8.2	8.2

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.4	17.4	17.7	13.6	13.3	13.5	8.2	7.6	8.0	—	—	—
2	18.1	17.3	17.7	13.4	12.9	13.2	7.6	7.0	7.3	—	—	—
3	17.8	16.8	17.2	12.9	12.3	12.7	—	—	—	—	—	—
4	17.1	16.3	16.8	12.4	11.9	12.3	—	—	—	—	—	—
5	16.7	15.8	16.3	12.1	11.4	11.8	—	—	—	—	—	—
6	16.6	15.8	16.2	11.6	11.1	11.3	—	—	—	—	—	—
7	16.9	15.9	16.3	11.9	11.3	11.6	—	—	—	—	—	—
8	16.9	16.1	16.5	11.6	10.7	11.2	—	—	—	—	—	—
9	17.1	16.4	16.6	10.8	9.9	10.5	—	—	—	—	—	—
10	16.7	15.8	16.3	10.7	9.9	10.3	—	—	—	—	—	—
11	16.2	15.4	15.8	10.4	10.1	10.3	—	—	—	—	—	—
12	16.1	15.2	15.6	10.1	9.6	9.9	—	—	—	—	—	—
13	16.2	15.4	15.7	9.9	9.1	9.6	—	—	—	—	—	—
14	15.7	15.5	15.6	9.4	8.8	9.1	—	—	—	—	—	—
15	15.5	15.0	15.3	9.1	8.8	8.9	—	—	—	—	—	—
16	15.1	14.3	14.8	9.2	8.8	9.0	—	—	—	—	—	—
17	14.4	13.6	14.1	9.7	9.2	9.5	—	—	—	—	—	—
18	13.6	13.2	13.5	10.2	9.6	9.9	—	—	—	—	—	—
19	13.5	13.2	13.4	10.2	10.0	10.1	—	—	—	—	—	—
20	13.5	13.2	13.4	10.3	10.1	10.2	—	—	—	—	—	—
21	13.7	13.4	13.5	10.4	10.0	10.2	—	—	—	—	—	—
22	13.6	13.3	13.4	10.1	9.8	9.9	—	—	—	—	—	—
23	13.6	13.2	13.4	9.8	9.7	9.8	—	—	—	—	—	—
24	13.6	13.1	13.4	9.8	8.8	9.4	—	—	—	—	—	—
25	14.0	13.2	13.6	9.0	7.5	8.2	—	—	—	—	—	—
26	14.2	13.6	13.8	7.6	7.2	7.4	—	—	—	—	—	—
27	14.3	13.7	13.9	8.3	7.6	8.0	—	—	—	—	—	—
28	14.2	13.6	13.8	8.3	7.8	8.1	—	—	—	—	—	—
29	13.9	13.6	13.7	8.3	7.9	8.1	—	—	—	—	—	—
30	14.3	13.6	13.9	8.1	7.9	8.0	—	—	—	—	—	—
31	13.8	13.6	13.7	—	—	—	—	—	—	—	—	—
MONTH	18.4	13.1	15.0	13.6	7.2	10.1	—	—	—	—	—	—

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	4.2	3.2	3.8	7.4	6.4	6.8
2	---	---	---	---	---	---	3.5	2.9	3.2	7.3	6.7	6.9
3	---	---	---	---	---	---	4.5	3.0	3.8	6.8	6.4	6.6
4	---	---	---	---	---	---	5.6	4.1	4.8	7.3	6.1	6.5
5	---	---	---	---	---	---	5.0	0.6	1.9	7.1	6.0	6.4
6	---	---	---	---	---	---	4.7	1.3	3.4	7.4	6.1	6.6
7	---	---	---	---	---	---	5.0	4.3	4.6	7.7	6.4	7.0
8	---	---	---	---	---	---	4.9	2.6	4.0	8.1	6.8	7.3
9	---	---	---	---	---	---	6.9	4.8	5.8	8.6	7.1	7.8
10	---	---	---	---	---	---	6.1	3.2	5.1	9.2	7.9	8.4
11	---	---	---	---	---	---	6.7	4.7	5.7	8.9	8.0	8.4
12	---	---	---	---	---	---	7.2	4.4	6.1	8.7	7.5	8.0
13	---	---	---	---	---	---	7.2	4.6	6.0	9.4	8.3	8.9
14	---	---	---	---	---	---	8.3	6.2	7.2	9.2	8.7	8.9
15	---	---	---	---	---	---	8.7	7.4	7.8	8.9	8.5	8.7
16	---	---	---	---	---	---	8.3	7.0	7.5	9.0	8.4	8.6
17	---	---	---	---	---	---	7.4	6.6	7.0	9.7	8.6	9.1
18	---	---	---	---	---	---	8.0	6.4	6.9	10.2	8.9	9.4
19	---	---	---	---	---	---	8.6	6.8	7.4	9.6	9.2	9.4
20	---	---	---	---	---	---	8.0	7.1	7.5	10.5	9.0	9.5
21	---	---	---	---	---	---	8.7	6.8	7.6	10.8	9.3	10
22	---	---	---	---	---	---	8.4	7.7	8.0	11.0	10.1	10.5
23	---	---	---	1.2	0.2	0.5	7.8	7.0	7.5	10.5	9.7	10.1
24	---	---	---	1.4	0.4	0.9	7.0	5.4	5.9	10.5	9.6	10
25	---	---	---	1.2	0.6	0.8	6.4	5.4	5.8	11.8	10.2	11.0
26	---	---	---	1.4	0.6	1.0	6.7	6.1	6.4	12.4	11.3	11.8
27	---	---	---	1.2	0.6	0.9	6.7	6.0	6.4	12.6	11.6	11.9
28	---	---	---	1.7	0.6	1.1	6.7	5.9	6.2	12.5	11.5	11.8
29	---	---	---	1.4	0.7	1.0	6.9	5.8	6.2	12.2	11.3	11.7
30	---	---	---	1.0	0.1	0.4	6.9	6.0	6.4	12.7	11.6	12.0
31	---	---	---	3.8	0.2	1.9	---	---	---	13.7	12.0	12.9
MONTH	---	---	---	---	---	---	8.7	0.6	5.9	13.7	6.0	9.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.4	12.9	13.5	20.7	19.2	19.9	24.3	23.2	23.7	23.1	21.9	22.4
2	16.2	13.9	14.9	20.6	19.2	19.8	24.9	23.6	24.0	23.0	22.0	22.4
3	15.0	13.6	14.3	20.6	19.4	20.0	25.1	23.9	24.4	22.6	21.7	22.1
4	14.2	13.5	13.7	21.6	20.1	20.8	24.9	24.2	24.5	22.5	21.4	22.0
5	14.8	13.6	13.9	21.4	20.9	21.0	24.9	23.9	24.3	23.0	21.6	22.1
6	14.6	13.6	14.0	21.5	20.7	21.0	24.8	23.8	24.1	22.9	21.8	22.2
7	15.4	13.5	14.5	21.2	20.5	20.8	25.0	23.8	24.3	22.9	21.8	22.3
8	16.4	14.9	15.5	22.1	20.7	21.2	25.3	24.0	24.5	22.6	21.9	22.2
9	16.8	15.1	15.8	22.4	21.0	21.6	25.4	24.3	24.7	22.8	21.8	22.1
10	16.8	15.1	15.7	22.8	21.4	22.1	25.1	24.5	24.7	22.9	21.6	22.2
11	16.0	14.7	15.3	23.3	21.9	22.5	24.9	24.1	24.5	23.0	21.8	22.3
12	16.1	14.2	15.4	23.2	22.4	22.8	24.7	24.0	24.3	23.0	21.9	22.3
13	15.4	14.1	14.8	23.8	22.8	23.3	24.8	24.2	24.4	23.1	22.1	22.4
14	17.9	14.7	16.2	24.6	23.5	24.0	24.3	23.8	24.1	22.6	22.0	22.3
15	17.7	15.2	16.3	25.2	23.8	24.4	24.7	23.5	24.0	22.1	21.3	21.8
16	17.0	15.0	16.2	24.5	24.1	24.3	24.6	23.5	24.0	21.4	20.9	21.1
17	17.1	16.6	16.8	24.8	23.9	24.2	24.6	23.5	23.9	21.2	20.7	20.9
18	17.4	16.6	16.9	25.3	24.0	24.5	24.5	23.6	23.9	21.7	20.5	21.0
19	17.5	16.8	17.0	24.8	23.9	24.3	24.4	23.5	23.8	21.4	20.8	21.1
20	18.6	16.7	17.7	24.7	23.6	24.1	24.0	23.4	23.7	21.8	20.8	21.1
21	19.0	17.8	18.3	25.1	23.9	24.4	24.2	23.2	23.6	21.5	20.6	21.0
22	19.2	17.9	18.3	25.4	24.1	24.6	23.3	22.3	22.9	20.8	20.6	20.7
23	18.9	17.6	18.2	25.3	24.0	24.6	22.7	21.8	22.2	20.8	19.9	20.4
24	19.5	18.1	18.7	25.1	24.3	24.6	22.8	21.5	22.0	20.3	19.6	20.0
25	19.8	18.7	19.0	25.4	24.4	24.8	22.4	21.7	22.0	20.5	19.8	20.1
26	19.7	18.7	19.1	25.1	24.0	24.6	23.1	21.9	22.4	20.7	20.0	20.3
27	20.5	19.0	19.6	24.0	23.0	23.6	22.8	22.2	22.4	20.5	19.4	19.9
28	20.7	19.8	20.1	24.0	22.7	23.3	23.2	21.9	22.4	20.1	19.2	19.6
29	21.3	19.8	20.4	23.8	22.9	23.3	23.3	22.1	22.5	19.4	18.4	19.1
30	21.7	20.1	20.7	23.8	22.8	23.1	22.6	22.2	22.4	18.8	17.9	18.3
31	---	---	---	24.0	22.7	23.3	22.6	22.1	22.3	---	---	---
MONTH	21.7	12.9	16.7	25.4	19.2	22.9	25.4	21.5	23.6	23.1	17.9	21.3

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.7	9.1	9.3	10.6	10.0	10.2	11.5	11.2	11.3	---	---	---
2	9.8	9.2	9.3	10.4	10.1	10.2	11.6	11.3	11.5	---	---	---
3	9.9	9.2	9.4	10.9	10.0	10.3	---	---	---	---	---	---
4	9.8	9.3	9.5	10.2	10.0	10.1	---	---	---	---	---	---
5	9.9	9.3	9.6	10.6	10.0	10.2	---	---	---	---	---	---
6	10.2	9.5	9.8	10.8	10.2	10.4	---	---	---	---	---	---
7	10.5	9.8	10.0	10.7	10.3	10.4	---	---	---	---	---	---
8	10.3	9.8	10.0	10.9	10.3	10.5	---	---	---	---	---	---
9	10.3	9.8	10.0	11.1	10.5	10.7	---	---	---	---	---	---
10	10.3	9.7	9.9	11.1	10.6	10.8	---	---	---	---	---	---
11	10.4	9.7	10.0	11.2	10.7	10.8	---	---	---	---	---	---
12	10.3	9.8	10.0	11.4	10.8	11.0	---	---	---	---	---	---
13	10.3	9.7	9.9	11.5	10.9	11.1	---	---	---	---	---	---
14	10.0	9.5	9.8	11.7	11.1	11.3	---	---	---	---	---	---
15	9.8	9.5	9.6	11.7	11.2	11.4	---	---	---	---	---	---
16	10.0	9.5	9.7	11.7	11.2	11.4	---	---	---	---	---	---
17	10.1	9.6	9.8	11.4	11.1	11.2	---	---	---	---	---	---
18	10.3	9.8	10.0	11.5	11.0	11.2	---	---	---	---	---	---
19	10.1	9.8	10.0	11.2	10.9	11.0	---	---	---	---	---	---
20	10.2	9.5	9.8	11.2	10.8	11.0	---	---	---	---	---	---
21	10.0	9.5	9.7	11.3	10.8	11.0	---	---	---	---	---	---
22	10.0	9.6	9.8	11.3	10.9	11.0	---	---	---	---	---	---
23	10.1	9.6	9.8	11.2	10.9	11.0	---	---	---	---	---	---
24	10.2	9.7	9.9	11.2	11.0	11.1	---	---	---	---	---	---
25	10.3	9.8	10.0	11.4	11.0	11.2	---	---	---	---	---	---
26	10.4	9.8	10.0	11.5	11.2	11.4	---	---	---	---	---	---
27	10.5	9.8	10.1	11.5	11.3	11.3	---	---	---	---	---	---
28	10.5	9.9	10.1	11.4	11.2	11.3	---	---	---	---	---	---
29	10.2	10.0	10.1	11.6	11.3	11.4	---	---	---	---	---	---
30	10.4	10.0	10.1	11.4	11.2	11.3	---	---	---	---	---	---
31	10.3	9.9	10.1	---	---	---	---	---	---	---	---	---
MONTH	10.5	9.1	9.8	11.7	10.0	10.9	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.6	13.2	13.5	12.6	12.2	12.4
2	---	---	---	---	---	---	13.6	13.4	13.5	12.4	12.2	12.3
3	---	---	---	---	---	---	13.5	12.9	13.1	12.7	12.2	12.4
4	---	---	---	---	---	---	12.9	12.8	12.8	13.1	12.4	12.7
5	---	---	---	---	---	---	12.9	12.6	12.7	13.3	12.8	13.1
6	---	---	---	---	---	---	13.2	12.7	13.0	13.5	13.0	13.2
7	---	---	---	---	---	---	13.3	13.0	13.2	13.4	13.0	13.1
8	---	---	---	---	---	---	13.2	12.9	13.0	13.5	12.9	13.1
9	---	---	---	---	---	---	12.9	12.6	12.8	13.3	12.8	13.0
10	---	---	---	---	---	---	12.8	12.5	12.6	13.0	12.6	12.8
11	---	---	---	---	---	---	13.0	12.5	12.8	12.8	12.4	12.6
12	---	---	---	---	---	---	12.6	12.4	12.5	12.8	11.9	12.5
13	---	---	---	---	---	---	12.9	12.5	12.7	11.9	11.5	11.7
14	---	---	---	---	---	---	12.6	12.0	12.2	11.9	11.4	11.7
15	---	---	---	---	---	---	12.2	11.9	12.0	12.2	11.5	11.8
16	---	---	---	---	---	---	12.5	12.1	12.3	12.1	11.6	11.9
17	---	---	---	---	---	---	12.9	12.3	12.6	12.2	11.5	11.8
18	---	---	---	---	---	---	13.1	12.7	12.9	11.9	11.4	11.6
19	---	---	---	---	---	---	13.1	12.7	12.9	11.6	11.3	11.5
20	---	---	---	---	---	---	12.8	12.5	12.7	11.7	11.3	11.5
21	---	---	---	---	---	---	12.6	12.0	12.3	11.9	11.4	11.6
22	---	---	---	---	---	---	12.1	11.8	11.9	11.7	11.3	11.5
23	---	---	---	13.8	13.6	13.6	12.0	11.4	11.7	11.5	11.3	11.4
24	---	---	---	13.8	13.6	13.6	11.8	11.5	11.7	11.8	11.2	11.5
25	---	---	---	13.7	13.5	13.6	11.8	11.7	11.8	11.3	10.8	11.1
26	---	---	---	13.9	13.6	13.7	11.9	11.6	11.7	11.2	10.7	11.0
27	---	---	---	13.8	13.6	13.7	12.1	11.8	12.0	11.5	10.8	11.1
28	---	---	---	13.8	13.6	13.8	12.4	12.1	12.2	11.8	11.0	11.4
29	---	---	---	13.8	13.4	13.6	12.7	12.4	12.5	11.9	11.2	11.5
30	---	---	---	13.5	13.2	13.4	12.8	12.5	12.6	12.0	11.2	11.6
31	---	---	---	13.6	13.2	13.4	---	---	---	12.1	11.3	11.6
MONTH	---	---	---	---	---	---	13.6	11.4	12.5	13.5	10.7	12.0

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.0	11.1	11.5	10.0	9.4	9.7	9.4	8.1	8.6	9.2	8.2	8.5
2	11.4	10.7	11.1	9.9	9.2	9.5	9.5	8.2	8.6	9.2	8.2	8.6
3	11.6	10.7	11.2	9.8	9.0	9.3	9.4	8.2	8.6	9.2	8.4	8.7
4	12.0	11.1	11.5	9.8	8.9	9.2	9.1	7.8	8.5	9.2	8.4	8.7
5	12.2	11.3	11.7	9.6	8.8	9.1	9.4	8.0	8.6	9.3	8.5	8.8
6	12.1	11.3	11.7	9.7	8.8	9.1	9.4	8.2	8.6	9.5	8.5	8.9
7	11.8	11.0	11.5	9.5	8.6	9.0	9.2	8.2	8.6	9.5	8.6	8.9
8	11.5	10.9	11.2	9.9	8.8	9.2	9.6	8.2	8.7	9.3	8.5	8.8
9	11.5	10.9	11.2	9.9	8.8	9.2	9.3	8.1	8.6	9.6	8.6	9.0
10	11.8	11.0	11.4	9.6	8.7	9.1	9.2	8.1	8.5	9.6	8.6	9.0
11	12.1	11.2	11.6	9.9	8.6	9.1	9.2	8.1	8.6	9.6	8.7	9.0
12	12.0	11.0	11.5	9.6	8.5	9.0	9.1	8.0	8.4	9.7	8.7	9.1
13	12.1	11.3	11.8	9.4	8.3	8.8	9.0	8.0	8.4	9.6	8.7	9.0
14	12.1	10.3	11.3	9.2	8.2	8.6	8.9	8.0	8.4	9.4	8.6	8.9
15	11.5	10.3	11.1	9.2	8.0	8.5	9.4	8.1	8.6	9.5	8.7	9.0
16	11.2	10.2	10.7	8.6	7.8	8.2	9.4	8.2	8.6	9.1	8.6	8.8
17	10.5	10.0	10.2	7.8	7.4	7.6	9.4	8.1	8.6	9.3	8.6	8.9
18	10.5	9.9	10.1	8.5	7.6	8.0	9.1	8.2	8.5	9.6	8.6	9.0
19	10.8	9.8	10.2	9.0	7.9	8.3	9.2	8.2	8.6	9.5	8.7	9.0
20	10.8	9.9	10.2	9.1	8.0	8.5	8.8	8.2	8.4	9.7	8.8	9.2
21	10.6	9.7	10.0	9.4	8.0	8.5	9.1	8.1	8.6	9.7	8.9	9.2
22	10.6	9.8	10.1	9.5	8.0	8.5	9.2	8.2	8.7	9.3	8.3	9.0
23	10.7	9.7	10.1	9.4	8.0	8.5	9.2	8.3	8.6	9.7	8.9	9.2
24	10.6	9.7	10.1	8.8	7.9	8.2	9.3	8.2	8.6	9.6	8.9	9.2
25	10.9	9.8	10.2	9.2	7.8	8.4	9.1	8.3	8.6	9.6	8.9	9.2
26	10.5	9.9	10.2	8.8	7.9	8.3	9.3	8.3	8.7	9.4	8.9	9.1
27	10.6	9.8	10.1	9.2	8.0	8.4	8.9	8.3	8.5	9.8	8.9	9.2
28	10.5	9.4	9.9	9.3	7.9	8.4	9.2	8.2	8.6	9.8	9.0	9.3
29	9.9	9.2	9.5	9.7	8.0	8.6	9.4	8.3	8.7	9.7	9.0	9.3
30	9.9	9.2	9.5	9.5	8.1	8.7	9.0	8.5	8.7	9.9	9.1	9.4
31	---	---	---	9.4	8.0	8.6	9.1	8.3	8.7	---	---	---
MONTH	12.2	9.2	10.7	10.0	7.4	8.7	9.6	7.8	8.6	9.9	8.2	9.0

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	216	212	214	---	---	---	---	---	---	---	---	---
2	212	211	212	---	---	---	---	---	---	---	---	---
3	213	209	211	---	---	---	---	---	---	---	---	---
4	212	205	210	---	---	---	---	---	---	---	---	---
5	211	206	209	---	---	---	---	---	---	---	---	---
6	208	206	207	---	---	---	---	---	---	---	---	---
7	207	205	206	---	---	---	---	---	---	---	---	---
8	208	206	207	---	---	---	---	---	---	---	---	---
9	208	205	206	---	---	---	---	---	---	---	---	---
10	209	206	208	---	---	---	---	---	---	---	---	---
11	208	206	207	---	---	---	---	---	---	---	---	---
12	210	208	209	---	---	---	---	---	---	---	---	---
13	211	208	210	---	---	---	---	---	---	---	---	---
14	211	209	210	---	---	---	---	---	---	---	---	---
15	210	206	208	---	---	---	---	---	---	---	---	---
16	210	206	208	---	---	---	---	---	---	---	---	---
17	211	207	209	---	---	---	---	---	---	---	---	---
18	211	204	209	---	---	---	---	---	---	---	---	---
19	210	204	208	---	---	---	---	---	---	---	---	---
20	212	205	208	---	---	---	---	---	---	---	---	---
21	209	205	207	---	---	---	---	---	---	---	---	---
22	209	207	208	---	---	---	---	---	---	---	---	---
23	210	208	210	---	---	---	---	---	---	---	---	---
24	210	208	209	---	---	---	---	---	---	---	---	---
25	209	208	209	---	---	---	---	---	---	---	---	---
26	213	209	211	---	---	---	---	---	---	---	---	---
27	213	209	211	---	---	---	---	---	---	---	---	---
28	211	207	209	---	---	---	---	---	---	---	---	---
29	215	209	212	---	---	---	---	---	---	---	---	---
30	214	207	211	---	---	---	---	---	---	---	---	---
31	212	210	211	---	---	---	---	---	---	---	---	---
MONTH	216	204	209	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
2	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
3	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
4	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
5	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
6	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
7	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
8	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
9	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
10	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
11	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
12	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
13	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
14	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
15	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
16	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
17	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
18	8.3	8.1	8.1	---	---	---	---	---	---	---	---	---
19	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
20	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
21	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
22	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
23	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
24	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
25	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
26	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
27	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
28	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
29	8.3	8.1	8.1	---	---	---	---	---	---	---	---	---
30	8.3	8.1	8.1	---	---	---	---	---	---	---	---	---
31	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
MAX	8.4	8.2	8.2	---	---	---	---	---	---	---	---	---
MIN	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160635 ST. CLAIR RIVER NEAR ROBERTS LANDING, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.8	17.7	18.2	---	---	---	---	---	---	---	---	---
2	19.2	18.1	18.5	---	---	---	---	---	---	---	---	---
3	19.5	18.6	18.9	---	---	---	---	---	---	---	---	---
4	19.8	18.8	19.1	---	---	---	---	---	---	---	---	---
5	19.8	18.9	19.2	---	---	---	---	---	---	---	---	---
6	19.9	18.9	19.2	---	---	---	---	---	---	---	---	---
7	18.9	17.6	18.6	---	---	---	---	---	---	---	---	---
8	17.8	16.4	17.1	---	---	---	---	---	---	---	---	---
9	16.7	15.9	16.3	---	---	---	---	---	---	---	---	---
10	16.2	16.0	16.1	---	---	---	---	---	---	---	---	---
11	16.3	15.9	16.1	---	---	---	---	---	---	---	---	---
12	16.7	16.1	16.4	---	---	---	---	---	---	---	---	---
13	17.0	16.4	16.6	---	---	---	---	---	---	---	---	---
14	17.2	16.4	16.7	---	---	---	---	---	---	---	---	---
15	16.9	16.1	16.5	---	---	---	---	---	---	---	---	---
16	16.2	15.7	16.0	---	---	---	---	---	---	---	---	---
17	16.1	15.2	15.6	---	---	---	---	---	---	---	---	---
18	16.1	15.2	15.6	---	---	---	---	---	---	---	---	---
19	15.7	14.9	15.3	---	---	---	---	---	---	---	---	---
20	15.0	14.3	14.7	---	---	---	---	---	---	---	---	---
21	15.1	14.4	14.7	---	---	---	---	---	---	---	---	---
22	14.6	14.1	14.4	---	---	---	---	---	---	---	---	---
23	14.3	13.7	14.0	---	---	---	---	---	---	---	---	---
24	13.9	13.3	13.7	---	---	---	---	---	---	---	---	---
25	13.4	12.5	13.1	---	---	---	---	---	---	---	---	---
26	12.5	11.5	12.0	---	---	---	---	---	---	---	---	---
27	12.1	11.4	11.8	---	---	---	---	---	---	---	---	---
28	12.8	12.0	12.3	---	---	---	---	---	---	---	---	---
29	12.9	11.9	12.3	---	---	---	---	---	---	---	---	---
30	12.8	11.9	12.2	---	---	---	---	---	---	---	---	---
31	12.9	12.0	12.4	---	---	---	---	---	---	---	---	---
MONTH	19.9	11.4	15.6	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.0	9.2	9.5	---	---	---	---	---	---	---	---	---
2	10.1	9.3	9.6	---	---	---	---	---	---	---	---	---
3	10.2	9.3	9.5	---	---	---	---	---	---	---	---	---
4	10.2	9.2	9.6	---	---	---	---	---	---	---	---	---
5	10.1	9.0	9.5	---	---	---	---	---	---	---	---	---
6	9.8	8.9	9.2	---	---	---	---	---	---	---	---	---
7	9.6	8.9	9.1	---	---	---	---	---	---	---	---	---
8	9.3	8.9	9.0	---	---	---	---	---	---	---	---	---
9	9.7	8.9	9.2	---	---	---	---	---	---	---	---	---
10	9.5	9.0	9.2	---	---	---	---	---	---	---	---	---
11	9.6	9.1	9.3	---	---	---	---	---	---	---	---	---
12	9.7	8.8	9.3	---	---	---	---	---	---	---	---	---
13	9.8	9.1	9.3	---	---	---	---	---	---	---	---	---
14	9.9	9.0	9.3	---	---	---	---	---	---	---	---	---
15	9.8	9.1	9.4	---	---	---	---	---	---	---	---	---
16	9.8	9.2	9.5	---	---	---	---	---	---	---	---	---
17	10.0	9.2	9.5	---	---	---	---	---	---	---	---	---
18	10.0	9.2	9.5	---	---	---	---	---	---	---	---	---
19	9.9	9.3	9.5	---	---	---	---	---	---	---	---	---
20	10.1	9.4	9.7	---	---	---	---	---	---	---	---	---
21	10.1	9.5	9.7	---	---	---	---	---	---	---	---	---
22	10.0	9.5	9.7	---	---	---	---	---	---	---	---	---
23	10.1	9.6	9.8	---	---	---	---	---	---	---	---	---
24	10.2	8.8	9.9	---	---	---	---	---	---	---	---	---
25	10.4	9.8	10.0	---	---	---	---	---	---	---	---	---
26	10.5	10.0	10.2	---	---	---	---	---	---	---	---	---
27	10.6	10.1	10.3	---	---	---	---	---	---	---	---	---
28	10.6	10.1	10.3	---	---	---	---	---	---	---	---	---
29	10.8	10.1	10.3	---	---	---	---	---	---	---	---	---
30	10.7	9.4	10.3	---	---	---	---	---	---	---	---	---
31	10.8	10.2	10.4	---	---	---	---	---	---	---	---	---
MONTH	10.8	8.8	9.6	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160800 SASHABAW CREEK NEAR DRAYTON PLAINS, MI

LOCATION.--Lat 42°43'12", long 83°21'13", in SE1/4 sec.26, T.4 N., R.9 E., Oakland County, Hydrologic Unit 04090003, on right bank at upstream side of culverts on Maybee Road, 1.1 mi upstream from mouth, and 2.5 mi northeast of Drayton Plains.

DRAINAGE AREA.--20.9 mi^2.

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Metal V-notch weir Aug. 30, 1961 to Mar. 6, 1968. Elevation of gage is 970 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	2.6	e10	29	e9.0	e15	35	22	5.9	3.1	17	2.4
2	1.5	5.8	e14	35	e8.7	e15	32	20	5.5	2.8	16	2.1
3	1.5	5.2	12	43	e8.5	e14	29	18	5.4	2.6	14	2.0
4	1.5	6.7	9.5	40	e8.3	e14	27	17	5.3	2.5	13	1.9
5	1.5	7.3	8.3	34	e9.0	e15	25	17	5.6	3.1	11	1.8
6	1.5	5.4	8.0	e29	e10	19	24	15	9.0	3.0	10	1.7
7	1.4	5.0	16	e27	e12	24	23	15	6.7	2.9	8.4	1.7
8	1.4	4.5	26	26	19	31	22	14	5.8	5.2	6.9	2.2
9	1.9	4.0	23	25	20	29	20	13	5.6	6.2	6.0	2.1
10	2.0	3.7	24	25	e18	27	19	11	5.1	3.9	5.5	1.8
11	1.8	3.5	28	24	e17	20	17	10	5.0	3.1	5.0	1.7
12	1.6	3.2	26	30	16	20	16	10	5.5	2.8	4.9	1.7
13	1.7	3.0	26	68	15	21	14	11	6.4	2.6	4.7	1.7
14	2.0	2.8	24	e77	25	19	13	15	6.7	2.4	4.4	1.7
15	2.4	2.8	e21	e59	45	17	12	14	7.2	2.2	4.1	1.7
16	3.1	2.8	19	e42	64	17	12	12	6.5	8.6	3.9	2.4
17	3.2	3.0	e17	e34	e45	17	12	12	6.1	12	3.5	2.5
18	2.6	3.2	16	e28	e37	17	11	12	5.5	9.5	3.4	2.2
19	2.3	3.1	e14	e24	e31	17	11	11	5.3	8.8	3.6	2.0
20	2.2	3.5	e13	e22	e28	22	11	11	4.8	7.2	4.0	1.9
21	2.0	3.7	e11	e20	e26	23	10	10	4.5	7.1	4.0	2.0
22	1.9	3.3	e10	e19	e24	25	10	9.7	4.3	7.0	3.6	5.1
23	2.0	3.5	e9.2	e17	e22	27	12	11	4.4	6.6	3.2	13
24	2.4	4.6	e8.0	e16	e21	25	19	12	4.3	12	2.6	6.2
25	2.2	5.8	e7.3	e15	e20	27	28	11	3.4	16	2.5	4.9
26	1.8	5.3	e6.9	e14	e19	28	36	9.6	3.3	30	2.3	9.7
27	1.8	7.4	e6.9	e13	e17	28	35	8.9	3.0	33	2.7	7.6
28	1.6	10	e6.9	e12	e16	30	31	8.0	3.0	29	3.5	6.0
29	3.4	8.3	e8.0	e11	---	33	26	7.6	3.0	25	2.8	7.0
30	4.3	e7.6	e9.6	e10	---	36	23	7.0	3.0	21	2.7	5.8
31	3.2	---	24	e9.5	---	37	---	6.6	---	19	2.6	---
TOTAL	64.9	140.6	462.6	877.5	610.5	709	615	381.4	155.1	300.2	181.8	106.5
MEAN	2.09	4.69	14.9	28.3	21.8	22.9	20.5	12.3	5.17	9.68	5.86	3.55
MAX	4.3	10	28	77	64	37	36	22	9.0	33	17	13
MIN	1.2	2.6	6.9	9.5	8.3	14	10	6.6	3.0	2.2	2.3	1.7
CFSM	0.10	0.22	0.71	1.35	1.04	1.09	0.98	0.59	0.25	0.46	0.28	0.17
IN.	0.12	0.25	0.82	1.56	1.09	1.26	1.09	0.68	0.28	0.53	0.32	0.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2005, BY WATER YEAR (WY)

MEAN	6.98	10.3	12.5	12.7	15.1	25.6	27.2	18.4	11.6	6.07	4.52	5.78
MAX	38.4	38.2	28.2	36.5	42.6	61.2	45.5	41.6	28.5	15.0	19.5	34.9
(WY)	1982	1986	1988	1993	2001	1976	1975	1974	1996	2000	1975	2000
MIN	0.37	1.02	0.95	1.46	1.67	6.28	8.01	8.03	1.58	0.74	0.30	0.35
(WY)	1964	1965	1964	1961	2003	1964	2004	1988	1988	1965	1984	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1960 - 2005	
ANNUAL TOTAL	4536.5		4605.1			
ANNUAL MEAN	12.4		12.6		13.0	
HIGHEST ANNUAL MEAN					21.5	1975
LOWEST ANNUAL MEAN					4.12	1964
HIGHEST DAILY MEAN	160	May 24	77	Jan 14	160	May 24 2004
LOWEST DAILY MEAN	1.1	Sep 25	1.2	Oct 1	0.04	Jul 9 1988
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 24	1.4	Oct 1	0.04	Jul 9 1988
MAXIMUM PEAK FLOW			(a)83	Jan 13	(b)188	May 23 2004
MAXIMUM PEAK STAGE			(c)3.82	Jan 15	4.53	Oct 1 1981
INSTANTANEOUS LOW FLOW					0.03	(d)
ANNUAL RUNOFF (CFSM)	0.593		0.604		0.623	
ANNUAL RUNOFF (INCHES)	8.07		8.20		8.47	
10 PERCENT EXCEEDS	26		28		30	
50 PERCENT EXCEEDS	7.2		9.2		9.2	
90 PERCENT EXCEEDS	1.9		2.2		1.7	

(a) Gage height 3.54 ft.
(b) Gage height 4.46 ft.
(c) Backwater from ice.
(d) July 9, 16, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI

LOCATION.--Lat 42°39'37", long 83°23'25", in NE1/4 sec.21, T.3 N., R.9 E., Oakland County, Hydrologic Unit 04090003, on left bank at downstream side of bridge on State Highway 59, 2.0 mi south of Drayton Plains.

DRAINAGE AREA.--79.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 940 ft above sea level, from topographic map. Jan. 29 to July 9, 1964, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Some regulation and occasional diversion for lake-level control at many lakes upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	34	59	64	85	105	92	105	48	14	27	5.6
2	3.8	44	85	75	83	103	95	96	31	14	27	5.5
3	3.4	58	78	79	81	101	97	88	14	13	26	5.5
4	3.3	74	78	86	80	97	101	81	14	13	25	5.3
5	3.3	64	81	91	78	95	102	76	16	14	24	5.3
6	3.5	62	82	96	75	93	102	71	16	14	23	5.2
7	3.1	61	89	99	74	96	104	60	14	13	23	5.0
8	3.7	57	90	101	74	94	102	42	14	16	22	5.2
9	5.0	58	91	101	73	93	99	13	14	15	22	5.0
10	3.5	54	94	102	74	92	56	19	14	14	13	4.8
11	3.5	53	97	104	75	92	9.6	24	15	14	6.7	4.6
12	3.6	55	99	108	76	91	11	27	14	13	7.3	4.6
13	5.8	54	101	115	75	89	19	41	37	12	7.1	4.6
14	4.6	54	102	117	83	82	23	51	70	11	7.5	4.6
15	11	53	102	122	87	81	22	50	44	11	7.2	4.7
16	8.4	63	101	126	93	79	22	48	11	25	7.1	5.7
17	6.9	76	100	128	95	76	24	50	11	57	6.9	4.4
18	13	52	97	133	100	73	25	54	11	49	6.7	4.1
19	19	21	95	134	102	72	25	54	11	13	6.2	4.0
20	23	59	e90	130	104	73	26	54	11	15	6.6	4.0
21	23	68	85	127	116	74	26	52	12	17	6.3	4.0
22	31	38	78	e121	125	76	26	50	12	18	6.0	9.3
23	35	31	e73	e116	120	77	27	42	12	18	5.9	9.9
24	43	20	e70	e113	116	78	31	43	12	29	5.6	12
25	43	69	e66	108	113	81	38	44	12	35	5.6	27
26	44	64	61	96	111	83	64	42	13	71	5.7	87
27	32	46	59	92	107	84	103	36	13	87	7.2	92
28	8.0	15	57	92	104	86	107	29	12	87	6.0	97
29	24	14	56	91	---	86	108	29	13	87	5.9	97
30	28	15	58	89	---	88	108	37	15	83	5.9	91
31	29	---	65	86	---	90	---	49	---	30	5.8	---
TOTAL	475.0	1486	2539	3242	2579	2680	1794.6	1557	556	922	367.2	623.9
MEAN	15.3	49.5	81.9	105	92.1	86.5	59.8	50.2	18.5	29.7	11.8	20.8
MAX	44	76	102	134	125	105	108	105	70	87	27	97
MIN	3.1	14	56	64	73	72	9.6	13	11	11	5.6	4.0
CFSM	0.19	0.63	1.03	1.32	1.16	1.09	0.76	0.63	0.23	0.38	0.15	0.26
IN.	0.22	0.70	1.19	1.52	1.21	1.26	0.84	0.73	0.26	0.43	0.17	0.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2005, BY WATER YEAR (WY)

MEAN	36.9	51.7	60.1	57.0	59.0	82.9	87.2	62.4	45.9	28.7	24.2	28.7
MAX	114	107	109	114	115	188	168	137	115	82.0	68.9	129
(WY)	1982	1986	1986	1973	1974	1976	1974	1974	1996	1968	2000	1975
MIN	4.08	7.90	15.6	15.5	16.6	28.8	27.3	22.9	6.47	4.07	3.94	3.57
(WY)	1999	1965	1964	1964	1964	1964	2000	1988	1988	2003	2003	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1960 - 2005	
ANNUAL TOTAL	18293.4		18821.7			
ANNUAL MEAN	50.0		51.6		52.0	
HIGHEST ANNUAL MEAN					87.9	1974
LOWEST ANNUAL MEAN					20.0	1964
HIGHEST DAILY MEAN	256	May 27	134	Jan 19	274	Mar 12 1974
LOWEST DAILY MEAN	3.1	Oct 7	3.1	Oct 7	2.1	(a)
ANNUAL SEVEN-DAY MINIMUM	3.4	Oct 1	3.4	Oct 1	2.8	Jan 25 2003
MAXIMUM PEAK FLOW			135	Jan 19	(b)276	Mar 12 1974
MAXIMUM PEAK STAGE			4.02	Jan 19	5.22	May 26 2004
INSTANTANEOUS LOW FLOW			1.7	Oct 5	1.7	Oct 5 2004
ANNUAL RUNOFF (CFSM)	0.631		0.651		0.656	
ANNUAL RUNOFF (INCHES)	8.59		8.84		8.92	
10 PERCENT EXCEEDS	97		102		103	
50 PERCENT EXCEEDS	42		50		46	
90 PERCENT EXCEEDS	10		5.7		10	

(a) Jan. 25-27, 2003.
(b) Gage height 4.95 ft.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to 1974, 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: October 1961 to September 1974, June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water temperature recorder from October 1961 to September 1974. Water-quality monitor telemeter, set for 15 minute measurement interval from June 2004 to October 2005, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Nov. 15-30, Mar. 18 to Apr. 28, Aug. 10, 11, Oct. 16-29, 2005, rated good. pH recods rated excellent except for the following periods: Apr. 1-4, 22-25, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 4, 5, Apr. 8, 9, 29, 30, May 14-16, 30, 31, June 15-19, July 1, 2, Aug. 4-8, 16-19, Sept. 3-9, 27-30, Oct. 1-3, 2005, rated good; Apr. 10, 11, May 1-3, 17-19, June 1-3, 20-27, July 3-5, Aug. 9-11, 20-22, Sept. 10-12, rated fair; May 4-9, June 4-6, July 6-11, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,070 microsiemens, Oct. 14-20, 2005; minimum, 291 microsiemens, Aug. 27, 2005.
pH: Maximum, 8.5 std. units, Aug. 1, 2004, July 28, 30, 2005; minimum, 7.3 std. units, Sept. 3, 2005.
WATER TEMPERATURE: Maximum, 30.5°C, July 1, 1963, July 24, 1964; minimum, 0.0°C, on many days during winter periods in 1962, 1963.
DISSOLVED OXYGEN: Maximum, 12.7 mg/L, Apr. 3, 2005; minimum, 3.6 mg/L, July 24, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,040 microsiemens, Sept. 17; minimum, 291 microsiemens, Aug. 27.
pH: Maximum, 8.5 std. units, July 28, 30; minimum, 7.3 std. units, Sept. 3.
WATER TEMPERATURE: Maximum, 29.1°C, June 10, 27; minimum, 1.5°C, Mar. 19.
DISSOLVED OXYGEN: Maximum, 12.7 mg/L, Apr. 3; minimum, 3.6 mg/L, July 24.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	917	910	912	742	720	737	---	---	---	---	---	---
2	930	786	893	737	671	716	---	---	---	---	---	---
3	954	920	934	727	706	715	---	---	---	---	---	---
4	926	912	921	714	672	698	---	---	---	---	---	---
5	932	919	924	726	705	714	---	---	---	---	---	---
6	934	917	923	727	718	721	---	---	---	---	---	---
7	939	921	930	725	721	723	---	---	---	---	---	---
8	936	920	928	727	724	725	---	---	---	---	---	---
9	946	888	921	728	725	726	---	---	---	---	---	---
10	945	932	941	728	725	726	---	---	---	---	---	---
11	951	937	944	735	727	731	---	---	---	---	---	---
12	955	947	951	735	732	733	---	---	---	---	---	---
13	955	921	949	735	733	734	---	---	---	---	---	---
14	963	914	945	735	732	734	---	---	---	---	---	---
15	964	868	932	737	734	736	---	---	---	---	---	---
16	966	897	945	816	733	745	---	---	---	---	---	---
17	962	911	934	734	729	732	---	---	---	---	---	---
18	955	777	855	856	731	753	---	---	---	---	---	---
19	777	744	763	961	721	892	---	---	---	---	---	---
20	750	745	748	755	707	725	---	---	---	---	---	---
21	753	732	748	747	720	730	---	---	---	---	---	---
22	736	731	734	907	728	787	---	---	---	---	---	---
23	737	715	732	956	717	805	---	---	---	---	---	---
24	727	723	725	972	714	879	---	---	---	---	---	---
25	727	722	725	805	692	735	---	---	---	---	---	---
26	724	721	723	765	707	731	---	---	---	---	---	---
27	826	722	743	811	728	755	---	---	---	---	---	---
28	835	779	811	816	774	796	---	---	---	---	---	---
29	789	619	742	834	784	802	---	---	---	---	---	---
30	739	677	723	815	757	787	---	---	---	---	---	---
31	734	730	732	---	---	---	---	---	---	---	---	---
MONTH	966	619	849	972	671	751	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	815	764	805	791	789	791
2	---	---	---	---	---	---	764	714	738	794	791	793
3	---	---	---	---	---	---	775	758	769	800	794	797
4	---	---	---	---	---	---	785	775	781	803	800	801
5	---	---	---	---	---	---	780	776	778	806	800	804
6	---	---	---	---	---	---	779	768	774	814	805	811
7	---	---	---	---	---	---	790	754	769	821	812	817
8	---	---	---	---	---	---	768	763	765	902	819	839
9	---	---	---	---	---	---	769	764	766	906	891	899
10	---	---	---	---	---	---	960	767	834	891	862	875
11	---	---	---	---	---	---	976	920	937	862	843	851
12	---	---	---	---	---	---	923	908	916	843	836	840
13	---	---	---	---	---	---	927	841	889	838	769	817
14	---	---	---	---	---	---	850	836	843	808	774	800
15	---	---	---	---	---	---	865	832	840	809	803	805
16	---	---	---	---	---	---	845	825	832	807	805	806
17	---	---	---	---	---	---	836	814	828	808	801	804
18	---	---	---	826	800	808	854	812	828	821	801	805
19	---	---	---	837	803	812	861	802	832	806	786	803
20	---	---	---	828	806	811	936	819	826	811	798	806
21	---	---	---	810	804	807	828	820	825	813	806	810
22	---	---	---	811	794	805	828	815	823	814	797	807
23	---	---	---	831	800	810	826	813	819	813	798	807
24	---	---	---	816	794	806	909	790	815	813	802	809
25	---	---	---	808	796	804	871	823	847	814	809	811
26	---	---	---	814	801	809	823	770	794	817	810	813
27	---	---	---	810	801	806	778	772	775	828	815	820
28	---	---	---	810	778	799	781	777	780	831	826	828
29	---	---	---	801	759	775	784	781	783	832	828	830
30	---	---	---	776	750	764	789	784	787	845	818	830
31	---	---	---	792	736	759	---	---	---	823	815	819
MONTH	---	---	---	---	---	---	976	714	813	906	769	818

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	827	819	823	843	805	826	760	741	751	909	893	900
2	885	820	847	841	825	833	763	742	753	914	897	905
3	894	885	892	852	837	845	762	744	754	913	904	909
4	900	892	895	846	791	835	759	746	755	913	889	907
5	920	527	878	851	794	829	770	750	760	918	908	914
6	909	839	878	832	808	816	769	749	759	922	910	918
7	880	860	869	838	754	822	771	749	761	934	913	925
8	904	878	887	848	751	802	774	753	763	939	886	924
9	890	879	887	810	771	793	775	755	766	980	924	946
10	896	873	886	821	794	808	869	757	811	942	913	929
11	896	773	878	825	809	816	887	869	880	946	926	940
12	896	882	890	830	817	822	921	731	866	942	926	936
13	888	777	834	832	822	827	926	879	894	941	929	934
14	814	801	807	843	828	835	879	818	861	944	927	936
15	974	803	863	849	832	841	874	865	870	955	935	942
16	973	917	931	848	456	772	878	867	872	985	784	890
17	925	912	918	755	720	739	877	868	873	1040	967	1000
18	915	905	909	815	706	748	884	869	875	1000	973	986
19	910	898	906	838	786	809	903	884	890	1020	995	1010
20	905	888	898	791	776	783	904	798	878	1020	1000	1010
21	894	605	874	782	769	776	908	887	904	1030	996	1010
22	884	873	878	776	762	770	905	893	897	1030	341	873
23	881	872	876	778	760	769	904	899	902	840	612	749
24	881	873	877	816	596	714	910	901	905	748	724	738
25	876	864	873	726	659	706	910	899	904	759	720	741
26	865	761	850	736	517	675	908	900	905	728	685	715
27	863	849	854	714	690	705	910	291	835	733	726	729
28	856	815	849	716	700	710	973	873	904	735	719	732
29	858	816	846	715	703	709	888	868	876	737	717	732
30	849	777	818	744	702	713	889	882	885	743	736	740
31	---	---	---	755	733	745	894	879	883	---	---	---
MONTH	974	527	872	852	456	780	973	291	845	1040	341	884

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.7	7.5	7.6	7.9	7.8	7.8	---	---	---	---	---	---
2	7.6	7.6	7.6	7.9	7.8	7.8	---	---	---	---	---	---
3	7.6	7.4	7.5	8.0	7.8	7.9	---	---	---	---	---	---
4	7.6	7.4	7.5	8.0	7.9	7.9	---	---	---	---	---	---
5	7.6	7.5	7.6	8.0	7.9	7.9	---	---	---	---	---	---
6	7.6	7.6	7.6	8.0	7.9	8.0	---	---	---	---	---	---
7	7.6	7.5	7.6	8.0	7.9	7.9	---	---	---	---	---	---
8	7.6	7.5	7.6	8.1	7.9	8.0	---	---	---	---	---	---
9	7.6	7.5	7.6	8.1	8.0	8.1	---	---	---	---	---	---
10	7.6	7.5	7.6	8.1	8.0	8.1	---	---	---	---	---	---
11	7.6	7.5	7.6	8.1	8.0	8.1	---	---	---	---	---	---
12	7.6	7.4	7.5	8.1	8.0	8.1	---	---	---	---	---	---
13	7.5	7.4	7.5	8.1	8.1	8.1	---	---	---	---	---	---
14	7.5	7.4	7.4	8.1	8.0	8.1	---	---	---	---	---	---
15	7.4	7.4	7.4	8.1	8.0	8.0	---	---	---	---	---	---
16	7.5	7.4	7.4	8.0	7.8	8.0	---	---	---	---	---	---
17	7.5	7.4	7.5	8.0	8.0	8.0	---	---	---	---	---	---
18	7.7	7.5	7.6	8.0	7.6	8.0	---	---	---	---	---	---
19	7.8	7.6	7.8	8.1	7.5	7.6	---	---	---	---	---	---
20	7.8	7.8	7.8	8.1	8.0	8.0	---	---	---	---	---	---
21	7.9	7.8	7.8	8.2	8.0	8.0	---	---	---	---	---	---
22	7.9	7.8	7.8	8.1	7.6	7.9	---	---	---	---	---	---
23	7.9	7.8	7.8	8.1	7.4	7.8	---	---	---	---	---	---
24	7.9	7.8	7.8	8.0	7.4	7.5	---	---	---	---	---	---
25	7.9	7.8	7.8	8.1	7.9	8.0	---	---	---	---	---	---
26	7.9	7.8	7.9	8.0	7.9	7.9	---	---	---	---	---	---
27	7.9	7.6	7.8	7.9	7.6	7.9	---	---	---	---	---	---
28	7.7	7.5	7.6	7.8	7.6	7.7	---	---	---	---	---	---
29	7.7	7.7	7.7	7.8	7.7	7.7	---	---	---	---	---	---
30	7.7	7.7	7.7	7.8	7.7	7.7	---	---	---	---	---	---
31	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
MAX	7.9	7.8	7.9	8.2	8.1	8.1	---	---	---	---	---	---
MIN	7.4	7.4	7.4	7.8	7.4	7.5	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	7.8	7.7	7.7	8.2	8.2	8.2
2	---	---	---	---	---	---	7.8	7.7	7.7	8.3	8.2	8.2
3	---	---	---	---	---	---	7.8	7.7	7.8	8.3	8.2	8.2
4	---	---	---	---	---	---	8.0	7.7	7.8	8.2	8.2	8.2
5	---	---	---	---	---	---	8.0	8.0	8.0	8.3	8.2	8.2
6	---	---	---	---	---	---	8.1	7.9	8.0	8.2	8.2	8.2
7	---	---	---	---	---	---	8.0	7.9	7.9	8.2	8.1	8.2
8	---	---	---	---	---	---	8.0	7.9	8.0	8.1	7.7	8.1
9	---	---	---	---	---	---	8.0	7.9	8.0	7.8	7.6	7.7
10	---	---	---	---	---	---	8.0	7.4	7.8	7.9	7.7	7.8
11	---	---	---	---	---	---	7.6	7.4	7.4	7.9	7.7	7.8
12	---	---	---	---	---	---	7.7	7.5	7.6	8.0	7.8	7.9
13	---	---	---	---	---	---	7.9	7.6	7.8	8.0	7.9	8.0
14	---	---	---	---	---	---	7.9	7.8	7.8	8.0	7.9	7.9
15	---	---	---	---	---	---	7.9	7.8	7.8	8.0	7.9	7.9
16	---	---	---	---	---	---	7.8	7.7	7.8	8.0	7.9	8.0
17	---	---	---	---	---	---	7.8	7.7	7.7	8.0	7.9	7.9
18	---	---	---	7.9	7.9	7.9	7.8	7.7	7.7	8.0	7.9	7.9
19	---	---	---	8.0	7.9	7.9	7.8	7.6	7.7	8.1	7.9	7.9
20	---	---	---	7.9	7.8	7.9	7.8	7.6	7.7	8.1	8.0	8.0
21	---	---	---	7.9	7.8	7.8	7.9	7.7	7.8	8.1	8.0	8.0
22	---	---	---	7.9	7.8	7.8	7.8	7.6	7.7	8.0	7.9	8.0
23	---	---	---	7.9	7.8	7.9	7.8	7.6	7.7	7.9	7.9	7.9
24	---	---	---	7.9	7.8	7.8	7.8	7.7	7.7	8.0	7.9	7.9
25	---	---	---	7.9	7.8	7.9	8.1	7.7	8.0	8.0	7.9	8.0
26	---	---	---	7.9	7.7	7.8	8.2	8.0	8.0	8.0	7.9	8.0
27	---	---	---	7.8	7.7	7.7	8.2	8.1	8.1	8.0	7.9	7.9
28	---	---	---	7.8	7.7	7.8	8.2	8.1	8.2	8.0	7.8	7.9
29	---	---	---	7.8	7.7	7.8	8.2	8.1	8.2	8.0	7.9	7.9
30	---	---	---	7.8	7.7	7.8	8.2	8.2	8.2	8.0	7.9	8.0
31	---	---	---	7.8	7.7	7.8	---	---	---	8.1	8.0	8.0
MAX	---	---	---	---	---	---	8.2	8.2	8.2	8.3	8.2	8.2
MIN	---	---	---	---	---	---	7.6	7.4	7.4	7.8	7.6	7.7

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.9	8.0	7.7	7.5	7.6	8.0	7.7	7.9	7.7	7.4	7.6
2	7.9	7.6	7.9	7.8	7.6	7.7	8.0	7.7	7.9	7.6	7.4	7.5
3	7.7	7.6	7.7	7.8	7.6	7.7	8.1	7.8	8.0	7.6	7.3	7.4
4	7.8	7.6	7.7	7.7	7.5	7.6	8.1	7.8	7.9	7.6	7.4	7.5
5	7.8	7.6	7.6	7.6	7.5	7.5	8.1	7.8	7.9	7.6	7.4	7.5
6	7.7	7.6	7.6	7.6	7.5	7.5	8.1	7.8	8.0	7.6	7.4	7.5
7	7.7	7.6	7.6	7.7	7.5	7.5	8.1	7.8	8.0	7.6	7.4	7.5
8	7.8	7.6	7.6	7.7	7.5	7.5	8.1	7.8	8.0	7.5	7.4	7.4
9	7.8	7.6	7.6	7.7	7.5	7.6	8.1	7.8	8.0	7.5	7.4	7.4
10	7.7	7.5	7.6	7.7	7.5	7.6	8.1	7.6	7.7	7.5	7.4	7.4
11	7.7	7.5	7.6	7.9	7.5	7.7	7.6	7.5	7.6	7.5	7.4	7.4
12	7.7	7.5	7.6	7.8	7.6	7.6	7.7	7.5	7.6	7.7	7.4	7.5
13	7.9	7.5	7.6	7.7	7.5	7.6	7.7	7.5	7.6	7.7	7.6	7.6
14	8.2	7.9	8.0	7.7	7.5	7.6	7.7	7.5	7.5	7.7	7.5	7.6
15	8.0	7.6	7.9	7.7	7.5	7.6	7.7	7.5	7.6	7.7	7.6	7.6
16	7.7	7.5	7.6	7.9	7.5	7.5	7.7	7.5	7.6	7.7	7.5	7.6
17	7.7	7.6	7.6	8.3	7.7	7.9	7.9	7.6	7.7	7.6	7.5	7.5
18	7.7	7.6	7.6	8.3	7.6	8.0	7.9	7.6	7.7	7.6	7.5	7.5
19	7.8	7.6	7.7	7.7	7.5	7.6	7.9	7.6	7.7	7.6	7.5	7.5
20	7.8	7.6	7.7	7.8	7.6	7.7	7.8	7.6	7.7	7.6	7.5	7.5
21	7.8	7.6	7.7	7.9	7.6	7.7	7.9	7.6	7.7	7.6	7.5	7.6
22	7.8	7.6	7.7	7.9	7.6	7.7	7.7	7.6	7.6	7.7	7.5	7.5
23	7.8	7.6	7.7	7.9	7.6	7.7	7.7	7.5	7.6	7.6	7.4	7.5
24	7.8	7.6	7.7	7.8	7.6	7.7	7.8	7.5	7.6	7.7	7.5	7.6
25	7.8	7.6	7.7	8.2	7.7	7.8	7.8	7.5	7.6	8.1	7.6	7.7
26	7.8	7.6	7.6	8.2	7.7	8.0	7.8	7.4	7.6	8.2	7.9	7.9
27	7.8	7.6	7.6	8.4	7.9	8.0	7.6	7.4	7.5	8.3	8.0	8.1
28	7.7	7.5	7.6	8.5	8.0	8.2	7.7	7.4	7.5	8.3	8.0	8.1
29	7.7	7.5	7.6	8.4	8.0	8.2	7.8	7.4	7.5	8.3	7.9	8.0
30	7.6	7.5	7.6	8.5	8.0	8.1	7.7	7.4	7.5	8.3	7.9	8.1
31	---	---	---	8.1	7.7	7.9	7.7	7.4	7.5	---	---	---
MAX	8.2	7.9	8.0	8.5	8.0	8.2	8.1	7.8	8.0	8.3	8.0	8.1
MIN	7.6	7.5	7.6	7.6	7.5	7.5	7.6	7.4	7.5	7.5	7.3	7.4

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.8	11.8	14.4	11.0	9.9	10.6	---	---	---	---	---	---
2	16.4	13.4	15.2	10.6	9.9	10.3	---	---	---	---	---	---
3	15.0	10.2	12.7	10.8	9.6	10.1	---	---	---	---	---	---
4	13.6	11.4	12.5	10.0	9.2	9.8	---	---	---	---	---	---
5	13.1	8.9	11.1	9.8	8.3	9.0	---	---	---	---	---	---
6	14.5	8.9	11.6	10.5	8.4	9.4	---	---	---	---	---	---
7	15.8	11.2	13.5	10.6	9.0	9.7	---	---	---	---	---	---
8	16.5	12.1	14.3	9.0	7.6	8.3	---	---	---	---	---	---
9	16.3	14.0	15.4	8.1	6.8	7.4	---	---	---	---	---	---
10	14.6	11.0	13.0	8.9	6.8	7.8	---	---	---	---	---	---
11	14.3	10.5	12.4	8.6	7.1	8.1	---	---	---	---	---	---
12	14.2	10.1	12.3	7.5	6.1	6.7	---	---	---	---	---	---
13	14.1	11.1	12.7	7.3	5.8	6.5	---	---	---	---	---	---
14	13.7	12.4	13.1	7.6	5.6	6.5	---	---	---	---	---	---
15	13.0	11.6	12.2	7.0	5.9	6.6	---	---	---	---	---	---
16	11.6	9.6	10.6	7.8	6.9	7.4	---	---	---	---	---	---
17	9.6	8.3	9.0	8.3	7.7	8.0	---	---	---	---	---	---
18	9.8	8.0	8.9	10.0	8.1	8.9	---	---	---	---	---	---
19	10.1	9.1	9.6	10.1	9.0	9.6	---	---	---	---	---	---
20	11.0	9.9	10.5	9.5	8.7	9.0	---	---	---	---	---	---
21	11.4	10.7	11.0	8.8	7.6	8.1	---	---	---	---	---	---
22	12.3	11.0	11.6	8.3	6.7	7.4	---	---	---	---	---	---
23	11.9	11.3	11.6	8.6	7.1	7.7	---	---	---	---	---	---
24	12.0	11.7	11.9	8.2	4.6	6.6	---	---	---	---	---	---
25	13.2	11.3	12.2	5.4	4.0	4.7	---	---	---	---	---	---
26	12.4	11.2	11.9	5.9	5.0	5.5	---	---	---	---	---	---
27	13.5	12.0	12.5	6.7	5.9	6.2	---	---	---	---	---	---
28	14.0	11.0	12.3	6.6	4.8	6.0	---	---	---	---	---	---
29	13.4	12.2	12.8	5.5	4.4	4.9	---	---	---	---	---	---
30	15.3	13.2	14.1	5.4	5.1	5.2	---	---	---	---	---	---
31	13.2	11.0	12.1	---	---	---	---	---	---	---	---	---
MONTH	16.8	8.0	12.2	11.0	4.0	7.7	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	6.2	3.5	5.0	11.0	8.9	9.9
2	---	---	---	---	---	---	4.9	3.6	4.0	10.2	8.1	9.1
3	---	---	---	---	---	---	6.9	2.9	4.7	8.9	7.7	8.4
4	---	---	---	---	---	---	8.0	3.7	5.7	12.3	7.4	9.7
5	---	---	---	---	---	---	9.2	4.7	6.8	13.3	8.4	10.9
6	---	---	---	---	---	---	10.6	5.2	7.8	14.5	10.4	12.5
7	---	---	---	---	---	---	8.2	6.8	7.4	16.3	10.9	13.5
8	---	---	---	---	---	---	11.5	6.9	9.0	18.3	13.8	15.9
9	---	---	---	---	---	---	12.8	8.4	10.5	20.8	13.2	16.9
10	---	---	---	---	---	---	15.1	10.2	12.6	21.4	16.2	18.4
11	---	---	---	---	---	---	16.6	9.5	12.2	17.8	14.5	16.9
12	---	---	---	---	---	---	15.3	8.1	11.5	17.8	12.8	15.0
13	---	---	---	---	---	---	14.8	7.9	11.1	14.8	13.1	13.9
14	---	---	---	---	---	---	15.5	9.2	11.9	15.7	13.8	14.7
15	---	---	---	---	---	---	15.8	9.7	12.4	14.5	12.9	13.5
16	---	---	---	---	---	---	17.0	10.4	13.3	14.1	11.9	13.1
17	---	---	---	---	---	---	16.1	12.3	13.9	16.9	12.7	14.6
18	---	---	---	3.3	1.9	2.5	18.1	12.1	14.8	18.0	14.5	16.2
19	---	---	---	3.1	1.5	2.3	19.8	13.9	16.5	16.5	14.3	15.0
20	---	---	---	2.9	2.3	2.6	16.4	12.9	15.3	18.4	13.3	15.7
21	---	---	---	3.7	2.1	2.8	16.2	11.0	13.4	19.8	15.1	17.3
22	---	---	---	6.0	1.9	3.7	13.0	11.2	12.2	17.8	16.0	16.7
23	---	---	---	3.4	2.1	2.6	11.2	7.5	9.4	16.0	14.6	15.4
24	---	---	---	5.7	2.2	3.6	7.5	5.5	6.4	15.3	13.9	14.7
25	---	---	---	5.5	2.9	3.9	11.9	5.6	8.5	19.1	13.7	16.1
26	---	---	---	6.1	1.9	3.9	9.8	8.3	9.1	19.4	16.0	17.7
27	---	---	---	5.3	2.6	3.9	9.7	7.9	8.7	19.4	15.9	17.6
28	---	---	---	7.5	2.9	4.9	10.9	7.2	9.0	19.7	16.1	17.6
29	---	---	---	8.3	4.0	5.9	11.9	8.3	10.0	19.6	15.6	17.6
30	---	---	---	9.4	5.1	7.0	11.0	9.3	10.2	20.7	16.7	18.4
31	---	---	---	7.6	5.2	6.5	---	---	---	22.2	17.5	19.7
MONTH	---	---	---	---	---	---	19.8	2.9	10.1	22.2	7.4	14.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.6	18.8	21.1	25.6	21.1	23.4	27.9	23.8	25.8	23.4	17.9	20.6
2	24.2	20.3	21.9	25.7	19.0	22.1	28.6	24.2	26.5	22.4	17.5	20.1
3	21.5	18.7	19.9	26.3	19.4	22.6	28.7	25.1	26.9	22.2	17.0	19.6
4	24.1	18.0	20.8	27.5	20.7	23.7	26.9	25.6	26.1	22.0	16.7	19.3
5	26.3	19.0	22.2	26.7	22.3	23.9	27.6	23.9	25.6	22.6	16.8	19.7
6	25.7	20.4	22.8	23.3	20.7	21.8	27.4	23.4	25.5	23.0	17.2	20.1
7	27.2	20.1	23.3	25.3	18.9	21.9	27.7	23.8	25.8	23.2	18.1	20.7
8	27.7	21.0	23.9	24.0	20.6	22.3	28.0	24.2	26.2	22.0	19.4	20.8
9	28.1	21.5	24.5	26.5	20.2	23.2	28.5	24.9	26.7	22.6	17.9	20.3
10	29.1	22.2	25.4	27.9	20.9	24.2	27.1	24.8	26.1	22.5	17.1	19.9
11	27.0	23.3	24.6	28.9	22.1	25.2	24.8	21.5	23.1	22.9	17.6	20.3
12	26.0	22.5	23.9	28.3	23.3	25.4	25.1	20.6	22.7	23.2	18.1	20.7
13	25.7	22.1	23.8	28.0	23.3	25.3	24.6	21.3	22.9	23.3	18.8	21.2
14	27.5	24.1	25.7	28.5	22.9	25.4	23.3	20.6	21.9	22.4	20.2	21.1
15	25.6	19.2	23.0	28.1	22.7	25.2	24.5	19.2	21.8	21.0	18.0	19.3
16	20.6	17.5	18.9	26.0	23.4	24.4	24.7	19.5	22.0	18.7	16.2	17.1
17	19.3	15.7	17.5	28.8	25.2	26.7	25.4	19.4	22.3	18.5	16.3	17.3
18	19.0	16.6	17.7	29.0	25.1	27.0	24.5	19.8	22.2	19.2	15.7	17.5
19	21.6	15.2	18.4	28.0	23.0	25.3	25.8	21.1	23.3	18.5	16.2	17.5
20	24.3	16.7	20.2	28.3	22.6	25.3	23.9	20.1	22.0	20.1	17.1	18.6
21	24.0	18.0	20.6	28.8	24.2	26.3	24.6	19.7	22.1	19.8	16.1	18.1
22	25.1	18.4	21.5	28.7	25.0	26.6	21.6	17.8	19.2	19.4	17.1	18.0
23	25.2	17.1	21.0	28.6	23.5	25.9	20.2	17.6	18.8	19.2	16.6	17.9
24	27.7	19.6	23.4	27.6	23.6	25.5	22.9	15.9	19.1	19.4	15.8	17.6
25	29.0	22.0	25.2	29.0	26.0	27.3	21.3	17.3	19.5	20.5	18.2	19.3
26	28.3	21.7	24.8	27.2	25.2	26.5	24.6	18.3	21.2	20.4	19.3	19.9
27	29.1	22.9	25.8	26.4	24.2	25.3	23.6	20.2	21.8	20.6	18.0	19.3
28	27.2	23.5	25.1	26.9	23.4	25.1	24.2	18.0	21.1	20.4	18.2	19.3
29	28.5	22.6	25.1	26.4	23.5	25.0	24.9	19.0	21.9	19.3	17.1	17.9
30	25.3	23.2	24.3	26.6	23.2	24.8	23.2	20.2	21.7	18.6	16.1	17.2
31	---	---	---	26.9	22.6	24.8	22.1	19.4	20.7	---	---	---
MONTH	29.1	15.2	22.5	29.0	18.9	24.8	28.7	15.9	23.0	23.4	15.7	19.2

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	5.7	6.8	9.6	8.9	9.1	---	---	---	---	---	---
2	7.5	5.6	6.4	9.2	8.8	8.9	---	---	---	---	---	---
3	8.2	5.9	6.9	9.4	9.0	9.2	---	---	---	---	---	---
4	8.6	6.0	7.2	9.2	9.0	9.1	---	---	---	---	---	---
5	8.5	7.0	7.6	9.8	9.1	9.5	---	---	---	---	---	---
6	8.5	6.5	7.3	9.7	9.4	9.6	---	---	---	---	---	---
7	7.8	5.7	6.7	9.7	9.2	9.4	---	---	---	---	---	---
8	7.8	5.7	6.6	10.2	9.6	10.0	---	---	---	---	---	---
9	7.2	4.6	6.0	10.4	10.2	10.3	---	---	---	---	---	---
10	7.7	5.5	6.6	10.4	10.0	10.2	---	---	---	---	---	---
11	8.0	6.0	6.9	10.6	9.8	10.2	---	---	---	---	---	---
12	8.0	6.0	6.9	10.9	10.5	10.7	---	---	---	---	---	---
13	7.4	5.7	6.5	11.0	10.8	10.9	---	---	---	---	---	---
14	6.5	5.2	5.8	11.2	10.8	11.0	---	---	---	---	---	---
15	6.6	5.3	6.0	10.9	10.1	10.6	---	---	---	---	---	---
16	7.9	5.5	6.7	10.1	9.1	9.9	---	---	---	---	---	---
17	8.2	6.5	7.4	9.8	9.5	9.6	---	---	---	---	---	---
18	9.7	7.4	8.7	9.9	7.1	9.2	---	---	---	---	---	---
19	9.4	9.0	9.1	9.7	5.5	6.7	---	---	---	---	---	---
20	9.1	8.7	8.9	9.9	9.4	9.6	---	---	---	---	---	---
21	9.2	8.6	8.8	10.5	9.6	10.0	---	---	---	---	---	---
22	9.1	8.7	8.9	10.5	7.4	9.2	---	---	---	---	---	---
23	9.1	8.7	8.9	10.4	6.3	8.6	---	---	---	---	---	---
24	9.2	8.5	8.7	10.4	6.2	7.6	---	---	---	---	---	---
25	9.1	8.7	8.9	11.3	10.4	11.0	---	---	---	---	---	---
26	9.3	8.8	9.1	10.8	10.3	10.6	---	---	---	---	---	---
27	9.2	6.7	8.6	10.4	9.1	9.9	---	---	---	---	---	---
28	8.4	6.2	7.4	10.4	9.2	9.8	---	---	---	---	---	---
29	8.4	7.6	8.0	10.9	10.0	10.4	---	---	---	---	---	---
30	8.2	7.6	7.9	10.8	10.2	10.5	---	---	---	---	---	---
31	8.9	7.8	8.5	---	---	---	---	---	---	---	---	---
MONTH	9.7	4.6	7.6	11.3	5.5	9.7	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	12.3	11.5	11.9	11.4	10.6	11.0
2	---	---	---	---	---	---	12.5	11.7	12.1	11.7	11.0	11.3
3	---	---	---	---	---	---	12.7	11.9	12.3	12.0	11.3	11.6
4	---	---	---	---	---	---	12.5	11.4	11.9	11.9	11.3	11.6
5	---	---	---	---	---	---	12.1	11.2	11.6	11.9	11.2	11.5
6	---	---	---	---	---	---	12.0	11.1	11.4	11.4	10.9	11.1
7	---	---	---	---	---	---	12.1	11.1	11.5	11.2	10.3	10.8
8	---	---	---	---	---	---	11.9	11.1	11.5	10.6	7.7	9.9
9	---	---	---	---	---	---	11.7	10.9	11.2	9.1	6.1	7.5
10	---	---	---	---	---	---	10.9	6.2	9.5	8.8	6.7	7.5
11	---	---	---	---	---	---	7.9	6.0	6.6	8.6	6.8	7.7
12	---	---	---	---	---	---	8.9	6.3	7.6	10.1	7.9	8.9
13	---	---	---	---	---	---	9.6	7.0	8.4	9.7	8.2	9.0
14	---	---	---	---	---	---	9.8	8.5	9.0	9.5	8.6	8.9
15	---	---	---	---	---	---	10.0	8.5	9.2	10.0	8.7	9.3
16	---	---	---	---	---	---	9.9	8.3	9.0	10.7	9.3	9.9
17	---	---	---	---	---	---	9.7	8.2	8.8	10.6	9.1	9.7
18	---	---	---	12.3	11.7	11.9	10.0	8.0	8.9	10.0	7.8	9.1
19	---	---	---	12.4	11.7	12.0	9.4	7.5	8.4	9.7	8.2	8.9
20	---	---	---	12.0	11.5	11.8	9.2	7.3	8.1	9.7	8.4	8.9
21	---	---	---	12.4	11.6	11.9	10.2	8.2	9.1	9.7	8.3	8.9
22	---	---	---	12.4	11.6	11.9	10.0	8.4	9.1	8.9	7.8	8.5
23	---	---	---	12.6	11.7	12.1	10.4	8.6	9.4	8.5	7.8	8.2
24	---	---	---	12.6	11.7	12.1	11.4	9.6	10.4	9.2	8.0	8.6
25	---	---	---	12.6	11.8	12.1	11.2	9.3	10.5	9.7	8.0	8.8
26	---	---	---	12.5	11.6	12.0	10.6	9.3	10.0	9.2	7.6	8.4
27	---	---	---	12.4	11.7	12.0	10.8	10.3	10.6	8.9	7.1	8.1
28	---	---	---	12.4	11.5	11.9	11.1	10.6	10.9	9.0	7.0	7.8
29	---	---	---	12.4	11.5	11.9	11.1	10.6	10.8	8.8	7.1	7.9
30	---	---	---	12.2	11.2	11.7	11.1	10.6	10.8	8.8	7.1	8.0
31	---	---	---	11.9	11.2	11.5	---	---	---	8.9	7.5	8.2
MONTH	---	---	---	---	---	---	12.7	6.0	10.0	12.0	6.1	9.2

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.8	7.3	8.0	6.8	4.5	5.6	7.6	6.4	7.0	8.7	4.5	6.6
2	8.8	5.8	7.6	7.4	5.1	6.2	7.5	6.4	6.9	8.2	4.9	6.4
3	8.0	5.4	6.5	7.6	5.3	6.3	7.7	6.3	6.9	8.5	5.0	6.5
4	8.5	5.8	7.0	7.5	5.2	6.1	7.5	6.3	6.8	8.3	5.3	6.7
5	8.6	5.2	6.8	7.1	4.8	5.7	7.8	6.5	7.1	8.4	5.2	6.7
6	7.2	4.2	5.7	7.1	5.1	5.9	7.9	6.6	7.3	8.3	5.3	6.6
7	7.0	4.1	5.3	7.8	5.8	6.6	8.0	6.7	7.3	8.2	5.1	6.5
8	7.3	4.2	5.4	7.5	5.4	6.5	7.9	6.6	7.3	7.5	4.8	6.1
9	7.3	4.1	5.4	7.8	5.9	6.8	8.0	6.5	7.3	7.7	5.0	6.3
10	6.9	3.9	5.2	7.8	6.0	6.7	7.1	5.7	6.6	7.9	5.1	6.4
11	6.3	3.8	4.7	7.6	5.3	6.4	6.6	4.4	5.5	7.7	5.1	6.3
12	6.6	3.7	4.8	7.4	4.9	5.8	6.9	4.4	5.6	7.4	5.0	6.1
13	6.6	3.8	5.2	6.8	4.6	5.4	7.3	4.1	5.5	7.0	4.4	5.7
14	7.7	6.1	6.8	7.1	4.5	5.5	7.5	4.4	5.8	6.4	4.1	5.2
15	6.8	4.8	6.1	6.9	4.4	5.4	8.1	4.8	6.3	7.1	4.5	5.8
16	7.3	4.4	5.8	7.4	4.1	5.5	8.2	4.8	6.4	6.5	5.5	6.0
17	7.7	5.3	6.4	8.2	5.7	6.8	8.3	4.9	6.4	6.3	4.5	5.4
18	8.0	5.5	6.7	8.1	4.5	6.5	8.8	4.9	6.6	6.9	4.8	5.8
19	8.2	6.0	7.0	6.6	4.0	5.3	8.3	4.6	6.3	6.5	4.8	5.7
20	8.2	5.6	6.8	6.8	4.8	5.7	7.8	4.7	6.2	6.6	4.6	5.7
21	7.9	5.6	6.5	7.0	4.7	5.6	8.8	4.8	6.6	6.5	4.9	5.7
22	8.1	5.3	6.6	6.4	4.3	5.3	8.1	5.2	6.6	8.2	4.3	5.6
23	8.2	5.7	6.8	6.3	3.8	5.1	8.6	4.9	6.7	7.0	4.9	6.0
24	7.9	5.4	6.4	6.9	3.6	5.8	9.2	5.4	7.1	8.0	6.0	6.9
25	7.6	4.7	5.9	7.5	5.6	6.5	9.3	5.0	6.9	8.5	6.7	7.4
26	7.5	4.7	5.9	7.1	5.9	6.5	9.5	4.9	6.9	8.6	7.3	7.9
27	7.0	4.5	5.5	8.3	6.1	7.0	7.4	4.2	5.8	9.2	7.8	8.4
28	6.7	4.1	5.1	8.4	6.6	7.4	8.8	4.5	6.3	9.3	8.0	8.5
29	7.1	4.0	5.2	8.4	6.6	7.4	9.1	4.5	6.4	9.3	7.8	8.5
30	5.9	4.4	5.1	8.7	6.8	7.6	7.9	4.2	5.9	9.5	8.2	8.7
31	---	---	---	7.6	6.5	7.0	8.9	4.6	6.3	---	---	---
MONTH	8.8	3.7	6.1	8.7	3.6	6.2	9.5	4.1	6.5	9.5	4.1	6.5

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	746	738	742	---	---	---	---	---	---	---	---	---
2	909	746	775	---	---	---	---	---	---	---	---	---
3	987	909	958	---	---	---	---	---	---	---	---	---
4	1000	987	992	---	---	---	---	---	---	---	---	---
5	991	983	986	---	---	---	---	---	---	---	---	---
6	992	984	988	---	---	---	---	---	---	---	---	---
7	1000	991	997	---	---	---	---	---	---	---	---	---
8	1020	1000	1010	---	---	---	---	---	---	---	---	---
9	1030	1010	1020	---	---	---	---	---	---	---	---	---
10	1030	1020	1030	---	---	---	---	---	---	---	---	---
11	1040	1030	1030	---	---	---	---	---	---	---	---	---
12	1050	1030	1040	---	---	---	---	---	---	---	---	---
13	1060	1040	1050	---	---	---	---	---	---	---	---	---
14	1070	1050	1060	---	---	---	---	---	---	---	---	---
15	1070	1050	1060	---	---	---	---	---	---	---	---	---
16	1070	1060	1060	---	---	---	---	---	---	---	---	---
17	1070	1060	1060	---	---	---	---	---	---	---	---	---
18	1070	1060	1060	---	---	---	---	---	---	---	---	---
19	1070	1060	1070	---	---	---	---	---	---	---	---	---
20	1070	1050	1050	---	---	---	---	---	---	---	---	---
21	1050	1040	1050	---	---	---	---	---	---	---	---	---
22	1040	1000	1020	---	---	---	---	---	---	---	---	---
23	1000	966	980	---	---	---	---	---	---	---	---	---
24	970	930	953	---	---	---	---	---	---	---	---	---
25	930	903	915	---	---	---	---	---	---	---	---	---
26	903	896	898	---	---	---	---	---	---	---	---	---
27	897	883	888	---	---	---	---	---	---	---	---	---
28	886	862	878	---	---	---	---	---	---	---	---	---
29	869	862	865	---	---	---	---	---	---	---	---	---
30	865	856	861	---	---	---	---	---	---	---	---	---
31	856	828	847	---	---	---	---	---	---	---	---	---
MONTH	1070	738	974	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	7.9	8.0	---	---	---	---	---	---	---	---	---
2	8.1	7.5	7.9	---	---	---	---	---	---	---	---	---
3	7.5	7.4	7.5	---	---	---	---	---	---	---	---	---
4	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
5	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
6	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
7	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
8	7.6	7.5	7.6	---	---	---	---	---	---	---	---	---
9	7.6	7.5	7.6	---	---	---	---	---	---	---	---	---
10	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
11	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
12	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
13	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
14	7.5	7.5	7.5	---	---	---	---	---	---	---	---	---
15	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
16	7.6	7.5	7.6	---	---	---	---	---	---	---	---	---
17	7.6	7.5	7.6	---	---	---	---	---	---	---	---	---
18	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
19	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
20	7.6	7.5	7.6	---	---	---	---	---	---	---	---	---
21	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
22	7.6	7.6	7.6	---	---	---	---	---	---	---	---	---
23	7.7	7.6	7.7	---	---	---	---	---	---	---	---	---
24	7.7	7.6	7.7	---	---	---	---	---	---	---	---	---
25	7.7	7.7	7.7	---	---	---	---	---	---	---	---	---
26	7.7	7.7	7.7	---	---	---	---	---	---	---	---	---
27	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
28	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
29	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
30	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
31	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
MAX	8.3	7.9	8.0	---	---	---	---	---	---	---	---	---
MIN	7.5	7.4	7.5	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04160900 CLINTON RIVER NEAR DRAYTON PLAINS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.2	16.1	17.5	---	---	---	---	---	---	---	---	---
2	19.8	16.7	18.0	---	---	---	---	---	---	---	---	---
3	20.8	17.4	19.0	---	---	---	---	---	---	---	---	---
4	20.2	17.7	19.2	---	---	---	---	---	---	---	---	---
5	20.1	17.8	19.2	---	---	---	---	---	---	---	---	---
6	19.9	17.8	18.7	---	---	---	---	---	---	---	---	---
7	17.8	13.6	15.2	---	---	---	---	---	---	---	---	---
8	13.6	12.3	12.8	---	---	---	---	---	---	---	---	---
9	13.3	11.1	12.2	---	---	---	---	---	---	---	---	---
10	12.8	12.2	12.6	---	---	---	---	---	---	---	---	---
11	13.8	12.8	13.3	---	---	---	---	---	---	---	---	---
12	14.5	13.6	14.1	---	---	---	---	---	---	---	---	---
13	15.7	14.4	15.0	---	---	---	---	---	---	---	---	---
14	16.2	14.6	15.3	---	---	---	---	---	---	---	---	---
15	15.2	13.2	14.4	---	---	---	---	---	---	---	---	---
16	13.2	12.0	12.6	---	---	---	---	---	---	---	---	---
17	12.0	10.6	11.3	---	---	---	---	---	---	---	---	---
18	13.2	10.8	11.7	---	---	---	---	---	---	---	---	---
19	13.0	11.2	11.9	---	---	---	---	---	---	---	---	---
20	11.3	10.0	10.6	---	---	---	---	---	---	---	---	---
21	11.2	9.1	9.9	---	---	---	---	---	---	---	---	---
22	10.5	9.4	9.8	---	---	---	---	---	---	---	---	---
23	9.8	9.0	9.4	---	---	---	---	---	---	---	---	---
24	9.7	9.0	9.4	---	---	---	---	---	---	---	---	---
25	9.6	8.8	9.2	---	---	---	---	---	---	---	---	---
26	9.2	8.0	8.5	---	---	---	---	---	---	---	---	---
27	8.6	7.1	7.9	---	---	---	---	---	---	---	---	---
28	8.8	7.8	8.4	---	---	---	---	---	---	---	---	---
29	8.6	6.6	7.8	---	---	---	---	---	---	---	---	---
30	9.4	6.9	8.2	---	---	---	---	---	---	---	---	---
31	11.2	9.0	10	---	---	---	---	---	---	---	---	---
MONTH	20.8	6.6	12.7	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.6	8.3	8.8	---	---	---	---	---	---	---	---	---
2	9.4	6.2	8.3	---	---	---	---	---	---	---	---	---
3	6.4	4.7	5.7	---	---	---	---	---	---	---	---	---
4	5.7	4.5	5.1	---	---	---	---	---	---	---	---	---
5	5.6	4.3	5.0	---	---	---	---	---	---	---	---	---
6	5.5	4.4	5.0	---	---	---	---	---	---	---	---	---
7	6.1	4.9	5.5	---	---	---	---	---	---	---	---	---
8	6.9	5.9	6.3	---	---	---	---	---	---	---	---	---
9	6.9	6.3	6.5	---	---	---	---	---	---	---	---	---
10	6.3	5.4	5.8	---	---	---	---	---	---	---	---	---
11	5.8	5.1	5.5	---	---	---	---	---	---	---	---	---
12	5.6	4.8	5.3	---	---	---	---	---	---	---	---	---
13	5.7	4.7	5.2	---	---	---	---	---	---	---	---	---
14	5.9	4.6	5.2	---	---	---	---	---	---	---	---	---
15	6.4	4.8	5.5	---	---	---	---	---	---	---	---	---
16	6.6	5.2	5.8	---	---	---	---	---	---	---	---	---
17	7.0	5.5	6.1	---	---	---	---	---	---	---	---	---
18	7.1	5.5	6.2	---	---	---	---	---	---	---	---	---
19	6.9	5.3	6.0	---	---	---	---	---	---	---	---	---
20	7.1	5.6	6.2	---	---	---	---	---	---	---	---	---
21	7.4	5.8	6.6	---	---	---	---	---	---	---	---	---
22	7.6	6.5	7.1	---	---	---	---	---	---	---	---	---
23	8.0	7.2	7.8	---	---	---	---	---	---	---	---	---
24	8.2	7.6	8.0	---	---	---	---	---	---	---	---	---
25	8.5	7.7	8.2	---	---	---	---	---	---	---	---	---
26	8.9	8.1	8.5	---	---	---	---	---	---	---	---	---
27	9.4	8.4	8.9	---	---	---	---	---	---	---	---	---
28	9.3	8.4	8.9	---	---	---	---	---	---	---	---	---
29	9.6	8.7	9.2	---	---	---	---	---	---	---	---	---
30	9.6	8.7	9.2	---	---	---	---	---	---	---	---	---
31	9.2	8.3	8.8	---	---	---	---	---	---	---	---	---
MONTH	9.6	4.3	6.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI

LOCATION.--Lat 42°38'00", long 83°13'28", in NW1/4 sec.36, T.3 N., R.10 E., Oakland County, Hydrologic Unit 04090003, on right bank 10 ft upstream from bridge on Auburn Road in Auburn Hills, 2.8 mi upstream from Galloway Creek.

DRAINAGE AREA.--123 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1935 to June 1939 and February to September 1940 (published as "at Pontiac"), October 1956 to September 1982 (published as "at Auburn Heights"), October 1982 to September 1991 (operated as a crest-stage partial-record station; published as "at Auburn Heights"), July 2001 to September 2002, October 2002 to September 2003 (operated as a crest-stage partial-record station), April 2004 to current year.

REVISED RECORDS.--WSP 1307: 1937(M). WSP 1507: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 846.50 ft above sea level. Prior to October 1940 nonrecording gage at site 3.3 mi upstream at datum 876.01 ft above sea level.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Some regulation by many lakes upstream from station. Flow includes sewage effluent, most of which originates from sources outside the basin. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	127	200	147	e120	218	158	145	30	48	32	24
2	37	171	131	213	e125	211	173	160	28	32	27	24
3	26	133	104	191	e130	204	162	168	28	29	24	23
4	25	192	87	199	143	200	160	168	26	37	25	23
5	24	134	92	200	145	201	134	164	34	57	26	22
6	23	114	102	203	139	226	42	163	35	32	24	23
7	25	108	264	198	175	280	48	156	29	29	23	23
8	26	106	153	196	189	223	52	124	27	42	24	41
9	32	104	114	193	161	198	92	77	28	33	23	26
10	24	103	152	195	152	188	90	33	27	27	21	24
11	24	103	139	196	147	186	64	32	30	25	21	23
12	25	103	127	347	150	177	52	30	28	24	43	23
13	25	102	127	454	147	162	42	66	66	24	23	22
14	30	100	104	345	291	169	30	62	60	23	30	21
15	44	100	110	285	273	170	31	41	61	24	21	22
16	41	99	119	e255	270	168	31	51	62	246	19	71
17	48	105	122	e230	258	169	31	56	55	174	21	28
18	30	103	122	e210	242	168	32	56	34	166	23	24
19	26	107	121	e190	e240	170	30	71	29	154	24	25
20	25	114	e115	e180	e235	178	34	90	29	116	33	22
21	25	100	e110	e170	e230	166	29	75	33	34	26	23
22	26	99	e105	e160	e230	168	33	96	30	31	26	202
23	51	97	e100	e180	e230	132	47	176	26	27	25	110
24	116	120	e96	e200	229	117	90	171	27	177	23	50
25	137	135	e92	e190	229	162	138	164	40	162	21	64
26	134	107	e94	e160	224	172	140	152	51	246	20	223
27	128	135	e98	e130	216	157	123	115	38	184	98	148
28	131	145	e100	e100	214	157	117	82	41	148	39	170
29	222	106	e105	e105	---	158	155	57	118	128	30	227
30	171	106	111	e110	---	156	149	35	130	107	27	173
31	133	---	213	e115	---	158	---	32	---	37	25	---
TOTAL	1859	3478	3829	6247	5534	5569	2509	3068	1280	2623	867	1924
MEAN	60.0	116	124	202	198	180	83.6	99.0	42.7	84.6	28.0	64.1
MAX	222	192	264	454	291	280	173	176	130	246	98	227
MIN	23	97	87	100	120	117	29	30	26	23	19	21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2005, BY WATER YEAR (WY)

MEAN	75.4	86.6	102	105	119	156	173	127	92.5	70.7	57.2	61.5
MAX	257	192	177	264	225	421	338	304	206	223	126	279
(WY)	1982	2002	1973	1974	1974	1974	1974	1974	2004	1968	1980	1975
MIN	8.08	14.4	12.6	29.2	36.5	58.1	55.9	51.3	11.6	8.85	8.26	12.7
(WY)	1936	1939	1939	1961	1963	1964	2004	1958	1936	1936	1936	1936

SUMMARY STATISTICS	FOR 2005 WATER YEAR		WATER YEARS 1935 - 2005	
ANNUAL TOTAL	38787			
ANNUAL MEAN	106		104	
HIGHEST ANNUAL MEAN			193	1974
LOWEST ANNUAL MEAN			42.4	1936
HIGHEST DAILY MEAN	454	Jan 13	978	May 23 2004
LOWEST DAILY MEAN	19	Aug 16	5.5	Sep 1 1936
ANNUAL SEVEN-DAY MINIMUM	23	Aug 13	6.0	Aug 30 1936
MAXIMUM PEAK FLOW	1180	Jul 16	(a)2040	May 23 2004
MAXIMUM PEAK STAGE	4.57	Jul 16	6.05	May 23 2004
INSTANTANEOUS LOW FLOW	17	(b)	(c)4.8	Sep 4 1936
10 PERCENT EXCEEDS	203		195	
50 PERCENT EXCEEDS	104		90	
90 PERCENT EXCEEDS	24		32	

(a) From rating curve extended above 1,300 ft^3/s.
(b) Aug. 16, 17, 26, 27, Sept. 15.
(c) Observed; site then in use.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 19-27, Nov. 4-7, Nov. 20 to Dec. 1, Mar. 18-29, rated good. pH and water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Nov. 14-18, 23-25, Mar. 23-26, Apr. 19-25, May 7-9, 25-27, May 31 to June 1, June 13-15, 25-27, July 2-5, 19-23, rated good; Nov. 26-30, Mar. 27 to Apr. 1, June 2-4, 16-18, July 6-9, 24, 25, rated fair; Dec. 1, Apr. 2-6, June 5-9, 19-22, July 10, 11, 27-29, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,050 microsiemens, Nov. 25, 2004; minimum, 84 microsiemens, Sept. 22, 2005.
pH: Maximum, 8.6 std. units, on many days in April and May, 2005; minimum, 7.3 std. units, July 13, 2004, June 6, 12, 21, 22, 2005.
WATER TEMPERATURE: Maximum, 27.8°C, July 25, 2005; minimum, 2.8°C, Mar. 19, 2005.
DISSOLVED OXYGEN: Maximum, 20.8 mg/L, April 15, 2005; minimum, 3.1 mg/L, June 6, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 3,050 microsiemens, Nov. 25; minimum, 84 microsiemens, Sept. 22.
pH: Maximum, 8.6 std. units, on many days in April and May; minimum, 7.3 std. units, June 6, 12, 21, 22.
WATER TEMPERATURE: Maximum, 27.8°C, July 25; minimum, 2.8°C, Mar. 19.
DISSOLVED OXYGEN: Maximum, 20.8 mg/L, April 15; minimum, 3.1 mg/L, June 6.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1210	1160	1180	791	770	778	2700	601	1120	---	---	---
2	1220	803	1010	792	517	727	---	---	---	---	---	---
3	1190	1100	1150	796	780	789	---	---	---	---	---	---
4	1170	1100	1130	810	334	688	---	---	---	---	---	---
5	1200	1140	1180	805	761	787	---	---	---	---	---	---
6	1240	1170	1210	818	798	809	---	---	---	---	---	---
7	1240	1160	1190	830	800	813	---	---	---	---	---	---
8	1240	905	1160	831	800	815	---	---	---	---	---	---
9	1220	731	1070	854	807	822	---	---	---	---	---	---
10	1170	1110	1140	839	808	823	---	---	---	---	---	---
11	1170	1080	1120	847	811	824	---	---	---	---	---	---
12	1180	1100	1150	838	815	825	---	---	---	---	---	---
13	1160	1070	1140	836	809	823	---	---	---	---	---	---
14	1200	1020	1120	853	812	825	---	---	---	---	---	---
15	1120	647	964	826	809	818	---	---	---	---	---	---
16	1000	649	865	840	814	828	---	---	---	---	---	---
17	971	517	765	861	811	833	---	---	---	---	---	---
18	1040	971	1010	862	814	832	---	---	---	---	---	---
19	1170	1040	1090	851	807	827	---	---	---	---	---	---
20	1160	1090	1130	855	735	804	---	---	---	---	---	---
21	1190	1120	1150	813	798	806	---	---	---	---	---	---
22	1200	1120	1150	825	799	807	---	---	---	---	---	---
23	1160	522	1010	818	795	807	---	---	---	---	---	---
24	890	647	815	2100	636	832	---	---	---	---	---	---
25	799	776	790	3050	1040	1680	---	---	---	---	---	---
26	793	771	778	1180	971	1010	---	---	---	---	---	---
27	793	769	780	1440	922	1090	---	---	---	---	---	---
28	812	772	784	922	802	875	---	---	---	---	---	---
29	794	342	668	893	862	875	---	---	---	---	---	---
30	768	527	728	903	785	860	---	---	---	---	---	---
31	781	761	769	---	---	---	---	---	---	---	---	---
MONTH	1240	342	1010	3050	334	858	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	981	939	959	1080	985	1010
2	---	---	---	---	---	---	1270	943	1050	1060	971	994
3	---	---	---	---	---	---	1030	956	984	1040	961	980
4	---	---	---	---	---	---	1010	963	979	979	949	964
5	---	---	---	---	---	---	1280	960	1010	1030	942	960
6	---	---	---	---	---	---	1600	1280	1440	1020	936	960
7	---	---	---	---	---	---	1530	1350	1390	1080	943	982
8	---	---	---	---	---	---	1420	1200	1350	1040	964	989
9	---	---	---	---	---	---	1200	1040	1080	1340	1000	1090
10	---	---	---	---	---	---	1150	1020	1070	1580	1340	1480
11	---	---	---	---	---	---	1360	1140	1180	1580	1420	1490
12	---	---	---	---	---	---	1280	1190	1220	1640	1420	1500
13	---	---	---	---	---	---	1350	1240	1270	1560	693	1300
14	---	---	---	---	---	---	1660	1350	1490	1560	858	1270
15	---	---	---	---	---	---	1610	1390	1470	1410	1360	1380
16	---	---	---	---	---	---	1500	1360	1440	1370	1150	1230
17	---	---	---	---	---	---	1740	1430	1540	1170	1130	1150
18	---	---	---	1710	1010	1150	1450	1310	1400	1180	1120	1150
19	---	---	---	1690	1030	1170	1610	1360	1460	1250	959	1100
20	---	---	---	1500	1070	1180	1950	1470	1650	1160	920	1050
21	---	---	---	1130	1030	1060	1820	1410	1600	1070	1020	1040
22	---	---	---	1160	1000	1060	1630	1380	1490	1100	895	1000
23	---	---	---	1360	997	1110	1660	1410	1540	1040	829	957
24	---	---	---	1210	1060	1110	1680	1310	1530	973	897	920
25	---	---	---	1090	972	1020	1480	1110	1300	946	885	912
26	---	---	---	1030	963	987	1260	1000	1170	939	881	909
27	---	---	---	1050	966	990	1230	1140	1190	1120	907	955
28	---	---	---	1080	973	1010	1180	1050	1110	1110	945	1000
29	---	---	---	1050	951	993	1110	980	1030	1180	1040	1080
30	---	---	---	1030	947	974	1070	1000	1020	1270	1180	1240
31	---	---	---	1040	961	985	---	---	---	1470	1270	1330
MONTH	---	---	---	---	---	---	1950	939	1280	1640	693	1110

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1380	1300	1340	1150	985	1070	1220	1180	1200	1240	1160	1210
2	1530	1330	1390	1230	1140	1200	1340	1220	1290	1260	1160	1220
3	1430	1340	1380	1250	1210	1230	1390	1240	1320	1250	1180	1200
4	1600	1400	1470	1280	574	1230	1400	1300	1360	1240	1160	1200
5	1530	799	1420	1180	522	985	1400	1310	1340	1280	1140	1200
6	1570	1220	1410	1240	1150	1200	1330	1270	1300	1220	1140	1180
7	1490	1400	1440	1430	1230	1260	1370	1280	1320	1210	1150	1170
8	1460	1350	1400	1300	374	1130	1360	1230	1290	1230	491	962
9	1380	1330	1360	1190	887	1110	1370	1260	1320	1220	1100	1180
10	1430	1340	1390	1240	1180	1210	1390	1260	1320	1240	1150	1190
11	1620	1330	1410	1290	1220	1260	1360	1240	1300	1220	1140	1180
12	1620	1320	1470	1380	1260	1310	1380	628	1020	1260	1100	1150
13	1430	642	1090	1350	1250	1290	1330	1210	1250	1240	1150	1200
14	1250	1020	1120	1370	1250	1300	1360	814	1110	1260	1130	1210
15	1110	859	1050	1320	1240	1280	1240	1180	1210	1240	1130	1190
16	1110	987	1050	1290	191	900	1360	1220	1250	1180	328	811
17	1070	1010	1030	894	857	874	1340	1170	1250	1160	962	1070
18	1190	1070	1140	881	571	829	1300	1120	1200	1210	1120	1160
19	1280	1190	1220	863	830	850	1170	1100	1130	1190	1120	1160
20	1300	1220	1260	1140	818	892	1140	911	1040	1280	1160	1200
21	1400	685	1240	1280	1100	1190	1110	1060	1090	1290	1180	1230
22	1390	950	1230	1290	1220	1240	1210	1040	1100	1310	84	945
23	1340	1240	1290	1290	1230	1250	1200	1130	1160	936	479	800
24	1360	1230	1290	1300	199	818	1160	1120	1140	991	936	966
25	1350	1070	1140	821	800	812	1220	1130	1170	991	540	874
26	1110	898	1040	834	270	704	1220	1120	1160	881	301	688
27	1160	1080	1110	814	724	782	1240	115	915	854	762	808
28	1210	815	1160	842	806	822	1100	983	1050	812	634	790
29	1240	256	881	877	828	855	1120	1070	1090	801	422	727
30	1250	181	915	962	840	868	1210	1110	1150	815	795	802
31	---	---	---	1210	962	1120	1260	1180	1230	---	---	---
MONTH	1620	181	1240	1430	191	1060	1400	115	1200	1310	84	1060

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.8	7.5	7.6	7.9	7.7	7.7	7.9	7.6	7.7	---	---	---
2	7.6	7.4	7.5	7.8	7.5	7.6	---	---	---	---	---	---
3	7.6	7.4	7.5	7.7	7.6	7.7	---	---	---	---	---	---
4	7.7	7.5	7.6	7.8	7.6	7.7	---	---	---	---	---	---
5	7.7	7.5	7.6	8.0	7.8	7.9	---	---	---	---	---	---
6	7.7	7.5	7.6	7.9	7.8	7.9	---	---	---	---	---	---
7	7.7	7.5	7.6	8.0	7.9	7.9	---	---	---	---	---	---
8	7.8	7.5	7.5	8.0	7.9	7.9	---	---	---	---	---	---
9	7.5	7.4	7.4	8.0	7.9	7.9	---	---	---	---	---	---
10	7.6	7.4	7.5	8.0	7.9	7.9	---	---	---	---	---	---
11	7.7	7.5	7.6	8.0	7.8	7.9	---	---	---	---	---	---
12	7.6	7.5	7.6	8.0	7.8	7.8	---	---	---	---	---	---
13	7.7	7.5	7.6	7.9	7.8	7.9	---	---	---	---	---	---
14	7.6	7.5	7.5	8.0	7.8	7.9	---	---	---	---	---	---
15	7.7	7.5	7.5	8.0	7.8	7.9	---	---	---	---	---	---
16	7.6	7.4	7.6	8.0	7.8	7.9	---	---	---	---	---	---
17	7.6	7.5	7.6	7.9	7.8	7.8	---	---	---	---	---	---
18	7.8	7.6	7.6	8.2	7.8	7.9	---	---	---	---	---	---
19	7.6	7.6	7.6	8.1	7.9	7.9	---	---	---	---	---	---
20	7.6	7.5	7.6	8.0	7.8	7.9	---	---	---	---	---	---
21	7.6	7.5	7.5	8.2	7.9	8.0	---	---	---	---	---	---
22	7.6	7.5	7.6	8.1	7.8	7.9	---	---	---	---	---	---
23	7.7	7.5	7.6	8.0	7.8	7.9	---	---	---	---	---	---
24	7.8	7.6	7.8	7.9	7.8	7.8	---	---	---	---	---	---
25	8.0	7.8	7.8	8.0	7.8	7.9	---	---	---	---	---	---
26	7.9	7.8	7.8	8.0	7.8	7.9	---	---	---	---	---	---
27	7.9	7.8	7.8	7.9	7.8	7.8	---	---	---	---	---	---
28	7.9	7.8	7.8	7.9	7.7	7.8	---	---	---	---	---	---
29	8.0	7.7	7.7	8.0	7.8	7.8	---	---	---	---	---	---
30	7.8	7.7	7.7	7.9	7.7	7.8	---	---	---	---	---	---
31	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
MAX	8.0	7.8	7.8	8.2	7.9	8.0	---	---	---	---	---	---
MIN	7.5	7.4	7.4	7.7	7.5	7.6	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.5	8.0	8.1	8.6	8.2	8.3
2	---	---	---	---	---	---	8.3	8.0	8.1	8.6	8.2	8.3
3	---	---	---	---	---	---	8.5	8.0	8.2	8.4	8.1	8.2
4	---	---	---	---	---	---	8.5	8.0	8.2	8.6	8.1	8.2
5	---	---	---	---	---	---	8.6	7.8	8.1	8.6	8.1	8.2
6	---	---	---	---	---	---	8.4	7.7	7.9	8.6	8.1	8.2
7	---	---	---	---	---	---	8.4	7.6	7.9	8.6	8.0	8.2
8	---	---	---	---	---	---	8.5	7.7	7.9	8.6	8.0	8.2
9	---	---	---	---	---	---	8.5	7.8	8.0	8.6	7.7	8.0
10	---	---	---	---	---	---	8.5	7.8	8.0	8.1	7.6	7.7
11	---	---	---	---	---	---	8.5	7.8	8.0	7.8	7.5	7.6
12	---	---	---	---	---	---	8.6	7.7	7.9	8.0	7.5	7.7
13	---	---	---	---	---	---	8.6	7.7	7.9	7.8	7.6	7.6
14	---	---	---	---	---	---	8.5	7.6	7.8	7.7	7.4	7.6
15	---	---	---	---	---	---	8.6	7.6	7.8	7.7	7.5	7.6
16	---	---	---	---	---	---	8.5	7.5	7.8	7.9	7.6	7.7
17	---	---	---	---	---	---	8.5	7.5	7.7	7.9	7.6	7.7
18	---	---	---	8.3	8.0	8.0	8.6	7.5	7.7	7.9	7.6	7.7
19	---	---	---	8.3	8.0	8.0	8.4	7.4	7.6	7.8	7.6	7.8
20	---	---	---	8.2	8.0	8.0	7.9	7.4	7.5	8.0	7.7	7.8
21	---	---	---	8.3	8.0	8.1	8.4	7.4	7.6	8.0	7.7	7.8
22	---	---	---	8.4	8.0	8.1	8.0	7.4	7.6	7.9	7.7	7.8
23	---	---	---	8.3	8.0	8.0	7.9	7.4	7.6	7.9	7.8	7.8
24	---	---	---	8.5	8.0	8.1	8.0	7.5	7.8	7.9	7.7	7.8
25	---	---	---	8.5	8.0	8.1	8.3	7.9	8.1	8.0	7.8	7.9
26	---	---	---	8.4	8.0	8.1	8.3	8.0	8.1	8.0	7.8	7.9
27	---	---	---	8.5	8.0	8.1	8.5	8.1	8.2	8.1	7.7	7.9
28	---	---	---	8.5	8.0	8.1	8.6	8.1	8.2	8.1	7.7	7.8
29	---	---	---	8.5	8.0	8.1	8.6	8.1	8.3	8.0	7.7	7.8
30	---	---	---	8.5	8.0	8.1	8.5	8.2	8.3	7.9	7.6	7.7
31	---	---	---	8.5	8.0	8.1	---	---	---	7.9	7.6	7.7
MAX	---	---	---	---	---	---	8.6	8.2	8.3	8.6	8.2	8.3
MIN	---	---	---	---	---	---	7.9	7.4	7.5	7.7	7.4	7.6

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	7.6	7.7	7.8	7.5	7.6	8.0	7.6	7.8	7.9	7.6	7.7
2	7.9	7.5	7.7	7.9	7.6	7.7	8.0	7.6	7.7	7.9	7.6	7.7
3	7.9	7.6	7.7	7.9	7.6	7.7	8.1	7.6	7.7	7.9	7.6	7.7
4	7.9	7.6	7.7	8.0	7.6	7.7	8.0	7.6	7.7	7.9	7.7	7.7
5	7.9	7.5	7.6	7.8	7.4	7.6	8.1	7.6	7.8	7.9	7.7	7.7
6	7.7	7.3	7.5	7.8	7.6	7.7	8.2	7.7	7.8	8.0	7.6	7.7
7	7.8	7.5	7.6	8.0	7.6	7.7	8.2	7.7	7.8	7.9	7.6	7.7
8	7.9	7.5	7.6	8.1	7.5	7.6	8.3	7.7	7.8	7.7	7.5	7.6
9	7.8	7.5	7.5	7.9	7.5	7.6	8.3	7.6	7.8	7.7	7.5	7.6
10	7.9	7.4	7.6	8.0	7.6	7.7	8.2	7.6	7.8	7.8	7.6	7.6
11	7.8	7.4	7.5	8.1	7.6	7.7	8.2	7.6	7.7	7.8	7.6	7.6
12	7.7	7.3	7.5	8.1	7.6	7.7	7.7	7.5	7.6	7.9	7.6	7.7
13	7.5	7.4	7.4	8.1	7.6	7.7	7.8	7.5	7.6	7.9	7.6	7.7
14	7.8	7.4	7.6	8.2	7.6	7.7	7.7	7.6	7.6	7.8	7.6	7.7
15	7.8	7.5	7.7	8.1	7.6	7.7	8.1	7.6	7.7	7.9	7.6	7.7
16	7.9	7.6	7.7	8.3	7.5	7.7	8.0	7.6	7.7	7.9	7.6	7.6
17	7.9	7.6	7.7	8.1	7.8	8.0	8.0	7.6	7.7	7.7	7.6	7.6
18	7.7	7.5	7.6	8.2	7.8	8.0	7.8	7.6	7.7	7.9	7.6	7.7
19	7.7	7.5	7.5	8.1	7.9	8.0	7.8	7.6	7.7	7.9	7.6	7.7
20	7.7	7.4	7.5	8.1	7.7	7.9	7.7	7.5	7.6	7.8	7.6	7.6
21	7.6	7.3	7.4	7.8	7.6	7.7	7.9	7.5	7.7	7.8	7.5	7.6
22	7.8	7.3	7.6	7.9	7.6	7.7	7.9	7.6	7.7	8.4	7.5	7.5
23	7.9	7.5	7.7	7.9	7.6	7.7	7.9	7.6	7.7	7.7	7.6	7.6
24	8.0	7.6	7.7	8.1	7.6	7.8	7.9	7.5	7.6	7.7	7.6	7.6
25	8.3	7.7	7.9	8.2	7.9	8.0	8.0	7.5	7.6	7.7	7.5	7.6
26	8.0	7.7	7.8	8.2	7.8	7.9	7.9	7.5	7.6	8.0	7.6	7.7
27	8.0	7.6	7.8	8.0	7.8	7.9	8.1	7.5	7.6	8.1	7.7	7.9
28	7.9	7.5	7.6	8.1	7.9	8.0	7.6	7.5	7.6	8.1	7.8	7.9
29	8.1	7.4	7.6	8.1	7.9	8.0	7.9	7.5	7.6	8.2	7.9	8.0
30	8.5	7.5	7.5	8.2	7.8	8.0	7.7	7.6	7.6	8.2	7.9	8.0
31	---	---	---	---	7.9	7.7	7.8	7.8	7.6	7.7	---	---	---
MAX	8.5	7.7	7.9	8.3	7.9	8.0	8.3	7.7	7.8	8.4	7.9	8.0
MIN	7.5	7.3	7.4	7.8	7.4	7.6	7.6	7.5	7.6	7.7	7.5	7.5

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.3	15.2	16.6	12.4	11.6	11.9	6.3	5.1	5.6	---	---	---
2	17.1	14.9	16.4	11.9	11.0	11.5	---	---	---	---	---	---
3	16.4	13.7	15.0	11.6	10.5	11.0	---	---	---	---	---	---
4	15.8	14.0	14.8	10.7	9.1	10.3	---	---	---	---	---	---
5	15.4	12.9	14.0	10.1	9.0	9.5	---	---	---	---	---	---
6	16.4	12.8	14.5	10.6	8.9	9.7	---	---	---	---	---	---
7	17.8	14.7	16.1	10.9	9.5	10.1	---	---	---	---	---	---
8	18.2	15.3	16.7	9.5	8.0	8.8	---	---	---	---	---	---
9	17.6	15.8	16.8	8.7	7.3	8.0	---	---	---	---	---	---
10	16.6	14.2	15.4	9.2	7.4	8.2	---	---	---	---	---	---
11	16.3	14.0	14.9	9.1	7.7	8.5	---	---	---	---	---	---
12	16.5	13.7	14.9	7.9	6.7	7.4	---	---	---	---	---	---
13	16.8	14.3	15.4	7.9	6.5	7.1	---	---	---	---	---	---
14	16.2	14.8	15.4	7.8	6.0	6.8	---	---	---	---	---	---
15	15.5	13.2	14.8	7.8	6.1	7.0	---	---	---	---	---	---
16	14.0	11.5	13.0	8.1	7.2	7.7	---	---	---	---	---	---
17	11.9	10.5	11.1	9.2	7.8	8.4	---	---	---	---	---	---
18	12.4	10.6	11.6	10.4	8.6	9.5	---	---	---	---	---	---
19	13.0	11.8	12.4	10.2	9.4	9.8	---	---	---	---	---	---
20	13.9	12.3	13.1	10.3	9.3	9.8	---	---	---	---	---	---
21	14.4	13.4	13.8	9.8	8.9	9.3	---	---	---	---	---	---
22	15.5	13.8	14.5	9.0	8.2	8.6	---	---	---	---	---	---
23	14.7	13.2	14.2	9.0	8.1	8.6	---	---	---	---	---	---
24	13.5	11.8	12.4	8.5	5.6	7.5	---	---	---	---	---	---
25	13.2	11.7	12.4	6.1	5.3	5.8	---	---	---	---	---	---
26	13.0	12.0	12.6	6.0	4.8	5.5	---	---	---	---	---	---
27	13.4	12.5	12.9	6.9	5.9	6.6	---	---	---	---	---	---
28	13.4	12.2	12.8	7.0	5.4	6.4	---	---	---	---	---	---
29	13.7	12.5	13.1	6.0	5.1	5.6	---	---	---	---	---	---
30	15.2	13.7	14.4	6.1	5.3	5.8	---	---	---	---	---	---
31	13.7	12.3	13.0	---	---	---	---	---	---	---	---	---
MONTH	18.3	10.5	14.2	12.4	4.8	8.4	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.2	6.3	7.3	11.8	10.1	10.9
2	---	---	---	---	---	---	7.2	5.6	6.3	11.2	9.6	10.4
3	---	---	---	---	---	---	7.5	4.9	6.1	10.0	9.0	9.4
4	---	---	---	---	---	---	8.8	5.6	7.1	11.9	8.3	10.1
5	---	---	---	---	---	---	10.8	7.2	8.9	13.2	9.8	11.5
6	---	---	---	---	---	---	14.5	9.6	12.0	14.3	10.6	12.6
7	---	---	---	---	---	---	12.7	10.4	11.8	15.8	12.6	14.2
8	---	---	---	---	---	---	14.2	9.0	11.4	17.3	13.6	15.5
9	---	---	---	---	---	---	13.9	9.9	11.7	18.1	14.9	16.3
10	---	---	---	---	---	---	14.1	10.4	12.2	18.9	14.8	16.6
11	---	---	---	---	---	---	14.3	10.8	12.3	16.3	13.6	15.3
12	---	---	---	---	---	---	13.2	9.5	11.2	16.1	11.7	13.7
13	---	---	---	---	---	---	13.8	8.7	11.0	13.2	11.7	12.5
14	---	---	---	---	---	---	14.8	9.2	11.6	16.1	12.8	14.2
15	---	---	---	---	---	---	14.8	9.5	11.8	14.0	12.5	13.2
16	---	---	---	---	---	---	15.5	9.8	12.5	14.3	11.5	12.9
17	---	---	---	---	---	---	14.6	11.2	12.8	16.1	12.6	14.2
18	---	---	---	4.5	3.1	3.8	16.7	11.3	13.8	17.0	13.2	15.0
19	---	---	---	3.9	2.8	3.4	18.1	12.5	15.2	15.3	14.0	14.6
20	---	---	---	4.0	3.2	3.5	15.9	12.6	14.6	17.5	13.4	15.3
21	---	---	---	4.5	3.1	3.7	15.7	10.5	12.9	18.3	14.3	16.2
22	---	---	---	6.2	3.1	4.5	12.4	10.6	11.5	16.8	15.7	16.4
23	---	---	---	4.5	3.2	3.8	10.6	7.1	9.0	16.4	15.3	15.9
24	---	---	---	5.8	3.3	4.4	7.1	6.0	6.4	15.6	14.7	15.2
25	---	---	---	5.8	4.0	4.7	10.6	6.2	8.3	17.4	14.3	15.8
26	---	---	---	6.0	3.3	4.6	9.9	9.3	9.6	18.4	15.6	17.0
27	---	---	---	5.9	4.0	5.0	10.7	8.8	9.7	19.0	16.6	17.7
28	---	---	---	7.3	4.6	5.8	11.7	8.5	10.1	19.1	16.6	17.6
29	---	---	---	8.1	5.1	6.6	12.5	9.7	11.0	18.9	16.0	17.4
30	---	---	---	8.9	6.3	7.5	11.6	10.7	11.1	19.2	15.8	17.4
31	---	---	---	8.3	6.7	7.5	---	---	---	19.4	15.8	17.7
MONTH	---	---	---	---	---	---	18.1	4.9	10.7	19.4	8.3	14.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.1	15.9	18.0	23.4	20.5	22.2	24.7	21.3	22.9	22.7	19.6	21.1
2	20.5	16.4	18.4	22.3	18.5	20.4	25.5	21.5	23.3	22.6	19.4	20.7
3	18.6	17.2	17.9	22.2	18.5	20.3	25.3	21.9	23.4	21.9	19.1	20.3
4	20.5	16.6	18.5	23.6	19.3	21.2	23.6	22.2	22.8	21.7	18.5	19.9
5	22.2	17.8	19.9	22.9	20.5	21.7	24.5	21.3	22.7	22.0	18.1	19.9
6	22.5	18.7	20.4	21.5	19.3	20.1	24.1	20.4	22.0	22.6	18.6	20.3
7	23.0	18.6	20.6	22.5	18.1	20.0	24.4	20.7	22.4	22.6	19.4	20.9
8	23.5	19.3	21.2	21.7	19.2	20.4	24.6	21.0	22.6	21.3	19.3	20.6
9	23.0	19.6	21.2	23.1	18.5	20.7	25.3	21.7	23.3	22.3	19.3	20.6
10	24.3	19.8	21.9	24.0	19.5	21.6	24.5	22.3	23.2	22.3	18.8	20.4
11	22.8	20.5	21.4	24.3	20.3	22.1	23.1	21.5	22.3	22.7	18.9	20.6
12	21.9	19.8	20.8	23.7	21.0	22.2	23.5	20.0	21.9	23.2	19.4	21.1
13	21.9	20.2	21.0	24.3	21.1	22.5	23.2	21.6	22.3	23.2	19.9	21.5
14	24.8	20.5	22.7	24.7	21.1	22.7	22.0	20.3	21.3	22.5	20.8	21.5
15	23.0	19.5	22.1	24.4	21.1	22.6	23.1	19.7	21.3	21.3	19.5	20.3
16	21.2	19.6	20.5	24.8	21.7	23.0	23.2	19.9	21.4	19.5	16.8	18.2
17	20.1	18.7	19.4	27.1	24.7	25.8	23.2	20.0	21.5	20.0	18.0	18.9
18	18.7	17.5	18.2	27.5	25.8	26.4	23.0	20.2	21.7	21.0	18.0	19.4
19	19.7	16.3	17.9	27.3	25.4	26.2	24.7	21.6	22.9	20.6	18.7	19.6
20	20.8	16.7	18.8	27.5	24.0	25.9	23.0	21.0	22.2	21.3	18.7	19.9
21	22.2	17.9	19.4	25.5	22.6	24.0	23.8	21.2	22.3	21.6	18.2	19.8
22	22.1	18.2	20.1	25.1	22.3	23.5	21.3	19.6	20.2	19.9	18.7	19.3
23	21.4	16.9	19.3	24.6	20.9	22.6	20.4	19.1	19.7	19.8	17.9	19.1
24	23.4	18.7	20.9	26.4	21.3	23.5	21.9	18.2	20.0	19.4	17.1	18.3
25	25.3	21.2	23.2	27.8	26.0	26.8	21.2	18.9	20.2	21.0	18.9	19.8
26	25.0	20.3	23.1	27.0	24.1	25.6	23.1	19.6	21.2	20.4	19.0	19.8
27	25.5	22.5	23.9	25.4	23.5	24.5	22.8	20.9	21.7	20.1	18.0	19.1
28	24.3	21.8	22.9	25.4	23.1	24.3	23.1	20.1	21.6	20.1	18.7	19.4
29	27.3	21.9	23.5	25.0	23.3	24.2	23.4	20.2	21.8	19.1	17.3	17.8
30	24.3	22.4	23.2	25.1	22.9	23.9	22.0	20.9	21.5	17.8	16.5	17.2
31	---	---	---	23.9	20.5	22.3	22.0	20.3	21.1	---	---	---
MONTH	27.3	15.9	20.7	27.8	18.1	23.0	25.5	18.2	21.9	23.2	16.5	19.8

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.5	6.9	7.8	10.2	9.4	9.8	12.6	11.8	12.2	---	---	---
2	7.6	6.4	6.9	9.8	9.5	9.7	---	---	---	---	---	---
3	8.8	6.4	7.4	10.6	9.8	10.2	---	---	---	---	---	---
4	9.3	6.9	7.8	10.9	9.7	10.1	---	---	---	---	---	---
5	9.6	7.3	8.1	10.8	9.9	10.3	---	---	---	---	---	---
6	9.5	7.1	7.8	10.8	10.0	10.3	---	---	---	---	---	---
7	9.4	6.6	7.6	10.8	10.0	10.3	---	---	---	---	---	---
8	9.1	6.3	7.4	11.4	10.2	10.9	---	---	---	---	---	---
9	7.2	5.4	6.1	12.0	10.9	11.3	---	---	---	---	---	---
10	7.9	5.8	6.7	11.9	10.7	11.2	---	---	---	---	---	---
11	9.0	6.6	7.6	11.9	10.5	11.2	---	---	---	---	---	---
12	9.3	7.0	7.9	12.2	11.1	11.6	---	---	---	---	---	---
13	9.2	6.9	7.8	12.4	11.2	11.8	---	---	---	---	---	---
14	7.6	6.1	6.8	12.9	11.6	12.1	---	---	---	---	---	---
15	7.8	6.7	7.1	12.8	11.6	12.1	---	---	---	---	---	---
16	8.7	7.2	7.9	12.5	11.3	11.8	---	---	---	---	---	---
17	9.5	8.3	8.9	11.4	10.6	11.1	---	---	---	---	---	---
18	9.6	8.1	8.7	12.3	10.3	11.1	---	---	---	---	---	---
19	8.6	7.5	8.0	11.4	10.3	10.6	---	---	---	---	---	---
20	8.3	7.0	7.6	11.3	10.0	10.6	---	---	---	---	---	---
21	7.9	6.8	7.2	12.2	10.4	11.1	---	---	---	---	---	---
22	9.1	6.7	7.5	12.6	10.6	11.3	---	---	---	---	---	---
23	8.6	6.7	7.5	11.7	10.8	11.1	---	---	---	---	---	---
24	9.7	8.2	9.3	11.6	10.8	11.1	---	---	---	---	---	---
25	10.3	9.5	9.8	12.8	11.4	12.1	---	---	---	---	---	---
26	10.3	9.5	9.8	13.1	12.0	12.4	---	---	---	---	---	---
27	10.3	9.4	9.7	12.3	11.4	11.9	---	---	---	---	---	---
28	10.3	9.3	9.7	12.3	11.2	11.9	---	---	---	---	---	---
29	9.7	9.0	9.3	13.5	12.2	12.5	---	---	---	---	---	---
30	9.0	8.4	8.8	12.7	11.9	12.2	---	---	---	---	---	---
31	9.7	8.8	9.3	---	---	---	---	---	---	---	---	---
MONTH	10.3	5.4	8.1	13.5	9.4	11.2	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	15.2	10.7	12.3	13.7	10.3	11.6
2	---	---	---	---	---	---	13.3	10.7	11.7	13.8	10.5	11.8
3	---	---	---	---	---	---	15.4	11.0	12.8	13.4	10.9	11.9
4	---	---	---	---	---	---	15.2	10.5	12.5	14.8	10.7	12.5
5	---	---	---	---	---	---	15.2	8.0	11.8	14.6	10.3	12.1
6	---	---	---	---	---	---	17.9	7.1	11.1	14.3	9.6	11.6
7	---	---	---	---	---	---	15.4	7.1	10.2	13.7	9.0	11.0
8	---	---	---	---	---	---	17.3	8.3	11.5	14.0	8.6	10.8
9	---	---	---	---	---	---	14.7	8.6	10.9	14.3	6.9	10.3
10	---	---	---	---	---	---	14.6	8.3	10.8	13.8	6.1	9.1
11	---	---	---	---	---	---	16.2	8.1	11.1	10.0	5.6	7.6
12	---	---	---	---	---	---	17.4	8.1	11.5	12.5	6.5	9.1
13	---	---	---	---	---	---	18.4	7.7	11.8	9.9	7.1	8.5
14	---	---	---	---	---	---	20.5	6.9	12.0	8.6	6.5	7.6
15	---	---	---	---	---	---	20.8	6.9	12.2	9.5	7.0	8.1
16	---	---	---	---	---	---	20.6	6.9	12.2	10.5	7.9	9.1
17	---	---	---	---	---	---	19.0	6.3	11.3	10.3	7.9	9.0
18	---	---	---	14.2	12.1	12.8	20.5	6.4	11.7	10.2	7.6	8.7
19	---	---	---	14.8	12.1	13.0	20.1	5.6	11.1	9.2	7.5	8.5
20	---	---	---	13.6	12.1	12.7	12.3	4.5	7.0	9.9	7.8	8.9
21	---	---	---	15.1	12.2	13.1	18.4	4.7	10.4	10.0	7.7	8.6
22	---	---	---	15.4	11.9	13.2	14.4	5.8	9.2	8.8	7.7	8.2
23	---	---	---	14.9	11.4	13.0	12.2	5.3	8.6	9.0	8.0	8.6
24	---	---	---	16.0	11.5	13.2	12.3	8.8	10.3	9.7	8.8	9.3
25	---	---	---	15.9	11.8	13.3	12.7	9.7	11.0	10.3	8.7	9.5
26	---	---	---	15.6	11.7	13.3	11.7	9.7	10.4	9.7	8.3	9.0
27	---	---	---	15.5	11.5	13.1	12.9	10.1	11.1	9.5	7.7	8.6
28	---	---	---	15.6	11.1	12.9	14.2	10.2	11.7	9.8	7.2	8.5
29	---	---	---	15.7	10.7	12.7	13.4	10.1	11.3	10.0	7.2	8.4
30	---	---	---	15.7	10.5	12.4	13.3	10.2	11.1	10.6	7.0	8.5
31	---	---	---	14.6	10.5	11.7	---	---	---	10.7	7.1	8.6
MONTH	---	---	---	---	---	---	20.8	4.5	11.1	14.8	5.6	9.5

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.2	6.9	8.7	7.9	5.1	6.4	---	---	---	9.1	6.6	7.4
2	11.6	6.7	8.6	9.0	6.1	7.2	---	---	---	9.5	6.6	7.5
3	10.4	6.4	8.0	9.5	6.3	7.6	---	---	---	9.5	6.8	7.7
4	10.9	6.6	8.3	10.2	6.3	7.7	---	---	---	9.9	6.9	7.9
5	11.1	5.9	8.0	8.8	5.8	6.9	10.5	6.1	7.7	9.8	7.0	7.9
6	9.0	3.1	5.7	9.3	6.2	7.5	11.3	6.4	8.0	10.1	7.0	7.9
7	10.1	5.0	6.9	10.6	6.8	8.1	11.5	6.3	8.1	9.7	6.8	7.7
8	10.5	5.1	7.0	9.3	5.1	7.1	11.6	6.3	8.2	7.9	6.1	6.8
9	10.0	5.0	6.9	9.9	5.3	7.4	12.4	6.1	8.3	8.3	6.2	6.9
10	11.1	4.8	7.2	10.5	6.3	7.8	11.7	5.7	7.8	8.6	6.5	7.2
11	10.3	4.2	6.6	10.4	6.1	7.8	11.6	5.9	7.8	9.2	6.6	7.4
12	9.3	3.4	5.9	10.7	5.5	7.3	7.6	5.5	6.6	9.4	6.5	7.5
13	7.9	4.6	5.5	10.5	5.5	7.2	8.8	5.3	6.6	9.3	6.3	7.3
14	8.0	5.0	6.2	11.1	5.4	7.4	8.0	6.3	6.9	8.8	6.0	7.0
15	8.1	4.9	6.4	10.7	5.6	7.6	9.3	6.1	7.3	9.4	6.3	7.5
16	8.6	6.0	7.1	7.8	5.5	6.5	10.3	6.3	7.7	8.3	6.8	7.5
17	8.9	6.6	7.6	7.9	6.8	7.2	10.1	6.2	7.5	8.3	6.7	7.2
18	8.5	6.3	7.3	8.1	6.7	7.3	8.2	6.3	7.2	9.0	6.6	7.4
19	9.3	6.2	7.4	8.1	7.0	7.4	8.2	6.1	6.9	9.1	6.8	7.5
20	9.2	5.8	7.2	8.4	6.5	7.5	7.0	5.5	6.3	9.1	6.5	7.4
21	8.1	3.9	6.2	8.7	6.0	7.1	8.6	5.5	6.8	9.3	6.6	7.4
22	8.7	3.6	5.9	9.3	6.3	7.4	9.2	6.2	7.5	9.0	6.4	7.2
23	10.3	5.3	7.3	10.0	6.5	7.8	9.4	6.7	7.8	7.8	7.1	7.3
24	10.9	5.4	7.4	8.7	6.6	7.4	10.4	6.8	7.9	8.5	7.2	7.8
25	10.5	5.0	7.1	8.3	7.0	7.5	10.9	6.5	8.1	8.2	7.0	7.5
26	8.3	5.2	6.4	8.7	7.1	7.5	10.2	6.7	7.9	8.5	7.2	8.0
27	9.4	5.0	6.8	9.1	7.4	8.4	8.7	6.4	7.0	9.0	7.8	8.5
28	9.3	4.5	6.3	9.7	8.4	8.9	7.8	6.6	7.1	8.9	8.2	8.5
29	8.5	4.2	5.7	9.9	8.5	9.1	8.1	6.6	7.1	8.9	8.3	8.7
30	8.2	4.9	5.6	---	---	---	7.6	6.4	6.9	9.3	8.8	9.0
31	---	---	---	---	---	---	8.7	6.3	7.2	---	---	---
MONTH	11.6	3.1	6.9	---	---	---	---	---	---	10.1	6.0	7.6

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	821	801	808	---	---	---	---	---	---	---	---	---
2	900	803	827	---	---	---	---	---	---	---	---	---
3	1040	690	902	---	---	---	---	---	---	---	---	---
4	1210	1040	1140	---	---	---	---	---	---	---	---	---
5	1280	1180	1220	---	---	---	---	---	---	---	---	---
6	1280	1200	1230	---	---	---	---	---	---	---	---	---
7	1280	1190	1230	---	---	---	---	---	---	---	---	---
8	1300	1210	1250	---	---	---	---	---	---	---	---	---
9	1300	1180	1250	---	---	---	---	---	---	---	---	---
10	1320	1180	1260	---	---	---	---	---	---	---	---	---
11	1260	1200	1220	---	---	---	---	---	---	---	---	---
12	1310	1220	1260	---	---	---	---	---	---	---	---	---
13	1300	1080	1210	---	---	---	---	---	---	---	---	---
14	1080	956	991	---	---	---	---	---	---	---	---	---
15	1040	952	992	---	---	---	---	---	---	---	---	---
16	1090	1030	1050	---	---	---	---	---	---	---	---	---
17	1130	1070	1090	---	---	---	---	---	---	---	---	---
18	1240	1110	1150	---	---	---	---	---	---	---	---	---
19	1180	1110	1140	---	---	---	---	---	---	---	---	---
20	1210	1120	1160	---	---	---	---	---	---	---	---	---
21	1240	1130	1170	---	---	---	---	---	---	---	---	---
22	1200	1120	1160	---	---	---	---	---	---	---	---	---
23	1210	1120	1170	---	---	---	---	---	---	---	---	---
24	1200	1120	1160	---	---	---	---	---	---	---	---	---
25	1310	1130	1240	---	---	---	---	---	---	---	---	---
26	1230	1060	1110	---	---	---	---	---	---	---	---	---
27	1100	1020	1050	---	---	---	---	---	---	---	---	---
28	1100	894	1050	---	---	---	---	---	---	---	---	---
29	903	857	873	---	---	---	---	---	---	---	---	---
30	924	871	884	---	---	---	---	---	---	---	---	---
31	923	876	889	---	---	---	---	---	---	---	---	---
MONTH	1320	690	1100	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
2	8.1	7.8	8.0	---	---	---	---	---	---	---	---	---
3	7.8	7.6	7.8	---	---	---	---	---	---	---	---	---
4	7.7	7.6	7.6	---	---	---	---	---	---	---	---	---
5	7.7	7.6	7.6	---	---	---	---	---	---	---	---	---
6	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
7	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
8	7.9	7.7	7.7	---	---	---	---	---	---	---	---	---
9	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
10	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
11	7.8	7.6	7.6	---	---	---	---	---	---	---	---	---
12	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
13	8.0	7.6	7.8	---	---	---	---	---	---	---	---	---
14	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
15	8.1	7.7	7.9	---	---	---	---	---	---	---	---	---
16	8.2	7.8	7.9	---	---	---	---	---	---	---	---	---
17	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
18	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
19	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
20	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
21	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
22	8.2	7.7	7.8	---	---	---	---	---	---	---	---	---
23	8.0	7.7	7.8	---	---	---	---	---	---	---	---	---
24	8.0	7.7	7.8	---	---	---	---	---	---	---	---	---
25	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
26	8.1	7.7	7.8	---	---	---	---	---	---	---	---	---
27	8.2	7.7	7.9	---	---	---	---	---	---	---	---	---
28	8.2	7.7	7.9	---	---	---	---	---	---	---	---	---
29	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
30	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
31	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
MAX	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
MIN	7.7	7.6	7.6	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161000 CLINTON RIVER AT AUBURN HILLS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.3	16.6	17.5	---	---	---	---	---	---	---	---	---
2	19.2	17.3	18.2	---	---	---	---	---	---	---	---	---
3	20.8	18.9	19.8	---	---	---	---	---	---	---	---	---
4	21.4	19.1	20.2	---	---	---	---	---	---	---	---	---
5	21.3	19.0	20.1	---	---	---	---	---	---	---	---	---
6	21.0	18.3	19.7	---	---	---	---	---	---	---	---	---
7	18.3	15.5	17.0	---	---	---	---	---	---	---	---	---
8	16.3	14.6	15.4	---	---	---	---	---	---	---	---	---
9	16.3	13.7	14.9	---	---	---	---	---	---	---	---	---
10	16.3	14.8	15.4	---	---	---	---	---	---	---	---	---
11	16.7	15.7	16.2	---	---	---	---	---	---	---	---	---
12	17.4	15.9	16.6	---	---	---	---	---	---	---	---	---
13	17.8	16.7	17.1	---	---	---	---	---	---	---	---	---
14	17.8	15.9	16.9	---	---	---	---	---	---	---	---	---
15	16.9	15.2	16.2	---	---	---	---	---	---	---	---	---
16	15.3	14.2	14.7	---	---	---	---	---	---	---	---	---
17	15.2	13.1	14.3	---	---	---	---	---	---	---	---	---
18	15.9	14.0	14.9	---	---	---	---	---	---	---	---	---
19	15.8	13.9	14.7	---	---	---	---	---	---	---	---	---
20	14.7	12.7	13.8	---	---	---	---	---	---	---	---	---
21	14.9	12.8	13.7	---	---	---	---	---	---	---	---	---
22	14.4	13.0	13.6	---	---	---	---	---	---	---	---	---
23	14.0	12.3	13.1	---	---	---	---	---	---	---	---	---
24	13.6	12.1	12.8	---	---	---	---	---	---	---	---	---
25	13.2	12.0	12.7	---	---	---	---	---	---	---	---	---
26	12.1	11.0	11.7	---	---	---	---	---	---	---	---	---
27	12.2	10.4	11.3	---	---	---	---	---	---	---	---	---
28	12.6	10.3	11.6	---	---	---	---	---	---	---	---	---
29	10.9	9.0	10.0	---	---	---	---	---	---	---	---	---
30	11.8	9.8	10.8	---	---	---	---	---	---	---	---	---
31	12.8	10.8	11.8	---	---	---	---	---	---	---	---	---
MONTH	21.4	9.0	15.1	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.5	8.8	9.0	---	---	---	---	---	---	---	---	---
2	9.6	8.1	8.9	---	---	---	---	---	---	---	---	---
3	8.5	6.8	7.9	---	---	---	---	---	---	---	---	---
4	8.4	6.6	7.1	---	---	---	---	---	---	---	---	---
5	8.4	6.6	7.2	---	---	---	---	---	---	---	---	---
6	8.8	6.6	7.3	---	---	---	---	---	---	---	---	---
7	9.2	7.0	7.8	---	---	---	---	---	---	---	---	---
8	10.2	7.5	8.4	---	---	---	---	---	---	---	---	---
9	9.9	7.7	8.5	---	---	---	---	---	---	---	---	---
10	9.9	7.5	8.3	---	---	---	---	---	---	---	---	---
11	10.0	7.4	8.2	---	---	---	---	---	---	---	---	---
12	10.0	6.9	8.1	---	---	---	---	---	---	---	---	---
13	10.8	7.0	8.5	---	---	---	---	---	---	---	---	---
14	10.8	7.6	8.7	---	---	---	---	---	---	---	---	---
15	10.3	7.7	8.7	---	---	---	---	---	---	---	---	---
16	11.4	7.7	9.0	---	---	---	---	---	---	---	---	---
17	11.5	7.6	8.9	---	---	---	---	---	---	---	---	---
18	10.9	7.2	8.5	---	---	---	---	---	---	---	---	---
19	11.5	7.0	8.7	---	---	---	---	---	---	---	---	---
20	11.9	7.4	9.0	---	---	---	---	---	---	---	---	---
21	11.7	7.7	9.1	---	---	---	---	---	---	---	---	---
22	12.3	7.5	9.3	---	---	---	---	---	---	---	---	---
23	11.4	7.8	9.1	---	---	---	---	---	---	---	---	---
24	11.4	7.8	9.2	---	---	---	---	---	---	---	---	---
25	12.0	7.5	9.3	---	---	---	---	---	---	---	---	---
26	12.2	7.8	9.5	---	---	---	---	---	---	---	---	---
27	12.3	8.2	9.8	---	---	---	---	---	---	---	---	---
28	12.1	8.0	9.7	---	---	---	---	---	---	---	---	---
29	11.5	9.5	10.4	---	---	---	---	---	---	---	---	---
30	11.6	9.4	10.2	---	---	---	---	---	---	---	---	---
31	11.3	8.9	9.9	---	---	---	---	---	---	---	---	---
MONTH	12.3	6.6	8.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI

LOCATION.--Lat 42°41'18", long 83°08'35", in NW1/4 SE1/4 sec.10, T.3 N., R.11 E., Oakland County, Hydrologic Unit 04090003, on right bank at upstream side of bridge on Ludlow Street in Rochester, 1.5 mi upstream from mouth.

DRAINAGE AREA.--70.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 755.11 ft above sea level.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Occasional regulation by Lake Orion. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	37	122	115	e56	77	123	103	37	24	31	17
2	17	72	91	151	e54	75	128	87	35	18	27	14
3	18	81	71	146	e52	e72	118	76	33	16	26	12
4	16	110	61	144	e50	e70	106	69	30	17	27	11
5	15	90	56	125	50	68	97	64	31	26	24	11
6	14	64	55	112	51	77	90	60	39	20	21	11
7	13	53	180	103	61	134	86	60	31	18	19	11
8	13	48	156	94	97	e125	79	58	27	28	17	18
9	17	55	98	88	84	e95	68	55	25	38	16	17
10	16	50	90	84	71	86	67	52	24	24	16	14
11	15	55	101	82	65	86	62	51	25	21	16	12
12	15	49	91	154	64	85	55	48	27	19	25	11
13	15	44	96	319	63	80	48	57	43	18	20	11
14	19	41	82	259	174	76	46	71	39	17	19	10
15	23	38	73	e150	223	74	46	65	46	16	18	11
16	31	37	71	e120	268	71	46	59	38	213	17	24
17	33	36	69	e100	171	73	45	54	35	137	15	18
18	28	36	68	e85	142	76	44	51	30	96	15	15
19	22	37	64	e85	125	74	41	52	28	76	14	14
20	22	41	e58	e80	112	94	42	56	26	58	17	14
21	21	39	e54	e75	111	92	33	49	25	62	16	13
22	20	36	e52	e70	104	100	32	47	24	46	14	73
23	22	35	e50	e73	96	107	43	57	22	31	13	108
24	26	48	e48	e75	89	100	68	60	21	102	13	40
25	25	66	e46	e73	84	110	102	52	21	76	12	34
26	23	57	e45	e70	81	110	125	48	22	199	12	82
27	22	71	e44	e65	78	110	127	46	20	143	32	45
28	23	99	e43	e63	75	115	117	44	19	91	30	34
29	47	67	e45	e61	---	122	118	43	19	68	18	60
30	54	58	e50	e60	---	124	113	42	24	54	19	38
31	47	---	150	e58	---	128	---	40	---	39	19	---
TOTAL	706	1650	2380	3339	2751	2886	2315	1776	866	1811	598	803
MEAN	22.8	55.0	76.8	108	98.2	93.1	77.2	57.3	28.9	58.4	19.3	26.8
MAX	54	110	180	319	268	134	128	103	46	213	32	108
MIN	13	35	43	58	50	68	32	40	19	16	12	10
CFSM	0.32	0.78	1.08	1.52	1.39	1.31	1.09	0.81	0.41	0.82	0.27	0.38
IN.	0.37	0.87	1.25	1.75	1.44	1.51	1.21	0.93	0.45	0.95	0.31	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2005, BY WATER YEAR (WY)

MEAN	39.1	46.2	51.3	51.4	61.9	94.0	94.2	65.6	47.6	30.1	25.5	33.9
MAX	123	120	103	127	166	204	194	158	125	58.4	66.7	104
(WY)	1982	1986	1976	1973	2001	1976	1975	2004	1996	2005	1975	1975
MIN	8.50	11.0	14.5	14.9	15.4	25.9	33.8	28.5	13.5	11.7	12.0	12.2
(WY)	1964	1964	1965	1964	1963	1964	2004	1977	1988	1963	1965	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1960 - 2005	
ANNUAL TOTAL	21631		21881			
ANNUAL MEAN	59.1		59.9		53.3	
HIGHEST ANNUAL MEAN					86.7	1976
LOWEST ANNUAL MEAN					20.4	1964
HIGHEST DAILY MEAN	1180	May 23	319	Jan 13	1180	May 23 2004
LOWEST DAILY MEAN	13	Oct 7	10	Sep 14	6.8	Aug 15 1988
ANNUAL SEVEN-DAY MINIMUM	14	Sep 23	12	Sep 9	7.5	Sep 8 2003
MAXIMUM PEAK FLOW			668	Jul 16	1930	May 23 2004
MAXIMUM PEAK STAGE			4.36	Jul 16	6.52	May 23 2004
INSTANTANEOUS LOW FLOW			10	(a)	(b)1.2	Aug 19 1974
ANNUAL RUNOFF (CFSM)	0.834		0.846		0.752	
ANNUAL RUNOFF (INCHES)	11.35		11.48		10.22	
10 PERCENT EXCEEDS	103		115		103	
50 PERCENT EXCEEDS	43		51		40	
90 PERCENT EXCEEDS	19		16		16	

(a) Sept. 13, 14.
(b) Result of regulation due to bridge construction.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2001 to 2003, 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2001 to September 2003, June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2001 to September 2003, June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months after June 2004.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Nov. 4-7, 15-18, Mar. 21-25, 29-31, Apr. 28-30, May 30 to June 9, June 14-27, July 16, 23-30, Aug. 10-18, Aug. 27 to Sept. 1, Sept. 16-19, 25-30, rated good; July 31 to Aug. 3, rated fair; July 17-19, rated poor. pH and water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 13-16, Nov. 5-7, 15-18, Apr. 3, 4, 21-28, June 4, Aug. 24-27, rated good; Oct. 17-22, Apr. 5, 6, Aug. 28 to Sept. 1, rated fair; Oct. 23-25, June 5, 6, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,910 microsiemens, Aug. 12, 2001; minimum, 161 microsiemens, July 16, 2005.
pH: Maximum, 8.5 std. units, May 7, 8, 2005; minimum, 7.6 std. units, July 16, 17, 2005.
WATER TEMPERATURE: Maximum, 26.0°C, July 29, 2002; minimum, 0.0°C, on many days during winter periods in 2002, 2003.
DISSOLVED OXYGEN: Maximum, 14.9 mg/L, Mar. 26, 27, 2005; minimum, 6.3 mg/L, June 21, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,700 microsiemens, Aug. 11; minimum, 161 microsiemens, July 16.
pH: Maximum, 8.5 std. units, May 7, 8; minimum, 7.6 std. units, July 16, 17.
WATER TEMPERATURE: Maximum, 25.4°C, July 18; minimum, 2.0°C, Mar. 26.
DISSOLVED OXYGEN: Maximum, 14.9 mg/L, Mar. 26, 27; minimum, 6.3 mg/L, June 21.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	843	830	837	752	722	728	726	668	694	---	---	---
2	888	737	827	740	603	677	---	---	---	---	---	---
3	846	805	821	658	625	652	---	---	---	---	---	---
4	851	823	832	656	518	619	---	---	---	---	---	---
5	846	825	835	635	574	614	---	---	---	---	---	---
6	857	835	848	739	635	645	---	---	---	---	---	---
7	884	842	849	660	652	655	---	---	---	---	---	---
8	853	728	842	672	660	666	---	---	---	---	---	---
9	948	787	844	668	642	650	---	---	---	---	---	---
10	857	831	841	665	651	658	---	---	---	---	---	---
11	840	817	825	780	647	656	---	---	---	---	---	---
12	830	818	822	673	656	664	---	---	---	---	---	---
13	856	760	824	879	673	685	---	---	---	---	---	---
14	923	760	820	704	690	695	---	---	---	---	---	---
15	836	752	805	715	702	708	---	---	---	---	---	---
16	816	736	786	725	714	718	---	---	---	---	---	---
17	777	743	758	740	722	727	---	---	---	---	---	---
18	777	747	768	1040	729	742	---	---	---	---	---	---
19	788	776	779	753	736	741	---	---	---	---	---	---
20	807	773	785	966	683	754	---	---	---	---	---	---
21	1110	775	799	753	741	746	---	---	---	---	---	---
22	801	785	790	755	740	746	---	---	---	---	---	---
23	925	640	785	757	749	753	---	---	---	---	---	---
24	799	778	787	792	678	736	---	---	---	---	---	---
25	793	782	786	969	763	868	---	---	---	---	---	---
26	793	784	787	993	827	918	---	---	---	---	---	---
27	791	783	786	1080	831	858	---	---	---	---	---	---
28	1120	786	794	837	753	771	---	---	---	---	---	---
29	787	471	723	762	753	759	---	---	---	---	---	---
30	828	669	718	771	709	748	---	---	---	---	---	---
31	727	701	715	---	---	---	---	---	---	---	---	---
MONTH	1120	471	801	1080	518	719	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	685	656	670	676	667	670
2	---	---	---	---	---	---	739	666	711	695	674	685
3	---	---	---	---	---	---	737	712	723	705	695	700
4	---	---	---	---	---	---	712	692	701	714	702	706
5	---	---	---	---	---	---	704	682	698	839	705	715
6	---	---	---	---	---	---	760	680	704	720	700	711
7	---	---	---	---	---	---	801	689	713	919	707	720
8	---	---	---	---	---	---	720	696	712	717	703	709
9	---	---	---	---	---	---	875	704	729	715	703	710
10	---	---	---	---	---	---	741	711	725	717	706	713
11	---	---	---	---	---	---	740	729	732	728	712	719
12	---	---	---	---	---	---	754	737	743	991	722	736
13	---	---	---	---	---	---	856	754	774	---	---	---
14	---	---	---	---	---	---	1030	750	770	---	---	---
15	---	---	---	---	---	---	774	755	759	---	---	---
16	---	---	---	---	---	---	949	752	761	---	---	---
17	---	---	---	---	---	---	762	748	752	748	728	738
18	---	---	---	---	---	---	757	751	754	735	713	726
19	---	---	---	---	---	---	773	748	758	776	660	721
20	---	---	---	---	---	---	863	747	767	734	721	730
21	---	---	---	---	---	---	1050	772	796	940	718	731
22	---	---	---	819	778	810	845	793	816	754	717	726
23	---	---	---	792	777	786	1100	829	853	754	677	735
24	---	---	---	876	770	782	875	833	850	750	726	739
25	---	---	---	775	764	770	931	775	856	737	730	733
26	---	---	---	792	757	764	775	720	745	841	726	734
27	---	---	---	762	750	757	727	706	715	740	726	731
28	---	---	---	758	733	750	742	688	702	877	732	743
29	---	---	---	735	712	724	699	670	679	741	730	736
30	---	---	---	716	701	710	705	657	671	741	729	736
31	---	---	---	720	684	698	---	---	---	746	733	739
MONTH	---	---	---	---	---	---	1100	656	745	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	753	734	747	830	804	810	731	702	716	981	780	800
2	953	744	766	1310	798	818	752	730	740	802	756	792
3	776	758	770	810	679	799	787	737	764	1200	796	820
4	1070	767	796	822	580	768	1290	765	789	829	815	821
5	898	559	809	812	604	777	815	765	791	842	822	828
6	901	810	846	834	779	805	1480	792	823	885	819	829
7	820	792	802	1120	802	820	826	797	813	836	814	823
8	821	792	799	819	645	764	834	816	824	1080	599	811
9	1090	803	815	818	640	737	839	810	826	821	781	795
10	819	798	804	780	743	765	842	822	831	1110	785	804
11	986	789	803	776	769	773	1700	831	860	803	786	794
12	819	785	801	775	762	768	909	499	831	806	794	799
13	847	555	797	775	766	770	1490	834	862	830	803	815
14	854	653	813	1010	772	792	864	829	839	844	813	820
15	812	744	775	810	779	789	857	838	844	1210	809	831
16	823	749	759	1520	161	523	888	836	854	840	579	756
17	764	751	757	423	315	374	854	835	841	1010	762	807
18	1100	757	770	545	422	485	1280	829	851	833	797	810
19	770	759	763	---	---	---	839	824	832	824	805	815
20	778	767	772	---	---	---	1120	722	829	816	805	810
21	790	771	776	---	---	---	847	813	828	849	792	817
22	789	772	781	721	709	715	851	834	841	1180	247	677
23	1120	780	798	1090	715	740	850	834	838	613	425	529
24	792	781	788	780	340	606	854	838	843	1070	613	656
25	1150	752	803	674	575	636	1160	840	860	692	505	665
26	826	724	803	677	307	507	859	841	846	680	461	595
27	821	804	812	604	519	570	1270	475	798	691	615	671
28	843	790	808	690	604	622	763	695	722	731	504	694
29	817	792	799	651	629	637	788	733	770	1100	504	661
30	1320	685	817	903	639	659	799	779	788	720	683	706
31	---	---	---	702	671	688	781	768	776	---	---	---
MONTH	1320	555	792	---	---	---	1700	475	815	1210	247	762

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	8.1	8.1	8.1	8.0	8.0	8.2	8.1	8.2	---	---	---
2	8.2	8.0	8.1	8.0	8.0	8.0	---	---	---	---	---	---
3	8.2	8.0	8.1	8.1	8.0	8.0	---	---	---	---	---	---
4	8.2	8.0	8.1	8.1	7.9	8.0	---	---	---	---	---	---
5	8.2	8.1	8.2	8.2	8.1	8.2	---	---	---	---	---	---
6	8.2	8.1	8.2	8.2	8.1	8.2	---	---	---	---	---	---
7	8.2	8.1	8.2	8.2	8.1	8.2	---	---	---	---	---	---
8	8.3	8.1	8.1	8.3	8.2	8.2	---	---	---	---	---	---
9	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
10	8.2	8.1	8.1	8.3	8.2	8.2	---	---	---	---	---	---
11	8.2	8.1	8.1	8.3	8.2	8.2	---	---	---	---	---	---
12	8.2	8.1	8.1	8.3	8.2	8.2	---	---	---	---	---	---
13	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
14	8.1	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
15	8.1	8.0	8.0	8.3	8.2	8.2	---	---	---	---	---	---
16	8.1	8.0	8.0	8.3	8.1	8.2	---	---	---	---	---	---
17	8.1	8.0	8.1	8.2	8.2	8.2	---	---	---	---	---	---
18	8.1	8.0	8.1	8.4	8.1	8.2	---	---	---	---	---	---
19	8.1	8.1	8.1	8.4	8.2	8.2	---	---	---	---	---	---
20	8.1	8.0	8.1	8.3	8.1	8.2	---	---	---	---	---	---
21	8.1	8.0	8.1	8.4	8.2	8.3	---	---	---	---	---	---
22	8.2	8.0	8.1	8.4	8.2	8.2	---	---	---	---	---	---
23	8.1	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
24	8.1	8.0	8.0	8.3	8.2	8.2	---	---	---	---	---	---
25	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
26	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
27	8.2	8.0	8.1	8.3	8.1	8.2	---	---	---	---	---	---
28	8.2	8.0	8.1	8.3	8.2	8.2	---	---	---	---	---	---
29	8.0	7.9	8.0	8.3	8.2	8.2	---	---	---	---	---	---
30	8.0	7.9	8.0	8.3	8.2	8.2	---	---	---	---	---	---
31	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
MAX	8.3	8.1	8.2	8.4	8.2	8.3	---	---	---	---	---	---
MIN	8.0	7.9	8.0	8.0	7.9	8.0	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.1	8.2
2	---	---	---	---	---	---	8.2	8.1	8.1	8.4	8.1	8.2
3	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.1	8.2
4	---	---	---	---	---	---	8.4	8.1	8.2	8.4	8.1	8.3
5	---	---	---	---	---	---	8.4	8.1	8.2	8.4	8.1	8.2
6	---	---	---	---	---	---	8.3	8.1	8.1	8.4	8.1	8.3
7	---	---	---	---	---	---	8.3	8.0	8.1	8.5	8.1	8.3
8	---	---	---	---	---	---	8.3	8.1	8.1	8.5	8.1	8.3
9	---	---	---	---	---	---	8.3	8.1	8.1	8.4	8.1	8.3
10	---	---	---	---	---	---	8.2	8.1	8.1	8.4	8.1	8.2
11	---	---	---	---	---	---	8.3	8.1	8.1	8.3	8.1	8.2
12	---	---	---	---	---	---	8.2	8.1	8.1	8.4	8.1	8.3
13	---	---	---	---	---	---	8.2	8.1	8.2	---	---	---
14	---	---	---	---	---	---	8.2	8.1	8.2	---	---	---
15	---	---	---	---	---	---	8.2	8.1	8.2	---	---	---
16	---	---	---	---	---	---	8.2	8.1	8.1	---	---	---
17	---	---	---	---	---	---	8.2	8.1	8.1	8.3	8.1	8.2
18	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.1	8.2
19	---	---	---	---	---	---	8.3	8.1	8.2	8.2	8.1	8.1
20	---	---	---	---	---	---	8.3	8.1	8.2	8.2	8.0	8.1
21	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.0	8.1
22	---	---	---	8.2	7.9	8.0	8.2	8.1	8.2	8.2	8.0	8.1
23	---	---	---	8.1	7.9	8.0	8.2	8.1	8.1	8.1	7.9	8.0
24	---	---	---	8.2	8.0	8.0	8.2	8.1	8.1	8.1	8.0	8.1
25	---	---	---	8.2	8.0	8.1	8.1	8.1	8.1	8.2	8.0	8.1
26	---	---	---	8.2	8.0	8.1	8.1	8.1	8.1	8.2	8.0	8.1
27	---	---	---	8.2	8.0	8.1	8.2	8.1	8.1	8.1	8.0	8.1
28	---	---	---	8.2	8.0	8.1	8.3	8.1	8.2	8.2	8.0	8.1
29	---	---	---	8.3	8.0	8.1	8.3	8.1	8.2	8.2	8.0	8.1
30	---	---	---	8.4	8.1	8.2	8.3	8.1	8.2	8.2	8.0	8.1
31	---	---	---	8.3	8.1	8.1	---	---	---	8.2	8.0	8.1
MAX	---	---	---	---	---	---	8.4	8.1	8.2	---	---	---
MIN	---	---	---	---	---	---	8.1	8.0	8.1	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	8.0	8.1	8.2	8.0	8.1	8.0	7.9	8.0	8.2	8.0	8.1
2	8.2	8.0	8.1	8.2	8.0	8.1	8.0	7.9	8.0	8.2	8.1	8.1
3	8.1	8.0	8.1	8.2	8.1	8.1	8.2	8.0	8.1	8.2	8.0	8.1
4	8.2	8.0	8.1	8.2	8.0	8.1	8.2	8.0	8.1	8.2	8.1	8.1
5	8.2	8.0	8.0	8.1	8.0	8.0	8.3	8.1	8.1	8.2	8.1	8.1
6	8.1	7.9	8.0	8.2	8.0	8.1	8.3	8.0	8.1	8.2	8.1	8.1
7	8.1	7.9	8.0	8.2	8.0	8.1	8.3	8.1	8.2	8.2	8.1	8.1
8	8.1	8.0	8.0	8.2	7.9	8.1	8.4	8.1	8.2	8.2	8.0	8.1
9	8.2	7.9	8.0	8.1	7.9	8.0	8.4	8.1	8.2	8.2	8.1	8.1
10	8.2	8.0	8.1	8.1	8.0	8.1	8.3	8.1	8.2	8.2	7.9	8.1
11	8.2	8.0	8.0	8.2	8.0	8.1	8.3	8.0	8.1	8.2	8.1	8.1
12	8.2	8.0	8.0	8.2	8.1	8.1	8.2	8.0	8.1	8.2	8.1	8.1
13	8.0	7.9	8.0	8.3	8.1	8.1	8.2	7.9	8.1	8.2	8.1	8.1
14	8.1	7.9	8.0	8.3	8.0	8.1	8.2	8.0	8.1	8.2	8.1	8.1
15	8.0	7.9	7.9	8.3	8.1	8.1	8.3	8.1	8.1	8.3	8.0	8.2
16	8.1	7.9	8.0	8.1	7.6	7.8	8.3	8.1	8.1	8.2	8.0	8.1
17	8.1	8.0	8.1	7.9	7.6	7.8	8.3	8.1	8.2	8.2	8.0	8.1
18	8.1	8.0	8.1	8.0	7.7	7.8	8.3	8.0	8.2	8.2	8.0	8.1
19	8.1	8.0	8.1	8.0	7.8	7.9	8.3	8.1	8.2	8.2	8.1	8.1
20	8.2	8.0	8.1	8.1	7.8	8.0	8.2	8.0	8.1	8.2	8.1	8.1
21	8.2	8.0	8.1	8.1	7.9	8.0	8.3	8.1	8.2	8.2	8.1	8.1
22	8.3	8.1	8.2	8.2	8.0	8.1	8.3	8.1	8.2	8.2	7.8	8.1
23	8.3	8.1	8.2	8.2	8.0	8.1	8.3	8.1	8.2	8.0	7.8	7.9
24	8.3	8.1	8.1	8.1	7.9	7.9	8.3	8.1	8.2	8.1	7.9	8.0
25	8.3	8.0	8.1	8.1	7.9	8.0	8.3	8.1	8.2	8.1	8.0	8.0
26	8.3	8.0	8.1	8.1	7.8	7.8	8.3	8.1	8.2	8.0	7.9	8.0
27	8.2	8.1	8.1	8.0	7.9	7.9	8.3	8.0	8.1	8.1	8.0	8.0
28	8.2	8.0	8.1	8.0	7.9	8.0	8.2	8.0	8.1	8.1	8.0	8.0
29	8.2	8.0	8.1	7.9	7.9	7.9	8.3	8.1	8.1	8.1	7.9	8.0
30	8.1	8.0	8.1	8.0	7.8	7.9	8.2	8.1	8.1	8.1	8.0	8.0
31	---	---	---	8.0	7.9	8.0	8.2	8.1	8.1	---	---	---
MAX	8.3	8.1	8.2	8.3	8.1	8.1	8.4	8.1	8.2	8.3	8.1	8.2
MIN	8.0	7.9	7.9	7.9	7.6	7.8	8.0	7.9	8.0	8.0	7.8	7.9

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.9	10.6	11.9	11.2	9.8	10.3	5.0	4.0	4.6	---	---	---
2	13.4	11.6	12.8	10.3	9.6	10.0	---	---	---	---	---	---
3	11.9	9.8	11.0	9.9	8.8	9.5	---	---	---	---	---	---
4	11.7	10.1	11.0	9.1	8.5	8.9	---	---	---	---	---	---
5	10.3	8.5	9.5	8.5	7.5	7.9	---	---	---	---	---	---
6	11.1	8.1	9.6	9.0	7.5	8.2	---	---	---	---	---	---
7	12.7	10.4	11.4	9.6	8.1	8.7	---	---	---	---	---	---
8	14.4	10.5	12.1	8.1	5.9	7.0	---	---	---	---	---	---
9	14.2	12.6	13.6	6.2	5.1	5.7	---	---	---	---	---	---
10	12.6	11.1	11.9	7.6	5.3	6.4	---	---	---	---	---	---
11	11.7	10.0	10.8	8.2	6.7	7.7	---	---	---	---	---	---
12	11.2	9.3	10.2	6.7	5.1	5.9	---	---	---	---	---	---
13	11.8	9.6	10.7	5.7	4.4	5.0	---	---	---	---	---	---
14	11.8	11.3	11.6	5.2	3.4	4.3	---	---	---	---	---	---
15	11.7	11.1	11.4	5.3	3.5	4.5	---	---	---	---	---	---
16	11.1	9.5	10.4	7.6	5.3	6.6	---	---	---	---	---	---
17	9.5	8.4	8.9	9.0	7.6	8.4	---	---	---	---	---	---
18	8.5	7.6	8.1	10.6	8.8	9.6	---	---	---	---	---	---
19	9.1	8.3	8.7	9.7	9.2	9.5	---	---	---	---	---	---
20	10.1	9.1	9.6	10.2	9.1	9.6	---	---	---	---	---	---
21	10.6	9.9	10.2	9.7	8.1	9.0	---	---	---	---	---	---
22	11.4	10.2	10.8	8.1	6.7	7.2	---	---	---	---	---	---
23	12.1	10.6	11.2	7.8	6.6	7.2	---	---	---	---	---	---
24	11.9	11.5	11.7	7.3	4.4	6.2	---	---	---	---	---	---
25	12.8	11.3	11.9	4.4	3.5	3.8	---	---	---	---	---	---
26	11.8	10.4	11.2	4.5	3.4	3.9	---	---	---	---	---	---
27	12.6	11.2	11.8	5.8	4.5	5.2	---	---	---	---	---	---
28	12.0	10.5	11.3	5.8	4.5	5.5	---	---	---	---	---	---
29	12.5	11.4	12.0	4.5	3.8	4.2	---	---	---	---	---	---
30	14.6	12.5	13.6	5.0	4.3	4.6	---	---	---	---	---	---
31	13.2	11.2	12.2	---	---	---	---	---	---	---	---	---
MONTH	14.6	7.6	11.1	11.2	3.4	7.0	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	7.2	5.2	6.3	9.9	8.1	9.2
2	---	---	---	---	---	---	6.8	4.5	5.5	9.9	8.5	9.3
3	---	---	---	---	---	---	6.5	3.5	5.0	8.9	7.5	7.9
4	---	---	---	---	---	---	8.0	4.6	6.5	11.0	6.6	8.9
5	---	---	---	---	---	---	9.8	5.9	8.0	12.4	8.8	10.6
6	---	---	---	---	---	---	11.5	8.3	9.9	12.7	9.5	11.3
7	---	---	---	---	---	---	11.3	8.8	10.3	15.1	11.6	13.4
8	---	---	---	---	---	---	10.6	7.0	8.8	15.4	12.2	13.9
9	---	---	---	---	---	---	10.8	7.7	9.4	16.4	13.2	14.8
10	---	---	---	---	---	---	11.6	8.5	10.1	17.6	14.7	16.1
11	---	---	---	---	---	---	12.3	9.6	10.9	16.2	12.7	14.8
12	---	---	---	---	---	---	10.7	8.6	9.6	13.9	11.0	12.5
13	---	---	---	---	---	---	11.1	7.5	9.2	---	---	---
14	---	---	---	---	---	---	11.9	8.1	9.8	---	---	---
15	---	---	---	---	---	---	12.2	8.4	10.2	---	---	---
16	---	---	---	---	---	---	12.9	8.6	10.7	---	---	---
17	---	---	---	---	---	---	12.3	10.3	11.2	13.7	11.4	12.5
18	---	---	---	---	---	---	14.5	9.9	12.2	15.0	11.7	13.3
19	---	---	---	---	---	---	16.5	11.9	14.2	13.9	12.5	13.2
20	---	---	---	---	---	---	15.8	11.8	14.2	15.6	11.6	13.7
21	---	---	---	---	---	---	13.5	9.6	11.5	16.3	13.1	14.8
22	---	---	---	5.2	2.3	3.7	11.0	8.9	9.9	15.1	13.7	14.4
23	---	---	---	3.8	2.3	2.7	9.2	5.5	7.5	13.7	12.6	13.2
24	---	---	---	4.8	2.3	3.4	5.5	3.4	4.2	13.2	12.0	12.7
25	---	---	---	5.0	3.0	4.0	8.9	3.4	6.0	15.7	11.8	13.7
26	---	---	---	4.8	2.0	3.6	8.9	8.0	8.3	16.0	13.6	14.9
27	---	---	---	4.6	2.7	3.9	9.3	7.5	8.4	16.3	14.0	15.2
28	---	---	---	6.6	3.2	4.9	10.2	7.3	8.9	16.3	14.0	15.0
29	---	---	---	6.9	3.8	5.6	11.6	8.2	9.9	15.8	13.7	14.8
30	---	---	---	8.0	5.1	6.8	10.8	9.2	9.9	16.4	14.1	15.2
31	---	---	---	7.7	6.3	7.2	---	---	---	17.9	14.9	16.4
MONTH	---	---	---	---	---	---	16.5	3.4	9.2	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.2	15.0	16.7	20.9	18.6	19.8	22.7	19.8	21.3	19.7	17.3	18.5
2	18.6	15.5	17.1	19.6	16.5	18.0	23.3	20.3	21.9	19.2	16.9	18.0
3	17.6	16.4	17.1	19.4	16.0	17.7	23.4	20.7	22.1	18.4	16.3	17.4
4	18.4	15.5	17.0	21.2	17.0	18.9	22.5	21.1	21.8	17.9	15.5	16.7
5	22.1	16.6	18.7	21.3	19.1	20.0	22.5	20.4	21.4	17.9	15.2	16.5
6	21.4	18.5	19.9	19.5	17.4	18.3	21.8	18.9	20.3	18.2	15.3	16.7
7	21.7	18.3	20.0	18.8	16.1	17.5	21.6	18.7	20.2	18.3	15.9	17.2
8	22.4	18.6	20.5	19.7	16.9	17.8	21.7	19.0	20.3	19.1	17.4	18.3
9	21.9	19.1	20.7	19.9	16.6	18.2	22.2	19.6	21.0	19.0	16.9	17.9
10	23.0	19.4	21.3	20.8	17.1	19.0	22.1	20.4	21.2	18.3	15.6	17.0
11	22.2	20.6	21.5	21.5	17.9	19.7	21.2	19.9	20.5	18.3	15.7	17.0
12	21.3	19.9	20.6	21.2	19.0	20.1	21.8	19.7	20.9	19.0	16.3	17.6
13	21.2	19.7	20.3	22.1	19.4	20.7	21.2	20.0	20.6	19.6	16.9	18.3
14	22.6	19.0	20.3	22.8	19.8	21.2	20.3	19.2	19.6	19.3	18.3	18.8
15	20.6	18.7	19.8	22.1	20.0	21.1	20.4	17.9	19.2	18.3	16.9	17.5
16	18.7	16.6	17.8	23.4	20.3	21.6	20.0	17.7	19.0	17.7	16.2	16.7
17	16.7	15.5	16.0	23.7	21.6	22.6	20.7	17.7	19.2	17.2	16.0	16.5
18	16.2	15.0	15.5	25.4	23.2	24.0	19.9	17.8	19.0	17.7	15.3	16.4
19	16.8	14.0	15.4	24.2	23.0	23.6	21.7	18.9	20.1	17.1	15.5	16.3
20	18.2	14.6	16.5	23.8	21.7	22.9	20.7	19.0	20.1	17.9	16.0	16.9
21	18.1	15.8	17.1	24.5	22.7	23.6	20.8	18.9	19.7	17.8	15.4	16.6
22	19.3	16.0	17.6	24.9	22.8	23.9	19.1	17.0	17.8	19.2	15.8	17.0
23	18.6	14.8	16.9	23.1	20.7	22.0	17.4	16.1	16.8	18.3	16.4	17.5
24	20.7	16.5	18.7	23.4	20.8	22.3	18.0	14.9	16.5	16.9	15.3	16.1
25	22.4	19.1	20.7	24.7	23.1	23.8	17.4	15.6	16.6	19.4	16.1	17.2
26	22.0	18.9	20.6	24.0	23.0	23.5	19.2	16.4	17.8	18.7	17.3	18.3
27	22.2	19.5	20.9	23.6	21.6	22.3	20.9	18.0	19.2	17.3	15.2	16.2
28	22.0	20.0	20.9	21.6	20.1	21.0	20.5	18.0	19.3	16.7	13.9	15.2
29	21.6	19.5	20.5	21.7	20.2	21.0	20.6	18.0	19.3	16.6	13.3	14.9
30	21.7	19.0	20.3	21.5	19.9	20.7	19.6	18.4	19.1	13.5	11.9	12.8
31	---	---	---	21.5	18.9	20.2	19.6	18.4	18.9	---	---	---
MONTH	23.0	14.0	18.9	25.4	16.0	20.9	23.4	14.9	19.7	19.7	11.9	16.9

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	9.3	10.0	10.9	9.4	10.1	12.4	11.7	12.1	---	---	---
2	10.1	8.8	9.4	10.0	9.6	9.9	---	---	---	---	---	---
3	10.8	9.5	10.0	10.9	10.0	10.5	---	---	---	---	---	---
4	11.0	9.5	10.0	10.6	10.0	10.4	---	---	---	---	---	---
5	11.3	9.9	10.4	11.2	10.3	10.7	---	---	---	---	---	---
6	11.2	9.6	10.3	11.2	10.4	10.7	---	---	---	---	---	---
7	10.9	9.3	10.0	11.1	10.4	10.6	---	---	---	---	---	---
8	11.0	8.6	9.8	12.0	10.6	11.3	---	---	---	---	---	---
9	9.8	8.3	9.0	12.6	11.5	12.0	---	---	---	---	---	---
10	10.4	9.0	9.6	12.4	10.9	11.7	---	---	---	---	---	---
11	10.9	9.5	10.1	11.9	10.8	11.2	---	---	---	---	---	---
12	11.0	9.6	10.2	12.7	11.3	12.0	---	---	---	---	---	---
13	11.1	9.1	10.1	13.1	12.0	12.5	---	---	---	---	---	---
14	9.9	9.1	9.4	13.5	12.4	12.8	---	---	---	---	---	---
15	9.7	9.0	9.2	13.6	12.1	12.8	---	---	---	---	---	---
16	10.3	9.1	9.6	12.8	11.2	12.0	---	---	---	---	---	---
17	10.9	9.5	10.2	11.8	10.6	11.1	---	---	---	---	---	---
18	11.4	10.3	10.7	12.4	10.0	10.9	---	---	---	---	---	---
19	11.0	10.1	10.5	11.7	10.0	10.5	---	---	---	---	---	---
20	10.9	9.8	10.2	11.5	10.0	10.4	---	---	---	---	---	---
21	10.7	9.6	10.0	12.2	10.0	10.9	---	---	---	---	---	---
22	11.2	9.6	10.2	12.8	10.6	11.4	---	---	---	---	---	---
23	10.5	8.9	9.7	11.8	10.8	11.2	---	---	---	---	---	---
24	10.2	9.2	9.6	11.6	10.8	11.2	---	---	---	---	---	---
25	10.7	9.1	9.8	13.1	11.6	12.4	---	---	---	---	---	---
26	10.8	9.2	9.8	13.3	12.0	12.5	---	---	---	---	---	---
27	10.7	9.2	9.7	12.6	11.4	11.9	---	---	---	---	---	---
28	10.8	9.2	9.7	12.3	11.4	11.8	---	---	---	---	---	---
29	9.4	8.9	9.2	13.4	12.0	12.6	---	---	---	---	---	---
30	9.2	8.5	8.8	12.7	11.8	12.2	---	---	---	---	---	---
31	9.9	8.7	9.3	---	---	---	---	---	---	---	---	---
MONTH	11.4	8.3	9.8	13.6	9.4	11.4	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.9	11.2	12.4	11.9	10.1	10.9
2	---	---	---	---	---	---	13.2	11.4	12.3	12.1	10.1	11.0
3	---	---	---	---	---	---	14.4	11.8	13.0	12.3	10.4	11.3
4	---	---	---	---	---	---	14.2	11.4	12.7	12.8	10.1	11.5
5	---	---	---	---	---	---	13.9	10.8	12.3	12.6	9.8	11.0
6	---	---	---	---	---	---	13.3	9.7	11.4	12.5	9.4	10.8
7	---	---	---	---	---	---	12.0	9.6	10.6	12.0	9.0	10.2
8	---	---	---	---	---	---	12.6	10.2	11.3	12.1	8.9	10.2
9	---	---	---	---	---	---	12.3	10.1	11.0	12.0	8.6	10.0
10	---	---	---	---	---	---	12.0	9.8	10.8	11.2	8.3	9.4
11	---	---	---	---	---	---	11.6	9.8	10.5	10.8	8.3	9.4
12	---	---	---	---	---	---	11.9	10.0	10.8	12.5	9.4	10.7
13	---	---	---	---	---	---	11.7	10.2	10.8	---	---	---
14	---	---	---	---	---	---	11.6	10.0	10.7	---	---	---
15	---	---	---	---	---	---	11.7	10.0	10.7	---	---	---
16	---	---	---	---	---	---	11.5	9.7	10.6	---	---	---
17	---	---	---	---	---	---	11.1	9.8	10.2	11.9	9.3	10.3
18	---	---	---	---	---	---	11.1	9.0	10.1	11.8	9.0	10.2
19	---	---	---	---	---	---	10.6	8.5	9.5	10.5	8.9	9.6
20	---	---	---	---	---	---	10.1	8.5	9.2	11.1	8.7	9.8
21	---	---	---	---	---	---	11.4	9.3	10.2	10.8	8.6	9.5
22	---	---	---	14.4	12.3	13.1	11.4	9.5	10.4	9.8	8.5	9.1
23	---	---	---	14.3	12.3	13.2	11.7	10.0	11.0	9.4	8.9	9.2
24	---	---	---	14.7	12.2	13.4	12.8	11.5	12.3	10.3	9.3	9.6
25	---	---	---	14.7	12.2	13.3	12.8	10.3	11.9	10.5	8.7	9.6
26	---	---	---	14.9	12.3	13.5	11.0	10.3	10.7	10.1	8.5	9.1
27	---	---	---	14.9	12.3	13.4	11.5	10.4	10.9	9.9	8.5	9.0
28	---	---	---	14.6	11.6	13.0	12.0	10.1	11.0	10.1	8.6	9.1
29	---	---	---	14.5	11.0	12.7	11.7	9.8	10.7	9.9	8.6	9.1
30	---	---	---	13.7	10.8	12.1	11.6	9.8	10.6	9.9	7.8	9.0
31	---	---	---	12.9	10.8	11.6	---	---	---	9.8	8.2	8.8
MONTH	---	---	---	---	---	---	14.4	8.5	11.0	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.6	8.1	8.7	8.8	7.5	8.1	9.0	8.1	8.5	9.9	8.1	9.0
2	9.5	7.8	8.5	9.5	7.8	8.5	9.1	7.9	8.4	9.7	8.1	8.7
3	8.7	7.7	8.1	9.7	8.1	8.7	9.3	7.8	8.4	9.9	8.3	8.9
4	9.0	7.5	8.2	9.7	7.3	8.5	9.3	7.8	8.3	10.4	8.5	9.2
5	10.0	7.1	8.4	8.7	7.2	7.8	9.8	7.9	8.6	10.1	8.7	9.2
6	8.6	7.2	7.8	9.1	7.4	8.2	10.4	8.1	9.0	10.2	8.6	9.2
7	---	---	---	9.6	8.0	8.6	10.5	8.1	9.0	10.2	8.4	9.1
8	---	---	---	9.6	6.8	8.2	11.0	8.0	9.1	9.5	8.1	8.7
9	---	---	---	9.0	7.1	8.2	11.0	7.8	9.1	9.5	8.4	8.8
10	8.7	6.9	7.7	---	---	---	10.5	7.8	8.8	9.9	8.5	9.0
11	8.5	6.9	7.4	---	---	---	10.6	7.8	8.9	10.1	8.5	9.1
12	8.7	7.1	7.7	---	---	---	9.5	7.7	8.4	10.1	8.5	9.1
13	7.6	6.8	7.4	---	---	---	9.7	7.8	8.6	10.0	8.2	8.9
14	8.4	7.0	7.6	---	---	---	10.1	8.0	8.8	9.4	8.2	8.6
15	7.8	6.4	7.2	9.9	7.8	8.6	10.2	8.4	9.1	10.0	8.3	9.0
16	8.3	6.5	7.7	---	---	---	10.3	8.4	9.1	9.4	8.3	8.8
17	9.0	7.6	8.2	---	---	---	10.4	8.4	9.1	9.9	8.8	9.2
18	9.1	7.7	8.5	---	---	---	10.6	8.1	9.1	10.2	8.8	9.2
19	9.3	6.9	8.4	---	---	---	10.1	8.0	8.7	10.4	8.4	9.2
20	9.2	7.6	8.2	---	---	---	9.8	7.8	8.5	9.5	8.4	8.7
21	9.5	6.3	8.2	---	---	---	10.1	7.9	8.7	9.7	8.4	8.9
22	---	---	---	8.1	7.5	7.7	10.7	8.2	9.3	9.1	8.2	8.6
23	---	---	---	8.7	7.6	8.1	10.8	8.9	9.6	8.7	8.2	8.5
24	---	---	---	8.3	7.4	7.8	10.8	8.9	9.7	9.2	8.7	8.9
25	---	---	---	8.0	7.5	7.7	11.2	9.0	9.8	9.0	8.3	8.6
26	---	---	---	8.1	7.3	7.5	11.0	8.5	9.5	8.5	8.3	8.4
27	9.6	7.4	8.3	8.2	7.5	8.0	9.2	8.5	8.8	9.3	8.5	8.9
28	9.0	7.3	8.0	8.6	8.1	8.3	9.6	8.4	9.0	9.5	8.5	9.0
29	9.4	7.5	8.1	8.6	8.1	8.3	10.1	8.5	9.1	9.5	8.7	9.2
30	8.9	7.2	7.9	8.7	8.1	8.5	9.8	8.5	9.0	10.1	9.4	9.7
31	---	---	---	9.2	8.2	8.7	10.2	8.5	9.1	---	---	---
MONTH	---	---	---	---	---	---	11.2	7.7	8.9	10.4	8.1	8.9

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1070	717	746	---	---	---	---	---	---	---	---	---
2	745	737	742	---	---	---	---	---	---	---	---	---
3	750	393	700	---	---	---	---	---	---	---	---	---
4	749	735	742	---	---	---	---	---	---	---	---	---
5	772	741	746	---	---	---	---	---	---	---	---	---
6	1240	749	769	---	---	---	---	---	---	---	---	---
7	761	747	753	---	---	---	---	---	---	---	---	---
8	1010	752	764	---	---	---	---	---	---	---	---	---
9	777	759	768	---	---	---	---	---	---	---	---	---
10	797	769	784	---	---	---	---	---	---	---	---	---
11	796	760	780	---	---	---	---	---	---	---	---	---
12	760	730	740	---	---	---	---	---	---	---	---	---
13	880	726	734	---	---	---	---	---	---	---	---	---
14	736	729	732	---	---	---	---	---	---	---	---	---
15	856	734	745	---	---	---	---	---	---	---	---	---
16	774	751	759	---	---	---	---	---	---	---	---	---
17	796	765	774	---	---	---	---	---	---	---	---	---
18	791	777	783	---	---	---	---	---	---	---	---	---
19	816	778	796	---	---	---	---	---	---	---	---	---
20	1350	802	829	---	---	---	---	---	---	---	---	---
21	822	809	815	---	---	---	---	---	---	---	---	---
22	1210	810	838	---	---	---	---	---	---	---	---	---
23	827	819	823	---	---	---	---	---	---	---	---	---
24	844	817	826	---	---	---	---	---	---	---	---	---
25	832	816	827	---	---	---	---	---	---	---	---	---
26	831	815	822	---	---	---	---	---	---	---	---	---
27	1260	808	827	---	---	---	---	---	---	---	---	---
28	816	806	810	---	---	---	---	---	---	---	---	---
29	1220	801	820	---	---	---	---	---	---	---	---	---
30	820	806	813	---	---	---	---	---	---	---	---	---
31	834	803	809	---	---	---	---	---	---	---	---	---
MONTH	1350	393	781	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	7.9	8.1	---	---	---	---	---	---	---	---	---
2	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
3	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
4	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
5	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
6	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
7	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
8	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
9	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
10	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
11	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
12	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
13	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
14	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
15	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
16	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
17	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
18	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
19	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
20	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
21	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
22	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
23	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
24	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
25	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
26	8.2	8.0	8.0	---	---	---	---	---	---	---	---	---
27	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
28	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
29	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
30	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
31	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
MAX	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
MIN	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161540 PAINT CREEK AT ROCHESTER, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	11.8	13.2	---	---	---	---	---	---	---	---	---
2	15.8	13.1	14.5	---	---	---	---	---	---	---	---	---
3	18.2	15.4	17.1	---	---	---	---	---	---	---	---	---
4	18.8	16.7	17.7	---	---	---	---	---	---	---	---	---
5	18.4	16.4	17.5	---	---	---	---	---	---	---	---	---
6	18.1	16.2	17.0	---	---	---	---	---	---	---	---	---
7	16.2	13.2	14.6	---	---	---	---	---	---	---	---	---
8	13.2	11.7	12.4	---	---	---	---	---	---	---	---	---
9	12.2	10.5	11.4	---	---	---	---	---	---	---	---	---
10	12.3	11.4	11.8	---	---	---	---	---	---	---	---	---
11	13.1	12.2	12.7	---	---	---	---	---	---	---	---	---
12	14.1	13.0	13.6	---	---	---	---	---	---	---	---	---
13	15.1	13.9	14.4	---	---	---	---	---	---	---	---	---
14	15.3	13.6	14.5	---	---	---	---	---	---	---	---	---
15	14.5	12.9	13.8	---	---	---	---	---	---	---	---	---
16	12.9	11.3	12.1	---	---	---	---	---	---	---	---	---
17	11.3	9.7	10.8	---	---	---	---	---	---	---	---	---
18	12.1	10.5	11.3	---	---	---	---	---	---	---	---	---
19	12.0	10.3	11.1	---	---	---	---	---	---	---	---	---
20	10.4	8.7	9.7	---	---	---	---	---	---	---	---	---
21	10.0	8.3	9.1	---	---	---	---	---	---	---	---	---
22	9.7	8.4	9.0	---	---	---	---	---	---	---	---	---
23	9.0	7.8	8.5	---	---	---	---	---	---	---	---	---
24	8.9	7.7	8.4	---	---	---	---	---	---	---	---	---
25	9.1	8.2	8.6	---	---	---	---	---	---	---	---	---
26	8.9	7.5	8.1	---	---	---	---	---	---	---	---	---
27	7.9	6.5	7.4	---	---	---	---	---	---	---	---	---
28	8.1	6.7	7.4	---	---	---	---	---	---	---	---	---
29	7.9	5.7	6.9	---	---	---	---	---	---	---	---	---
30	8.1	5.9	7.1	---	---	---	---	---	---	---	---	---
31	10.2	7.9	9.0	---	---	---	---	---	---	---	---	---
MONTH	18.8	5.7	11.6	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.1	9.2	9.7	---	---	---	---	---	---	---	---	---
2	10.2	9.0	9.6	---	---	---	---	---	---	---	---	---
3	9.5	8.6	9.0	---	---	---	---	---	---	---	---	---
4	9.6	8.4	8.9	---	---	---	---	---	---	---	---	---
5	9.6	8.3	8.8	---	---	---	---	---	---	---	---	---
6	9.7	8.4	8.8	---	---	---	---	---	---	---	---	---
7	10.3	8.5	9.3	---	---	---	---	---	---	---	---	---
8	10.9	9.2	9.9	---	---	---	---	---	---	---	---	---
9	11.0	9.7	10.2	---	---	---	---	---	---	---	---	---
10	10.9	9.6	10.1	---	---	---	---	---	---	---	---	---
11	11.0	9.5	10.0	---	---	---	---	---	---	---	---	---
12	10.6	9.2	9.7	---	---	---	---	---	---	---	---	---
13	10.5	9.0	9.5	---	---	---	---	---	---	---	---	---
14	10.6	9.0	9.5	---	---	---	---	---	---	---	---	---
15	10.4	9.0	9.5	---	---	---	---	---	---	---	---	---
16	11.0	9.1	9.9	---	---	---	---	---	---	---	---	---
17	11.5	9.7	10.3	---	---	---	---	---	---	---	---	---
18	10.9	9.6	10.0	---	---	---	---	---	---	---	---	---
19	11.2	9.6	10.2	---	---	---	---	---	---	---	---	---
20	11.7	9.8	10.6	---	---	---	---	---	---	---	---	---
21	11.7	10.2	10.7	---	---	---	---	---	---	---	---	---
22	12.0	10.2	10.8	---	---	---	---	---	---	---	---	---
23	11.9	10.2	10.8	---	---	---	---	---	---	---	---	---
24	11.9	10.1	10.9	---	---	---	---	---	---	---	---	---
25	11.7	10.0	10.5	---	---	---	---	---	---	---	---	---
26	12.0	10.0	10.8	---	---	---	---	---	---	---	---	---
27	12.4	10.7	11.3	---	---	---	---	---	---	---	---	---
28	12.3	10.9	11.4	---	---	---	---	---	---	---	---	---
29	12.3	10.9	11.4	---	---	---	---	---	---	---	---	---
30	12.4	10.7	11.4	---	---	---	---	---	---	---	---	---
31	12.1	9.9	10.9	---	---	---	---	---	---	---	---	---
MONTH	12.4	8.3	10.1	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161580 STONY CREEK NEAR ROMEO, MI

LOCATION.--Lat 42°48'03", long 83°05'25", in SW1/4 sec.31, T.5 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on right bank at upstream side of culvert on 32 Mile Road, 4.0 mi west of Romeo.

DRAINAGE AREA.--25.6 mi^2.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 861.64 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	13	26	40	e15	e21	50	28	6.9	4.7	7.1	3.2
2	2.9	27	23	43	e15	e20	44	24	6.3	4.0	3.6	2.5
3	2.9	22	18	55	e14	e20	38	21	6.7	3.5	3.0	2.2
4	2.8	25	15	e48	14	e19	31	20	8.5	4.0	2.7	2.6
5	2.7	25	15	e39	14	19	27	20	8.1	5.3	3.0	2.4
6	2.6	19	14	e32	14	20	25	17	11	5.2	4.1	2.4
7	2.3	16	29	e29	16	28	22	16	12	4.5	2.8	2.3
8	2.4	12	45	e26	21	32	16	14	10	6.8	2.4	3.3
9	3.9	10	34	e25	22	e28	14	13	6.3	19	2.3	2.9
10	4.2	9.2	29	e24	21	e25	13	13	5.9	9.4	2.2	1.5
11	3.5	9.1	29	23	19	23	12	13	5.8	6.6	2.3	2.8
12	2.7	6.3	26	31	18	22	11	13	6.5	6.3	3.2	2.9
13	2.7	5.4	26	69	17	21	11	14	11	5.5	3.0	2.3
14	4.4	8.2	22	e86	31	19	10	18	12	5.0	2.9	2.1
15	4.9	7.0	18	e76	55	18	9.4	18	12	4.5	2.7	1.8
16	8.7	4.1	17	e59	79	17	8.5	16	11	15	2.5	2.7
17	8.1	5.3	15	e40	e70	18	8.1	14	9.8	19	2.3	3.0
18	6.7	5.9	15	e30	e51	18	9.1	13	9.1	13	2.6	3.2
19	5.4	4.9	14	e24	e43	19	8.4	13	7.8	10	2.2	2.2
20	5.1	8.5	e13	e22	40	23	9.4	14	6.7	6.7	2.5	2.0
21	4.9	15	e13	e19	36	24	9.8	12	6.5	8.2	2.8	1.9
22	4.8	9.0	e13	e18	33	28	9.7	11	6.4	6.5	2.4	5.1
23	5.9	11	e12	e17	30	32	14	13	5.3	6.2	2.2	13
24	7.3	12	e12	e16	28	30	23	14	5.0	11	2.4	6.0
25	5.6	16	e12	e16	25	34	36	12	4.5	12	2.1	5.0
26	4.9	12	e11	e16	e24	35	50	11	5.3	26	2.2	12
27	6.2	16	e11	e16	e22	37	52	10	5.1	42	5.6	11
28	9.8	22	e11	e16	e21	41	46	9.4	4.7	34	5.9	6.9
29	13	15	e11	e15	---	49	38	9.2	5.3	25	3.3	11
30	20	14	e13	e15	---	54	32	8.3	5.0	20	3.1	8.7
31	16	---	32	e15	---	56	---	7.9	---	16	3.2	---
TOTAL	179.5	384.9	594	1000	808	850	687.4	449.8	226.5	364.9	94.6	130.9
MEAN	5.79	12.8	19.2	32.3	28.9	27.4	22.9	14.5	7.55	11.8	3.05	4.36
MAX	20	27	45	86	79	56	52	28	12	42	7.1	13
MIN	2.2	4.1	11	15	14	17	8.1	7.9	4.5	3.5	2.1	1.5
CFSM	0.23	0.50	0.75	1.26	1.13	1.07	0.90	0.57	0.29	0.46	0.12	0.17
IN.	0.26	0.56	0.86	1.45	1.17	1.24	1.00	0.65	0.33	0.53	0.14	0.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2005, BY WATER YEAR (WY)

MEAN	10.3	15.4	17.1	16.3	20.9	33.5	32.2	19.6	13.7	7.97	6.55	8.64
MAX	25.1	46.2	41.3	47.7	62.9	79.7	75.1	57.1	49.5	20.0	48.5	41.2
(WY)	1982	1986	1976	1973	1976	1976	1975	1974	1996	1969	1975	1975
MIN	1.79	2.06	3.56	3.77	3.50	8.40	8.05	5.82	2.67	1.47	1.63	1.52
(WY)	1967	1965	1965	2003	2003	2000	2004	1977	1988	1965	1965	1966

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1965 - 2005	
ANNUAL TOTAL	5737.9		5770.5			
ANNUAL MEAN	15.7		15.8		16.8	
HIGHEST ANNUAL MEAN					31.5	1975
LOWEST ANNUAL MEAN					8.63	2003
HIGHEST DAILY MEAN	219	May 24	86	Jan 14	245	Apr 20 1975
LOWEST DAILY MEAN	1.9	Sep 22	1.5	Sep 10	0.92	Oct 9 1966
ANNUAL SEVEN-DAY MINIMUM	2.2	Sep 19	2.3	Sep 10	1.2	Sep 13 1966
MAXIMUM PEAK FLOW			(a)90	Jan 14	290	Apr 19 1975
MAXIMUM PEAK STAGE			(b)3.39	Jan 15	5.19	Apr 19 1975
INSTANTANEOUS LOW FLOW			(c)0.48	Sep 10	(c)0.48	Sep 10 2005
ANNUAL RUNOFF (CFSM)	0.612		0.618		0.657	
ANNUAL RUNOFF (INCHES)	8.34		8.39		8.93	
10 PERCENT EXCEEDS	29		33		36	
50 PERCENT EXCEEDS	9.8		12		11	
90 PERCENT EXCEEDS	3.7		2.7		3.2	

(a) Gage height 3.17 ft.
(b) Backwater from ice.
(c) Result of regulation from unknown source.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161790 STONY LAKE NEAR WASHINGTON, MI

LOCATION.--Lat 42°42'58", long 83°05'58", in SE1/4 sec.31, T.4 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on left bank 1,000 ft east of bridge over dam on Stony Creek, 2.7 mi west of Washington.

DRAINAGE AREA.--68.0 mi^2.

PERIOD OF RECORD.--February 1963 to current year. Prior to October 1996 monthend elevations and contents only.

REVISED RECORDS.--WDR MI-77-1: 1976.

GAGE.--Water-stage recorder. Datum of gage is 790.00 ft above sea level (levels by Huron-Clinton Metropolitan Authority).

REMARKS.--Records good. Lake is formed by an earthfill dam with concrete spillway completed in 1962. The spillway section includes a drum gate and 2 sluices, one on each side, with valve controls capable of draining lake. The lake began filling February 1963 and is used for recreational purposes.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 13.77 ft, May 24, 2004; minimum recorded, 4.71 ft, Nov. 21, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 12.49 ft, Apr. 28; minimum, 9.37 ft, Feb. 5-7.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.08	12.27	10.07	10.07	9.38	9.53	9.77	12.35	12.20	12.09	12.31	12.09
2	12.10	12.30	10.08	10.11	9.38	9.50	9.76	12.30	12.18	12.07	12.26	12.09
3	12.09	12.31	10.07	10.12	9.38	9.47	9.70	12.25	12.17	12.07	12.22	12.08
4	12.09	12.37	10.03	10.13	9.38	9.46	9.64	12.21	12.16	12.06	12.19	12.08
5	12.08	12.37	10.01	10.10	9.37	9.47	9.61	12.17	12.15	12.09	12.17	12.07
6	12.09	12.35	10.00	10.05	9.37	9.46	9.66	12.13	12.17	12.08	12.15	12.07
7	12.09	12.32	10.08	9.99	9.39	9.51	9.94	12.11	12.16	12.08	12.14	12.07
8	12.10	12.22	10.21	9.96	9.45	9.62	10.19	12.06	12.17	12.10	12.13	12.08
9	12.12	11.79	10.20	9.93	9.51	9.62	10.39	12.03	12.17	12.12	12.11	12.08
10	12.11	11.56	10.18	9.89	9.50	9.61	10.56	11.99	12.16	12.14	12.11	12.08
11	12.11	11.44	10.16	9.87	9.47	9.59	10.73	11.93	12.14	12.13	12.10	12.07
12	12.11	11.34	10.13	9.91	9.46	9.55	10.88	11.83	12.13	12.11	12.12	12.07
13	12.11	11.28	10.12	10.10	9.45	9.51	10.99	11.78	12.16	12.10	12.11	12.06
14	12.13	11.25	10.07	10.16	9.54	9.48	11.06	11.81	12.17	12.10	12.12	12.06
15	12.15	11.20	10.03	9.93	9.74	9.47	11.11	11.82	12.17	12.10	12.11	12.05
16	12.17	11.07	10.00	9.80	9.99	9.47	11.17	11.82	12.18	12.27	12.10	12.08
17	12.19	11.02	9.98	9.70	9.98	9.48	11.22	11.95	12.18	12.40	12.10	12.09
18	12.19	10.90	9.96	9.61	9.87	9.49	11.25	12.06	12.18	12.35	12.08	12.09
19	12.19	10.62	9.95	9.58	9.79	9.49	11.29	12.15	12.18	12.32	12.08	12.10
20	12.19	10.32	9.90	9.53	9.73	9.51	11.36	12.22	12.17	12.27	12.08	12.10
21	12.19	10.19	9.90	9.50	9.69	9.54	11.41	12.23	12.15	12.25	12.08	12.09
22	12.18	10.15	9.91	9.50	9.64	9.58	11.47	12.23	12.14	12.22	12.06	12.15
23	12.19	10.10	9.95	9.47	9.61	9.63	11.58	12.24	12.12	12.18	12.06	12.26
24	12.21	10.01	9.92	9.44	9.57	9.64	11.75	12.26	12.11	12.23	12.05	12.23
25	12.21	9.98	9.91	9.43	9.54	9.65	11.99	12.27	12.11	12.28	12.05	12.22
26	12.20	9.96	9.90	9.44	9.52	9.65	12.27	12.25	12.10	12.38	12.05	12.27
27	12.20	9.96	9.89	9.44	9.48	9.66	12.44	12.24	12.09	12.44	12.08	12.25
28	12.18	9.99	9.88	9.43	9.48	9.67	12.48	12.22	12.08	12.44	12.09	12.24
29	12.23	10.01	9.89	9.42	---	9.71	12.44	12.21	12.08	12.43	12.09	12.26
30	12.25	10.01	9.90	9.40	---	9.75	12.38	12.19	12.09	12.39	12.09	12.23
31	12.28	---	9.98	9.38	---	9.77	---	12.20	---	12.34	12.10	---
MEAN	12.16	11.09	10.01	9.75	9.56	9.57	11.02	12.11	12.15	12.21	12.12	12.13
MAX	12.28	12.37	10.21	10.16	9.99	9.77	12.48	12.35	12.20	12.44	12.31	12.27
MIN	12.08	9.96	9.88	9.38	9.37	9.46	9.61	11.78	12.08	12.06	12.05	12.05

CAL YR 2004 MEAN 11.04 MAX 13.72 MIN 6.80
WTR YR 2005 MEAN 11.16 MAX 12.48 MIN 9.37

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161800 STONY CREEK NEAR WASHINGTON, MI

LOCATION.--Lat 42°42'55", long 83°05'31", in SW1/4 sec.31, T.4 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on left bank at downstream side of bridge on Mt. Vernon Road, 500 ft downstream from Stony Lake Dam, and 2.9 mi west of Washington.

DRAINAGE AREA.--68.2 mi^2.

PERIOD OF RECORD.--July 1958 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 772.59 ft above sea level (levels by Huron-Clinton Metropolitan Authority).

REMARKS.--Records good. Occasional diurnal fluctuation caused by mills upstream from station prior to February 1963; occasional regulation by Stony Lake since (see preceding page). From 1963 to 1991 annual mean discharge and runoff figures adjusted for change in contents in Stony Lake. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	35	60	89	35	60	134	83	25	9.6	43	7.7
2	8.1	41	64	113	35	56	132	79	22	7.5	35	7.6
3	7.3	45	61	129	35	50	109	70	20	6.4	29	7.0
4	7.8	56	54	133	34	49	91	64	19	6.5	24	6.4
5	6.2	57	49	128	33	49	81	58	19	8.9	21	6.1
6	6.1	51	48	110	32	49	26	53	21	9.3	17	5.9
7	6.5	46	63	91	36	57	4.0	51	20	8.2	15	5.9
8	7.1	116	95	85	46	77	2.5	46	22	9.7	13	7.7
9	9.6	126	96	75	57	78	2.5	43	22	12	12	7.0
10	9.0	64	92	67	55	74	2.4	43	20	15	11	6.7
11	8.5	55	85	64	49	71	2.4	60	18	14	9.8	6.4
12	8.4	42	77	72	48	64	7.6	55	16	12	11	6.2
13	9.0	33	75	144	46	56	14	46	19	11	11	6.0
14	11	29	65	231	63	51	14	48	21	11	12	5.8
15	14	48	57	180	116	49	15	48	23	10	11	6.8
16	16	41	52	138	195	50	15	22	23	38	9.7	10
17	20	37	47	104	191	52	15	4.4	22	63	9.0	9.5
18	21	73	44	85	154	56	15	7.5	23	53	7.4	9.0
19	22	106	40	e75	130	57	15	17	23	44	6.9	9.5
20	21	67	34	69	114	60	15	29	22	35	7.0	10
21	20	41	33	e64	100	66	15	30	19	31	7.1	8.9
22	20	33	34	e62	87	75	15	30	19	27	6.2	17
23	19	48	41	e56	78	91	17	31	14	22	5.8	36
24	23	52	37	e46	69	90	17	35	13	e25	5.4	30
25	23	44	34	43	63	96	18	35	13	e32	4.8	27
26	24	39	32	45	60	96	60	32	11	e48	4.9	36
27	25	39	31	43	53	98	115	30	10	e78	7.0	34
28	22	46	31	38	53	103	130	28	9.3	70	8.2	32
29	27	49	32	36	---	113	125	25	8.7	69	7.8	36
30	31	49	32	35	---	127	103	23	9.0	62	9.5	32
31	33	---	47	34	---	135	---	24	---	50	10	---
TOTAL	491.3	1608	1642	2684	2067	2255	1327.4	1249.9	546.0	898.1	391.5	436.1
MEAN	15.8	53.6	53.0	86.6	73.8	72.7	44.2	40.3	18.2	29.0	12.6	14.5
MAX	33	126	96	231	195	135	134	83	25	78	43	36
MIN	5.7	29	31	34	32	49	2.4	4.4	8.7	6.4	4.8	5.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2005, BY WATER YEAR (WY)

MEAN	31.1	43.5	44.7	41.4	49.8	74.1	72.8	51.9	36.8	21.1	18.3	24.0
MAX	85.8	105	94.0	115	144	199	142	134	120	50.7	76.0	97.7
(WY)	1982	1986	1976	1973	1976	1976	1975	2004	1989	1969	1975	1975
MIN	10.3	10.2	5.02	3.03	9.79	5.14	10.0	17.2	6.93	4.41	4.00	4.72
(WY)	1963	1964	1999	2000	1963	1964	1963	1963	1964	1988	1964	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1958 - 2005	
ANNUAL TOTAL	16065.2		15596.3			
ANNUAL MEAN	43.9		42.7		42.4	
HIGHEST ANNUAL MEAN					79.1	1976
LOWEST ANNUAL MEAN					12.0	1963
HIGHEST DAILY MEAN	533	May 24	231	Jan 14	533	May 24 2004
LOWEST DAILY MEAN	1.9	Apr 14	2.4	Apr 10	1.3	Jul 31 1964
ANNUAL SEVEN-DAY MINIMUM	1.9	Apr 16	5.1	Apr 7	1.9	Apr 16 2004
MAXIMUM PEAK FLOW			261	Nov 8	(a)552	Jun 10 1988
MAXIMUM PEAK STAGE			4.76	Nov 8	(b)6.71	Mar 6 1959
INSTANTANEOUS LOW FLOW			2.2	Apr 12	0.90	Jul 10 1963
10 PERCENT EXCEEDS	78		93		86	
50 PERCENT EXCEEDS	34		34		32	
90 PERCENT EXCEEDS	7.6		7.5		9.0	

(a) From rating curve extended above 380 ft^3/s; result of momentary release of water from Stony Lake; gage height 6.44 ft.
(b) Backwater from ice.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI

LOCATION.--Lat 42°36'52", long 83°01'36", in NE1/4 SW1/4 sec.3, T.2 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on right bank at downstream side of bridge on Riverland Road in Sterling Heights.

DRAINAGE AREA.--309 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to December 1982, March 1996 to May 1998, July 2001 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 605 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	241	499	544	e240	402	440	356	98	140	137	59
2	68	325	410	596	e235	391	456	347	94	80	111	54
3	67	300	318	683	e235	369	413	336	88	67	95	49
4	50	400	264	676	e250	358	393	322	85	63	86	44
5	48	398	247	589	e260	358	367	308	82	124	82	41
6	43	294	248	540	267	387	258	297	125	87	74	39
7	40	260	515	500	302	561	190	297	91	70	70	39
8	41	249	854	465	442	654	180	263	82	91	65	77
9	70	342	446	443	385	468	190	237	80	114	65	70
10	57	271	413	429	338	e420	206	166	80	79	60	53
11	48	247	488	423	308	e410	176	160	77	72	59	45
12	49	234	382	596	299	397	154	164	82	70	110	41
13	50	213	415	1290	300	352	142	173	139	65	80	39
14	73	201	338	1370	627	338	125	273	142	63	83	35
15	82	198	296	849	862	331	117	224	150	61	71	38
16	140	227	290	654	1200	326	116	181	138	403	64	129
17	152	198	286	e520	848	333	113	148	133	676	60	94
18	104	230	e270	e450	676	345	115	138	103	387	59	64
19	79	275	e250	e400	591	338	109	144	89	376	60	58
20	65	293	e230	e370	539	401	115	212	83	286	70	55
21	61	230	e220	e340	525	385	105	185	81	186	74	47
22	58	207	e220	e330	493	397	97	181	84	136	62	116
23	58	205	e210	e320	470	433	136	266	73	100	61	661
24	168	247	e205	e310	443	349	243	292	68	336	58	220
25	191	328	e200	e340	422	403	347	273	74	400	53	171
26	202	272	e205	e330	416	431	387	256	102	656	49	448
27	193	287	e210	e290	390	413	482	226	84	600	133	294
28	189	382	e215	e210	383	411	407	196	74	396	154	274
29	368	294	e220	e220	---	431	414	149	90	320	77	399
30	337	265	e240	e240	---	437	410	120	210	279	67	290
31	272	---	617	e250	---	448	---	103	---	192	66	---
TOTAL	3464	8113	10221	15567	12746	12477	7403	6993	2981	6975	2415	4043
MEAN	112	270	330	502	455	402	247	226	99.4	225	77.9	135
MAX	368	400	854	1370	1200	654	482	356	210	676	154	661
MIN	40	198	200	210	235	326	97	103	68	61	49	35
CFSM	0.36	0.88	1.07	1.63	1.47	1.30	0.80	0.73	0.32	0.73	0.25	0.44
IN.	0.42	0.98	1.23	1.87	1.53	1.50	0.89	0.84	0.36	0.84	0.29	0.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 2005, BY WATER YEAR (WY)

MEAN	218	251	267	247	292	410	407	336	257	151	124	160
MAX	574	396	391	502	514	672	619	706	511	243	268	317
(WY)	1982	2002	2002	2005	1997	1982	1982	2004	1996	1997	1980	1981
MIN	76.0	129	126	82.2	72.4	211	145	216	99.4	60.2	54.2	74.6
(WY)	2003	2003	2003	2003	2003	2003	2004	1998	2005	2003	2002	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1979 - 2005	
ANNUAL TOTAL	97494		93398			
ANNUAL MEAN	266		256		257	
HIGHEST ANNUAL MEAN					342	1997
LOWEST ANNUAL MEAN					139	2003
HIGHEST DAILY MEAN	2680	May 23	1370	Jan 14	2680	May 23 2004
LOWEST DAILY MEAN	40	Oct 7	35	Sep 14	34	(a)
ANNUAL SEVEN-DAY MINIMUM	45	Sep 25	46	Sep 9	35	Sep 8 2003
MAXIMUM PEAK FLOW			1630	Jan 14	(b)4600	May 23 2004
MAXIMUM PEAK STAGE			13.16	Jan 14	16.51	May 23 2004
INSTANTANEOUS LOW FLOW			33	Sep 14	26	Sep 9 2003
ANNUAL RUNOFF (CFSM)	0.862		0.828		0.833	
ANNUAL RUNOFF (INCHES)	11.74		11.24		11.31	
10 PERCENT EXCEEDS	461		466		465	
50 PERCENT EXCEEDS	205		226		212	
90 PERCENT EXCEEDS	72		61		75	

(a) Sept. 10-12, 14, 2003.
(b) From rating curve extended above 2,300 ft^3/s.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to 1998, 2002 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 1996 to May 1998, June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water temperature recorder from June 6 to Aug. 22, 1996. Water-quality monitor from Aug. 22, 1996 to May 31, 1998. Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months after June 2004.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Nov. 1-28, Mar. 24-26, Mar. 29 to Apr. 1, Apr. 28 to May 2, May 18, June 4-8, 14-27, July 18-25, 28, 29, Sept. 27, 28, rated good; Apr. 2-4, July 30, rated fair; Apr. 5-6, July 31 to Aug. 3, rated poor. pH records rated excellent except for the following period: Nov. 1-3, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 24, 25, Nov. 5, Apr. 4-6, May 5-8, May 31 to June 1, July 8, 21-25, 28, Aug. 13-18, 21, 22, rated good; Oct. 26-28, Nov. 6-8, May 9, 10, June 2-5, July 9, 10, Aug. 23-25, rated fair; Oct. 29 to Nov. 2, Nov. 9-17, June 6-8, July 11-13, 29-31, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,810 microsiemens, Nov. 26, 2004; minimum, 367 microsiemens, Sept. 23, 2005.
pH: Maximum, 8.6 std. units, Mar. 28, 2005; minimum, 7.6 std. units, Oct. 30, 31, 2004, July 16, 2005.
WATER TEMPERATURE: Maximum, 26.6°C, July 25, 2005; minimum, -0.5°C, Jan. 28, 29, 1997, Dec. 31, Jan. 1, 1998.
DISSOLVED OXYGEN: Maximum, 15.5 mg/L, Mar. 24, 2005; minimum, 4.7 mg/L, June 24, 2005.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum measured, 2,640 microsiemens, Feb. 25, 2004; minimum measured, 401 microsiemens, Sept. 10, 1997.
pH: Minimum measured, 7.0 std. units, Jan. 29, 2004.
DISSOLVED OXYGEN: Maximum measured, 15.4 mg/L, Nov. 25, 1997.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,810 microsiemens, Nov. 26; minimum, 367 microsiemens, Sept. 23.
pH: Maximum, 8.6 std. units, Mar. 28; minimum, 7.6 std. units, Oct. 30, 31, July 16.
WATER TEMPERATURE: Maximum, 26.6°C, July 25; minimum, 2.5°C, Mar. 24.
DISSOLVED OXYGEN: Maximum, 15.5 mg/L, Mar. 24; minimum, 4.7 mg/L, June 24.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1090	1070	1080	811	800	803	916	731	777	---	---	---
2	1130	1020	1070	806	675	766	---	---	---	---	---	---
3	1070	999	1040	781	703	755	---	---	---	---	---	---
4	1040	978	1000	769	529	705	---	---	---	---	---	---
5	1100	1010	1040	759	526	689	---	---	---	---	---	---
6	1120	1040	1060	786	759	769	---	---	---	---	---	---
7	1140	1050	1070	812	765	774	---	---	---	---	---	---
8	1100	1070	1080	812	749	772	---	---	---	---	---	---
9	1110	1020	1050	749	667	679	---	---	---	---	---	---
10	1070	984	1020	722	682	706	---	---	---	---	---	---
11	1060	991	1020	763	711	724	---	---	---	---	---	---
12	1030	1010	1020	759	711	718	---	---	---	---	---	---
13	1090	1010	1030	767	718	727	---	---	---	---	---	---
14	1030	970	998	735	726	731	---	---	---	---	---	---
15	1020	945	979	777	727	735	---	---	---	---	---	---
16	962	832	908	729	684	698	---	---	---	---	---	---
17	886	781	828	825	712	757	---	---	---	---	---	---
18	886	763	805	841	795	809	---	---	---	---	---	---
19	916	817	873	795	718	749	---	---	---	---	---	---
20	953	908	919	762	715	739	---	---	---	---	---	---
21	971	918	940	778	740	770	---	---	---	---	---	---
22	1030	949	960	821	778	788	---	---	---	---	---	---
23	1040	918	966	835	774	793	---	---	---	---	---	---
24	974	753	895	825	750	765	---	---	---	---	---	---
25	835	815	822	1480	772	994	---	---	---	---	---	---
26	838	803	812	1810	991	1280	---	---	---	---	---	---
27	808	802	806	1140	959	1010	---	---	---	---	---	---
28	838	802	809	1140	847	935	---	---	---	---	---	---
29	822	569	712	889	848	867	---	---	---	---	---	---
30	775	666	741	878	835	855	---	---	---	---	---	---
31	800	722	772	---	---	---	---	---	---	---	---	---
MONTH	1140	569	940	1810	526	795	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	873	834	851	958	890	907
2	---	---	---	---	---	---	1120	831	877	958	888	898
3	---	---	---	---	---	---	1120	875	950	958	892	905
4	---	---	---	---	---	---	906	865	878	953	885	904
5	---	---	---	---	---	---	924	866	886	950	886	905
6	---	---	---	---	---	---	1050	851	900	932	905	915
7	---	---	---	---	---	---	1210	997	1110	1010	907	932
8	---	---	---	---	---	---	1140	1110	1130	964	924	941
9	---	---	---	---	---	---	1210	1060	1130	1000	935	944
10	---	---	---	---	---	---	1110	1020	1040	1040	925	945
11	---	---	---	---	---	---	1070	1000	1020	1080	943	993
12	---	---	---	---	---	---	1140	1050	1080	1070	958	986
13	---	---	---	---	---	---	1160	1050	1080	1080	927	1010
14	---	---	---	---	---	---	1140	1050	1070	1220	923	1070
15	---	---	---	---	---	---	1150	1050	1070	1260	1000	1090
16	---	---	---	---	---	---	1170	1090	1110	1160	1060	1090
17	---	---	---	---	---	---	1160	1080	1100	1200	1120	1160
18	---	---	---	---	---	---	1160	1080	1100	1210	1110	1130
19	---	---	---	---	---	---	1140	1030	1090	1210	1070	1100
20	---	---	---	---	---	---	1200	1040	1110	1110	991	1050
21	---	---	---	---	---	---	1250	1150	1190	1070	996	1030
22	---	---	---	---	---	---	1320	1200	1270	1070	991	1000
23	---	---	---	---	---	---	1240	1150	1190	1050	950	1000
24	---	---	---	1090	949	1010	1380	1160	1310	993	926	960
25	---	---	---	1040	977	1000	1460	1300	1390	987	926	941
26	---	---	---	1010	949	976	1330	1030	1170	994	911	929
27	---	---	---	992	930	948	1070	973	1030	984	912	926
28	---	---	---	974	904	928	1030	958	986	1060	924	962
29	---	---	---	963	872	907	981	922	942	1060	933	965
30	---	---	---	918	842	866	949	896	909	1050	967	993
31	---	---	---	903	840	857	---	---	---	1030	970	1010
MONTH	---	---	---	---	---	---	1460	831	1070	1260	885	987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1120	1020	1040	1000	687	804	847	742	802	1090	987	1010
2	1120	1010	1040	1120	1000	1070	925	846	878	1060	1030	1040
3	1100	1030	1050	1130	1110	1120	1040	899	924	1060	1050	1060
4	1180	1050	1080	1230	1080	1140	974	940	960	1160	1060	1080
5	1200	1070	1090	1120	923	1040	1090	963	980	1090	1060	1070
6	1210	1010	1110	1070	854	938	1010	991	1000	1180	1070	1090
7	1160	1090	1130	1170	1070	1110	1130	1000	1020	1120	1080	1090
8	1200	1100	1130	1160	888	1090	1030	1000	1010	1140	911	1040
9	1200	1070	1100	1020	831	936	1150	1020	1040	1030	842	955
10	1090	1060	1070	1050	973	1010	1050	829	1030	1030	857	938
11	1100	1020	1050	1070	1040	1050	1140	724	1010	1050	1030	1040
12	1150	1060	1080	1160	815	1060	1130	726	999	---	---	---
13	1230	970	1080	1200	1060	1080	1110	872	995	---	---	---
14	1110	896	1000	1100	1030	1080	1030	806	944	---	---	---
15	1120	1010	1050	1180	1030	1090	1090	1020	1060	1100	1070	1080
16	1030	983	1000	1120	387	821	1040	963	999	1190	756	974
17	1040	989	1000	870	443	759	1130	1030	1050	887	673	749
18	1010	969	988	851	775	811	1130	969	1060	1060	839	940
19	994	969	982	802	696	767	1120	1070	1090	1040	1010	1020
20	1050	991	1010	794	780	786	1140	1050	1070	1140	1040	1050
21	1080	1010	1030	793	754	776	1080	1000	1040	1060	1030	1040
22	1120	1030	1060	846	785	822	1040	1000	1020	1150	546	972
23	1110	999	1030	948	846	877	1140	1040	1060	779	367	569
24	1150	1010	1070	908	504	774	1100	1050	1070	870	779	826
25	1180	1080	1100	823	507	741	1190	1080	1100	874	804	857
26	1180	922	1040	---	---	---	1100	1070	1080	850	453	651
27	1050	999	1030	---	---	---	1120	629	987	841	648	740
28	1160	1050	1080	651	630	641	906	545	709	841	789	809
29	1140	1060	1090	677	643	660	990	906	956	808	582	713
30	1130	555	822	709	677	694	1030	990	1010	816	763	800
31	---	---	---	788	705	733	1100	987	1000	---	---	---
MONTH	1230	555	1050	---	---	---	1190	545	998	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	8.0	8.1	7.9	7.7	7.8	8.1	8.0	8.0	---	---	---
2	8.2	8.0	8.1	8.0	7.7	7.8	---	---	---	---	---	---
3	8.2	8.0	8.1	8.1	8.0	8.1	---	---	---	---	---	---
4	8.2	8.0	8.1	8.1	8.0	8.1	---	---	---	---	---	---
5	8.2	8.1	8.1	8.1	8.0	8.0	---	---	---	---	---	---
6	8.2	8.1	8.1	8.2	8.1	8.1	---	---	---	---	---	---
7	8.2	8.0	8.1	8.2	8.1	8.1	---	---	---	---	---	---
8	8.3	8.1	8.1	8.2	8.1	8.2	---	---	---	---	---	---
9	8.2	8.0	8.1	8.2	8.2	8.2	---	---	---	---	---	---
10	8.1	8.0	8.0	8.2	8.2	8.2	---	---	---	---	---	---
11	8.2	8.0	8.1	8.2	8.1	8.2	---	---	---	---	---	---
12	8.2	8.1	8.1	8.2	8.2	8.2	---	---	---	---	---	---
13	8.2	8.1	8.1	8.2	8.1	8.2	---	---	---	---	---	---
14	8.1	7.9	8.1	8.2	8.1	8.2	---	---	---	---	---	---
15	7.9	7.8	7.9	8.2	8.1	8.2	---	---	---	---	---	---
16	7.9	7.9	7.9	8.2	8.1	8.2	---	---	---	---	---	---
17	8.0	7.9	7.9	8.2	8.1	8.1	---	---	---	---	---	---
18	8.0	7.8	7.9	8.2	8.1	8.1	---	---	---	---	---	---
19	8.0	7.9	8.0	8.2	8.1	8.2	---	---	---	---	---	---
20	8.0	7.9	8.0	8.2	8.1	8.2	---	---	---	---	---	---
21	8.0	7.9	7.9	8.3	8.1	8.2	---	---	---	---	---	---
22	8.1	8.0	8.0	8.3	8.1	8.2	---	---	---	---	---	---
23	8.1	8.0	8.0	8.2	8.1	8.2	---	---	---	---	---	---
24	8.0	7.8	7.9	8.2	8.1	8.2	---	---	---	---	---	---
25	8.0	7.9	8.0	8.2	8.1	8.1	---	---	---	---	---	---
26	8.0	7.9	8.0	8.2	8.1	8.2	---	---	---	---	---	---
27	8.1	8.0	8.0	8.2	8.1	8.2	---	---	---	---	---	---
28	8.1	7.9	8.0	8.1	8.1	8.1	---	---	---	---	---	---
29	8.0	7.7	7.8	8.2	8.1	8.1	---	---	---	---	---	---
30	7.9	7.6	7.8	8.2	8.1	8.1	---	---	---	---	---	---
31	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
MAX	8.3	8.1	8.1	8.3	8.2	8.2	---	---	---	---	---	---
MIN	7.8	7.6	7.7	7.9	7.7	7.8	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.5	8.1	8.3	8.4	8.2	8.3
2	---	---	---	---	---	---	8.4	8.1	8.2	8.5	8.2	8.4
3	---	---	---	---	---	---	8.5	8.1	8.2	8.4	8.2	8.3
4	---	---	---	---	---	---	8.5	8.2	8.4	8.5	8.2	8.4
5	---	---	---	---	---	---	8.4	8.1	8.3	8.5	8.2	8.4
6	---	---	---	---	---	---	8.4	8.0	8.2	8.5	8.1	8.4
7	---	---	---	---	---	---	8.2	8.0	8.1	8.5	8.1	8.4
8	---	---	---	---	---	---	8.2	8.1	8.2	8.4	8.1	8.3
9	---	---	---	---	---	---	8.2	8.1	8.2	8.4	8.1	8.3
10	---	---	---	---	---	---	8.2	8.1	8.2	8.3	8.0	8.2
11	---	---	---	---	---	---	8.2	8.1	8.2	8.2	8.0	8.1
12	---	---	---	---	---	---	8.2	8.1	8.2	8.3	8.1	8.2
13	---	---	---	---	---	---	8.3	8.1	8.2	8.2	8.0	8.1
14	---	---	---	---	---	---	8.2	8.1	8.2	8.1	7.9	8.0
15	---	---	---	---	---	---	8.2	8.1	8.1	8.0	7.9	8.0
16	---	---	---	---	---	---	8.2	8.1	8.1	8.1	8.0	8.1
17	---	---	---	---	---	---	8.2	8.0	8.1	8.1	8.0	8.0
18	---	---	---	---	---	---	8.3	8.1	8.2	8.1	8.0	8.0
19	---	---	---	---	---	---	8.3	8.1	8.2	8.0	8.0	8.0
20	---	---	---	---	---	---	8.2	8.0	8.1	8.0	7.9	8.0
21	---	---	---	---	---	---	8.3	8.0	8.1	8.0	7.9	7.9
22	---	---	---	---	---	---	8.2	8.0	8.2	8.0	7.9	7.9
23	---	---	---	---	---	---	8.3	8.1	8.2	8.0	7.8	7.9
24	---	---	---	8.5	8.2	8.3	8.2	8.2	8.2	7.9	7.8	7.9
25	---	---	---	8.5	8.2	8.4	8.2	8.1	8.2	7.9	7.9	7.9
26	---	---	---	8.5	8.2	8.4	8.2	8.1	8.2	8.1	7.8	8.1
27	---	---	---	8.5	8.2	8.4	8.3	8.1	8.2	8.1	8.0	8.1
28	---	---	---	8.6	8.2	8.4	8.4	8.2	8.3	8.1	8.0	8.1
29	---	---	---	8.5	8.2	8.4	8.5	8.2	8.3	8.1	8.0	8.1
30	---	---	---	8.5	8.1	8.4	8.4	8.1	8.3	8.1	8.0	8.1
31	---	---	---	8.4	8.1	8.3	---	---	---	8.1	8.0	8.0
MAX	---	---	---	---	---	---	8.5	8.2	8.4	8.5	8.2	8.4
MIN	---	---	---	---	---	---	8.2	8.0	8.1	7.9	7.8	7.9

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	8.0	8.1	7.9	7.7	7.8	8.2	8.1	8.2	8.1	8.1	8.1
2	8.2	8.1	8.1	8.1	7.8	8.0	8.2	8.1	8.2	8.2	8.1	8.1
3	8.2	8.1	8.1	8.1	7.8	8.0	8.2	8.1	8.1	8.2	8.1	8.1
4	8.1	8.1	8.1	8.1	7.8	8.0	8.2	8.1	8.1	8.2	8.1	8.1
5	8.1	7.9	8.1	8.1	8.0	8.1	8.2	8.1	8.2	8.2	8.1	8.1
6	8.1	7.9	8.0	8.1	8.0	8.0	8.2	8.1	8.2	8.2	8.1	8.1
7	8.0	7.8	7.9	8.2	8.1	8.2	8.3	8.1	8.2	8.2	8.1	8.1
8	8.1	7.9	8.0	8.2	8.1	8.2	8.4	8.2	8.2	8.1	8.0	8.1
9	8.1	8.0	8.1	8.2	8.0	8.1	8.4	8.2	8.3	8.0	7.9	8.0
10	8.2	8.1	8.1	8.1	8.0	8.1	8.3	8.1	8.2	8.1	7.9	8.0
11	8.1	8.0	8.1	8.2	8.0	8.1	8.3	8.1	8.2	8.2	8.1	8.1
12	8.1	8.0	8.1	8.2	8.1	8.1	8.2	8.0	8.1	8.2	8.0	8.1
13	8.1	8.0	8.0	8.2	8.1	8.1	8.1	7.9	8.0	8.2	8.1	8.1
14	8.1	7.9	8.0	8.3	8.0	8.1	8.2	8.0	8.0	8.2	8.1	8.1
15	8.2	8.0	8.1	8.3	8.1	8.1	8.2	8.0	8.1	8.2	8.0	8.1
16	8.2	8.1	8.1	8.1	7.6	8.0	8.2	8.0	8.1	8.1	7.9	8.1
17	8.2	8.1	8.2	8.0	7.7	7.9	8.2	8.1	8.1	8.0	7.8	7.9
18	8.2	8.1	8.1	8.0	8.0	8.0	8.2	8.1	8.1	8.1	8.0	8.0
19	8.2	8.1	8.1	8.1	7.8	8.0	8.2	8.1	8.1	8.1	8.0	8.0
20	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.0	8.1	8.1	8.0	8.1
21	8.1	8.0	8.1	8.1	8.0	8.1	8.2	8.0	8.1	8.1	8.0	8.0
22	8.2	8.0	8.1	8.1	8.0	8.1	8.2	8.1	8.2	8.1	7.8	8.0
23	8.1	8.0	8.1	8.2	8.0	8.1	8.3	8.2	8.2	7.9	7.7	7.8
24	8.2	8.0	8.1	8.2	7.8	8.1	8.3	8.2	8.2	8.0	7.9	8.0
25	8.2	8.0	8.1	8.1	7.8	8.0	8.3	8.1	8.2	8.0	8.0	8.0
26	8.1	8.0	8.1	---	---	---	8.3	8.1	8.2	8.0	7.8	7.9
27	8.2	7.9	8.0	---	---	---	8.1	7.9	8.0	8.1	7.9	8.0
28	8.2	8.0	8.1	8.1	8.0	8.0	8.0	7.8	7.9	8.1	8.0	8.0
29	8.2	7.9	8.0	8.1	8.1	8.1	8.1	8.0	8.0	8.1	7.9	8.0
30	8.0	7.7	7.8	8.2	8.1	8.1	8.1	8.0	8.1	8.1	8.0	8.1
31	---	---	---	8.2	8.1	8.2	8.1	8.0	8.1	---	---	---
MAX	8.2	8.1	8.2	---	---	---	8.4	8.2	8.3	8.2	8.1	8.1
MIN	8.0	7.7	7.8	---	---	---	8.0	7.8	7.9	7.9	7.7	7.8

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	13.0	13.9	12.2	11.0	11.3	5.2	4.7	5.1	---	---	---
2	14.9	13.7	14.4	11.0	10.5	10.9	---	---	---	---	---	---
3	13.7	12.3	12.9	10.5	9.8	10.2	---	---	---	---	---	---
4	13.1	11.8	12.5	9.8	9.0	9.4	---	---	---	---	---	---
5	11.8	10.6	11.1	9.0	8.1	8.5	---	---	---	---	---	---
6	11.8	9.7	10.8	9.2	7.8	8.5	---	---	---	---	---	---
7	13.2	11.1	12.1	9.8	8.7	9.2	---	---	---	---	---	---
8	14.5	12.1	13.2	9.2	7.1	7.9	---	---	---	---	---	---
9	15.4	14.3	14.8	7.1	6.1	6.5	---	---	---	---	---	---
10	14.5	12.8	13.6	7.8	5.9	6.6	---	---	---	---	---	---
11	12.9	11.8	12.4	8.0	7.2	7.8	---	---	---	---	---	---
12	12.4	11.1	11.8	7.2	5.8	6.3	---	---	---	---	---	---
13	12.7	11.3	12.0	5.9	5.0	5.4	---	---	---	---	---	---
14	12.9	12.4	12.6	5.2	4.1	4.8	---	---	---	---	---	---
15	12.6	12.0	12.4	5.5	4.3	4.8	---	---	---	---	---	---
16	12.0	10.7	11.4	7.6	5.5	6.5	---	---	---	---	---	---
17	10.7	9.4	9.8	8.8	7.6	8.2	---	---	---	---	---	---
18	9.4	8.6	8.9	10.1	8.8	9.4	---	---	---	---	---	---
19	9.4	8.9	9.1	10.0	9.0	9.3	---	---	---	---	---	---
20	10.4	9.4	9.9	9.9	8.9	9.4	---	---	---	---	---	---
21	11.0	10.4	10.7	9.8	8.5	9.2	---	---	---	---	---	---
22	11.8	10.8	11.3	8.5	7.4	7.7	---	---	---	---	---	---
23	12.2	11.2	11.6	8.0	7.2	7.6	---	---	---	---	---	---
24	13.0	12.2	12.6	7.9	5.3	7.0	---	---	---	---	---	---
25	13.1	12.1	12.6	5.3	4.2	4.6	---	---	---	---	---	---
26	12.6	11.5	12.0	4.5	3.9	4.1	---	---	---	---	---	---
27	13.3	12.3	12.7	6.3	4.5	5.4	---	---	---	---	---	---
28	12.8	11.7	12.3	6.3	5.2	6.0	---	---	---	---	---	---
29	13.2	12.4	12.7	5.2	4.3	4.6	---	---	---	---	---	---
30	14.9	13.2	14.1	5.1	4.6	4.8	---	---	---	---	---	---
31	14.3	12.2	13.1	---	---	---	---	---	---	---	---	---
MONTH	15.4	8.6	12.1	12.2	3.9	7.4	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	7.8	6.2	7.0	10.9	9.3	10.2
2	---	---	---	---	---	---	7.2	5.4	6.1	11.0	9.5	10.2
3	---	---	---	---	---	---	6.8	4.3	5.5	10.1	8.6	9.0
4	---	---	---	---	---	---	8.7	5.6	7.1	11.7	7.6	9.5
5	---	---	---	---	---	---	10.5	7.1	8.7	13.0	9.6	11.3
6	---	---	---	---	---	---	12.5	9.5	11.0	13.9	10.5	12.3
7	---	---	---	---	---	---	12.5	10.6	11.8	15.9	12.5	14.1
8	---	---	---	---	---	---	12.0	8.6	10.4	16.6	13.4	15.1
9	---	---	---	---	---	---	12.6	9.0	10.9	17.5	14.5	16.0
10	---	---	---	---	---	---	13.2	10.1	11.7	18.7	15.8	17.3
11	---	---	---	---	---	---	13.9	11.0	12.4	18.2	14.8	16.4
12	---	---	---	---	---	---	12.4	10.0	11.3	14.8	12.2	13.6
13	---	---	---	---	---	---	12.0	8.8	10.5	13.9	12.2	12.8
14	---	---	---	---	---	---	12.8	9.5	11.1	14.7	12.7	13.6
15	---	---	---	---	---	---	13.0	9.9	11.5	14.3	12.7	13.4
16	---	---	---	---	---	---	13.7	10.3	12.1	12.7	11.3	12.1
17	---	---	---	---	---	---	13.4	11.6	12.6	14.5	11.8	13.0
18	---	---	---	---	---	---	15.3	11.6	13.4	15.7	12.5	14.2
19	---	---	---	---	---	---	17.2	13.7	15.4	15.4	13.7	14.3
20	---	---	---	---	---	---	16.7	14.5	15.9	16.5	12.7	14.6
21	---	---	---	---	---	---	14.6	12.1	13.5	17.4	14.4	16.1
22	---	---	---	---	---	---	13.2	10.6	11.6	17.1	15.5	16.0
23	---	---	---	---	---	---	10.6	7.0	8.8	15.5	14.4	14.7
24	---	---	---	5.0	2.5	3.6	7.0	4.6	5.5	14.6	13.8	14.3
25	---	---	---	5.4	3.9	4.7	9.5	4.6	6.7	17.1	13.5	15.1
26	---	---	---	5.3	2.9	4.2	9.5	9.0	9.2	17.6	15.2	16.5
27	---	---	---	5.3	3.5	4.5	9.8	8.6	9.1	18.0	15.9	17.0
28	---	---	---	7.3	4.0	5.6	11.0	8.4	9.7	17.9	15.9	17.0
29	---	---	---	7.8	5.0	6.5	12.2	9.5	10.7	17.3	15.7	16.6
30	---	---	---	8.8	6.2	7.5	11.7	10.5	11.0	17.7	15.9	16.8
31	---	---	---	8.6	7.2	8.0	---	---	---	19.2	16.3	17.7
MONTH	---	---	---	---	---	---	17.2	4.3	10.4	19.2	7.6	14.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.9	17.2	18.6	23.8	22.3	23.1	25.0	22.4	23.8	21.6	19.9	20.9
2	20.5	18.1	19.5	22.3	20.2	21.4	25.8	23.3	24.6	21.3	19.7	20.6
3	20.2	19.0	19.5	21.8	19.8	21.0	26.0	24.3	25.2	20.7	19.2	20.0
4	20.6	18.2	19.4	23.4	20.5	22.0	25.6	24.4	24.8	20.2	18.6	19.4
5	22.8	19.7	21.2	23.0	21.4	22.4	24.7	23.4	24.1	20.1	18.2	19.3
6	23.2	21.0	22.2	22.5	20.3	21.2	23.9	22.5	23.2	20.4	18.4	19.5
7	23.9	21.1	22.5	21.9	19.1	20.5	24.2	22.2	23.2	20.8	19.0	20.0
8	24.7	22.3	23.5	22.1	19.9	21.1	24.5	22.6	23.6	20.7	19.9	20.2
9	24.2	23.0	23.7	22.1	19.0	20.6	25.1	23.2	24.2	20.7	19.2	20.0
10	25.7	23.1	24.4	23.5	20.6	22.1	25.4	24.1	24.7	20.4	18.6	19.6
11	25.6	24.3	24.9	24.4	21.9	23.2	24.4	22.9	23.7	20.6	18.7	19.7
12	24.3	23.6	23.9	24.5	23.0	23.7	23.1	22.0	22.6	21.1	19.2	20.2
13	23.7	22.0	22.9	25.7	23.1	24.4	23.3	22.4	22.8	21.6	19.9	20.8
14	23.9	21.2	22.5	26.1	24.0	25.1	22.9	21.8	22.3	21.7	20.8	21.3
15	23.3	21.3	22.1	25.9	24.1	25.1	22.5	20.6	21.6	21.0	19.2	20.1
16	21.3	19.2	20.1	25.0	22.9	23.8	22.6	20.8	21.9	19.2	17.5	18.1
17	19.2	17.7	18.3	25.5	22.8	24.0	23.0	21.0	22.1	18.4	17.5	17.9
18	18.3	17.5	17.8	26.5	24.7	25.5	22.7	21.2	22.1	19.0	17.4	18.3
19	18.9	16.5	17.7	26.1	24.5	25.3	23.9	21.9	22.9	18.8	17.8	18.4
20	20.0	17.6	18.8	25.8	23.5	24.7	23.1	22.0	22.6	19.6	18.2	18.9
21	20.6	19.2	19.9	26.3	24.3	25.4	23.1	21.6	22.4	19.6	17.8	18.8
22	21.6	19.2	20.4	26.5	24.6	25.6	21.9	19.6	20.6	19.2	18.3	18.6
23	20.9	18.6	19.9	25.6	23.4	24.5	19.7	18.8	19.3	19.0	18.0	18.7
24	23.2	19.8	21.5	24.6	22.7	23.8	20.0	17.8	19.0	18.0	16.8	17.5
25	25.1	22.7	23.9	26.6	23.9	25.3	19.9	18.6	19.4	19.4	17.8	18.5
26	24.6	21.3	23.5	---	---	---	21.6	19.1	20.4	19.7	19.1	19.4
27	25.3	22.9	24.2	---	---	---	22.2	21.0	21.4	19.1	17.2	17.9
28	25.0	23.8	24.5	23.2	21.5	22.4	22.0	20.1	21.2	18.3	16.6	17.5
29	24.8	23.3	24.1	23.3	21.7	22.6	22.5	20.7	21.7	18.3	15.7	17.0
30	24.2	23.1	23.5	23.7	21.7	22.7	22.1	21.2	21.6	15.7	14.3	15.1
31	---	---	---	23.9	21.5	22.7	21.6	20.7	21.1	---	---	---
MONTH	25.7	16.5	21.6	---	---	---	26.0	17.8	22.4	21.7	14.3	19.1

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.8	9.0	10.1	10.9	10.0	10.5	12.0	11.5	11.8	---	---	---
2	10.5	8.3	9.4	10.7	10.2	10.5	---	---	---	---	---	---
3	11.0	8.9	9.8	11.3	10.4	11.0	---	---	---	---	---	---
4	11.5	9.0	10.1	11.2	10.8	11.0	---	---	---	---	---	---
5	12.1	9.8	10.8	11.7	11.0	11.4	---	---	---	---	---	---
6	12.5	10.2	11.1	11.8	11.2	11.6	---	---	---	---	---	---
7	12.6	9.7	10.9	11.7	11.2	11.3	---	---	---	---	---	---
8	12.3	9.2	10.4	12.3	11.2	11.8	---	---	---	---	---	---
9	10.2	8.2	9.0	12.7	12.0	12.3	---	---	---	---	---	---
10	10.7	8.2	9.3	12.7	11.7	12.2	---	---	---	---	---	---
11	11.5	9.0	10.0	12.2	11.5	11.8	---	---	---	---	---	---
12	11.8	9.3	10.3	12.6	11.7	12.2	---	---	---	---	---	---
13	11.8	9.1	10.2	12.8	12.1	12.4	---	---	---	---	---	---
14	9.8	8.6	9.0	12.8	12.1	12.4	---	---	---	---	---	---
15	9.4	8.6	9.0	12.6	12.0	12.3	---	---	---	---	---	---
16	10.0	9.0	9.5	12.2	11.4	11.9	---	---	---	---	---	---
17	10.8	9.5	10.2	11.6	10.6	11.2	---	---	---	---	---	---
18	11.5	10.3	10.8	11.4	10.2	10.7	---	---	---	---	---	---
19	11.2	10.3	10.7	11.2	10.2	10.6	---	---	---	---	---	---
20	10.8	9.9	10.4	10.9	10.0	10.4	---	---	---	---	---	---
21	10.8	9.6	10.0	11.6	10.0	10.7	---	---	---	---	---	---
22	11.0	9.6	10.1	12.1	10.5	11.1	---	---	---	---	---	---
23	10.2	9.2	9.6	11.5	10.6	11.0	---	---	---	---	---	---
24	9.3	8.8	9.0	11.2	10.6	10.9	---	---	---	---	---	---
25	10.3	9.2	9.7	12.6	11.2	12.0	---	---	---	---	---	---
26	10.6	9.5	10.0	12.8	12.0	12.3	---	---	---	---	---	---
27	10.5	9.6	9.9	12.3	11.2	11.9	---	---	---	---	---	---
28	10.7	9.5	10.0	11.7	11.2	11.4	---	---	---	---	---	---
29	9.8	8.9	9.5	12.9	11.7	12.3	---	---	---	---	---	---
30	9.5	8.9	9.3	12.4	11.8	12.1	---	---	---	---	---	---
31	10.1	8.8	9.6	---	---	---	---	---	---	---	---	---
MONTH	12.6	8.2	9.9	12.9	10.0	11.5	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	14.1	11.2	12.4	12.2	9.9	10.8
2	---	---	---	---	---	---	12.9	11.4	12.1	12.1	10.0	10.9
3	---	---	---	---	---	---	14.8	11.9	13.1	12.4	10.2	11.2
4	---	---	---	---	---	---	14.6	11.1	12.7	13.5	10.3	11.8
5	---	---	---	---	---	---	14.0	10.2	12.0	13.3	9.8	11.3
6	---	---	---	---	---	---	12.7	9.3	10.9	13.0	9.4	10.9
7	---	---	---	---	---	---	11.2	8.8	9.9	12.2	8.8	10.3
8	---	---	---	---	---	---	12.6	9.7	10.9	12.4	8.6	10.1
9	---	---	---	---	---	---	12.3	9.6	10.7	11.9	8.3	9.8
10	---	---	---	---	---	---	12.0	9.3	10.4	10.3	7.5	8.8
11	---	---	---	---	---	---	11.8	9.1	10.2	9.2	7.2	8.2
12	---	---	---	---	---	---	12.0	8.9	10.3	11.1	8.2	9.6
13	---	---	---	---	---	---	12.2	9.4	10.6	9.6	8.4	9.1
14	---	---	---	---	---	---	12.1	9.3	10.5	8.7	8.0	8.5
15	---	---	---	---	---	---	12.2	8.9	10.5	9.2	8.0	8.6
16	---	---	---	---	---	---	12.1	8.7	10.2	9.7	8.7	9.2
17	---	---	---	---	---	---	11.1	8.0	9.5	9.3	8.3	8.9
18	---	---	---	---	---	---	12.0	8.7	10.1	9.5	8.0	8.7
19	---	---	---	---	---	---	11.3	8.0	9.4	8.6	7.8	8.3
20	---	---	---	---	---	---	9.9	7.0	8.4	9.1	7.9	8.6
21	---	---	---	---	---	---	11.7	7.7	9.7	8.9	7.8	8.3
22	---	---	---	---	---	---	11.2	8.2	9.7	8.6	7.7	8.2
23	---	---	---	---	---	---	11.6	9.0	10.2	8.7	8.1	8.4
24	---	---	---	15.5	12.4	13.7	12.2	10.7	11.5	9.2	8.6	8.9
25	---	---	---	15.4	12.2	13.4	12.3	10.1	11.6	9.5	8.4	9.1
26	---	---	---	15.4	12.3	13.5	11.0	10.0	10.5	9.1	8.0	8.6
27	---	---	---	15.2	12.2	13.4	11.2	10.1	10.7	8.7	7.9	8.3
28	---	---	---	15.2	11.4	13.1	11.9	10.0	10.9	8.9	7.9	8.4
29	---	---	---	15.0	11.3	12.8	11.9	9.7	10.6	8.9	8.1	8.5
30	---	---	---	14.5	11.1	12.5	11.3	9.5	10.3	9.0	8.2	8.6
31	---	---	---	13.3	10.9	11.8	---	---	---	9.0	7.9	8.5
MONTH	---	---	---	---	---	---	14.8	7.0	10.7	13.5	7.2	9.3

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.1	7.7	8.4	7.3	6.5	6.9	---	---	---	8.5	7.4	7.8
2	8.8	7.7	8.2	8.5	6.8	7.6	---	---	---	8.6	7.3	7.8
3	8.7	7.4	8.0	---	---	---	---	---	---	8.9	7.3	8.1
4	8.9	7.6	8.2	---	---	---	7.7	6.6	7.1	9.2	7.6	8.3
5	8.9	6.7	7.9	---	---	---	8.3	6.9	7.5	9.5	7.7	8.4
6	7.6	5.9	6.9	8.1	6.7	7.3	8.9	6.9	7.8	9.8	7.6	8.5
7	8.2	6.1	7.3	9.0	7.4	8.1	9.6	7.0	8.0	9.6	7.6	8.5
8	8.0	6.3	7.1	8.8	7.2	7.8	10.1	6.9	8.2	8.5	7.3	7.8
9	7.7	6.0	6.7	8.9	7.6	8.1	10.3	6.8	8.3	8.3	6.8	7.6
10	7.9	5.8	6.8	8.9	7.3	8.0	9.7	6.3	7.7	8.9	6.8	7.9
11	7.3	5.6	6.3	9.0	7.3	8.0	9.6	6.4	7.8	9.3	7.2	8.3
12	7.5	6.0	6.6	9.2	7.0	7.9	8.5	6.3	7.3	9.6	7.7	8.5
13	6.9	6.1	6.5	9.2	6.5	7.7	8.2	6.6	7.2	9.7	7.4	8.3
14	7.6	6.4	6.9	9.1	6.2	7.4	8.6	6.6	7.4	9.4	7.1	8.0
15	7.6	6.3	7.0	9.2	6.0	7.4	9.0	7.1	7.8	9.8	7.1	8.3
16	8.0	6.6	7.4	6.8	5.7	6.4	9.1	6.9	7.9	8.6	7.5	8.1
17	7.8	6.7	7.3	7.3	6.7	7.0	9.2	7.1	8.0	8.8	7.9	8.3
18	7.0	6.1	6.7	7.1	6.7	7.0	9.4	7.0	8.0	9.1	7.9	8.4
19	7.2	6.1	6.6	7.2	6.6	7.0	9.1	6.9	7.8	9.2	7.8	8.3
20	7.6	5.8	6.7	7.4	6.8	7.2	8.7	6.9	7.6	9.1	7.6	8.2
21	6.9	5.1	6.1	7.1	6.4	6.8	8.9	6.9	7.8	9.2	7.5	8.3
22	7.8	5.3	6.9	7.0	6.1	6.5	9.1	6.9	8.0	8.5	7.4	7.9
23	8.0	5.8	6.8	7.4	5.4	6.8	9.9	7.8	8.8	8.5	7.8	8.2
24	8.6	4.7	6.3	7.7	6.4	7.0	10.1	8.3	9.1	9.0	8.5	8.7
25	8.6	5.8	7.2	7.4	6.6	7.1	10.0	8.1	8.9	8.6	8.1	8.3
26	8.4	6.4	7.3	---	---	---	10.0	7.6	8.6	8.4	7.9	8.1
27	9.0	6.3	7.4	---	---	---	7.6	7.0	7.3	9.0	8.3	8.7
28	8.6	6.1	7.1	6.7	4.9	5.6	8.2	7.2	7.7	9.1	8.4	8.8
29	8.7	6.1	7.2	5.6	4.9	5.3	8.4	7.2	7.7	9.2	8.4	8.8
30	6.9	6.2	6.5	6.4	5.6	6.1	7.9	7.0	7.4	9.7	9.2	9.5
31	---	---	---	6.8	6.1	6.5	8.4	7.2	7.7	---	---	---
MONTH	9.1	4.7	7.1	---	---	---	---	---	---	9.8	6.8	8.3

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)
OCT 26...	1040	206	752	130	8.2	816	11.5	170	2	136	32.3
DEC 16...	1015	293	750	101	8.2	1050	.8	207	251	182	38.3
MAR 10...	1130	e420	757	19	7.6	1150	.3	--	--	207	38.1
APR 21...	1100	102	754	87	8.1	1240	12.1	227	275	232	46.3
JUN 29...	1130	118	761	84	7.6	1060	23.4	184	--	186	39.0
AUG 30...	1100	67	757	86	7.9	1020	21.4	176	3	176	38.2

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)
OCT 26...	<.04	1.09	.016	.046	.092	<.006	E.018	<.006	<.005	.033	<.050
DEC 16...	.15	1.28	.012	.011	.043	<.006	<.015	<.006	<.005	.023	<.050
MAR 10...	.14	1.01	.015	<.006	.025	<.006	<.010	<.006	<.005	.021	<.050
APR 21...	.22	2.06	.049	.008	E.044	<.006	E.015	.014	<.005	.045	<.050
JUN 29...	.20	2.29	.059	.048	.147	<.006	E.015	<.006	<.005	.031	<.050
AUG 30...	.11	1.75	.035	.066	.121	<.006	E.009	<.006	<.005	.013	<.050

Date	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	DCPA, water fltrd 0.7u GF ug/L 82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Fonofos water, fltrd, ug/L (04095)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)
OCT 26...	<.010	<.041	<.005	<.006	<.003	<.005	<.009	<.003	<.027	<.015	.015
DEC 16...	<.010	<.041	<.005	<.006	<.003	<.005	<.009	<.003	<.027	<.015	.013
MAR 10...	<.010	<.041	<.005	<.006	<.003	<.005	<.009	<.003	<.027	<.015	.007
APR 21...	<.010	E.009	<.005	<.006	<.003	<.005	<.009	<.003	<.027	<.015	.013
JUN 29...	<.010	<.041	<.005	<.006	<.003	<.005	<.009	<.003	<.027	<.015	.020
AUG 30...	<.010	E.009	<.005	<.006	<.003	<.005	<.009	<.003	<.027	<.015	.011

Date	Metribuzin, water, fltrd, ug/L (82630)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)
OCT 26...	<.006	<.022	<.011	<.01	<.004	<.012	<.02	<.02	<.009	10
DEC 16...	<.006	<.022	<.011	<.01	<.004	.014	<.02	<.02	<.009	10
MAR 10...	<.006	<.022	<.011	<.02	<.004	<.010	<.02	<.02	<.009	36
APR 21...	<.006	E.015	<.011	.01	<.004	<.020	<.02	<.02	<.009	44
JUN 29...	<.006	<.022	<.011	.01	<.004	<.010	<.02	<.02	<.009	--
AUG 30...	<.006	<.022	<.011	.01	<.004	<.009	<.02	<.02	<.009	11

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	867	816	819	---	---	---	---	---	---	---	---	---
2	875	813	817	---	---	---	---	---	---	---	---	---
3	882	555	750	---	---	---	---	---	---	---	---	---
4	868	771	812	---	---	---	---	---	---	---	---	---
5	892	830	864	---	---	---	---	---	---	---	---	---
6	971	892	925	---	---	---	---	---	---	---	---	---
7	1040	942	957	---	---	---	---	---	---	---	---	---
8	998	943	960	---	---	---	---	---	---	---	---	---
9	1010	968	982	---	---	---	---	---	---	---	---	---
10	1120	1010	1020	---	---	---	---	---	---	---	---	---
11	1040	1020	1030	---	---	---	---	---	---	---	---	---
12	1140	999	1020	---	---	---	---	---	---	---	---	---
13	1090	979	995	---	---	---	---	---	---	---	---	---
14	1030	979	1000	---	---	---	---	---	---	---	---	---
15	1030	934	979	---	---	---	---	---	---	---	---	---
16	1030	927	934	---	---	---	---	---	---	---	---	---
17	1100	929	957	---	---	---	---	---	---	---	---	---
18	1010	954	972	---	---	---	---	---	---	---	---	---
19	1020	979	988	---	---	---	---	---	---	---	---	---
20	1020	989	1000	---	---	---	---	---	---	---	---	---
21	1110	997	1010	---	---	---	---	---	---	---	---	---
22	1040	1010	1020	---	---	---	---	---	---	---	---	---
23	1120	1000	1020	---	---	---	---	---	---	---	---	---
24	1130	1020	1040	---	---	---	---	---	---	---	---	---
25	1030	882	949	---	---	---	---	---	---	---	---	---
26	918	808	846	---	---	---	---	---	---	---	---	---
27	1020	878	951	---	---	---	---	---	---	---	---	---
28	996	772	827	---	---	---	---	---	---	---	---	---
29	913	793	850	---	---	---	---	---	---	---	---	---
30	938	852	867	---	---	---	---	---	---	---	---	---
31	921	867	889	---	---	---	---	---	---	---	---	---
MONTH	1140	555	937	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	8.0	8.1	---	---	---	---	---	---	---	---	---
2	8.1	8.0	8.1	---	---	---	---	---	---	---	---	---
3	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
4	8.0	7.9	8.0	---	---	---	---	---	---	---	---	---
5	8.0	8.0	8.0	---	---	---	---	---	---	---	---	---
6	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
7	8.1	8.0	8.1	---	---	---	---	---	---	---	---	---
8	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
9	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
10	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
11	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
12	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
13	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
14	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
15	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
16	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
17	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
18	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
19	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
20	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
21	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
22	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
23	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
24	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
25	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
26	8.2	8.0	8.2	---	---	---	---	---	---	---	---	---
27	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
28	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
29	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
30	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
31	8.2	8.0	8.2	---	---	---	---	---	---	---	---	---
MAX	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
MIN	8.0	7.9	8.0	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04161820 CLINTON RIVER AT STERLING HEIGHTS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	14.4	15.4	---	---	---	---	---	---	---	---	---
2	17.9	15.7	16.7	---	---	---	---	---	---	---	---	---
3	19.5	17.8	18.6	---	---	---	---	---	---	---	---	---
4	19.8	18.6	19.3	---	---	---	---	---	---	---	---	---
5	19.6	18.5	19.1	---	---	---	---	---	---	---	---	---
6	19.3	18.2	18.8	---	---	---	---	---	---	---	---	---
7	18.2	14.9	16.5	---	---	---	---	---	---	---	---	---
8	14.9	13.1	14.0	---	---	---	---	---	---	---	---	---
9	13.1	12.1	12.6	---	---	---	---	---	---	---	---	---
10	13.1	12.6	12.8	---	---	---	---	---	---	---	---	---
11	13.9	13.0	13.4	---	---	---	---	---	---	---	---	---
12	14.6	13.9	14.2	---	---	---	---	---	---	---	---	---
13	15.5	14.6	15.0	---	---	---	---	---	---	---	---	---
14	15.8	14.6	15.3	---	---	---	---	---	---	---	---	---
15	15.7	14.3	15.0	---	---	---	---	---	---	---	---	---
16	14.3	12.6	13.4	---	---	---	---	---	---	---	---	---
17	12.6	11.4	11.9	---	---	---	---	---	---	---	---	---
18	12.7	11.5	12.1	---	---	---	---	---	---	---	---	---
19	12.6	11.5	12.1	---	---	---	---	---	---	---	---	---
20	11.5	10.5	10.9	---	---	---	---	---	---	---	---	---
21	10.6	9.8	10.2	---	---	---	---	---	---	---	---	---
22	10.3	9.6	9.9	---	---	---	---	---	---	---	---	---
23	9.8	9.0	9.4	---	---	---	---	---	---	---	---	---
24	9.3	8.7	9.1	---	---	---	---	---	---	---	---	---
25	9.8	9.0	9.3	---	---	---	---	---	---	---	---	---
26	9.4	8.6	8.9	---	---	---	---	---	---	---	---	---
27	8.7	7.8	8.2	---	---	---	---	---	---	---	---	---
28	8.9	7.9	8.4	---	---	---	---	---	---	---	---	---
29	8.4	7.1	7.9	---	---	---	---	---	---	---	---	---
30	8.7	7.4	8.1	---	---	---	---	---	---	---	---	---
31	11.0	8.7	9.8	---	---	---	---	---	---	---	---	---
MONTH	19.8	7.1	12.8	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.8	9.0	9.4	---	---	---	---	---	---	---	---	---
2	9.4	8.7	9.1	---	---	---	---	---	---	---	---	---
3	8.7	8.0	8.4	---	---	---	---	---	---	---	---	---
4	8.4	7.9	8.1	---	---	---	---	---	---	---	---	---
5	8.6	7.8	8.1	---	---	---	---	---	---	---	---	---
6	8.6	7.8	8.1	---	---	---	---	---	---	---	---	---
7	9.3	8.0	8.6	---	---	---	---	---	---	---	---	---
8	10.0	8.8	9.4	---	---	---	---	---	---	---	---	---
9	10.4	9.3	9.7	---	---	---	---	---	---	---	---	---
10	10.3	9.3	9.6	---	---	---	---	---	---	---	---	---
11	10.5	9.2	9.7	---	---	---	---	---	---	---	---	---
12	10.4	9.0	9.5	---	---	---	---	---	---	---	---	---
13	10.8	8.6	9.5	---	---	---	---	---	---	---	---	---
14	10.7	8.5	9.3	---	---	---	---	---	---	---	---	---
15	10.0	8.2	9.0	---	---	---	---	---	---	---	---	---
16	10.8	8.5	9.5	---	---	---	---	---	---	---	---	---
17	11.3	9.2	10.0	---	---	---	---	---	---	---	---	---
18	11.2	9.2	10.0	---	---	---	---	---	---	---	---	---
19	11.3	9.1	10.0	---	---	---	---	---	---	---	---	---
20	11.8	9.4	10.4	---	---	---	---	---	---	---	---	---
21	12.0	9.8	10.7	---	---	---	---	---	---	---	---	---
22	12.3	9.9	10.9	---	---	---	---	---	---	---	---	---
23	12.0	10.0	10.8	---	---	---	---	---	---	---	---	---
24	11.9	10.1	10.8	---	---	---	---	---	---	---	---	---
25	12.0	10.1	10.8	---	---	---	---	---	---	---	---	---
26	11.9	10.1	10.9	---	---	---	---	---	---	---	---	---
27	12.7	10.5	11.5	---	---	---	---	---	---	---	---	---
28	12.2	10.8	11.4	---	---	---	---	---	---	---	---	---
29	12.4	10.9	11.5	---	---	---	---	---	---	---	---	---
30	12.5	10.8	11.5	---	---	---	---	---	---	---	---	---
31	11.9	10.2	10.9	---	---	---	---	---	---	---	---	---
MONTH	12.7	7.8	9.9	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI

LOCATION.--Lat 42°32'16", long 83°00'21", in SW1/4 SW1/4 sec.35, T.2 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on right bank 50 ft downstream from bridge on 14 Mile Road in Warren.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 2004 to October 2005 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 610 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 969 ft^3/s, May 23, 2004, gage height, 10.72 ft; minimum daily, 28 ft^3/s, Oct. 7, 11, 2004.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	35	246	146	60	90	68	66	51	58	41	33
2	52	105	83	189	60	74	87	67	64	43	40	33
3	36	47	57	195	60	69	70	63	65	38	40	37
4	31	128	52	193	63	70	66	62	66	41	42	30
5	31	71	49	135	67	75	64	62	67	97	40	30
6	30	43	55	109	68	111	66	62	89	44	38	33
7	28	38	394	95	108	263	66	64	66	40	37	33
8	31	37	359	95	187	238	66	60	94	59	35	49
9	47	35	138	95	98	100	65	61	100	44	31	37
10	29	34	165	100	78	77	65	60	70	36	34	33
11	28	34	179	109	73	81	66	62	84	38	34	31
12	29	33	127	270	78	81	66	60	74	38	45	33
13	29	31	139	591	76	72	61	91	97	38	32	32
14	53	30	100	489	367	71	60	115	62	39	60	33
15	83	31	95	275	389	71	60	68	66	38	37	32
16	67	31	91	142	601	72	59	63	63	267	32	154
17	61	43	91	84	308	73	59	62	56	270	31	58
18	40	38	84	72	159	73	60	61	51	75	31	40
19	37	44	82	73	102	78	60	62	48	61	33	38
20	36	60	82	71	86	92	70	71	52	52	64	38
21	34	35	80	69	92	79	60	61	71	60	50	35
22	33	35	79	66	95	79	64	73	73	42	44	141
23	48	34	77	67	89	81	100	88	51	40	40	272
24	57	107	79	67	79	81	129	70	51	210	35	54
25	36	110	73	68	78	78	108	64	60	90	32	70
26	34	54	75	66	78	76	123	63	83	123	32	111
27	33	64	77	64	75	74	136	61	56	223	121	51
28	32	86	75	64	75	73	84	68	52	60	51	43
29	121	51	77	63	---	70	72	61	82	46	39	115
30	76	53	86	60	---	69	68	60	111	43	37	46
31	40	---	198	61	---	70	---	61	---	39	43	---
TOTAL	1356	1577	3644	4243	3749	2761	2248	2072	2075	2392	1301	1775
MEAN	43.7	52.6	118	137	134	89.1	74.9	66.8	69.2	77.2	42.0	59.2
MAX	121	128	394	591	601	263	136	115	111	270	121	272
MIN	28	30	49	60	60	69	59	60	48	36	31	30

WTR YR 2005 TOTAL 29193 MEAN 80.0 MAX 601 MIN 28

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	---	---	---	---	---	---	---	---	---	---	---
2	38	---	---	---	---	---	---	---	---	---	---	---
3	100	---	---	---	---	---	---	---	---	---	---	---
4	48	---	---	---	---	---	---	---	---	---	---	---
5	41	---	---	---	---	---	---	---	---	---	---	---
6	40	---	---	---	---	---	---	---	---	---	---	---
7	38	---	---	---	---	---	---	---	---	---	---	---
8	36	---	---	---	---	---	---	---	---	---	---	---
9	34	---	---	---	---	---	---	---	---	---	---	---
10	35	---	---	---	---	---	---	---	---	---	---	---
11	37	---	---	---	---	---	---	---	---	---	---	---
12	35	---	---	---	---	---	---	---	---	---	---	---
13	37	---	---	---	---	---	---	---	---	---	---	---
14	35	---	---	---	---	---	---	---	---	---	---	---
15	33	---	---	---	---	---	---	---	---	---	---	---
16	31	---	---	---	---	---	---	---	---	---	---	---
17	33	---	---	---	---	---	---	---	---	---	---	---
18	34	---	---	---	---	---	---	---	---	---	---	---
19	34	---	---	---	---	---	---	---	---	---	---	---
20	31	---	---	---	---	---	---	---	---	---	---	---
21	32	---	---	---	---	---	---	---	---	---	---	---
22	31	---	---	---	---	---	---	---	---	---	---	---
23	30	---	---	---	---	---	---	---	---	---	---	---
24	31	---	---	---	---	---	---	---	---	---	---	---
25	31	---	---	---	---	---	---	---	---	---	---	---
26	30	---	---	---	---	---	---	---	---	---	---	---
27	36	---	---	---	---	---	---	---	---	---	---	---
28	35	---	---	---	---	---	---	---	---	---	---	---
29	30	---	---	---	---	---	---	---	---	---	---	---
30	29	---	---	---	---	---	---	---	---	---	---	---
31	30	---	---	---	---	---	---	---	---	---	---	---
TOTAL	1135	---	---	---	---	---	---	---	---	---	---	---
MEAN	36.6	---	---	---	---	---	---	---	---	---	---	---
MAX	100	---	---	---	---	---	---	---	---	---	---	---
MIN	29	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval. Dissolved oxygen and pH not collected during winter months.

REMARKS.--Interruptions in water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 1-5, Nov. 22 to Dec. 1, Dec. 18-23, Jan. 8 to Mar. 4, Mar. 24-27, Apr. 3-6, 28-30, May 2, 3, 8-12, 23-26, June 3-8, 10-15, 19-25, July 1-5, 14-16, 23-27, Aug. 13-16, 20-30, Sept. 4-8, Oct. 6-18, 27-31, 2005, rated good; May 13-16, July 17, 18, July 28 to Aug. 1, Aug. 31 to Sept. 1, Sept. 9-11, rated fair; May 17, 18, July 19-21, Aug. 2, 3, Sept. 12-15, rated poor. pH records rated excellent except for the following period: June 27-29, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 13-17, Nov. 2, 14-18, Nov. 30 to Dec. 1, Mar. 28, 29, Apr. 9, 24, 25, May 11-16, May 31 to June 1, June 11-13, 19-21, July 6, 16, 17, 26, 27, Sept. 7-10, Oct. 31, 2005, rated good; Oct. 18-23, Mar. 30 to Apr. 1, Apr. 10-13, 26-28, May 17, 18, June 2-5, 14, 15, 22-25, July 7, 18-20, 28-31, Sept. 11-15, rated fair; Apr. 2-6, 13-21, June 6-8, 26-28, July 8-11, 21, Aug. 1-3, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 12,400 microsiemens, Jan. 7, 2005; minimum, 188 microsiemens, July 16, 2005.
pH: Maximum, 8.6 std. units, June 1, 2005; minimum, 7.1 std. units, Sept. 24, 25, 27, 28, Oct. 5-8, 11, 12, 15, 25, 26, 2004, June 8, Oct. 24, 25, 29-31, 2005.
WATER TEMPERATURE: Maximum, 28.7°C, July 13, 2005; minimum, 1.8°C, Feb. 14, 2005.
DISSOLVED OXYGEN: Maximum, 18.1 mg/L, June 1, 2005; minimum, 1.1 mg/L, June 6, 9, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 12,400 microsiemens, Jan. 7; minimum, 188 microsiemens, July 16.
pH: Maximum, 8.6 std. units, June 1; minimum, 7.1 std. units, Oct. 5-8, 11, 12, 15, 25, 26, June 8.
WATER TEMPERATURE: Maximum, 28.7°C, July 13; minimum, 1.8°C, Feb. 14.
DISSOLVED OXYGEN: Maximum, 18.1 mg/L, June 1; minimum, 1.1 mg/L, June 6, 9.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1340	1010	1130	897	783	830	1040	359	597	2530	2080	2240
2	2010	1030	1410	890	494	635	---	---	---	2540	1140	1810
3	1300	894	997	871	676	768	---	---	---	1860	1370	1580
4	990	841	916	932	395	638	---	---	---	1670	1350	1470
5	1040	889	940	871	614	753	---	---	---	4960	1620	2950
6	1030	872	931	1040	849	953	---	---	---	8060	4960	6320
7	1040	901	958	1190	1010	1070	---	---	---	12400	5830	7140
8	1080	903	991	1210	1010	1090	---	---	---	6610	4510	5450
9	1930	999	1350	1230	974	1100	---	---	---	6640	5210	5880
10	1100	844	958	1290	1040	1140	---	---	---	5580	4500	5080
11	926	768	852	1350	1030	1160	---	---	---	9920	4020	5980
12	983	800	895	1360	1010	1150	---	---	---	9090	1700	4410
13	1100	888	982	1390	987	1160	---	---	---	1740	1110	1480
14	1550	880	1120	1500	1000	1150	---	---	---	1740	1120	1400
15	968	492	766	1350	976	1160	---	---	---	2050	1740	1940
16	900	517	658	1330	1010	1140	---	---	---	2190	1970	2070
17	900	740	794	1850	954	1360	---	---	---	2150	1960	2030
18	862	759	792	1380	1050	1190	1930	1480	1670	2120	1810	1940
19	944	850	908	1240	984	1130	2680	1730	2000	5340	1820	2870
20	1070	912	993	1080	697	836	2090	1630	1870	5600	3780	4820
21	1230	941	1040	887	813	843	2250	1590	1830	4700	2830	3490
22	1200	974	1060	949	805	864	2300	1450	1760	3380	2320	2930
23	1440	781	1100	1010	860	913	2190	1660	1860	3040	2210	2430
24	1190	812	853	1150	423	805	2140	1590	1790	3640	2330	2660
25	848	758	810	1970	690	1510	2590	1840	2260	4260	2740	3450
26	941	827	864	1390	1100	1190	3200	1720	2210	4980	3380	4120
27	1030	897	949	1680	1260	1480	2310	1980	2120	4520	2200	3290
28	1170	899	995	1370	852	982	2900	2130	2430	3460	2230	2670
29	1170	417	638	1020	848	912	2800	2060	2420	3760	2020	2340
30	715	472	628	1250	880	1080	4010	2650	3080	2940	1810	2260
31	801	715	755	---	---	---	4120	2280	2980	2810	1690	2110
MONTH	2010	417	937	1970	395	1030	---	---	---	12400	1110	3250

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2720	1770	2100	12200	3610	6810	2070	1870	1950	2160	1780	1940
2	2520	1720	2000	9950	5200	6650	3330	1820	2450	1970	1690	1830
3	2360	1580	1940	5600	3400	4650	2310	1820	1980	2160	1630	1890
4	2790	1680	2120	4880	2220	3690	2220	1710	1910	2220	1490	1860
5	3160	1940	2580	4130	2880	3400	2310	1920	2100	2180	1600	1830
6	3120	2140	2720	3740	2630	3060	2280	1780	2020	1970	1640	1780
7	4470	2400	3150	2890	1200	2110	2100	1770	1940	2360	1740	2070
8	2830	1860	2050	1820	1200	1510	2070	1740	1880	2180	1710	1890
9	6280	1920	3280	2000	1770	1880	2020	1730	1860	2130	1510	1850
10	7340	5480	6140	2110	1830	1940	1980	1570	1760	2140	1680	1890
11	5890	3400	4180	6300	2100	3820	1790	1510	1660	2040	1750	1900
12	3880	2650	3170	7040	4520	5760	1840	1520	1660	2240	1400	1900
13	3460	2300	2610	6920	3820	5050	2070	1580	1780	3000	1360	1920
14	6400	1400	2700	3910	2650	3240	2050	1420	1800	1360	1060	1200
15	2160	828	1670	2940	2410	2620	2280	1370	1840	1460	1220	1380
16	2340	654	1610	2680	2230	2450	1930	1470	1740	1660	1410	1530
17	2600	1690	1980	2650	2130	2430	2180	1470	1780	1810	1570	1700
18	2680	2070	2390	2760	2290	2520	1950	1500	1710	2040	1550	1730
19	2220	1890	2060	3930	2330	2770	2060	1520	1780	1980	1490	1680
20	2800	1880	2160	3710	2260	2910	2930	1590	2210	2480	1440	1840
21	6460	2670	4540	2350	2080	2220	2230	1610	1850	1640	1400	1520
22	6440	4320	5090	2440	2050	2200	2700	1480	1880	2030	1370	1700
23	4430	3420	3960	2490	1870	2140	2710	1270	1960	1850	1220	1510
24	4270	2990	3500	3710	2440	2990	1740	1270	1490	1410	1220	1310
25	4310	2680	3190	2750	2140	2350	1750	1250	1550	1480	1280	1370
26	4610	3700	4190	2310	1920	2110	1800	1110	1550	1640	1400	1510
27	4200	2790	3270	2130	1910	2010	1940	1070	1430	1770	1440	1600
28	3650	2460	2890	2350	1880	2080	1800	1450	1620	2080	1380	1640
29	---	---	---	2330	1740	2100	2030	1750	1900	1750	1300	1510
30	---	---	---	2400	1900	2100	2350	1740	1990	1690	1340	1490
31	---	---	---	2200	1830	2000	---	---	---	1860	1340	1560
MONTH	7340	654	2970	12200	1200	3020	3330	1070	1830	3000	1060	1690

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3230	1140	2110	1120	891	1060	1670	1300	1440	1510	933	1070
2	1730	1330	1550	1240	1060	1120	1590	1270	1440	1420	920	1120
3	2120	1330	1630	1470	1110	1250	1650	1100	1360	1300	927	1060
4	1820	1240	1590	1580	1110	1330	1540	932	1190	1380	859	1070
5	3340	1430	1790	2090	747	1060	1660	884	1240	1380	884	1110
6	3220	1390	1630	1090	1010	1060	1450	839	1120	1380	880	1080
7	1670	1280	1460	1240	1060	1140	1480	792	1130	1390	908	1080
8	1710	467	1330	1970	1140	1340	1430	774	1100	1960	971	1320
9	1090	412	723	1670	1140	1300	1640	783	1220	1280	1020	1140
10	1280	921	1070	1300	1060	1190	1660	1020	1370	1260	953	1060
11	2390	1160	1420	1390	1000	1190	1840	990	1430	1180	868	1040
12	1400	955	1050	1390	1130	1260	2370	1270	1780	1190	845	1000
13	1780	677	1190	1520	995	1260	1690	1210	1440	1190	893	1000
14	1790	1140	1420	1820	861	1250	1640	932	1150	1220	931	1040
15	1280	929	1050	1610	949	1170	1020	911	970	1330	977	1140
16	1830	1180	1460	1430	188	799	1270	872	1050	1510	325	737
17	1380	1080	1200	772	304	529	1340	946	1140	995	571	775
18	1290	1070	1170	1240	595	888	1430	975	1200	954	800	883
19	1500	1090	1270	941	546	794	1360	1010	1230	1070	901	970
20	1560	1100	1350	1160	913	1010	1830	555	1210	1220	999	1080
21	1930	901	1420	1580	1060	1230	961	678	853	1310	1000	1090
22	1830	1200	1390	1280	1100	1200	945	799	853	1280	249	962
23	1310	1100	1190	1500	1170	1310	1040	867	947	818	269	546
24	1290	1130	1210	1520	324	852	1240	932	1070	985	818	898
25	---	---	---	1060	565	842	1260	991	1100	1250	657	981
26	---	---	---	1490	511	946	1300	1010	1150	742	540	624
27	---	---	---	824	485	614	1380	420	900	1040	742	906
28	---	---	---	1180	824	994	829	628	745	1170	871	1090
29	---	---	---	1340	1160	1270	940	811	866	1100	508	670
30	1040	366	822	1600	1280	1410	1080	911	996	1000	740	879
31	---	---	---	1640	1300	1430	1380	1010	1190	---	---	---
MONTH	---	---	---	2090	188	1100	2370	420	1160	1960	249	981

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.8	7.2	7.3	7.5	7.3	7.4	8.0	7.7	7.8	---	---	---
2	7.8	7.2	7.4	7.8	7.3	7.5	---	---	---	---	---	---
3	7.6	7.2	7.3	7.4	7.3	7.4	---	---	---	---	---	---
4	7.6	7.2	7.2	7.9	7.3	7.5	---	---	---	---	---	---
5	7.6	7.1	7.2	7.6	7.3	7.4	---	---	---	---	---	---
6	7.6	7.1	7.2	7.5	7.4	7.4	---	---	---	---	---	---
7	7.6	7.1	7.2	7.6	7.4	7.5	---	---	---	---	---	---
8	7.6	7.1	7.3	7.6	7.3	7.4	---	---	---	---	---	---
9	7.8	7.2	7.5	7.6	7.3	7.4	---	---	---	---	---	---
10	7.6	7.2	7.3	7.5	7.2	7.4	---	---	---	---	---	---
11	7.6	7.1	7.2	7.5	7.2	7.4	---	---	---	---	---	---
12	7.7	7.1	7.3	7.6	7.3	7.4	---	---	---	---	---	---
13	7.7	7.2	7.3	7.6	7.3	7.4	---	---	---	---	---	---
14	7.8	7.2	7.4	7.6	7.3	7.4	---	---	---	---	---	---
15	7.6	7.1	7.3	7.6	7.2	7.4	---	---	---	---	---	---
16	7.6	7.2	7.3	7.6	7.3	7.4	---	---	---	---	---	---
17	7.5	7.2	7.4	7.8	7.2	7.4	---	---	---	---	---	---
18	7.4	7.2	7.2	7.6	7.2	7.4	---	---	---	---	---	---
19	7.5	7.2	7.3	7.6	7.2	7.4	---	---	---	---	---	---
20	7.5	7.3	7.3	7.6	7.3	7.4	---	---	---	---	---	---
21	7.4	7.2	7.3	7.6	7.2	7.4	---	---	---	---	---	---
22	7.4	7.2	7.3	7.6	7.2	7.3	---	---	---	---	---	---
23	7.8	7.2	7.4	7.4	7.2	7.3	---	---	---	---	---	---
24	7.7	7.2	7.4	8.0	7.4	7.7	---	---	---	---	---	---
25	7.4	7.1	7.2	8.1	7.7	7.8	---	---	---	---	---	---
26	7.4	7.1	7.2	7.7	7.5	7.6	---	---	---	---	---	---
27	7.5	7.2	7.2	7.9	7.5	7.7	---	---	---	---	---	---
28	7.6	7.2	7.3	8.0	7.6	7.8	---	---	---	---	---	---
29	7.8	7.2	7.5	7.7	7.4	7.6	---	---	---	---	---	---
30	7.5	7.3	7.4	8.0	7.4	7.5	---	---	---	---	---	---
31	7.4	7.3	7.3	---	---	---	---	---	---	---	---	---
MAX	7.8	7.3	7.5	8.1	7.7	7.8	---	---	---	---	---	---
MIN	7.4	7.1	7.2	7.4	7.2	7.3	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	7.8	7.5	7.6	7.5	7.4	7.4
2	---	---	---	---	---	---	8.0	7.5	7.7	7.5	7.3	7.4
3	---	---	---	---	---	---	7.8	7.5	7.6	7.6	7.3	7.4
4	---	---	---	---	---	---	8.0	7.3	7.5	7.6	7.3	7.4
5	---	---	---	---	---	---	8.0	7.3	7.6	7.6	7.3	7.5
6	---	---	---	---	---	---	7.8	7.4	7.5	7.6	7.3	7.4
7	---	---	---	---	---	---	7.8	7.4	7.5	7.6	7.3	7.5
8	---	---	---	---	---	---	7.8	7.4	7.5	7.6	7.3	7.4
9	---	---	---	---	---	---	7.8	7.4	7.5	7.6	7.3	7.4
10	---	---	---	---	---	---	7.7	7.4	7.5	7.8	7.3	7.4
11	---	---	---	---	---	---	7.7	7.3	7.4	7.7	7.3	7.5
12	---	---	---	---	---	---	7.7	7.3	7.5	7.8	7.3	7.5
13	---	---	---	---	---	---	7.8	7.4	7.5	8.2	7.3	7.5
14	---	---	---	---	---	---	7.9	7.4	7.5	7.8	7.5	7.6
15	---	---	---	---	---	---	7.9	7.4	7.6	7.5	7.3	7.4
16	---	---	---	---	---	---	7.9	7.4	7.5	7.5	7.3	7.4
17	---	---	---	---	---	---	7.9	7.4	7.5	7.6	7.3	7.5
18	---	---	---	---	---	---	7.9	7.4	7.5	7.8	7.3	7.5
19	---	---	---	---	---	---	7.9	7.3	7.5	7.5	7.3	7.4
20	---	---	---	---	---	---	7.7	7.3	7.6	7.7	7.3	7.6
21	---	---	---	---	---	---	7.7	7.3	7.4	7.6	7.3	7.4
22	---	---	---	---	---	---	7.7	7.3	7.6	7.8	7.3	7.5
23	---	---	---	---	---	---	7.8	7.5	7.6	7.5	7.4	7.4
24	---	---	---	---	---	---	8.0	7.7	7.9	7.5	7.2	7.4
25	---	---	---	7.9	7.6	7.8	8.1	7.6	7.9	7.7	7.2	7.4
26	---	---	---	7.9	7.6	7.7	8.0	7.5	7.6	7.6	7.3	7.4
27	---	---	---	7.8	7.6	7.7	8.0	7.6	7.7	7.7	7.3	7.4
28	---	---	---	7.9	7.6	7.7	7.7	7.5	7.6	7.6	7.3	7.5
29	---	---	---	8.1	7.6	7.7	7.7	7.5	7.5	7.7	7.3	7.4
30	---	---	---	8.1	7.5	7.7	7.6	7.4	7.5	7.7	7.3	7.4
31	---	---	---	7.9	7.4	7.6	---	---	---	7.8	7.3	7.4
MAX	---	---	---	---	---	---	8.1	7.7	7.9	8.2	7.5	7.6
MIN	---	---	---	---	---	---	7.6	7.3	7.4	7.5	7.2	7.4

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.6	7.2	7.4	7.5	7.3	7.4	8.0	7.5	7.7	8.2	7.4	7.6
2	7.7	7.2	7.4	7.7	7.3	7.4	8.1	7.5	7.6	8.3	7.3	7.6
3	7.7	7.2	7.3	7.7	7.4	7.5	8.2	7.4	7.6	8.1	7.3	7.5
4	7.6	7.2	7.3	7.7	7.4	7.5	8.2	7.3	7.5	8.0	7.3	7.5
5	7.9	7.2	7.5	8.1	7.3	7.6	8.3	7.3	7.5	8.1	7.3	7.4
6	7.6	7.2	7.4	7.5	7.2	7.3	8.2	7.3	7.5	8.0	7.2	7.5
7	7.6	7.2	7.3	7.7	7.2	7.4	8.3	7.3	7.5	7.9	7.2	7.4
8	7.8	7.1	7.4	7.9	7.3	7.5	8.2	7.3	7.6	7.9	7.3	7.4
9	7.7	7.2	7.3	7.6	7.3	7.5	8.3	7.3	7.5	7.7	7.3	7.4
10	7.6	7.2	7.3	7.7	7.3	7.4	8.0	7.3	7.4	7.9	7.4	7.5
11	7.7	7.2	7.4	7.9	7.3	7.5	7.9	7.3	7.4	8.1	7.4	7.5
12	7.6	7.3	7.4	7.9	7.4	7.5	8.2	7.2	7.5	8.1	7.4	7.5
13	7.5	7.3	7.4	8.3	7.2	7.4	7.5	7.2	7.4	8.2	7.4	7.5
14	7.6	7.4	7.5	7.8	7.2	7.5	7.6	7.3	7.5	8.1	7.4	7.5
15	7.5	7.3	7.5	7.7	7.2	7.3	7.5	7.3	7.4	8.1	7.3	7.5
16	7.6	7.3	7.5	8.5	7.2	7.3	7.7	7.2	7.5	7.9	7.2	7.5
17	7.6	7.3	7.4	8.2	7.2	7.4	7.7	7.4	7.5	7.6	7.2	7.3
18	7.6	7.4	7.5	7.7	7.4	7.4	7.8	7.4	7.6	7.6	7.3	7.4
19	7.7	7.4	7.5	7.7	7.3	7.4	7.7	7.5	7.6	7.6	7.2	7.4
20	7.8	7.4	7.6	7.6	7.3	7.4	8.1	7.4	7.6	7.8	7.2	7.4
21	7.8	7.4	7.6	7.7	7.3	7.6	7.5	7.2	7.4	7.9	7.3	7.4
22	7.9	7.4	7.6	7.8	7.4	7.5	7.4	7.2	7.3	8.2	7.3	7.5
23	8.0	7.5	7.6	7.9	7.4	7.6	7.6	7.2	7.3	7.9	7.3	7.4
24	8.1	7.4	7.6	8.1	7.4	7.6	7.8	7.3	7.5	7.4	7.3	7.3
25	8.2	7.4	7.6	7.5	7.3	7.4	7.6	7.4	7.5	7.8	7.3	7.5
26	7.8	7.4	7.5	7.8	7.3	7.6	7.7	7.4	7.5	7.7	7.4	7.5
27	7.7	7.4	7.6	7.6	7.4	7.5	8.2	7.4	7.6	7.6	7.4	7.5
28	7.8	7.5	7.6	7.7	7.4	7.6	7.7	7.5	7.6	7.7	7.4	7.5
29	7.9	7.4	7.6	7.7	7.5	7.6	7.8	7.5	7.6	7.9	7.4	7.5
30	8.0	7.3	7.5	7.8	7.6	7.7	7.8	7.5	7.6	7.7	7.3	7.5
31	---	---	---	7.9	7.6	7.7	8.0	7.5	7.7	---	---	---
MAX	8.6	7.5	7.6	8.5	7.6	7.7	8.3	7.5	7.7	8.3	7.4	7.6
MIN	7.5	7.1	7.3	7.5	7.2	7.3	7.4	7.2	7.3	7.4	7.2	7.3

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.2	16.7	19.4	16.8	13.5	15.3	8.6	6.3	7.3	8.6	6.4	7.7
2	19.7	16.0	17.9	16.0	12.2	13.1	---	---	---	8.7	5.6	6.6
3	20.3	15.0	17.4	15.8	12.9	14.2	---	---	---	8.6	6.3	7.6
4	19.3	15.2	17.1	14.1	10.3	11.9	---	---	---	8.0	5.9	6.9
5	20.1	14.0	17.1	14.2	10.9	12.3	---	---	---	8.0	7.1	7.4
6	20.6	14.8	17.7	16.0	10.8	13.6	---	---	---	8.4	7.1	7.6
7	21.4	16.3	18.6	16.7	13.1	14.6	---	---	---	9.4	3.4	8.0
8	21.5	16.8	19.2	15.2	11.9	13.7	---	---	---	9.6	8.1	8.9
9	19.9	16.2	18.2	16.1	11.0	13.5	---	---	---	9.7	8.8	9.4
10	20.6	15.1	17.6	15.8	11.6	14.0	---	---	---	9.9	7.4	9.0
11	20.4	15.3	17.6	15.4	12.8	14.1	---	---	---	8.9	7.4	8.2
12	20.7	15.1	17.7	15.8	11.0	13.5	---	---	---	8.8	3.3	5.7
13	19.9	15.6	17.8	15.4	10.6	13.2	---	---	---	7.4	4.5	6.6
14	18.0	14.9	16.5	15.8	9.4	13.2	---	---	---	7.0	6.3	6.6
15	17.6	14.2	15.6	15.0	10.9	13.3	---	---	---	7.4	5.5	6.4
16	15.7	12.3	14.1	16.0	12.7	14.5	---	---	---	7.4	5.5	6.5
17	13.8	11.5	12.8	15.7	12.0	14.2	---	---	---	7.5	6.2	6.7
18	15.7	12.7	14.2	17.4	13.9	15.6	10.6	7.8	9.4	8.3	6.1	7.2
19	16.1	13.3	15.0	16.0	13.2	14.8	9.2	4.9	7.4	9.0	7.0	7.7
20	17.8	14.5	16.2	15.0	12.1	13.7	10.0	7.2	8.3	9.6	7.6	8.6
21	17.6	14.8	16.6	16.3	12.7	14.5	10.9	7.5	9.2	9.6	6.9	8.5
22	18.5	15.4	17.1	15.9	12.1	14.3	11.2	7.1	9.5	8.7	5.2	7.0
23	18.2	14.6	16.4	15.5	13.1	14.7	9.3	6.8	8.0	9.5	5.3	7.6
24	16.7	14.6	15.7	15.0	6.3	10.6	9.9	6.8	8.7	9.3	7.6	8.5
25	19.1	15.6	17.3	8.8	5.8	7.3	9.6	6.6	7.8	10.1	7.8	9.3
26	18.8	15.5	17.1	11.6	8.2	10.4	10.3	4.6	8.4	9.7	7.1	8.6
27	19.4	16.0	17.5	11.6	9.9	10.8	10.8	7.3	9.2	10.7	7.4	8.7
28	19.5	15.4	17.4	10.7	8.2	9.4	10.8	7.4	9.2	11.0	7.4	9.1
29	17.6	13.6	14.9	12.2	8.1	10.9	11.5	8.6	10.0	10.7	7.0	9.4
30	17.5	15.6	16.4	13.1	8.4	11.8	11.4	7.4	9.6	11.5	6.5	9.1
31	16.3	14.6	15.5	---	---	---	7.4	5.0	6.2	12.1	6.4	9.3
MONTH	22.2	11.5	16.8	17.4	5.8	13.0	---	---	---	12.1	3.3	7.9

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.8	7.0	9.4	7.9	5.7	6.9	13.4	10.5	11.6	14.4	11.4	12.7
2	11.9	7.1	9.5	8.6	5.7	7.1	10.9	7.3	8.9	14.5	11.5	12.8
3	12.6	7.8	10.0	10.8	5.6	7.8	12.8	7.9	9.9	13.4	10.9	12.2
4	12.7	7.4	9.9	10.9	6.4	8.4	15.3	9.5	12.1	17.6	10.7	13.9
5	12.3	6.3	8.8	11.3	6.6	8.5	16.9	11.1	13.6	18.6	12.1	15.1
6	11.0	6.4	8.1	10.2	5.5	7.5	17.5	12.6	14.8	18.8	12.1	15.4
7	9.0	4.0	6.6	5.6	3.0	4.6	14.6	12.5	13.9	18.8	13.7	16.1
8	4.6	3.8	4.2	6.2	2.7	4.1	16.5	11.5	13.6	20.5	13.9	16.9
9	6.8	4.2	5.6	7.0	3.9	5.5	16.8	11.8	13.9	20.5	14.7	17.1
10	8.9	6.0	7.4	8.5	4.8	6.7	16.2	12.0	13.9	20.6	15.8	17.9
11	8.8	6.9	8.0	9.6	6.7	7.9	16.3	12.1	13.7	18.7	15.1	17.0
12	10.6	7.1	8.7	9.3	7.1	7.9	15.3	11.2	13.0	19.8	13.6	16.2
13	9.4	6.8	8.1	10.7	5.9	8.1	16.8	10.4	13.3	16.1	12.6	14.3
14	8.4	1.8	3.7	11.1	7.4	9.0	17.9	11.2	14.2	16.1	12.9	14.5
15	5.6	3.6	4.7	10.9	8.1	9.3	18.0	11.2	14.5	15.8	13.3	14.4
16	5.5	3.9	4.6	11.5	7.8	9.3	18.7	11.9	15.1	16.9	12.7	14.7
17	6.4	5.1	5.8	11.7	8.1	9.5	16.8	13.1	14.6	19.8	13.8	16.3
18	6.7	4.6	5.6	9.5	7.3	8.6	18.9	12.6	15.5	20.7	14.3	17.3
19	7.8	5.4	6.6	9.6	6.1	7.9	19.6	13.9	16.5	16.9	15.6	16.3
20	7.6	5.0	6.5	7.8	5.9	6.8	17.1	14.1	15.6	20.4	12.7	16.4
21	8.1	6.0	7.3	9.3	6.7	7.8	18.5	12.1	15.1	21.6	14.9	18.0
22	8.7	6.9	7.9	11.5	6.8	8.9	15.5	11.8	13.8	18.2	15.0	16.7
23	9.4	6.8	7.9	8.4	5.9	7.2	11.9	7.4	9.5	15.1	13.5	14.4
24	9.8	6.6	8.1	10.5	5.9	8.4	7.7	6.3	7.1	16.7	13.2	15.1
25	9.1	7.1	7.8	11.7	8.0	9.4	12.2	6.2	9.2	21.3	14.3	17.4
26	10.3	7.0	8.1	11.6	7.2	9.2	12.1	10.2	11.1	21.5	15.4	18.1
27	10.1	7.0	8.3	10.8	8.2	9.6	12.4	9.9	10.8	21.4	16.0	18.4
28	9.8	7.2	8.4	13.0	7.9	10.2	14.7	9.6	12.2	19.6	15.5	17.5
29	---	---	---	14.0	9.0	11.1	15.7	12.0	13.5	21.3	15.6	18.1
30	---	---	---	14.7	10.1	12.2	14.5	12.3	13.2	21.3	16.3	18.4
31	---	---	---	14.2	11.1	12.2	---	---	---	22.7	16.4	19.4
MONTH	12.7	1.8	7.3	14.7	2.7	8.3	19.6	6.2	12.9	22.7	10.7	16.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.7	17.0	21.5	25.4	20.6	22.6	26.8	21.6	23.9	26.7	21.4	23.6
2	23.8	17.6	20.2	26.0	19.2	22.1	28.2	22.3	24.8	26.2	20.8	23.3
3	22.2	18.7	19.9	26.1	19.6	22.6	27.6	23.1	25.1	25.3	21.0	22.9
4	23.4	18.4	20.5	26.9	20.4	23.1	25.8	23.4	24.4	25.6	20.3	22.4
5	25.8	18.8	21.9	24.3	20.8	22.2	27.6	22.6	24.7	26.0	19.9	22.3
6	24.4	19.5	21.6	23.0	20.2	21.3	26.8	22.1	24.1	25.8	20.0	22.6
7	26.0	19.6	22.3	26.6	19.2	22.4	27.3	21.8	24.3	25.9	20.8	23.2
8	26.2	20.5	22.8	25.8	20.4	22.2	26.3	22.0	24.0	23.3	21.1	22.4
9	25.6	20.9	22.7	25.8	19.3	22.4	28.3	22.5	25.0	26.0	20.6	22.9
10	27.0	20.7	23.5	26.8	19.9	23.0	28.2	23.3	25.1	26.6	20.5	23.2
11	25.5	21.6	23.0	26.6	20.6	23.3	26.1	23.1	24.4	26.9	20.9	23.4
12	24.3	21.4	22.6	26.5	21.7	23.4	25.8	22.6	23.9	26.3	21.0	23.3
13	22.1	20.5	21.4	28.7	22.1	24.6	25.8	23.1	24.2	26.6	21.7	23.8
14	25.6	19.7	22.5	27.3	22.2	24.5	23.6	21.3	22.5	25.2	22.4	23.6
15	23.0	19.9	21.5	27.5	22.1	24.4	25.8	21.1	23.2	24.3	21.4	22.7
16	21.1	17.9	19.7	24.8	22.8	23.5	26.0	21.4	23.7	21.9	17.4	19.0
17	21.8	17.2	19.1	24.6	22.6	23.6	27.3	21.8	24.1	20.9	18.9	19.9
18	20.6	18.1	19.3	26.3	21.8	24.0	27.2	21.8	24.0	24.6	19.2	21.7
19	23.1	17.3	20.0	25.8	22.2	23.7	27.7	23.1	24.7	23.7	20.1	21.8
20	24.4	17.5	20.8	26.6	21.3	23.4	24.6	22.5	23.6	24.2	19.9	21.9
21	23.8	19.1	21.5	26.5	22.2	24.0	25.9	22.0	23.5	25.0	19.4	22.0
22	24.8	18.9	21.5	27.8	22.9	24.7	23.2	21.2	22.1	23.0	20.0	21.2
23	25.1	18.4	21.6	27.2	21.8	24.1	23.9	21.4	22.4	20.9	19.8	20.3
24	27.0	20.1	23.2	23.4	21.8	22.8	26.2	19.7	22.8	22.1	19.1	20.6
25	27.7	21.8	24.1	26.7	22.7	24.1	24.4	20.3	22.4	23.0	20.2	21.3
26	24.5	20.4	22.5	25.4	23.0	24.1	26.5	21.2	23.5	21.5	19.7	20.7
27	25.7	20.9	23.1	23.9	21.4	22.2	23.3	21.9	22.8	22.9	18.0	20.2
28	25.6	21.7	23.2	24.2	20.3	22.0	25.9	21.1	23.1	23.0	18.6	20.7
29	26.9	21.6	23.6	24.9	20.7	22.5	26.7	21.5	23.7	20.2	17.3	18.2
30	25.0	22.0	22.8	26.4	20.6	23.0	24.4	22.5	23.5	21.1	16.3	18.6
31	---	---	---	26.7	20.4	23.2	24.7	21.6	22.9	---	---	---
MONTH	27.7	17.0	21.8	28.7	19.2	23.2	28.3	19.7	23.8	26.9	16.3	21.8

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	9.0	7.2	7.9	11.6	10.1	11.0	---	---	---
2	---	---	---	8.6	7.3	8.2	---	---	---	---	---	---
3	---	---	---	8.8	7.8	8.2	---	---	---	---	---	---
4	---	---	---	9.8	7.8	8.9	---	---	---	---	---	---
5	---	---	---	9.2	8.5	8.8	---	---	---	---	---	---
6	11.5	7.4	8.8	9.4	8.2	8.8	---	---	---	---	---	---
7	11.8	7.2	8.8	9.6	8.1	8.7	---	---	---	---	---	---
8	11.9	7.1	8.8	10.1	8.4	9.1	---	---	---	---	---	---
9	9.8	6.3	7.8	10.8	8.6	9.4	---	---	---	---	---	---
10	11.1	6.3	8.1	10.9	8.4	9.3	---	---	---	---	---	---
11	11.7	6.6	8.5	11.2	8.3	9.3	---	---	---	---	---	---
12	12.0	7.1	8.7	11.9	8.6	9.6	---	---	---	---	---	---
13	11.9	7.0	8.7	12.3	8.6	9.8	---	---	---	---	---	---
14	8.5	6.1	7.0	13.3	8.6	10.2	---	---	---	---	---	---
15	7.6	5.8	6.7	13.3	8.8	10.3	---	---	---	---	---	---
16	8.4	6.9	7.6	13.3	8.6	10.1	---	---	---	---	---	---
17	8.1	6.7	7.4	11.2	8.3	9.5	---	---	---	---	---	---
18	9.5	7.3	8.1	12.1	7.3	8.9	---	---	---	---	---	---
19	9.3	7.4	8.1	10.3	7.0	8.0	---	---	---	---	---	---
20	9.8	7.2	8.2	8.7	7.0	7.7	---	---	---	---	---	---
21	10.3	6.6	8.3	12.0	7.3	8.9	---	---	---	---	---	---
22	10.8	6.9	8.6	12.1	7.7	9.2	---	---	---	---	---	---
23	10.8	7.2	8.7	10.5	7.6	8.7	---	---	---	---	---	---
24	8.3	6.8	7.6	11.2	7.7	9.4	---	---	---	---	---	---
25	10.4	7.2	8.4	11.4	10.3	10.9	---	---	---	---	---	---
26	10.6	7.1	8.4	10.4	9.4	9.9	---	---	---	---	---	---
27	11.4	7.4	8.9	10.3	9.2	9.7	---	---	---	---	---	---
28	12.1	7.3	9.0	10.5	9.4	9.9	---	---	---	---	---	---
29	9.6	6.9	8.0	10.9	9.2	9.8	---	---	---	---	---	---
30	7.6	5.5	6.3	10.5	8.9	9.5	---	---	---	---	---	---
31	8.0	6.3	7.1	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	13.3	7.0	9.2	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	16.5	10.1	12.7	12.1	9.1	10.3
2	---	---	---	---	---	---	11.5	10.3	10.9	12.0	9.2	10.4
3	---	---	---	---	---	---	14.9	10.0	12.0	12.0	8.7	10.2
4	---	---	---	---	---	---	17.4	8.6	12.1	13.3	9.2	10.7
5	---	---	---	---	---	---	17.6	9.1	12.5	12.6	9.1	10.6
6	---	---	---	---	---	---	15.3	9.3	11.7	12.5	8.9	10.3
7	---	---	---	---	---	---	12.8	9.0	10.3	11.7	8.2	9.6
8	---	---	---	---	---	---	14.4	9.2	11.3	12.4	7.6	9.6
9	---	---	---	---	---	---	14.5	9.4	11.5	13.2	7.8	9.9
10	---	---	---	---	---	---	14.0	9.3	11.3	12.3	7.7	9.7
11	---	---	---	---	---	---	14.4	9.3	11.3	12.2	7.4	9.5
12	---	---	---	---	---	---	13.9	9.3	11.2	14.0	8.2	10.6
13	---	---	---	---	---	---	14.8	9.1	11.4	12.0	7.9	9.4
14	---	---	---	---	---	---	15.4	8.4	11.5	8.4	6.8	7.9
15	---	---	---	---	---	---	16.0	9.0	11.6	9.5	6.8	8.2
16	---	---	---	---	---	---	15.7	8.7	11.7	11.3	8.1	9.5
17	---	---	---	---	---	---	15.6	9.1	11.5	12.0	8.1	9.7
18	---	---	---	---	---	---	17.0	9.2	12.4	12.0	7.7	9.6
19	---	---	---	---	---	---	15.8	8.9	11.9	9.9	7.3	8.5
20	---	---	---	---	---	---	9.6	7.4	8.5	10.6	7.3	8.7
21	---	---	---	---	---	---	12.5	5.9	8.8	11.6	6.9	8.9
22	---	---	---	---	---	---	10.8	6.3	8.4	10.3	7.0	8.3
23	---	---	---	---	---	---	9.7	7.1	8.4	7.7	5.6	6.8
24	---	---	---	---	---	---	10.7	9.6	10.2	10.2	6.7	8.3
25	---	---	---	15.0	10.0	12.5	11.7	9.5	10.7	11.6	7.4	9.3
26	---	---	---	15.6	10.7	12.9	10.1	8.7	9.3	11.5	7.3	9.0
27	---	---	---	15.4	10.9	13.2	10.7	8.6	9.4	11.6	7.1	9.2
28	---	---	---	16.4	11.3	13.6	10.9	9.2	9.9	10.5	7.0	8.5
29	---	---	---	17.6	10.5	13.7	11.2	8.6	9.8	12.0	6.7	9.2
30	---	---	---	17.9	11.0	13.7	11.6	8.7	9.9	12.5	6.9	9.6
31	---	---	---	15.9	10.1	12.0	---	---	---	13.3	7.4	10.2
MONTH	---	---	---	---	---	---	17.6	5.9	10.8	14.0	5.6	9.4

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.1	7.5	11.8	---	---	---	13.7	7.3	10.0	10.7	6.7	8.3
2	14.1	7.6	10.1	---	---	---	16.0	7.5	10.9	11.1	6.2	8.2
3	13.2	7.2	9.7	---	---	---	15.8	7.2	10.8	11.0	6.6	8.4
4	12.8	6.6	9.5	---	---	---	15.3	6.6	9.8	12.1	7.1	9.0
5	14.1	5.8	9.3	---	---	---	15.5	6.3	10.2	12.9	7.1	9.1
6	8.5	1.1	5.0	9.0	5.3	7.0	15.2	6.4	10.0	12.6	7.0	9.2
7	11.5	3.2	7.1	11.0	6.1	8.2	15.8	6.4	10.2	12.2	7.0	9.1
8	12.5	4.0	7.9	11.5	6.1	8.2	15.0	5.9	9.6	8.2	5.6	7.0
9	6.1	1.1	3.8	10.7	6.0	8.2	15.8	5.5	9.6	10.5	5.8	7.8
10	9.6	3.0	5.5	12.5	6.5	9.2	14.0	5.8	8.6	12.1	6.3	8.5
11	9.5	2.3	5.4	13.4	6.9	10.0	12.8	5.3	8.3	13.3	6.6	9.2
12	7.3	2.1	4.4	---	---	---	12.6	4.9	7.7	13.7	6.5	9.5
13	6.3	2.7	3.7	---	---	---	9.3	3.8	6.4	14.3	6.7	9.6
14	7.5	2.6	5.0	12.8	5.3	8.7	7.4	5.2	6.3	13.4	6.7	9.3
15	6.2	2.9	4.3	11.6	4.5	8.0	8.3	6.2	7.3	13.0	6.8	9.1
16	7.1	3.2	5.1	7.9	3.6	5.9	8.4	6.5	7.3	8.2	7.0	7.5
17	7.7	4.1	5.6	6.7	3.4	5.5	8.6	6.4	7.5	7.8	6.9	7.3
18	7.9	4.3	6.0	7.4	4.5	6.3	9.9	6.5	7.6	9.2	6.7	7.6
19	9.5	4.6	6.9	6.4	4.2	5.6	8.8	5.8	7.5	10.2	6.7	7.9
20	10.6	4.5	7.5	8.9	4.9	6.7	8.1	4.9	6.7	10.5	6.5	8.1
21	10.7	4.4	7.0	9.2	6.2	7.5	8.4	5.1	7.0	12.1	6.6	8.7
22	8.9	2.6	5.6	11.2	5.7	8.0	8.7	7.0	7.9	11.6	6.6	8.2
23	11.1	4.3	7.2	12.2	6.5	9.0	9.4	7.6	8.4	7.6	6.9	7.2
24	12.0	4.2	7.7	7.5	6.0	6.7	11.0	6.3	8.7	8.3	7.3	7.8
25	12.7	3.5	7.7	7.7	5.9	6.8	10.5	7.5	8.8	9.0	6.6	7.5
26	7.4	3.7	5.5	7.0	5.0	6.1	12.5	7.3	9.2	7.5	6.4	7.1
27	9.7	3.5	6.3	7.3	5.5	6.9	8.5	6.5	7.0	8.6	7.1	7.8
28	10.9	2.5	6.9	8.1	7.1	7.6	8.2	6.5	7.4	8.8	7.2	7.9
29	---	---	---	8.5	6.9	7.7	9.7	6.8	8.2	8.2	7.4	7.8
30	---	---	---	9.6	7.2	8.2	9.8	6.8	8.2	9.3	7.6	8.2
31	---	---	---	11.6	7.4	9.0	10.1	6.4	8.0	---	---	---
MONTH	---	---	---	---	---	---	16.0	3.8	8.4	14.3	5.6	8.3

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1140	988	1070	---	---	---	---	---	---	---	---	---
2	1300	1080	1160	---	---	---	---	---	---	---	---	---
3	1410	512	782	---	---	---	---	---	---	---	---	---
4	1000	791	902	---	---	---	---	---	---	---	---	---
5	1120	1000	1060	---	---	---	---	---	---	---	---	---
6	1270	1040	1140	---	---	---	---	---	---	---	---	---
7	1330	1060	1180	---	---	---	---	---	---	---	---	---
8	1420	1100	1240	---	---	---	---	---	---	---	---	---
9	1500	1010	1250	---	---	---	---	---	---	---	---	---
10	1700	991	1240	---	---	---	---	---	---	---	---	---
11	1520	1100	1220	---	---	---	---	---	---	---	---	---
12	1490	1150	1290	---	---	---	---	---	---	---	---	---
13	1600	1040	1280	---	---	---	---	---	---	---	---	---
14	1380	997	1200	---	---	---	---	---	---	---	---	---
15	1460	1080	1280	---	---	---	---	---	---	---	---	---
16	1490	1010	1210	---	---	---	---	---	---	---	---	---
17	1480	975	1170	---	---	---	---	---	---	---	---	---
18	1670	1040	1310	---	---	---	---	---	---	---	---	---
19	1490	1020	1200	---	---	---	---	---	---	---	---	---
20	1820	928	1170	---	---	---	---	---	---	---	---	---
21	1340	919	1120	---	---	---	---	---	---	---	---	---
22	1380	985	1150	---	---	---	---	---	---	---	---	---
23	1380	933	1120	---	---	---	---	---	---	---	---	---
24	1370	871	1130	---	---	---	---	---	---	---	---	---
25	1620	1020	1300	---	---	---	---	---	---	---	---	---
26	1580	1030	1290	---	---	---	---	---	---	---	---	---
27	1270	960	1100	---	---	---	---	---	---	---	---	---
28	1370	961	1140	---	---	---	---	---	---	---	---	---
29	1430	923	1180	---	---	---	---	---	---	---	---	---
30	1340	884	1130	---	---	---	---	---	---	---	---	---
31	1290	832	1070	---	---	---	---	---	---	---	---	---
MONTH	1820	512	1160	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.7	7.4	7.5	---	---	---	---	---	---	---	---	---
2	7.9	7.4	7.5	---	---	---	---	---	---	---	---	---
3	7.9	7.4	7.5	---	---	---	---	---	---	---	---	---
4	7.6	7.4	7.4	---	---	---	---	---	---	---	---	---
5	7.8	7.4	7.5	---	---	---	---	---	---	---	---	---
6	7.8	7.4	7.5	---	---	---	---	---	---	---	---	---
7	7.9	7.3	7.5	---	---	---	---	---	---	---	---	---
8	8.0	7.3	7.5	---	---	---	---	---	---	---	---	---
9	8.1	7.3	7.5	---	---	---	---	---	---	---	---	---
10	8.0	7.2	7.5	---	---	---	---	---	---	---	---	---
11	8.1	7.2	7.4	---	---	---	---	---	---	---	---	---
12	7.9	7.2	7.4	---	---	---	---	---	---	---	---	---
13	8.1	7.2	7.4	---	---	---	---	---	---	---	---	---
14	8.1	7.2	7.4	---	---	---	---	---	---	---	---	---
15	8.0	7.3	7.5	---	---	---	---	---	---	---	---	---
16	8.0	7.3	7.5	---	---	---	---	---	---	---	---	---
17	7.9	7.2	7.4	---	---	---	---	---	---	---	---	---
18	7.9	7.2	7.5	---	---	---	---	---	---	---	---	---
19	7.8	7.2	7.3	---	---	---	---	---	---	---	---	---
20	8.5	7.2	7.3	---	---	---	---	---	---	---	---	---
21	7.8	7.2	7.3	---	---	---	---	---	---	---	---	---
22	7.8	7.2	7.3	---	---	---	---	---	---	---	---	---
23	7.9	7.2	7.3	---	---	---	---	---	---	---	---	---
24	7.7	7.1	7.3	---	---	---	---	---	---	---	---	---
25	7.8	7.1	7.4	---	---	---	---	---	---	---	---	---
26	7.7	7.3	7.5	---	---	---	---	---	---	---	---	---
27	7.8	7.2	7.3	---	---	---	---	---	---	---	---	---
28	7.8	7.2	7.3	---	---	---	---	---	---	---	---	---
29	7.6	7.1	7.3	---	---	---	---	---	---	---	---	---
30	7.9	7.1	7.2	---	---	---	---	---	---	---	---	---
31	7.7	7.1	7.3	---	---	---	---	---	---	---	---	---
MAX	8.5	7.4	7.5	---	---	---	---	---	---	---	---	---
MIN	7.6	7.1	7.2	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163030 RED RUN AT WARREN, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.7	17.0	19.8	---	---	---	---	---	---	---	---	---
2	23.9	18.1	20.9	---	---	---	---	---	---	---	---	---
3	21.8	19.6	20.9	---	---	---	---	---	---	---	---	---
4	24.2	20.7	22.1	---	---	---	---	---	---	---	---	---
5	24.7	20.6	22.4	---	---	---	---	---	---	---	---	---
6	24.1	20.5	22.1	---	---	---	---	---	---	---	---	---
7	21.2	18.6	19.9	---	---	---	---	---	---	---	---	---
8	20.1	16.9	18.6	---	---	---	---	---	---	---	---	---
9	21.8	15.7	18.5	---	---	---	---	---	---	---	---	---
10	19.8	17.3	18.5	---	---	---	---	---	---	---	---	---
11	20.6	17.9	19.5	---	---	---	---	---	---	---	---	---
12	21.0	18.5	20.0	---	---	---	---	---	---	---	---	---
13	21.7	19.0	20.5	---	---	---	---	---	---	---	---	---
14	22.9	18.8	20.7	---	---	---	---	---	---	---	---	---
15	22.0	18.2	19.8	---	---	---	---	---	---	---	---	---
16	20.1	16.7	18.4	---	---	---	---	---	---	---	---	---
17	20.4	15.3	18.0	---	---	---	---	---	---	---	---	---
18	20.7	15.7	18.3	---	---	---	---	---	---	---	---	---
19	21.0	16.6	18.7	---	---	---	---	---	---	---	---	---
20	20.7	15.9	18.2	---	---	---	---	---	---	---	---	---
21	20.6	15.6	18.0	---	---	---	---	---	---	---	---	---
22	19.4	15.8	17.7	---	---	---	---	---	---	---	---	---
23	18.8	14.5	17.0	---	---	---	---	---	---	---	---	---
24	18.5	14.4	16.5	---	---	---	---	---	---	---	---	---
25	17.5	14.8	16.1	---	---	---	---	---	---	---	---	---
26	18.3	13.0	15.8	---	---	---	---	---	---	---	---	---
27	18.6	15.4	17.3	---	---	---	---	---	---	---	---	---
28	19.3	15.2	17.5	---	---	---	---	---	---	---	---	---
29	20.3	14.2	16.9	---	---	---	---	---	---	---	---	---
30	19.7	14.9	16.9	---	---	---	---	---	---	---	---	---
31	19.7	15.8	17.7	---	---	---	---	---	---	---	---	---
MONTH	24.7	13.0	18.8	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.0	7.5	8.4	---	---	---	---	---	---	---	---	---
2	11.0	7.4	8.5	---	---	---	---	---	---	---	---	---
3	8.2	6.7	7.2	---	---	---	---	---	---	---	---	---
4	8.9	6.8	7.6	---	---	---	---	---	---	---	---	---
5	10.4	6.9	8.1	---	---	---	---	---	---	---	---	---
6	11.1	6.7	8.4	---	---	---	---	---	---	---	---	---
7	12.1	7.1	8.9	---	---	---	---	---	---	---	---	---
8	13.5	7.4	9.4	---	---	---	---	---	---	---	---	---
9	14.3	7.6	9.7	---	---	---	---	---	---	---	---	---
10	12.4	7.4	9.2	---	---	---	---	---	---	---	---	---
11	14.1	7.3	9.4	---	---	---	---	---	---	---	---	---
12	13.1	7.3	9.3	---	---	---	---	---	---	---	---	---
13	14.0	7.1	9.3	---	---	---	---	---	---	---	---	---
14	14.5	7.2	9.5	---	---	---	---	---	---	---	---	---
15	13.4	7.0	9.0	---	---	---	---	---	---	---	---	---
16	13.7	7.2	9.6	---	---	---	---	---	---	---	---	---
17	13.8	7.5	9.2	---	---	---	---	---	---	---	---	---
18	14.2	7.4	9.4	---	---	---	---	---	---	---	---	---
19	13.0	7.3	9.2	---	---	---	---	---	---	---	---	---
20	16.9	7.3	9.5	---	---	---	---	---	---	---	---	---
21	13.5	7.6	9.5	---	---	---	---	---	---	---	---	---
22	13.6	7.4	9.5	---	---	---	---	---	---	---	---	---
23	14.1	7.7	9.5	---	---	---	---	---	---	---	---	---
24	13.8	7.7	9.8	---	---	---	---	---	---	---	---	---
25	14.8	7.6	10.1	---	---	---	---	---	---	---	---	---
26	13.2	7.7	9.6	---	---	---	---	---	---	---	---	---
27	14.3	7.9	9.9	---	---	---	---	---	---	---	---	---
28	14.3	7.8	10.0	---	---	---	---	---	---	---	---	---
29	14.2	7.9	9.9	---	---	---	---	---	---	---	---	---
30	15.2	7.9	10.0	---	---	---	---	---	---	---	---	---
31	15.0	7.6	9.8	---	---	---	---	---	---	---	---	---
MONTH	16.9	6.7	9.2	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04163400 PLUM BROOK AT UTICA, MI

LOCATION.--Lat 42°36'05", long 83°04'17" (revised), in SE1/4 NE1/4 sec.7, T.2 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on left bank at downstream side of bridge on Ryan Road, 1.0 mi southwest of Utica.

DRAINAGE AREA.--16.5 mi^2.

PERIOD OF RECORD.--July 1965 to July 1998, October 1999 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 619.79 ft above sea level (levels by Johnson and Anderson, Inc.).

REMARKS.--Records good except for estimated daily discharges, which are poor. Prior to 1998, occasional diversion for sprinkler irrigation. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.4	7.9	111	40	5.8	e11	14	12	1.7	12	3.3	e2.8
2	e4.0	36	54	49	6.0	e13	17	11	1.5	7.4	2.6	e2.5
3	e3.0	23	33	45	6.5	e11	16	8.8	2.0	7.1	2.1	e2.2
4	e2.0	50	24	52	6.8	e10	12	7.5	2.3	6.8	2.5	e1.9
5	e1.8	50	18	33	7.6	e9.9	10	6.4	2.7	12	2.2	e1.7
6	e1.7	18	18	26	9.1	e23	10	5.8	6.4	9.5	2.6	e1.4
7	e1.7	10	172	e20	20	98	9.4	6.8	2.7	6.8	4.5	e1.8
8	e1.6	5.8	96	e18	50	62	8.3	5.9	2.2	13	2.2	e2.9
9	e4.0	4.4	33	e17	32	29	6.9	5.1	2.0	12	3.4	e2.8
10	e3.2	4.2	41	e18	e19	21	6.3	4.3	6.3	7.5	2.9	e2.3
11	2.4	4.3	49	23	e15	20	6.0	3.7	6.1	3.7	5.1	e1.9
12	2.0	3.9	32	95	17	21	5.8	3.4	6.9	2.9	9.3	e1.6
13	1.9	3.5	40	262	18	19	5.3	13	14	3.9	6.5	e1.4
14	5.1	3.1	26	113	129	17	4.9	31	13	2.6	8.3	e1.3
15	12	2.9	19	36	127	19	4.4	18	11	2.6	7.8	e1.4
16	29	3.3	17	24	188	18	4.0	9.7	8.7	9.8	5.0	e8.2
17	36	3.7	16	e18	46	18	4.3	9.3	8.4	13	3.4	e4.4
18	13	4.6	14	e15	28	21	4.6	6.8	6.2	6.3	3.0	e2.8
19	5.9	4.1	e12	e13	22	21	4.5	5.1	4.7	3.6	2.8	e2.2
20	4.4	16	e11	e12	e19	34	6.8	6.9	3.9	2.6	4.5	e2.0
21	3.8	7.7	e9.6	e11	e17	28	6.7	5.3	5.0	2.8	4.7	e1.9
22	3.3	4.4	e8.2	e9.5	e17	29	5.8	4.7	7.8	2.1	3.6	e9.8
23	4.8	3.6	e7.1	e9.0	e16	29	13	9.3	3.9	1.7	3.7	e25
24	19	21	e6.5	e8.9	e16	23	30	8.9	3.0	31	1.6	e5.5
25	5.9	62	e6.3	e8.9	e14	24	37	5.0	2.5	22	1.5	e8.2
26	4.1	32	e6.0	e8.5	e13	22	32	3.4	17	42	1.4	e15
27	3.5	33	e5.9	e8.1	e12	21	43	2.7	12	34	21	e8.6
28	3.2	54	6.3	e7.8	e11	20	26	4.2	11	13	19	e5.6
29	53	32	6.8	7.3	---	19	18	4.6	12	7.8	e10	e14
30	46	21	8.1	6.9	---	18	15	3.5	13	4.8	e3.2	e8.6
31	22	---	67	6.1	---	16	---	1.9	---	3.6	e3.0	---
TOTAL	305.7	529.4	973.8	1021.0	887.8	744.9	387.0	234.0	199.9	309.9	156.7	151.7
MEAN	9.86	17.6	31.4	32.9	31.7	24.0	12.9	7.55	6.66	10.0	5.05	5.06
MAX	53	62	172	262	188	98	43	31	17	42	21	25
MIN	1.6	2.9	5.9	6.1	5.8	9.9	4.0	1.9	1.5	1.7	1.4	1.3
CFSM	0.60	1.07	1.90	2.00	1.92	1.46	0.78	0.46	0.40	0.61	0.31	0.31
IN.	0.69	1.19	2.20	2.30	2.00	1.68	0.87	0.53	0.45	0.70	0.35	0.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2005, BY WATER YEAR (WY)

MEAN	8.24	12.2	15.3	12.8	19.7	29.2	23.9	16.1	11.5	8.28	6.46	6.83
MAX	40.0	39.8	37.7	40.7	60.3	83.6	47.4	41.9	51.9	53.6	30.4	26.8
(WY)	2002	1986	1973	1993	1976	1982	1979	2004	1996	2000	2000	2000
MIN	0.82	1.45	1.99	1.23	2.62	7.24	7.60	3.46	1.51	0.29	0.43	0.44
(WY)	1967	1966	1977	1977	1980	2000	2004	1971	1988	1965	1965	1969

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1965 - 2005	
ANNUAL TOTAL	6735.1		5901.8			
ANNUAL MEAN	18.4		16.2		14.2	
HIGHEST ANNUAL MEAN					20.5	1968
LOWEST ANNUAL MEAN					6.67	1970
HIGHEST DAILY MEAN	326	May 23	262	Jan 13	707	Jun 26 1968
LOWEST DAILY MEAN	1.6	Oct 8	1.3	Sep 14	0.04	Jul 19 1966
ANNUAL SEVEN-DAY MINIMUM	2.3	Oct 2	1.8	Sep 9	0.09	Aug 22 1969
MAXIMUM PEAK FLOW			385	Dec 7	(a)1290	Jun 18 1996
MAXIMUM PEAK STAGE			6.47	Dec 7	10.62	Jun 18 1996
INSTANTANEOUS LOW FLOW					0.00	(b)
ANNUAL RUNOFF (CFSM)	1.12		0.980		0.859	
ANNUAL RUNOFF (INCHES)	15.18		13.31		11.68	
10 PERCENT EXCEEDS	43		33		30	
50 PERCENT EXCEEDS	8.9		8.3		6.4	
90 PERCENT EXCEEDS	3.4		2.4		1.5	

(a) From rating curve extended above 800 ft^3/s.
(b) Part of each day July 19, 28, 1966, Aug. 22-28, Sept. 3, 11, 1969.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI

LOCATION.--Lat 42°34'38", long 82°57'05", in SE1/4 NE1/4 sec.19, T.2 N., R.13 E., Macomb County, Hydrologic Unit 04090003, on right bank 50 ft downstream from bridge on Garfield Road, 2.8 mi north of Fraser, and 4.0 mi upstream from North Branch.

DRAINAGE AREA.--444 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1947 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 577.71 ft above sea level (Macomb County bench mark). Prior to Nov. 17, 1949, and from May 29 to July 31, 1990, nonrecording gage at same site and datum. Nov. 17, 1949 to Apr. 5, 1990, water-stage recorder at site 800 ft downstream at same datum.

REMARKS.--Water-discharge records good. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 5 or 6, 1947, reached a stage of 20 ft, from floodmark, and discharge of approximately 9,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	259	1170	956	322	583	570	469	139	291	204	108
2	174	616	729	997	317	551	654	443	141	130	180	97
3	157	397	426	1140	319	474	580	423	140	98	159	96
4	119	716	337	1130	334	471	514	403	136	91	149	84
5	112	689	290	905	358	482	478	382	124	304	141	80
6	108	369	302	780	375	625	396	369	245	154	127	81
7	103	291	1390	692	509	1270	268	374	149	107	118	80
8	106	255	1770	628	1060	1360	254	333	138	184	111	134
9	163	343	882	602	720	803	248	300	283	236	103	140
10	134	309	801	613	522	612	272	232	134	120	102	95
11	111	259	1020	656	450	588	254	206	136	104	102	84
12	109	245	680	1130	438	584	227	213	154	99	160	82
13	107	216	788	2390	455	504	200	285	304	96	154	79
14	192	199	537	2270	1410	454	184	622	277	90	213	76
15	316	191	428	1480	1690	447	168	363	297	89	140	77
16	365	218	396	999	2700	445	164	250	233	853	114	562
17	325	218	388	733	1600	453	162	212	235	1320	99	292
18	209	233	354	594	1080	477	163	192	167	562	95	143
19	154	270	368	e540	859	480	162	189	135	515	97	113
20	140	390	284	e500	751	652	203	280	126	364	166	107
21	129	253	306	e460	749	581	176	240	145	312	186	95
22	121	208	315	e440	742	573	156	244	217	208	123	301
23	140	196	284	e430	701	645	333	373	115	173	114	1390
24	319	464	275	427	625	568	601	414	100	771	103	431
25	236	775	272	468	578	563	703	340	112	749	93	299
26	237	377	275	462	575	594	688	309	245	727	90	694
27	231	369	276	383	519	572	920	279	163	1250	435	484
28	228	638	284	278	511	546	652	260	120	597	385	339
29	690	416	298	299	---	565	544	204	157	415	157	690
30	609	334	322	328	---	565	532	172	351	349	129	402
31	354	---	954	336	---	583	---	148	---	273	140	---
TOTAL	6604	10713	17201	24046	21269	18670	11426	9523	5418	11631	4689	7735
MEAN	213	357	555	776	760	602	381	307	181	375	151	258
MAX	690	775	1770	2390	2700	1360	920	622	351	1320	435	1390
MIN	103	191	272	278	317	445	156	148	100	89	90	76
CFSM	0.48	0.80	1.25	1.75	1.71	1.36	0.86	0.69	0.41	0.85	0.34	0.58
IN.	0.55	0.90	1.44	2.01	1.78	1.56	0.96	0.80	0.45	0.97	0.39	0.65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2005, BY WATER YEAR (WY)

MEAN	275	338	388	385	466	650	632	471	364	269	229	246
MAX	1021	834	837	975	1119	1313	1237	1382	942	664	597	758
(WY)	1982	1986	1968	1950	1976	1976	1950	1956	1996	1957	2000	1975
MIN	72.3	78.2	93.1	91.8	112	217	220	127	120	87.1	69.5	73.3
(WY)	1954	1954	1959	1961	1963	1964	2004	1958	1949	1955	1954	1954

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1947 - 2005	
ANNUAL TOTAL	155170		148925			
ANNUAL MEAN	424		408		392	
HIGHEST ANNUAL MEAN					595	1976
LOWEST ANNUAL MEAN					189	1964
HIGHEST DAILY MEAN	4810	May 24	2700	Feb 16	6930	May 11 1948
LOWEST DAILY MEAN	103	Oct 7	76	Sep 14	49	Sep 6 1955
ANNUAL SEVEN-DAY MINIMUM	108	Sep 25	89	Sep 1	59	Sep 3 1954
MAXIMUM PEAK FLOW			3510	Feb 16	8840	Oct 1 1981
MAXIMUM PEAK STAGE			15.90	Feb 16	19.56	Oct 1 1981
INSTANTANEOUS LOW FLOW			69	Sep 14	47	Sep 6 1955
ANNUAL RUNOFF (CFSM)	0.955		0.919		0.882	
ANNUAL RUNOFF (INCHES)	13.00		12.48		11.98	
10 PERCENT EXCEEDS	874		759		750	
50 PERCENT EXCEEDS	305		306		284	
90 PERCENT EXCEEDS	135		108		116	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966, 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval. Dissolved Oxygen and pH not collected during winter months.

REMARKS.--Interruptions in water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 2-7, 16-22, Nov. 16, 25, Dec. 18-26, Jan. 5-15, Feb. 5-15, Feb. 24 to Mar. 6, Mar. 22, 30, Apr. 3, 4, 6-8, 11-13, 21, 22, 27, 28, May 1, 2, 8-11, 16-18, 26-30, June 18-22, 26-29, July 1, 2, 5, Aug. 5-7, 11-13, 17-20, 23, 24, Sept. 2-11, 28-30, Oct. 1-6, 2005, rated good; Nov. 26, Jan. 16-23, Jan. 28 to Feb. 4, Mar. 7-14, 23, 31, Aug. 8, 9, 14-16, 21, 22, 25, 26, Sept. 12, rated fair; Nov. 27-30, Jan. 24-27, Mar. 15-21, 24, 25, Aug. 10, 27-29, rated poor. pH records rated excellent except for the following periods: Oct. 17-22, May 17, 18, July 13-15, 22, 23, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 7-13, 20-22, Mar. 30, 31, Apr. 9, 10, 26, 27, May 7, 8, 24, 30, 31, June 6, 24, 25, July 8, 9, 14, 15, 22, 23, Aug. 9, 10, 12, Aug. 27 to Sept. 7, Oct. 27-31, 2005, rated good; Mar. 22, Apr. 11, 21, May 9-11, 25, 26, June 1, 26, July 10-12, Aug. 13, 14, rated fair; Mar. 23, 24, June 7, 27-29, July 13, Aug. 15-18, Sept. 8, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 4,770 microsiemens, Mar. 2, 2005; minimum, 272 microsiemens, Sept. 23, 2005.
pH: Maximum, 8.5 std. units, July 2, 3, 4, 2004, June 25, Aug. 8, 9, Sept. 13, 15, 2005; minimum, 6.9 std. units, Sept. 7, 2004.
WATER TEMPERATURE: Maximum, 27.8°C, Aug. 3, 2005; minimum, -0.1°C, Dec. 20, 2004, Jan. 22, 2005.
DISSOLVED OXYGEN: Maximum, 14.8 mg/L, Mar. 24, 2005; minimum, 3.1 mg/L, June 6, 30, July 13, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 4,770 microsiemens, Mar. 2; minimum, 272 microsiemens, Sept. 23.
pH: Maximum, 8.5 std. units, June 25, Aug. 8, 9, Sept. 13, 15; minimum, 7.1 std. units, June 14.
WATER TEMPERATURE: Maximum, 27.8°C, Aug. 3; minimum, -0.1°C, Dec. 20, Jan. 22.
DISSOLVED OXYGEN: Maximum, 14.8 mg/L, Mar. 24; minimum, 3.1 mg/L, June 6, 30, July 13.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1220	1100	1150	---	---	---	---	---	---	1670	1260	1400
2	1560	1140	1250	---	---	---	---	---	---	1380	1080	1250
3	1260	1020	1100	---	---	---	---	---	---	1160	1000	1060
4	1040	1010	1030	---	---	---	---	---	---	1160	1010	1070
5	1060	983	1010	---	---	---	---	---	---	1410	1090	1190
6	1090	1040	1060	---	---	---	---	---	---	2340	1410	1930
7	1120	1060	1090	---	---	---	---	---	---	2680	2340	2540
8	1120	1070	1090	---	---	---	---	---	---	2400	1970	2090
9	1380	1070	1180	---	---	---	---	---	---	2530	2080	2360
10	1120	1040	1070	---	---	---	---	---	---	2400	2140	2210
11	1050	998	1020	---	---	---	---	---	---	3300	2040	2350
12	1040	988	1010	---	---	---	---	---	---	4300	1680	3210
13	1080	1000	1040	---	---	---	---	---	---	1680	1260	1460
14	1190	1010	1090	---	---	---	---	---	---	1320	1190	1240
15	1020	671	899	---	---	---	---	---	---	1280	1220	1240
16	833	668	765	922	831	864	---	---	---	1220	1070	1100
17	844	797	817	1030	862	899	---	---	---	1100	1040	1070
18	877	810	851	1080	893	964	1180	1100	1140	1090	1050	1070
19	934	842	887	---	---	---	1350	1090	1190	1260	1040	1080
20	1010	934	977	---	---	---	1430	1260	1350	2000	1260	1680
21	1040	976	1000	---	---	---	1260	1130	1190	1830	1500	1680
22	1050	992	1010	---	---	---	1320	1150	1230	1500	1270	1390
23	---	---	---	---	---	---	1310	1150	1200	1430	1190	1280
24	---	---	---	918	561	812	1290	1200	1240	1310	1260	1280
25	---	---	---	1180	545	924	1340	1270	1300	1490	1280	1380
26	---	---	---	1600	1160	1350	1370	1220	1290	1840	1490	1640
27	---	---	---	1270	1100	1160	1380	1260	1330	1910	1580	1770
28	---	---	---	1260	999	1120	1400	1280	1320	1720	1580	1630
29	---	---	---	1040	991	1010	1520	1260	1340	1590	1300	1450
30	---	---	---	1110	1040	1070	2050	1510	1640	1300	1180	1220
31	---	---	---	---	---	---	2930	1670	2250	1260	1180	1210
MONTH	---	---	---	---	---	---	---	---	---	4300	1000	1570

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1260	1150	1190	4740	1410	2340	1100	1050	1060	1120	1060	1090
2	1230	1140	1160	4770	2820	3830	1460	1030	1200	1120	1010	1080
3	1190	1060	1110	2820	2220	2460	1440	1100	1260	1070	1000	1020
4	1310	1060	1130	2220	1910	2050	1110	1070	1090	1060	990	1030
5	1560	1250	1330	2080	1790	1890	1160	1050	1080	1050	978	1000
6	1650	1370	1460	2530	1840	2010	1230	1120	1180	1040	998	1010
7	2720	1440	1770	2340	1540	1860	1390	1230	1320	1130	1000	1060
8	2430	1510	1810	1560	1420	1470	1480	1370	1400	1140	1050	1100
9	1860	1380	1530	1500	1370	1460	1420	1330	1380	1190	1060	1110
10	3170	1860	2620	1380	1300	1350	1370	1250	1310	1260	1130	1190
11	2630	1750	2190	2350	1290	1640	1280	1220	1250	1330	1190	1240
12	1750	1470	1590	3120	2350	2820	1350	1230	1300	1270	1200	1240
13	1700	1320	1510	3260	2320	2920	1440	1310	1370	1730	1160	1260
14	3100	1220	1760	2320	1680	1920	1430	1320	1360	1480	992	1100
15	1410	1080	1260	1680	1480	1570	1450	1310	1350	1160	1040	1110
16	1450	644	1080	1570	1450	1480	1410	1320	1340	1200	1150	1170
17	1440	1220	1300	1550	1430	1470	1430	1300	1350	1310	1190	1250
18	1390	1260	1330	1600	1410	1500	1390	1280	1330	1350	1280	1310
19	1300	1180	1220	1870	1540	1630	1490	1360	1400	1340	1260	1300
20	1280	1170	1200	2150	1770	1900	2080	1360	1610	1470	1240	1330
21	2420	1240	1580	1800	1430	1530	1720	1440	1540	1240	1120	1150
22	2690	2320	2500	1430	1180	1260	1590	1430	1490	1370	1110	1160
23	2320	1840	2020	1200	1100	1140	1800	1280	1620	1370	1110	1210
24	1900	1600	1790	1510	1170	1350	1420	1230	1330	1120	1000	1040
25	1690	1450	1510	1530	1260	1390	1470	1290	1390	1030	1000	1010
26	2280	1690	2000	---	---	---	1410	1270	1350	1040	1000	1020
27	1990	1520	1800	---	---	---	1280	1080	1140	1030	979	998
28	1520	1410	1470	---	---	---	1290	1080	1150	1210	1010	1090
29	---	---	---	1260	1150	1200	1090	1060	1070	1140	1080	1120
30	---	---	---	1240	1140	1170	1100	1040	1070	1220	1110	1150
31	---	---	---	1160	1070	1120	---	---	---	1240	1130	1170
MONTH	3170	644	1580	---	---	---	2080	1030	1300	1730	978	1130

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1230	1190	1210	914	717	840	---	---	---	1050	983	1000
2	1520	1190	1310	1090	887	992	---	---	---	1060	989	1020
3	1350	1220	1280	---	---	---	1170	1080	1100	1080	1030	1060
4	1350	1240	1300	---	---	---	---	---	---	1090	1030	1040
5	1430	1230	1280	1560	972	1140	1170	1090	1130	1140	1040	1080
6	2210	1170	1420	1060	983	1020	1180	1090	1120	1170	1070	1110
7	1300	1210	1250	1140	977	1060	1200	1080	1130	1180	1080	1120
8	1430	1240	1260	1180	646	1020	1190	1110	1140	1330	1060	1170
9	1290	780	933	1160	877	1090	1250	1100	1180	1250	1030	1090
10	1120	1050	1090	1120	982	1060	1260	1140	1200	1070	987	1030
11	1190	1100	1120	1180	1080	1120	1280	1130	1190	1120	1000	1050
12	1440	1080	1230	1270	785	1140	1290	1150	1210	1130	1050	1090
13	1080	911	1000	1320	1150	1220	1230	1040	1120	1100	1030	1060
14	1200	944	1100	1320	1220	1250	1210	925	1080	1090	1020	1050
15	1140	944	1060	1440	1220	1300	1030	924	983	1110	1020	1060
16	1220	1040	1120	---	---	---	1070	997	1050	1050	328	717
17	1130	1060	1090	---	---	---	1100	991	1060	563	460	518
18	1090	1040	1050	---	---	---	1140	1070	1120	604	511	552
19	1110	1060	1080	---	---	---	1220	1110	1160	660	604	636
20	1200	1110	1140	---	---	---	1600	847	1240	714	647	678
21	1310	1150	1190	---	---	---	1010	821	942	729	700	710
22	1400	1080	1250	977	900	936	991	965	978	716	272	645
23	1240	1120	1180	1110	956	1030	1040	978	1010	585	272	447
24	---	---	---	---	---	---	1140	1040	1080	767	585	698
25	---	---	---	---	---	---	1210	1090	1150	937	767	812
26	1360	825	1070	---	---	---	1280	1190	1220	875	542	683
27	1270	1090	1160	---	---	---	1290	557	1030	819	546	713
28	1190	1080	1120	---	---	---	879	649	741	850	819	838
29	1470	1180	1220	---	---	---	991	756	900	907	604	723
30	1750	714	1080	---	---	---	1050	970	1000	818	605	751
31	---	---	---	---	---	---	1120	1010	1060	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	1330	272	872

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.8	8.0	---	---	---	8.0	7.8	8.0	---	---	---
2	8.1	7.8	7.8	---	---	---	---	---	---	---	---	---
3	8.0	7.8	7.9	---	---	---	---	---	---	---	---	---
4	8.1	7.8	7.9	---	---	---	---	---	---	---	---	---
5	8.1	7.8	7.9	---	---	---	---	---	---	---	---	---
6	8.1	7.8	8.0	---	---	---	---	---	---	---	---	---
7	8.2	7.8	8.0	---	---	---	---	---	---	---	---	---
8	8.2	7.8	8.0	---	---	---	---	---	---	---	---	---
9	8.1	7.7	7.9	---	---	---	---	---	---	---	---	---
10	8.1	7.8	7.9	---	---	---	---	---	---	---	---	---
11	8.1	7.8	8.0	---	---	---	---	---	---	---	---	---
12	8.2	7.8	8.0	---	---	---	---	---	---	---	---	---
13	8.2	7.8	8.0	---	---	---	---	---	---	---	---	---
14	8.1	7.6	7.8	---	---	---	---	---	---	---	---	---
15	8.0	7.6	7.9	---	---	---	---	---	---	---	---	---
16	7.9	7.6	7.8	8.2	8.2	8.2	---	---	---	---	---	---
17	8.0	7.7	7.8	8.2	7.9	8.2	---	---	---	---	---	---
18	7.9	7.7	7.8	8.0	8.0	8.0	---	---	---	---	---	---
19	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
20	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
21	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
22	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	8.2	7.9	8.1	---	---	---	---	---	---
25	---	---	---	8.2	8.1	8.1	---	---	---	---	---	---
26	---	---	---	8.2	8.1	8.1	---	---	---	---	---	---
27	---	---	---	8.1	8.0	8.1	---	---	---	---	---	---
28	---	---	---	8.1	7.8	8.0	---	---	---	---	---	---
29	---	---	---	8.0	7.8	7.9	---	---	---	---	---	---
30	---	---	---	8.0	7.8	7.9	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.3	8.1	8.2	8.1	7.9	8.0
2	---	---	---	---	---	---	8.3	8.0	8.1	8.1	7.9	8.0
3	---	---	---	---	---	---	8.4	7.7	8.0	8.1	8.0	8.1
4	---	---	---	---	---	---	8.4	8.2	8.3	8.1	8.0	8.1
5	---	---	---	---	---	---	8.3	8.1	8.2	8.2	7.6	7.9
6	---	---	---	---	---	---	8.3	8.0	8.1	8.0	7.9	8.0
7	---	---	---	---	---	---	8.0	7.9	7.9	8.1	7.7	8.0
8	---	---	---	---	---	---	8.1	7.9	8.0	8.1	8.0	8.1
9	---	---	---	---	---	---	8.1	7.8	8.0	8.1	8.0	8.0
10	---	---	---	---	---	---	8.1	7.9	8.0	8.0	7.9	7.9
11	---	---	---	---	---	---	8.1	7.8	8.0	8.0	7.8	7.9
12	---	---	---	---	---	---	8.1	7.8	8.0	8.1	7.9	7.9
13	---	---	---	---	---	---	8.1	7.9	8.0	8.1	7.7	7.9
14	---	---	---	---	---	---	8.1	7.9	8.0	7.7	7.4	7.4
15	---	---	---	---	---	---	8.1	7.8	8.0	7.6	7.4	7.5
16	---	---	---	---	---	---	8.1	7.8	8.0	7.7	7.5	7.5
17	---	---	---	---	---	---	8.0	7.8	7.9	7.8	7.6	7.6
18	---	---	---	---	---	---	8.1	7.8	7.9	8.0	7.7	7.8
19	---	---	---	---	---	---	8.2	7.8	8.0	7.9	7.7	7.8
20	---	---	---	---	---	---	8.0	7.7	7.8	7.9	7.6	7.8
21	---	---	---	---	---	---	8.1	7.7	7.8	7.9	7.7	7.8
22	---	---	---	8.3	8.2	8.2	8.0	7.8	7.9	7.9	7.6	7.7
23	---	---	---	8.3	8.0	8.1	7.8	7.7	7.8	7.7	7.5	7.6
24	---	---	---	8.2	7.9	8.0	8.0	7.8	7.9	7.8	7.6	7.7
25	---	---	---	8.1	8.0	8.0	8.1	8.0	8.0	7.8	7.7	7.8
26	---	---	---	8.2	8.0	8.1	8.1	7.8	7.9	8.0	7.7	7.8
27	---	---	---	8.0	7.9	8.0	8.0	7.9	8.0	8.0	7.9	7.9
28	---	---	---	8.3	7.9	8.0	8.1	8.0	8.0	8.0	7.8	7.9
29	---	---	---	8.4	8.1	8.2	8.1	7.7	8.0	8.0	7.8	7.8
30	---	---	---	8.3	8.0	8.1	8.3	7.8	8.1	8.1	7.9	8.0
31	---	---	---	8.2	8.0	8.1	---	---	---	8.1	7.8	8.0
MAX	---	---	---	---	---	---	8.4	8.2	8.3	8.2	8.0	8.1
MIN	---	---	---	---	---	---	7.8	7.7	7.8	7.6	7.4	7.4

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.8	8.0	7.7	7.3	7.6	---	---	---	8.0	7.8	7.9
2	8.1	7.9	8.0	7.8	7.5	7.7	---	---	---	8.1	7.8	8.0
3	8.1	7.7	7.9	7.9	7.5	7.7	8.1	7.7	7.9	8.2	7.9	8.0
4	8.1	7.8	7.9	8.2	7.5	7.7	8.1	7.6	7.9	8.3	7.9	8.0
5	8.1	7.6	7.8	7.8	7.2	7.6	8.2	7.8	8.0	8.3	7.9	8.1
6	8.1	7.4	7.6	7.8	7.6	7.6	8.3	7.9	8.0	8.3	7.9	8.1
7	7.9	7.5	7.6	8.0	7.6	7.7	8.4	7.9	8.1	8.4	7.9	8.1
8	8.1	7.5	7.8	8.0	7.6	7.7	8.5	8.0	8.2	8.3	7.9	7.9
9	7.5	7.3	7.3	7.8	7.6	7.7	8.5	8.0	8.2	8.1	7.8	7.9
10	7.6	7.3	7.4	7.9	7.6	7.7	8.4	8.0	8.2	8.2	7.7	7.9
11	7.7	7.4	7.5	8.0	7.6	7.8	8.3	7.8	8.1	8.3	7.8	7.9
12	7.9	7.5	7.6	8.1	7.6	7.8	8.1	7.8	7.9	8.4	7.8	8.0
13	7.9	7.4	7.5	8.3	7.5	8.0	8.0	7.6	7.8	8.5	7.8	8.1
14	7.6	7.1	7.4	8.4	7.6	8.1	7.9	7.6	7.6	8.4	7.8	8.1
15	7.9	7.4	7.8	8.4	7.6	8.1	7.8	7.6	7.7	8.5	7.8	8.1
16	7.9	7.7	7.8	---	---	---	7.8	7.7	7.7	8.4	7.6	7.8
17	8.0	7.7	7.8	---	---	---	7.9	7.7	7.8	7.9	7.6	7.6
18	8.0	7.9	8.0	---	---	---	7.9	7.7	7.8	7.9	7.6	7.8
19	8.1	7.8	8.0	---	---	---	8.0	7.7	7.8	8.0	7.8	7.8
20	8.2	7.8	8.1	---	---	---	7.9	7.5	7.8	8.1	7.8	7.9
21	8.1	7.8	8.0	---	---	---	7.8	7.5	7.7	8.0	7.7	7.8
22	8.1	7.6	7.8	7.8	7.7	7.7	7.9	7.6	7.6	8.1	7.7	7.8
23	8.1	7.7	7.9	7.8	7.7	7.8	8.0	7.7	7.8	8.2	7.7	7.7
24	8.3	7.8	8.0	---	---	---	8.2	7.7	7.9	7.8	7.7	7.7
25	8.5	7.9	8.2	---	---	---	8.1	7.8	7.9	7.9	7.7	7.8
26	8.3	7.7	7.8	---	---	---	8.4	7.8	7.9	7.8	7.7	7.7
27	8.3	7.7	7.9	---	---	---	8.2	7.5	7.8	7.9	7.7	7.8
28	8.4	7.8	8.1	---	---	---	7.9	7.6	7.7	7.9	7.9	7.9
29	8.2	7.8	8.0	---	---	---	7.9	7.7	7.7	8.0	7.7	7.8
30	7.9	7.3	7.5	---	---	---	7.9	7.7	7.8	7.9	7.7	7.8
31	---	---	---	---	---	---	8.0	7.7	7.8	---	---	---
MAX	8.5	7.9	8.2	---	---	---	---	---	---	8.5	7.9	8.1
MIN	7.5	7.1	7.3	---	---	---	---	---	---	7.8	7.6	7.6

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.2	13.8	15.6	---	---	---	8.0	5.5	6.5	3.8	3.1	3.3
2	17.9	14.9	16.2	---	---	---	---	---	---	4.7	3.1	4.0
3	15.2	12.5	13.9	---	---	---	---	---	---	4.8	3.8	4.1
4	14.3	12.4	13.3	---	---	---	---	---	---	4.8	3.4	3.8
5	13.8	10.9	12.4	---	---	---	---	---	---	3.5	2.1	2.8
6	14.5	10.8	12.6	---	---	---	---	---	---	2.1	1.4	1.7
7	15.7	12.3	14.0	---	---	---	---	---	---	1.8	1.3	1.6
8	16.7	13.1	14.9	---	---	---	---	---	---	2.8	1.8	2.2
9	17.1	15.3	16.2	---	---	---	---	---	---	3.2	2.7	2.9
10	15.5	13.2	14.4	---	---	---	---	---	---	4.1	3.2	3.6
11	14.8	12.2	13.6	---	---	---	---	---	---	4.1	3.4	3.6
12	14.6	11.8	13.2	---	---	---	---	---	---	4.9	3.1	3.6
13	14.7	12.2	13.5	---	---	---	---	---	---	5.6	3.4	4.7
14	14.6	13.9	14.3	---	---	---	---	---	---	5.4	1.6	3.3
15	14.8	13.2	13.8	---	---	---	---	---	---	1.6	0.9	1.2
16	13.7	11.7	12.5	7.8	5.8	6.7	---	---	---	1.3	0.6	0.9
17	11.7	10.2	11.0	10.4	7.8	8.9	---	---	---	0.6	0.3	0.5
18	10.2	9.6	9.9	10.9	9.5	10.2	2.6	1.8	2.1	0.4	0.1	0.2
19	10.2	9.8	10.0	---	---	---	2.5	0.0	1.0	0.8	0.2	0.4
20	11.5	10.2	10.9	---	---	---	0.6	-0.1	0.2	0.8	0.6	0.7
21	12.0	11.3	11.6	---	---	---	1.0	0.5	0.7	0.7	0.5	0.6
22	12.9	11.6	12.2	---	---	---	1.1	0.8	1.0	0.6	-0.1	0.2
23	---	---	---	---	---	---	0.9	0.2	0.4	0.2	0.0	0.1
24	---	---	---	9.2	6.6	8.0	0.7	0.0	0.4	0.5	0.2	0.4
25	---	---	---	6.6	5.2	5.6	0.3	0.0	0.1	1.0	0.5	0.7
26	---	---	---	5.5	4.7	5.0	0.4	0.0	0.2	1.1	0.4	0.8
27	---	---	---	7.0	5.5	6.4	0.8	0.2	0.5	0.7	0.2	0.4
28	---	---	---	8.0	6.3	7.1	0.8	0.4	0.6	1.0	0.2	0.7
29	---	---	---	6.3	5.4	5.7	1.6	0.7	1.1	1.0	0.4	0.8
30	---	---	---	6.6	5.6	5.8	3.0	1.5	1.8	0.9	0.4	0.6
31	---	---	---	---	---	---	3.8	2.2	3.2	1.0	0.4	0.6
MONTH	---	---	---	---	---	---	---	---	---	5.6	-0.1	1.8

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.1	0.6	0.8	3.1	2.4	2.7	8.7	7.4	7.8	11.0	9.9	10.6
2	1.0	0.5	0.7	2.6	1.3	1.7	7.7	5.8	6.9	10.8	9.8	10.4
3	1.2	0.5	0.8	1.7	0.5	1.2	6.5	5.1	5.8	10.6	8.8	9.4
4	1.7	0.9	1.2	2.5	1.2	1.7	8.7	6.4	7.4	11.1	8.1	9.5
5	1.9	1.0	1.4	4.3	2.3	3.1	10.6	8.3	9.3	12.7	10.5	11.6
6	2.3	0.9	1.4	6.7	3.1	4.3	13.5	10.5	11.8	13.7	11.7	12.8
7	4.8	2.3	3.3	5.0	2.8	4.2	13.3	11.1	12.3	15.3	13.1	14.3
8	3.4	2.8	3.1	2.8	1.1	1.7	13.1	9.5	11.3	16.8	14.4	15.6
9	2.8	2.3	2.5	1.7	1.1	1.5	13.2	9.6	11.5	17.4	15.4	16.4
10	2.4	1.7	2.1	2.2	1.0	1.6	13.9	10.6	12.3	19.3	16.3	17.7
11	2.2	1.2	1.6	4.2	2.2	3.1	14.6	11.3	12.9	18.4	15.1	17.0
12	4.6	1.9	3.0	4.1	3.2	3.6	13.1	10.3	11.8	15.6	13.0	14.3
13	4.2	2.8	3.2	3.7	2.3	3.0	12.8	9.2	11.0	14.2	12.7	13.2
14	4.2	1.8	2.5	4.0	2.6	3.4	13.9	9.6	11.7	15.0	12.6	13.7
15	4.1	1.7	2.3	4.1	3.4	3.8	14.5	10.0	12.2	14.4	13.1	13.6
16	4.3	1.7	2.6	4.7	3.0	3.9	15.3	10.6	12.9	13.1	12.0	12.7
17	2.1	1.7	1.9	5.4	4.0	4.8	15.1	11.8	13.4	15.3	12.2	13.6
18	1.8	0.8	1.1	5.3	4.0	4.6	16.5	11.8	14.1	16.6	13.1	14.9
19	2.0	1.0	1.4	4.7	3.4	3.9	18.5	13.6	16.0	15.9	14.1	14.8
20	2.2	0.9	1.7	4.7	4.1	4.2	17.3	14.3	16.1	16.4	13.3	14.8
21	3.3	0.7	1.7	4.6	3.8	4.2	16.0	12.1	14.0	17.9	14.9	16.5
22	3.5	3.1	3.3	5.7	4.0	4.9	14.1	11.2	12.2	17.4	15.5	16.4
23	3.5	2.5	3.0	5.7	3.5	4.5	11.2	7.5	9.2	15.5	14.0	14.7
24	3.4	2.2	2.5	5.6	3.5	4.4	7.5	5.9	6.6	14.6	13.7	14.2
25	2.4	1.8	2.1	6.1	5.0	5.5	9.0	5.4	7.0	16.6	13.7	15.2
26	2.8	1.9	2.4	5.6	4.2	5.0	10.3	9.0	9.5	17.5	16.1	16.8
27	2.5	1.3	1.8	5.5	4.8	5.3	10.0	9.0	9.5	18.0	16.6	17.3
28	2.7	1.7	2.1	7.3	5.1	6.1	11.1	8.9	10.0	18.2	16.6	17.3
29	---	---	---	7.7	6.5	7.2	11.7	10.1	10.9	17.7	16.1	17.0
30	---	---	---	8.7	7.4	8.1	11.8	11.0	11.4	19.1	16.4	17.6
31	---	---	---	9.1	8.5	8.8	---	---	---	20.4	16.6	18.5
MONTH	4.8	0.5	2.1	9.1	0.5	4.1	18.5	5.1	11.0	20.4	8.1	14.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.2	17.4	19.2	24.7	22.4	23.4	---	---	---	24.0	20.1	22.0
2	22.2	18.4	20.1	24.1	20.6	22.2	---	---	---	23.3	19.8	21.6
3	21.4	19.2	20.3	24.2	20.5	22.2	27.8	23.9	25.8	23.4	19.4	21.4
4	22.7	18.7	20.6	25.9	21.5	23.3	---	---	---	22.4	18.9	20.8
5	24.7	19.8	22.1	24.2	21.5	22.7	26.6	23.2	24.9	22.6	18.7	20.8
6	24.0	20.8	22.5	22.5	21.0	21.7	25.8	22.3	24.1	23.3	19.0	21.2
7	25.6	21.4	23.3	24.5	19.5	21.8	26.2	22.0	24.1	23.8	19.6	21.8
8	26.3	22.4	24.2	23.3	20.6	22.1	26.5	22.3	24.4	22.7	20.5	21.6
9	25.9	21.8	23.9	23.5	20.0	21.7	27.0	23.1	25.0	22.8	19.4	21.0
10	27.3	22.7	25.0	25.5	21.1	23.2	27.0	23.9	25.5	23.0	18.9	21.0
11	25.9	24.3	25.2	26.4	22.3	24.3	25.7	23.5	24.6	23.3	19.2	21.3
12	25.3	23.1	24.2	25.9	23.3	24.6	25.2	22.3	23.7	24.0	19.7	21.9
13	24.3	21.4	22.8	27.7	23.5	25.5	24.4	22.8	23.6	23.9	20.4	22.3
14	24.4	21.6	22.9	27.6	24.3	26.0	23.8	21.7	22.7	23.0	21.3	22.2
15	23.6	21.4	22.3	27.4	23.8	25.8	24.5	20.7	22.5	22.3	20.2	21.0
16	21.4	19.1	20.4	---	---	---	25.1	20.8	22.8	20.2	17.4	18.4
17	19.1	17.8	18.6	---	---	---	25.6	21.2	23.2	19.7	17.8	18.7
18	18.8	17.9	18.3	---	---	---	24.7	21.3	23.1	21.4	17.8	19.4
19	21.3	16.8	18.8	---	---	---	26.0	22.5	24.0	20.7	18.6	19.7
20	22.6	18.1	20.2	---	---	---	24.7	22.1	23.3	21.9	18.8	20.3
21	22.2	19.6	21.0	---	---	---	25.6	22.0	23.5	22.0	18.1	20.1
22	23.1	19.9	21.4	27.7	24.6	25.9	22.9	20.1	21.2	20.8	18.9	19.6
23	23.0	18.8	20.9	26.9	23.2	25.0	21.6	19.4	20.5	20.0	18.9	19.3
24	25.4	20.7	22.9	---	---	---	23.0	18.2	20.5	18.9	17.8	18.4
25	26.8	23.3	25.0	---	---	---	21.8	19.0	20.6	20.9	18.4	19.3
26	25.9	21.9	23.6	---	---	---	24.5	19.8	22.0	20.5	19.5	20.0
27	26.8	22.9	24.7	---	---	---	23.4	21.6	22.3	19.5	18.1	18.7
28	26.4	24.1	25.1	---	---	---	23.5	21.0	22.2	18.3	17.0	17.8
29	26.1	23.4	24.7	---	---	---	24.7	20.9	22.7	18.4	16.4	17.5
30	25.5	22.6	23.5	---	---	---	23.5	21.8	22.5	16.4	14.9	15.6
31	---	---	---	---	---	---	22.8	21.1	21.9	---	---	---
MONTH	27.3	16.8	22.3	---	---	---	---	---	---	24.0	14.9	20.2

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.5	7.7	9.6	---	---	---	---	---	---	---	---	---
2	9.9	7.0	8.0	---	---	---	---	---	---	---	---	---
3	10.0	7.0	8.5	---	---	---	---	---	---	---	---	---
4	10.9	8.0	9.4	---	---	---	---	---	---	---	---	---
5	11.4	8.5	9.9	---	---	---	---	---	---	---	---	---
6	11.7	8.8	10.2	---	---	---	---	---	---	---	---	---
7	12.0	8.5	10.2	---	---	---	---	---	---	---	---	---
8	12.1	8.3	10.1	---	---	---	---	---	---	---	---	---
9	10.0	6.8	8.5	---	---	---	---	---	---	---	---	---
10	10.7	7.6	8.9	---	---	---	---	---	---	---	---	---
11	11.3	8.2	9.7	---	---	---	---	---	---	---	---	---
12	11.6	8.4	10.0	---	---	---	---	---	---	---	---	---
13	11.5	6.5	9.5	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	12.1	11.2	11.5	---	---	---	---	---	---
17	---	---	---	11.5	10.0	10.6	---	---	---	---	---	---
18	---	---	---	10.2	9.4	9.8	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	9.6	8.8	9.2	---	---	---	---	---	---	---	---	---
21	9.3	8.5	8.9	---	---	---	---	---	---	---	---	---
22	9.7	8.3	9.0	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	10.8	9.7	10.3	---	---	---	---	---	---
25	---	---	---	11.6	10.6	11.2	---	---	---	---	---	---
26	---	---	---	11.7	11.5	11.6	---	---	---	---	---	---
27	---	---	---	11.7	10.2	11.0	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	11.3	9.7	10.5
2	---	---	---	---	---	---	---	---	---	11.0	9.0	10.5
3	---	---	---	---	---	---	---	---	---	11.1	9.1	10.3
4	---	---	---	---	---	---	---	---	---	12.0	10.4	11.2
5	---	---	---	---	---	---	12.3	10.5	11.4	11.4	9.6	10.7
6	---	---	---	---	---	---	11.7	9.5	10.7	11.2	9.1	10.2
7	---	---	---	---	---	---	10.5	8.1	9.2	10.6	8.6	9.6
8	---	---	---	---	---	---	12.4	9.0	10.6	10.6	8.1	9.4
9	---	---	---	---	---	---	12.2	9.2	10.8	10.4	8.0	9.2
10	---	---	---	---	---	---	12.2	9.1	10.7	9.7	7.5	8.6
11	---	---	---	---	---	---	11.7	9.0	10.5	9.0	6.8	8.1
12	---	---	---	---	---	---	11.8	8.5	10.3	11.1	7.8	9.3
13	---	---	---	---	---	---	11.8	8.9	10.5	10.1	7.8	8.8
14	---	---	---	---	---	---	11.9	8.8	10.4	---	---	---
15	---	---	---	---	---	---	11.9	8.4	10.3	---	---	---
16	---	---	---	---	---	---	11.8	8.4	10.1	---	---	---
17	---	---	---	---	---	---	11.0	7.7	9.5	---	---	---
18	---	---	---	---	---	---	11.6	7.9	9.8	---	---	---
19	---	---	---	---	---	---	11.2	7.3	9.2	8.7	6.8	7.8
20	---	---	---	---	---	---	8.7	6.3	7.1	9.3	6.9	8.2
21	---	---	---	---	---	---	10.6	6.4	8.6	9.1	6.9	8.0
22	---	---	---	14.0	11.7	13.0	9.9	7.3	8.7	8.7	6.7	7.6
23	---	---	---	13.7	12.0	12.9	9.6	7.3	8.3	7.6	6.3	7.0
24	---	---	---	14.8	12.9	13.8	10.9	9.6	10.3	9.1	7.4	8.2
25	---	---	---	---	---	---	11.5	10.6	11.0	9.4	7.9	8.8
26	---	---	---	---	---	---	10.6	9.1	9.7	9.2	7.9	8.5
27	---	---	---	---	---	---	10.2	9.4	9.8	8.8	7.6	8.2
28	---	---	---	---	---	---	10.9	9.5	10.2	8.9	7.4	8.1
29	---	---	---	13.7	11.1	12.5	10.9	9.5	10.2	8.8	7.2	8.0
30	---	---	---	13.4	11.3	12.4	10.6	8.5	10.0	9.1	7.4	8.3
31	---	---	---	12.6	10.9	11.5	---	---	---	9.1	7.3	8.2
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.7	6.8	7.8	6.6	3.5	5.4	---	---	---	8.3	6.4	7.3
2	8.9	6.4	7.7	7.8	4.7	6.2	---	---	---	8.4	6.5	7.6
3	8.4	5.7	7.2	8.6	4.9	6.6	8.3	5.8	6.9	9.2	6.9	7.9
4	9.1	6.1	7.5	8.9	4.7	6.8	8.5	5.6	7.1	9.4	7.1	8.2
5	8.6	5.7	7.1	6.1	3.4	5.0	9.1	6.3	7.6	9.5	7.1	8.3
6	7.3	3.1	4.8	7.1	5.0	5.9	9.6	6.4	7.9	10.1	6.8	8.3
7	8.3	4.3	6.1	8.5	5.5	6.7	9.7	6.7	8.2	10.3	6.7	8.4
8	---	---	---	8.1	5.2	6.3	10.7	6.5	8.5	8.9	6.5	7.7
9	---	---	---	7.8	5.2	6.5	10.6	6.6	8.6	---	---	---
10	---	---	---	8.0	3.2	5.8	10.2	6.3	8.3	---	---	---
11	---	---	---	9.2	3.4	6.8	10.4	6.0	8.2	---	---	---
12	---	---	---	9.9	3.9	6.8	9.2	6.2	7.6	---	---	---
13	---	---	---	10.6	3.1	7.3	8.3	5.9	7.2	11.2	6.9	9.0
14	---	---	---	11.5	4.5	8.0	7.3	5.1	6.0	10.9	6.7	8.7
15	---	---	---	11.4	4.2	7.8	6.3	4.3	5.5	11.7	6.9	9.2
16	---	---	---	---	---	---	6.8	4.4	5.4	10.2	6.8	7.9
17	---	---	---	---	---	---	7.8	5.2	6.5	7.8	7.4	7.6
18	---	---	---	---	---	---	8.9	6.3	7.6	8.5	7.1	7.7
19	---	---	---	---	---	---	---	---	---	8.7	6.8	7.6
20	---	---	---	---	---	---	---	---	---	9.1	6.7	7.7
21	8.8	6.4	7.6	---	---	---	---	---	---	9.3	6.7	7.9
22	8.5	4.1	6.3	6.3	5.4	5.8	---	---	---	8.6	6.4	7.2
23	9.3	5.8	7.5	7.0	5.4	6.1	9.2	6.5	7.7	6.8	6.4	6.6
24	9.8	6.1	7.8	---	---	---	9.9	7.0	8.3	7.9	6.8	7.4
25	10.1	5.7	7.9	---	---	---	10.0	7.0	8.5	7.7	6.4	7.4
26	8.6	3.8	5.8	---	---	---	11.2	7.0	8.8	7.5	6.3	7.0
27	9.5	4.3	6.8	---	---	---	8.8	5.4	6.5	8.2	7.3	7.7
28	10.1	4.9	7.4	---	---	---	7.1	5.8	6.6	8.4	8.0	8.2
29	9.9	4.7	7.2	---	---	---	7.6	6.3	7.0	8.3	7.2	7.9
30	6.4	3.1	4.4	---	---	---	7.4	6.2	6.8	9.3	8.3	8.8
31	---	---	---	---	---	---	7.7	6.2	6.9	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	887	818	846	---	---	---	---	---	---	---	---	---
2	901	864	876	---	---	---	---	---	---	---	---	---
3	988	619	804	---	---	---	---	---	---	---	---	---
4	853	674	797	---	---	---	---	---	---	---	---	---
5	949	853	906	---	---	---	---	---	---	---	---	---
6	1030	949	989	---	---	---	---	---	---	---	---	---
7	1060	999	1020	---	---	---	---	---	---	---	---	---
8	1090	1020	1050	---	---	---	---	---	---	---	---	---
9	1120	1030	1060	---	---	---	---	---	---	---	---	---
10	1140	1030	1070	---	---	---	---	---	---	---	---	---
11	1150	1050	1090	---	---	---	---	---	---	---	---	---
12	1150	1070	1100	---	---	---	---	---	---	---	---	---
13	1150	1070	1100	---	---	---	---	---	---	---	---	---
14	1120	1010	1050	---	---	---	---	---	---	---	---	---
15	1100	1030	1060	---	---	---	---	---	---	---	---	---
16	1080	1000	1020	---	---	---	---	---	---	---	---	---
17	1080	982	1010	---	---	---	---	---	---	---	---	---
18	1190	1010	1070	---	---	---	---	---	---	---	---	---
19	1150	1070	1110	---	---	---	---	---	---	---	---	---
20	1160	1070	1100	---	---	---	---	---	---	---	---	---
21	1160	1050	1100	---	---	---	---	---	---	---	---	---
22	1150	1040	1080	---	---	---	---	---	---	---	---	---
23	1150	1060	1090	---	---	---	---	---	---	---	---	---
24	1150	1060	1090	---	---	---	---	---	---	---	---	---
25	1150	1050	1100	---	---	---	---	---	---	---	---	---
26	1060	982	1030	---	---	---	---	---	---	---	---	---
27	1040	956	990	---	---	---	---	---	---	---	---	---
28	1060	889	1000	---	---	---	---	---	---	---	---	---
29	965	877	902	---	---	---	---	---	---	---	---	---
30	979	941	962	---	---	---	---	---	---	---	---	---
31	1010	924	961	---	---	---	---	---	---	---	---	---
MONTH	1190	619	1010	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
2	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
3	7.9	7.6	7.7	---	---	---	---	---	---	---	---	---
4	7.7	7.6	7.7	---	---	---	---	---	---	---	---	---
5	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
6	8.0	7.7	7.9	---	---	---	---	---	---	---	---	---
7	8.1	7.8	7.9	---	---	---	---	---	---	---	---	---
8	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
9	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
10	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
11	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
12	8.2	7.9	8.1	---	---	---	---	---	---	---	---	---
13	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
14	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
15	8.3	8.0	8.2	---	---	---	---	---	---	---	---	---
16	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
17	8.3	8.0	8.2	---	---	---	---	---	---	---	---	---
18	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
19	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
20	8.2	7.9	8.0	---	---	---	---	---	---	---	---	---
21	8.2	7.8	8.0	---	---	---	---	---	---	---	---	---
22	8.3	7.9	8.2	---	---	---	---	---	---	---	---	---
23	8.3	8.0	8.2	---	---	---	---	---	---	---	---	---
24	8.3	8.0	8.2	---	---	---	---	---	---	---	---	---
25	8.3	8.0	8.2	---	---	---	---	---	---	---	---	---
26	8.2	8.1	8.2	---	---	---	---	---	---	---	---	---
27	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
28	8.2	8.0	8.2	---	---	---	---	---	---	---	---	---
29	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
30	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
31	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
MAX	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
MIN	7.7	7.6	7.7	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164000 CLINTON RIVER NEAR FRASER, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.4	14.9	15.7	---	---	---	---	---	---	---	---	---
2	18.0	16.1	17.0	---	---	---	---	---	---	---	---	---
3	20.0	18.0	19.2	---	---	---	---	---	---	---	---	---
4	21.4	19.3	20.2	---	---	---	---	---	---	---	---	---
5	21.3	19.0	20.2	---	---	---	---	---	---	---	---	---
6	21.1	18.9	19.9	---	---	---	---	---	---	---	---	---
7	19.1	15.5	17.1	---	---	---	---	---	---	---	---	---
8	15.5	13.8	14.4	---	---	---	---	---	---	---	---	---
9	14.6	12.4	13.6	---	---	---	---	---	---	---	---	---
10	14.1	13.4	13.8	---	---	---	---	---	---	---	---	---
11	15.0	13.9	14.4	---	---	---	---	---	---	---	---	---
12	15.9	14.7	15.3	---	---	---	---	---	---	---	---	---
13	17.3	15.5	16.3	---	---	---	---	---	---	---	---	---
14	17.5	15.3	16.4	---	---	---	---	---	---	---	---	---
15	16.8	15.1	15.8	---	---	---	---	---	---	---	---	---
16	15.1	13.5	14.0	---	---	---	---	---	---	---	---	---
17	13.8	11.9	13.0	---	---	---	---	---	---	---	---	---
18	14.4	12.4	13.4	---	---	---	---	---	---	---	---	---
19	14.0	12.5	13.3	---	---	---	---	---	---	---	---	---
20	13.0	11.2	12.1	---	---	---	---	---	---	---	---	---
21	12.2	10.9	11.6	---	---	---	---	---	---	---	---	---
22	11.5	10.4	11.0	---	---	---	---	---	---	---	---	---
23	11.0	9.7	10.4	---	---	---	---	---	---	---	---	---
24	10.7	9.3	10.1	---	---	---	---	---	---	---	---	---
25	10.5	9.4	10.0	---	---	---	---	---	---	---	---	---
26	9.8	8.7	9.3	---	---	---	---	---	---	---	---	---
27	10.2	8.3	9.3	---	---	---	---	---	---	---	---	---
28	10.0	8.3	9.3	---	---	---	---	---	---	---	---	---
29	9.2	8.0	8.7	---	---	---	---	---	---	---	---	---
30	9.6	8.1	8.9	---	---	---	---	---	---	---	---	---
31	11.8	9.3	10.4	---	---	---	---	---	---	---	---	---
MONTH	21.4	8.0	13.7	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.3	8.9	9.1	---	---	---	---	---	---	---	---	---
2	9.3	8.7	8.9	---	---	---	---	---	---	---	---	---
3	9.1	7.0	7.8	---	---	---	---	---	---	---	---	---
4	7.9	7.3	7.5	---	---	---	---	---	---	---	---	---
5	8.3	7.2	7.6	---	---	---	---	---	---	---	---	---
6	8.5	7.3	7.7	---	---	---	---	---	---	---	---	---
7	9.3	7.5	8.3	---	---	---	---	---	---	---	---	---
8	10.3	8.4	9.2	---	---	---	---	---	---	---	---	---
9	10.9	8.9	9.7	---	---	---	---	---	---	---	---	---
10	10.8	8.7	9.5	---	---	---	---	---	---	---	---	---
11	10.5	8.5	9.4	---	---	---	---	---	---	---	---	---
12	10.1	8.4	9.3	---	---	---	---	---	---	---	---	---
13	10.6	8.1	9.2	---	---	---	---	---	---	---	---	---
14	10.4	7.8	9.1	---	---	---	---	---	---	---	---	---
15	10.1	8.0	9.0	---	---	---	---	---	---	---	---	---
16	10.8	8.4	9.5	---	---	---	---	---	---	---	---	---
17	11.1	8.8	10.0	---	---	---	---	---	---	---	---	---
18	11.2	8.7	9.9	---	---	---	---	---	---	---	---	---
19	11.3	8.6	10.0	---	---	---	---	---	---	---	---	---
20	11.3	8.9	10.3	---	---	---	---	---	---	---	---	---
21	12.0	9.0	10.5	---	---	---	---	---	---	---	---	---
22	12.3	9.4	10.9	---	---	---	---	---	---	---	---	---
23	12.0	9.6	10.9	---	---	---	---	---	---	---	---	---
24	12.3	9.5	11.0	---	---	---	---	---	---	---	---	---
25	11.9	9.8	11.0	---	---	---	---	---	---	---	---	---
26	11.8	10.3	11.1	---	---	---	---	---	---	---	---	---
27	12.5	10.1	11.4	---	---	---	---	---	---	---	---	---
28	12.3	10.5	11.4	---	---	---	---	---	---	---	---	---
29	12.4	10.6	11.5	---	---	---	---	---	---	---	---	---
30	12.4	10.8	11.5	---	---	---	---	---	---	---	---	---
31	12.2	10.2	11.0	---	---	---	---	---	---	---	---	---
MONTH	12.5	7.0	9.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164100 EAST POND CREEK AT ROMEO, MI

LOCATION.--Lat 42°49'21", long 83°01'13", in NE1/4 SE1/4 sec.27, T.5 N., R.12 E., Macomb County, Hydrologic Unit 04090003, on right bank at upstream side of bridge on Van Dyke Road, 1.4 mi north of Romeo.

DRAINAGE AREA.--21.8 mi^2.

PERIOD OF RECORD.--September 1958 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 780 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Occasional regulation by lakes upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	7.8	32	33	e15	e20	38	28	8.9	4.9	6.9	3.9
2	3.9	13	27	35	e14	e19	37	26	8.3	4.1	6.1	3.5
3	3.8	13	20	41	e14	e19	34	28	7.6	3.8	5.8	2.9
4	3.6	16	16	38	e13	e18	30	27	9.1	3.9	5.1	2.7
5	3.4	17	14	34	e13	e19	28	25	11	5.1	4.9	2.5
6	3.3	13	13	e31	e13	21	25	22	11	4.9	4.8	2.4
7	3.0	11	31	e28	e15	32	23	19	11	4.8	4.8	2.4
8	3.2	9.3	42	27	34	44	20	18	9.3	4.2	4.7	3.7
9	4.2	8.4	29	25	23	e30	18	16	8.2	4.8	4.2	3.5
10	5.0	7.7	25	24	e20	e28	17	15	8.0	4.1	3.9	3.1
11	4.2	7.6	27	23	e18	27	16	13	7.4	4.0	3.4	2.9
12	4.0	7.1	27	32	e17	26	15	12	7.7	3.6	3.6	2.6
13	4.5	7.1	33	68	19	e24	14	12	9.9	3.4	3.6	2.3
14	6.1	6.8	e28	71	42	e22	15	15	10	3.1	3.9	2.3
15	7.0	7.2	e22	e46	60	21	15	14	11	4.1	3.9	2.2
16	8.4	7.2	20	e37	72	20	16	13	11	32	3.4	3.7
17	8.1	7.2	17	e31	55	21	15	12	11	26	3.2	4.3
18	7.2	7.3	15	e26	e46	21	13	12	9.9	13	2.9	4.2
19	6.8	7.2	e14	e23	e38	21	12	12	9.3	9.4	2.9	4.0
20	6.6	8.0	e13	e22	e34	26	11	13	8.4	7.6	3.1	3.7
21	6.5	8.1	e12	e21	e32	26	11	17	7.7	7.4	3.6	3.2
22	6.5	7.5	e11	e19	e29	28	11	17	7.1	6.3	3.4	9.6
23	6.6	7.5	e12	e18	e28	30	12	20	6.3	5.3	3.1	18
24	7.8	8.6	e12	e18	e25	29	19	e17	6.2	13	3.0	11
25	7.4	13	e12	e17	e23	31	28	e15	5.8	12	3.0	8.1
26	6.9	12	e11	e17	e22	32	33	13	5.6	30	2.9	13
27	6.8	13	e11	e17	e21	33	35	12	5.3	33	3.8	11
28	6.5	18	e11	e16	e20	35	31	11	5.0	15	4.2	8.2
29	7.9	20	e12	e16	---	38	29	11	5.1	11	4.2	11
30	10	22	13	e15	---	39	29	9.8	5.0	8.7	4.2	8.6
31	9.5	---	34	e15	---	40	---	9.3	---	7.7	4.3	---
TOTAL	181.8	318.6	616	884	775	840	650	504.1	247.1	300.2	124.8	164.5
MEAN	5.86	10.6	19.9	28.5	27.7	27.1	21.7	16.3	8.24	9.68	4.03	5.48
MAX	10	22	42	71	72	44	38	28	11	33	6.9	18
MIN	3.0	6.8	11	15	13	18	11	9.3	5.0	3.1	2.9	2.2
CFSM	0.27	0.49	0.91	1.31	1.27	1.24	0.99	0.75	0.38	0.44	0.18	0.25
IN.	0.31	0.54	1.05	1.51	1.32	1.43	1.11	0.86	0.42	0.51	0.21	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2005, BY WATER YEAR (WY)

MEAN	10.2	13.6	15.1	14.9	19.3	31.2	29.8	19.8	13.9	8.89	6.95	8.69
MAX	35.1	45.0	35.7	42.6	54.9	67.9	71.4	52.2	52.9	22.9	35.0	52.3
(WY)	1987	1986	1988	1973	2001	1976	1975	1974	1989	1969	1975	1985
MIN	1.92	2.32	1.64	2.89	2.93	7.81	12.8	7.77	2.76	2.07	1.30	2.02
(WY)	1964	1964	1964	1959	1964	1964	2000	1977	1963	1964	1965	1966

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1958 - 2005	
ANNUAL TOTAL	6125.6		5606.1			
ANNUAL MEAN	16.7		15.4		16.0	
HIGHEST ANNUAL MEAN					29.0	1975
LOWEST ANNUAL MEAN					4.99	1964
HIGHEST DAILY MEAN	267	May 23	72	Feb 16	302	Feb 1 1968
LOWEST DAILY MEAN	2.9	Sep 28	2.2	Sep 15	0.90	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	3.0	Sep 23	2.7	Sep 9	0.99	Jul 27 1964
MAXIMUM PEAK FLOW			(a)85	Jan 13	(b)418	May 23 2004
MAXIMUM PEAK STAGE			(c)2.94	Feb 18	(c)4.56	Mar 12 1962
INSTANTANEOUS LOW FLOW			2.0	Sep 15	0.80	(d)
ANNUAL RUNOFF (CFSM)	0.768		0.705		0.734	
ANNUAL RUNOFF (INCHES)	10.45		9.57		9.97	
10 PERCENT EXCEEDS	31		32		32	
50 PERCENT EXCEEDS	11		12		11	
90 PERCENT EXCEEDS	4.9		3.6		3.5	

(a) Gage height 2.79 ft.
(b) Gage height 4.54 ft.
(c) Backwater from ice.
(d) July 30, 31, 1964, Aug. 6, 7, 1965.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164300 EAST BRANCH COON CREEK AT ARMADA, MI

LOCATION.--Lat 42°50'45", long 82°53'06", in NE1/4 sec.23, T.5 N., R.13 E., Macomb County, Hydrologic Unit 04090003, on right bank at downstream side of bridge on Prospect Street in Armada.

DRAINAGE AREA.--13.0 mi^2.

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WDR MI-83-1: 1982.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 735 ft above sea level, from topographic map.

REMARKS.--Records fair except those below 1.0 ft^3/s, which are poor. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.20	0.73	15	110	e1.2	e2.1	15	7.3	1.0	1.2	0.42	0.22
2	e0.13	1.2	16	63	e1.1	e2.1	16	5.7	0.91	0.88	0.38	0.22
3	0.08	1.2	6.7	74	e1.1	e2.1	16	4.7	0.82	0.69	0.36	e0.20
4	0.08	2.7	4.1	38	e1.1	e2.4	9.6	4.0	0.91	0.63	0.36	e0.19
5	0.09	2.8	3.1	24	e1.1	3.0	7.2	3.3	1.0	1.1	0.36	e0.18
6	0.10	1.9	2.6	e9.0	1.1	4.3	6.2	3.1	0.98	0.54	0.35	e0.17
7	0.14	1.2	54	e5.6	1.1	28	5.6	2.9	0.87	0.52	0.31	e0.17
8	0.15	0.93	110	e4.8	3.6	e95	4.8	2.7	0.74	e0.48	0.28	e0.16
9	0.37	0.75	22	e4.4	5.3	e44	4.1	2.3	0.60	e0.44	0.26	0.16
10	0.13	0.62	12	e4.4	3.6	e14	3.7	2.1	0.54	e0.40	0.23	0.21
11	0.06	0.54	19	e5.2	2.7	e8.6	3.2	2.0	e0.60	e0.36	0.23	0.15
12	0.06	0.45	15	37	2.3	e5.2	2.9	1.8	e1.2	e0.32	0.28	0.16
13	0.13	0.38	12	194	2.7	e4.1	2.6	1.9	e1.9	e0.28	0.23	0.15
14	0.44	0.36	8.7	133	74	e3.4	2.4	2.7	e3.0	e0.36	0.28	0.15
15	0.50	0.35	5.5	e30	139	3.8	2.1	2.8	4.3	e0.44	0.20	0.14
16	0.20	0.36	4.3	e12	146	4.3	2.0	2.4	3.5	e3.3	0.23	0.46
17	0.27	0.38	3.6	e7.0	e44	9.9	1.9	2.0	4.4	e2.2	0.23	0.38
18	0.21	0.37	e2.9	e5.4	e9.8	16	1.9	1.7	3.9	e0.83	0.23	0.23
19	0.15	0.42	e2.0	e4.4	e6.0	16	1.8	1.6	3.0	e0.54	0.26	0.16
20	0.21	0.47	e1.6	e3.4	4.9	42	1.9	1.7	2.3	0.35	0.31	0.17
21	0.27	0.44	e1.3	e2.7	5.0	43	1.9	1.5	1.9	0.35	0.22	0.18
22	0.24	0.45	e0.95	e2.2	5.3	52	1.8	1.4	1.6	0.29	0.22	e0.52
23	e0.30	0.43	e0.86	e2.0	4.6	54	2.5	2.9	1.3	0.23	0.23	e0.86
24	e0.44	0.66	e0.82	e1.8	4.1	27	4.9	3.7	1.1	e0.71	0.23	e0.52
25	e0.30	1.2	e0.77	e1.7	4.1	36	30	2.8	0.91	e1.1	0.21	e0.35
26	0.34	1.2	e0.77	e1.6	e3.2	29	96	2.1	0.75	e2.9	0.23	e0.77
27	0.40	2.0	e0.77	e1.5	e2.4	27	92	1.8	0.70	e4.4	0.90	e0.51
28	0.34	5.2	e0.77	e1.4	e2.1	28	30	1.5	1.0	2.0	0.22	e0.39
29	0.66	4.3	e0.90	e1.3	---	30	15	1.4	0.90	1.1	0.25	0.73
30	0.84	2.7	e1.0	e1.2	---	24	10	1.3	1.8	0.71	0.26	0.32
31	0.82	---	78	e1.2	---	21	---	1.2	---	0.51	0.36	---
TOTAL	8.65	36.69	407.01	787.2	482.5	681.3	395.0	80.3	48.43	30.16	9.12	9.18
MEAN	0.28	1.22	13.1	25.4	17.2	22.0	13.2	2.59	1.61	0.97	0.29	0.31
MAX	0.84	5.2	110	194	146	95	96	7.3	4.4	4.4	0.90	0.86
MIN	0.06	0.35	0.77	1.2	1.1	2.1	1.8	1.2	0.54	0.23	0.20	0.14
CFSM	0.02	0.09	1.01	1.95	1.33	1.69	1.01	0.20	0.12	0.07	0.02	0.02
IN.	0.02	0.10	1.16	2.25	1.38	1.95	1.13	0.23	0.14	0.09	0.03	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2005, BY WATER YEAR (WY)

MEAN	2.61	5.23	8.08	6.81	11.9	23.1	15.0	6.82	4.60	1.85	1.36	2.25
MAX	25.6	43.3	35.7	37.6	60.3	75.2	47.1	50.2	21.9	19.7	12.3	33.9
(WY)	2002	1986	1973	1974	1976	1982	1967	2004	1989	1967	1975	1985
MIN	0.05	0.09	0.07	0.08	0.09	0.23	0.83	0.61	0.06	0.05	0.05	0.06
(WY)	1964	1964	1964	1961	1964	1964	1964	1977	1964	1964	1963	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1959 - 2005	
ANNUAL TOTAL	3613.01		2975.54			
ANNUAL MEAN	9.87		8.15		7.44	
HIGHEST ANNUAL MEAN					14.9	1985
LOWEST ANNUAL MEAN					0.36	1964
HIGHEST DAILY MEAN	485	May 23	194	Jan 13	497	Apr 19 1975
LOWEST DAILY MEAN	0.06	Oct 11	0.06	Oct 11	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.10	Sep 21	0.11	Oct 2	0.00	Jan 25 1961
MAXIMUM PEAK FLOW			221	Jan 13	910	Apr 19 1975
MAXIMUM PEAK STAGE			4.19	Jan 13	6.69	Apr 19 1975
ANNUAL RUNOFF (CFSM)	0.759		0.627		0.572	
ANNUAL RUNOFF (INCHES)	10.34		8.51		7.77	
10 PERCENT EXCEEDS	18		20		15	
50 PERCENT EXCEEDS	1.6		1.4		1.1	
90 PERCENT EXCEEDS	0.21		0.22		0.11	

(a) Jan. 25 to Feb. 9, 1961, result of freezeup.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164500 NORTH BRANCH CLINTON RIVER NEAR MOUNT CLEMENS, MI

LOCATION.--Lat 42°37'45", long 82°53'20" (revised), in SW1/4 sec.35, T.3 N., R.13 E., Macomb County, Hydrologic Unit 04090003, on left bank at upstream side of bridge on State Highway 59, 2 mi north of Mount Clemens, and 3.6 mi upstream from mouth.

DRAINAGE AREA.--199 mi^2.

PERIOD OF RECORD.--May 1947 to current year.

REVISED RECORDS.--WSP 1437: 1948. WSP 1557: Drainage area.

GAGE.--Water-stage recorder. Concrete control since September 1961. Datum of gage is 576.38 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Nov. 15, 1949 and Oct. 3, 1997 to Apr. 22, 1998, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation at times by mill upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	33	155	513	e60	e85	284	145	35	21	27	13
2	5.2	39	286	1070	e59	e80	230	117	32	20	24	10
3	7.0	44	289	1080	58	e77	240	98	28	17	19	6.8
4	8.3	86	168	1100	58	e76	222	88	28	13	17	4.3
5	7.0	106	109	797	61	e85	151	80	29	13	15	4.3
6	5.1	110	85	516	64	110	126	72	32	15	13	4.3
7	4.7	82	161	e260	71	209	111	68	35	14	11	3.9
8	4.1	51	633	e180	109	528	101	63	38	11	9.6	3.1
9	5.3	38	986	e160	149	891	89	60	70	9.1	8.0	8.1
10	6.3	32	587	145	169	695	78	55	33	8.7	7.8	8.6
11	8.0	29	366	144	159	372	71	52	29	8.2	6.8	4.0
12	8.4	27	333	186	129	214	66	49	27	e8.1	13	4.3
13	8.2	25	308	877	130	e145	61	49	32	e7.8	19	4.5
14	13	24	270	1970	211	e125	57	64	38	e7.5	28	3.4
15	20	23	163	1550	800	e110	55	82	41	e7.5	18	2.5
16	24	23	125	814	1970	e100	52	78	41	e75	16	20
17	30	24	e110	e450	1960	e125	52	64	42	245	14	21
18	24	25	e90	e295	1360	194	51	56	40	168	11	16
19	22	25	e86	e225	656	220	48	50	39	66	9.2	13
20	20	26	e82	185	393	292	48	48	36	45	9.6	11
21	18	28	e73	149	259	471	48	47	31	39	9.4	11
22	16	28	63	122	204	532	47	46	27	37	8.8	16
23	15	28	58	102	180	575	50	49	20	29	e7.5	89
24	17	30	53	e89	e145	600	76	65	19	33	e6.9	72
25	21	46	54	e87	e125	448	192	73	15	52	e6.3	44
26	20	77	54	e83	e110	435	378	60	13	81	e5.7	40
27	20	79	53	e80	e100	408	694	50	12	165	e12	46
28	18	92	53	e70	e90	369	809	45	11	139	38	42
29	25	132	53	e63	---	365	475	40	18	68	25	38
30	28	124	55	e62	---	376	235	39	23	50	19	38
31	31	---	121	e61	---	335	---	37	---	37	15	---
TOTAL	463.8	1536	6082	13485	9839	9647	5197	1989	914	1509.9	449.6	602.1
MEAN	15.0	51.2	196	435	351	311	173	64.2	30.5	48.7	14.5	20.1
MAX	31	132	986	1970	1970	891	809	145	70	245	38	89
MIN	4.1	23	53	61	58	76	47	37	11	7.5	5.7	2.5
CFSM	0.08	0.26	0.99	2.19	1.77	1.56	0.87	0.32	0.15	0.24	0.07	0.10
IN.	0.09	0.29	1.14	2.52	1.84	1.80	0.97	0.37	0.17	0.28	0.08	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2005, BY WATER YEAR (WY)

MEAN	53.0	89.7	135	133	207	345	261	147	81.9	35.9	26.2	40.6
MAX	479	595	460	507	766	928	560	790	448	127	247	484
(WY)	1982	1986	1968	1974	1976	1982	1975	1956	1996	1992	1975	1985
MIN	3.71	7.12	5.63	5.55	8.77	29.6	72.6	25.9	7.08	3.44	2.14	3.12
(WY)	1964	1964	1959	1961	1963	1964	1963	1958	1988	1955	1955	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1947 - 2005	
ANNUAL TOTAL	59581.8		51714.4			
ANNUAL MEAN	163		142		129	
HIGHEST ANNUAL MEAN					230	1986
LOWEST ANNUAL MEAN					25.4	1964
HIGHEST DAILY MEAN	6200	May 24	1970	Jan 14	6200	May 24 2004
LOWEST DAILY MEAN	3.1	Sep 29	2.5	Sep 15	0.09	Jul 7 1988
ANNUAL SEVEN-DAY MINIMUM	4.3	Sep 25	5.0	Sep 3	0.10	Jul 3 1988
MAXIMUM PEAK FLOW			2190	Feb 16	6830	May 24 2004
MAXIMUM PEAK STAGE			13.96	Feb 16	20.34	May 24 2004
INSTANTANEOUS LOW FLOW					0.08	(a)
ANNUAL RUNOFF (CFSM)	0.818		0.712		0.647	
ANNUAL RUNOFF (INCHES)	11.14		9.67		8.80	
10 PERCENT EXCEEDS	342		370		308	
50 PERCENT EXCEEDS	56		52		43	
90 PERCENT EXCEEDS	15		8.4		7.4	

(a) Part of each day July 4-10, 14, 15, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI

LOCATION.--Lat 42°38'34", long 82°56'00", in NW1/4 NW1/4 sec.33, T.3 N., R.13 E., Macomb County, Hydrologic Unit 04090003, on left bank at downstream side of bridge on 21 Mile Road, 1.0 mi south of Waldenburg.

DRAINAGE AREA.-- 46.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- June 2004 to October 2005 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 590 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 652 ft^3/s, July 16, 2005, gage height, 9.69 ft; minimum, 2.2 ft^3/s, July 15, 2005.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	19	110	212	e18	e29	42	30	11	8.9	17	6.9
2	13	42	90	161	e18	e29	44	27	10	5.6	14	5.4
3	13	40	39	246	e18	e28	49	25	9.7	4.8	11	4.4
4	7.7	52	28	189	e18	e28	37	23	11	4.3	10	3.6
5	6.7	64	24	122	e20	e28	32	22	11	14	9.6	3.9
6	6.7	37	21	77	e26	e40	32	21	20	9.5	8.0	3.9
7	5.3	26	170	61	e38	188	29	21	13	6.8	7.7	3.7
8	6.0	20	375	50	108	299	27	20	12	5.0	7.4	5.4
9	12	16	109	45	95	103	25	19	11	8.3	6.7	7.0
10	12	15	79	47	54	65	24	17	8.7	6.6	6.6	4.4
11	8.7	18	119	53	41	49	23	16	8.8	4.6	5.6	3.8
12	7.9	15	80	154	41	48	22	16	11	3.5	29	3.2
13	8.7	14	95	506	45	41	21	22	30	3.5	17	3.3
14	22	15	64	404	223	37	20	58	26	2.8	26	3.2
15	25	17	45	117	370	37	18	38	19	2.5	12	3.8
16	43	16	39	e55	480	36	18	25	17	255	8.5	28
17	34	17	39	e44	183	46	17	21	16	303	7.0	25
18	23	18	34	e38	e90	63	17	19	12	44	5.8	12
19	16	16	e30	e33	e61	51	16	17	9.9	35	5.4	7.5
20	11	20	e27	e30	e52	122	18	23	8.8	24	7.0	5.6
21	10	21	e24	e28	e44	108	17	18	7.7	36	8.7	4.5
22	8.7	13	e22	e26	e42	103	16	16	7.5	21	6.0	39
23	11	11	e20	e24	e39	126	27	28	5.9	14	6.3	219
24	28	20	e19	e23	e36	76	67	34	5.6	80	4.6	39
25	20	57	e18	e22	e33	87	117	21	4.9	90	4.0	23
26	14	40	e17	e21	e32	80	110	17	5.9	202	3.4	78
27	12	36	e16	e20	e31	69	149	16	5.6	164	72	37
28	15	52	e17	e20	e30	64	73	15	5.0	46	49	20
29	40	42	e22	e19	---	67	42	14	6.0	29	13	57
30	44	30	e28	e19	---	56	35	13	7.5	31	8.0	30
31	31	---	177	e19	---	49	---	12	---	22	8.9	---
TOTAL	522.3	819	1997	2885	2286	2252	1184	684	337.5	1486.7	405.2	690.5
MEAN	16.8	27.3	64.4	93.1	81.6	72.6	39.5	22.1	11.2	48.0	13.1	23.0
MAX	44	64	375	506	480	299	149	58	30	303	72	219
MIN	5.3	11	16	19	18	28	16	12	4.9	2.5	3.4	3.2
CFSM	0.36	0.59	1.39	2.01	1.77	1.57	0.85	0.48	0.24	1.04	0.28	0.50
IN.	0.42	0.66	1.61	2.32	1.84	1.81	0.95	0.55	0.27	1.20	0.33	0.56

WTR YR 2005 TOTAL 15549.2 MEAN 42.6 MAX 506 MIN 2.5 CFSM 0.92 IN. 12.52

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	---	---	---	---	---	---	---	---	---	---	---
2	16	---	---	---	---	---	---	---	---	---	---	---
3	45	---	---	---	---	---	---	---	---	---	---	---
4	39	---	---	---	---	---	---	---	---	---	---	---
5	21	---	---	---	---	---	---	---	---	---	---	---
6	17	---	---	---	---	---	---	---	---	---	---	---
7	14	---	---	---	---	---	---	---	---	---	---	---
8	11	---	---	---	---	---	---	---	---	---	---	---
9	11	---	---	---	---	---	---	---	---	---	---	---
10	10	---	---	---	---	---	---	---	---	---	---	---
11	11	---	---	---	---	---	---	---	---	---	---	---
12	11	---	---	---	---	---	---	---	---	---	---	---
13	11	---	---	---	---	---	---	---	---	---	---	---
14	9.8	---	---	---	---	---	---	---	---	---	---	---
15	9.7	---	---	---	---	---	---	---	---	---	---	---
16	9.2	---	---	---	---	---	---	---	---	---	---	---
17	9.4	---	---	---	---	---	---	---	---	---	---	---
18	11	---	---	---	---	---	---	---	---	---	---	---
19	12	---	---	---	---	---	---	---	---	---	---	---
20	11	---	---	---	---	---	---	---	---	---	---	---
21	9.7	---	---	---	---	---	---	---	---	---	---	---
22	9.8	---	---	---	---	---	---	---	---	---	---	---
23	9.8	---	---	---	---	---	---	---	---	---	---	---
24	9.6	---	---	---	---	---	---	---	---	---	---	---
25	9.9	---	---	---	---	---	---	---	---	---	---	---
26	11	---	---	---	---	---	---	---	---	---	---	---
27	11	---	---	---	---	---	---	---	---	---	---	---
28	10	---	---	---	---	---	---	---	---	---	---	---
29	8.8	---	---	---	---	---	---	---	---	---	---	---
30	11	---	---	---	---	---	---	---	---	---	---	---
31	11	---	---	---	---	---	---	---	---	---	---	---
TOTAL	420.7	---	---	---	---	---	---	---	---	---	---	---
MEAN	13.6	---	---	---	---	---	---	---	---	---	---	---
MAX	45	---	---	---	---	---	---	---	---	---	---	---
MIN	8.8	---	---	---	---	---	---	---	---	---	---	---
CFSM	0.29	---	---	---	---	---	---	---	---	---	---	---
IN.	0.34	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2004 to October 2005.
pH: June 2004 to October 2005.
WATER TEMPERATURE: June 2004 to October 2005.
DISSOLVED OXYGEN: June 2004 to October 2005.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 5-7, 14-23, Nov. 1-3, Nov. 17 to Dec. 2, Apr. 5-9, 19-24, Apr. 27 to May 3, May 17, 18, 27, June 3-8, June 15 to July 1, July 18-30, Aug. 6-10, 16-18, 22-30, Sept. 18, 19, 29, 30, Oct. 6-24, 2005, rated good; July 2, 3, July 31 to Aug. 1, rated fair; July 4-9, rated poor. Water temperature and pH records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 4, 5, May 6-10, 30, 31, June 16-20, July 23-27, Sept. 12-14, Oct. 14-18, 29, 30, 2005, rated good; Oct. 6, 7, May 11-18, June 1-3, 21-27, July 28 to Aug. 1, Oct. 19-25, 31, 2005, rated fair; June 4-8, 28, 29, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,210 microsiemens, Apr. 20, 2005; minimum, 244 microsiemens, Aug. 27, 2005.
pH: Maximum, 8.4 std. units, Mar. 31 to Apr. 4, 2005; minimum, 7.3 std. units, Sept. 8, 2004.
WATER TEMPERATURE: Maximum, 28.0°C, July 14, 2005; minimum, 2.4°C, Nov. 14, 15, 2004, Mar. 23, 2005.
DISSOLVED OXYGEN: Maximum, 15.9 mg/L, Apr. 3, 4, 2005; minimum, 3.9 mg/L, June 9, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,210 microsiemens, Apr. 20; minimum, 244 microsiemens, Aug. 27.
pH: Maximum, 8.4 std. units, Mar. 31 to Apr. 4; minimum, 7.5 std. units, July 17.
WATER TEMPERATURE: Maximum, 28.0°C, July 14; minimum, 2.4°C, Nov. 14, 15, Mar. 23.
DISSOLVED OXYGEN: Maximum, 15.9 mg/L, Apr. 3, 4; minimum, 3.9 mg/L, June 9.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1030	1000	1010	890	788	831	902	587	671	---	---	---
2	1020	828	969	889	637	761	770	609	702	---	---	---
3	990	826	921	823	736	792	---	---	---	---	---	---
4	990	917	934	833	559	714	---	---	---	---	---	---
5	942	907	916	744	638	698	---	---	---	---	---	---
6	1000	942	972	837	744	798	---	---	---	---	---	---
7	1020	1000	1010	883	837	862	---	---	---	---	---	---
8	1020	1000	1010	925	883	906	---	---	---	---	---	---
9	1010	912	972	962	925	947	---	---	---	---	---	---
10	978	905	941	976	961	972	---	---	---	---	---	---
11	960	923	937	1000	970	985	---	---	---	---	---	---
12	924	911	917	1000	978	986	---	---	---	---	---	---
13	949	920	932	1000	983	990	---	---	---	---	---	---
14	920	753	824	1010	990	997	---	---	---	---	---	---
15	884	715	819	1020	1000	1020	---	---	---	---	---	---
16	736	688	711	1030	991	1010	---	---	---	---	---	---
17	770	697	725	994	974	986	---	---	---	---	---	---
18	785	763	773	1000	987	993	---	---	---	---	---	---
19	844	785	824	990	959	976	---	---	---	---	---	---
20	908	844	881	959	891	926	---	---	---	---	---	---
21	951	908	941	940	907	923	---	---	---	---	---	---
22	985	934	970	919	909	915	---	---	---	---	---	---
23	980	902	962	937	914	924	---	---	---	---	---	---
24	933	736	830	950	689	895	---	---	---	---	---	---
25	888	785	818	864	610	744	---	---	---	---	---	---
26	886	837	869	1170	864	1080	---	---	---	---	---	---
27	916	886	899	1050	892	940	---	---	---	---	---	---
28	928	916	923	985	871	915	---	---	---	---	---	---
29	928	585	734	894	871	881	---	---	---	---	---	---
30	731	635	680	916	886	902	---	---	---	---	---	---
31	788	731	759	---	---	---	---	---	---	---	---	---
MONTH	1030	585	883	1170	559	909	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	997	929	960	974	949	962
2	---	---	---	---	---	---	1150	980	1020	992	974	982
3	---	---	---	---	---	---	1150	1040	1060	1010	989	1000
4	---	---	---	---	---	---	1060	1030	1040	1020	1000	1010
5	---	---	---	---	---	---	1070	1040	1050	1010	989	1000
6	---	---	---	---	---	---	1060	1030	1050	1000	989	998
7	---	---	---	---	---	---	1060	1040	1050	1010	996	1000
8	---	---	---	---	---	---	1060	1050	1050	1040	1000	1020
9	---	---	---	---	---	---	1070	1050	1060	1020	1010	1010
10	---	---	---	---	---	---	1070	1060	1060	1080	1020	1060
11	---	---	---	---	---	---	1070	1060	1060	1110	1080	1100
12	---	---	---	---	---	---	1080	1060	1060	1140	1090	1110
13	---	---	---	---	---	---	1070	1060	1060	1180	763	1040
14	---	---	---	---	---	---	1070	1060	1060	922	720	840
15	---	---	---	---	---	---	1080	1060	1070	1020	880	980
16	---	---	---	---	---	---	1080	1060	1080	1060	1020	1040
17	---	---	---	---	---	---	1090	1080	1080	1060	1040	1050
18	---	---	---	---	---	---	1090	1060	1080	1070	1040	1060
19	---	---	---	---	---	---	1090	1060	1070	1100	1070	1080
20	---	---	---	---	---	---	1210	1040	1080	1160	1020	1060
21	---	---	---	---	---	---	1150	1070	1120	1040	986	1010
22	---	---	---	---	---	---	1140	1090	1120	1070	1030	1050
23	---	---	---	---	---	---	1120	920	1060	1060	727	964
24	---	---	---	---	---	---	1030	919	989	994	906	959
25	---	---	---	---	---	---	989	932	963	1050	974	1010
26	---	---	---	---	---	---	971	803	924	1060	1030	1050
27	---	---	---	---	---	---	892	821	835	1080	1060	1070
28	---	---	---	---	---	---	908	849	890	1090	1070	1080
29	---	---	---	---	---	---	954	908	937	1110	1090	1100
30	---	---	---	---	---	---	959	943	950	1100	1090	1100
31	---	---	---	---	---	---	---	---	---	1100	1080	1090
MONTH	---	---	---	---	---	---	1210	803	1030	1180	720	1030

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1090	1080	1080	1060	837	935	912	870	895	940	900	919
2	1100	1070	1090	1140	1020	1090	958	904	929	975	940	959
3	1090	1070	1080	1080	1040	1050	971	938	957	968	956	962
4	1100	1070	1080	1120	1050	1080	976	955	967	963	933	947
5	1150	1100	1120	1150	950	1080	980	961	972	988	944	968
6	1130	903	1020	1040	842	932	992	970	981	1000	976	983
7	1060	983	1010	1080	987	1030	999	981	990	1000	977	986
8	1020	881	995	1130	1080	1110	1010	985	996	981	942	969
9	982	838	932	1190	1120	1160	988	971	982	970	870	906
10	1010	948	986	---	---	---	990	975	981	1020	927	980
11	1020	1000	1010	---	---	---	1010	985	997	960	913	932
12	1040	952	996	---	---	---	998	571	797	943	915	922
13	1000	727	850	---	---	---	682	573	624	958	939	945
14	870	712	807	---	---	---	710	488	620	982	957	972
15	916	867	890	1040	1000	1010	826	710	780	996	978	987
16	921	868	896	1050	274	621	859	782	814	1000	526	777
17	937	871	922	626	341	513	897	859	875	666	523	606
18	962	920	942	772	626	705	974	893	934	808	666	748
19	993	953	972	826	703	770	988	967	978	855	808	831
20	1010	993	1000	835	771	803	999	927	975	904	855	883
21	1010	1000	1010	814	532	707	982	890	931	950	901	919
22	1020	1010	1010	844	754	809	1030	917	956	981	288	811
23	1040	1010	1020	855	821	838	933	900	916	543	336	447
24	1070	1030	1050	870	379	655	939	926	931	675	543	608
25	1090	940	1050	634	497	575	955	930	941	790	675	741
26	1090	989	1050	681	317	490	963	932	949	749	477	577
27	1070	1030	1060	693	458	570	971	244	678	694	591	635
28	1070	735	1010	780	693	753	607	393	509	803	694	753
29	1100	990	1040	835	772	809	743	607	683	808	557	644
30	1060	910	977	859	731	810	848	743	795	717	644	679
31	---	---	---	870	815	852	900	848	881	---	---	---
MONTH	1150	712	998	---	---	---	1030	244	878	1020	288	833

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	8.0	8.0	7.9	7.7	7.7	8.2	8.0	8.0	---	---	---
2	8.0	7.8	8.0	7.9	7.8	7.8	8.1	8.0	8.1	---	---	---
3	8.1	7.8	8.0	7.9	7.8	7.9	---	---	---	---	---	---
4	8.0	7.9	8.0	7.9	7.8	7.9	---	---	---	---	---	---
5	8.0	7.9	8.0	7.9	7.8	7.9	---	---	---	---	---	---
6	8.1	8.0	8.0	8.0	7.9	8.0	---	---	---	---	---	---
7	8.2	8.0	8.0	8.0	8.0	8.0	---	---	---	---	---	---
8	8.2	7.9	8.0	8.0	8.0	8.0	---	---	---	---	---	---
9	8.0	7.8	7.9	8.1	8.0	8.1	---	---	---	---	---	---
10	8.0	7.8	7.9	8.1	8.1	8.1	---	---	---	---	---	---
11	8.0	7.8	7.9	8.1	8.0	8.1	---	---	---	---	---	---
12	8.1	7.9	7.9	8.2	8.1	8.1	---	---	---	---	---	---
13	8.1	7.9	8.0	8.2	8.1	8.1	---	---	---	---	---	---
14	8.0	7.8	7.8	8.2	8.1	8.1	---	---	---	---	---	---
15	7.8	7.7	7.8	8.2	8.1	8.1	---	---	---	---	---	---
16	7.8	7.7	7.8	8.2	8.1	8.1	---	---	---	---	---	---
17	7.9	7.8	7.8	8.2	8.1	8.1	---	---	---	---	---	---
18	7.9	7.9	7.9	8.2	8.1	8.1	---	---	---	---	---	---
19	8.0	7.9	7.9	8.2	8.1	8.1	---	---	---	---	---	---
20	8.0	7.9	7.9	8.1	8.1	8.1	---	---	---	---	---	---
21	7.9	7.9	7.9	8.2	8.1	8.2	---	---	---	---	---	---
22	7.9	7.8	7.9	8.3	8.1	8.2	---	---	---	---	---	---
23	7.9	7.8	7.8	8.3	8.2	8.2	---	---	---	---	---	---
24	7.8	7.7	7.7	8.2	8.1	8.2	---	---	---	---	---	---
25	7.7	7.7	7.7	8.2	8.1	8.1	---	---	---	---	---	---
26	7.8	7.7	7.8	8.2	8.2	8.2	---	---	---	---	---	---
27	7.8	7.7	7.8	8.2	8.1	8.2	---	---	---	---	---	---
28	7.9	7.8	7.8	8.2	8.1	8.1	---	---	---	---	---	---
29	7.8	7.6	7.7	8.2	8.1	8.2	---	---	---	---	---	---
30	7.6	7.6	7.6	8.2	8.2	8.2	---	---	---	---	---	---
31	7.7	7.6	7.6	---	---	---	---	---	---	---	---	---
MAX	8.2	8.0	8.0	8.3	8.2	8.2	---	---	---	---	---	---
MIN	7.6	7.6	7.6	7.9	7.7	7.7	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.4	8.1	8.3	8.3	8.1	8.2
2	---	---	---	---	---	---	8.4	8.1	8.2	8.3	8.2	8.2
3	---	---	---	---	---	---	8.4	8.1	8.3	8.2	8.2	8.2
4	---	---	---	---	---	---	8.4	8.2	8.3	8.3	8.1	8.2
5	---	---	---	---	---	---	8.3	8.1	8.2	8.2	8.1	8.2
6	---	---	---	---	---	---	8.2	8.0	8.1	8.2	8.1	8.1
7	---	---	---	---	---	---	8.1	7.9	8.0	8.1	8.0	8.0
8	---	---	---	---	---	---	8.1	8.0	8.1	8.1	7.9	8.0
9	---	---	---	---	---	---	8.1	8.0	8.1	8.0	7.9	7.9
10	---	---	---	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9
11	---	---	---	---	---	---	8.1	8.0	8.0	7.9	7.8	7.9
12	---	---	---	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9
13	---	---	---	---	---	---	8.1	8.0	8.1	8.0	7.8	7.9
14	---	---	---	---	---	---	8.1	8.0	8.0	7.9	7.7	7.8
15	---	---	---	---	---	---	8.1	8.0	8.0	7.9	7.8	7.9
16	---	---	---	---	---	---	8.1	8.0	8.0	8.1	7.9	8.0
17	---	---	---	---	---	---	8.1	7.9	8.0	8.1	8.0	8.0
18	---	---	---	---	---	---	8.1	7.9	8.0	8.0	7.8	7.9
19	---	---	---	---	---	---	8.1	7.9	7.9	7.9	7.8	7.8
20	---	---	---	---	---	---	7.9	7.8	7.9	8.0	7.7	7.8
21	---	---	---	---	---	---	8.1	7.8	8.0	7.9	7.7	7.8
22	---	---	---	---	---	---	8.1	7.8	8.0	7.8	7.7	7.8
23	---	---	---	---	---	---	8.1	8.0	8.0	7.8	7.7	7.7
24	---	---	---	---	---	---	8.1	8.0	8.1	7.8	7.7	7.8
25	---	---	---	---	---	---	8.1	8.0	8.0	7.9	7.8	7.8
26	---	---	---	---	---	---	8.0	7.9	8.0	7.9	7.8	7.8
27	---	---	---	---	---	---	8.1	7.8	7.9	8.0	7.8	8.0
28	---	---	---	---	---	---	8.2	8.0	8.0	8.0	7.9	8.0
29	---	---	---	---	---	---	8.2	8.0	8.2	8.0	7.9	8.0
30	---	---	---	---	---	---	8.2	8.1	8.2	8.0	7.9	8.0
31	---	---	---	---	---	---	---	---	---	8.0	7.9	8.0
MAX	---	---	---	---	---	---	8.4	8.2	8.3	8.3	8.2	8.2
MIN	---	---	---	---	---	---	7.9	7.8	7.9	7.8	7.7	7.7

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.0	7.9	7.9	8.0	7.8	7.9	8.0	7.9	7.9	8.0	7.9	8.0
2	8.1	7.9	7.9	8.0	7.9	8.0	8.1	8.0	8.0	8.0	8.0	8.0
3	8.0	7.9	7.9	8.0	7.9	7.9	8.1	8.0	8.0	8.1	8.0	8.0
4	8.0	7.9	7.9	8.0	7.9	8.0	8.1	8.0	8.1	8.1	8.0	8.0
5	8.0	7.9	7.9	8.0	7.9	7.9	8.1	8.0	8.1	8.1	8.0	8.0
6	8.0	7.8	7.9	7.9	7.7	7.8	8.1	8.0	8.0	8.1	8.0	8.0
7	8.0	7.8	7.8	8.0	7.8	7.9	8.1	8.0	8.0	8.1	8.0	8.0
8	7.9	7.8	7.9	8.0	7.9	7.9	8.1	8.0	8.0	8.0	7.9	8.0
9	7.9	7.8	7.8	8.0	7.9	8.0	8.1	8.0	8.0	8.0	7.8	8.0
10	7.9	7.8	7.8	8.0	7.9	8.0	8.1	8.0	8.0	8.1	7.9	7.9
11	7.9	7.8	7.8	8.1	7.9	8.0	8.1	8.0	8.0	8.1	7.9	7.9
12	7.8	7.8	7.8	8.1	7.9	8.0	8.1	7.7	7.9	8.1	7.9	7.9
13	7.9	7.7	7.8	8.1	7.9	8.0	7.9	7.7	7.8	8.1	7.9	8.0
14	7.9	7.7	7.8	8.1	7.9	8.0	7.9	7.8	7.8	8.1	7.9	8.0
15	7.9	7.8	7.8	8.1	7.9	7.9	8.0	7.9	7.9	8.1	7.9	8.0
16	7.9	7.8	7.9	8.0	7.6	7.9	8.0	7.9	8.0	8.1	7.8	7.9
17	8.0	7.9	7.9	7.7	7.5	7.6	8.1	8.0	8.0	7.9	7.8	7.8
18	8.0	7.9	7.9	7.8	7.7	7.7	8.1	8.0	8.0	8.0	7.9	8.0
19	8.0	7.9	8.0	7.8	7.7	7.8	8.1	8.0	8.0	8.1	7.9	8.0
20	8.0	8.0	8.0	7.9	7.8	7.8	8.1	8.0	8.0	8.1	8.0	8.0
21	8.0	7.9	7.9	7.9	7.6	7.8	8.1	7.9	8.0	8.1	8.0	8.0
22	8.0	7.9	8.0	7.9	7.8	7.8	8.1	8.0	8.0	8.1	7.8	8.0
23	8.0	7.9	8.0	7.9	7.8	7.8	8.1	8.0	8.1	7.8	7.7	7.8
24	8.0	7.9	8.0	7.9	7.6	7.8	8.2	8.1	8.1	7.9	7.8	7.9
25	8.0	7.9	7.9	7.8	7.6	7.7	8.2	8.0	8.1	8.0	7.9	7.9
26	7.9	7.9	7.9	7.8	7.6	7.7	8.2	8.0	8.1	7.9	7.8	7.8
27	7.9	7.9	7.9	7.7	7.6	7.6	8.1	7.7	8.0	7.9	7.8	7.9
28	8.0	7.8	7.9	7.8	7.7	7.8	7.9	7.6	7.8	8.0	7.9	8.0
29	7.9	7.8	7.9	7.9	7.8	7.9	7.9	7.8	7.9	8.0	7.9	7.9
30	7.9	7.8	7.9	7.9	7.8	7.9	7.9	7.9	7.9	8.0	7.9	8.0
31	---	---	---	8.0	7.9	7.9	8.0	7.9	7.9	---	---	---
MAX	8.1	8.0	8.0	8.1	7.9	8.0	8.2	8.1	8.1	8.1	8.0	8.0
MIN	7.8	7.7	7.8	7.7	7.5	7.6	7.9	7.6	7.8	7.8	7.7	7.8

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.0	12.9	13.8	11.7	10.5	10.9	5.4	4.5	5.0	---	---	---
2	15.1	13.7	14.5	10.8	9.9	10.5	4.6	4.1	4.4	---	---	---
3	13.7	11.8	12.7	9.9	9.0	9.6	---	---	---	---	---	---
4	12.4	10.9	11.8	9.0	8.3	8.8	---	---	---	---	---	---
5	11.7	9.8	10.6	8.3	7.2	7.8	---	---	---	---	---	---
6	12.1	9.5	10.7	8.6	6.8	7.8	---	---	---	---	---	---
7	13.9	11.2	12.3	9.5	8.2	8.7	---	---	---	---	---	---
8	14.6	12.1	13.4	8.4	5.9	7.1	---	---	---	---	---	---
9	15.6	14.2	14.8	5.9	4.6	5.2	---	---	---	---	---	---
10	14.4	12.5	13.4	6.6	4.3	5.4	---	---	---	---	---	---
11	13.3	11.7	12.3	7.0	5.9	6.6	---	---	---	---	---	---
12	12.6	11.2	11.7	5.9	4.5	5.1	---	---	---	---	---	---
13	12.6	11.2	11.9	5.1	3.7	4.3	---	---	---	---	---	---
14	12.9	12.3	12.6	4.5	2.4	3.4	---	---	---	---	---	---
15	12.4	11.9	12.2	3.6	2.4	3.1	---	---	---	---	---	---
16	11.9	10.2	11.1	6.0	3.5	4.6	---	---	---	---	---	---
17	10.2	8.6	9.3	8.1	6.0	7.1	---	---	---	---	---	---
18	8.6	8.1	8.4	10.1	8.1	9.1	---	---	---	---	---	---
19	8.8	8.1	8.4	9.8	9.4	9.6	---	---	---	---	---	---
20	9.9	8.8	9.4	10.3	9.3	9.8	---	---	---	---	---	---
21	10.5	9.8	10.1	10.1	8.7	9.4	---	---	---	---	---	---
22	11.3	10.1	10.7	8.7	7.0	7.8	---	---	---	---	---	---
23	12.2	10.5	11.2	7.4	6.6	7.1	---	---	---	---	---	---
24	12.4	12.1	12.3	7.1	4.6	6.2	---	---	---	---	---	---
25	13.4	12.0	12.6	4.7	3.5	3.8	---	---	---	---	---	---
26	12.7	11.6	12.2	3.7	2.9	3.3	---	---	---	---	---	---
27	13.5	11.8	12.4	5.8	3.7	4.9	---	---	---	---	---	---
28	12.8	11.2	12.0	6.2	5.1	5.9	---	---	---	---	---	---
29	13.0	12.0	12.4	5.1	4.2	4.4	---	---	---	---	---	---
30	14.9	13.0	13.9	4.8	4.1	4.3	---	---	---	---	---	---
31	13.7	11.7	12.6	---	---	---	---	---	---	---	---	---
MONTH	15.6	8.1	11.9	11.7	2.4	6.7	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.0	7.4	8.2	10.3	8.8	9.5
2	---	---	---	---	---	---	7.7	5.1	6.4	9.9	8.4	9.1
3	---	---	---	---	---	---	6.9	4.0	5.4	8.9	7.3	8.0
4	---	---	---	---	---	---	9.5	5.6	7.6	10.0	6.3	8.3
5	---	---	---	---	---	---	11.7	8.2	10.0	12.7	8.6	10.7
6	---	---	---	---	---	---	14.0	10.7	12.3	13.2	10.2	11.8
7	---	---	---	---	---	---	13.3	11.0	12.6	15.9	11.8	13.8
8	---	---	---	---	---	---	12.2	9.0	10.7	17.0	13.3	15.2
9	---	---	---	---	---	---	12.7	9.2	11.0	17.7	14.5	16.1
10	---	---	---	---	---	---	13.4	10.2	11.9	19.3	15.7	17.4
11	---	---	---	---	---	---	13.8	10.8	12.3	18.2	14.4	16.7
12	---	---	---	---	---	---	12.1	9.6	11.0	15.0	12.0	13.5
13	---	---	---	---	---	---	11.9	8.5	10.2	13.2	11.5	12.1
14	---	---	---	---	---	---	12.7	8.8	10.8	14.5	11.9	13.3
15	---	---	---	---	---	---	13.0	9.4	11.3	13.8	11.7	12.9
16	---	---	---	---	---	---	13.8	9.9	12.0	12.0	10.7	11.5
17	---	---	---	---	---	---	13.6	11.3	12.5	14.2	11.2	12.6
18	---	---	---	---	---	---	15.3	11.2	13.4	15.3	12.3	13.8
19	---	---	---	---	---	---	17.2	13.4	15.5	14.5	12.8	13.6
20	---	---	---	---	---	---	16.8	13.7	15.7	16.1	11.9	14.1
21	---	---	---	---	---	---	14.5	11.4	13.0	17.3	13.8	15.7
22	---	---	---	---	---	---	12.7	9.9	11.1	16.5	14.7	15.5
23	---	---	---	---	---	---	9.9	5.5	7.7	14.7	12.9	13.7
24	---	---	---	---	---	---	5.5	3.9	4.4	13.9	12.3	13.1
25	---	---	---	---	---	---	9.6	3.9	6.1	16.5	12.2	14.4
26	---	---	---	---	---	---	9.7	8.7	9.1	17.1	14.5	16.0
27	---	---	---	---	---	---	9.3	8.2	8.8	17.3	15.1	16.2
28	---	---	---	---	---	---	11.1	7.8	9.5	17.5	15.0	16.2
29	---	---	---	---	---	---	12.2	9.3	10.7	16.7	14.8	15.9
30	---	---	---	---	---	---	11.1	10.1	10.7	17.3	15.0	16.2
31	---	---	---	---	---	---	---	---	---	19.2	15.9	17.4
MONTH	---	---	---	---	---	---	17.2	3.9	10.4	19.3	6.3	13.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.2	17.1	18.5	24.1	21.2	22.6	24.5	21.4	23.0	22.5	19.9	21.1
2	21.0	17.7	19.1	23.5	19.3	21.1	25.8	22.8	24.3	22.2	19.7	20.6
3	20.1	18.5	19.1	23.6	19.4	21.2	26.1	23.7	24.9	21.8	19.2	20.2
4	21.6	17.9	19.5	25.5	20.6	22.7	24.9	24.1	24.5	21.7	18.4	19.7
5	23.7	20.0	21.6	22.9	21.7	22.4	25.6	22.9	24.0	21.5	18.0	19.5
6	23.2	20.8	22.0	22.3	20.2	21.2	24.7	22.2	23.2	21.8	18.3	19.8
7	24.7	21.0	22.7	23.2	19.0	20.9	24.4	21.8	22.9	22.2	19.0	20.4
8	25.4	22.4	23.7	23.2	20.4	21.4	25.3	22.2	23.5	21.5	20.0	20.5
9	25.8	22.4	24.0	23.2	19.5	21.2	26.3	23.1	24.4	21.6	19.0	20.1
10	26.8	23.1	24.7	25.0	20.6	22.5	25.9	23.9	24.7	21.7	18.6	19.9
11	25.8	24.1	24.9	26.1	21.8	23.6	24.6	22.7	23.8	22.1	18.8	20.1
12	24.9	23.5	24.0	25.8	22.9	24.1	23.1	21.8	22.5	22.9	18.9	20.6
13	23.9	21.6	22.6	27.7	22.9	24.9	23.7	22.4	23.0	23.0	19.8	21.2
14	24.7	21.4	22.9	28.0	23.7	25.4	23.1	21.8	22.3	22.7	20.8	21.5
15	22.9	20.7	21.8	27.7	23.5	25.4	23.2	20.5	21.9	21.0	18.9	20.0
16	20.7	18.3	19.4	25.7	22.9	24.1	23.1	20.8	22.0	18.9	17.5	17.9
17	18.7	17.0	17.9	25.5	23.2	24.2	24.0	21.0	22.2	18.9	17.3	18.0
18	18.0	16.9	17.4	26.0	23.8	24.8	23.4	21.1	22.1	20.0	17.4	18.6
19	19.8	16.1	17.8	25.1	23.4	24.3	24.9	21.8	23.0	19.5	18.1	18.9
20	21.4	17.5	19.3	25.1	22.7	24.0	23.4	22.1	22.7	20.5	18.1	19.1
21	21.2	19.1	20.0	25.7	22.7	24.3	23.9	21.5	22.4	20.7	18.0	19.1
22	22.3	18.9	20.2	26.4	23.9	25.1	21.6	19.4	20.4	19.4	18.7	18.9
23	22.2	17.9	19.8	25.4	22.8	24.0	20.0	18.7	19.2	19.4	18.0	18.9
24	24.2	19.4	21.6	24.1	21.8	23.3	21.6	17.6	19.2	18.0	16.7	17.5
25	26.4	22.2	23.9	26.6	24.1	25.3	20.6	18.5	19.5	19.3	17.6	18.4
26	25.5	21.6	23.4	25.6	23.5	24.4	23.0	19.0	20.7	19.8	18.7	19.4
27	26.7	22.7	24.4	23.9	21.4	22.6	22.5	21.2	21.7	18.7	17.1	17.9
28	26.5	23.9	24.8	22.0	19.9	21.0	23.0	20.8	22.0	17.5	15.7	16.8
29	26.5	23.3	24.5	21.8	20.0	21.0	23.5	20.9	22.1	17.3	14.6	16.0
30	24.4	23.0	23.7	22.8	19.8	21.3	22.5	21.5	22.0	15.0	13.4	14.2
31	---	---	---	23.0	19.8	21.5	21.9	20.7	21.2	---	---	---
MONTH	26.8	16.1	21.6	28.0	19.0	23.1	26.3	17.6	22.4	23.0	13.4	19.2

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	8.0	9.1	---	---	---	11.6	10.9	11.3	---	---	---
2	8.9	7.2	8.0	8.6	7.8	8.2	12.0	11.5	11.7	---	---	---
3	10.2	7.3	8.8	9.2	8.5	8.9	---	---	---	---	---	---
4	10.6	8.1	9.2	9.5	8.7	9.2	---	---	---	---	---	---
5	11.0	8.7	9.6	10.2	9.4	9.9	---	---	---	---	---	---
6	12.3	9.7	10.5	10.4	9.9	10.1	---	---	---	---	---	---
7	12.6	9.1	10.3	10.2	9.5	9.8	---	---	---	---	---	---
8	12.5	8.4	9.8	10.8	9.6	10.2	---	---	---	---	---	---
9	9.4	7.1	8.0	11.9	10.8	11.3	---	---	---	---	---	---
10	9.9	7.0	8.1	12.0	11.0	11.5	---	---	---	---	---	---
11	11.2	7.8	8.9	11.5	10.4	11.0	---	---	---	---	---	---
12	11.6	8.0	9.3	12.3	10.9	11.5	---	---	---	---	---	---
13	11.9	8.3	9.4	12.9	11.5	12.1	---	---	---	---	---	---
14	---	---	---	13.5	12.2	12.7	---	---	---	---	---	---
15	---	---	---	13.6	12.4	12.9	---	---	---	---	---	---
16	---	---	---	13.4	11.7	12.5	---	---	---	---	---	---
17	---	---	---	11.7	10.0	10.8	---	---	---	---	---	---
18	---	---	---	12.0	9.5	10.4	---	---	---	---	---	---
19	---	---	---	11.0	9.2	9.9	---	---	---	---	---	---
20	---	---	---	10.2	8.8	9.4	---	---	---	---	---	---
21	---	---	---	11.6	8.9	10.1	---	---	---	---	---	---
22	9.8	8.1	8.7	12.7	9.8	11.1	---	---	---	---	---	---
23	9.3	7.4	8.2	12.2	10.4	11.1	---	---	---	---	---	---
24	7.4	6.6	7.0	11.0	10.1	10.5	---	---	---	---	---	---
25	7.6	6.7	7.2	11.9	10.7	11.5	---	---	---	---	---	---
26	8.5	7.1	7.6	12.4	11.8	12.1	---	---	---	---	---	---
27	8.8	6.9	7.7	12.2	11.2	11.5	---	---	---	---	---	---
28	9.2	6.9	7.7	11.3	10.4	10.8	---	---	---	---	---	---
29	---	---	---	12.6	11.3	12.0	---	---	---	---	---	---
30	---	---	---	12.3	11.5	12.0	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	15.4	10.1	12.9	13.7	10.1	11.9
2	---	---	---	---	---	---	13.6	10.8	12.3	13.5	10.4	12.0
3	---	---	---	---	---	---	15.9	11.9	13.9	13.5	10.5	12.1
4	---	---	---	---	---	---	15.9	11.8	13.9	14.9	11.4	13.0
5	---	---	---	---	---	---	14.8	10.8	12.8	14.1	10.5	12.0
6	---	---	---	---	---	---	12.8	9.7	11.3	12.3	9.7	11.0
7	---	---	---	---	---	---	10.9	8.8	9.7	11.4	9.0	9.9
8	---	---	---	---	---	---	12.6	9.8	11.0	10.9	8.0	9.3
9	---	---	---	---	---	---	12.6	9.7	10.9	10.0	7.7	8.8
10	---	---	---	---	---	---	11.8	9.2	10.4	8.7	7.3	7.9
11	---	---	---	---	---	---	11.7	9.0	10.2	8.1	6.8	7.5
12	---	---	---	---	---	---	12.5	9.4	10.8	10.5	7.9	9.2
13	---	---	---	---	---	---	13.1	9.9	11.2	9.6	8.6	9.1
14	---	---	---	---	---	---	12.8	9.8	11.1	8.8	8.2	8.6
15	---	---	---	---	---	---	12.7	9.6	10.9	9.5	8.2	8.8
16	---	---	---	---	---	---	12.5	8.4	10.2	10.8	9.2	9.9
17	---	---	---	---	---	---	10.9	6.7	8.9	10.6	9.1	9.9
18	---	---	---	---	---	---	12.5	7.5	9.6	10.1	8.3	9.3
19	---	---	---	---	---	---	11.3	6.7	9.0	8.9	7.8	8.3
20	---	---	---	---	---	---	8.2	6.5	7.5	10.0	7.9	8.7
21	---	---	---	---	---	---	12.1	6.8	9.2	9.5	7.5	8.3
22	---	---	---	---	---	---	10.9	8.0	9.8	8.4	7.3	7.7
23	---	---	---	---	---	---	11.1	9.2	10.2	8.3	7.4	7.8
24	---	---	---	---	---	---	12.2	11.1	11.7	9.1	7.9	8.5
25	---	---	---	---	---	---	12.2	10.2	11.7	10.0	8.1	9.0
26	---	---	---	---	---	---	11.0	9.7	10.3	9.1	7.7	8.4
27	---	---	---	---	---	---	11.1	9.9	10.5	8.6	7.4	7.9
28	---	---	---	---	---	---	12.6	10.0	11.3	8.7	7.2	7.9
29	---	---	---	---	---	---	12.9	9.9	11.3	8.6	7.4	8.0
30	---	---	---	---	---	---	12.5	9.4	11.1	8.7	7.7	8.2
31	---	---	---	---	---	---	---	---	---	8.4	7.6	8.0
MONTH	---	---	---	---	---	---	15.9	6.5	10.9	14.9	6.8	9.3

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.1	7.6	6.6	5.2	5.8	7.8	7.0	7.4	7.6	6.3	6.8
2	8.0	7.1	7.5	7.0	5.8	6.2	7.8	6.7	7.2	7.9	6.6	7.0
3	7.4	6.6	6.9	7.0	5.7	6.2	8.1	6.5	7.2	8.1	6.7	7.1
4	7.5	6.6	7.0	7.3	5.6	6.3	7.9	6.6	7.2	8.4	6.8	7.3
5	7.9	6.0	7.0	6.6	5.1	5.9	8.4	7.0	7.5	8.8	6.9	7.5
6	7.3	4.9	6.1	6.5	5.4	5.9	8.6	7.2	7.6	9.0	7.1	7.7
7	6.6	5.2	5.7	7.5	6.2	6.7	8.5	7.2	7.6	9.2	6.8	7.6
8	6.4	4.9	5.6	7.2	6.2	6.5	8.6	6.8	7.5	8.2	6.3	7.1
9	6.2	3.9	5.0	7.6	6.1	6.9	8.5	6.5	7.2	8.2	6.2	7.1
10	6.1	4.4	5.0	7.6	6.3	6.8	8.0	6.3	6.9	9.1	6.8	7.5
11	5.7	4.4	4.8	7.6	6.0	6.6	8.2	6.4	6.9	9.2	6.8	7.5
12	5.4	4.1	4.7	7.9	5.7	6.4	7.1	6.0	6.5	9.7	6.8	7.7
13	5.5	4.1	4.8	7.8	5.6	6.3	6.8	5.6	6.2	9.7	6.5	7.6
14	6.3	4.6	5.4	8.2	5.2	6.3	7.1	6.0	6.6	9.1	6.1	7.1
15	6.1	5.0	5.5	8.6	5.1	6.3	7.4	6.7	7.1	9.5	6.1	7.3
16	6.4	5.0	5.7	7.3	4.7	5.5	7.5	6.7	7.1	7.8	6.6	7.2
17	7.3	6.0	6.6	5.6	4.6	5.1	8.0	7.0	7.3	7.8	7.1	7.4
18	7.6	6.1	6.9	6.3	5.4	5.9	8.2	6.7	7.2	8.5	7.3	7.8
19	8.0	7.2	7.5	6.5	5.6	6.2	8.4	6.5	7.1	8.8	7.2	7.7
20	8.2	6.2	7.5	6.9	6.2	6.5	7.4	6.0	6.7	8.6	6.9	7.5
21	7.8	6.9	7.1	7.1	5.6	6.4	7.8	6.1	6.8	8.9	7.1	7.5
22	8.1	6.8	7.3	6.5	6.0	6.2	8.1	6.6	7.1	8.0	7.0	7.3
23	8.4	6.9	7.4	7.0	6.1	6.5	8.6	6.8	7.7	7.1	6.5	6.9
24	8.2	6.2	7.2	7.0	6.0	6.4	9.6	7.6	8.2	8.2	7.1	7.7
25	7.0	5.5	6.2	6.7	5.6	6.1	9.3	7.5	8.2	7.8	7.0	7.5
26	6.6	5.1	5.9	6.5	5.2	5.8	10.0	6.9	8.1	7.3	6.6	7.1
27	6.7	5.1	5.7	6.6	5.2	6.0	7.5	5.9	6.7	8.4	7.2	7.8
28	6.6	5.1	5.6	7.6	6.5	7.1	7.3	5.6	6.5	8.6	8.0	8.3
29	6.4	4.8	5.3	7.7	6.4	7.2	7.4	6.4	6.8	8.7	7.8	8.2
30	5.6	4.7	5.1	7.5	6.6	7.3	6.8	6.2	6.5	9.4	8.7	9.1
31	---	---	---	8.1	7.3	7.6	7.1	6.2	6.5	---	---	---
MONTH	8.4	3.9	6.2	8.6	4.6	6.4	10.0	5.6	7.1	9.7	6.1	7.5

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	825	717	776	---	---	---	---	---	---	---	---	---
2	880	821	850	---	---	---	---	---	---	---	---	---
3	898	541	761	---	---	---	---	---	---	---	---	---
4	699	619	646	---	---	---	---	---	---	---	---	---
5	823	699	770	---	---	---	---	---	---	---	---	---
6	905	823	871	---	---	---	---	---	---	---	---	---
7	940	905	921	---	---	---	---	---	---	---	---	---
8	971	940	957	---	---	---	---	---	---	---	---	---
9	1000	968	981	---	---	---	---	---	---	---	---	---
10	1010	993	1000	---	---	---	---	---	---	---	---	---
11	1010	1000	1000	---	---	---	---	---	---	---	---	---
12	1010	917	974	---	---	---	---	---	---	---	---	---
13	993	899	953	---	---	---	---	---	---	---	---	---
14	994	967	985	---	---	---	---	---	---	---	---	---
15	995	988	991	---	---	---	---	---	---	---	---	---
16	998	991	994	---	---	---	---	---	---	---	---	---
17	1000	990	994	---	---	---	---	---	---	---	---	---
18	1010	991	998	---	---	---	---	---	---	---	---	---
19	1000	992	997	---	---	---	---	---	---	---	---	---
20	992	956	972	---	---	---	---	---	---	---	---	---
21	1000	948	983	---	---	---	---	---	---	---	---	---
22	1040	998	1040	---	---	---	---	---	---	---	---	---
23	1050	1020	1040	---	---	---	---	---	---	---	---	---
24	1040	1010	1030	---	---	---	---	---	---	---	---	---
25	1040	991	1010	---	---	---	---	---	---	---	---	---
26	1050	903	999	---	---	---	---	---	---	---	---	---
27	967	889	917	---	---	---	---	---	---	---	---	---
28	991	905	937	---	---	---	---	---	---	---	---	---
29	986	931	963	---	---	---	---	---	---	---	---	---
30	973	951	960	---	---	---	---	---	---	---	---	---
31	956	903	926	---	---	---	---	---	---	---	---	---
MONTH	1050	541	942	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.0	8.0	8.0	---	---	---	---	---	---	---	---	---
2	8.0	8.0	8.0	---	---	---	---	---	---	---	---	---
3	8.1	7.8	7.9	---	---	---	---	---	---	---	---	---
4	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
5	7.9	7.9	7.9	---	---	---	---	---	---	---	---	---
6	8.0	7.9	7.9	---	---	---	---	---	---	---	---	---
7	8.0	7.9	8.0	---	---	---	---	---	---	---	---	---
8	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
9	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
10	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
11	8.1	8.1	8.1	---	---	---	---	---	---	---	---	---
12	8.1	8.0	8.1	---	---	---	---	---	---	---	---	---
13	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
14	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
15	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
16	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
17	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
18	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
19	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
20	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
21	8.1	8.0	8.0	---	---	---	---	---	---	---	---	---
22	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
23	8.2	8.1	8.1	---	---	---	---	---	---	---	---	---
24	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
25	8.3	8.0	8.1	---	---	---	---	---	---	---	---	---
26	8.3	8.0	8.2	---	---	---	---	---	---	---	---	---
27	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
28	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
29	8.2	8.0	8.1	---	---	---	---	---	---	---	---	---
30	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
31	8.1	7.9	8.0	---	---	---	---	---	---	---	---	---
MAX	8.3	8.1	8.2	---	---	---	---	---	---	---	---	---
MIN	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04164980 MIDDLE BRANCH CLINTON RIVER NEAR WALDENBURG, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.5	13.1	14.4	---	---	---	---	---	---	---	---	---
2	17.0	14.6	15.7	---	---	---	---	---	---	---	---	---
3	19.3	16.8	18.0	---	---	---	---	---	---	---	---	---
4	20.2	18.6	19.4	---	---	---	---	---	---	---	---	---
5	20.0	18.4	19.3	---	---	---	---	---	---	---	---	---
6	19.9	18.2	19.0	---	---	---	---	---	---	---	---	---
7	18.2	14.5	16.4	---	---	---	---	---	---	---	---	---
8	14.5	12.3	13.3	---	---	---	---	---	---	---	---	---
9	13.0	11.1	12.0	---	---	---	---	---	---	---	---	---
10	12.6	12.1	12.4	---	---	---	---	---	---	---	---	---
11	13.4	12.5	12.9	---	---	---	---	---	---	---	---	---
12	14.3	13.3	13.8	---	---	---	---	---	---	---	---	---
13	15.6	14.2	14.8	---	---	---	---	---	---	---	---	---
14	16.1	14.3	15.2	---	---	---	---	---	---	---	---	---
15	15.4	13.7	14.7	---	---	---	---	---	---	---	---	---
16	13.7	12.1	13.0	---	---	---	---	---	---	---	---	---
17	12.3	10.9	11.7	---	---	---	---	---	---	---	---	---
18	12.9	11.1	11.9	---	---	---	---	---	---	---	---	---
19	12.7	11.2	11.9	---	---	---	---	---	---	---	---	---
20	11.4	10.0	10.7	---	---	---	---	---	---	---	---	---
21	10.9	9.5	10.1	---	---	---	---	---	---	---	---	---
22	10.1	9.0	9.5	---	---	---	---	---	---	---	---	---
23	9.7	8.5	9.0	---	---	---	---	---	---	---	---	---
24	9.1	8.0	8.6	---	---	---	---	---	---	---	---	---
25	9.4	8.4	8.8	---	---	---	---	---	---	---	---	---
26	8.9	7.6	8.2	---	---	---	---	---	---	---	---	---
27	8.5	7.3	7.9	---	---	---	---	---	---	---	---	---
28	8.8	7.3	7.9	---	---	---	---	---	---	---	---	---
29	8.3	6.3	7.3	---	---	---	---	---	---	---	---	---
30	8.2	6.4	7.3	---	---	---	---	---	---	---	---	---
31	9.8	7.8	8.8	---	---	---	---	---	---	---	---	---
MONTH	20.2	6.3	12.4	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.3	8.8	9.1	---	---	---	---	---	---	---	---	---
2	9.1	8.3	8.8	---	---	---	---	---	---	---	---	---
3	8.3	7.3	7.7	---	---	---	---	---	---	---	---	---
4	8.2	7.5	7.7	---	---	---	---	---	---	---	---	---
5	7.8	7.3	7.5	---	---	---	---	---	---	---	---	---
6	7.7	7.2	7.4	---	---	---	---	---	---	---	---	---
7	8.2	7.3	7.7	---	---	---	---	---	---	---	---	---
8	9.1	8.2	8.7	---	---	---	---	---	---	---	---	---
9	9.6	9.1	9.4	---	---	---	---	---	---	---	---	---
10	9.5	9.1	9.3	---	---	---	---	---	---	---	---	---
11	9.5	9.0	9.2	---	---	---	---	---	---	---	---	---
12	9.2	8.7	8.9	---	---	---	---	---	---	---	---	---
13	9.4	8.4	8.8	---	---	---	---	---	---	---	---	---
14	9.4	8.2	8.6	---	---	---	---	---	---	---	---	---
15	9.3	7.8	8.3	---	---	---	---	---	---	---	---	---
16	10.3	8.0	8.8	---	---	---	---	---	---	---	---	---
17	10.6	8.6	9.2	---	---	---	---	---	---	---	---	---
18	10.6	8.5	9.3	---	---	---	---	---	---	---	---	---
19	10.6	8.5	9.2	---	---	---	---	---	---	---	---	---
20	11.3	8.6	9.5	---	---	---	---	---	---	---	---	---
21	11.5	9.0	9.8	---	---	---	---	---	---	---	---	---
22	12.1	9.3	10.2	---	---	---	---	---	---	---	---	---
23	12.5	9.4	10.2	---	---	---	---	---	---	---	---	---
24	11.9	9.3	10.3	---	---	---	---	---	---	---	---	---
25	12.6	9.3	10.4	---	---	---	---	---	---	---	---	---
26	11.7	9.3	10.2	---	---	---	---	---	---	---	---	---
27	12.2	9.5	10.5	---	---	---	---	---	---	---	---	---
28	12.3	9.9	10.8	---	---	---	---	---	---	---	---	---
29	12.9	10.4	11.1	---	---	---	---	---	---	---	---	---
30	12.9	10.2	11.2	---	---	---	---	---	---	---	---	---
31	12.5	10.0	10.8	---	---	---	---	---	---	---	---	---
MONTH	12.9	7.2	9.3	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165500 CLINTON RIVER AT MOUNT CLEMENS, MI

LOCATION.--Lat 42°35'45", long 82°54'32", Macomb County, Hydrologic Unit 04090003, on left bank at downstream side of bridge on Moravian Drive, 0.2 mi downstream from North Branch, and 0.5 mi west of Mount Clemens.

DRAINAGE AREA.--734 mi^2.

PERIOD OF RECORD.--May 1934 to current year.

REVISED RECORDS.--WSP 1084: 1943, 1945-46. WSP 1937: 1935, 1936(M), 1937-39, 1949(M), 1950. WSP 1557: Drainage area. WSP 1727: 1952(M), 1954(M).

GAGE.--Water-stage recorder and acoustic doppler current meter. Datum of gage is 570.43 ft above sea level. May 10, 1934 to Jan. 11, 1939, nonrecording gage at same site and datum. Mar. 15, 1938 to Jan. 3, 1952, auxiliary nonrecording gage 1.6 mi downstream from base gage at same datum. Jan. 4, 1952 to June 27, 2000, auxiliary water-stage recorder on right bank 2.0 mi downstream from base gage at same datum.

REMARKS.--Records fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e143	372	1370	1620	411	735	896	716	175	307	269	129
2	e238	728	1180	1870	403	688	918	634	167	156	230	115
3	e214	577	831	2100	403	583	883	583	159	121	194	108
4	e158	e1000	631	2070	422	581	797	535	154	112	176	96
5	e149	e951	521	1740	461	608	687	504	143	292	162	92
6	e143	e587	497	1400	500	768	577	477	250	188	143	92
7	e136	e435	1410	1080	629	1570	430	480	182	131	131	90
8	e140	e371	2840	961	1300	1990	384	436	157	158	126	142
9	e222	e497	1850	877	1040	1600	367	390	375	272	118	162
10	e180	415	1470	864	776	1310	376	326	155	141	119	110
11	e147	370	1560	897	668	1040	353	286	140	121	119	98
12	e145	347	1210	1370	641	862	300	288	165	115	228	93
13	e142	313	1300	3150	672	716	278	354	293	111	266	90
14	e265	295	1010	3940	1640	619	252	841	301	107	362	89
15	e451	285	773	2690	2420	607	233	569	325	105	191	88
16	e525	313	677	1680	4230	597	230	394	264	1140	142	656
17	e464	318	e622	1190	3020	637	236	323	260	2170	123	485
18	e290	347	e555	886	1960	755	238	289	197	1010	112	208
19	e241	366	e522	779	1470	769	235	272	163	769	113	143
20	e214	518	e410	e732	1160	1080	295	334	149	503	170	126
21	202	396	e429	e661	1040	1190	254	294	147	442	233	110
22	184	327	e441	e610	979	1220	223	280	227	298	135	273
23	165	307	e404	e585	927	1310	435	414	132	228	122	1760
24	400	520	e378	e578	818	1270	813	497	117	848	108	715
25	312	976	e372	e610	749	1110	1110	413	116	1100	99	407
26	305	595	e367	e585	744	1100	1190	371	243	1060	96	915
27	276	550	e367	496	658	1060	1710	330	183	1680	500	688
28	293	813	e378	373	643	987	1550	298	140	969	691	434
29	746	681	396	372	---	1000	1170	250	167	631	226	832
30	748	565	434	412	---	1000	889	217	300	512	168	545
31	502	---	1250	425	---	967	---	189	---	367	171	---
TOTAL	8740	15135	26455	37603	30784	30329	18309	12584	5946	16164	6043	9891
MEAN	282	504	853	1213	1099	978	610	406	198	521	195	330
MAX	748	1000	2840	3940	4230	1990	1710	841	375	2170	691	1760
MIN	136	285	367	372	403	581	223	189	116	105	96	88
CFSM	0.38	0.69	1.16	1.65	1.50	1.33	0.83	0.55	0.27	0.71	0.27	0.45
IN.	0.44	0.77	1.34	1.91	1.56	1.54	0.93	0.64	0.30	0.82	0.31	0.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2005, BY WATER YEAR (WY)

MEAN	325	428	539	556	764	1114	1030	705	490	308	258	283
MAX	1550	1492	1615	1739	2407	2255	3090	2747	1543	865	907	1144
(WY)	1982	1986	1968	1993	1938	1982	1947	1943	1989	1969	2000	1975
MIN	64.1	79.0	84.3	93.9	118	263	249	164	52.9	50.9	51.7	52.5
(WY)	1935	1945	1945	1945	1940	1964	1946	1958	1934	1934	1934	1941

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1934 - 2005	
ANNUAL TOTAL	247973		217983			
ANNUAL MEAN	678		597		567	
HIGHEST ANNUAL MEAN					929	1974
LOWEST ANNUAL MEAN					230	1964
HIGHEST DAILY MEAN	12500	May 24	4230	Feb 16	19200	Apr 6 1947
LOWEST DAILY MEAN	125	Sep 26	88	Sep 15	25	Aug 24 1934
ANNUAL SEVEN-DAY MINIMUM	130	Sep 22	103	Sep 1	28	Aug 22 1934
MAXIMUM PEAK FLOW			4740	Feb 16	21200	Apr 6 1947
MAXIMUM PEAK STAGE			12.54	Feb 16	(a)23.55	Apr 6 1947
ANNUAL RUNOFF (CFSM)	0.923		0.814		0.773	
ANNUAL RUNOFF (INCHES)	12.57		11.05		10.50	
10 PERCENT EXCEEDS	1290		1260		1200	
50 PERCENT EXCEEDS	420		411		338	
90 PERCENT EXCEEDS	202		131		121	

(a) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI

LOCATION.--Lat 42°33'41", long 82°50'43", in SW1/4 sec.30, T.2 N., R.14 E., Macomb County, Hydrologic Unit 04090003, on left bank 15 ft upstream from bridge on Jefferson Avenue, 2.0 mi southeast of Mt. Clemens.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to September 1983 (gage-heights only), July 2004 to October 2005 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 565.36 ft above sea level. October 1979 to September 1983, water-stage recorder 600 ft downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Gage height and discharge affected by wind direction and seiche on Lake St. Clair, 600 ft downstream. Satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,720 ft^3/s, Jan. 14, 2005; minimum daily, -70 ft^3/s, Jan. 27, 2005.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	-6.0	383	487	e-19	e32	e9.5	17	26	8.1	-14	-15
2	32	43	138	858	e12	e31	-6.6	55	47	43	5.0	2.6
3	71	31	19	1010	e38	e32	6.6	65	57	58	40	-8.0
4	9.5	e22	49	924	68	e32	66	57	66	42	5.8	54
5	e15	e15	45	553	58	e32	53	74	65	e32	36	56
6	30	e9.1	75	336	35	e60	53	38	7.6	e13	51	56
7	38	e11	754	168	e50	e320	12	65	5.0	e27	45	73
8	e33	e15	1640	81	e120	e850	53	47	50	e22	81	28
9	25	e22	629	14	e80	e550	51	55	59	e13	26	43
10	e62	30	306	68	e40	e250	50	32	65	e18	-33	58
11	e41	-8.5	384	21	e30	e120	40	30	25	e22	26	48
12	35	34	128	481	e22	e60	28	20	35	e22	-19	63
13	23	27	164	2150	e200	e35	2.1	27	12	e18	13	66
14	-11	9.7	36	2720	e450	e35	19	29	20	e27	-29	-4.2
15	-10	7.2	50	1410	e1000	e35	63	36	24	e36	53	16
16	18	31	53	529	e2300	e35	52	26	25	e298	47	121
17	1.0	8.6	59	219	e1500	e32	59	58	3.2	e1010	68	52
18	7.7	17	38	252	e720	e33	35	66	-8.3	e160	51	55
19	14	31	24	221	e330	56	24	58	33	e101	-2.1	46
20	-13	58	39	74	e150	100	23	26	63	59	19	-20
21	-5.4	41	10	8.7	e50	e100	35	20	7.8	20	-8.3	46
22	41	34	29	33	e29	e150	30	34	5.3	-8.0	-8.8	72
23	59	44	9.3	-14	e29	e200	32	26	20	57	-1.3	936
24	61	37	7.5	47	e29	e150	45	23	58	270	34	84
25	65	12	51	35	e31	e124	156	29	30	208	42	45
26	30	32	19	-6.9	e31	e78	213	58	50	230	45	30
27	1.9	e37	10	e-70	e31	e41	546	24	44	805	132	53
28	18	e33	0.76	e-41	e31	e18	432	34	9.6	170	112	30
29	50	e30	19	e-22	---	e3.7	190	7.3	56	-3.2	88	5.7
30	19	44	25	0.88	---	e9.5	72	41	25	26	21	34
31	13	---	294	-48	---	e-7.7	---	51	---	69	-42	---
TOTAL	806.7	751.1	5487.56	12498.68	7445	3596.5	2443.6	1228.3	985.2	3872.9	883.3	2126.1
MEAN	26.0	25.0	177	403	266	116	81.5	39.6	32.8	125	28.5	70.9
MAX	71	58	1640	2720	2300	850	546	74	66	1010	132	936
MIN	-13	-8.5	0.76	-70	-19	-7.7	-6.6	7.3	-8.3	-8.0	-42	-20

WTR YR 2005 TOTAL 42124.94 MEAN 115 MAX 2720 MIN -70

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	---	---	---	---	---	---	---	---	---	---	---
2	55	---	---	---	---	---	---	---	---	---	---	---
3	14	---	---	---	---	---	---	---	---	---	---	---
4	41	---	---	---	---	---	---	---	---	---	---	---
5	13	---	---	---	---	---	---	---	---	---	---	---
6	0.32	---	---	---	---	---	---	---	---	---	---	---
7	-16	---	---	---	---	---	---	---	---	---	---	---
8	-37	---	---	---	---	---	---	---	---	---	---	---
9	-21	---	---	---	---	---	---	---	---	---	---	---
10	15	---	---	---	---	---	---	---	---	---	---	---
11	9.0	---	---	---	---	---	---	---	---	---	---	---
12	26	---	---	---	---	---	---	---	---	---	---	---
13	49	---	---	---	---	---	---	---	---	---	---	---
14	50	---	---	---	---	---	---	---	---	---	---	---
15	8.5	---	---	---	---	---	---	---	---	---	---	---
16	-10	---	---	---	---	---	---	---	---	---	---	---
17	24	---	---	---	---	---	---	---	---	---	---	---
18	-14	---	---	---	---	---	---	---	---	---	---	---
19	17	---	---	---	---	---	---	---	---	---	---	---
20	29	---	---	---	---	---	---	---	---	---	---	---
21	23	---	---	---	---	---	---	---	---	---	---	---
22	19	---	---	---	---	---	---	---	---	---	---	---
23	16	---	---	---	---	---	---	---	---	---	---	---
24	5.9	---	---	---	---	---	---	---	---	---	---	---
25	-7.1	---	---	---	---	---	---	---	---	---	---	---
26	-11	---	---	---	---	---	---	---	---	---	---	---
27	7.9	---	---	---	---	---	---	---	---	---	---	---
28	24	---	---	---	---	---	---	---	---	---	---	---
29	17	---	---	---	---	---	---	---	---	---	---	---
30	53	---	---	---	---	---	---	---	---	---	---	---
31	38	---	---	---	---	---	---	---	---	---	---	---
TOTAL	502.52	---	---	---	---	---	---	---	---	---	---	---
MEAN	16.2	---	---	---	---	---	---	---	---	---	---	---
MAX	64	---	---	---	---	---	---	---	---	---	---	---
MIN	-37	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 2004 to October 2005.
pH: July 2004 to October 2005.
WATER TEMPERATURE: July 2004 to October 2005.
DISSOLVED OXYGEN: July 2004 to October 2005.

INSTRUMENTATION: Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 22-25, Nov. 2 to Dec. 2, Apr. 8-30, May 2, 3, 8, 15, 16, June 7-9, July 2-4, July 22 to Aug. 1, Aug. 13-16, Sept. 19-27, Oct. 23-31, 2005, rated good; Mar. 29, 30, rated fair; Mar. 31 to Apr. 7, rated poor. pH records rated excellent except for the following periods: May 30 to June 1, June 26-29, July 29 to Aug. 1, Sept. 9-14, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 3, 8, 30, Nov. 5, 6, Apr. 1, 2, May 7-9, 21, June 11, July 4, 15, 16, Aug. 3, 4, 18, 19, 27, Sept. 3, 4, 17, Oct. 8, 28, 2005, rated good; Oct. 4, 5, 9, Nov. 7, 8, Apr. 3-5, 28, May 10-14, 22, June 3, 4, 12, 13, July 17-19, Aug. 5, 6, 20, 21, 28, 29, Sept. 5, 6, 18-20, 28, Oct. 9, 10, 29, 2005, rated fair; Oct. 6, 7, 10-13, 31, Nov. 9-17, Apr. 7, Apr. 29 to May 1, May 15-20, 23-27, June 5-9, 14-20, July 20-30, Aug. 7-13, 22-25, 30, 31, Sept. 7-14, 21-27, 29, 30, Oct. 11-17, 30, 31, 2005, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,450 microsiemens, Apr. 25, 2005; minimum, 267 microsiemens, July 16, 2005.
pH: Maximum, 9.4 std. units, Sept. 12, 2005; minimum, 6.0 std. units, July 15, 2005.
WATER TEMPERATURE: Maximum, 30.2°C, July 22, 2005; minimum, 4.3°C, Dec. 3, 2004.
DISSOLVED OXYGEN: Maximum, 19.7 mg/L, July 22, 2005; minimum, 0.4 mg/L, Aug. 5, 6, 2004.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,450 microsiemens, Apr. 25; minimum, 267 microsiemens, July 16.
pH: Maximum, 9.4 std. units, Sept. 12; minimum, 6.0 std. units, July 15.
WATER TEMPERATURE: Maximum, 30.2°C, July 22; minimum, 4.3°C, Dec. 3.
DISSOLVED OXYGEN: Maximum, 19.7 mg/L, July 22; minimum, 1.3 mg/L, July 19, Sept. 19, 24.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	492	403	458	631	562	606	917	537	705	---	---	---
2	494	399	449	731	598	672	670	573	647	---	---	---
3	498	424	468	732	664	713	---	---	---	---	---	---
4	511	451	483	791	650	709	---	---	---	---	---	---
5	511	440	470	724	705	715	---	---	---	---	---	---
6	546	468	492	719	632	705	---	---	---	---	---	---
7	527	454	493	699	594	665	---	---	---	---	---	---
8	487	418	446	712	613	690	---	---	---	---	---	---
9	523	444	492	662	413	602	---	---	---	---	---	---
10	516	446	494	634	440	544	---	---	---	---	---	---
11	506	468	491	638	497	588	---	---	---	---	---	---
12	515	432	479	632	583	601	---	---	---	---	---	---
13	534	466	494	657	529	611	---	---	---	---	---	---
14	529	488	513	664	468	606	---	---	---	---	---	---
15	571	508	525	686	591	658	---	---	---	---	---	---
16	601	543	573	705	477	627	---	---	---	---	---	---
17	617	533	575	632	430	559	---	---	---	---	---	---
18	556	487	513	689	402	549	---	---	---	---	---	---
19	556	487	529	578	469	511	---	---	---	---	---	---
20	617	497	543	554	389	493	---	---	---	---	---	---
21	571	502	545	575	459	542	---	---	---	---	---	---
22	587	510	556	574	424	516	---	---	---	---	---	---
23	573	416	479	542	383	474	---	---	---	---	---	---
24	635	490	594	620	477	554	---	---	---	---	---	---
25	633	524	592	756	604	718	---	---	---	---	---	---
26	672	476	601	737	424	652	---	---	---	---	---	---
27	698	541	593	695	500	613	---	---	---	---	---	---
28	606	486	568	806	537	740	---	---	---	---	---	---
29	663	516	593	898	491	734	---	---	---	---	---	---
30	663	400	549	929	633	780	---	---	---	---	---	---
31	627	565	598	---	---	---	---	---	---	---	---	---
MONTH	698	399	524	929	383	625	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	951	914	939	988	934	976
2	---	---	---	---	---	---	953	908	918	1020	897	986
3	---	---	---	---	---	---	1320	950	1190	1000	913	971
4	---	---	---	---	---	---	1190	758	1060	989	656	841
5	---	---	---	---	---	---	1160	565	872	978	626	791
6	---	---	---	---	---	---	1160	441	682	1180	611	849
7	---	---	---	---	---	---	1230	474	772	992	561	722
8	---	---	---	---	---	---	1100	740	903	1110	630	779
9	---	---	---	---	---	---	1080	781	937	1020	527	636
10	---	---	---	---	---	---	1380	756	994	752	502	594
11	---	---	---	---	---	---	1200	713	871	744	435	544
12	---	---	---	---	---	---	949	720	839	676	524	584
13	---	---	---	---	---	---	945	728	834	807	570	699
14	---	---	---	---	---	---	955	610	776	1110	568	899
15	---	---	---	---	---	---	1060	723	866	1080	855	1030
16	---	---	---	---	---	---	1060	684	833	1020	674	916
17	---	---	---	---	---	---	1030	628	796	927	554	730
18	---	---	---	---	---	---	1170	549	833	1060	503	743
19	---	---	---	---	---	---	822	321	606	775	634	714
20	---	---	---	---	---	---	933	316	583	1000	724	807
21	---	---	---	---	---	---	815	583	667	1000	630	798
22	---	---	---	---	---	---	834	612	716	863	399	628
23	---	---	---	---	---	---	866	766	804	866	654	796
24	---	---	---	---	---	---	1270	866	974	918	725	826
25	---	---	---	---	---	---	1450	1270	1330	883	377	754
26	---	---	---	---	---	---	1270	1040	1200	904	377	735
27	---	---	---	---	---	---	1100	857	970	902	740	813
28	---	---	---	---	---	---	928	848	884	875	634	789
29	---	---	---	1010	890	982	932	848	889	863	644	754
30	---	---	---	996	931	953	975	930	965	1190	728	873
31	---	---	---	945	895	925	---	---	---	1370	738	999
MONTH	---	---	---	---	---	---	1450	316	883	1370	377	793

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1180	694	862	854	769	823	681	636	656	660	533	608
2	972	653	750	1020	723	846	657	554	605	627	601	617
3	743	566	650	930	674	803	626	542	598	616	545	589
4	819	571	663	831	591	716	651	579	626	615	543	575
5	714	460	582	---	---	---	731	639	666	642	539	583
6	611	494	551	---	---	---	732	613	652	603	522	573
7	656	474	571	---	---	---	698	591	637	583	494	534
8	773	454	593	---	---	---	691	552	612	627	512	557
9	815	462	524	---	---	---	661	547	593	644	577	601
10	664	392	503	---	---	---	663	537	593	656	554	598
11	621	404	448	---	---	---	649	578	609	623	500	573
12	848	459	515	918	635	745	684	599	645	624	510	551
13	636	456	531	932	647	745	671	578	634	566	498	536
14	718	497	561	746	621	666	656	607	630	560	505	533
15	651	531	589	808	654	690	732	615	647	581	540	558
16	597	484	535	928	267	592	731	626	673	788	517	598
17	651	478	541	598	318	482	724	613	682	737	679	701
18	571	451	525	644	598	626	688	640	666	769	619	707
19	814	456	542	688	604	637	703	663	677	749	550	659
20	744	512	591	718	627	676	688	612	657	691	608	650
21	696	412	516	800	574	653	691	655	675	669	582	649
22	631	378	504	766	359	617	679	607	651	806	611	664
23	733	418	532	666	365	567	674	563	615	806	308	429
24	803	534	611	816	486	654	715	593	637	489	419	461
25	855	427	603	624	437	567	727	592	663	534	476	497
26	1250	543	1010	719	536	602	740	593	663	644	490	554
27	1370	649	1020	692	536	588	754	579	626	692	644	659
28	872	588	693	679	513	637	841	642	735	667	575	641
29	1170	768	931	688	627	655	687	585	649	693	598	679
30	964	680	778	734	657	677	654	586	608	722	645	678
31	---	---	---	738	634	676	632	575	610	---	---	---
MONTH	1370	378	628	---	---	---	841	537	642	806	308	594

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.6	7.7	7.7	7.5	7.6	8.1	7.9	8.0	---	---	---
2	8.0	7.6	7.8	7.6	7.3	7.4	8.3	8.0	8.1	---	---	---
3	8.0	7.6	7.7	7.5	7.3	7.4	---	---	---	---	---	---
4	7.9	7.6	7.7	7.6	7.3	7.5	---	---	---	---	---	---
5	7.9	7.6	7.7	7.6	7.5	7.6	---	---	---	---	---	---
6	7.9	7.7	7.7	7.8	7.5	7.7	---	---	---	---	---	---
7	7.9	7.6	7.7	7.8	7.6	7.7	---	---	---	---	---	---
8	8.2	7.8	7.9	7.9	7.6	7.7	---	---	---	---	---	---
9	8.0	7.6	7.7	8.1	7.7	7.8	---	---	---	---	---	---
10	8.0	7.6	7.7	8.1	7.8	7.9	---	---	---	---	---	---
11	7.8	7.6	7.7	8.0	7.8	7.8	---	---	---	---	---	---
12	8.0	7.6	7.7	8.1	7.7	7.8	---	---	---	---	---	---
13	7.8	7.5	7.7	8.3	7.8	7.8	---	---	---	---	---	---
14	7.8	7.5	7.7	8.1	7.8	7.9	---	---	---	---	---	---
15	7.7	7.5	7.7	8.0	7.8	7.9	---	---	---	---	---	---
16	7.7	7.5	7.6	8.0	7.8	7.9	---	---	---	---	---	---
17	7.7	7.5	7.6	8.1	7.6	7.8	---	---	---	---	---	---
18	7.8	7.6	7.7	7.9	7.6	7.7	---	---	---	---	---	---
19	7.8	7.6	7.7	7.8	7.7	7.8	---	---	---	---	---	---
20	7.7	7.5	7.6	7.9	7.7	7.8	---	---	---	---	---	---
21	7.7	7.5	7.6	7.8	7.6	7.7	---	---	---	---	---	---
22	7.6	7.5	7.5	8.0	7.6	7.7	---	---	---	---	---	---
23	7.8	7.6	7.8	8.0	7.7	7.8	---	---	---	---	---	---
24	7.6	7.4	7.5	7.8	7.6	7.7	---	---	---	---	---	---
25	7.6	7.4	7.5	7.9	7.6	7.7	---	---	---	---	---	---
26	7.6	7.3	7.4	8.1	7.8	7.9	---	---	---	---	---	---
27	7.7	7.3	7.5	8.1	7.9	8.0	---	---	---	---	---	---
28	7.8	7.5	7.6	8.1	7.8	7.9	---	---	---	---	---	---
29	7.7	7.5	7.6	8.1	7.8	7.9	---	---	---	---	---	---
30	7.8	7.5	7.6	8.1	7.8	7.9	---	---	---	---	---	---
31	7.6	7.5	7.6	---	---	---	---	---	---	---	---	---
MAX	8.2	7.8	7.9	8.3	7.9	8.0	---	---	---	---	---	---
MIN	7.6	7.3	7.4	7.5	7.3	7.4	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.4	8.2	8.3	8.1	7.8	8.0
2	---	---	---	---	---	---	8.4	8.3	8.3	8.1	7.9	8.0
3	---	---	---	---	---	---	8.4	8.2	8.3	8.1	7.9	8.0
4	---	---	---	---	---	---	8.4	8.2	8.3	8.2	7.8	8.2
5	---	---	---	---	---	---	8.3	8.2	8.3	8.2	8.0	8.1
6	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.0	8.1
7	---	---	---	---	---	---	8.3	7.9	8.0	8.3	8.0	8.1
8	---	---	---	---	---	---	8.0	7.8	7.9	8.4	7.9	8.1
9	---	---	---	---	---	---	8.0	7.8	7.9	8.3	8.0	8.1
10	---	---	---	---	---	---	8.2	7.8	7.9	8.4	7.8	8.1
11	---	---	---	---	---	---	8.2	7.8	8.0	8.3	7.8	8.0
12	---	---	---	---	---	---	8.1	8.0	8.0	8.1	7.8	7.9
13	---	---	---	---	---	---	8.4	7.9	8.0	7.9	7.7	7.8
14	---	---	---	---	---	---	8.3	7.9	8.0	7.9	7.6	7.7
15	---	---	---	---	---	---	8.2	8.0	8.1	7.9	7.6	7.7
16	---	---	---	---	---	---	8.2	8.0	8.1	7.8	7.5	7.7
17	---	---	---	---	---	---	8.1	7.9	8.0	7.9	7.6	7.8
18	---	---	---	---	---	---	8.4	7.9	8.0	8.0	7.6	7.8
19	---	---	---	---	---	---	8.5	8.0	8.2	8.0	7.7	7.8
20	---	---	---	---	---	---	8.6	7.9	8.2	7.9	7.6	7.7
21	---	---	---	---	---	---	8.3	7.9	8.1	8.2	7.6	7.8
22	---	---	---	---	---	---	8.1	7.8	8.0	8.2	7.7	7.9
23	---	---	---	---	---	---	8.0	7.8	7.9	8.0	7.6	7.8
24	---	---	---	---	---	---	8.0	7.8	7.9	8.1	7.6	7.8
25	---	---	---	---	---	---	8.2	7.9	8.1	8.0	7.7	7.8
26	---	---	---	---	---	---	8.1	8.0	8.1	8.5	7.7	8.0
27	---	---	---	---	---	---	8.0	7.9	8.0	8.7	7.8	8.1
28	---	---	---	---	---	---	8.0	7.9	8.0	8.6	7.8	8.0
29	---	---	---	8.4	8.3	8.4	8.1	8.0	8.0	8.2	7.8	8.0
30	---	---	---	8.5	8.3	8.4	8.0	7.9	8.0	8.2	7.8	7.9
31	---	---	---	8.5	8.3	8.4	---	---	---	8.2	7.7	7.9
MAX	---	---	---	---	---	---	8.6	8.3	8.3	8.7	8.0	8.2
MIN	---	---	---	---	---	---	8.0	7.8	7.9	7.8	7.5	7.7

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	7.5	7.9	8.3	7.4	7.7	8.9	7.9	8.5	8.7	7.4	7.7
2	8.0	7.6	7.8	7.9	7.4	7.6	8.7	8.2	8.5	8.1	7.5	7.8
3	8.1	7.6	7.7	8.2	7.4	7.7	8.7	7.8	8.3	8.6	7.6	8.0
4	8.0	7.6	7.7	8.4	7.6	7.9	8.8	7.5	8.4	8.7	7.6	7.9
5	8.4	7.5	7.7	---	---	---	8.6	7.4	8.0	8.9	7.7	8.3
6	8.1	7.5	7.7	---	---	---	8.6	7.5	8.1	9.0	8.0	8.4
7	7.8	7.4	7.6	---	---	---	8.8	7.7	8.1	9.2	8.2	8.7
8	7.9	7.5	7.6	---	---	---	9.1	8.0	8.4	8.9	7.8	8.3
9	7.8	7.4	7.6	---	---	---	9.0	8.5	8.8	8.3	7.8	7.9
10	8.0	7.4	7.6	---	---	---	9.0	8.4	8.8	8.7	7.8	8.0
11	8.0	7.4	7.6	---	---	---	8.7	7.8	8.5	9.2	7.9	8.2
12	8.0	7.3	7.6	8.4	7.4	8.0	8.4	7.6	7.9	9.4	8.0	8.6
13	7.9	7.5	7.6	8.6	7.4	7.8	8.1	7.6	7.8	9.2	8.4	8.8
14	8.1	7.4	7.6	8.4	7.6	7.9	7.8	7.4	7.6	8.8	7.9	8.4
15	7.8	7.4	7.6	8.4	6.0	7.8	8.5	7.4	7.6	8.2	7.6	7.8
16	7.8	7.4	7.6	8.2	7.6	7.9	8.3	7.5	7.8	7.8	7.4	7.6
17	7.8	7.4	7.5	7.8	7.5	7.6	8.7	7.5	7.7	7.6	7.3	7.4
18	7.6	7.4	7.5	7.7	7.3	7.5	8.4	7.6	8.0	7.6	7.3	7.4
19	8.0	7.4	7.5	7.7	7.3	7.4	8.4	7.6	7.9	7.9	7.3	7.5
20	8.2	7.6	7.7	8.0	7.3	7.5	8.5	7.6	8.0	7.7	7.4	7.5
21	8.8	7.7	8.3	8.4	7.3	7.7	8.0	7.6	7.8	8.0	7.4	7.6
22	9.1	7.9	8.5	9.2	7.3	8.5	7.9	7.5	7.7	7.8	7.4	7.6
23	8.8	7.6	8.3	8.8	7.6	8.3	8.2	7.6	7.9	7.9	7.6	7.7
24	8.7	7.8	8.1	8.7	7.6	8.0	7.9	7.6	7.7	7.6	7.4	7.5
25	8.7	7.5	8.1	7.7	7.4	7.5	8.2	7.5	7.6	7.5	7.4	7.4
26	8.2	7.5	7.5	7.9	7.4	7.6	8.4	7.5	7.7	7.5	7.4	7.4
27	8.0	7.5	7.5	7.7	7.6	7.6	8.4	7.7	8.1	7.5	7.3	7.4
28	9.1	7.7	8.1	7.8	7.6	7.6	7.9	7.4	7.5	7.6	7.2	7.3
29	8.4	7.4	7.6	7.9	7.6	7.7	8.6	7.4	7.5	7.5	7.2	7.3
30	8.3	7.3	7.8	8.0	7.6	7.7	8.3	7.6	7.9	7.5	7.3	7.3
31	---	---	---	8.5	7.6	7.8	8.1	7.5	7.7	---	---	---
MAX	9.1	7.9	8.5	---	---	---	9.1	8.5	8.8	9.4	8.4	8.8
MIN	7.6	7.3	7.5	---	---	---	7.8	7.4	7.5	7.5	7.2	7.3

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.1	17.9	18.4	13.0	12.4	12.7	6.9	4.8	5.6	---	---	---
2	18.7	17.9	18.4	12.5	12.1	12.4	5.6	4.9	5.1	---	---	---
3	17.9	17.0	17.5	12.1	11.3	11.8	---	---	---	---	---	---
4	17.0	15.8	16.3	11.3	10.2	10.9	---	---	---	---	---	---
5	15.8	14.4	15.2	10.2	9.5	9.8	---	---	---	---	---	---
6	16.3	14.5	15.1	10.1	9.1	9.5	---	---	---	---	---	---
7	16.0	14.9	15.4	9.8	9.0	9.5	---	---	---	---	---	---
8	16.5	15.3	15.9	9.4	8.5	8.9	---	---	---	---	---	---
9	16.8	16.0	16.4	8.6	7.0	8.0	---	---	---	---	---	---
10	16.5	15.6	16.0	8.0	6.9	7.4	---	---	---	---	---	---
11	15.9	15.2	15.5	7.7	7.3	7.5	---	---	---	---	---	---
12	16.0	14.5	15.2	7.3	6.8	7.1	---	---	---	---	---	---
13	15.4	14.7	15.0	7.0	6.4	6.8	---	---	---	---	---	---
14	15.3	15.0	15.1	7.0	5.8	6.5	---	---	---	---	---	---
15	15.0	14.6	14.8	7.0	6.4	6.7	---	---	---	---	---	---
16	14.6	13.3	14.1	6.6	6.3	6.4	---	---	---	---	---	---
17	13.4	11.7	12.6	7.2	6.3	6.6	---	---	---	---	---	---
18	11.8	11.0	11.2	8.3	6.6	7.4	---	---	---	---	---	---
19	11.2	10.5	10.9	8.2	7.7	8.0	---	---	---	---	---	---
20	11.5	10.4	10.8	9.4	8.0	8.3	---	---	---	---	---	---
21	11.1	10.6	10.8	9.1	8.3	8.6	---	---	---	---	---	---
22	11.3	10.9	11.1	8.7	8.1	8.4	---	---	---	---	---	---
23	11.4	10.5	11.0	8.2	7.5	7.9	---	---	---	---	---	---
24	11.6	11.3	11.5	8.1	7.3	7.8	---	---	---	---	---	---
25	12.6	11.6	12.1	7.3	5.5	6.6	---	---	---	---	---	---
26	12.7	12.1	12.4	5.8	4.7	5.3	---	---	---	---	---	---
27	13.5	12.3	12.8	5.1	4.5	4.9	---	---	---	---	---	---
28	13.6	12.7	13.0	5.3	4.8	5.1	---	---	---	---	---	---
29	13.2	12.8	13.0	5.3	4.7	5.0	---	---	---	---	---	---
30	14.8	13.1	13.6	5.4	4.8	5.1	---	---	---	---	---	---
31	13.7	13.0	13.4	---	---	---	---	---	---	---	---	---
MONTH	19.1	10.4	14.0	13.0	4.5	7.9	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.2	8.3	8.7	11.5	10.5	11.0
2	---	---	---	---	---	---	8.9	8.0	8.4	11.5	10.5	10.9
3	---	---	---	---	---	---	8.0	6.7	7.2	10.8	10.2	10.4
4	---	---	---	---	---	---	8.6	6.8	7.5	11.2	9.5	10.3
5	---	---	---	---	---	---	9.0	7.7	8.4	12.4	10.0	11.1
6	---	---	---	---	---	---	11.3	8.9	9.7	13.6	11.9	12.8
7	---	---	---	---	---	---	11.2	9.2	10.7	15.1	12.4	13.8
8	---	---	---	---	---	---	11.5	10.2	10.7	16.7	14.0	15.2
9	---	---	---	---	---	---	12.3	10.3	11.1	17.6	16.1	16.7
10	---	---	---	---	---	---	12.8	11.4	12.0	19.2	17.0	17.7
11	---	---	---	---	---	---	13.6	11.6	12.7	18.6	16.2	17.6
12	---	---	---	---	---	---	12.9	11.2	12.1	16.9	15.4	16.1
13	---	---	---	---	---	---	14.3	10.8	11.8	15.8	14.7	15.3
14	---	---	---	---	---	---	14.6	11.2	12.1	16.6	14.7	15.8
15	---	---	---	---	---	---	13.2	12.1	12.5	16.1	15.0	15.6
16	---	---	---	---	---	---	13.6	12.0	12.8	15.1	13.3	14.6
17	---	---	---	---	---	---	13.6	12.6	13.0	15.8	13.1	14.4
18	---	---	---	---	---	---	15.8	12.9	13.9	16.8	15.1	15.9
19	---	---	---	---	---	---	18.4	14.5	15.9	16.4	15.6	15.9
20	---	---	---	---	---	---	17.2	14.0	15.9	16.5	15.3	15.7
21	---	---	---	---	---	---	15.7	14.8	15.2	18.4	15.7	16.9
22	---	---	---	---	---	---	14.8	13.9	14.3	17.5	16.0	16.9
23	---	---	---	---	---	---	14.0	11.4	12.8	16.8	16.2	16.4
24	---	---	---	---	---	---	11.5	8.7	10.2	16.7	15.4	16.1
25	---	---	---	---	---	---	8.7	5.7	7.0	17.0	15.3	16.0
26	---	---	---	---	---	---	8.9	7.2	7.7	18.0	15.7	16.7
27	---	---	---	---	---	---	9.3	8.9	9.1	19.7	17.3	18.2
28	---	---	---	---	---	---	9.9	8.6	9.2	19.2	17.9	18.4
29	---	---	---	7.3	5.5	6.3	11.3	9.6	10.3	19.1	17.9	18.4
30	---	---	---	8.1	6.9	7.6	11.4	10.6	10.9	19.7	18.1	18.7
31	---	---	---	9.5	7.9	8.6	---	---	---	20.8	18.8	19.6
MONTH	---	---	---	---	---	---	18.4	5.7	11.1	20.8	9.5	15.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.0	20.0	20.8	27.4	26.4	26.9	27.5	24.9	26.1	25.0	23.4	24.1
2	22.6	21.0	21.8	26.4	25.2	25.7	27.5	26.0	26.6	24.6	23.7	24.1
3	22.5	21.3	21.9	26.4	24.8	25.5	27.7	26.6	27.3	24.4	23.1	23.7
4	23.3	21.7	22.4	27.0	25.3	26.0	28.8	26.1	27.5	23.9	22.9	23.4
5	25.5	22.8	23.8	---	---	---	28.0	26.5	27.3	24.3	22.8	23.3
6	25.7	24.2	25.0	---	---	---	27.6	26.3	26.9	24.5	23.0	23.6
7	26.3	24.3	25.4	---	---	---	27.8	26.5	27.0	24.9	23.6	24.1
8	26.2	24.7	25.5	---	---	---	28.3	26.8	27.4	24.4	23.7	24.0
9	26.6	25.1	25.8	---	---	---	28.5	27.3	27.7	24.0	23.3	23.6
10	28.0	25.8	26.6	---	---	---	29.3	27.6	28.2	24.4	23.0	23.6
11	27.8	26.9	27.6	---	---	---	28.5	27.2	27.8	24.6	23.1	23.8
12	28.1	27.1	27.5	27.7	25.9	27.2	28.1	26.2	27.0	25.3	23.6	24.2
13	27.6	26.6	27.1	28.7	26.0	27.3	27.1	26.2	26.7	25.2	24.1	24.6
14	27.6	26.0	26.7	28.9	27.5	28.1	26.5	25.8	26.0	24.8	24.2	24.5
15	26.8	25.4	26.1	29.1	27.8	28.3	26.3	25.2	25.7	24.4	23.2	23.8
16	25.4	23.8	24.5	29.0	24.0	27.2	26.4	25.2	25.7	23.2	18.6	21.9
17	23.8	22.8	23.3	24.4	23.5	24.0	26.8	25.3	25.9	19.1	18.3	18.5
18	22.9	21.9	22.4	26.1	24.3	24.8	26.3	25.6	26.0	20.2	18.3	19.0
19	23.1	21.2	21.9	27.4	25.4	26.3	27.0	25.6	26.2	21.0	18.6	20.0
20	24.0	21.9	22.6	27.6	26.3	26.9	26.6	25.6	26.0	21.5	20.0	20.7
21	24.8	23.1	23.8	27.9	25.9	27.1	26.3	25.4	25.8	22.3	20.6	21.1
22	25.7	23.2	24.0	30.2	26.2	28.5	25.5	24.1	24.8	21.8	20.4	21.0
23	24.3	23.1	23.7	29.3	27.4	28.2	24.4	23.1	23.7	20.8	18.8	19.5
24	25.1	23.3	23.9	28.1	23.5	26.4	23.7	22.8	23.1	19.1	18.4	18.8
25	26.1	24.0	25.2	26.0	23.8	24.6	23.4	22.7	23.0	19.5	18.9	19.0
26	26.0	24.6	25.2	27.3	24.3	25.6	24.7	22.9	23.4	20.2	19.1	19.7
27	27.6	24.4	25.8	24.7	22.7	23.6	25.3	24.0	24.3	20.2	19.1	19.6
28	28.8	26.3	27.7	24.5	22.3	22.9	24.4	22.4	23.3	20.1	19.2	19.6
29	27.7	26.5	27.0	24.6	22.9	23.8	25.3	22.7	23.7	19.7	18.3	18.8
30	27.7	26.4	27.4	24.4	23.2	23.8	24.8	24.0	24.5	18.5	17.6	17.9
31	---	---	---	25.5	23.6	24.3	24.4	23.6	23.9	---	---	---
MONTH	28.8	20.0	24.7	---	---	---	29.3	22.4	25.8	25.3	17.6	21.8

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.3	5.2	6.4	---	---	---	11.2	9.0	10.5	---	---	---
2	7.7	5.5	6.7	---	---	---	11.2	5.9	10.2	---	---	---
3	8.3	5.5	6.3	4.7	2.3	4.0	---	---	---	---	---	---
4	7.8	5.6	6.6	7.3	3.7	5.0	---	---	---	---	---	---
5	8.0	6.2	7.1	7.2	5.6	6.5	---	---	---	---	---	---
6	8.8	6.6	7.4	7.4	4.9	6.6	---	---	---	---	---	---
7	8.4	6.2	7.4	8.0	6.3	7.3	---	---	---	---	---	---
8	9.8	7.7	8.5	8.4	6.0	7.3	---	---	---	---	---	---
9	9.0	7.0	8.1	10.5	5.1	8.0	---	---	---	---	---	---
10	9.5	7.1	8.1	10.6	5.4	8.6	---	---	---	---	---	---
11	9.7	7.5	8.5	9.3	5.0	7.4	---	---	---	---	---	---
12	10.4	7.9	8.8	9.3	7.4	8.5	---	---	---	---	---	---
13	9.8	7.7	8.8	9.7	6.9	8.7	---	---	---	---	---	---
14	---	---	---	11.3	6.8	9.3	---	---	---	---	---	---
15	---	---	---	10.7	7.4	8.7	---	---	---	---	---	---
16	---	---	---	11.3	8.2	9.4	---	---	---	---	---	---
17	---	---	---	11.4	7.7	9.4	---	---	---	---	---	---
18	---	---	---	10.2	7.6	8.9	---	---	---	---	---	---
19	---	---	---	9.4	8.3	9.1	---	---	---	---	---	---
20	---	---	---	9.9	8.2	9.0	---	---	---	---	---	---
21	---	---	---	8.9	8.1	8.5	---	---	---	---	---	---
22	7.7	6.0	6.6	10.0	7.7	8.6	---	---	---	---	---	---
23	9.2	6.9	8.4	10.1	7.9	9.0	---	---	---	---	---	---
24	8.0	5.6	6.5	9.2	7.2	8.2	---	---	---	---	---	---
25	7.6	5.2	6.2	8.8	2.3	7.4	---	---	---	---	---	---
26	7.3	3.8	5.8	10.7	7.1	9.2	---	---	---	---	---	---
27	7.3	4.2	5.8	11.4	9.7	10.6	---	---	---	---	---	---
28	8.1	5.2	6.5	11.3	6.0	9.2	---	---	---	---	---	---
29	7.4	4.1	6.3	10.1	4.0	8.0	---	---	---	---	---	---
30	7.8	2.4	6.0	10.2	4.2	8.7	---	---	---	---	---	---
31	5.4	1.4	2.6	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	11.7	9.9	11.0	11.3	4.9	8.4
2	---	---	---	---	---	---	11.6	10.3	11.1	---	---	---
3	---	---	---	---	---	---	11.7	10.5	11.1	10.0	7.8	8.8
4	---	---	---	---	---	---	12.0	10.5	11.0	11.0	7.7	9.7
5	---	---	---	---	---	---	12.8	10.1	11.8	11.0	9.8	10.3
6	---	---	---	---	---	---	12.3	11.1	11.8	11.5	9.5	10.6
7	---	---	---	---	---	---	12.0	9.0	10.7	11.8	9.5	10.5
8	---	---	---	---	---	---	10.3	8.2	9.5	12.0	8.9	10.6
9	---	---	---	---	---	---	10.2	8.8	9.6	11.7	9.5	10.4
10	---	---	---	---	---	---	11.4	8.4	9.7	10.8	8.1	9.5
11	---	---	---	---	---	---	10.9	8.2	10.1	10.5	8.0	9.0
12	---	---	---	---	---	---	10.5	9.3	10.0	10.0	7.8	8.7
13	---	---	---	---	---	---	12.5	8.4	9.5	8.6	7.3	7.9
14	---	---	---	---	---	---	11.7	8.5	9.7	9.0	6.3	7.5
15	---	---	---	---	---	---	10.9	9.2	9.9	9.1	6.7	7.4
16	---	---	---	---	---	---	10.7	9.1	10.0	8.3	6.3	7.3
17	---	---	---	---	---	---	10.4	9.0	9.7	9.1	7.6	8.5
18	---	---	---	---	---	---	12.4	9.1	10.2	9.7	7.2	8.8
19	---	---	---	---	---	---	12.7	9.7	10.9	9.7	8.0	8.7
20	---	---	---	---	---	---	12.3	9.4	10.5	8.6	6.2	7.5
21	---	---	---	---	---	---	10.7	7.9	9.5	11.1	6.0	8.2
22	---	---	---	---	---	---	9.6	7.4	8.7	9.6	7.3	8.7
23	---	---	---	---	---	---	9.3	6.7	8.3	9.0	6.7	7.7
24	---	---	---	---	---	---	9.5	7.0	8.4	10.1	5.8	7.8
25	---	---	---	---	---	---	11.4	8.4	10.4	10.3	6.5	8.2
26	---	---	---	---	---	---	11.3	9.8	10.7	13.0	7.8	10.0
27	---	---	---	---	---	---	9.8	9.1	9.4	13.9	8.1	10.5
28	---	---	---	---	---	---	10.0	9.4	9.7	---	---	---
29	---	---	---	13.2	12.1	12.6	10.1	4.2	7.5	---	---	---
30	---	---	---	12.6	11.3	12.2	9.3	2.2	5.1	---	---	---
31	---	---	---	12.2	11.3	11.9	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	12.8	2.2	9.8	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	8.3	2.7	5.7	---	---	---	7.5	3.0	4.9
2	9.5	6.2	7.6	6.7	2.3	4.8	12.4	7.9	10.2	6.5	3.0	5.3
3	9.3	5.3	6.8	8.4	3.1	5.5	11.3	5.9	8.4	7.9	4.1	6.0
4	9.1	5.5	7.0	8.7	4.1	6.1	13.3	4.3	8.4	7.8	4.3	5.8
5	9.3	4.3	6.9	---	---	---	10.5	3.9	7.5	8.5	5.0	6.6
6	8.6	4.3	6.0	---	---	---	8.9	3.9	7.2	8.0	5.3	6.6
7	7.5	2.2	5.1	---	---	---	9.6	5.4	7.4	8.2	5.8	6.9
8	8.4	3.1	5.5	---	---	---	10.0	5.7	8.0	7.2	4.3	5.9
9	6.2	2.4	4.3	---	---	---	10.4	6.8	8.0	6.3	3.5	4.7
10	7.5	2.4	4.5	---	---	---	10.9	5.9	8.1	7.6	2.3	5.2
11	6.7	2.2	4.4	---	---	---	8.7	4.6	7.0	8.2	4.8	6.1
12	7.1	2.7	4.9	8.2	2.5	6.4	9.0	3.6	5.7	9.2	3.5	6.4
13	6.8	3.5	5.0	8.8	2.2	5.9	6.9	3.6	5.3	8.0	4.1	6.6
14	7.8	1.9	4.6	8.1	4.1	6.0	---	---	---	7.6	4.6	6.0
15	6.4	3.2	4.9	8.3	4.0	5.6	---	---	---	5.7	3.1	4.3
16	6.3	2.6	4.6	7.0	3.1	5.2	---	---	---	6.5	2.9	4.6
17	7.2	1.6	4.2	5.0	4.4	4.7	9.1	2.9	5.6	6.4	1.6	4.5
18	6.3	2.9	4.5	5.5	2.0	4.0	7.6	4.4	6.1	4.7	1.3	3.5
19	7.9	2.6	4.9	5.8	1.3	3.5	8.7	4.0	6.1	6.3	1.7	3.6
20	9.6	4.6	6.6	7.5	2.6	4.8	8.8	3.7	5.9	5.8	3.1	4.5
21	---	---	---	11.5	2.2	6.7	7.2	2.1	5.4	7.0	2.7	5.1
22	---	---	---	19.7	1.8	10.5	6.5	3.0	5.1	6.9	3.2	5.1
23	---	---	---	14.1	4.6	9.2	7.0	3.8	5.4	7.9	5.8	7.1
24	---	---	---	11.4	4.7	7.2	6.1	2.7	4.5	7.0	1.3	3.2
25	---	---	---	5.5	1.7	4.2	6.7	2.2	4.4	4.9	1.4	1.8
26	---	---	---	7.2	1.7	4.3	7.7	3.1	5.5	4.9	1.5	2.4
27	---	---	---	6.5	5.6	6.0	7.7	5.6	6.7	3.9	1.6	2.5
28	---	---	---	7.0	4.8	6.0	6.7	2.1	4.5	6.2	2.3	3.7
29	---	---	---	7.6	1.8	4.7	7.2	1.8	4.3	5.9	1.9	4.2
30	7.8	1.7	5.6	8.9	2.2	5.9	6.4	3.2	5.1	6.2	2.6	4.5
31	---	---	---	11.3	3.8	7.9	5.6	3.4	4.7	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	9.2	1.3	4.9

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	725	603	686	---	---	---	---	---	---	---	---	---
2	757	590	677	---	---	---	---	---	---	---	---	---
3	827	568	715	---	---	---	---	---	---	---	---	---
4	758	559	653	---	---	---	---	---	---	---	---	---
5	712	525	566	---	---	---	---	---	---	---	---	---
6	605	515	557	---	---	---	---	---	---	---	---	---
7	602	525	571	---	---	---	---	---	---	---	---	---
8	567	528	542	---	---	---	---	---	---	---	---	---
9	611	529	551	---	---	---	---	---	---	---	---	---
10	575	527	557	---	---	---	---	---	---	---	---	---
11	568	532	550	---	---	---	---	---	---	---	---	---
12	693	545	604	---	---	---	---	---	---	---	---	---
13	772	606	676	---	---	---	---	---	---	---	---	---
14	717	542	602	---	---	---	---	---	---	---	---	---
15	664	556	612	---	---	---	---	---	---	---	---	---
16	638	549	604	---	---	---	---	---	---	---	---	---
17	588	536	569	---	---	---	---	---	---	---	---	---
18	616	564	584	---	---	---	---	---	---	---	---	---
19	605	527	567	---	---	---	---	---	---	---	---	---
20	627	560	584	---	---	---	---	---	---	---	---	---
21	654	577	615	---	---	---	---	---	---	---	---	---
22	638	547	602	---	---	---	---	---	---	---	---	---
23	629	503	581	---	---	---	---	---	---	---	---	---
24	613	561	597	---	---	---	---	---	---	---	---	---
25	610	531	576	---	---	---	---	---	---	---	---	---
26	560	449	520	---	---	---	---	---	---	---	---	---
27	584	436	516	---	---	---	---	---	---	---	---	---
28	569	470	511	---	---	---	---	---	---	---	---	---
29	612	539	580	---	---	---	---	---	---	---	---	---
30	567	421	523	---	---	---	---	---	---	---	---	---
31	576	420	478	---	---	---	---	---	---	---	---	---
MONTH	827	420	585	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.5	7.3	7.3	---	---	---	---	---	---	---	---	---
2	7.6	7.3	7.3	---	---	---	---	---	---	---	---	---
3	7.6	7.3	7.4	---	---	---	---	---	---	---	---	---
4	7.7	7.3	7.4	---	---	---	---	---	---	---	---	---
5	7.8	7.3	7.6	---	---	---	---	---	---	---	---	---
6	7.8	7.4	7.6	---	---	---	---	---	---	---	---	---
7	7.7	7.4	7.5	---	---	---	---	---	---	---	---	---
8	7.7	7.4	7.5	---	---	---	---	---	---	---	---	---
9	7.6	7.4	7.5	---	---	---	---	---	---	---	---	---
10	7.7	7.4	7.5	---	---	---	---	---	---	---	---	---
11	7.6	7.3	7.4	---	---	---	---	---	---	---	---	---
12	7.6	7.4	7.4	---	---	---	---	---	---	---	---	---
13	7.5	7.3	7.4	---	---	---	---	---	---	---	---	---
14	7.7	7.4	7.5	---	---	---	---	---	---	---	---	---
15	7.7	7.5	7.6	---	---	---	---	---	---	---	---	---
16	7.8	7.4	7.6	---	---	---	---	---	---	---	---	---
17	7.8	7.5	7.6	---	---	---	---	---	---	---	---	---
18	7.7	7.5	7.6	---	---	---	---	---	---	---	---	---
19	7.8	7.5	7.6	---	---	---	---	---	---	---	---	---
20	7.7	7.5	7.5	---	---	---	---	---	---	---	---	---
21	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
22	7.8	7.5	7.6	---	---	---	---	---	---	---	---	---
23	7.9	7.6	7.7	---	---	---	---	---	---	---	---	---
24	7.7	7.6	7.7	---	---	---	---	---	---	---	---	---
25	7.9	7.6	7.7	---	---	---	---	---	---	---	---	---
26	8.2	7.8	7.9	---	---	---	---	---	---	---	---	---
27	7.9	7.6	7.8	---	---	---	---	---	---	---	---	---
28	8.2	7.6	7.8	---	---	---	---	---	---	---	---	---
29	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
30	8.3	7.7	7.8	---	---	---	---	---	---	---	---	---
31	8.3	7.9	8.0	---	---	---	---	---	---	---	---	---
MAX	8.3	7.9	8.0	---	---	---	---	---	---	---	---	---
MIN	7.5	7.3	7.3	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165557 CLINTON RIVER BY-PASS AT MOUTH AT MOUNT CLEMENS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.1	17.1	17.6	---	---	---	---	---	---	---	---	---
2	18.4	17.4	17.8	---	---	---	---	---	---	---	---	---
3	19.6	17.7	18.8	---	---	---	---	---	---	---	---	---
4	21.3	18.9	20.0	---	---	---	---	---	---	---	---	---
5	22.0	20.4	21.2	---	---	---	---	---	---	---	---	---
6	22.2	21.0	21.4	---	---	---	---	---	---	---	---	---
7	21.0	18.8	20.0	---	---	---	---	---	---	---	---	---
8	18.9	16.9	17.8	---	---	---	---	---	---	---	---	---
9	17.2	15.8	16.5	---	---	---	---	---	---	---	---	---
10	16.5	15.8	16.1	---	---	---	---	---	---	---	---	---
11	15.9	15.6	15.7	---	---	---	---	---	---	---	---	---
12	15.9	15.5	15.7	---	---	---	---	---	---	---	---	---
13	16.3	15.7	16.0	---	---	---	---	---	---	---	---	---
14	17.2	15.9	16.4	---	---	---	---	---	---	---	---	---
15	16.8	16.1	16.4	---	---	---	---	---	---	---	---	---
16	16.1	14.8	15.3	---	---	---	---	---	---	---	---	---
17	15.1	14.0	14.5	---	---	---	---	---	---	---	---	---
18	14.9	14.2	14.5	---	---	---	---	---	---	---	---	---
19	14.6	14.1	14.4	---	---	---	---	---	---	---	---	---
20	14.3	13.7	13.8	---	---	---	---	---	---	---	---	---
21	13.8	13.2	13.4	---	---	---	---	---	---	---	---	---
22	13.2	12.3	12.7	---	---	---	---	---	---	---	---	---
23	12.4	11.9	12.2	---	---	---	---	---	---	---	---	---
24	12.2	11.6	11.8	---	---	---	---	---	---	---	---	---
25	11.6	10.8	11.3	---	---	---	---	---	---	---	---	---
26	10.9	9.8	10.4	---	---	---	---	---	---	---	---	---
27	10.5	9.4	9.9	---	---	---	---	---	---	---	---	---
28	10.4	9.5	9.7	---	---	---	---	---	---	---	---	---
29	10.7	9.3	9.9	---	---	---	---	---	---	---	---	---
30	10.5	9.5	9.9	---	---	---	---	---	---	---	---	---
31	11.3	9.8	10.3	---	---	---	---	---	---	---	---	---
MONTH	22.2	9.3	14.9	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	5.8	3.1	4.7	---	---	---	---	---	---	---	---	---
8	6.2	3.9	5.1	---	---	---	---	---	---	---	---	---
9	6.0	3.4	4.9	---	---	---	---	---	---	---	---	---
10	6.2	3.7	5.0	---	---	---	---	---	---	---	---	---
11	5.6	2.9	4.5	---	---	---	---	---	---	---	---	---
12	5.1	2.1	3.6	---	---	---	---	---	---	---	---	---
13	4.3	2.1	3.1	---	---	---	---	---	---	---	---	---
14	6.8	2.8	5.0	---	---	---	---	---	---	---	---	---
15	6.7	3.6	5.6	---	---	---	---	---	---	---	---	---
16	8.1	4.2	6.4	---	---	---	---	---	---	---	---	---
17	9.0	5.7	7.2	---	---	---	---	---	---	---	---	---
18	8.4	5.9	7.0	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	9.7	6.4	7.4	---	---	---	---	---	---	---	---	---
29	7.9	6.0	7.1	---	---	---	---	---	---	---	---	---
30	10.8	7.0	8.3	---	---	---	---	---	---	---	---	---
31	10.8	8.0	9.6	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI

LOCATION.--Lat 42°35'47", long 82°49'34", in SE1/4 NW1/4 sec.17, T.2 N., R.14 E., Macomb County, Hydrologic Unit 04090003, on left bank 400 ft upstream from bridge on Bridgeview Road, and 2.0 mi east of Mount Clemens.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 2004 to October 2005 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 580.77 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Gage height and discharge affected by wind direction and seiche on Lake St. Clair, 3.5 mi downstream. Satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,080 ft^3/s, Feb. 16, 2005; minimum daily, 97 ft^3/s, Aug. 13, 2005.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	e414	1100	1180	516	899	1140	947	236	455	e366	e182
2	e250	719	1180	1230	509	904	1160	831	e232	e263	243	e152
3	e223	585	960	1270	488	732	1070	763	e213	e175	e278	e139
4	e166	e1180	739	1260	522	734	1030	687	e209	e138	e254	e107
5	e154	932	543	1120	553	786	926	654	e225	458	e218	e104
6	e147	607	531	1060	609	933	793	618	e359	302	e197	e101
7	e141	457	987	1040	788	1260	576	608	e281	e183	193	e110
8	e153	338	1400	1060	1230	1240	545	562	e262	e225	e172	e184
9	e234	e542	1300	1040	1100	1080	481	482	546	446	e152	e223
10	e190	e483	1250	1000	974	1050	477	e411	259	257	e152	e142
11	e150	e439	1250	1060	833	1100	435	e366	e222	e183	e161	e112
12	e148	e408	1190	1210	739	1080	446	351	300	e155	e264	e109
13	e162	e383	1260	1590	822	967	394	443	466	e140	256	e97
14	e297	e355	1120	1930	1190	823	347	1050	434	e128	403	e98
15	e474	e359	859	1500	1480	779	e299	745	491	e128	208	e99
16	e561	e383	738	1140	2080	768	e299	504	335	e1360	163	e719
17	e484	e403	699	929	1640	819	e303	429	389	1210	e165	e566
18	e337	e425	628	e872	1220	972	e306	365	339	1000	e149	203
19	e266	e443	584	e866	e1120	1020	e317	371	259	917	e149	e189
20	e231	516	e491	e826	1040	1170	e397	476	255	615	e231	e159
21	e220	e468	490	833	1060	1170	e337	424	e267	535	e327	e131
22	e191	e403	543	694	1080	1150	274	376	343	390	e202	e312
23	154	e383	463	637	1080	1150	442	652	253	291	e172	998
24	401	e583	417	637	1060	1110	981	737	e169	723	e149	750
25	e343	1050	e416	693	954	1120	1190	583	e169	1020	e121	405
26	e336	650	e419	782	950	1120	1110	514	356	1000	e121	e977
27	e309	551	e431	674	871	1120	1150	444	e268	1110	e568	e762
28	e334	899	e439	515	821	1130	1100	400	e210	1030	724	e521
29	736	733	e461	490	---	1140	1050	353	286	761	e320	805
30	807	577	e534	514	---	1120	1040	299	436	601	195	574
31	499	---	1090	535	---	1140	---	247	---	431	e241	---
TOTAL	9263	16668	24512	30187	27329	31586	20415	16692	9069	16630	7514	10030
MEAN	299	556	791	974	976	1019	680	538	302	536	242	334
MAX	807	1180	1400	1930	2080	1260	1190	1050	546	1360	724	998
MIN	141	338	416	490	488	732	274	247	169	128	121	97

WTR YR 2005 TOTAL 219895 MEAN 602 MAX 2080 MIN 97

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	412	---	---	---	---	---	---	---	---	---	---	---
2	349	---	---	---	---	---	---	---	---	---	---	---
3	563	---	---	---	---	---	---	---	---	---	---	---
4	440	---	---	---	---	---	---	---	---	---	---	---
5	e251	---	---	---	---	---	---	---	---	---	---	---
6	e220	---	---	---	---	---	---	---	---	---	---	---
7	e196	---	---	---	---	---	---	---	---	---	---	---
8	e169	---	---	---	---	---	---	---	---	---	---	---
9	e151	---	---	---	---	---	---	---	---	---	---	---
10	e142	---	---	---	---	---	---	---	---	---	---	---
11	e140	---	---	---	---	---	---	---	---	---	---	---
12	e147	---	---	---	---	---	---	---	---	---	---	---
13	e154	---	---	---	---	---	---	---	---	---	---	---
14	e164	---	---	---	---	---	---	---	---	---	---	---
15	e217	---	---	---	---	---	---	---	---	---	---	---
16	e186	---	---	---	---	---	---	---	---	---	---	---
17	e170	---	---	---	---	---	---	---	---	---	---	---
18	e175	---	---	---	---	---	---	---	---	---	---	---
19	e172	---	---	---	---	---	---	---	---	---	---	---
20	e164	---	---	---	---	---	---	---	---	---	---	---
21	e168	---	---	---	---	---	---	---	---	---	---	---
22	e151	---	---	---	---	---	---	---	---	---	---	---
23	e148	---	---	---	---	---	---	---	---	---	---	---
24	e153	---	---	---	---	---	---	---	---	---	---	---
25	e183	---	---	---	---	---	---	---	---	---	---	---
26	e220	---	---	---	---	---	---	---	---	---	---	---
27	e196	---	---	---	---	---	---	---	---	---	---	---
28	e246	---	---	---	---	---	---	---	---	---	---	---
29	e246	---	---	---	---	---	---	---	---	---	---	---
30	e243	---	---	---	---	---	---	---	---	---	---	---
31	e233	---	---	---	---	---	---	---	---	---	---	---
TOTAL	6769	---	---	---	---	---	---	---	---	---	---	---
MEAN	218	---	---	---	---	---	---	---	---	---	---	---
MAX	563	---	---	---	---	---	---	---	---	---	---	---
MIN	140	---	---	---	---	---	---	---	---	---	---	---

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2004 to 2006 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 2004 to October 2005.
pH: July 2004 to October 2005.
WATER TEMPERATURE: July 2004 to October 2005.
DISSOLVED OXYGEN: July 2004 to October 2005.

INSTRUMENTATION: Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in water-quality record were due to malfunction of the instrument. Specific conductance records rated excellent except for the following periods: Oct. 21 to Apr. 3, Apr. 11 to May 2, rated good. pH records rated excellent except for the following periods: July 12-14, July 29 to Aug. 1, rated good. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 2, 17-21, Oct. 30 to Nov. 2, Nov. 12-17, 24-28, Apr. 16-20, 29, 30, May 15, 16, 22, June 2, 10, 11, 18, 19, July 17, Aug. 19, 26, Sept. 1-7, 21-23, rated good; Oct. 3, 4, Nov. 29 to Dec. 2, Apr. 21-27, May 1, 2, 17-20, 23, June 3, 4, 12-14, 20, 21, July 18-20, Aug. 3, 20-22, 27, Sept. 24-27, rated fair; Oct. 5-7, May 3-10, 24-29, June 5-7, 15, June 22 to July 14, July 21-29, Aug. 4-8, 23-25, 28-31, Sept. 9, 10, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,670 microsiemens, Apr. 22, 2005; minimum, 301 microsiemens, July 17, 2005.
pH: Maximum, 8.6 std. units, Aug. 6, 7, 9, 18, 19, 2005; minimum, 7.3 std. units, June 10, 2005.
WATER TEMPERATURE: Maximum, 28.3°C, July 15, 2005; minimum, 4.2°C, Dec. 3, 2004.
DISSOLVED OXYGEN: Maximum, 17.4 mg/L, Sept. 6, 2005; minimum, 0.8 mg/L, Apr. 22, 2005.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,670 microsiemens, Apr. 22; minimum, 301 microsiemens, July 17.
pH: Maximum, 8.6 std. units, Aug. 6, 7, 9, 18, 19; minimum, 7.3 std. units, June 10.
WATER TEMPERATURE: Maximum, 28.3°C, July 15; minimum, 4.2°C, Dec. 3.
DISSOLVED OXYGEN: Maximum, 17.4 mg/L, Sept. 6; minimum, 0.8 mg/L, Apr. 22.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1150	1130	1140	805	751	769	943	560	810	---	---	---
2	1150	1120	1150	820	677	786	1020	572	727	---	---	---
3	1170	1120	1130	718	643	680	---	---	---	---	---	---
4	1310	1150	1210	763	608	724	---	---	---	---	---	---
5	1310	1180	1290	652	568	614	---	---	---	---	---	---
6	1180	1070	1110	791	636	724	---	---	---	---	---	---
7	1070	1050	1060	851	791	825	---	---	---	---	---	---
8	1060	1030	1040	885	849	863	---	---	---	---	---	---
9	1070	1040	1060	899	879	886	---	---	---	---	---	---
10	1100	1070	1090	892	798	828	---	---	---	---	---	---
11	1210	1100	1120	877	833	848	---	---	---	---	---	---
12	1280	1130	1230	896	877	885	---	---	---	---	---	---
13	1130	1060	1090	901	886	893	---	---	---	---	---	---
14	1060	1010	1030	911	893	901	---	---	---	---	---	---
15	1070	959	1030	929	901	915	---	---	---	---	---	---
16	1060	652	791	934	910	921	---	---	---	---	---	---
17	787	654	735	936	880	909	---	---	---	---	---	---
18	780	730	757	976	886	917	---	---	---	---	---	---
19	838	777	796	1050	942	995	---	---	---	---	---	---
20	849	831	839	943	858	893	---	---	---	---	---	---
21	919	842	877	899	815	854	---	---	---	---	---	---
22	980	917	953	855	817	834	---	---	---	---	---	---
23	1000	977	981	869	854	859	---	---	---	---	---	---
24	1020	956	997	873	834	867	---	---	---	---	---	---
25	967	890	928	915	612	748	---	---	---	---	---	---
26	911	854	881	1260	915	1070	---	---	---	---	---	---
27	875	865	869	1250	1090	1190	---	---	---	---	---	---
28	881	869	878	1130	1060	1090	---	---	---	---	---	---
29	889	671	837	1070	912	953	---	---	---	---	---	---
30	671	625	645	949	911	933	---	---	---	---	---	---
31	751	656	702	---	---	---	---	---	---	---	---	---
MONTH	1310	625	976	1260	568	872	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	938	907	929	1020	994	1010
2	---	---	---	---	---	---	1070	937	959	1060	1020	1050
3	---	---	---	---	---	---	1270	1070	1190	1050	1040	1040
4	---	---	---	---	---	---	1160	982	1030	1070	1040	1050
5	---	---	---	---	---	---	1030	986	1000	1070	1040	1050
6	---	---	---	---	---	---	1090	1020	1040	1070	1030	1050
7	---	---	---	---	---	---	1130	1080	1110	1080	1050	1060
8	---	---	---	---	---	---	1220	1120	1170	1160	1070	1110
9	---	---	---	---	---	---	1250	1220	1230	1160	1110	1130
10	---	---	---	---	---	---	1260	1230	1240	1150	1100	1110
11	---	---	---	---	---	---	1260	1200	1230	1190	1130	1150
12	---	---	---	---	---	---	1210	1190	1200	1220	1170	1190
13	---	---	---	---	---	---	1240	1190	1220	1250	1200	1230
14	---	---	---	---	---	---	1280	1240	1260	1450	994	1180
15	---	---	---	---	---	---	1300	1250	1270	1070	995	1040
16	---	---	---	---	---	---	1280	1240	1260	1130	1050	1100
17	---	---	---	---	---	---	1280	1230	1260	1130	1090	1110
18	---	---	---	---	---	---	1280	1230	1260	1200	1130	1150
19	---	---	---	---	---	---	1290	1220	1250	1220	1200	1210
20	---	---	---	---	---	---	1260	1220	1240	1250	1210	1230
21	---	---	---	---	---	---	1520	1260	1320	1340	1240	1280
22	---	---	---	---	---	---	1670	1330	1550	1250	1150	1190
23	---	---	---	---	---	---	1390	1280	1320	1280	1130	1170
24	---	---	---	---	---	---	1460	1170	1320	1280	1030	1140
25	---	---	---	---	---	---	1260	1170	1210	1040	1010	1030
26	---	---	---	---	---	---	1210	1070	1170	1040	1030	1030
27	---	---	---	---	---	---	1080	877	989	1080	1040	1050
28	---	---	---	---	---	---	908	840	870	1090	1060	1070
29	---	---	---	948	905	923	909	835	862	1200	1090	1120
30	---	---	---	927	884	912	994	909	948	1220	1160	1190
31	---	---	---	916	886	901	---	---	---	1170	1150	1160
MONTH	---	---	---	---	---	---	1670	835	1160	1450	994	1120

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1200	1160	1170	1400	868	1100	958	927	934	998	921	957
2	1210	1170	1180	947	822	865	999	958	988	1090	998	1030
3	1240	1210	1220	949	898	914	1050	990	1020	1090	1050	1080
4	1350	1240	1310	1010	896	948	1100	1040	1070	1050	1030	1030
5	1330	1300	1310	1190	1010	1120	1110	1090	1090	1060	1030	1050
6	1340	1300	1320	1290	1110	1220	1140	1100	1120	1100	1060	1080
7	1660	1300	1440	1110	1000	1040	1150	1130	1140	1100	1070	1080
8	1560	1220	1330	1050	1000	1030	1160	1140	1160	1120	1080	1100
9	1240	1020	1160	1080	1010	1050	1170	1150	1160	1140	1120	1130
10	1030	804	893	1030	878	944	1180	1160	1170	1210	1130	1140
11	936	802	867	1070	1010	1060	1180	1160	1170	1290	1120	1230
12	1110	936	1040	1090	1040	1070	1200	1150	1180	1120	1050	1060
13	1370	1110	1200	1100	1060	1090	1210	1070	1150	1060	1020	1040
14	1200	1040	1080	1160	1100	1130	1170	878	1080	1050	1010	1020
15	1130	1040	1100	1200	1150	1170	963	814	877	1130	1030	1060
16	1090	1010	1050	1210	361	1090	976	916	954	1070	628	964
17	1130	1040	1060	547	301	437	959	913	930	676	458	546
18	1150	1070	1110	792	547	680	1010	959	990	734	666	702
19	1080	1070	1070	908	792	844	1030	1000	1010	782	721	745
20	1070	1040	1050	887	805	831	1120	1020	1060	863	775	808
21	1080	1060	1070	920	887	903	1180	1120	1150	946	863	909
22	1150	1080	1120	988	920	964	1380	986	1240	1020	941	975
23	1180	1140	1160	969	920	936	998	900	939	993	350	547
24	1270	1160	1230	988	779	940	1010	995	1000	696	427	562
25	1230	1190	1200	779	455	569	1010	998	1000	798	696	760
26	1200	1080	1170	808	612	735	1040	1010	1030	848	630	768
27	1100	952	1010	688	543	595	1110	990	1070	688	591	636
28	1190	978	1090	775	609	688	990	471	624	837	688	761
29	1200	1110	1160	855	775	819	702	680	694	867	686	811
30	1210	1040	1100	896	855	877	773	680	705	706	646	673
31	---	---	---	927	876	896	921	773	849	---	---	---
MONTH	1660	802	1140	1400	301	921	1380	471	1020	1290	350	908

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	7.9	7.9	7.7	7.6	7.6	8.0	7.8	7.9	---	---	---
2	8.0	7.9	7.9	7.8	7.6	7.7	7.9	7.8	7.9	---	---	---
3	8.0	7.9	7.9	7.8	7.6	7.7	---	---	---	---	---	---
4	7.9	7.6	7.7	7.8	7.7	7.8	---	---	---	---	---	---
5	7.8	7.6	7.6	7.8	7.7	7.8	---	---	---	---	---	---
6	7.9	7.7	7.8	7.9	7.8	7.8	---	---	---	---	---	---
7	8.0	7.8	7.9	7.9	7.9	7.9	---	---	---	---	---	---
8	8.0	7.9	8.0	8.0	7.9	7.9	---	---	---	---	---	---
9	8.0	7.9	8.0	8.0	8.0	8.0	---	---	---	---	---	---
10	8.0	7.9	7.9	8.1	8.0	8.0	---	---	---	---	---	---
11	7.9	7.7	7.8	8.0	8.0	8.0	---	---	---	---	---	---
12	7.8	7.7	7.8	8.0	8.0	8.0	---	---	---	---	---	---
13	7.8	7.8	7.8	8.1	8.0	8.0	---	---	---	---	---	---
14	7.9	7.8	7.8	8.1	8.0	8.0	---	---	---	---	---	---
15	7.8	7.6	7.8	8.1	8.0	8.0	---	---	---	---	---	---
16	7.7	7.5	7.5	8.0	8.0	8.0	---	---	---	---	---	---
17	7.7	7.6	7.7	8.1	8.0	8.0	---	---	---	---	---	---
18	7.7	7.6	7.7	8.0	7.9	8.0	---	---	---	---	---	---
19	7.8	7.7	7.7	8.0	7.9	8.0	---	---	---	---	---	---
20	7.8	7.7	7.7	8.0	8.0	8.0	---	---	---	---	---	---
21	7.8	7.7	7.8	8.0	7.8	7.9	---	---	---	---	---	---
22	7.8	7.8	7.8	8.0	8.0	8.0	---	---	---	---	---	---
23	7.8	7.7	7.8	8.1	8.0	8.1	---	---	---	---	---	---
24	7.8	7.6	7.8	8.1	7.9	8.1	---	---	---	---	---	---
25	7.7	7.5	7.5	8.1	7.9	8.0	---	---	---	---	---	---
26	7.7	7.6	7.6	8.1	8.0	8.0	---	---	---	---	---	---
27	7.8	7.7	7.7	8.1	8.0	8.1	---	---	---	---	---	---
28	7.8	7.8	7.8	8.1	8.0	8.1	---	---	---	---	---	---
29	7.8	7.5	7.8	8.1	8.0	8.0	---	---	---	---	---	---
30	7.6	7.5	7.5	8.1	8.0	8.0	---	---	---	---	---	---
31	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
MAX	8.1	7.9	8.0	8.1	8.0	8.1	---	---	---	---	---	---
MIN	7.6	7.5	7.5	7.7	7.6	7.6	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.3	8.2	8.3	8.2	8.1	8.2
2	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.2	8.2
3	---	---	---	---	---	---	8.2	8.0	8.1	8.3	8.2	8.2
4	---	---	---	---	---	---	8.3	8.1	8.2	8.3	8.1	8.2
5	---	---	---	---	---	---	8.3	8.2	8.2	8.2	8.1	8.2
6	---	---	---	---	---	---	8.2	8.1	8.1	8.2	8.0	8.2
7	---	---	---	---	---	---	8.2	8.0	8.1	8.2	8.0	8.1
8	---	---	---	---	---	---	8.1	8.0	8.0	8.1	7.9	8.0
9	---	---	---	---	---	---	8.1	8.0	8.1	8.0	7.9	8.0
10	---	---	---	---	---	---	8.1	8.0	8.1	8.0	7.8	7.9
11	---	---	---	---	---	---	8.1	8.0	8.1	8.0	7.8	8.0
12	---	---	---	---	---	---	8.2	8.0	8.1	8.0	7.9	7.9
13	---	---	---	---	---	---	8.2	8.1	8.2	8.0	7.9	8.0
14	---	---	---	---	---	---	8.3	8.0	8.2	8.0	7.7	7.7
15	---	---	---	---	---	---	8.3	8.0	8.1	7.8	7.7	7.7
16	---	---	---	---	---	---	8.3	8.0	8.1	8.0	7.8	7.9
17	---	---	---	---	---	---	8.2	8.0	8.1	8.1	7.9	8.0
18	---	---	---	---	---	---	8.2	7.9	8.0	8.1	8.0	8.0
19	---	---	---	---	---	---	8.2	7.9	8.1	8.1	7.9	8.0
20	---	---	---	---	---	---	8.2	8.0	8.1	8.0	7.9	7.9
21	---	---	---	---	---	---	8.1	7.7	7.8	7.9	7.8	7.8
22	---	---	---	---	---	---	8.1	7.6	7.8	7.9	7.8	7.8
23	---	---	---	---	---	---	8.1	7.9	8.0	7.9	7.7	7.8
24	---	---	---	---	---	---	8.1	7.9	8.0	7.8	7.7	7.8
25	---	---	---	---	---	---	8.2	8.0	8.1	7.9	7.7	7.8
26	---	---	---	---	---	---	8.2	8.0	8.2	7.9	7.8	7.9
27	---	---	---	---	---	---	8.0	7.9	8.0	7.9	7.8	7.9
28	---	---	---	---	---	---	8.0	7.9	7.9	7.9	7.8	7.9
29	---	---	---	8.4	8.2	8.3	8.1	8.0	8.0	7.9	7.7	7.8
30	---	---	---	8.4	8.2	8.3	8.2	8.1	8.1	7.9	7.7	7.8
31	---	---	---	8.4	8.2	8.3	---	---	---	8.0	7.7	7.8
MAX	---	---	---	---	---	---	8.3	8.2	8.3	8.3	8.2	8.2
MIN	---	---	---	---	---	---	8.0	7.6	7.8	7.8	7.7	7.7

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	8.0	8.0	7.7	7.4	7.5	8.0	7.8	7.9	8.0	7.7	7.8
2	8.2	8.0	8.1	7.6	7.4	7.5	8.0	7.7	7.8	7.9	7.8	7.8
3	8.2	8.0	8.0	7.8	7.4	7.6	8.0	7.8	7.8	8.0	7.8	7.9
4	8.3	7.9	8.0	8.0	7.5	7.6	8.0	7.8	7.9	8.3	7.8	8.0
5	8.3	7.8	8.0	7.8	7.6	7.7	8.3	7.8	7.9	8.3	7.8	8.0
6	7.9	7.8	7.9	7.8	7.4	7.5	8.6	8.0	8.2	8.5	7.9	8.1
7	7.9	7.6	7.8	7.9	7.6	7.7	8.6	8.1	8.2	8.4	7.8	8.1
8	8.1	7.8	7.8	8.0	7.6	7.8	8.3	7.9	8.1	8.3	7.6	7.9
9	7.9	7.4	7.7	7.8	7.7	7.8	8.6	7.9	8.2	7.9	7.7	7.8
10	7.5	7.3	7.4	7.8	7.5	7.6	8.3	8.0	8.1	7.8	7.6	7.7
11	7.7	7.4	7.6	8.1	7.6	7.7	8.2	7.9	8.1	7.8	7.5	7.6
12	7.8	7.6	7.6	8.4	7.7	7.9	8.3	7.9	8.1	7.9	7.5	7.6
13	7.8	7.7	7.7	8.4	7.9	8.1	8.2	7.8	7.9	8.2	7.4	7.8
14	7.7	7.5	7.6	8.4	7.8	8.0	7.9	7.8	7.9	8.1	7.7	7.9
15	7.8	7.6	7.7	8.3	8.0	8.1	7.8	7.6	7.6	8.1	7.7	7.9
16	7.8	7.5	7.6	8.3	7.5	8.2	7.9	7.6	7.7	8.0	7.5	7.9
17	7.8	7.7	7.7	7.7	7.4	7.5	8.1	7.7	7.8	7.7	7.5	7.6
18	7.8	7.7	7.7	7.7	7.5	7.6	8.6	7.8	8.2	7.6	7.5	7.6
19	7.9	7.7	7.8	7.7	7.6	7.7	8.6	8.0	8.2	7.7	7.5	7.6
20	8.1	7.8	7.9	7.8	7.6	7.7	8.3	8.0	8.1	7.7	7.5	7.6
21	7.9	7.8	7.9	7.8	7.6	7.7	8.0	7.7	7.9	7.8	7.7	7.7
22	8.0	7.8	7.9	7.9	7.6	7.7	8.0	7.6	7.8	7.8	7.7	7.7
23	8.0	7.8	8.0	8.3	7.7	7.8	8.0	7.5	7.7	7.8	7.5	7.6
24	8.2	7.7	7.8	8.0	7.6	7.9	8.1	7.7	7.9	7.5	7.5	7.5
25	8.2	7.8	8.0	7.7	7.6	7.6	8.2	7.8	8.0	7.6	7.4	7.5
26	8.0	7.8	7.9	7.8	7.6	7.7	8.3	8.0	8.0	7.6	7.5	7.5
27	7.9	7.6	7.7	7.7	7.6	7.7	8.1	7.8	8.0	7.7	7.5	7.6
28	8.0	7.6	7.8	7.8	7.7	7.8	7.8	7.5	7.7	7.8	7.6	7.7
29	8.0	7.6	7.8	8.0	7.8	7.9	7.7	7.5	7.6	7.8	7.7	7.8
30	7.8	7.5	7.6	8.0	7.9	8.0	7.7	7.5	7.6	7.8	7.7	7.7
31	---	---	---	8.1	7.9	8.0	7.8	7.6	7.7	---	---	---
MAX	8.3	8.0	8.1	8.4	8.0	8.2	8.6	8.1	8.2	8.5	7.9	8.1
MIN	7.5	7.3	7.4	7.6	7.4	7.5	7.7	7.5	7.6	7.5	7.4	7.5

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.7	16.2	16.7	13.4	12.1	12.7	6.9	5.2	5.8	---	---	---
2	16.8	15.7	16.3	12.1	11.3	11.6	5.6	4.6	5.0	---	---	---
3	15.7	14.8	15.2	11.3	10.4	11.0	---	---	---	---	---	---
4	15.0	14.3	14.6	10.4	9.6	10.0	---	---	---	---	---	---
5	14.5	13.1	13.8	9.8	8.4	9.1	---	---	---	---	---	---
6	13.7	12.6	13.1	9.3	8.1	8.7	---	---	---	---	---	---
7	14.7	12.9	13.5	9.5	8.4	8.9	---	---	---	---	---	---
8	14.9	13.3	13.9	9.1	8.0	8.5	---	---	---	---	---	---
9	15.7	14.4	15.0	8.0	6.8	7.4	---	---	---	---	---	---
10	15.6	14.6	15.1	7.0	6.0	6.6	---	---	---	---	---	---
11	15.2	14.6	14.8	7.2	6.9	7.1	---	---	---	---	---	---
12	15.0	14.2	14.5	7.3	6.5	6.9	---	---	---	---	---	---
13	14.3	13.6	13.9	6.7	5.7	6.3	---	---	---	---	---	---
14	14.0	13.4	13.7	5.9	5.1	5.5	---	---	---	---	---	---
15	13.4	13.2	13.3	5.2	4.7	4.9	---	---	---	---	---	---
16	13.2	12.0	12.7	6.2	4.9	5.5	---	---	---	---	---	---
17	12.0	10.4	11.0	7.7	6.2	6.8	---	---	---	---	---	---
18	10.4	9.7	9.9	10.1	7.7	8.8	---	---	---	---	---	---
19	9.8	9.3	9.5	10.2	9.8	10.1	---	---	---	---	---	---
20	10.0	9.3	9.7	10.6	10.0	10.2	---	---	---	---	---	---
21	10.6	10.0	10.2	10.5	9.9	10.2	---	---	---	---	---	---
22	11.5	10.6	11.0	9.9	8.8	9.3	---	---	---	---	---	---
23	11.9	11.2	11.5	8.8	8.1	8.4	---	---	---	---	---	---
24	13.5	11.9	12.4	8.1	6.6	7.6	---	---	---	---	---	---
25	13.9	13.3	13.6	6.9	4.7	5.9	---	---	---	---	---	---
26	13.3	12.9	13.1	4.7	4.4	4.6	---	---	---	---	---	---
27	13.5	12.8	13.1	5.6	4.5	5.0	---	---	---	---	---	---
28	13.2	12.6	12.9	6.8	5.6	6.3	---	---	---	---	---	---
29	13.7	12.8	13.2	6.4	5.3	5.7	---	---	---	---	---	---
30	14.7	13.5	14.0	5.3	5.0	5.1	---	---	---	---	---	---
31	14.3	13.4	14.0	---	---	---	---	---	---	---	---	---
MONTH	17.7	9.3	13.2	13.4	4.4	7.8	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.4	8.4	8.9	11.5	10.5	11.0
2	---	---	---	---	---	---	8.4	6.6	7.5	11.0	10.1	10.5
3	---	---	---	---	---	---	7.2	5.8	6.4	10.2	9.4	9.8
4	---	---	---	---	---	---	8.3	5.8	7.0	10.9	8.7	9.7
5	---	---	---	---	---	---	10.3	7.6	8.9	12.4	9.6	10.9
6	---	---	---	---	---	---	12.4	9.8	11.0	13.5	11.3	12.5
7	---	---	---	---	---	---	12.7	12.1	12.3	15.2	12.8	13.9
8	---	---	---	---	---	---	12.9	11.2	12.0	16.6	14.0	15.3
9	---	---	---	---	---	---	13.2	10.8	12.0	17.7	15.6	16.5
10	---	---	---	---	---	---	13.7	11.2	12.4	18.4	16.5	17.4
11	---	---	---	---	---	---	14.0	11.8	12.9	18.2	17.4	17.8
12	---	---	---	---	---	---	13.5	11.9	12.7	17.4	15.9	16.5
13	---	---	---	---	---	---	12.6	10.9	11.8	16.2	14.3	15.1
14	---	---	---	---	---	---	12.6	10.9	11.9	14.3	13.2	13.8
15	---	---	---	---	---	---	13.0	11.4	12.1	14.5	13.5	13.9
16	---	---	---	---	---	---	13.9	12.3	12.9	13.8	12.8	13.3
17	---	---	---	---	---	---	13.6	13.0	13.3	14.6	12.7	13.5
18	---	---	---	---	---	---	14.9	13.6	14.1	15.6	13.7	14.5
19	---	---	---	---	---	---	16.3	14.7	15.4	15.4	14.7	15.0
20	---	---	---	---	---	---	16.9	16.1	16.4	16.3	14.4	15.3
21	---	---	---	---	---	---	16.3	14.8	15.5	17.3	14.8	16.1
22	---	---	---	---	---	---	15.4	13.1	14.2	17.3	16.6	16.9
23	---	---	---	---	---	---	13.1	8.9	11.2	16.9	15.0	16.0
24	---	---	---	---	---	---	8.9	5.6	6.8	15.0	14.1	14.6
25	---	---	---	---	---	---	7.6	5.5	6.4	16.6	13.8	15.1
26	---	---	---	---	---	---	8.8	7.1	8.1	17.6	15.2	16.4
27	---	---	---	---	---	---	9.9	8.8	9.3	18.2	16.6	17.4
28	---	---	---	---	---	---	10.5	8.5	9.5	18.5	17.1	17.7
29	---	---	---	8.2	5.7	6.9	11.6	9.5	10.5	18.3	17.1	17.7
30	---	---	---	9.2	6.9	7.9	11.8	10.5	11.1	18.4	17.4	17.9
31	---	---	---	9.7	8.1	8.9	---	---	---	19.6	18.0	18.4
MONTH	---	---	---	---	---	---	16.9	5.5	11.2	19.6	8.7	14.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.8	19.0	19.6	25.2	23.4	24.3	24.9	23.5	24.0	23.7	22.3	23.0
2	22.6	19.6	20.7	24.6	23.2	23.8	26.7	24.8	25.3	23.1	22.1	22.7
3	21.8	20.4	21.1	25.7	23.2	24.2	27.5	25.8	26.3	23.0	22.1	22.5
4	23.3	20.6	21.7	26.6	24.1	24.9	27.2	26.1	26.6	23.8	21.9	22.7
5	24.8	21.9	22.9	25.1	24.2	24.5	26.6	25.6	26.0	23.7	21.6	22.6
6	24.4	22.6	23.5	24.2	22.3	23.0	27.5	25.4	26.2	24.5	22.1	22.9
7	24.8	23.6	23.9	24.1	22.0	22.6	27.5	25.4	26.1	24.4	22.1	23.0
8	25.8	23.8	24.6	24.0	22.9	23.3	26.4	25.5	25.8	23.4	22.2	22.6
9	25.8	24.4	25.0	23.9	22.2	22.9	28.0	25.6	26.4	22.9	21.7	22.2
10	26.3	24.3	24.9	25.0	22.6	23.4	27.4	26.1	26.5	23.5	21.6	22.4
11	26.9	24.7	25.9	25.7	23.4	23.9	26.6	25.8	26.3	23.8	22.0	22.7
12	27.2	25.6	26.3	25.8	24.1	24.8	26.1	24.9	25.7	24.1	21.9	22.7
13	26.6	24.5	25.7	26.3	25.4	25.7	25.7	24.1	24.6	24.7	22.2	23.2
14	24.5	22.7	23.7	28.0	25.8	26.7	24.4	23.3	24.0	23.8	22.7	23.2
15	24.3	22.9	23.6	28.3	27.0	27.4	23.3	22.2	22.7	23.0	21.8	22.6
16	23.4	21.6	22.4	28.1	24.2	26.9	24.3	22.9	23.5	21.8	17.8	20.3
17	21.6	20.1	20.6	25.2	24.0	24.4	24.0	23.0	23.4	18.8	17.7	18.2
18	20.1	18.7	19.3	26.2	24.2	25.2	25.2	23.7	24.3	20.2	18.0	18.9
19	20.8	18.4	19.4	26.7	24.9	25.7	25.6	24.1	24.7	21.2	19.6	20.1
20	22.2	19.7	20.6	26.7	24.8	25.7	24.9	24.2	24.7	20.9	19.3	20.1
21	21.8	20.7	21.3	27.0	24.9	26.0	24.8	23.8	24.2	22.5	20.2	20.9
22	22.6	21.1	21.9	27.2	25.3	26.3	23.9	23.1	23.5	21.0	19.9	20.5
23	23.6	21.5	22.3	27.4	26.3	26.7	23.1	22.2	22.4	20.2	18.7	19.6
24	25.1	22.0	23.1	26.4	23.9	25.8	22.3	21.4	21.8	19.2	18.2	18.7
25	24.8	23.4	23.9	26.1	23.7	24.9	22.3	21.4	21.8	19.4	18.1	18.8
26	26.2	23.8	24.7	26.1	24.7	25.5	23.8	21.5	22.3	20.8	19.1	19.9
27	26.2	24.4	25.1	24.7	22.6	23.9	23.5	22.5	22.8	20.1	18.8	19.4
28	26.5	25.1	25.7	23.8	22.1	22.8	23.4	22.0	22.7	19.1	17.6	18.5
29	26.5	25.3	25.9	23.4	21.8	22.6	23.8	21.8	22.6	18.6	16.4	17.4
30	26.4	25.2	25.9	23.9	21.7	22.7	23.9	22.9	23.5	17.1	15.7	16.3
31	---	---	---	24.4	22.0	23.2	23.6	22.4	22.9	---	---	---
MONTH	27.2	18.4	23.2	28.3	21.7	24.6	28.0	21.4	24.3	24.7	15.7	21.0

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.2	8.2	8.7	7.1	5.7	6.4	11.7	10.6	11.2	---	---	---
2	9.4	8.3	8.9	8.0	6.3	7.5	11.8	11.1	11.5	---	---	---
3	9.7	8.6	9.0	7.8	7.0	7.4	---	---	---	---	---	---
4	8.8	6.8	7.8	8.7	7.7	8.2	---	---	---	---	---	---
5	8.2	6.0	6.9	8.9	8.3	8.7	---	---	---	---	---	---
6	9.8	8.1	9.1	9.3	8.9	9.1	---	---	---	---	---	---
7	10.5	8.9	9.7	9.4	9.0	9.2	---	---	---	---	---	---
8	10.1	9.2	9.6	9.5	8.9	9.2	---	---	---	---	---	---
9	9.8	9.2	9.5	10.4	9.4	9.8	---	---	---	---	---	---
10	9.4	8.4	8.9	11.1	10.4	10.9	---	---	---	---	---	---
11	8.6	6.2	7.4	10.8	10.3	10.6	---	---	---	---	---	---
12	7.8	6.4	7.2	10.6	10.1	10.4	---	---	---	---	---	---
13	8.2	7.3	7.9	11.1	10.2	10.8	---	---	---	---	---	---
14	8.9	7.6	8.4	11.5	10.5	11.2	---	---	---	---	---	---
15	8.3	6.1	7.5	11.8	10.7	11.6	---	---	---	---	---	---
16	7.0	6.2	6.5	11.9	11.4	11.7	---	---	---	---	---	---
17	8.4	6.6	7.7	11.7	10.4	11.2	---	---	---	---	---	---
18	8.8	7.6	8.3	10.4	9.3	10.0	---	---	---	---	---	---
19	9.3	8.0	8.8	9.3	8.8	9.1	---	---	---	---	---	---
20	9.3	6.5	8.6	9.4	8.9	9.2	---	---	---	---	---	---
21	9.1	7.9	8.5	9.2	8.2	8.7	---	---	---	---	---	---
22	8.3	7.7	8.2	10.0	9.0	9.4	---	---	---	---	---	---
23	8.3	7.7	8.0	10.3	9.9	10.2	---	---	---	---	---	---
24	8.2	6.2	7.7	10.6	9.5	10.2	---	---	---	---	---	---
25	6.6	5.1	5.6	11.1	9.8	10.6	---	---	---	---	---	---
26	7.4	6.4	6.8	11.6	11.1	11.3	---	---	---	---	---	---
27	8.1	7.2	7.7	11.7	11.4	11.6	---	---	---	---	---	---
28	8.0	7.6	7.9	11.5	10.4	11.0	---	---	---	---	---	---
29	7.9	6.4	7.5	11.4	10.5	11.1	---	---	---	---	---	---
30	6.8	6.3	6.6	11.7	11.3	11.5	---	---	---	---	---	---
31	6.6	5.4	6.0	---	---	---	---	---	---	---	---	---
MONTH	10.5	5.1	8.0	11.9	5.7	9.9	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	11.6	10.6	11.2	11.2	10.2	10.6
2	---	---	---	---	---	---	11.6	11.1	11.3	11.7	10.9	11.2
3	---	---	---	---	---	---	12.1	10.8	11.5	11.8	11.1	11.4
4	---	---	---	---	---	---	13.0	11.8	12.4	12.7	10.8	11.9
5	---	---	---	---	---	---	12.7	11.8	12.3	12.9	11.1	12.4
6	---	---	---	---	---	---	11.9	11.0	11.4	12.3	9.9	11.5
7	---	---	---	---	---	---	11.1	9.5	10.2	12.0	8.5	10.8
8	---	---	---	---	---	---	10.3	9.0	9.6	11.4	8.2	10.3
9	---	---	---	---	---	---	11.5	10.0	10.7	11.1	8.3	10.1
10	---	---	---	---	---	---	11.6	10.2	10.8	10.8	7.2	9.0
11	---	---	---	---	---	---	11.7	10.0	10.7	---	---	---
12	---	---	---	---	---	---	11.4	9.5	10.4	8.4	7.0	7.6
13	---	---	---	---	---	---	12.1	9.5	10.8	9.2	8.1	8.5
14	---	---	---	---	---	---	12.5	9.9	11.3	8.9	6.5	7.4
15	---	---	---	---	---	---	12.6	8.8	10.8	7.1	6.5	6.8
16	---	---	---	---	---	---	12.6	8.8	11.2	8.5	6.3	7.4
17	---	---	---	---	---	---	12.8	8.4	11.0	9.5	7.2	8.3
18	---	---	---	---	---	---	12.4	6.6	9.9	9.5	7.8	8.8
19	---	---	---	---	---	---	12.4	7.1	10.4	9.3	6.8	8.3
20	---	---	---	---	---	---	12.2	6.8	10.3	8.4	6.7	7.7
21	---	---	---	---	---	---	9.2	3.0	6.3	8.3	7.0	7.8
22	---	---	---	---	---	---	9.3	0.8	5.0	8.1	7.1	7.6
23	---	---	---	---	---	---	10.2	5.5	8.1	7.7	6.7	7.2
24	---	---	---	---	---	---	10.4	7.4	9.0	8.2	6.7	7.3
25	---	---	---	---	---	---	11.8	10.0	11.0	9.5	7.2	8.3
26	---	---	---	---	---	---	11.5	9.0	10.8	9.4	7.4	8.7
27	---	---	---	---	---	---	10.1	7.4	9.3	9.1	7.1	8.4
28	---	---	---	---	---	---	10.1	9.4	9.7	9.3	5.6	8.3
29	---	---	---	13.0	12.2	12.6	10.5	9.8	10.1	9.2	5.9	8.0
30	---	---	---	12.6	11.8	12.2	10.6	10.0	10.3	---	---	---
31	---	---	---	12.1	11.1	11.6	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	13.0	0.8	10.3	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.7	7.5	8.4	5.6	3.0	4.5	---	---	---	8.5	5.5	6.6
2	12.0	8.0	9.8	6.0	3.3	4.3	8.8	4.2	6.1	8.2	6.4	7.4
3	11.7	8.6	9.9	7.1	2.8	5.4	8.5	5.1	6.5	9.7	7.0	8.3
4	13.0	8.1	10.1	9.0	3.8	5.7	8.8	5.6	7.3	13.4	8.0	10.4
5	13.9	8.0	10.2	6.6	4.5	5.3	10.4	5.5	7.2	14.7	8.7	11.1
6	10.5	8.4	9.5	5.1	1.8	3.0	14.3	6.8	9.7	17.4	7.9	11.6
7	9.5	5.2	6.8	6.1	2.3	4.3	14.4	8.4	11.1	16.8	8.5	11.8
8	9.2	5.2	6.7	7.7	4.2	5.8	11.5	7.9	9.4	14.7	6.7	9.5
9	7.1	1.5	4.6	6.2	3.7	4.8	---	---	---	9.3	6.9	8.3
10	---	---	---	5.7	1.8	3.8	---	---	---	9.2	5.3	8.0
11	5.5	1.3	3.3	8.4	2.4	5.1	---	---	---	---	---	---
12	5.9	2.1	3.7	10.9	4.0	6.2	---	---	---	---	---	---
13	5.2	2.4	4.2	10.7	4.4	7.6	---	---	---	---	---	---
14	5.0	0.9	2.6	12.1	5.1	8.1	---	---	---	---	---	---
15	5.9	3.9	4.8	12.6	6.9	9.6	---	---	---	9.4	6.5	7.6
16	5.3	2.8	4.0	12.3	2.5	9.4	---	---	---	7.8	5.6	7.1
17	6.2	4.2	5.0	4.0	2.5	3.6	10.0	7.0	7.9	6.4	5.7	6.2
18	6.1	4.4	5.3	5.6	3.5	4.7	15.2	7.3	11.1	6.5	5.3	6.0
19	7.4	4.4	6.3	5.6	4.6	5.2	14.5	9.0	11.7	7.3	5.8	6.2
20	9.2	5.6	7.5	6.3	4.1	5.3	11.9	8.5	10.2	7.2	5.5	6.4
21	8.0	6.1	7.4	7.0	4.6	5.9	8.5	5.4	7.1	8.3	6.0	7.1
22	7.9	6.1	6.9	7.8	4.2	6.1	8.6	5.4	6.8	7.3	6.3	6.7
23	7.8	5.8	7.0	11.6	5.2	7.8	8.8	4.6	6.5	6.8	5.0	5.7
24	10.2	4.5	7.1	8.4	4.6	6.9	10.3	6.3	8.1	6.4	5.7	6.1
25	10.9	5.4	8.1	5.5	4.3	4.9	11.4	7.8	9.2	6.8	3.8	5.8
26	8.6	6.1	7.4	6.3	4.7	5.5	12.3	8.6	10.1	6.8	5.3	6.2
27	6.2	3.4	4.7	6.1	4.6	5.3	10.3	6.4	9.2	7.3	6.4	6.8
28	9.2	4.6	6.9	7.2	5.8	6.5	6.4	4.7	5.5	7.4	6.3	6.8
29	9.0	5.8	7.1	7.5	6.2	7.1	6.7	4.1	5.6	7.6	6.6	7.1
30	6.9	4.1	5.3	---	---	---	6.7	3.6	5.8	7.7	6.9	7.4
31	---	---	---	---	---	---	6.9	4.2	5.8	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	832	706	784	---	---	---	---	---	---	---	---	---
2	888	832	859	---	---	---	---	---	---	---	---	---
3	931	868	889	---	---	---	---	---	---	---	---	---
4	911	666	749	---	---	---	---	---	---	---	---	---
5	817	686	757	---	---	---	---	---	---	---	---	---
6	898	817	856	---	---	---	---	---	---	---	---	---
7	959	896	930	---	---	---	---	---	---	---	---	---
8	1010	958	984	---	---	---	---	---	---	---	---	---
9	1030	1010	1020	---	---	---	---	---	---	---	---	---
10	1060	1030	1040	---	---	---	---	---	---	---	---	---
11	1070	1060	1060	---	---	---	---	---	---	---	---	---
12	1090	1060	1070	---	---	---	---	---	---	---	---	---
13	1110	1090	1100	---	---	---	---	---	---	---	---	---
14	1130	1100	1110	---	---	---	---	---	---	---	---	---
15	1140	1110	1120	---	---	---	---	---	---	---	---	---
16	1140	1070	1090	---	---	---	---	---	---	---	---	---
17	1090	1080	1090	---	---	---	---	---	---	---	---	---
18	1110	1060	1080	---	---	---	---	---	---	---	---	---
19	1080	1040	1050	---	---	---	---	---	---	---	---	---
20	1080	1040	1070	---	---	---	---	---	---	---	---	---
21	1120	1070	1100	---	---	---	---	---	---	---	---	---
22	1100	1080	1090	---	---	---	---	---	---	---	---	---
23	1110	1070	1090	---	---	---	---	---	---	---	---	---
24	1090	1050	1070	---	---	---	---	---	---	---	---	---
25	1090	1050	1070	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
2	7.8	7.7	7.7	---	---	---	---	---	---	---	---	---
3	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
4	7.6	7.4	7.5	---	---	---	---	---	---	---	---	---
5	7.6	7.5	7.5	---	---	---	---	---	---	---	---	---
6	7.7	7.5	7.6	---	---	---	---	---	---	---	---	---
7	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
8	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
9	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
10	7.9	7.8	7.9	---	---	---	---	---	---	---	---	---
11	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
12	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
13	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
14	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
15	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
16	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
17	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
18	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
19	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
20	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
21	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
22	7.8	7.8	7.8	---	---	---	---	---	---	---	---	---
23	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
24	7.9	7.8	7.8	---	---	---	---	---	---	---	---	---
25	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO LAKE ST. CLAIR

04165559 CLINTON RIVER NEAR MOUNT CLEMENS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	14.6	15.7	---	---	---	---	---	---	---	---	---
2	17.4	15.6	16.5	---	---	---	---	---	---	---	---	---
3	19.4	17.2	18.1	---	---	---	---	---	---	---	---	---
4	21.1	19.4	20.2	---	---	---	---	---	---	---	---	---
5	20.9	19.7	20.3	---	---	---	---	---	---	---	---	---
6	21.4	19.9	20.7	---	---	---	---	---	---	---	---	---
7	19.9	17.6	19.1	---	---	---	---	---	---	---	---	---
8	17.6	15.5	16.6	---	---	---	---	---	---	---	---	---
9	15.5	14.4	14.8	---	---	---	---	---	---	---	---	---
10	14.5	13.9	14.1	---	---	---	---	---	---	---	---	---
11	13.9	13.4	13.6	---	---	---	---	---	---	---	---	---
12	14.7	13.8	14.3	---	---	---	---	---	---	---	---	---
13	15.9	14.6	15.1	---	---	---	---	---	---	---	---	---
14	16.9	15.3	15.9	---	---	---	---	---	---	---	---	---
15	16.8	15.7	16.2	---	---	---	---	---	---	---	---	---
16	15.7	14.5	14.9	---	---	---	---	---	---	---	---	---
17	14.5	13.7	14.0	---	---	---	---	---	---	---	---	---
18	14.2	13.2	13.7	---	---	---	---	---	---	---	---	---
19	13.6	13.0	13.3	---	---	---	---	---	---	---	---	---
20	13.3	12.5	12.8	---	---	---	---	---	---	---	---	---
21	12.6	12.0	12.3	---	---	---	---	---	---	---	---	---
22	12.0	10.9	11.5	---	---	---	---	---	---	---	---	---
23	11.2	10.4	10.7	---	---	---	---	---	---	---	---	---
24	10.5	9.9	10.2	---	---	---	---	---	---	---	---	---
25	10.2	9.7	10.0	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.6	7.9	---	---	---	---	---	---	---	---	---
2	8.2	7.7	8.0	---	---	---	---	---	---	---	---	---
3	8.0	6.4	7.7	---	---	---	---	---	---	---	---	---
4	6.4	5.6	6.0	---	---	---	---	---	---	---	---	---
5	6.6	5.0	5.9	---	---	---	---	---	---	---	---	---
6	6.5	5.7	6.1	---	---	---	---	---	---	---	---	---
7	6.3	5.6	6.0	---	---	---	---	---	---	---	---	---
8	6.8	6.0	6.4	---	---	---	---	---	---	---	---	---
9	7.6	6.5	7.1	---	---	---	---	---	---	---	---	---
10	7.7	7.3	7.5	---	---	---	---	---	---	---	---	---
11	7.7	7.3	7.5	---	---	---	---	---	---	---	---	---
12	7.7	7.1	7.5	---	---	---	---	---	---	---	---	---
13	7.4	6.9	7.1	---	---	---	---	---	---	---	---	---
14	7.2	6.7	7.0	---	---	---	---	---	---	---	---	---
15	7.5	6.4	7.1	---	---	---	---	---	---	---	---	---
16	7.8	7.0	7.3	---	---	---	---	---	---	---	---	---
17	7.7	7.0	7.2	---	---	---	---	---	---	---	---	---
18	7.8	6.8	7.3	---	---	---	---	---	---	---	---	---
19	8.1	7.3	7.7	---	---	---	---	---	---	---	---	---
20	8.0	6.9	7.6	---	---	---	---	---	---	---	---	---
21	8.0	7.2	7.7	---	---	---	---	---	---	---	---	---
22	8.5	7.8	8.2	---	---	---	---	---	---	---	---	---
23	8.4	7.7	8.1	---	---	---	---	---	---	---	---	---
24	9.0	8.4	8.7	---	---	---	---	---	---	---	---	---
25	9.0	8.3	8.7	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166000 RIVER ROUGE AT BIRMINGHAM, MI

LOCATION.--Lat 42°32'45", long 83°13'25", in NW1/4 sec.36, T.2 N., R.10 E., Oakland County, Hydrologic Unit 04090004, on left bank 25 ft downstream from mouth of Quarton Lake outlet, and 100 ft upstream from bridge on Maple Road in Birmingham.

DRAINAGE AREA.--33.3 mi^2. Prior to water year 1971, drainage area was 36.9 mi^2. An area of 3.6 mi^2 noncontributing since then.

PERIOD OF RECORD.--June 1950 to current year.

REVISED RECORDS.--WSP 1387: 1951-52(M). WSP 1557: Drainage area.

GAGE.--Water-stage recorder. Concrete control since July 27, 1962. Datum of gage is 715.94 ft above sea level.

REMARKS.--Records good. Occasional regulation by Quarton Lake upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	13	95	60	21	32	32	21	11	27	9.4	7.0
2	9.2	25	44	71	20	29	41	19	11	14	8.7	5.9
3	9.9	21	26	69	20	26	34	18	9.7	11	7.7	5.1
4	7.7	33	22	72	21	27	27	17	9.9	10	7.7	4.9
5	7.2	31	20	46	22	27	26	17	10	21	7.0	4.8
6	6.8	17	20	39	22	39	25	16	17	15	6.3	4.5
7	7.4	13	167	32	35	100	25	17	12	11	6.0	4.3
8	7.2	17	112	31	76	87	23	16	9.5	24	5.4	5.5
9	9.8	14	42	30	46	44	22	15	10	25	5.2	6.3
10	8.7	15	63	30	32	34	21	14	15	13	5.3	5.0
11	7.6	14	79	32	27	33	20	14	9.7	9.8	5.2	4.5
12	11	13	48	113	27	33	17	13	9.3	8.8	8.3	4.2
13	8.5	13	54	311	27	30	16	22	18	8.0	9.0	4.0
14	9.6	12	35	165	163	27	15	43	19	8.0	12	3.9
15	14	12	28	66	174	26	15	24	14	7.2	10	4.0
16	19	13	26	46	240	26	14	18	12	67	7.4	25
17	21	15	25	35	82	30	14	16	12	41	6.2	17
18	17	14	24	30	51	32	14	15	10	17	5.8	9.6
19	12	14	21	32	41	31	14	15	9.4	14	5.6	7.8
20	10	19	19	29	38	51	17	20	8.9	12	7.6	8.9
21	9.8	16	20	27	39	43	17	16	10	11	8.6	9.8
22	9.0	15	20	26	36	47	16	16	15	9.1	6.3	28
23	9.9	14	20	26	35	50	20	22	9.7	7.6	6.8	87
24	16	20	19	27	31	40	39	20	8.1	56	3.9	20
25	14	38	18	27	30	44	55	16	7.5	32	5.0	24
26	10	24	18	26	31	42	56	14	19	43	5.0	59
27	7.4	27	17	23	28	39	62	13	12	42	32	24
28	7.9	48	17	23	28	39	33	13	9.1	20	27	15
29	33	29	18	23	---	41	26	12	31	14	11	39
30	30	23	19	23	---	38	23	11	38	12	9.7	19
31	18	---	93	22	---	37	---	11	---	11	7.6	---
TOTAL	375.1	592	1249	1612	1443	1224	779	534	396.8	621.5	268.7	467.0
MEAN	12.1	19.7	40.3	52.0	51.5	39.5	26.0	17.2	13.2	20.0	8.67	15.6
MAX	33	48	167	311	240	100	62	43	38	67	32	87
MIN	6.5	12	17	22	20	26	14	11	7.5	7.2	3.9	3.9
CFSM	0.36	0.59	1.21	1.56	1.55	1.19	0.78	0.52	0.40	0.60	0.26	0.47
IN.	0.42	0.66	1.40	1.80	1.61	1.37	0.87	0.60	0.44	0.69	0.30	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2005, BY WATER YEAR (WY)

MEAN	13.1	17.0	20.6	20.3	26.1	38.7	35.7	27.4	20.7	13.7	11.3	11.9
MAX	61.4	47.7	51.5	56.0	76.6	82.5	63.6	98.1	84.0	48.2	39.6	47.1
(WY)	2002	1993	1988	1993	2001	1982	1974	1956	1989	1968	2000	2000
MIN	1.48	2.11	1.88	2.18	2.21	7.59	10.4	5.82	4.33	1.42	1.58	1.42
(WY)	1965	1965	1964	1963	1963	1964	1963	1958	1966	1966	1954	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1950 - 2005	
ANNUAL TOTAL	10038.8		9562.1			
ANNUAL MEAN	27.4		26.2		(a)21.4	
HIGHEST ANNUAL MEAN					35.6	1968
LOWEST ANNUAL MEAN					4.55	1964
HIGHEST DAILY MEAN	375	May 23	311	Jan 13	902	Jun 26 1968
LOWEST DAILY MEAN	5.1	Sep 27	3.9	Aug 24	0.20	Jul 31 1964
ANNUAL SEVEN-DAY MINIMUM	5.9	Sep 23	4.6	Sep 9	0.34	Jul 27 1964
MAXIMUM PEAK FLOW			419	Feb 16	1390	Jun 26 1968
MAXIMUM PEAK STAGE			4.40	Feb 16	8.70	Jun 26 1968
INSTANTANEOUS LOW FLOW			2.4	Aug 24	0.10	(b)
ANNUAL RUNOFF (CFSM)	0.824		0.787		0.643	
ANNUAL RUNOFF (INCHES)	11.21		10.68		8.73	
10 PERCENT EXCEEDS	51		46		43	
50 PERCENT EXCEEDS	19		19		13	
90 PERCENT EXCEEDS	9.8		7.4		3.5	

(a) Annual mean, water years 1951-70, 15.3 ft^3/s, 5.63 in/yr; water years 1971-05, 24.9 ft^3/s, 10.15 in/yr.
(b) Aug. 8, 9, 1963.

STREAMS TRIBUTARY TO DETROIT RIVER

04166040 FRANKLIN BRANCH AT SOUTHFIELD, MI

LOCATION.--Lat 42°30'05", long 83°16'44", in SW1/4 SW1/4 sec.9, T.1 N., R.10 E., Oakland County, Hydrologic Unit 04090004, on right bank 5 ft upstream from bridge on 12 Mile Road in Southfield.

DRAINAGE AREA.--17.0 mi^2.

PERIOD OF RECORD.--February 2004 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 650 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	6.6	75	39	e16	23	20	14	6.3	10	3.5	3.1
2	6.9	23	33	55	e16	21	26	13	5.4	6.5	3.1	3.1
3	3.8	11	23	45	e16	e20	22	13	5.1	5.7	2.8	2.6
4	3.4	31	18	48	e16	e19	19	12	5.0	6.1	2.7	2.6
5	3.3	19	15	32	16	20	18	11	9.1	11	2.5	2.9
6	3.2	11	15	28	16	29	17	10	14	7.0	2.4	2.6
7	3.1	8.0	101	24	27	61	17	12	9.4	6.6	2.3	3.6
8	3.6	6.6	57	22	45	e48	16	10	9.1	6.3	2.5	3.4
9	6.1	5.8	28	20	32	e29	15	9.5	12	5.5	2.2	2.6
10	3.4	5.4	49	20	24	e25	14	9.2	7.8	5.1	2.3	2.4
11	3.2	e5.2	45	22	20	24	14	9.3	6.9	4.3	2.4	2.3
12	3.3	e4.8	34	88	20	23	13	8.9	7.4	4.4	3.1	2.3
13	3.4	4.7	41	198	19	21	12	16	16	11	2.6	2.3
14	3.8	e4.4	e23	105	100	19	11	24	11	3.8	5.9	2.4
15	11	e4.2	22	e51	109	18	10	16	9.4	3.2	2.9	2.4
16	10	e5.4	21	e38	130	18	9.9	12	9.7	57	2.4	17
17	9.9	13	19	e27	59	20	9.9	11	8.6	27	2.3	6.0
18	4.6	11	17	e22	44	21	9.6	9.7	7.4	14	2.2	3.7
19	4.1	13	16	e23	35	22	9.3	9.9	6.8	9.9	2.1	4.7
20	3.6	19	e15	e22	31	32	12	11	6.5	7.3	10	3.1
21	3.5	12	e14	e21	31	28	11	9.0	6.5	7.2	4.5	2.7
22	3.4	11	e13	e20	30	33	9.9	12	6.2	5.1	2.6	22
23	5.8	9.3	e12	e20	27	32	14	19	5.8	4.2	2.4	17
24	10	24	e12	e21	25	27	27	14	5.5	25	4.1	5.4
25	5.4	35	e11	e22	24	29	37	11	5.2	11	2.2	11
26	4.4	19	e10	e22	23	27	38	9.5	9.6	15	2.2	20
27	5.1	31	e10	e21	22	25	37	8.7	5.5	16	20	7.1
28	3.8	44	e11	e19	21	25	24	8.2	12	7.3	7.1	5.4
29	25	21	e12	e18	---	25	18	7.6	17	5.9	4.1	19
30	18	22	e13	e17	---	23	16	7.1	15	5.2	4.3	7.2
31	13	---	72	e17	---	22	---	6.7	---	4.0	3.6	---
TOTAL	194.1	440.4	857	1147	994	809	526.6	354.3	261.2	317.6	119.3	191.9
MEAN	6.26	14.7	27.6	37.0	35.5	26.1	17.6	11.4	8.71	10.2	3.85	6.40
MAX	25	44	101	198	130	61	38	24	17	57	20	22
MIN	3.0	4.2	10	17	16	18	9.3	6.7	5.0	3.2	2.1	2.3
CFSM	0.37	0.86	1.63	2.18	2.09	1.54	1.03	0.67	0.51	0.60	0.23	0.38
IN.	0.42	0.96	1.88	2.51	2.18	1.77	1.15	0.78	0.57	0.69	0.26	0.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2004 - 2005, BY WATER YEAR (WY)

MEAN	6.26	14.7	27.6	37.0	23.1	26.7	14.2	24.9	15.2	10.1	6.69	5.83
MAX	6.26	14.7	27.6	37.0	35.5	27.3	17.6	38.4	21.7	10.2	9.53	6.40
(WY)	2005	2005	2005	2005	2005	2004	2005	2004	2004	2005	2004	2005
MIN	6.26	14.7	27.6	37.0	11.1	26.1	10.9	11.4	8.71	9.91	3.85	5.27
(WY)	2005	2005	2005	2005	2004	2005	2004	2005	2005	2004	2005	2004

SUMMARY STATISTICS	FOR 2005 WATER YEAR		WATER YEARS 2004 - 2005	
ANNUAL TOTAL	6212.4			
ANNUAL MEAN	17.0		17.0	
HIGHEST ANNUAL MEAN			17.0	2005
LOWEST ANNUAL MEAN			17.0	2005
HIGHEST DAILY MEAN	198	Jan 13	198	Jan 13 2005
LOWEST DAILY MEAN	2.1	Aug 19	2.1	Aug 19 2005
ANNUAL SEVEN-DAY MINIMUM	2.4	Aug 5	2.4	Aug 5 2005
MAXIMUM PEAK FLOW	254	Feb 16	262	May 23 2004
MAXIMUM PEAK STAGE	9.10	Feb 16	9.17	May 23 2004
ANNUAL RUNOFF (CFSM)	1.00		1.00	
ANNUAL RUNOFF (INCHES)	13.59		13.60	
10 PERCENT EXCEEDS	32		32	
50 PERCENT EXCEEDS	12		12	
90 PERCENT EXCEEDS	3.1		3.1	

(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166100 RIVER ROUGE AT SOUTHFIELD, MI

LOCATION.--Lat 42°26'52", long 83°17'52", in SW1/4 sec.32, T.1 N., R.10 E., Oakland County, Hydrologic Unit 04090004, on right bank at downstream side of bridge on Beech Road in Southfield.

DRAINAGE AREA.--87.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 609.62 ft above sea level (City of Southfield bench mark). Prior to Sept. 30, 1958, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	38	263	190	e57	e84	90	67	27	70	19	15
2	31	114	169	206	e57	e80	112	60	26	33	17	13
3	29	90	106	202	e58	e76	102	55	24	24	16	11
4	23	126	80	209	e60	e73	84	52	24	21	16	11
5	19	144	64	148	e62	e80	77	49	27	57	15	11
6	18	83	58	120	e73	114	76	47	67	36	14	11
7	18	40	338	101	113	249	73	51	32	26	13	10
8	18	32	431	88	253	267	69	45	37	51	12	17
9	35	36	131	86	172	132	63	42	42	54	12	13
10	28	30	152	88	112	111	60	40	43	27	12	12
11	23	31	213	104	95	101	59	38	27	20	13	10
12	21	31	137	274	94	102	53	38	26	18	13	9.9
13	27	27	171	760	96	92	48	52	52	39	17	9.9
14	26	29	108	612	380	84	43	138	52	31	32	11
15	52	26	79	194	452	82	42	83	48	17	21	10
16	75	30	69	e137	766	82	41	55	37	135	15	85
17	70	50	62	e102	242	92	40	45	37	154	13	53
18	45	51	e58	e88	e144	102	40	41	27	60	12	26
19	36	46	e54	e86	e114	95	39	40	24	42	11	18
20	30	107	e51	e83	e103	151	50	54	23	28	29	18
21	29	51	e50	e81	e102	126	49	42	23	36	35	14
22	26	35	e52	e77	e100	136	42	50	27	23	15	65
23	27	33	e52	e73	e97	152	63	85	24	19	13	187
24	67	79	e51	e70	e88	116	118	70	19	123	14	54
25	38	172	e49	e67	e83	126	174	48	18	85	10	50
26	32	115	e47	e66	e78	121	154	40	39	81	11	138
27	28	120	e46	e62	e75	111	193	36	28	125	67	68
28	24	173	e45	e62	e75	109	115	36	22	50	68	35
29	129	123	e47	e63	---	111	86	32	81	31	25	106
30	145	97	e50	e60	---	104	74	30	71	27	20	55
31	75	---	223	e57	---	101	---	28	---	22	18	---
TOTAL	1261	2159	3506	4616	4201	3562	2329	1589	1054	1565	618	1146.8
MEAN	40.7	72.0	113	149	150	115	77.6	51.3	35.1	50.5	19.9	38.2
MAX	145	173	431	760	766	267	193	138	81	154	68	187
MIN	17	26	45	57	57	73	39	28	18	17	10	9.9
CFSM	0.46	0.82	1.29	1.69	1.71	1.31	0.88	0.58	0.40	0.57	0.23	0.43
IN.	0.53	0.91	1.48	1.95	1.78	1.51	0.99	0.67	0.45	0.66	0.26	0.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2005, BY WATER YEAR (WY)

MEAN	45.9	58.7	68.8	65.8	85.8	128	116	82.8	67.6	41.9	38.6	40.9
MAX	211	164	178	203	254	327	225	191	241	118	142	147
(WY)	2002	1993	1988	1993	1976	1982	1977	1983	1989	1968	1995	1986
MIN	4.08	7.24	6.92	8.95	9.14	38.9	38.5	19.6	13.7	5.52	3.77	3.37
(WY)	1964	1964	1964	1961	1963	1964	1963	1958	1971	1964	1963	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1958 - 2005	
ANNUAL TOTAL	28159		27606.8			
ANNUAL MEAN	76.9		75.6		70.4	
HIGHEST ANNUAL MEAN					105	1993
LOWEST ANNUAL MEAN					20.4	1964
HIGHEST DAILY MEAN	662	May 22	766	Feb 16	3210	Jun 26 1968
LOWEST DAILY MEAN	14	Sep 28	9.9	Sep 12	0.30	Jul 31 1964
ANNUAL SEVEN-DAY MINIMUM	15	Sep 24	11	Sep 9	0.66	Jul 26 1964
MAXIMUM PEAK FLOW			965	Feb 16	4900	Jun 26 1968
MAXIMUM PEAK STAGE			11.65	Feb 16	19.04	Jun 26 1968
INSTANTANEOUS LOW FLOW			9.5	(a)	0.10	Aug 2 1964
ANNUAL RUNOFF (CFSM)	0.875		0.860		0.800	
ANNUAL RUNOFF (INCHES)	11.92		11.68		10.87	
10 PERCENT EXCEEDS	157		144		138	
50 PERCENT EXCEEDS	46		52		40	
90 PERCENT EXCEEDS	26		17		12	

(a) Aug. 25, Sept. 12, 13.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166100 RIVER ROUGE AT SOUTHFIELD, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 2001 to April 2004.
WATER TEMPERATURE: April 1999 to current year.
DISSOLVED OXYGEN: April 1999 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 10, 11, 25, 26, Apr. 30, May 30, 31, June 1, June 29 to July 1, rated good; Oct. 12, 13, 27, 28, May 1, 2, rated fair; Apr. 21, 22, May 3-5, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded during period of operation, 8,870 microsiemens, Feb. 4, 2004; minimum recorded, 398 microsiemens, Sept. 15, 2002.
WATER TEMPERATURE: Maximum recorded during period of operation, 26.5°C, July 4, 2002; minimum recorded, -0.5°C, on many days during the 2003 winter period.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 15.4 mg/L, Mar. 26, 27, 2005; minimum recorded, 4.3 mg/L, June 8, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 26.0°C, July 25; minimum recorded, 2.6°C, Mar. 24.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 15.4 mg/L, Mar. 26, 27; minimum recorded, 4.3 mg/L, June 8.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.0	11.8	13.0	11.8	10.1	10.6	---	---	---	---	---	---
2	14.5	13.1	13.9	---	---	---	---	---	---	---	---	---
3	13.1	10.9	11.9	---	---	---	---	---	---	---	---	---
4	12.1	10.6	11.5	---	---	---	---	---	---	---	---	---
5	10.7	9.2	9.9	---	---	---	---	---	---	---	---	---
6	10.8	8.3	9.6	---	---	---	---	---	---	---	---	---
7	12.2	9.8	10.9	---	---	---	---	---	---	---	---	---
8	14.1	10.5	12.0	---	---	---	---	---	---	---	---	---
9	15.1	13.7	14.2	---	---	---	---	---	---	---	---	---
10	13.7	11.9	12.8	---	---	---	---	---	---	---	---	---
11	12.2	10.8	11.5	---	---	---	---	---	---	---	---	---
12	11.6	10.0	10.8	---	---	---	---	---	---	---	---	---
13	11.8	10.2	11.0	---	---	---	---	---	---	---	---	---
14	12.7	11.6	12.0	---	---	---	---	---	---	---	---	---
15	12.5	11.7	12.0	---	---	---	---	---	---	---	---	---
16	12.0	10.0	11.0	---	---	---	---	---	---	---	---	---
17	10.0	9.0	9.3	---	---	---	---	---	---	---	---	---
18	9.0	8.1	8.5	---	---	---	---	---	---	---	---	---
19	9.0	8.5	8.8	---	---	---	---	---	---	---	---	---
20	10.3	9.0	9.7	---	---	---	---	---	---	---	---	---
21	10.8	10.2	10.5	---	---	---	---	---	---	---	---	---
22	11.5	10.5	10.9	---	---	---	---	---	---	---	---	---
23	12.3	10.5	11.1	---	---	---	---	---	---	---	---	---
24	12.2	11.6	12.0	---	---	---	---	---	---	---	---	---
25	12.8	11.6	12.1	---	---	---	---	---	---	---	---	---
26	12.3	11.1	11.7	---	---	---	---	---	---	---	---	---
27	13.3	11.9	12.5	---	---	---	---	---	---	---	---	---
28	12.9	11.7	12.3	---	---	---	---	---	---	---	---	---
29	13.3	12.2	12.7	---	---	---	---	---	---	---	---	---
30	15.1	13.3	14.1	---	---	---	---	---	---	---	---	---
31	14.1	11.8	12.9	---	---	---	---	---	---	---	---	---
MONTH	15.1	8.1	11.5	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166100 RIVER ROUGE AT SOUTHFIELD, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.2	7.7	8.5	10.8	8.7	9.9
2	---	---	---	---	---	---	8.5	6.3	7.2	10.4	8.7	9.6
3	---	---	---	---	---	---	8.0	5.2	6.6	9.3	7.7	8.2
4	---	---	---	---	---	---	9.8	6.3	8.1	10.8	6.4	8.6
5	---	---	---	---	---	---	12.0	8.1	10.1	13.0	8.6	10.8
6	---	---	---	---	---	---	14.0	10.8	12.5	14.1	9.9	12.1
7	---	---	---	---	---	---	13.6	11.1	12.8	16.7	12.2	14.5
8	---	---	---	---	---	---	12.6	9.1	10.9	17.4	13.7	15.6
9	---	---	---	---	---	---	13.2	9.5	11.5	18.0	14.4	16.3
10	---	---	---	---	---	---	14.2	10.3	12.3	19.5	16.3	17.9
11	---	---	---	---	---	---	14.4	11.5	12.9	18.5	15.3	17.0
12	---	---	---	---	---	---	12.6	10.0	11.3	15.5	12.9	14.2
13	---	---	---	---	---	---	12.4	8.7	10.6	13.7	12.2	12.7
14	---	---	---	---	---	---	13.2	9.1	11.1	14.9	12.8	13.7
15	---	---	---	---	---	---	13.3	9.5	11.5	14.4	12.5	13.3
16	---	---	---	---	---	---	14.0	9.8	12.0	13.1	11.3	12.3
17	---	---	---	---	---	---	14.1	11.4	12.7	14.4	11.7	13.0
18	---	---	---	---	---	---	16.1	12.0	14.1	15.2	12.1	13.7
19	---	---	---	---	---	---	17.8	13.7	15.8	14.6	13.2	13.7
20	---	---	---	---	---	---	17.0	14.8	16.1	16.2	12.4	14.2
21	---	---	---	---	---	---	15.0	12.0	13.6	17.3	13.6	15.5
22	---	---	---	---	---	---	13.3	10.5	11.5	16.3	14.7	15.2
23	---	---	---	---	---	---	10.5	7.2	8.9	14.8	13.5	14.1
24	---	---	---	5.1	2.6	4.0	7.2	5.1	5.8	13.6	12.8	13.2
25	---	---	---	5.9	4.3	5.1	9.8	4.9	7.0	16.1	12.2	14.2
26	---	---	---	5.3	3.5	4.5	9.8	9.0	9.2	16.8	14.0	15.6
27	---	---	---	5.3	4.0	4.7	9.7	8.4	9.1	17.2	14.6	16.0
28	---	---	---	7.9	4.5	6.1	---	---	---	16.7	14.7	15.8
29	---	---	---	8.6	6.0	7.4	---	---	---	16.5	14.4	15.6
30	---	---	---	10.2	7.5	8.8	11.2	10.2	10.7	17.4	15.1	16.2
31	---	---	---	10.0	9.2	9.6	---	---	---	18.6	15.3	16.9
MONTH	---	---	---	---	---	---	---	---	---	19.5	6.4	13.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.4	16.0	17.7	23.5	21.5	22.4	24.0	20.7	22.2	21.8	19.5	20.6
2	20.1	16.9	18.1	21.8	19.3	20.6	25.2	21.7	23.4	21.0	18.8	19.9
3	---	---	---	21.6	18.7	20.1	25.5	22.7	24.0	20.2	18.0	19.1
4	---	---	---	23.4	19.7	21.4	24.3	23.1	23.7	19.8	17.3	18.6
5	---	---	---	22.6	21.0	21.8	24.9	22.3	23.5	19.9	17.0	18.5
6	---	---	---	21.9	20.1	20.9	24.0	21.1	22.6	20.1	17.1	18.8
7	23.6	20.0	22.0	21.7	18.6	20.1	23.7	21.0	22.4	20.6	17.8	19.2
8	24.4	21.3	23.2	20.9	19.1	20.1	23.9	21.1	22.6	20.7	19.1	19.9
9	23.6	21.4	22.8	22.2	19.2	20.7	24.7	21.9	23.3	20.5	18.6	19.5
10	25.1	21.9	23.3	23.5	20.0	21.8	24.8	22.8	23.8	20.2	17.5	18.9
11	24.1	23.0	23.6	24.3	20.9	22.5	24.2	22.6	23.3	20.3	17.4	18.9
12	23.9	22.3	23.0	24.3	21.7	22.9	23.7	21.7	22.7	20.8	17.8	19.3
13	22.8	21.7	22.2	25.6	22.2	23.6	23.3	22.4	22.9	21.3	18.5	19.9
14	23.4	20.5	22.0	25.0	23.2	23.9	22.6	21.4	21.8	21.1	20.1	20.6
15	22.6	20.4	21.4	24.8	22.4	23.6	22.2	20.2	21.2	20.6	19.1	19.8
16	20.5	18.1	19.3	24.0	22.6	23.3	22.5	19.9	21.2	19.1	16.8	17.3
17	18.1	16.5	17.2	24.9	23.1	24.1	22.8	20.0	21.3	18.0	16.9	17.5
18	17.3	16.5	16.9	25.4	23.6	24.4	22.7	20.2	21.5	18.7	16.8	17.8
19	18.5	15.7	17.1	25.0	23.0	24.0	24.2	21.4	22.7	18.6	17.2	17.9
20	19.9	16.2	17.9	24.5	21.7	23.2	23.1	21.2	22.2	19.5	17.9	18.6
21	20.0	17.6	18.7	24.8	22.7	23.7	23.3	21.4	22.4	19.1	16.8	18.0
22	21.3	17.9	19.5	25.5	23.5	24.4	21.4	19.0	19.8	20.1	17.1	18.0
23	20.8	17.3	19.1	24.9	22.2	23.5	19.4	18.3	18.8	19.7	18.0	18.9
24	22.7	18.6	20.6	23.6	21.7	22.9	19.9	16.9	18.4	18.0	16.9	17.4
25	24.8	21.0	22.8	26.0	23.6	25.0	19.8	17.5	18.7	19.6	17.3	18.1
26	23.6	21.2	22.7	25.2	23.9	24.4	21.4	18.5	19.9	19.5	18.7	19.3
27	25.2	22.0	23.7	23.9	21.7	22.5	22.1	19.7	20.8	18.7	16.7	17.4
28	24.6	22.4	23.7	22.0	20.1	21.1	21.9	20.2	21.0	17.1	15.0	16.1
29	23.5	21.8	22.8	21.8	19.6	20.8	22.4	20.2	21.3	17.0	14.4	15.7
30	23.4	21.9	22.7	22.4	19.9	21.1	21.7	20.9	21.3	14.4	12.9	13.6
31	---	---	---	22.5	19.5	21.0	21.9	20.5	21.1	---	---	---
MONTH	---	---	---	26.0	18.6	22.4	25.5	16.9	21.8	21.8	12.9	18.4

STREAMS TRIBUTARY TO DETROIT RIVER

04166100 RIVER ROUGE AT SOUTHFIELD, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.6	9.3	10.5	9.8	8.5	9.2	---	---	---	---	---	---
2	9.6	8.2	8.9	---	---	---	---	---	---	---	---	---
3	11.1	8.3	9.6	---	---	---	---	---	---	---	---	---
4	11.5	9.2	10.1	---	---	---	---	---	---	---	---	---
5	12.5	9.9	11.0	---	---	---	---	---	---	---	---	---
6	13.1	10.5	11.4	---	---	---	---	---	---	---	---	---
7	13.1	10.1	11.2	---	---	---	---	---	---	---	---	---
8	13.4	9.4	10.9	---	---	---	---	---	---	---	---	---
9	9.4	8.0	8.6	---	---	---	---	---	---	---	---	---
10	11.1	8.5	9.6	---	---	---	---	---	---	---	---	---
11	11.9	9.3	10.4	---	---	---	---	---	---	---	---	---
12	12.9	10.0	11.1	---	---	---	---	---	---	---	---	---
13	12.4	9.5	10.8	---	---	---	---	---	---	---	---	---
14	10.4	8.8	9.4	---	---	---	---	---	---	---	---	---
15	9.5	8.4	8.9	---	---	---	---	---	---	---	---	---
16	9.2	8.3	8.9	---	---	---	---	---	---	---	---	---
17	10.2	9.2	9.7	---	---	---	---	---	---	---	---	---
18	10.9	9.9	10.3	---	---	---	---	---	---	---	---	---
19	10.7	9.9	10.2	---	---	---	---	---	---	---	---	---
20	10.9	9.6	10.1	---	---	---	---	---	---	---	---	---
21	10.3	9.3	9.7	---	---	---	---	---	---	---	---	---
22	10.7	9.2	9.7	---	---	---	---	---	---	---	---	---
23	9.9	8.8	9.3	---	---	---	---	---	---	---	---	---
24	8.8	8.0	8.4	---	---	---	---	---	---	---	---	---
25	10.1	8.4	9.1	---	---	---	---	---	---	---	---	---
26	11.1	8.9	9.8	---	---	---	---	---	---	---	---	---
27	11.0	9.0	9.8	---	---	---	---	---	---	---	---	---
28	10.3	8.8	9.5	---	---	---	---	---	---	---	---	---
29	8.9	7.7	8.2	---	---	---	---	---	---	---	---	---
30	7.8	7.4	7.6	---	---	---	---	---	---	---	---	---
31	8.5	7.5	8.0	---	---	---	---	---	---	---	---	---
MONTH	13.4	7.4	9.7	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.6	10.2	11.8	14.3	10.4	12.1
2	---	---	---	---	---	---	12.2	10.5	11.3	14.0	10.4	12.0
3	---	---	---	---	---	---	14.5	11.3	12.6	14.1	10.5	12.1
4	---	---	---	---	---	---	14.4	11.1	12.5	15.0	11.0	12.6
5	---	---	---	---	---	---	14.1	10.4	11.9	13.8	9.7	11.5
6	---	---	---	---	---	---	13.0	9.5	10.9	13.1	9.2	10.9
7	---	---	---	---	---	---	10.6	8.7	9.6	11.9	8.5	10.0
8	---	---	---	---	---	---	13.3	9.7	11.1	12.1	7.9	9.7
9	---	---	---	---	---	---	12.9	9.6	10.9	11.6	7.9	9.5
10	---	---	---	---	---	---	12.7	9.3	10.7	10.3	7.3	8.6
11	---	---	---	---	---	---	12.5	9.0	10.5	9.3	7.2	8.1
12	---	---	---	---	---	---	12.7	9.4	10.8	11.5	7.8	9.5
13	---	---	---	---	---	---	12.9	9.8	11.1	10.9	8.5	9.5
14	---	---	---	---	---	---	12.5	9.7	10.8	8.7	8.0	8.4
15	---	---	---	---	---	---	12.6	9.3	10.7	9.7	8.1	9.0
16	---	---	---	---	---	---	12.6	9.3	10.7	10.9	9.2	10.0
17	---	---	---	---	---	---	12.0	8.8	10.1	11.1	9.2	9.9
18	---	---	---	---	---	---	12.5	8.6	10.2	11.1	8.9	9.8
19	---	---	---	---	---	---	11.9	8.0	9.7	9.7	8.6	9.0
20	---	---	---	---	---	---	---	---	---	9.9	8.2	8.9
21	---	---	---	---	---	---	---	---	---	10.0	7.9	8.7
22	---	---	---	---	---	---	11.9	9.5	11.0	8.6	7.6	8.1
23	---	---	---	---	---	---	12.3	9.1	10.6	8.6	7.5	8.1
24	---	---	---	14.9	12.7	13.8	12.3	10.6	11.4	9.1	8.5	8.8
25	---	---	---	14.9	11.9	13.3	12.2	10.5	11.7	9.8	8.2	9.0
26	---	---	---	15.4	12.1	13.6	11.1	9.8	10.4	9.4	8.0	8.6
27	---	---	---	15.4	12.1	13.6	11.1	10.1	10.5	9.2	7.9	8.4
28	---	---	---	15.1	11.9	13.3	---	---	---	8.8	7.9	8.2
29	---	---	---	15.0	11.0	12.7	---	---	---	9.4	7.9	8.6
30	---	---	---	14.3	10.7	12.2	13.0	10.1	11.5	9.5	8.0	8.6
31	---	---	---	12.5	10.0	11.1	---	---	---	9.3	8.0	8.5
MONTH	---	---	---	---	---	---	---	---	---	15.0	7.2	9.5

STREAMS TRIBUTARY TO DETROIT RIVER

04166100 RIVER ROUGE AT SOUTHFIELD, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.4	7.8	8.3	7.0	6.7	6.8	8.1	7.1	7.5	8.8	7.4	7.9
2	9.2	7.5	8.2	7.7	6.8	7.3	8.4	7.0	7.5	9.2	7.6	8.2
3	---	---	---	8.0	7.4	7.7	8.8	6.9	7.6	9.6	7.9	8.5
4	---	---	---	8.0	7.1	7.6	8.5	6.8	7.5	10.0	8.1	8.8
5	---	---	---	7.5	6.6	6.9	9.4	6.8	7.8	10.1	8.1	8.8
6	---	---	---	7.8	6.8	7.3	9.8	6.9	8.0	10.4	8.0	8.8
7	6.9	5.2	6.2	8.3	7.5	7.8	10.2	6.9	8.2	10.7	7.8	8.8
8	7.0	4.3	6.3	8.3	6.7	7.5	10.5	6.9	8.2	8.1	6.5	7.6
9	5.8	4.5	5.3	7.9	6.8	7.5	10.9	6.7	8.2	8.8	6.5	7.5
10	6.2	4.7	5.5	8.2	7.3	7.6	10.2	6.3	7.8	9.5	7.4	8.2
11	6.0	5.1	5.6	8.2	7.2	7.6	10.1	6.3	7.8	9.9	7.5	8.4
12	6.3	5.3	5.9	8.4	7.0	7.5	10.0	6.5	7.8	10.2	7.6	8.4
13	6.1	5.6	5.9	8.5	5.3	7.2	8.9	6.6	7.5	10.4	7.3	8.4
14	6.5	6.1	6.3	6.7	5.4	5.9	7.2	6.6	6.9	8.8	7.1	7.8
15	6.6	6.0	6.4	7.8	6.0	6.9	8.9	6.9	7.7	10.2	7.2	8.4
16	7.2	6.6	7.0	7.3	5.0	6.2	9.5	7.2	8.1	8.9	7.7	8.2
17	7.8	7.1	7.5	6.6	6.0	6.4	9.7	7.2	8.2	8.3	8.0	8.1
18	8.1	7.6	7.8	7.0	6.5	6.7	10.3	7.2	8.4	8.8	8.1	8.4
19	8.6	7.8	8.1	7.2	6.2	6.8	10.1	7.0	8.1	9.0	8.1	8.4
20	8.7	7.7	8.1	7.4	6.7	7.0	9.1	6.4	7.4	8.7	8.0	8.3
21	8.2	6.5	7.7	7.0	6.3	6.7	7.7	6.3	7.0	8.8	7.9	8.3
22	8.2	6.5	7.5	7.3	6.4	6.7	8.5	6.8	7.6	8.6	7.0	7.9
23	8.5	7.3	7.8	7.8	6.5	7.1	9.3	7.6	8.3	7.8	7.0	7.4
24	8.3	6.9	7.5	7.3	6.3	6.7	9.9	7.9	8.6	8.5	7.8	8.2
25	8.0	6.6	7.1	6.9	6.1	6.5	10.6	7.9	9.0	8.3	7.4	8.0
26	7.0	5.7	6.3	6.6	6.0	6.3	10.7	7.8	8.8	7.8	7.4	7.6
27	7.0	5.9	6.4	7.2	6.5	6.9	7.9	6.1	7.3	8.6	7.8	8.2
28	7.2	6.1	6.6	7.5	7.0	7.3	8.0	7.2	7.6	8.7	8.0	8.3
29	6.8	5.8	6.3	7.9	7.2	7.5	8.4	7.3	7.7	8.7	8.0	8.3
30	7.1	5.8	6.4	8.0	7.3	7.6	8.1	7.2	7.6	9.4	8.7	9.1
31	---	---	---	8.2	7.4	7.7	8.5	7.4	7.8	---	---	---
MONTH	---	---	---	8.5	5.0	7.1	10.9	6.1	7.9	10.7	6.5	8.2

STREAMS TRIBUTARY TO DETROIT RIVER

04166200 EVANS DITCH AT SOUTHFIELD, MI

LOCATION.--Lat 42°27'28", long 83°16'03", in SE1/4 sec.28, T.1 N., R.10 E., Oakland County, Hydrologic Unit 04090004, on right bank 70 ft upstream from bridge on 9 Mile Road in Southfield, 1.6 mi upstream from mouth.

DRAINAGE AREA.--9.49 mi^2.

PERIOD OF RECORD.--September 1958 to current year.

REVISED RECORDS.--WSP 1912: 1963.

GAGE.--Water-stage recorder. Datum of gage is 615.07 ft above sea level (City of Southfield bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.6	45	8.9	e3.1	11	4.2	3.8	1.9	2.5	1.6	0.99
2	6.4	14	6.2	40	e3.0	6.0	11	3.6	1.9	1.9	1.5	0.95
3	1.3	2.2	3.9	18	e3.1	5.2	5.0	3.4	1.9	1.8	1.5	0.97
4	1.1	16	3.1	17	e3.2	5.3	4.0	3.3	1.8	1.9	1.3	0.92
5	1.1	4.0	2.7	9.9	e3.3	7.0	3.8	3.1	6.7	7.7	1.3	0.92
6	1.1	2.0	3.7	8.9	4.3	17	3.8	2.9	7.2	2.0	1.2	0.94
7	1.2	1.7	128	6.6	21	55	3.7	4.1	1.9	1.9	1.2	0.93
8	1.4	1.4	16	6.4	e29	19	3.4	2.7	23	14	1.1	2.6
9	4.6	1.4	7.7	6.3	e12	9.6	3.4	2.6	24	3.1	1.1	0.91
10	1.2	1.5	22	7.9	e7.9	7.3	3.2	2.6	5.8	1.9	1.2	0.83
11	1.1	1.4	17	11	e5.7	9.0	3.1	3.0	5.8	1.7	1.1	0.83
12	1.2	1.3	13	71	7.9	9.0	3.0	2.5	4.1	1.6	1.5	0.84
13	1.2	1.3	14	144	6.2	7.1	2.9	10	15	13	1.2	0.78
14	2.4	1.3	6.5	34	95	6.1	2.8	19	3.8	3.6	7.9	0.70
15	26	1.3	5.2	e11	63	5.5	2.7	3.7	5.5	1.9	1.2	0.78
16	5.7	1.4	4.7	e7.1	92	5.9	2.7	2.8	5.6	20	0.99	22
17	4.6	4.3	4.2	e5.6	19	7.3	2.6	2.4	4.9	26	1.0	3.1
18	1.7	2.2	4.1	5.4	11	7.5	2.5	2.2	2.6	4.5	1.0	1.9
19	1.5	3.4	3.8	e5.3	8.3	8.5	2.3	2.8	2.5	3.2	1.0	1.6
20	1.4	6.5	3.2	5.0	7.7	13	5.8	4.4	2.3	2.3	10	1.8
21	1.4	2.1	2.9	4.1	9.7	9.1	2.3	2.2	2.3	7.9	2.0	1.7
22	1.3	1.4	2.9	3.8	10	11	3.3	8.9	2.4	2.0	1.0	46
23	6.2	1.4	2.8	3.7	8.5	9.3	8.5	9.8	2.1	1.7	0.98	22
24	4.9	16	2.8	3.7	7.0	7.8	20	3.8	2.1	48	0.99	2.7
25	1.4	14	2.4	e3.6	7.4	8.3	17	2.9	2.0	4.5	0.96	13
26	1.4	3.3	2.5	e3.6	6.8	7.1	27	2.2	5.1	8.0	1.00	17
27	1.6	7.6	2.4	e3.5	5.6	6.2	15	2.2	1.9	19	13	3.1
28	2.0	13	2.4	e3.5	6.0	6.6	6.8	4.4	5.2	3.1	1.7	2.5
29	18	3.3	2.5	e3.4	---	6.1	5.1	2.1	8.5	2.3	1.1	20
30	8.9	4.1	3.9	e3.4	---	5.5	4.3	1.9	6.9	1.9	1.1	2.6
31	2.1	---	27	e3.2	---	5.0	---	1.8	---	1.7	1.8	---
TOTAL	116.6	136.4	368.5	468.8	466.7	303.3	185.2	127.1	166.7	216.6	65.52	175.89
MEAN	3.76	4.55	11.9	15.1	16.7	9.78	6.17	4.10	5.56	6.99	2.11	5.86
MAX	26	16	128	144	95	55	27	19	24	48	13	46
MIN	1.1	1.3	2.4	3.2	3.0	5.0	2.3	1.8	1.8	1.6	0.96	0.70
CFSM	0.40	0.48	1.25	1.59	1.76	1.03	0.65	0.43	0.59	0.74	0.22	0.62
IN.	0.46	0.53	1.44	1.84	1.83	1.19	0.73	0.50	0.65	0.85	0.26	0.69

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2005, BY WATER YEAR (WY)

MEAN	6.05	7.45	8.49	7.33	9.90	13.5	13.1	9.63	9.43	7.20	7.00	6.51
MAX	23.3	19.8	25.4	26.7	32.1	32.6	27.4	27.1	30.5	23.7	22.4	20.0
(WY)	1982	1993	1968	1974	1971	1974	1977	1968	1968	1992	1995	1986
MIN	0.44	1.13	0.71	0.49	0.79	3.71	3.27	2.35	1.68	0.73	1.35	0.58
(WY)	1964	1964	1964	1963	1963	2000	1971	1962	1959	1962	1960	1965

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1958 - 2005	
ANNUAL TOTAL	2652.56		2797.31			
ANNUAL MEAN	7.25		7.66		8.80	
HIGHEST ANNUAL MEAN					16.9	1968
LOWEST ANNUAL MEAN					3.12	1963
HIGHEST DAILY MEAN	128	Dec 7	144	Jan 13	442	Oct 1 1981
LOWEST DAILY MEAN	0.98	Sep 22	0.70	Sep 14	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 19	0.81	Sep 9	0.27	Dec 15 1963
MAXIMUM PEAK FLOW			496	Dec 7	(b)1200	Oct 1 1981
MAXIMUM PEAK STAGE			10.96	Dec 7	(c)15.03	Oct 1 1981
ANNUAL RUNOFF (CFSM)	0.764		0.808		0.927	
ANNUAL RUNOFF (INCHES)	10.40		10.97		12.60	
10 PERCENT EXCEEDS	15		17		18	
50 PERCENT EXCEEDS	3.4		3.5		3.4	
90 PERCENT EXCEEDS	1.4		1.2		1.2	

(a) June 13-15, 1986, result of regulation from unknown source.
(b) From rating curve extended above 500 ft^3/s.
(c) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166300 UPPER RIVER ROUGE AT FARMINGTON, MI

LOCATION.--Lat 42°27'52", long 83°22'11", in NW1/4 sec.27, T.1 N., R.9 E., Oakland County, Hydrologic Unit 04090004, on left bank 800 ft downstream from bridge on Shiawassee Road in Farmington.

DRAINAGE AREA.--17.5 mi^2.

PERIOD OF RECORD.--March 1958 to current year.

REVISED RECORDS.--WSP 1912: 1959(M), 1960(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 690.4 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	10	67	50	e12	e16	20	15	e7.7	e18	6.8	7.2
2	7.4	21	42	50	e12	15	23	13	e7.8	e9.9	5.8	e6.1
3	6.3	16	26	47	e12	16	20	12	e7.1	e7.8	5.0	e5.4
4	5.2	28	19	45	e12	16	16	11	e7.0	e7.3	5.0	e5.1
5	5.0	26	16	32	12	16	15	11	e7.5	e13	5.3	e4.8
6	5.4	17	15	e22	14	24	15	11	e11	e11	5.1	4.6
7	5.2	13	81	e20	36	59	14	12	e8.6	e8.1	5.4	4.7
8	5.3	11	72	e18	75	70	13	10	e7.1	e13	4.8	7.0
9	8.9	9.8	40	17	48	46	13	9.5	e7.6	e9.8	4.3	5.0
10	6.6	9.5	42	18	30	31	11	8.7	e9.5	6.5	4.8	e4.7
11	6.1	8.8	49	19	23	24	11	9.1	e7.0	5.3	4.4	e4.4
12	5.9	8.2	36	66	19	21	10	8.7	e6.9	5.0	5.6	e4.2
13	5.6	7.8	40	193	17	18	10	15	e12	4.8	5.7	e3.9
14	5.4	7.6	27	116	84	16	9.6	33	e13	4.6	9.3	3.7
15	11	7.6	e20	e57	100	15	9.1	19	e10	4.3	6.6	3.7
16	13	7.9	17	e30	150	15	9.0	13	e8.7	110	5.0	24
17	14	9.2	15	e22	66	18	9.0	11	e8.6	131	4.8	14
18	10	10	14	e20	45	19	9.2	10	e7.4	51	5.1	9.6
19	8.7	11	13	e20	36	19	9.5	10	e6.8	25	5.0	7.5
20	7.7	18	e12	e19	23	31	12	15	e6.4	14	7.9	6.8
21	7.2	12	e12	e18	23	27	12	9.3	e7.2	16	12	6.0
22	7.0	10	e12	e17	22	30	10	10	e10	11	8.0	25
23	8.7	9.5	e11	e16	20	32	15	15	e6.9	9.0	6.8	35
24	12	17	e11	e15	18	25	31	e14	e5.9	28	5.3	15
25	8.9	31	e10	e14	18	27	49	e11	e5.7	18	4.2	18
26	7.8	20	e10	e13	17	25	47	e9.8	e12	20	4.4	40
27	7.0	28	e10	e13	e16	24	47	e9.0	e8.5	34	24	24
28	6.8	43	e10	e13	16	23	29	e8.9	e6.9	15	26	15
29	23	26	e10	e13	---	24	21	e8.3	e19	10	12	35
30	24	20	e12	e12	---	21	17	e8.2	e25	8.8	10	18
31	14	---	e58	e11	---	20	---	e7.7	---	7.5	8.5	---
TOTAL	273.1	473.9	829	1036	976	783	536.4	368.2	274.8	636.7	232.9	367.4
MEAN	8.81	15.8	26.7	33.4	34.9	25.3	17.9	11.9	9.16	20.5	7.51	12.2
MAX	24	43	81	193	150	70	49	33	25	131	26	40
MIN	4.0	7.6	10	11	12	15	9.0	7.7	5.7	4.3	4.2	3.7
CFSM	0.50	0.90	1.53	1.91	1.99	1.44	1.02	0.68	0.52	1.17	0.43	0.70
IN.	0.58	1.01	1.76	2.20	2.07	1.66	1.14	0.78	0.58	1.35	0.50	0.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2005, BY WATER YEAR (WY)

MEAN	9.01	11.6	13.1	13.4	18.1	26.4	23.7	17.4	13.9	8.62	7.84	8.52
MAX	44.1	31.3	29.0	39.8	56.8	63.6	42.3	39.0	63.9	24.8	32.2	42.3
(WY)	2002	1993	1991	1974	2001	1982	1977	2004	1989	1992	1998	2000
MIN	1.10	1.69	1.70	2.06	2.20	6.81	9.10	3.46	2.13	1.00	0.97	1.00
(WY)	1965	1965	1964	1961	1963	1964	1971	1971	1971	1964	1963	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1958 - 2005	
ANNUAL TOTAL	6296.1		6787.4			
ANNUAL MEAN	17.2		18.6		14.3	
HIGHEST ANNUAL MEAN					22.6	1997
LOWEST ANNUAL MEAN					4.54	1964
HIGHEST DAILY MEAN	120	May 22	193	Jan 13	653	Jun 26 1968
LOWEST DAILY MEAN	4.0	Sep 30	3.7	Sep 14	0.32	Aug 10 1964
ANNUAL SEVEN-DAY MINIMUM	4.7	Sep 25	4.2	Sep 9	0.61	Sep 12 1964
MAXIMUM PEAK FLOW			263	Jul 16	1500	Jun 25 1968
MAXIMUM PEAK STAGE			4.75	Jul 16	8.70	Jun 25 1968
INSTANTANEOUS LOW FLOW			3.7	(a)	(b)0.07	Aug 30 1966
ANNUAL RUNOFF (CFSM)	0.983		1.06		0.820	
ANNUAL RUNOFF (INCHES)	13.38		14.43		11.14	
10 PERCENT EXCEEDS	39		36		30	
50 PERCENT EXCEEDS	11		12		8.1	
90 PERCENT EXCEEDS	5.9		5.4		2.4	

(a) Sept. 13, 14, 15, 16.
(b) Result of regulation.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166470 UPPER RIVER ROUGE AT DETROIT, MI

LOCATION.--Lat 42°23'39", long 83°16'42", in SW1/4 NE1/4 sec.20, T.1 S., R.8 E., Wayne County, Hydrologic Unit 04090004, on left bank 1,000 ft upstream from bridge on Telegraph Road in Detroit.

DRAINAGE AREA.--67.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 605 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	22	195	124	e27	e35	41	33	14	64	13	12
2	23	72	106	128	e27	e33	63	29	12	27	13	9.8
3	18	44	56	132	e27	e35	53	27	11	18	10	7.3
4	9.7	82	40	125	e27	e36	38	25	12	16	8.4	5.8
5	7.0	70	33	83	e28	e37	34	23	13	64	8.5	6.3
6	6.2	36	33	e60	e32	e52	33	22	47	29	8.1	6.0
7	6.9	26	277	e49	e78	190	31	23	21	24	7.6	6.0
8	5.7	20	398	e44	186	199	30	22	18	57	8.0	14
9	18	18	99	e40	110	83	28	20	41	35	6.5	12
10	13	17	100	e41	65	e64	26	18	14	16	6.8	6.1
11	9.1	16	131	e50	48	e55	24	20	20	12	6.9	5.6
12	7.8	15	90	e170	e45	e48	24	20	25	10	9.7	5.7
13	7.7	13	99	576	e40	e41	22	33	35	9.6	12	5.4
14	9.8	12	71	627	269	e35	21	97	33	17	29	5.5
15	33	14	50	e130	322	e33	20	51	26	11	16	5.0
16	48	13	43	e65	685	e32	19	30	30	74	9.6	98
17	37	24	39	e49	236	e39	19	24	25	204	8.3	48
18	26	28	36	e46	86	e42	19	21	18	85	8.6	27
19	17	23	e32	e45	e78	e48	19	22	14	52	8.0	16
20	14	64	e30	e42	e59	87	24	45	12	30	14	20
21	12	30	e28	e38	e52	73	23	24	42	83	20	12
22	11	20	e27	e37	e48	69	21	27	47	30	13	85
23	17	17	e26	e36	e44	81	41	39	17	19	10	217
24	44	69	e25	e33	e40	62	81	33	12	88	8.8	45
25	20	123	e24	e32	e39	63	114	24	10	52	6.9	50
26	15	53	e23	e30	e37	60	108	20	18	48	6.5	119
27	13	62	e22	e29	e36	53	118	18	17	117	61	53
28	11	109	e22	e29	e35	52	71	25	14	42	56	e31
29	70	60	e22	e29	---	53	46	18	78	25	24	e94
30	79	45	e30	e27	---	48	37	15	131	19	16	e43
31	38	---	137	e26	---	45	---	14	---	16	15	---
TOTAL	654.3	1217	2344	2972	2806	1883	1248	862	827	1393.6	449.2	1070.5
MEAN	21.1	40.6	75.6	95.9	100	60.7	41.6	27.8	27.6	45.0	14.5	35.7
MAX	79	123	398	627	685	199	118	97	131	204	61	217
MIN	5.7	12	22	26	27	32	19	14	10	9.6	6.5	5.0
CFSM	0.31	0.60	1.12	1.42	1.49	0.90	0.62	0.41	0.41	0.67	0.22	0.53
IN.	0.36	0.67	1.30	1.64	1.55	1.04	0.69	0.48	0.46	0.77	0.25	0.59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2005, BY WATER YEAR (WY)

MEAN	45.4	37.7	45.7	49.3	77.5	65.9	74.0	68.4	50.5	43.2	43.5	42.2
MAX	154	61.9	75.6	95.9	171	132	113	116	91.6	85.6	118	107
(WY)	2002	2004	2005	2005	2001	1998	1999	2004	2000	2000	1998	2000
MIN	16.4	19.4	24.5	14.7	16.5	30.2	26.4	27.8	25.3	14.3	14.5	15.8
(WY)	2003	2000	2003	2003	2003	2000	2004	2005	2002	2001	2005	1998

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1998 - 2005	
ANNUAL TOTAL	17693.5		17726.6			
ANNUAL MEAN	48.3		48.6		53.4	
HIGHEST ANNUAL MEAN					64.1	2002
LOWEST ANNUAL MEAN					38.3	2003
HIGHEST DAILY MEAN	597	May 22	685	Feb 16	1180	Feb 18 1998
LOWEST DAILY MEAN	5.7	Oct 8	5.0	Sep 15	5.0	Sep 15 2005
ANNUAL SEVEN-DAY MINIMUM	8.6	Sep 25	6.5	Sep 9	6.4	Sep 4 2002
MAXIMUM PEAK FLOW			801	Jan 14	1490	Aug 6 1998
MAXIMUM PEAK STAGE			9.23	Jan 14	13.08	Aug 6 1998
INSTANTANEOUS LOW FLOW			4.5	Sep 15	4.5	Sep 15 2005
ANNUAL RUNOFF (CFSM)	0.718		0.722		0.794	
ANNUAL RUNOFF (INCHES)	9.78		9.80		10.79	
10 PERCENT EXCEEDS	102		97		107	
50 PERCENT EXCEEDS	27		30		28	
90 PERCENT EXCEEDS	12		9.7		12	

(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166470 UPPER RIVER ROUGE AT DETROIT, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1999 to current year.
DISSOLVED OXYGEN: April 1999 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 1-3, 25, 28, 29, Apr. 5, 6, 15, 29, 30, May 21, 28, June 6, 10, 25-27, July 10, 11, Aug. 1-3, 14, 15, 28-30, rated good; Oct. 4-6, 26, 30, 31, Apr. 16, 17, May 1-3, 22-25, June 11-13, July 12, Aug. 16, 17, 31, rated fair; Apr. 18, 19, May 29-31, June 7, 14, Sept. 1, 2, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 27.5°C, July 24, Aug. 8, 2001; minimum recorded, 1.5°C, Apr. 7, 8, 2003.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.2 mg/L, Mar. 27, 2005; minimum recorded, 0.4 mg/L, July 3, 9, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 26.5°C, Aug. 3; minimum recorded, 2.5°C, Mar. 24.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.2 mg/L, Mar. 27; minimum recorded, 2.8 mg/L, July 15.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.4	12.2	13.8	---	---	---	---	---	---	---	---	---
2	15.9	13.2	14.7	---	---	---	---	---	---	---	---	---
3	13.7	11.6	12.6	---	---	---	---	---	---	---	---	---
4	12.5	11.2	11.9	---	---	---	---	---	---	---	---	---
5	11.6	9.2	10.4	---	---	---	---	---	---	---	---	---
6	12.3	8.7	10.4	---	---	---	---	---	---	---	---	---
7	13.1	10.2	11.7	---	---	---	---	---	---	---	---	---
8	14.7	10.7	12.6	---	---	---	---	---	---	---	---	---
9	15.4	14.0	14.6	---	---	---	---	---	---	---	---	---
10	14.1	12.2	13.2	---	---	---	---	---	---	---	---	---
11	13.1	11.1	12.1	---	---	---	---	---	---	---	---	---
12	12.5	10.3	11.4	---	---	---	---	---	---	---	---	---
13	12.2	10.5	11.4	---	---	---	---	---	---	---	---	---
14	12.9	11.6	12.1	---	---	---	---	---	---	---	---	---
15	13.5	12.0	12.4	---	---	---	---	---	---	---	---	---
16	12.2	10.3	11.4	---	---	---	---	---	---	---	---	---
17	10.3	9.2	9.7	---	---	---	---	---	---	---	---	---
18	9.2	8.4	8.8	---	---	---	---	---	---	---	---	---
19	9.1	8.5	8.8	---	---	---	---	---	---	---	---	---
20	10.4	9.0	9.7	---	---	---	---	---	---	---	---	---
21	10.8	10.1	10.4	---	---	---	---	---	---	---	---	---
22	11.5	10.5	10.9	---	---	---	---	---	---	---	---	---
23	12.5	10.5	11.2	---	---	---	---	---	---	---	---	---
24	13.7	12.1	12.6	---	---	---	---	---	---	---	---	---
25	13.4	11.9	12.6	---	---	---	---	---	---	---	---	---
26	12.8	11.4	12.1	---	---	---	---	---	---	---	---	---
27	13.5	12.0	12.7	---	---	---	---	---	---	---	---	---
28	13.3	11.8	12.5	---	---	---	---	---	---	---	---	---
29	13.9	12.5	13.3	---	---	---	---	---	---	---	---	---
30	15.4	13.6	14.5	---	---	---	---	---	---	---	---	---
31	14.1	12.3	13.3	---	---	---	---	---	---	---	---	---
MONTH	15.9	8.4	11.9	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166470 UPPER RIVER ROUGE AT DETROIT, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.3	7.7	8.5	10.8	8.7	9.8
2	---	---	---	---	---	---	8.1	5.9	6.9	10.3	8.7	9.4
3	---	---	---	---	---	---	8.1	4.9	6.4	8.9	7.5	8.0
4	---	---	---	---	---	---	10.1	6.0	8.0	10.9	6.3	8.7
5	---	---	---	---	---	---	12.4	8.0	10.1	12.8	8.3	10.5
6	---	---	---	---	---	---	14.5	10.6	12.5	14.2	9.6	11.9
7	---	---	---	---	---	---	13.3	11.0	12.6	16.4	11.8	14.0
8	---	---	---	---	---	---	13.2	9.2	11.2	17.2	13.1	15.2
9	---	---	---	---	---	---	13.5	9.4	11.4	17.9	14.0	15.9
10	---	---	---	---	---	---	14.2	10.2	12.1	19.6	15.7	17.6
11	---	---	---	---	---	---	14.5	11.1	12.6	18.0	14.8	16.7
12	---	---	---	---	---	---	12.2	9.6	11.0	15.2	12.5	13.9
13	---	---	---	---	---	---	12.7	8.3	10.3	13.4	11.8	12.7
14	---	---	---	---	---	---	13.6	8.9	11.1	14.5	12.7	13.6
15	---	---	---	---	---	---	13.7	9.3	11.5	13.8	12.3	13.2
16	---	---	---	---	---	---	14.6	9.6	12.1	13.4	11.3	12.4
17	---	---	---	---	---	---	14.7	11.1	12.8	14.3	11.6	12.8
18	---	---	---	---	---	---	16.6	11.6	14.0	15.5	11.8	13.6
19	---	---	---	---	---	---	18.3	13.4	15.8	14.2	12.8	13.5
20	---	---	---	---	---	---	16.8	14.1	15.8	15.9	12.1	13.9
21	---	---	---	---	---	---	15.3	12.1	13.7	17.3	13.2	15.2
22	---	---	---	---	---	---	13.0	10.1	11.5	15.9	14.2	14.9
23	---	---	---	4.6	2.9	3.8	10.1	7.3	8.7	14.4	13.3	14.0
24	---	---	---	5.0	2.5	3.6	7.3	5.1	6.0	13.8	12.7	13.3
25	---	---	---	6.1	4.1	4.9	8.4	4.8	6.5	16.6	12.2	14.3
26	---	---	---	5.7	3.5	4.6	9.6	8.3	8.9	17.1	14.0	15.6
27	---	---	---	5.3	3.5	4.5	9.8	8.7	9.2	17.3	14.4	15.9
28	---	---	---	7.9	4.3	5.9	10.7	8.1	9.5	16.7	14.5	15.6
29	---	---	---	9.1	5.8	7.4	12.0	9.4	10.5	17.5	14.2	15.8
30	---	---	---	10.7	7.3	8.9	11.0	10.0	10.5	18.4	15.1	16.5
31	---	---	---	10.5	9.0	9.6	---	---	---	18.8	15.3	17.2
MONTH	---	---	---	---	---	---	18.3	4.8	10.7	19.6	6.3	13.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.8	15.7	17.8	---	---	---	24.8	20.9	22.8	22.5	19.7	21.1
2	20.7	16.8	18.8	22.1	19.6	20.9	25.9	22.1	24.0	21.7	19.1	20.5
3	19.8	18.0	18.9	22.1	19.1	20.6	26.5	23.1	24.7	21.0	18.5	19.8
4	21.8	17.5	19.6	24.0	19.8	21.9	25.2	23.7	24.4	20.7	18.0	19.4
5	23.4	18.8	20.9	22.7	20.7	21.8	25.2	22.7	24.0	20.6	17.8	19.3
6	22.4	18.2	20.9	21.8	20.3	21.0	24.6	21.9	23.2	21.1	18.0	19.6
7	24.0	20.1	21.9	22.3	18.9	20.6	24.4	21.8	23.2	21.7	18.9	20.3
8	25.0	21.2	22.9	22.1	19.1	20.5	24.2	21.9	23.2	21.3	19.8	20.6
9	25.3	19.3	23.0	22.4	18.8	20.5	26.0	22.7	24.2	21.1	19.0	20.0
10	25.9	22.0	23.9	24.0	20.0	21.9	25.5	23.7	24.6	21.1	18.1	19.7
11	24.6	21.8	23.6	24.7	20.9	22.8	24.6	23.2	23.9	21.4	18.2	19.8
12	24.0	22.0	23.0	24.5	22.0	23.2	24.6	22.4	23.4	21.9	18.6	20.2
13	22.9	21.2	22.1	25.5	22.6	24.0	23.9	22.7	23.4	22.2	19.5	20.9
14	23.8	21.2	22.4	25.5	23.1	24.2	23.2	21.1	22.1	21.8	20.9	21.3
15	22.3	20.3	21.4	25.4	22.8	24.1	22.9	20.4	21.6	21.2	19.3	20.2
16	20.3	18.0	19.2	24.8	22.6	23.7	23.4	20.1	21.7	19.3	16.9	17.5
17	18.0	16.7	17.5	24.2	23.2	23.7	23.6	20.6	22.1	17.9	17.0	17.4
18	17.7	16.6	17.1	25.1	23.7	24.2	23.4	20.8	22.1	19.3	16.8	18.0
19	18.9	15.8	17.4	24.9	23.3	24.0	24.4	22.0	23.1	19.2	17.3	18.2
20	20.8	16.3	18.5	24.5	22.1	23.4	23.5	21.7	22.7	20.1	18.0	19.0
21	22.0	17.8	19.6	24.7	22.7	23.8	23.2	21.3	22.2	20.3	17.2	18.7
22	22.2	19.6	20.8	25.7	23.4	24.4	21.4	19.4	20.1	---	---	---
23	21.9	17.7	19.9	25.1	22.5	23.8	19.6	18.6	19.1	---	---	---
24	24.1	19.3	21.6	23.8	21.7	23.1	20.4	17.2	18.8	---	---	---
25	26.1	21.8	23.9	25.7	23.4	24.5	20.5	18.2	19.4	---	---	---
26	25.6	22.4	23.9	25.0	23.8	24.5	22.3	19.4	20.8	---	---	---
27	25.8	22.4	24.1	23.8	21.3	22.2	22.5	20.8	21.5	---	---	---
28	---	---	---	22.3	20.0	21.1	22.1	20.1	21.3	17.4	15.5	16.6
29	---	---	---	22.2	19.9	21.1	22.7	20.3	21.5	17.7	14.7	16.3
30	---	---	---	22.8	20.0	21.3	21.9	21.1	21.6	14.7	13.3	14.0
31	---	---	---	23.3	19.7	21.6	22.3	20.5	21.3	---	---	---
MONTH	---	---	---	---	---	---	26.5	17.2	22.3	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166470 UPPER RIVER ROUGE AT DETROIT, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.4	8.4	8.8	---	---	---	---	---	---	---	---	---
2	8.7	7.0	8.2	---	---	---	---	---	---	---	---	---
3	8.6	7.2	8.0	---	---	---	---	---	---	---	---	---
4	9.1	8.2	8.7	---	---	---	---	---	---	---	---	---
5	10.0	8.5	9.5	---	---	---	---	---	---	---	---	---
6	10.3	8.9	9.8	---	---	---	---	---	---	---	---	---
7	9.9	9.0	9.4	---	---	---	---	---	---	---	---	---
8	9.9	8.1	9.2	---	---	---	---	---	---	---	---	---
9	8.2	7.1	7.8	---	---	---	---	---	---	---	---	---
10	8.3	7.1	7.8	---	---	---	---	---	---	---	---	---
11	9.2	8.2	8.6	---	---	---	---	---	---	---	---	---
12	9.5	8.5	8.9	---	---	---	---	---	---	---	---	---
13	9.5	8.5	9.0	---	---	---	---	---	---	---	---	---
14	8.9	8.1	8.4	---	---	---	---	---	---	---	---	---
15	8.3	7.2	7.7	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	9.8	8.9	9.5	---	---	---	---	---	---	---	---	---
21	9.4	8.8	9.2	---	---	---	---	---	---	---	---	---
22	9.3	8.6	8.9	---	---	---	---	---	---	---	---	---
23	8.8	7.9	8.4	---	---	---	---	---	---	---	---	---
24	8.4	6.5	7.8	---	---	---	---	---	---	---	---	---
25	7.9	6.8	7.5	---	---	---	---	---	---	---	---	---
26	8.5	7.3	8.0	---	---	---	---	---	---	---	---	---
27	8.2	7.7	7.9	---	---	---	---	---	---	---	---	---
28	8.2	7.5	7.8	---	---	---	---	---	---	---	---	---
29	8.0	6.4	7.5	---	---	---	---	---	---	---	---	---
30	7.6	5.7	6.7	---	---	---	---	---	---	---	---	---
31	6.9	6.2	6.6	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.8	10.2	11.9	13.6	10.4	11.8
2	---	---	---	---	---	---	12.1	10.7	11.3	13.6	10.4	11.8
3	---	---	---	---	---	---	14.7	11.2	12.7	14.2	10.7	12.4
4	---	---	---	---	---	---	15.2	11.3	12.9	15.2	12.2	13.5
5	---	---	---	---	---	---	15.3	10.6	12.5	14.6	11.6	12.8
6	---	---	---	---	---	---	14.1	9.8	11.5	13.9	11.0	12.1
7	---	---	---	---	---	---	11.1	8.7	9.8	12.6	9.7	11.1
8	---	---	---	---	---	---	14.2	9.7	11.7	12.1	9.2	10.3
9	---	---	---	---	---	---	14.4	10.2	12.0	11.8	9.0	10.1
10	---	---	---	---	---	---	14.3	9.9	11.7	10.3	7.9	9.1
11	---	---	---	---	---	---	14.3	9.6	11.6	9.8	7.2	8.5
12	---	---	---	---	---	---	14.2	10.0	11.8	11.6	8.8	10.1
13	---	---	---	---	---	---	14.4	10.6	12.0	11.2	8.9	10.0
14	---	---	---	---	---	---	15.7	10.6	13.0	9.4	8.6	8.9
15	---	---	---	---	---	---	15.8	11.4	13.3	9.8	8.6	9.3
16	---	---	---	---	---	---	15.4	11.2	13.0	11.0	9.3	10.0
17	---	---	---	---	---	---	14.2	10.6	12.1	10.9	9.4	10.0
18	---	---	---	---	---	---	14.1	10.3	11.8	10.8	8.9	9.8
19	---	---	---	---	---	---	13.1	9.4	11.0	9.5	8.7	9.0
20	---	---	---	---	---	---	10.3	8.3	8.9	9.9	8.5	9.2
21	---	---	---	---	---	---	12.6	8.1	10.1	9.8	8.1	8.9
22	---	---	---	---	---	---	12.0	9.3	10.5	8.7	7.9	8.2
23	---	---	---	14.3	12.1	13.1	10.8	9.5	10.1	8.8	7.7	8.3
24	---	---	---	15.9	12.7	13.9	11.8	10.5	11.1	9.6	8.4	8.9
25	---	---	---	15.6	12.0	13.6	12.2	11.0	11.8	10.4	8.7	9.4
26	---	---	---	16.1	12.1	13.9	11.0	10.1	10.5	9.9	8.5	9.1
27	---	---	---	16.2	12.3	14.0	11.7	10.0	10.9	9.6	8.3	8.8
28	---	---	---	15.9	11.9	13.5	12.7	10.9	11.6	9.1	7.0	8.3
29	---	---	---	15.2	11.0	12.8	13.4	10.4	11.7	8.0	5.7	6.8
30	---	---	---	14.5	10.4	12.2	12.8	10.1	11.3	6.3	4.7	5.6
31	---	---	---	12.9	9.8	11.1	---	---	---	8.8	5.0	6.7
MONTH	---	---	---	---	---	---	15.8	8.1	11.5	15.2	4.7	9.6

STREAMS TRIBUTARY TO DETROIT RIVER

04166470 UPPER RIVER ROUGE AT DETROIT, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	6.4	5.1	5.9	7.8	7.2	7.5
2	8.6	7.1	7.7	6.4	6.0	6.2	6.1	5.0	5.9	8.4	7.1	7.9
3	7.7	6.5	7.1	6.3	5.9	6.2	5.7	5.2	5.5	---	---	---
4	7.9	6.5	7.2	6.0	5.2	5.8	5.9	4.9	5.3	---	---	---
5	7.4	6.1	6.7	6.4	5.6	5.9	6.4	5.2	5.8	---	---	---
6	6.6	3.6	4.7	6.3	5.7	6.2	6.4	5.7	6.0	---	---	---
7	5.9	4.6	5.3	6.4	5.6	6.1	---	---	---	---	---	---
8	5.7	5.0	5.2	6.9	5.5	6.1	6.5	5.2	6.0	7.4	6.1	6.6
9	5.6	3.2	4.7	6.6	5.8	6.3	6.1	5.0	5.5	6.4	5.6	6.0
10	4.8	3.9	4.4	6.0	5.1	5.6	5.6	4.8	5.3	6.7	5.7	6.2
11	5.4	3.7	4.3	5.8	4.6	5.3	6.0	5.0	5.4	6.8	5.8	6.3
12	5.5	3.8	5.0	5.2	4.3	4.9	6.5	4.9	5.7	---	---	---
13	6.0	4.9	5.5	4.9	3.6	4.6	5.9	4.9	5.5	---	---	---
14	6.5	5.4	6.0	5.3	3.3	4.4	7.1	4.4	6.2	---	---	---
15	6.1	5.4	5.7	4.1	2.8	3.7	6.9	5.8	6.5	7.2	5.8	6.5
16	7.0	5.7	6.5	5.3	3.1	4.0	6.4	5.0	5.8	8.5	6.5	7.6
17	7.6	7.0	7.4	---	---	---	5.7	4.6	5.2	8.5	8.0	8.3
18	7.7	7.4	7.5	---	---	---	5.8	4.5	5.2	8.3	7.8	8.1
19	7.9	7.4	7.6	---	---	---	5.4	4.7	5.1	8.2	7.4	7.9
20	7.8	6.9	7.4	6.1	5.8	6.0	6.0	4.2	5.3	8.0	7.2	7.6
21	7.3	4.8	6.7	6.4	5.8	6.1	---	---	---	7.7	7.1	7.3
22	6.4	4.9	5.5	6.0	5.4	5.8	---	---	---	---	---	---
23	5.7	4.7	5.4	5.7	5.0	5.4	---	---	---	---	---	---
24	5.1	4.2	4.8	6.7	4.9	5.8	6.6	5.7	6.2	---	---	---
25	4.6	3.8	4.2	6.2	5.3	5.8	6.1	5.5	6.0	---	---	---
26	5.3	3.7	4.5	6.3	5.3	5.7	---	---	---	---	---	---
27	5.6	4.3	4.8	7.0	6.0	6.7	7.3	4.4	6.1	---	---	---
28	---	---	---	---	---	---	7.7	6.7	7.4	8.4	8.0	8.2
29	---	---	---	7.1	6.8	6.9	7.5	6.9	7.3	8.8	7.8	8.4
30	---	---	---	7.0	6.3	6.6	7.0	6.6	6.8	9.3	8.8	9.1
31	---	---	---	6.9	5.6	6.4	7.4	6.7	7.1	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166500 RIVER ROUGE AT DETROIT, MI

LOCATION.--Lat 42°22'20", long 83°15'20", in SW1/4 sec.27, T.1 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on right bank 500 ft upstream from bridge on Plymouth Road in Detroit, 4 mi upstream from Middle River Rouge.

DRAINAGE AREA.--187 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to current year.

REVISED RECORDS.--WSP 1034: 1933(M). WSP 1054: 1939, 1943, 1945(M). WSP 1437: 1931-32, 1934, 1936(M), 1937-38, 1944(M), 1945. WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 584.00 ft above sea level. Prior to Oct. 16, 1948, nonrecording gage at site 1 mi downstream at datum 4.6 ft lower.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Regulation by water retention structure upstream from station and some diversion by pumping for sprinkler irrigation. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	81	508	459	e105	e140	141	113	49	202	41	34
2	45	165	397	364	e100	e130	177	101	47	82	37	28
3	60	159	181	461	e100	e120	192	92	44	53	34	24
4	36	193	125	416	e105	e130	130	87	44	47	31	21
5	29	239	102	288	e110	e140	112	82	43	136	30	21
6	27	123	96	e200	e120	e180	107	78	144	88	29	21
7	27	81	478	e170	e180	503	103	82	71	58	27	20
8	26	61	1100	e160	605	689	98	83	57	143	25	32
9	48	56	390	e150	452	294	91	72	256	162	24	37
10	49	54	281	e155	250	e190	86	68	73	62	25	23
11	34	51	473	e190	189	e170	82	66	e54	44	25	20
12	30	49	305	439	161	e150	79	69	e51	37	26	19
13	36	46	345	1200	176	e130	71	79	e105	35	33	18
14	35	43	250	1600	615	e125	66	296	e106	94	69	19
15	65	43	172	609	971	e120	62	190	90	43	53	19
16	182	43	e140	e250	1470	121	60	103	86	125	33	210
17	109	59	e120	e170	888	139	59	82	83	629	27	148
18	93	88	e100	e150	318	169	63	75	61	220	25	73
19	60	70	e90	e145	e230	155	59	69	50	122	24	43
20	49	146	e80	e140	e190	261	67	118	45	74	31	45
21	42	101	e84	e130	e170	235	79	83	84	167	87	33
22	40	65	e84	e125	e160	222	64	76	102	70	38	149
23	41	55	e82	e120	e150	275	98	141	52	47	29	681
24	125	126	e80	e120	e140	212	216	144	40	228	26	162
25	76	375	e78	e115	e130	208	367	89	35	252	25	107
26	55	175	e76	e115	e125	206	315	73	47	146	21	363
27	46	146	e73	e110	e120	182	424	64	70	362	143	190
28	41	300	e69	e110	e130	173	272	76	42	141	207	88
29	171	199	e72	e110	---	181	160	63	214	72	68	261
30	250	125	e100	e110	---	165	129	55	324	56	45	146
31	154	---	361	e105	---	154	---	53	---	47	41	---
TOTAL	2106	3517	6892	8986	8460	6269	4029	2922	2569	4044	1379	3055
MEAN	67.9	117	222	290	302	202	134	94.3	85.6	130	44.5	102
MAX	250	375	1100	1600	1470	689	424	296	324	629	207	681
MIN	25	43	69	105	100	120	59	53	35	35	21	18
CFSM	0.36	0.63	1.19	1.55	1.62	1.08	0.72	0.50	0.46	0.70	0.24	0.54
IN.	0.42	0.70	1.37	1.79	1.68	1.25	0.80	0.58	0.51	0.80	0.27	0.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	73.0	93.2	116	122	172	232	228	172	117	74.4	64.5	64.8
MAX	450	322	321	456	519	488	965	683	478	385	280	284
(WY)	1982	1993	1968	1950	1938	1950	1947	1943	1968	1957	1998	2000
MIN	8.35	16.3	16.6	13.6	18.2	59.5	49.3	23.9	7.92	6.46	5.58	7.03
(WY)	1964	1954	1940	1961	1963	1931	1931	1934	1934	1934	1931	1931

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	55139		54228			
ANNUAL MEAN	151		149		127	
HIGHEST ANNUAL MEAN					222	1968
LOWEST ANNUAL MEAN					25.7	1931
HIGHEST DAILY MEAN	1360	May 22	1600	Jan 14	7380	Apr 6 1947
LOWEST DAILY MEAN	24	Sep 27	18	Sep 13	1.8	Aug 1 1964
ANNUAL SEVEN-DAY MINIMUM	25	Sep 23	22	Sep 9	2.7	Aug 2 1963
MAXIMUM PEAK FLOW			1790	Jan 14	13000	Apr 5 1947
MAXIMUM PEAK STAGE			14.66	Jan 14	21.40	Jun 26 1968
INSTANTANEOUS LOW FLOW			17	(a)	1.8	(b)
ANNUAL RUNOFF (CFSM)	0.806		0.794		0.680	
ANNUAL RUNOFF (INCHES)	10.97		10.79		9.24	
10 PERCENT EXCEEDS	334		298		270	
50 PERCENT EXCEEDS	88		100		65	
90 PERCENT EXCEEDS	42		33		17	

(a) Sept. 13, 14, 15, 16.
(b) Aug. 1, 2, 1964.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166500 RIVER ROUGE AT DETROIT, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1999 to current year.
DISSOLVED OXYGEN: April 1999 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 3-6, Apr. 2-3, 24-26, May 10, 11, Sept. 6, 7, rated good; Apr. 4-6, rated fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 27.0°C, Aug. 9, 2001; minimum recorded, 2.0°C, Mar. 28, 2001, Apr. 8, 2003.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.9 mg/L, Mar. 28, 2001; minimum recorded, 0.1 mg/L, June 9, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 25.4°C, July 26; minimum recorded, 2.9°C, Mar. 24.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 15.1 mg/L, Apr. 5; minimum recorded, 0.1 mg/L, June 9.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	13.2	13.8	---	---	---	---	---	---	---	---	---
2	15.0	14.0	14.4	---	---	---	---	---	---	---	---	---
3	14.2	12.3	12.9	---	---	---	---	---	---	---	---	---
4	12.7	11.5	12.3	---	---	---	---	---	---	---	---	---
5	11.5	9.9	10.6	---	---	---	---	---	---	---	---	---
6	10.8	9.6	10.3	---	---	---	---	---	---	---	---	---
7	12.6	10.5	11.3	---	---	---	---	---	---	---	---	---
8	13.3	11.6	12.3	---	---	---	---	---	---	---	---	---
9	14.5	13.3	14.1	---	---	---	---	---	---	---	---	---
10	14.2	12.8	13.3	---	---	---	---	---	---	---	---	---
11	12.8	11.8	12.3	---	---	---	---	---	---	---	---	---
12	12.6	11.3	11.6	---	---	---	---	---	---	---	---	---
13	13.3	11.1	11.6	---	---	---	---	---	---	---	---	---
14	12.4	11.6	11.9	---	---	---	---	---	---	---	---	---
15	12.7	11.9	12.2	---	---	---	---	---	---	---	---	---
16	12.7	10.8	11.7	---	---	---	---	---	---	---	---	---
17	10.8	9.5	10.0	---	---	---	---	---	---	---	---	---
18	11.2	8.7	9.1	---	---	---	---	---	---	---	---	---
19	10.0	8.8	9.0	---	---	---	---	---	---	---	---	---
20	10.3	9.0	9.4	---	---	---	---	---	---	---	---	---
21	10.9	10.1	10.3	---	---	---	---	---	---	---	---	---
22	11.3	10.5	10.8	---	---	---	---	---	---	---	---	---
23	12.2	10.8	11.2	---	---	---	---	---	---	---	---	---
24	12.8	11.7	12.4	---	---	---	---	---	---	---	---	---
25	12.7	12.1	12.4	---	---	---	---	---	---	---	---	---
26	12.5	11.7	12.1	---	---	---	---	---	---	---	---	---
27	13.4	12.2	12.6	---	---	---	---	---	---	---	---	---
28	12.8	12.2	12.5	---	---	---	---	---	---	---	---	---
29	13.7	12.7	13.1	---	---	---	---	---	---	---	---	---
30	14.7	13.4	14.1	---	---	---	---	---	---	---	---	---
31	14.3	12.8	13.6	---	---	---	---	---	---	---	---	---
MONTH	15.0	8.7	11.9	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166500 RIVER ROUGE AT DETROIT, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.5	8.4	8.9	10.7	9.3	10.1
2	---	---	---	---	---	---	8.6	6.6	7.5	10.2	9.0	9.7
3	---	---	---	---	---	---	7.6	5.6	6.6	9.5	8.1	8.5
4	---	---	---	---	---	---	9.6	6.3	7.8	10.2	7.0	8.6
5	---	---	---	---	---	---	11.7	8.1	9.8	11.9	8.5	10.2
6	---	---	---	---	---	---	13.9	10.6	12.1	13.6	10.0	11.7
7	---	---	---	---	---	---	13.5	11.9	12.8	15.7	12.2	13.8
8	---	---	---	---	---	---	12.7	10.3	11.5	16.6	12.2	15.0
9	---	---	---	---	---	---	13.0	9.8	11.4	17.3	14.8	16.0
10	---	---	---	---	---	---	13.7	10.6	12.2	18.8	16.3	17.5
11	---	---	---	---	---	---	13.9	11.6	12.8	18.6	15.8	17.3
12	---	---	---	---	---	---	13.1	10.7	11.7	16.3	13.8	14.8
13	---	---	---	---	---	---	12.0	9.4	10.7	14.3	12.8	13.3
14	---	---	---	---	---	---	12.5	9.6	11.1	14.0	12.8	13.4
15	---	---	---	---	---	---	12.8	10.1	11.5	13.8	12.9	13.5
16	---	---	---	---	---	---	13.7	10.3	12.1	13.2	12.0	12.6
17	---	---	---	---	---	---	13.9	11.3	12.8	13.6	11.9	12.8
18	---	---	---	---	---	---	15.6	11.9	13.7	14.8	12.2	13.5
19	---	---	---	---	---	---	17.2	14.0	15.5	14.6	13.2	13.8
20	---	---	---	---	---	---	17.1	15.4	16.2	15.3	12.7	13.9
21	---	---	---	---	---	---	15.4	13.3	14.3	16.7	13.8	15.2
22	---	---	---	---	---	---	14.1	11.1	12.2	16.4	14.6	15.4
23	---	---	---	4.7	3.3	4.2	11.1	8.0	9.6	15.0	13.6	14.3
24	---	---	---	4.4	2.9	3.6	8.5	5.4	6.7	13.8	13.3	13.5
25	---	---	---	5.7	4.2	4.9	7.7	5.1	6.2	15.4	12.5	13.9
26	---	---	---	5.7	4.2	4.8	9.4	7.7	8.9	16.6	13.7	15.4
27	---	---	---	5.7	3.9	4.6	9.6	9.0	9.2	16.7	14.8	16.0
28	---	---	---	7.1	4.4	5.6	10.5	8.7	9.5	16.4	14.7	15.9
29	---	---	---	8.7	6.1	7.3	11.5	9.6	10.4	16.6	15.1	15.8
30	---	---	---	10.0	7.4	8.6	11.1	10.3	10.7	17.0	15.0	16.3
31	---	---	---	10.3	9.1	9.7	---	---	---	17.9	15.1	16.9
MONTH	---	---	---	---	---	---	17.2	5.1	10.9	18.8	7.0	13.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.6	16.3	17.6	23.1	21.6	22.5	23.3	21.0	22.5	21.4	20.1	21.0
2	19.4	17.7	18.6	22.0	20.3	21.1	24.4	21.7	23.5	21.1	20.3	20.7
3	19.5	17.8	19.0	21.4	19.9	20.7	25.1	22.2	24.3	20.4	18.7	19.8
4	20.3	18.4	19.3	22.6	19.9	21.5	24.7	22.8	24.3	20.0	18.8	19.3
5	21.6	19.7	20.7	22.7	20.6	21.8	24.7	23.3	24.0	20.1	18.6	19.2
6	21.9	18.7	21.1	22.0	20.4	21.3	23.9	22.2	23.3	20.2	18.2	19.3
7	23.1	20.7	21.8	21.5	19.8	20.6	24.0	22.6	23.3	20.6	19.3	19.9
8	23.7	20.5	22.4	21.4	18.8	20.6	24.0	21.6	23.2	21.1	20.0	20.5
9	23.4	21.7	22.5	21.6	18.5	20.1	24.7	21.9	23.8	20.7	19.6	20.0
10	24.3	22.0	23.3	22.8	20.3	21.4	24.7	19.7	23.7	20.2	19.0	19.5
11	---	---	---	23.3	21.7	22.6	24.3	22.5	23.8	20.4	18.4	19.5
12	---	---	---	23.8	21.4	23.1	23.8	21.9	23.2	20.8	19.2	19.9
13	---	---	---	24.4	21.6	23.7	23.6	22.2	23.4	21.5	19.7	20.5
14	---	---	---	24.8	22.3	24.2	23.3	21.4	22.4	21.7	20.7	21.2
15	22.7	20.2	21.6	24.5	20.4	23.6	21.9	21.0	21.5	21.1	18.8	20.1
16	21.1	18.8	19.8	24.3	21.3	23.8	22.0	20.9	21.5	19.2	17.0	17.9
17	18.9	17.2	17.8	24.3	23.0	23.7	22.7	21.4	22.0	17.6	17.0	17.3
18	17.6	16.7	17.2	24.9	22.9	24.2	22.6	20.6	21.9	18.5	17.1	17.7
19	18.0	16.6	17.2	24.9	23.6	24.2	23.8	21.9	23.0	18.5	17.8	18.2
20	19.3	17.2	18.2	24.4	22.8	23.6	23.1	20.0	22.3	19.2	17.3	18.5
21	21.5	17.8	19.3	24.5	22.3	23.6	23.1	21.2	22.6	18.9	17.9	18.5
22	21.2	19.5	20.4	25.1	23.6	24.4	22.5	19.5	20.7	21.0	18.0	19.0
23	20.6	18.6	19.6	24.9	22.9	23.9	19.8	19.1	19.5	20.5	18.4	19.5
24	22.1	19.1	20.8	24.3	21.2	23.1	19.6	18.0	18.8	18.4	17.7	18.0
25	24.3	22.0	23.0	25.1	23.3	24.1	19.6	18.3	19.2	19.6	17.6	18.3
26	24.8	22.1	23.8	25.4	22.9	24.7	21.0	19.4	20.1	19.8	18.9	19.5
27	24.6	22.9	23.8	24.0	21.9	22.6	22.1	19.4	21.2	19.1	17.5	18.1
28	24.6	21.8	24.1	21.9	20.7	21.3	21.7	20.7	21.3	17.5	16.2	16.8
29	24.0	19.7	23.0	21.8	20.4	21.2	22.2	20.6	21.4	17.2	15.3	16.4
30	23.2	21.2	22.4	21.9	20.6	21.3	22.2	20.0	21.5	15.3	13.8	14.3
31	---	---	---	22.1	20.4	21.3	21.5	21.0	21.3	---	---	---
MONTH	---	---	---	25.4	18.5	22.6	25.1	18.0	22.2	21.7	13.8	18.9

STREAMS TRIBUTARY TO DETROIT RIVER

04166500 RIVER ROUGE AT DETROIT, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.6	7.7	8.2	---	---	---	---	---	---	---	---	---
2	8.4	7.1	8.0	---	---	---	---	---	---	---	---	---
3	8.2	6.5	7.7	---	---	---	---	---	---	---	---	---
4	8.5	7.3	7.9	---	---	---	---	---	---	---	---	---
5	9.3	8.5	8.9	---	---	---	---	---	---	---	---	---
6	9.7	9.2	9.4	---	---	---	---	---	---	---	---	---
7	9.7	9.2	9.4	---	---	---	---	---	---	---	---	---
8	9.5	9.0	9.2	---	---	---	---	---	---	---	---	---
9	9.0	7.0	8.2	---	---	---	---	---	---	---	---	---
10	7.9	6.9	7.6	---	---	---	---	---	---	---	---	---
11	8.4	7.5	8.0	---	---	---	---	---	---	---	---	---
12	8.9	8.2	8.5	---	---	---	---	---	---	---	---	---
13	8.9	8.3	8.6	---	---	---	---	---	---	---	---	---
14	8.6	8.0	8.3	---	---	---	---	---	---	---	---	---
15	8.3	7.1	7.7	---	---	---	---	---	---	---	---	---
16	8.0	7.2	7.7	---	---	---	---	---	---	---	---	---
17	9.0	7.9	8.4	---	---	---	---	---	---	---	---	---
18	9.5	8.6	9.3	---	---	---	---	---	---	---	---	---
19	9.5	9.3	9.4	---	---	---	---	---	---	---	---	---
20	9.4	9.1	9.3	---	---	---	---	---	---	---	---	---
21	9.1	8.9	9.0	---	---	---	---	---	---	---	---	---
22	8.9	8.7	8.8	---	---	---	---	---	---	---	---	---
23	8.7	8.1	8.5	---	---	---	---	---	---	---	---	---
24	8.2	6.8	7.5	---	---	---	---	---	---	---	---	---
25	7.5	7.0	7.3	---	---	---	---	---	---	---	---	---
26	8.0	7.3	7.7	---	---	---	---	---	---	---	---	---
27	8.1	7.4	7.8	---	---	---	---	---	---	---	---	---
28	8.0	7.3	7.7	---	---	---	---	---	---	---	---	---
29	7.7	6.5	7.1	---	---	---	---	---	---	---	---	---
30	6.8	5.9	6.3	---	---	---	---	---	---	---	---	---
31	7.1	6.3	6.5	---	---	---	---	---	---	---	---	---
MONTH	9.7	5.9	8.2	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.2	9.9	11.4	12.4	9.8	11.0
2	---	---	---	---	---	---	11.4	10.4	10.8	12.5	10.3	11.3
3	---	---	---	---	---	---	13.6	10.6	11.9	12.1	10.5	11.2
4	---	---	---	---	---	---	14.8	11.4	12.8	13.8	10.6	12.1
5	---	---	---	---	---	---	15.1	10.9	12.7	13.3	10.6	11.7
6	---	---	---	---	---	---	14.1	10.3	11.9	12.8	9.7	11.0
7	---	---	---	---	---	---	10.6	8.6	9.6	11.9	8.9	10.2
8	---	---	---	---	---	---	13.8	9.0	11.1	11.5	8.2	9.6
9	---	---	---	---	---	---	14.1	9.7	11.7	11.3	7.9	9.4
10	---	---	---	---	---	---	14.0	9.5	11.5	10.5	7.3	8.7
11	---	---	---	---	---	---	14.2	9.3	11.5	8.9	6.7	7.6
12	---	---	---	---	---	---	14.0	9.4	11.5	10.3	7.0	8.5
13	---	---	---	---	---	---	14.3	9.9	11.9	9.9	7.8	8.7
14	---	---	---	---	---	---	14.4	10.0	12.0	8.3	7.2	7.6
15	---	---	---	---	---	---	14.6	9.7	12.0	8.2	7.4	7.8
16	---	---	---	---	---	---	14.5	9.8	12.0	9.3	8.1	8.7
17	---	---	---	---	---	---	13.7	9.4	11.4	9.3	8.5	8.9
18	---	---	---	---	---	---	14.2	8.9	11.3	9.0	8.2	8.6
19	---	---	---	---	---	---	14.1	8.5	11.0	8.6	7.8	8.0
20	---	---	---	---	---	---	11.7	7.6	9.2	8.3	7.5	7.9
21	---	---	---	---	---	---	12.3	6.6	9.2	8.1	7.4	7.8
22	---	---	---	---	---	---	11.1	8.3	9.7	7.8	6.9	7.1
23	---	---	---	---	---	---	10.4	8.6	9.4	7.8	6.3	7.0
24	---	---	---	---	---	---	11.3	9.7	10.4	8.1	7.0	7.7
25	---	---	---	---	---	---	11.8	11.2	11.5	8.4	7.7	8.0
26	---	---	---	---	---	---	11.4	9.9	10.5	8.0	7.2	7.6
27	---	---	---	---	---	---	10.6	9.8	10.1	8.0	6.9	7.3
28	---	---	---	---	---	---	11.3	10.2	10.7	7.6	5.6	6.9
29	---	---	---	---	---	---	12.0	10.2	11.0	7.0	5.6	6.4
30	---	---	---	14.1	10.8	12.2	11.4	9.9	10.6	7.4	6.4	6.9
31	---	---	---	12.2	10.1	11.0	---	---	---	8.0	6.5	6.9
MONTH	---	---	---	---	---	---	15.1	6.6	11.1	13.8	5.6	8.6

STREAMS TRIBUTARY TO DETROIT RIVER

04166500 RIVER ROUGE AT DETROIT, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.6	6.2	6.8	5.6	3.7	4.6	6.3	5.3	5.5	6.2	5.1	5.6
2	7.8	5.9	6.5	5.7	4.6	4.9	6.0	4.9	5.3	6.2	5.2	5.7
3	7.2	5.4	5.9	4.8	4.1	4.5	5.7	4.4	5.1	6.2	5.4	5.8
4	7.3	5.4	6.1	5.6	2.5	4.0	5.7	4.5	5.0	7.0	5.5	6.1
5	6.4	5.2	5.8	6.3	3.5	4.8	6.6	4.6	5.3	6.6	5.8	6.2
6	5.8	1.5	3.5	5.7	4.5	4.8	6.6	4.8	5.6	6.8	5.8	6.3
7	4.2	2.5	3.4	6.0	4.3	4.8	6.2	4.8	5.6	6.9	5.7	6.2
8	5.0	3.2	3.9	6.4	0.3	4.4	6.1	4.9	5.6	6.9	5.5	5.9
9	4.7	0.1	2.9	6.0	4.9	5.4	5.9	4.8	5.5	6.0	4.2	5.3
10	4.5	2.1	3.0	5.7	4.9	5.4	6.6	4.6	5.4	6.2	5.2	5.6
11	---	---	---	5.0	4.4	4.6	6.2	4.3	5.1	6.2	5.4	5.8
12	---	---	---	5.3	3.9	4.3	6.2	4.5	5.2	6.8	5.5	5.9
13	---	---	---	4.9	3.7	4.0	6.3	4.8	5.4	6.3	5.4	5.8
14	---	---	---	5.2	2.8	3.7	6.2	4.9	5.3	5.8	5.2	5.4
15	4.8	3.7	4.1	5.7	2.5	3.2	6.5	5.3	5.6	6.2	5.2	5.6
16	5.4	4.2	4.5	5.3	2.5	3.3	6.7	5.2	5.7	7.4	5.5	6.5
17	6.3	4.8	5.4	5.4	4.1	5.0	5.8	5.3	5.4	7.6	7.1	7.3
18	6.6	5.4	5.7	5.9	5.0	5.4	6.0	4.7	5.3	7.6	6.8	7.2
19	6.5	5.6	5.9	5.6	4.9	5.2	5.5	4.7	5.1	7.0	6.6	6.7
20	6.3	5.5	5.8	5.9	4.8	5.1	6.9	4.6	5.3	7.2	6.3	6.6
21	7.4	1.9	5.4	5.9	4.6	5.2	5.6	4.5	5.1	6.4	6.0	6.2
22	5.1	3.3	4.6	5.1	4.5	4.8	6.6	4.9	5.4	7.5	2.6	6.1
23	5.6	4.3	5.0	5.3	4.3	4.7	6.2	5.6	5.8	6.9	2.8	5.9
24	5.9	4.4	4.9	6.4	3.7	5.0	6.6	5.8	6.1	7.1	6.7	7.0
25	5.0	3.8	4.3	5.8	5.1	5.3	6.9	6.0	6.3	7.3	6.2	6.9
26	5.5	3.5	4.1	6.1	4.9	5.1	6.8	5.6	6.1	7.1	6.0	6.7
27	4.8	3.7	4.2	6.5	5.0	5.9	7.0	0.2	4.9	7.6	7.0	7.3
28	5.0	3.5	3.8	7.2	6.0	6.2	6.1	3.9	5.6	7.7	7.2	7.5
29	5.9	2.4	4.1	6.9	5.8	6.1	6.5	5.6	6.0	8.1	7.2	7.6
30	6.8	1.3	4.2	6.8	5.8	6.1	5.9	5.3	5.4	8.5	8.0	8.3
31	---	---	---	6.3	5.7	5.9	6.3	5.1	5.6	---	---	---
MONTH	---	---	---	7.2	0.3	4.9	7.0	0.2	5.5	8.5	2.6	6.4

STREAMS TRIBUTARY TO DETROIT RIVER

04166750 MIDDLE RIVER ROUGE AT PLYMOUTH, MI

LOCATION.--Lat 42°22'18", long 83°26'44", in NE1/4 SW1/4 sec. 25, T.1 S., R.8 E., Wayne County, Hydrologic Unit 04090004, on right bank 30 ft upstream from bridge on Haggerty Road in Plymouth.

DRAINAGE AREA.--60.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2002 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 690 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Regulation by storm water retention structures and occasional regulation by reservoirs upstream from station. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	29	150	171	e38	69	76	50	27	60	21	20
2	22	49	137	144	e34	64	78	44	27	38	20	17
3	23	47	85	158	e32	56	73	42	26	29	19	15
4	19	61	65	150	e33	57	58	41	26	27	19	15
5	17	76	55	119	34	58	56	37	32	48	19	15
6	17	48	51	92	35	73	54	37	55	45	18	14
7	17	33	179	80	57	156	51	39	36	43	18	14
8	17	27	292	73	135	222	47	35	40	50	17	16
9	23	23	138	69	124	142	44	31	33	30	17	16
10	22	23	118	68	88	101	42	37	34	24	12	15
11	19	20	152	73	68	89	39	35	47	19	6.5	14
12	18	19	121	147	65	82	36	31	111	19	8.4	15
13	17	18	111	533	64	70	34	37	100	18	13	14
14	17	18	90	571	179	62	32	81	82	21	17	15
15	21	17	69	267	332	59	31	69	54	23	16	15
16	33	18	61	e148	514	58	31	50	57	55	12	66
17	31	24	57	e97	297	79	30	40	43	89	12	45
18	28	28	51	e74	150	79	30	36	39	48	11	27
19	21	28	e48	e70	116	75	32	37	30	30	11	19
20	19	40	e44	e66	98	96	34	49	28	30	14	21
21	17	31	38	e63	92	97	37	45	37	54	15	16
22	18	24	36	e60	89	95	33	38	35	33	12	46
23	22	21	e36	e61	83	110	41	45	28	24	14	138
24	32	42	e35	e60	75	98	59	42	25	43	11	e51
25	24	90	e35	e59	71	97	80	40	24	36	12	e44
26	20	64	e35	e55	69	97	127	34	30	34	14	e91
27	18	64	e34	e50	61	89	123	34	25	68	34	e53
28	17	104	e34	e49	64	87	98	30	24	51	39	e37
29	42	75	e36	e48	---	89	72	32	47	28	25	e73
30	69	56	e38	e45	---	86	60	29	86	23	31	49
31	47	---	119	e42	---	82	---	27	---	21	27	---
TOTAL	743	1217	2550	3762	3097	2774	1638	1254	1288	1161	534.9	1006
MEAN	24.0	40.6	82.3	121	111	89.5	54.6	40.5	42.9	37.5	17.3	33.5
MAX	69	104	292	571	514	222	127	81	111	89	39	138
MIN	16	17	34	42	32	56	30	27	24	18	6.5	14
CFSM	0.39	0.67	1.36	2.00	1.82	1.47	0.90	0.67	0.71	0.62	0.28	0.55
IN.	0.46	0.75	1.56	2.31	1.90	1.70	1.00	0.77	0.79	0.71	0.33	0.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2005, BY WATER YEAR (WY)

MEAN	23.4	39.9	51.2	57.3	54.7	78.1	49.9	71.0	44.8	34.9	33.4	28.6
MAX	27.6	51.6	82.3	121	111	89.5	64.9	111	48.5	48.9	61.5	33.5
(WY)	2004	2004	2005	2005	2005	2005	2003	2004	2004	2004	2004	2005
MIN	18.6	27.4	23.4	18.2	16.9	55.7	30.1	40.5	42.9	18.5	17.3	24.2
(WY)	2003	2003	2003	2003	2003	2003	2004	2005	2003	2003	2005	2004

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2003 - 2005	
ANNUAL TOTAL	19286		21024.9			
ANNUAL MEAN	52.7		57.6		47.3	
HIGHEST ANNUAL MEAN					57.6	2005
LOWEST ANNUAL MEAN					33.2	2003
HIGHEST DAILY MEAN	456	May 22	571	Jan 14	571	Jan 14 2005
LOWEST DAILY MEAN	15	Jul 2	6.5	Aug 11	6.5	Aug 11 2005
ANNUAL SEVEN-DAY MINIMUM	16	Jun 27	12	Aug 10	11	Sep 7 2003
MAXIMUM PEAK FLOW			679	Jan 13	679	Jan 13 2005
MAXIMUM PEAK STAGE			9.64	Jan 13	9.64	Jan 13 2005
INSTANTANEOUS LOW FLOW			5.8	Aug 10	5.8	Aug 10 2005
ANNUAL RUNOFF (CFSM)	0.868		0.949		0.779	
ANNUAL RUNOFF (INCHES)	11.82		12.89		10.58	
10 PERCENT EXCEEDS	113		106		92	
50 PERCENT EXCEEDS	33		40		30	
90 PERCENT EXCEEDS	18		17		15	

(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04166750 MIDDLE RIVER ROUGE AT PLYMOUTH, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2003 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 2002 to current year.
DISSOLVED OXYGEN: October 2002 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 27, 28, Apr. 6, 7, 26, 27, May 16-18, June 7-10, 15, 16, 19, 20, 28, 29, Aug. 10, 11, 30, rated good; May 19, June 21-23, rated fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 28.3°C, Aug. 3, 2005; minimum recorded, 2.0°C, Apr. 7, 8, 9, 2003.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.7 mg/L, Apr. 9, 2003; minimum recorded, 4.2 mg/L, June 9, 2005.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 28.3°C, Aug. 3; minimum recorded, 4.9°C, Mar. 22.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.3 mg/L, Mar. 22; minimum recorded, 4.2 mg/L, June 9.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	14.6	15.9	12.4	11.2	11.7	---	---	---	---	---	---
2	16.6	15.3	16.2	---	---	---	---	---	---	---	---	---
3	15.3	13.4	14.4	---	---	---	---	---	---	---	---	---
4	14.6	13.1	13.8	---	---	---	---	---	---	---	---	---
5	13.3	11.7	12.5	---	---	---	---	---	---	---	---	---
6	13.9	11.3	12.6	---	---	---	---	---	---	---	---	---
7	14.9	12.6	13.7	---	---	---	---	---	---	---	---	---
8	16.2	13.0	14.4	---	---	---	---	---	---	---	---	---
9	16.1	15.1	15.7	---	---	---	---	---	---	---	---	---
10	15.3	13.4	14.3	---	---	---	---	---	---	---	---	---
11	14.5	13.0	13.8	---	---	---	---	---	---	---	---	---
12	14.2	12.8	13.4	---	---	---	---	---	---	---	---	---
13	14.1	13.0	13.6	---	---	---	---	---	---	---	---	---
14	14.3	13.5	13.9	---	---	---	---	---	---	---	---	---
15	13.9	12.7	13.4	---	---	---	---	---	---	---	---	---
16	12.7	10.9	11.7	---	---	---	---	---	---	---	---	---
17	10.9	9.7	10.0	---	---	---	---	---	---	---	---	---
18	9.7	9.1	9.4	---	---	---	---	---	---	---	---	---
19	9.6	9.3	9.4	---	---	---	---	---	---	---	---	---
20	10.8	9.5	10.0	---	---	---	---	---	---	---	---	---
21	11.0	10.6	10.7	---	---	---	---	---	---	---	---	---
22	11.4	10.7	11.0	---	---	---	---	---	---	---	---	---
23	12.2	10.8	11.3	---	---	---	---	---	---	---	---	---
24	11.8	11.5	11.7	---	---	---	---	---	---	---	---	---
25	12.9	11.0	12.0	---	---	---	---	---	---	---	---	---
26	12.7	11.5	12.1	---	---	---	---	---	---	---	---	---
27	13.8	12.6	13.0	---	---	---	---	---	---	---	---	---
28	13.8	12.6	13.1	---	---	---	---	---	---	---	---	---
29	13.8	13.2	13.5	---	---	---	---	---	---	---	---	---
30	15.0	13.6	14.2	---	---	---	---	---	---	---	---	---
31	13.6	12.4	13.1	---	---	---	---	---	---	---	---	---
MONTH	17.0	9.1	12.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166750 MIDDLE RIVER ROUGE AT PLYMOUTH, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	10.4	8.6	9.5	12.0	9.7	10.9
2	---	---	---	---	---	---	9.1	7.0	8.0	11.3	9.6	10.4
3	---	---	---	---	---	---	8.7	5.9	7.2	9.8	8.7	9.2
4	---	---	---	---	---	---	10.7	6.4	8.5	12.8	7.8	10.1
5	---	---	---	---	---	---	12.7	8.2	10.4	13.0	9.2	11.2
6	---	---	---	---	---	---	15.3	10.8	12.9	15.9	10.7	13.1
7	---	---	---	---	---	---	13.9	12.2	13.3	18.0	12.7	15.2
8	---	---	---	---	---	---	14.4	10.8	12.7	18.1	14.5	16.4
9	---	---	---	---	---	---	14.5	11.4	13.2	19.2	15.6	17.4
10	---	---	---	---	---	---	15.1	12.1	13.8	20.8	17.5	19.0
11	---	---	---	---	---	---	15.3	12.7	14.0	19.3	17.0	18.2
12	---	---	---	---	---	---	13.8	11.1	12.3	17.0	14.9	15.9
13	---	---	---	---	---	---	13.4	10.0	11.7	15.9	14.3	14.9
14	---	---	---	---	---	---	14.2	10.6	12.4	15.7	14.7	15.1
15	---	---	---	---	---	---	14.2	11.1	12.7	14.7	13.3	14.0
16	---	---	---	---	---	---	16.4	11.5	13.7	15.5	12.5	13.9
17	---	---	---	---	---	---	16.1	12.7	14.4	16.2	13.4	14.5
18	---	---	---	---	---	---	17.9	13.3	15.4	17.0	14.0	15.4
19	---	---	---	---	---	---	19.4	14.9	17.1	16.2	14.3	15.2
20	---	---	---	---	---	---	18.0	16.0	17.0	17.7	13.8	15.7
21	---	---	---	---	---	---	16.1	13.9	15.0	19.6	15.2	17.4
22	---	---	---	---	---	---	14.9	12.6	13.4	18.0	16.4	17.0
23	---	---	---	---	---	---	12.6	8.9	10.6	16.4	15.4	15.9
24	---	---	---	---	---	---	8.9	6.3	7.4	15.6	14.4	15.0
25	---	---	---	---	---	---	10.0	6.0	7.8	18.0	13.6	15.6
26	---	---	---	---	---	---	8.9	8.2	8.6	19.1	15.9	17.5
27	---	---	---	---	---	---	9.9	8.3	9.0	19.1	16.2	17.6
28	---	---	---	---	---	---	11.6	8.3	9.9	19.1	16.2	17.7
29	---	---	---	---	---	---	12.7	9.9	11.1	19.4	16.8	18.2
30	---	---	---	10.7	7.3	8.8	11.9	10.7	11.3	20.8	17.3	18.9
31	---	---	---	10.9	9.5	10.0	---	---	---	21.1	18.0	19.5
MONTH	---	---	---	---	---	---	19.4	5.9	11.8	21.1	7.8	15.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.6	18.9	20.4	24.6	22.4	23.4	26.9	23.0	24.8	23.6	21.0	22.3
2	21.9	19.7	20.9	23.7	21.0	22.4	27.8	24.2	25.9	22.8	20.5	21.7
3	21.7	20.3	20.8	25.1	21.4	23.0	28.3	25.1	26.7	22.4	20.4	21.4
4	22.9	19.8	21.3	26.1	22.0	23.8	27.4	25.7	26.1	21.8	19.9	21.0
5	24.9	21.0	22.7	25.2	22.8	23.8	27.1	24.4	25.6	22.0	20.0	21.0
6	24.5	21.6	23.2	23.9	22.2	22.8	26.7	23.8	25.1	22.9	20.3	21.5
7	25.9	22.0	23.9	24.6	20.9	22.4	26.7	23.6	25.1	23.7	20.9	22.1
8	26.6	23.3	24.6	24.0	21.8	22.9	27.1	23.8	25.3	23.4	21.8	22.3
9	27.3	23.2	24.9	26.1	21.7	23.7	27.5	24.5	26.0	22.5	20.9	21.7
10	27.9	24.0	25.6	26.8	22.3	24.4	27.0	25.2	25.8	22.6	20.3	21.4
11	26.3	24.8	25.6	26.2	23.2	24.7	25.4	24.1	24.6	23.2	20.3	21.7
12	25.2	23.4	24.2	25.8	24.3	25.2	25.2	23.3	24.2	23.7	20.9	22.2
13	23.6	22.4	23.2	27.1	24.6	25.8	25.5	24.3	24.8	23.7	21.3	22.6
14	25.2	22.2	23.5	27.5	25.3	26.4	24.7	23.0	23.8	23.4	22.4	22.7
15	23.1	21.9	22.5	26.6	25.1	25.9	24.4	22.6	23.5	22.4	20.6	21.4
16	21.9	20.6	21.3	26.5	24.0	25.7	25.3	22.2	23.6	20.6	17.7	19.0
17	20.6	18.9	19.9	26.4	24.1	25.1	25.2	22.7	23.9	18.7	18.2	18.4
18	19.7	18.9	19.2	27.0	24.4	25.4	24.4	22.6	23.6	20.7	17.2	18.7
19	21.5	17.7	19.2	27.0	24.2	25.5	25.5	23.8	24.5	19.5	17.9	18.7
20	23.7	18.5	20.5	27.5	24.1	25.7	25.3	23.4	24.2	---	---	---
21	23.7	19.9	21.4	28.0	23.7	25.7	24.9	23.1	23.9	21.1	19.0	20.5
22	23.3	20.3	21.7	27.9	25.0	26.3	23.5	21.4	21.9	22.2	19.0	20.0
23	24.6	20.0	21.9	27.4	24.4	25.8	21.4	20.5	21.0	20.7	18.9	19.6
24	26.3	21.1	23.4	26.9	23.1	25.4	21.7	19.3	20.5	19.2	17.9	18.6
25	27.7	23.2	25.4	28.2	25.4	26.5	22.0	20.4	21.2	19.9	18.5	19.2
26	27.1	22.5	25.5	27.2	25.2	26.3	23.4	21.2	22.2	19.7	18.5	19.2
27	27.9	25.1	26.6	25.5	23.2	24.3	24.1	22.1	23.1	19.4	17.3	18.3
28	27.2	24.5	26.1	24.9	22.2	23.6	24.1	21.1	22.6	19.0	16.7	17.9
29	27.6	24.4	25.5	25.2	22.0	23.5	24.2	21.5	22.7	18.4	15.8	16.8
30	25.9	22.9	24.4	25.1	21.9	23.2	23.8	22.6	22.9	16.6	14.4	15.5
31	---	---	---	26.1	22.0	23.9	23.5	21.7	22.5	---	---	---
MONTH	27.9	17.7	23.0	28.2	20.9	24.6	28.3	19.3	23.9	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04166750 MIDDLE RIVER ROUGE AT PLYMOUTH, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.2	7.7	8.4	9.8	8.4	8.9	---	---	---	---	---	---
2	8.8	7.5	8.0	---	---	---	---	---	---	---	---	---
3	9.7	8.1	8.9	---	---	---	---	---	---	---	---	---
4	9.7	8.4	9.0	---	---	---	---	---	---	---	---	---
5	10.1	8.8	9.4	---	---	---	---	---	---	---	---	---
6	10.3	8.7	9.5	---	---	---	---	---	---	---	---	---
7	10.1	8.4	9.2	---	---	---	---	---	---	---	---	---
8	9.9	7.4	8.8	---	---	---	---	---	---	---	---	---
9	9.2	7.6	8.3	---	---	---	---	---	---	---	---	---
10	9.7	8.2	8.8	---	---	---	---	---	---	---	---	---
11	9.6	8.2	8.8	---	---	---	---	---	---	---	---	---
12	9.8	8.3	8.9	---	---	---	---	---	---	---	---	---
13	9.4	7.8	8.6	---	---	---	---	---	---	---	---	---
14	9.2	7.7	8.3	---	---	---	---	---	---	---	---	---
15	8.4	7.8	8.1	---	---	---	---	---	---	---	---	---
16	9.8	8.4	9.1	---	---	---	---	---	---	---	---	---
17	10.3	9.2	9.8	---	---	---	---	---	---	---	---	---
18	11.0	9.8	10.3	---	---	---	---	---	---	---	---	---
19	10.5	9.7	10.0	---	---	---	---	---	---	---	---	---
20	10.9	9.1	9.9	---	---	---	---	---	---	---	---	---
21	10.2	9.0	9.5	---	---	---	---	---	---	---	---	---
22	10.6	8.9	9.4	---	---	---	---	---	---	---	---	---
23	9.8	8.5	9.1	---	---	---	---	---	---	---	---	---
24	9.5	8.8	9.1	---	---	---	---	---	---	---	---	---
25	10.2	8.4	9.2	---	---	---	---	---	---	---	---	---
26	10.3	8.4	9.2	---	---	---	---	---	---	---	---	---
27	10.2	8.1	8.9	---	---	---	---	---	---	---	---	---
28	9.9	7.7	8.6	---	---	---	---	---	---	---	---	---
29	8.6	7.3	8.1	---	---	---	---	---	---	---	---	---
30	9.0	8.3	8.6	---	---	---	---	---	---	---	---	---
31	9.3	8.3	8.7	---	---	---	---	---	---	---	---	---
MONTH	11.0	7.3	9.0	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	12.7	10.2	10.9	12.9	9.8	11.0
2	---	---	---	---	---	---	11.9	10.4	11.0	13.0	10.0	11.1
3	---	---	---	---	---	---	13.8	10.7	11.8	12.8	10.2	11.1
4	---	---	---	---	---	---	14.1	10.0	11.8	14.2	9.7	11.6
5	---	---	---	---	---	---	13.9	9.3	11.3	14.0	9.1	11.2
6	---	---	---	---	---	---	13.4	8.7	10.6	13.3	8.4	10.4
7	---	---	---	---	---	---	10.4	8.9	9.5	12.4	7.7	9.8
8	---	---	---	---	---	---	13.1	8.8	10.5	12.3	7.3	9.3
9	---	---	---	---	---	---	13.3	8.7	10.5	11.3	7.1	8.8
10	---	---	---	---	---	---	13.4	8.6	10.3	9.5	6.6	7.9
11	---	---	---	---	---	---	13.3	8.6	10.3	8.8	6.8	7.8
12	---	---	---	---	---	---	13.5	8.8	10.7	10.2	7.8	8.9
13	---	---	---	---	---	---	13.6	8.9	10.8	9.8	8.0	9.0
14	---	---	---	---	---	---	13.5	8.6	10.5	9.5	8.7	9.2
15	---	---	---	---	---	---	13.5	8.7	10.5	9.9	9.2	9.6
16	---	---	---	---	---	---	13.2	8.3	10.2	10.5	9.0	9.8
17	---	---	---	---	---	---	12.4	7.9	9.5	10.4	8.7	9.5
18	---	---	---	---	---	---	12.4	7.4	9.5	10.3	8.3	9.3
19	---	---	---	---	---	---	11.7	7.0	8.9	9.0	8.4	8.7
20	---	---	---	---	---	---	10.3	6.9	8.3	9.7	8.1	8.9
21	---	---	---	---	---	---	12.1	7.7	9.4	9.3	7.4	8.5
22	---	---	---	---	---	---	11.1	8.0	9.3	8.6	7.6	8.1
23	---	---	---	---	---	---	11.3	8.8	10.0	9.0	8.0	8.6
24	---	---	---	---	---	---	12.2	10.2	11.2	9.6	8.5	9.0
25	---	---	---	---	---	---	13.1	10.7	11.7	9.9	7.9	9.1
26	---	---	---	---	---	---	11.3	11.0	11.1	9.2	7.7	8.3
27	---	---	---	---	---	---	11.8	10.8	11.2	9.1	7.5	8.3
28	---	---	---	---	---	---	12.2	10.2	11.1	9.1	7.3	8.1
29	---	---	---	---	---	---	12.7	9.7	10.9	9.0	7.5	8.1
30	---	---	---	13.5	10.0	11.4	12.5	9.8	10.6	8.8	7.0	8.0
31	---	---	---	12.2	10.0	10.6	---	---	---	8.9	6.7	7.9
MONTH	---	---	---	---	---	---	14.1	6.9	10.5	14.2	6.6	9.2

STREAMS TRIBUTARY TO DETROIT RIVER

04166750 MIDDLE RIVER ROUGE AT PLYMOUTH, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.7	6.7	7.7	7.6	7.0	7.3	7.8	6.4	7.2	8.4	7.2	7.8
2	8.6	6.8	7.6	8.0	6.9	7.4	7.5	6.2	6.9	8.3	7.3	7.8
3	8.4	7.0	7.5	7.9	6.5	7.3	7.5	6.1	6.7	8.3	7.3	7.8
4	8.6	6.9	7.7	7.8	6.1	7.1	7.2	6.2	6.7	8.6	7.4	8.0
5	8.5	5.7	7.4	7.8	6.8	7.2	7.7	6.5	6.9	8.6	7.6	8.0
6	8.0	6.7	7.3	7.8	6.9	7.4	7.8	6.5	7.1	8.6	7.4	7.9
7	8.0	6.2	7.1	8.0	6.9	7.5	8.0	6.5	7.2	8.6	7.1	7.8
8	7.0	4.4	6.1	7.7	6.9	7.4	8.0	6.5	7.2	8.6	7.1	7.7
9	6.6	4.2	5.5	7.8	6.4	7.2	8.1	6.3	7.1	8.2	7.2	7.7
10	6.8	4.5	6.1	7.6	6.1	7.0	7.8	5.6	6.8	8.5	7.4	7.9
11	6.7	5.6	6.0	7.5	6.0	6.8	7.4	5.5	6.4	8.5	7.2	7.8
12	7.5	6.7	7.3	7.6	6.0	6.8	7.8	5.7	6.5	8.6	7.2	7.8
13	7.6	7.2	7.4	7.2	5.8	6.5	7.5	5.8	6.6	8.4	7.1	7.7
14	7.7	6.8	7.3	7.2	5.8	6.5	7.7	5.9	6.9	8.1	7.1	7.5
15	7.5	6.9	7.2	7.2	6.2	6.7	7.9	6.5	7.2	8.6	7.3	7.9
16	7.9	7.1	7.5	7.4	6.1	6.7	8.0	6.3	7.1	8.9	7.7	8.6
17	8.2	7.5	7.8	7.8	7.1	7.5	7.8	6.2	6.9	9.0	8.6	8.8
18	8.3	7.7	8.0	7.4	6.5	7.2	7.8	6.3	6.9	9.2	7.9	8.6
19	8.7	7.6	8.1	7.3	6.5	6.9	7.6	6.1	6.8	9.1	8.1	8.6
20	8.5	6.8	7.8	7.3	6.3	6.9	7.4	6.1	6.7	---	---	---
21	8.1	6.7	7.5	7.3	6.5	7.1	7.5	6.3	6.9	8.8	7.2	8.0
22	8.0	6.9	7.4	7.3	6.2	6.9	7.9	6.6	7.3	8.7	7.3	8.0
23	8.3	6.7	7.5	7.6	6.0	6.9	8.2	7.2	7.6	9.0	8.3	8.8
24	8.0	6.3	7.2	7.5	6.3	6.9	8.5	7.2	7.7	9.0	8.3	8.7
25	7.7	6.2	6.9	7.1	6.4	6.8	8.5	7.2	7.7	8.6	7.9	8.2
26	7.8	6.3	6.9	7.0	6.4	6.7	8.4	7.1	7.6	8.7	8.1	8.5
27	7.6	5.9	6.8	7.8	6.8	7.4	7.8	6.8	7.4	9.1	8.3	8.7
28	6.9	5.9	6.3	7.8	6.9	7.4	8.3	7.5	7.8	8.9	8.0	8.5
29	7.4	6.3	6.9	7.7	6.8	7.3	8.2	7.2	7.8	9.4	8.1	9.1
30	7.9	6.7	7.2	7.9	6.8	7.3	8.0	7.3	7.7	9.8	9.1	9.5
31	---	---	---	8.0	6.6	7.3	8.3	7.3	7.8	---	---	---
MONTH	8.7	4.2	7.2	8.0	5.8	7.1	8.5	5.5	7.1	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04167000 MIDDLE RIVER ROUGE NEAR GARDEN CITY, MI

LOCATION.--Lat 42°20'53", long 83°18'42", in SW1/4 NW1/4 sec.6, T.2 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on right bank 200 ft downstream from bridge on Inkster Road, 1.8 mi northeast of Garden City, and 6.0 mi upstream from mouth.

DRAINAGE AREA.--99.9 mi^2.

PERIOD OF RECORD.--October 1930 to September 1933 (published as "at Detroit"), June 1947 to September 1977, October 1977 to September 1983 (operated as a crest-stage partial-record station), October 1983 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 600.95 ft above sea level. Nov. 21, 1930 to Sept. 30, 1933, nonrecording gage at site 4.8 mi downstream at datum 17.48 ft lower. June 6, 1947 to Oct. 18, 1948, nonrecording gage at site 200 ft upstream at present datum.

REMARKS.--Records fair. Regulation by storm water retention structures and occasional regulation by reservoirs upstream from station since 1956. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	60	295	239	52	110	101	73	27	e144	41	37
2	43	114	233	240	47	106	127	62	26	91	40	29
3	41	83	145	257	46	90	112	56	25	66	38	24
4	32	149	101	270	47	88	87	53	24	62	37	22
5	28	125	81	200	e48	94	76	49	27	175	36	20
6	22	86	78	160	e51	e118	73	45	e69	105	34	20
7	21	61	337	126	e85	e250	69	47	e55	74	33	19
8	20	46	592	119	e202	e354	65	44	e42	115	31	21
9	39	37	299	119	e187	254	61	38	e155	75	31	21
10	35	32	224	119	e140	166	57	37	80	53	30	20
11	28	31	258	126	109	142	54	42	e140	44	22	19
12	24	26	217	276	103	135	48	39	e115	38	20	19
13	22	23	207	638	105	113	44	e49	e120	49	30	18
14	28	21	153	798	374	96	40	e140	e115	e51	53	19
15	52	20	118	556	493	89	38	e90	e92	e55	36	20
16	67	20	97	278	767	83	35	e63	e85	e127	28	178
17	57	38	89	181	583	96	36	e54	81	e219	25	102
18	49	49	81	e131	317	112	35	46	63	e116	24	58
19	42	46	e76	e110	187	114	35	46	54	e65	21	40
20	32	95	e70	99	149	138	43	79	47	56	33	33
21	26	57	e63	e98	151	144	41	60	64	131	31	30
22	24	41	55	e93	152	135	44	57	110	78	25	82
23	38	32	55	e95	141	148	74	72	54	52	22	316
24	74	117	e55	95	119	146	120	73	45	148	22	118
25	52	211	e55	89	106	130	175	54	40	97	20	87
26	39	112	56	83	101	130	194	44	38	127	21	155
27	32	104	54	e76	90	123	229	39	45	273	119	110
28	28	166	49	e71	88	116	160	54	42	113	77	63
29	138	130	51	68	---	114	113	36	e127	69	51	145
30	142	100	59	64	---	114	87	33	e207	52	41	88
31	97	---	187	59	---	110	---	29	---	45	48	---
TOTAL	1394	2232	4490	5933	5040	4158	2473	1703	2214	2965	1120	1933
MEAN	45.0	74.4	145	191	180	134	82.4	54.9	73.8	95.6	36.1	64.4
MAX	142	211	592	798	767	354	229	140	207	273	119	316
MIN	20	20	49	59	46	83	35	29	24	38	20	18
CFSM	0.45	0.74	1.45	1.92	1.80	1.34	0.83	0.55	0.74	0.96	0.36	0.64
IN.	0.52	0.83	1.67	2.21	1.88	1.55	0.92	0.63	0.82	1.10	0.42	0.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2005, BY WATER YEAR (WY)

MEAN	45.7	59.5	75.9	82.3	110	146	132	98.8	70.1	48.7	41.8	47.0
MAX	250	178	177	269	324	313	313	310	225	179	144	199
(WY)	2002	1993	1988	1952	1976	1976	1950	1956	1968	1957	1998	2000
MIN	7.83	9.46	10.4	9.65	14.2	42.3	32.6	21.9	17.8	8.85	5.64	4.97
(WY)	1932	1965	1964	1961	1963	1931	1931	1958	1959	1931	1931	1931

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1931 - 2005	
ANNUAL TOTAL	36902		35655			
ANNUAL MEAN	101		97.7		79.6	
HIGHEST ANNUAL MEAN					133	1976
LOWEST ANNUAL MEAN					20.8	1931
HIGHEST DAILY MEAN	1060	May 22	798	Jan 14	2060	Jun 26 1968
LOWEST DAILY MEAN	18	Jul 3	18	Sep 13	1.4	Aug 21 1931
ANNUAL SEVEN-DAY MINIMUM	22	Jun 27	19	Sep 9	3.0	Aug 30 1933
MAXIMUM PEAK FLOW			871	Jan 14	(a)2330	Jun 26 1968
MAXIMUM PEAK STAGE			8.76	Jan 14	(b)10.50	May 10 1948
INSTANTANEOUS LOW FLOW					0.90	Aug 16 1956
ANNUAL RUNOFF (CFSM)	1.01		0.978		0.796	
ANNUAL RUNOFF (INCHES)	13.74		13.28		10.82	
10 PERCENT EXCEEDS	217		187		169	
50 PERCENT EXCEEDS	62		69		45	
90 PERCENT EXCEEDS	28		26		15	

(a) Gage height 9.96 ft.
(b) From floodmark.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04167150 MIDDLE RIVER ROUGE AT DEARBORN HEIGHTS, MI

LOCATION.--Lat 42°19'50", long 83°14'53", in SW1/4 sec.10, T.2 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on right bank at downstream side of bridge on Hines Drive in Dearborn Heights.

DRAINAGE AREA.--110 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 585 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. Regulation by storm water retention structures and occasional regulation by reservoirs upstream from station. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	66	245	237	e57	107	97	75	32	221	39	31
2	32	94	233	193	e52	106	108	66	32	89	35	23
3	42	89	128	246	e50	88	114	62	32	66	34	19
4	30	115	92	237	e51	87	90	58	31	56	32	18
5	26	126	76	174	e53	94	81	55	32	126	31	17
6	21	87	72	140	e62	111	79	50	71	94	30	16
7	20	64	254	117	e102	258	77	50	61	78	29	16
8	18	46	671	106	318	403	73	51	43	92	28	17
9	31	38	319	101	256	216	70	45	159	97	27	18
10	36	34	170	101	149	144	67	41	81	56	26	18
11	28	33	249	114	105	126	64	45	141	39	22	16
12	24	30	186	223	100	123	60	45	119	32	19	16
13	23	28	187	643	104	110	54	51	122	38	27	15
14	28	26	145	955	321	96	51	151	117	69	55	17
15	46	26	113	600	567	91	49	107	93	37	37	16
16	80	26	97	229	809	87	47	78	87	71	26	113
17	59	36	91	e189	735	92	47	62	80	231	22	110
18	51	53	86	e140	271	105	47	51	65	134	23	59
19	40	46	e79	e117	161	104	46	48	57	98	21	34
20	32	84	e74	e108	138	130	48	77	48	62	28	28
21	27	65	e66	e103	135	133	47	64	64	114	40	24
22	24	45	e59	e98	136	125	46	58	102	81	25	70
23	28	36	e58	e101	130	138	69	76	61	55	21	365
24	73	77	e58	e101	114	133	104	80	47	117	21	125
25	51	191	e58	e94	103	121	165	60	40	134	19	82
26	37	108	e58	e87	101	120	152	50	37	99	19	162
27	30	89	e55	e80	93	115	212	44	48	241	93	118
28	27	138	e46	e75	92	109	146	56	36	115	107	69
29	94	119	e53	e72	---	108	101	44	114	77	53	128
30	132	89	e67	e67	---	106	84	39	191	56	34	95
31	100	---	163	e64	---	102	---	35	---	44	39	---
TOTAL	1309	2104	4308	5912	5365	3988	2495	1874	2243	2919	1062	1855
MEAN	42.2	70.1	139	191	192	129	83.2	60.5	74.8	94.2	34.3	61.8
MAX	132	191	671	955	809	403	212	151	191	241	107	365
MIN	18	26	46	64	50	87	46	35	31	32	19	15
CFSM	0.38	0.64	1.26	1.73	1.74	1.17	0.76	0.55	0.68	0.86	0.31	0.56
IN.	0.44	0.71	1.46	2.00	1.81	1.35	0.84	0.63	0.76	0.99	0.36	0.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2005, BY WATER YEAR (WY)

MEAN	81.0	67.5	87.5	92.3	146	130	132	132	97.9	79.7	82.5	78.7
MAX	269	107	139	191	324	242	199	275	171	141	160	220
(WY)	2002	2004	2005	2005	2001	1998	2002	2004	2000	2000	1998	2000
MIN	36.7	32.1	44.8	31.8	32.8	55.7	57.8	60.5	50.7	33.0	30.3	35.1
(WY)	2003	2000	2003	2003	2003	2000	2004	2005	2002	2001	2002	1998

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1998 - 2005	
ANNUAL TOTAL	38502		35434			
ANNUAL MEAN	105		97.1		100	
HIGHEST ANNUAL MEAN					118	2002
LOWEST ANNUAL MEAN					71.2	2003
HIGHEST DAILY MEAN	1190	May 22	955	Jan 14	1540	Feb 10 2001
LOWEST DAILY MEAN	18	Oct 8	15	Sep 13	13	Sep 14 2002
ANNUAL SEVEN-DAY MINIMUM	21	Sep 24	17	Sep 7	14	Sep 9 2002
MAXIMUM PEAK FLOW			1030	Jan 14	(a)1810	Feb 10 2001
MAXIMUM PEAK STAGE			9.84	Jan 14	12.24	Feb 18 1998
INSTANTANEOUS LOW FLOW			14	(b)	12	(c)
ANNUAL RUNOFF (CFSM)	0.956		0.883		0.912	
ANNUAL RUNOFF (INCHES)	13.02		11.98		12.40	
10 PERCENT EXCEEDS	217		172		202	
50 PERCENT EXCEEDS	67		72		63	
90 PERCENT EXCEEDS	28		26		25	

(a) Gage height 12.10 ft.
(b) Sept. 13, 14.
(c) Sept. 14, 15, 2002.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04167150 MIDDLE RIVER ROUGE AT DEARBORN HEIGHTS, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1999 to current year.
DISSOLVED OXYGEN: April 1999 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 1-4, 9, 10, Apr. 5, 6, 12, 13, 17, 18, 22, 23, May 22, 23, June 13, 14, 27, 28, rated good; Oct. 5, 6, 11-13, 30, Apr. 19, 24-26, May 24, 25, rated fair; Oct. 31 to Nov. 1, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 28.0°C, July 24, Aug. 9, 2001, July 3, Aug. 1, 2002; minimum recorded, 2.5°C, Mar. 28, 2001.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 18.8 mg/L, Mar. 30, 2001; minimum recorded, 1.1 mg/L, May 11, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 27.1°C, June 27; minimum recorded, 3.1°C, Mar. 23, 24.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 15.6 mg/L, Apr. 22; minimum recorded, 2.3 mg/L, June 9.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.0	13.6	14.3	12.6	11.4	11.8	---	---	---	---	---	---
2	15.6	15.0	15.3	---	---	---	---	---	---	---	---	---
3	15.1	13.1	13.8	---	---	---	---	---	---	---	---	---
4	13.8	12.4	12.8	---	---	---	---	---	---	---	---	---
5	12.6	10.8	11.5	---	---	---	---	---	---	---	---	---
6	12.0	10.6	11.4	---	---	---	---	---	---	---	---	---
7	13.1	11.8	12.5	---	---	---	---	---	---	---	---	---
8	14.9	12.9	13.8	---	---	---	---	---	---	---	---	---
9	15.5	14.9	15.4	---	---	---	---	---	---	---	---	---
10	15.4	13.4	14.1	---	---	---	---	---	---	---	---	---
11	14.0	12.0	12.7	---	---	---	---	---	---	---	---	---
12	12.8	11.7	12.3	---	---	---	---	---	---	---	---	---
13	12.8	12.1	12.4	---	---	---	---	---	---	---	---	---
14	13.4	12.8	13.2	---	---	---	---	---	---	---	---	---
15	13.6	13.0	13.3	---	---	---	---	---	---	---	---	---
16	13.5	11.3	12.5	---	---	---	---	---	---	---	---	---
17	11.3	10.0	10.5	---	---	---	---	---	---	---	---	---
18	10.0	9.2	9.6	---	---	---	---	---	---	---	---	---
19	10.1	9.5	9.8	---	---	---	---	---	---	---	---	---
20	11.1	10.0	10.5	---	---	---	---	---	---	---	---	---
21	11.4	10.9	11.1	---	---	---	---	---	---	---	---	---
22	11.8	11.3	11.6	---	---	---	---	---	---	---	---	---
23	13.0	11.2	11.7	---	---	---	---	---	---	---	---	---
24	13.2	12.3	12.8	---	---	---	---	---	---	---	---	---
25	12.9	12.2	12.6	---	---	---	---	---	---	---	---	---
26	12.9	11.5	12.0	---	---	---	---	---	---	---	---	---
27	13.0	12.2	12.7	---	---	---	---	---	---	---	---	---
28	13.1	12.5	12.8	---	---	---	---	---	---	---	---	---
29	14.2	12.8	13.5	---	---	---	---	---	---	---	---	---
30	15.4	13.6	14.6	---	---	---	---	---	---	---	---	---
31	14.4	12.6	13.7	---	---	---	---	---	---	---	---	---
MONTH	15.6	9.2	12.6	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04167150 MIDDLE RIVER ROUGE AT DEARBORN HEIGHTS, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	8.0	7.2	7.6	11.2	9.7	10.4
2	---	---	---	---	---	---	7.7	6.2	6.9	11.3	9.5	10.4
3	---	---	---	---	---	---	7.8	5.7	6.6	9.6	8.4	9.1
4	---	---	---	---	---	---	9.5	6.9	8.3	11.3	7.5	9.4
5	---	---	---	---	---	---	11.7	8.5	10.2	13.6	9.2	11.4
6	---	---	---	---	---	---	13.8	10.6	12.3	14.9	10.2	12.5
7	---	---	---	---	---	---	13.3	11.4	12.6	16.6	11.6	14.2
8	---	---	---	---	---	---	12.6	9.8	11.2	17.5	13.6	15.6
9	---	---	---	---	---	---	13.6	10.1	11.8	18.4	14.5	16.4
10	---	---	---	---	---	---	14.2	10.4	12.3	19.9	15.7	17.8
11	---	---	---	---	---	---	14.6	11.3	12.8	18.5	16.1	17.6
12	---	---	---	---	---	---	13.0	10.3	11.6	16.1	14.2	15.1
13	---	---	---	---	---	---	12.7	8.9	10.8	15.2	12.6	13.9
14	---	---	---	---	---	---	13.7	9.1	11.4	15.1	13.6	14.6
15	---	---	---	---	---	---	14.0	9.7	11.9	14.9	13.6	14.5
16	---	---	---	---	---	---	14.9	10.1	12.5	14.4	13.4	13.8
17	---	---	---	---	---	---	15.2	11.3	13.3	15.4	13.2	14.3
18	---	---	---	---	---	---	16.8	12.5	14.6	16.7	13.3	15.1
19	---	---	---	---	---	---	18.6	13.9	16.2	15.6	13.9	14.8
20	---	---	---	---	---	---	18.0	15.2	16.5	15.8	13.0	14.5
21	---	---	---	---	---	---	15.7	13.1	14.4	17.6	14.3	16.0
22	---	---	---	---	---	---	13.6	11.6	12.6	17.3	15.3	16.3
23	---	---	---	5.1	3.1	4.0	11.6	8.5	9.9	16.0	14.6	15.4
24	---	---	---	4.7	3.1	3.8	8.5	6.7	7.4	14.8	14.0	14.5
25	---	---	---	5.3	4.5	5.0	9.5	6.6	7.9	16.8	13.7	15.2
26	---	---	---	4.8	4.1	4.5	10.5	9.5	10.1	18.7	15.0	16.9
27	---	---	---	4.9	4.4	4.7	10.1	9.4	9.7	18.9	15.4	17.2
28	---	---	---	6.7	4.6	5.7	10.4	9.1	9.9	18.4	15.9	17.2
29	---	---	---	7.5	6.1	6.8	11.4	10.3	10.8	18.1	15.7	17.0
30	---	---	---	8.6	6.8	7.8	11.2	10.2	10.8	19.3	16.1	17.6
31	---	---	---	9.1	7.7	8.6	---	---	---	20.1	16.6	18.4
MONTH	---	---	---	---	---	---	18.6	5.7	11.2	20.1	7.5	14.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	17.1	19.1	23.7	22.9	23.2	25.5	22.1	23.8	22.7	20.5	21.7
2	21.4	17.9	19.7	23.0	21.5	22.4	26.8	23.4	25.1	22.1	20.0	21.1
3	20.6	18.9	19.8	23.7	20.6	22.1	26.9	24.3	25.7	21.5	19.6	20.4
4	22.2	18.5	20.3	25.1	21.2	23.0	26.3	24.8	25.5	20.5	19.1	19.9
5	23.8	19.9	21.7	23.4	22.4	23.0	25.7	24.0	24.9	20.6	18.9	19.8
6	23.6	20.6	22.2	22.9	21.9	22.6	24.9	22.9	24.1	21.0	19.1	20.1
7	24.6	21.8	23.1	23.1	21.2	22.1	25.1	22.8	24.1	21.6	19.9	20.8
8	25.8	22.4	23.9	23.3	21.2	22.2	25.4	23.1	24.3	22.0	20.8	21.3
9	24.3	22.3	23.7	23.5	21.6	22.4	26.1	23.9	25.0	21.3	20.0	20.6
10	26.1	23.3	24.8	25.1	21.4	23.2	26.0	24.5	25.3	20.8	19.1	20.1
11	25.8	23.8	24.7	25.6	22.2	23.9	25.7	24.2	24.7	20.9	19.2	20.1
12	25.0	24.4	24.7	25.4	23.1	24.3	24.8	23.4	24.1	21.5	19.5	20.6
13	25.3	23.6	24.4	26.1	23.7	24.8	24.4	22.6	23.7	22.2	20.3	21.3
14	24.8	23.5	24.1	26.0	24.1	25.0	23.5	22.4	22.9	22.2	21.4	21.8
15	24.2	22.1	23.6	25.7	23.6	24.6	23.3	21.4	22.4	21.6	20.0	20.9
16	22.1	19.9	21.1	25.4	23.7	24.6	23.5	21.2	22.5	20.0	17.0	18.2
17	20.2	19.2	19.7	26.0	24.1	25.2	23.6	21.9	22.8	19.4	17.1	18.5
18	19.8	18.9	19.4	26.9	24.8	26.0	23.5	22.1	23.0	20.1	18.8	19.4
19	20.4	18.2	19.2	26.2	25.0	25.7	24.9	23.2	23.9	20.5	18.5	19.6
20	22.0	18.1	20.0	26.3	23.6	24.9	24.0	22.4	23.4	20.2	19.3	19.9
21	22.6	19.3	20.9	25.7	23.7	24.8	23.7	22.4	23.1	20.3	18.3	19.3
22	22.7	20.9	21.8	26.8	24.8	25.8	22.8	20.4	21.0	21.8	18.7	19.8
23	22.8	19.7	21.2	26.2	24.3	25.2	20.4	19.5	20.0	21.6	19.9	20.8
24	24.7	20.1	22.3	24.8	23.0	24.0	20.4	18.4	19.5	19.9	18.9	19.3
25	26.6	22.8	24.6	26.7	24.2	25.5	20.6	19.2	20.0	20.8	19.2	19.8
26	26.6	23.4	25.1	26.7	25.4	26.1	22.3	20.2	21.2	20.6	19.6	20.3
27	27.1	24.1	25.6	25.5	22.5	23.6	22.8	21.7	22.2	19.6	17.9	18.7
28	26.4	24.5	25.4	23.5	22.3	22.9	22.9	21.7	22.3	18.5	17.9	18.2
29	25.1	22.9	24.3	24.0	22.7	23.3	23.8	21.5	22.7	18.1	15.9	17.3
30	25.1	22.1	23.7	24.3	21.9	23.1	23.4	22.1	22.8	15.9	15.2	15.7
31	---	---	---	24.4	21.2	22.9	22.8	21.7	22.2	---	---	---
MONTH	27.1	17.1	22.5	26.9	20.6	23.9	26.9	18.4	23.2	22.7	15.2	19.8

STREAMS TRIBUTARY TO DETROIT RIVER

04167150 MIDDLE RIVER ROUGE AT DEARBORN HEIGHTS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.1	8.8	9.4	9.6	7.7	9.0	---	---	---	---	---	---
2	9.1	5.9	8.2	---	---	---	---	---	---	---	---	---
3	8.9	6.7	8.2	---	---	---	---	---	---	---	---	---
4	10.0	8.1	9.1	---	---	---	---	---	---	---	---	---
5	10.7	9.2	10.0	---	---	---	---	---	---	---	---	---
6	10.6	9.7	10.1	---	---	---	---	---	---	---	---	---
7	10.6	9.2	9.8	---	---	---	---	---	---	---	---	---
8	10.6	8.8	9.5	---	---	---	---	---	---	---	---	---
9	8.8	7.5	8.1	---	---	---	---	---	---	---	---	---
10	9.1	7.3	8.2	---	---	---	---	---	---	---	---	---
11	10.1	8.2	9.2	---	---	---	---	---	---	---	---	---
12	10.6	8.9	9.7	---	---	---	---	---	---	---	---	---
13	10.4	9.0	9.6	---	---	---	---	---	---	---	---	---
14	9.6	8.3	8.7	---	---	---	---	---	---	---	---	---
15	8.4	7.0	8.0	---	---	---	---	---	---	---	---	---
16	8.2	6.7	7.5	---	---	---	---	---	---	---	---	---
17	9.6	8.2	8.9	---	---	---	---	---	---	---	---	---
18	10.6	9.6	10.0	---	---	---	---	---	---	---	---	---
19	10.2	9.7	10.0	---	---	---	---	---	---	---	---	---
20	10.4	9.5	9.9	---	---	---	---	---	---	---	---	---
21	10.0	9.3	9.6	---	---	---	---	---	---	---	---	---
22	10.1	9.2	9.6	---	---	---	---	---	---	---	---	---
23	9.8	8.5	9.3	---	---	---	---	---	---	---	---	---
24	8.7	6.8	7.6	---	---	---	---	---	---	---	---	---
25	8.7	7.6	8.2	---	---	---	---	---	---	---	---	---
26	9.5	8.5	9.0	---	---	---	---	---	---	---	---	---
27	9.3	8.4	8.7	---	---	---	---	---	---	---	---	---
28	9.3	8.1	8.6	---	---	---	---	---	---	---	---	---
29	8.5	6.0	7.1	---	---	---	---	---	---	---	---	---
30	6.3	4.4	5.5	---	---	---	---	---	---	---	---	---
31	8.1	5.8	7.1	---	---	---	---	---	---	---	---	---
MONTH	10.7	4.4	8.8	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	13.4	10.6	11.9	12.8	9.9	11.2
2	---	---	---	---	---	---	11.7	10.7	11.1	12.7	9.9	11.2
3	---	---	---	---	---	---	13.6	10.8	12.0	12.7	10.2	11.3
4	---	---	---	---	---	---	14.0	10.8	12.2	13.8	10.6	12.0
5	---	---	---	---	---	---	13.6	10.2	11.7	13.3	10.2	11.5
6	---	---	---	---	---	---	12.5	9.7	10.9	13.1	9.7	11.1
7	---	---	---	---	---	---	10.0	8.7	9.4	12.6	9.3	10.6
8	---	---	---	---	---	---	12.4	9.5	10.8	12.7	8.4	10.2
9	---	---	---	---	---	---	12.2	9.6	10.8	12.2	8.2	9.9
10	---	---	---	---	---	---	12.0	9.6	10.7	11.6	7.9	9.3
11	---	---	---	---	---	---	12.2	9.3	10.5	9.9	7.4	8.5
12	---	---	---	---	---	---	12.6	9.5	10.8	11.6	7.5	9.3
13	---	---	---	---	---	---	12.8	10.0	11.2	11.1	7.1	9.3
14	---	---	---	---	---	---	13.0	10.1	11.3	7.8	6.3	6.9
15	---	---	---	---	---	---	13.3	10.1	11.4	8.7	7.2	8.1
16	---	---	---	---	---	---	13.6	10.1	11.5	10.0	8.3	9.0
17	---	---	---	---	---	---	13.0	9.7	11.0	9.8	8.4	9.0
18	---	---	---	---	---	---	13.6	9.4	11.1	9.9	8.2	8.8
19	---	---	---	---	---	---	12.7	9.0	10.5	8.5	7.9	8.2
20	---	---	---	---	---	---	11.1	7.9	9.3	8.6	7.3	7.9
21	---	---	---	---	---	---	14.4	8.6	11.4	8.9	7.5	8.1
22	---	---	---	---	---	---	15.6	12.4	13.5	8.1	7.3	7.7
23	---	---	---	13.7	11.9	12.8	14.7	11.8	13.4	7.6	6.6	7.1
24	---	---	---	14.7	12.6	13.4	14.6	13.3	13.9	8.3	7.1	7.8
25	---	---	---	14.8	12.0	13.3	13.4	11.1	12.5	8.6	7.9	8.2
26	---	---	---	15.2	12.2	13.6	11.1	9.7	10.2	8.1	7.5	7.8
27	---	---	---	15.1	12.1	13.6	10.7	9.6	10.1	8.0	7.3	7.7
28	---	---	---	15.1	12.1	13.5	11.9	10.0	10.9	7.3	5.8	6.9
29	---	---	---	14.5	11.4	12.8	12.3	9.7	10.9	7.2	5.8	6.7
30	---	---	---	14.0	10.7	12.3	11.9	9.5	10.7	8.0	7.1	7.4
31	---	---	---	12.5	10.3	11.4	---	---	---	8.0	7.2	7.5
MONTH	---	---	---	---	---	---	15.6	7.9	11.3	13.8	5.8	8.9

STREAMS TRIBUTARY TO DETROIT RIVER

04167150 MIDDLE RIVER ROUGE AT DEARBORN HEIGHTS, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	6.8	7.4	5.8	5.0	5.3	7.0	6.5	6.8	7.6	7.0	7.2
2	7.8	6.5	7.1	6.6	5.8	6.3	6.8	6.2	6.5	7.8	7.0	7.4
3	7.4	6.4	6.8	6.7	6.5	6.6	6.8	6.1	6.4	7.9	7.1	7.5
4	7.6	6.3	6.9	6.8	6.1	6.5	6.7	6.1	6.3	8.2	7.3	7.7
5	7.3	5.2	6.5	7.3	4.3	5.1	6.9	6.2	6.6	8.3	7.4	7.8
6	5.3	3.2	4.4	6.3	5.6	6.0	7.3	6.5	6.8	8.3	7.5	7.8
7	6.0	3.6	5.4	7.1	5.8	6.5	7.4	6.6	6.9	8.2	7.3	7.5
8	6.2	5.1	5.8	6.6	5.8	6.3	7.4	6.5	6.9	8.0	7.0	7.4
9	5.4	2.3	3.8	7.0	6.3	6.6	7.4	5.0	6.8	7.9	6.8	7.3
10	5.0	3.4	4.5	6.8	6.5	6.7	7.0	4.8	6.3	8.4	7.1	7.6
11	5.7	3.2	4.4	6.7	6.3	6.6	7.1	6.0	6.5	8.6	7.5	7.9
12	5.7	3.8	5.0	6.7	6.1	6.4	7.2	6.2	6.6	8.5	7.4	7.8
13	5.9	5.3	5.7	6.6	5.6	6.2	6.3	5.2	5.9	8.4	7.2	7.7
14	6.0	5.5	5.7	6.8	4.0	5.1	6.2	5.4	5.8	7.8	7.0	7.3
15	5.8	5.3	5.6	6.0	4.4	5.5	7.1	6.0	6.6	8.4	7.0	7.6
16	6.2	5.5	5.9	7.1	4.2	6.0	7.6	6.7	7.1	8.1	6.6	7.4
17	6.9	6.2	6.6	6.1	4.7	5.6	7.6	6.6	7.0	7.8	7.3	7.6
18	7.2	6.8	7.0	7.9	5.9	6.3	7.8	6.2	7.0	7.9	7.6	7.7
19	7.4	7.2	7.3	5.9	5.0	5.4	7.4	6.4	6.8	8.0	7.5	7.8
20	7.5	7.0	7.2	6.2	5.4	5.8	7.1	4.9	6.4	7.9	7.5	7.7
21	7.2	4.7	6.8	6.4	4.8	5.6	6.9	4.9	6.2	8.1	7.4	7.8
22	5.5	3.2	4.9	6.4	5.7	6.1	7.7	6.3	7.0	8.1	6.3	7.5
23	6.4	5.5	6.1	6.7	6.2	6.4	8.2	7.1	7.6	7.1	5.5	6.3
24	6.5	6.0	6.4	6.8	5.3	6.0	8.5	7.5	7.9	8.0	7.1	7.7
25	6.2	5.7	6.0	6.2	5.1	5.7	8.8	7.4	8.0	7.8	6.5	7.5
26	6.3	5.7	6.0	6.6	4.7	5.8	8.5	7.2	7.7	7.1	6.4	6.8
27	6.3	5.7	6.0	6.4	5.5	6.1	8.0	5.4	6.7	7.9	7.1	7.7
28	6.1	5.7	6.0	6.8	6.4	6.6	6.6	5.4	6.0	8.0	7.7	7.8
29	5.7	3.1	4.3	7.0	6.5	6.7	7.2	6.6	6.9	7.9	7.1	7.5
30	6.2	3.6	4.9	6.9	6.6	6.8	7.1	6.8	6.9	8.8	7.9	8.5
31	---	---	---	7.0	6.7	6.9	7.6	6.7	7.1	---	---	---
MONTH	7.9	2.3	5.9	7.9	4.0	6.1	8.8	4.8	6.8	8.8	5.5	7.6

STREAMS TRIBUTARY TO DETROIT RIVER

04167625 LOWER RIVER ROUGE AT WAYNE, MI

LOCATION.--Lat 42°17'04", long 83°25'39", in NE1/4 SE1/4 sec.25, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, on left bank at upstream side of bridge on Hannan Road in Wayne, 0.35 mi north of Michigan Avenue, and 11.3 mi upstream from mouth.

DRAINAGE AREA.--54.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 650 ft above sea level, from topographic map.

REMARKS.--Water-discharge records fair. Flow contains effluent from sewage-treatment plant, which originates outside the basin. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	51	239	175	41	77	73	61	40	107	42	39
2	42	78	149	144	44	72	79	58	41	58	40	40
3	39	61	88	179	41	71	77	54	42	47	38	36
4	39	92	67	230	45	72	69	55	40	47	39	36
5	38	80	57	147	45	74	65	52	39	139	40	36
6	38	55	56	108	48	104	62	51	49	85	38	38
7	35	49	366	93	86	359	e59	48	41	64	36	34
8	35	46	516	84	242	475	e58	47	58	70	37	28
9	38	34	175	78	188	167	56	48	73	53	40	33
10	36	22	153	83	114	111	53	47	72	43	39	32
11	37	30	183	96	87	98	55	44	182	41	38	33
12	36	30	134	253	89	95	54	51	161	40	38	34
13	36	32	147	850	93	83	51	59	118	41	45	34
14	36	30	102	702	429	78	49	98	92	38	52	31
15	45	34	85	221	559	76	50	68	69	39	45	36
16	52	32	71	126	778	71	49	59	59	43	38	99
17	46	38	72	94	369	87	49	53	51	50	40	62
18	45	37	63	75	162	92	49	50	46	38	39	46
19	41	41	58	67	121	93	48	48	44	19	38	44
20	40	63	52	61	98	127	44	53	43	14	40	43
21	40	44	51	57	100	121	46	48	50	39	39	40
22	39	40	51	55	99	118	48	47	54	50	38	56
23	42	35	50	54	88	134	54	56	43	39	34	81
24	53	e100	49	53	81	107	74	57	38	48	34	54
25	46	e188	45	52	80	108	111	52	39	45	37	49
26	42	e101	43	54	76	103	115	47	40	94	36	85
27	41	e86	44	51	71	94	122	45	37	e200	55	58
28	40	e133	46	48	73	90	92	44	42	e89	48	49
29	68	e94	47	47	---	91	75	43	72	54	42	81
30	76	e73	49	48	---	86	66	42	163	47	37	57
31	57	---	199	50	---	83	---	42	---	44	40	---
TOTAL	1336	1829	3507	4435	4347	3617	1952	1627	1938	1825	1242	1424
MEAN	43.1	61.0	113	143	155	117	65.1	52.5	64.6	58.9	40.1	47.5
MAX	76	188	516	850	778	475	122	98	182	200	55	99
MIN	35	22	43	47	41	71	44	42	37	14	34	28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2005, BY WATER YEAR (WY)

MEAN	69.3	66.6	85.2	78.5	107	116	86.9	108	59.7	57.7	51.6	49.6
MAX	136	81.0	113	143	158	148	129	201	71.2	69.6	80.2	59.1
(WY)	2002	2004	2005	2005	2002	2004	2002	2004	2004	2004	2004	2003
MIN	39.9	57.8	50.4	41.5	39.1	98.0	55.1	52.5	45.1	45.8	38.5	43.5
(WY)	2003	2003	2003	2003	2003	2003	2004	2005	2002	2003	2002	2004

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2002 - 2005	
ANNUAL TOTAL	31439		29079			
ANNUAL MEAN	85.9		79.7		77.9	
HIGHEST ANNUAL MEAN					86.6	2004
LOWEST ANNUAL MEAN					61.1	2003
HIGHEST DAILY MEAN	1250	May 22	850	Jan 13	1250	May 22 2004
LOWEST DAILY MEAN	22	Nov 10	14	Jul 20	14	Jul 20 2005
ANNUAL SEVEN-DAY MINIMUM	30	Nov 10	30	Nov 10	30	Nov 10 2004
MAXIMUM PEAK FLOW			989	Jan 13	1430	May 22 2004
MAXIMUM PEAK STAGE			10.46	Jan 13	11.62	May 22 2004
10 PERCENT EXCEEDS	148		133		137	
50 PERCENT EXCEEDS	54		52		53	
90 PERCENT EXCEEDS	37		37		36	

(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04167625 LOWER RIVER ROUGE AT WAYNE, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2002 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 2001 to current year.
DISSOLVED OXYGEN: October 2001 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Nov. 1, Apr. 10, 20, 21, rated good; Apr. 11-13, rated fair; Apr. 14, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 25.6°C, July 19, 2005; minimum recorded, 3.0°C, Apr. 5, 2003.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 18.7 mg/L, Apr. 16, 2005; minimum recorded, 2.3 mg/L, May 13, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 25.6°C, July 19; minimum recorded, 5.7°C, Mar. 26.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 18.7 mg/L, Apr. 16; minimum recorded, 5.0 mg/L, June 8.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.1	16.9	17.9	15.3	14.5	14.8	---	---	---	---	---	---
2	19.0	17.1	18.0	---	---	---	---	---	---	---	---	---
3	17.1	15.3	16.2	---	---	---	---	---	---	---	---	---
4	17.1	15.9	16.4	---	---	---	---	---	---	---	---	---
5	16.2	14.8	15.5	---	---	---	---	---	---	---	---	---
6	17.5	14.7	15.9	---	---	---	---	---	---	---	---	---
7	18.1	16.3	17.2	---	---	---	---	---	---	---	---	---
8	19.2	16.5	17.6	---	---	---	---	---	---	---	---	---
9	19.2	18.0	18.4	---	---	---	---	---	---	---	---	---
10	18.0	16.3	17.0	---	---	---	---	---	---	---	---	---
11	17.2	15.8	16.6	---	---	---	---	---	---	---	---	---
12	17.2	15.9	16.6	---	---	---	---	---	---	---	---	---
13	17.5	16.1	16.7	---	---	---	---	---	---	---	---	---
14	17.4	16.9	17.1	---	---	---	---	---	---	---	---	---
15	17.3	15.6	16.5	---	---	---	---	---	---	---	---	---
16	15.8	13.9	14.8	---	---	---	---	---	---	---	---	---
17	14.3	13.3	13.8	---	---	---	---	---	---	---	---	---
18	15.0	13.4	14.1	---	---	---	---	---	---	---	---	---
19	15.0	14.2	14.6	---	---	---	---	---	---	---	---	---
20	16.2	15.0	15.5	---	---	---	---	---	---	---	---	---
21	16.5	15.9	16.1	---	---	---	---	---	---	---	---	---
22	16.6	16.2	16.4	---	---	---	---	---	---	---	---	---
23	16.6	15.4	16.2	---	---	---	---	---	---	---	---	---
24	16.4	15.5	16.2	---	---	---	---	---	---	---	---	---
25	16.9	15.9	16.5	---	---	---	---	---	---	---	---	---
26	17.1	15.7	16.4	---	---	---	---	---	---	---	---	---
27	17.7	16.8	17.3	---	---	---	---	---	---	---	---	---
28	17.4	16.4	17.0	---	---	---	---	---	---	---	---	---
29	17.3	15.4	16.5	---	---	---	---	---	---	---	---	---
30	17.6	16.7	17.2	---	---	---	---	---	---	---	---	---
31	16.7	14.9	15.7	---	---	---	---	---	---	---	---	---
MONTH	19.2	13.3	16.4	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04167625 LOWER RIVER ROUGE AT WAYNE, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	10.6	9.4	10.1	12.6	10.6	11.6
2	---	---	---	---	---	---	10.0	8.1	8.8	12.2	11.0	11.6
3	---	---	---	---	---	---	10.2	7.1	8.5	11.1	10.1	10.4
4	---	---	---	---	---	---	12.6	8.5	10.3	13.6	9.7	11.5
5	---	---	---	---	---	---	14.6	10.2	12.2	15.1	11.0	12.9
6	---	---	---	---	---	---	15.9	12.3	14.1	16.1	11.6	13.8
7	---	---	---	---	---	---	14.9	12.3	13.7	17.7	13.5	15.5
8	---	---	---	---	---	---	14.5	10.7	12.5	17.2	13.8	15.6
9	---	---	---	---	---	---	14.9	10.9	12.9	17.7	14.2	15.9
10	---	---	---	---	---	---	15.2	11.4	13.4	19.1	15.6	17.2
11	---	---	---	---	---	---	15.1	12.1	13.6	17.5	15.3	16.4
12	---	---	---	---	---	---	13.6	10.9	12.4	15.6	13.9	14.7
13	---	---	---	---	---	---	14.0	10.3	12.1	15.1	13.0	13.9
14	---	---	---	---	---	---	14.8	10.5	12.7	15.3	14.2	14.7
15	---	---	---	---	---	---	15.0	10.9	13.0	14.9	13.4	13.9
16	---	---	---	---	---	---	15.9	11.2	13.6	14.4	12.7	13.6
17	---	---	---	---	---	---	15.5	12.3	14.0	15.5	13.2	14.2
18	---	---	---	---	---	---	17.3	13.1	15.1	16.7	13.6	15.1
19	---	---	---	---	---	---	18.1	13.7	16.0	15.7	14.4	14.8
20	---	---	---	---	---	---	16.8	14.8	15.9	17.0	13.8	15.3
21	---	---	---	---	---	---	15.4	12.6	14.1	18.0	14.3	16.0
22	---	---	---	---	---	---	14.3	12.0	12.6	16.7	15.1	15.6
23	---	---	---	---	---	---	12.0	9.4	10.6	15.4	14.8	15.1
24	---	---	---	---	---	---	9.5	6.3	7.8	15.2	14.2	14.7
25	---	---	---	7.7	6.4	7.1	11.3	6.4	8.6	17.4	14.0	15.5
26	---	---	---	7.9	5.7	6.7	10.9	10.1	10.5	17.9	15.0	16.4
27	---	---	---	7.6	6.3	7.0	10.6	9.4	10.0	17.8	15.4	16.6
28	---	---	---	10.0	6.8	8.2	12.0	9.6	10.7	17.4	15.2	16.3
29	---	---	---	10.9	8.0	9.4	13.0	11.1	11.9	17.5	15.2	16.4
30	---	---	---	12.1	9.4	10.6	12.5	11.7	12.1	18.1	15.7	16.7
31	---	---	---	11.7	10.6	11.2	---	---	---	18.5	15.7	17.0
MONTH	---	---	---	---	---	---	18.1	6.3	12.1	19.1	9.7	14.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.1	16.0	17.5	23.3	21.7	22.5	24.1	21.4	22.6	22.7	20.8	21.7
2	19.2	16.6	17.9	21.7	19.8	20.8	24.5	21.8	23.0	22.3	20.5	21.4
3	18.7	17.5	18.1	22.2	19.4	20.7	24.7	22.4	23.5	21.9	20.0	21.0
4	20.0	17.3	18.5	23.1	20.2	21.6	23.6	22.6	23.1	21.7	19.7	20.8
5	21.3	18.0	19.5	22.6	21.7	22.1	23.7	22.1	22.9	21.8	19.8	20.8
6	21.3	18.9	20.1	22.5	20.8	21.6	23.6	21.3	22.4	22.2	20.0	21.1
7	22.2	18.8	20.4	22.3	19.8	21.0	23.7	21.5	22.5	22.6	20.3	21.4
8	23.7	19.4	20.9	22.0	20.5	21.2	23.9	21.6	22.7	22.4	21.1	21.8
9	23.3	20.7	21.9	22.4	19.7	21.0	24.8	22.1	23.2	21.9	20.5	21.3
10	24.5	20.7	22.1	23.0	20.0	21.4	24.0	22.6	23.3	22.1	19.6	20.9
11	24.1	22.8	23.4	23.0	20.4	21.6	23.4	22.4	22.9	22.3	19.8	21.1
12	23.8	22.6	22.9	22.9	20.6	21.7	24.3	22.0	22.9	22.7	20.4	21.6
13	22.7	22.1	22.4	23.8	21.1	22.3	23.5	22.4	23.0	23.0	21.0	22.0
14	23.1	21.4	22.2	23.2	21.5	22.4	22.9	21.9	22.4	22.7	21.7	22.2
15	22.0	19.9	21.0	23.3	21.3	22.2	22.9	21.4	22.1	22.2	21.0	21.5
16	19.9	18.3	19.2	22.8	21.7	22.2	23.4	21.0	22.1	21.0	17.7	18.9
17	18.4	17.3	17.9	23.9	22.0	22.8	23.5	21.5	22.4	19.9	18.7	19.3
18	18.4	17.5	17.9	25.3	22.1	23.3	23.2	21.6	22.4	20.9	19.0	19.9
19	19.5	17.1	18.3	25.6	23.0	24.2	24.1	22.3	23.1	21.3	19.7	20.4
20	20.5	17.4	18.9	25.4	21.9	23.7	23.3	21.8	22.5	21.6	20.6	21.1
21	21.5	18.2	19.6	25.0	22.9	23.7	23.3	21.8	22.5	21.8	19.7	20.7
22	21.3	19.2	20.3	24.5	22.7	23.5	22.0	20.4	20.9	22.0	20.1	20.8
23	21.2	18.0	19.6	23.9	21.5	22.7	20.9	20.2	20.6	21.8	19.8	20.5
24	22.7	19.1	20.8	24.2	21.8	22.8	21.6	19.5	20.6	20.5	19.1	19.7
25	23.6	20.6	22.0	25.2	23.3	24.1	22.0	20.0	21.0	21.0	20.0	20.4
26	23.2	20.8	21.9	25.2	23.0	24.0	23.0	20.9	21.9	21.0	20.1	20.6
27	23.6	20.8	22.1	---	---	---	23.0	21.8	22.3	20.1	18.6	19.2
28	23.0	21.1	22.0	---	---	---	23.0	20.8	22.0	20.2	18.1	19.1
29	23.5	21.6	22.6	23.0	21.0	22.1	23.3	21.1	22.2	19.9	17.0	17.7
30	23.4	21.7	22.4	23.1	21.0	22.0	22.8	21.8	22.2	17.6	16.1	16.7
31	---	---	---	23.3	20.5	21.8	22.6	21.6	22.1	---	---	---
MONTH	24.5	16.0	20.5	---	---	---	24.8	19.5	22.4	23.0	16.1	20.5

STREAMS TRIBUTARY TO DETROIT RIVER

04167625 LOWER RIVER ROUGE AT WAYNE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.5	7.7	8.1	7.8	7.0	7.5	---	---	---	---	---	---
2	8.3	7.6	7.8	---	---	---	---	---	---	---	---	---
3	8.7	7.8	8.2	---	---	---	---	---	---	---	---	---
4	8.8	7.8	8.3	---	---	---	---	---	---	---	---	---
5	9.1	8.3	8.6	---	---	---	---	---	---	---	---	---
6	9.2	8.1	8.7	---	---	---	---	---	---	---	---	---
7	8.9	7.9	8.4	---	---	---	---	---	---	---	---	---
8	9.0	7.6	8.3	---	---	---	---	---	---	---	---	---
9	8.1	7.5	7.7	---	---	---	---	---	---	---	---	---
10	8.5	7.6	8.0	---	---	---	---	---	---	---	---	---
11	8.7	7.9	8.2	---	---	---	---	---	---	---	---	---
12	8.8	7.8	8.2	---	---	---	---	---	---	---	---	---
13	8.5	7.7	8.1	---	---	---	---	---	---	---	---	---
14	8.3	7.7	7.9	---	---	---	---	---	---	---	---	---
15	7.7	7.4	7.6	---	---	---	---	---	---	---	---	---
16	8.3	7.4	7.7	---	---	---	---	---	---	---	---	---
17	8.4	7.9	8.2	---	---	---	---	---	---	---	---	---
18	8.7	8.1	8.4	---	---	---	---	---	---	---	---	---
19	8.3	7.9	8.1	---	---	---	---	---	---	---	---	---
20	8.2	7.6	8.0	---	---	---	---	---	---	---	---	---
21	7.9	7.4	7.7	---	---	---	---	---	---	---	---	---
22	7.8	7.4	7.6	---	---	---	---	---	---	---	---	---
23	7.6	7.2	7.4	---	---	---	---	---	---	---	---	---
24	7.2	6.9	7.1	---	---	---	---	---	---	---	---	---
25	7.7	7.1	7.4	---	---	---	---	---	---	---	---	---
26	7.7	7.1	7.4	---	---	---	---	---	---	---	---	---
27	7.4	6.9	7.1	---	---	---	---	---	---	---	---	---
28	7.6	6.8	7.2	---	---	---	---	---	---	---	---	---
29	7.0	6.5	6.8	---	---	---	---	---	---	---	---	---
30	6.8	6.5	6.7	---	---	---	---	---	---	---	---	---
31	7.1	6.5	6.8	---	---	---	---	---	---	---	---	---
MONTH	9.2	6.5	7.8	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	15.5	9.6	12.0	14.9	8.8	11.3
2	---	---	---	---	---	---	12.9	9.7	11.1	14.4	8.8	11.2
3	---	---	---	---	---	---	17.3	10.5	13.3	13.9	8.9	10.9
4	---	---	---	---	---	---	16.9	10.1	12.9	15.8	9.2	11.7
5	---	---	---	---	---	---	16.6	9.3	12.4	14.5	8.6	10.8
6	---	---	---	---	---	---	16.0	8.6	11.7	14.0	8.2	10.2
7	---	---	---	---	---	---	11.8	8.0	9.7	12.7	7.6	9.5
8	---	---	---	---	---	---	17.3	8.8	12.1	12.0	7.3	9.0
9	---	---	---	---	---	---	16.7	8.6	12.0	11.2	7.5	8.8
10	---	---	---	---	---	---	16.5	8.2	11.8	9.8	6.9	8.1
11	---	---	---	---	---	---	16.4	7.8	11.5	8.4	6.8	7.5
12	---	---	---	---	---	---	17.3	7.8	11.8	10.4	7.3	8.6
13	---	---	---	---	---	---	17.6	7.9	12.0	9.7	7.8	8.6
14	---	---	---	---	---	---	18.0	7.6	12.2	8.1	7.8	7.9
15	---	---	---	---	---	---	18.2	8.0	12.4	9.0	7.8	8.4
16	---	---	---	---	---	---	18.7	8.1	12.6	9.8	8.5	9.0
17	---	---	---	---	---	---	16.2	7.7	11.0	9.7	8.3	8.9
18	---	---	---	---	---	---	18.2	7.8	12.2	9.6	8.0	8.6
19	---	---	---	---	---	---	16.9	7.4	11.6	8.2	7.8	8.0
20	---	---	---	---	---	---	13.2	6.7	9.6	8.8	7.8	8.2
21	---	---	---	---	---	---	17.2	7.6	11.7	8.6	7.7	8.1
22	---	---	---	---	---	---	13.0	7.4	10.0	8.0	7.6	7.8
23	---	---	---	---	---	---	12.9	7.8	10.0	8.3	7.7	8.0
24	---	---	---	---	---	---	13.1	9.1	10.8	8.6	8.0	8.3
25	---	---	---	14.6	10.7	12.3	13.7	10.1	11.7	8.8	8.0	8.4
26	---	---	---	15.5	11.0	12.8	10.7	9.2	9.8	8.2	7.7	8.0
27	---	---	---	15.5	10.8	12.8	12.3	9.6	10.7	8.0	7.6	7.8
28	---	---	---	16.2	10.7	12.8	14.7	9.7	11.6	8.0	7.6	7.8
29	---	---	---	15.8	10.1	12.4	15.2	8.8	11.4	8.1	7.8	7.9
30	---	---	---	16.0	9.8	12.2	13.6	8.5	10.7	8.1	7.8	7.9
31	---	---	---	13.2	9.4	11.0	---	---	---	8.2	7.8	8.0
MONTH	---	---	---	---	---	---	18.7	6.7	11.5	15.8	6.8	8.8

STREAMS TRIBUTARY TO DETROIT RIVER

04167625 LOWER RIVER ROUGE AT WAYNE, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.8	7.9	7.2	6.3	6.9	7.5	7.3	7.4	7.9	7.2	7.5
2	8.1	7.7	7.8	7.7	7.2	7.5	7.5	7.2	7.3	7.6	7.2	7.4
3	7.9	7.4	7.7	7.6	7.3	7.5	7.6	7.0	7.3	8.1	7.4	7.7
4	7.9	7.6	7.7	7.5	6.8	7.4	7.3	6.7	7.0	8.3	7.5	7.8
5	7.6	7.0	7.4	7.2	6.6	6.9	7.7	7.3	7.4	8.3	7.6	7.9
6	7.1	6.6	6.8	7.7	7.0	7.3	7.8	7.4	7.6	8.4	7.5	7.9
7	7.0	6.8	6.9	7.7	7.0	7.5	7.8	7.3	7.5	8.2	7.3	7.7
8	7.2	5.0	6.8	7.5	6.8	7.2	7.9	7.4	7.6	8.2	7.2	7.6
9	6.9	5.7	6.3	7.7	7.4	7.6	7.7	6.8	7.3	8.2	7.2	7.6
10	6.5	5.1	6.2	7.7	7.5	7.6	7.2	6.9	7.0	8.2	7.4	7.7
11	6.4	5.4	6.0	7.7	7.5	7.6	7.4	6.9	7.1	8.3	7.4	7.8
12	6.8	6.1	6.6	7.9	7.6	7.7	7.5	7.0	7.2	8.4	7.5	7.8
13	6.7	6.4	6.6	7.7	7.4	7.6	7.3	6.9	7.0	8.2	7.2	7.7
14	6.9	6.6	6.8	7.7	7.4	7.5	7.5	6.8	7.1	7.7	7.1	7.3
15	7.1	6.5	6.8	7.7	7.5	7.6	7.8	7.1	7.4	8.1	7.2	7.5
16	7.4	7.0	7.3	7.5	7.3	7.4	7.8	7.3	7.5	8.0	7.4	7.8
17	7.8	7.4	7.6	7.8	7.3	7.5	7.7	7.3	7.5	8.0	7.7	7.9
18	7.8	7.6	7.7	7.6	6.0	7.3	7.8	7.3	7.5	8.2	7.6	7.9
19	7.9	7.7	7.8	6.9	5.9	6.5	7.6	7.1	7.3	8.0	7.4	7.7
20	7.9	7.7	7.8	6.6	6.2	6.5	7.1	6.6	6.9	7.8	7.3	7.5
21	7.7	6.8	7.5	7.1	6.0	6.5	7.6	7.0	7.2	7.7	7.1	7.5
22	7.5	6.7	7.2	7.3	6.8	7.1	8.0	7.2	7.6	7.5	6.3	7.2
23	7.7	7.3	7.5	7.5	7.2	7.3	8.0	7.5	7.7	7.6	6.5	7.2
24	7.4	7.1	7.3	7.3	6.8	7.0	8.2	7.6	7.8	7.9	7.3	7.6
25	7.4	7.1	7.2	7.2	6.7	6.9	8.4	7.6	7.9	7.6	7.0	7.3
26	7.7	7.2	7.4	7.4	6.1	6.8	8.2	7.5	7.8	7.4	6.9	7.1
27	7.6	7.2	7.4	---	---	---	7.8	6.9	7.3	7.8	7.4	7.6
28	7.8	6.9	7.4	---	---	---	7.8	7.1	7.5	7.7	7.2	7.5
29	7.0	6.5	6.8	7.7	7.3	7.5	8.0	7.3	7.6	8.1	7.2	7.7
30	7.1	6.1	6.6	7.7	7.4	7.5	7.8	7.3	7.4	8.5	8.0	8.2
31	---	---	---	7.6	7.4	7.5	7.7	7.2	7.5	---	---	---
MONTH	8.1	5.0	7.2	---	---	---	8.4	6.6	7.4	8.5	6.3	7.6

STREAMS TRIBUTARY TO DETROIT RIVER

04168000 LOWER RIVER ROUGE AT INKSTER, MI

LOCATION.--Lat 42°18'02", long 83°18'01", in SW1/4 SE1/4 sec.19, T.2 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on right bank 10 ft downstream from bridge on John Daly Road, 0.6 mi northeast of Inkster, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--83.2 mi^2.

PERIOD OF RECORD.--June 1947 to current year.

REVISED RECORDS.--WSP 1174: 1948(M). WSP 1437: 1949. WSP 2112: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 593.14 ft above sea level. Prior to Oct. 20, 1948, nonrecording gage at same site and datum.

REMARKS.--Records fair. Since 1995, flow contains effluent from sewage-treatment plant, which originates outside the basin. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	e47	e310	e270	e46	90	80	68	38	184	45	39
2	50	e88	249	e188	e39	83	93	65	36	73	40	38
3	41	e67	123	e235	e41	77	86	59	38	53	40	36
4	40	e155	85	e310	e44	77	74	58	38	54	37	34
5	36	e110	66	e220	e48	81	67	56	38	188	44	34
6	36	e67	67	e145	e54	111	64	54	48	181	39	36
7	33	54	376	e122	106	349	61	52	43	69	37	35
8	30	50	e700	e108	323	580	60	49	43	106	37	30
9	35	47	302	e97	287	236	58	50	115	72	44	24
10	32	21	e210	e98	154	141	53	53	89	50	41	29
11	30	21	e255	e120	e118	123	54	49	195	42	38	30
12	31	27	e195	e420	111	116	53	50	202	44	41	31
13	32	29	e200	866	123	e100	52	79	134	67	57	32
14	36	28	e145	1060	472	e88	48	145	110	51	70	28
15	e57	29	e105	391	726	85	48	84	76	45	50	33
16	e62	36	92	179	811	79	48	65	66	61	41	143
17	e47	48	91	123	589	92	48	57	53	73	39	93
18	41	48	76	e98	222	106	49	52	47	91	38	54
19	41	e51	e71	e76	158	107	48	50	43	36	39	43
20	34	e85	e63	e69	125	142	50	58	42	15	46	39
21	35	e63	e54	e65	120	143	50	50	59	48	42	39
22	35	53	56	e55	127	133	53	52	72	64	39	76
23	e40	43	56	e60	113	153	72	67	45	47	36	122
24	e58	e125	53	e57	92	126	103	64	38	77	33	63
25	e45	e270	52	e54	90	120	158	55	37	54	34	72
26	41	e130	47	e53	85	116	165	50	38	168	34	137
27	38	e100	48	e51	76	105	187	44	35	383	135	83
28	37	e162	49	e48	81	97	129	45	38	152	69	e47
29	e72	e115	53	e46	---	100	94	43	118	74	45	e97
30	e99	e87	59	e47	---	94	77	40	208	53	40	e67
31	e65	---	e220	e48	---	92	---	39	---	50	41	---
TOTAL	1346	2256	4528	5779	5381	4142	2282	1802	2182	2725	1411	1664
MEAN	43.4	75.2	146	186	192	134	76.1	58.1	72.7	87.9	45.5	55.5
MAX	99	270	700	1060	811	580	187	145	208	383	135	143
MIN	30	21	47	46	39	77	48	39	35	15	33	24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2005, BY WATER YEAR (WY)

MEAN	27.9	41.7	64.6	64.2	97.1	134	115	69.0	43.6	27.8	23.1	27.7
MAX	164	176	179	294	307	301	280	312	221	98.0	107	160
(WY)	2002	1986	1968	1952	1976	1982	1950	2004	1968	2004	2004	2000
MIN	2.11	3.23	2.32	1.86	4.18	19.4	22.2	4.47	2.75	2.26	0.83	1.86
(WY)	1949	1964	1964	1961	1964	1964	1958	1958	1949	1948	1950	1952

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1947 - 2005	
ANNUAL TOTAL	39810		35498			
ANNUAL MEAN	109		97.3		(a)61.1	
HIGHEST ANNUAL MEAN					109	2004
LOWEST ANNUAL MEAN					15.9	1964
HIGHEST DAILY MEAN	2030	May 22	1060	Jan 14	2520	Jun 26 1968
LOWEST DAILY MEAN	21	Nov 10	15	Jul 20	0.30	Sep 13 1955
ANNUAL SEVEN-DAY MINIMUM	27	Nov 10	27	Nov 10	0.53	Aug 2 1950
MAXIMUM PEAK FLOW			1150	Jan 14	3600	Jun 26 1968
MAXIMUM PEAK STAGE			11.05	Jan 14	13.62	Jun 26 1968
INSTANTANEOUS LOW FLOW					0.20	(b)
10 PERCENT EXCEEDS	207		185		133	
50 PERCENT EXCEEDS	62		58		25	
90 PERCENT EXCEEDS	37		36		3.0	

(a) Annual mean, water years 1948-95, 54.1 ft^3/s, 8.83 in/yr; water years 1996-05, 94.9 ft^3/s.
(b) Sept. 13, 1955, Jan. 23, 1961.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04168400 LOWER RIVER ROUGE AT DEARBORN, MI

LOCATION.--Lat 42°18'31", long 83°15'10", in NE1/4 sec.22, T.2 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on right bank 100 ft upstream from bridge on Military Road in Dearborn.

DRAINAGE AREA.--91 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 585 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good. Flow contains effluent from sewage-treatment plant, which originates outside the basin. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	49	314	274	48	95	80	72	39	224	48	39
2	46	91	254	191	41	88	94	70	35	80	43	38
3	42	70	129	239	43	79	88	66	37	56	43	37
4	40	160	93	316	46	80	74	63	38	50	40	35
5	38	116	78	226	50	84	67	61	36	199	46	34
6	39	70	76	147	56	114	65	60	45	209	41	35
7	37	56	389	125	101	382	62	60	42	75	40	34
8	35	52	704	111	327	662	61	57	38	106	39	32
9	37	50	316	100	310	304	59	58	122	84	44	26
10	35	36	217	101	170	166	55	61	102	56	44	30
11	34	31	263	123	120	138	55	60	216	45	40	31
12	35	36	199	342	111	125	55	56	227	46	41	32
13	36	36	203	827	125	103	54	84	146	69	61	33
14	37	36	147	1140	464	89	51	165	118	63	73	31
15	58	36	109	544	731	86	51	93	81	48	51	32
16	65	40	88	222	889	79	52	70	70	86	43	130
17	49	47	86	137	766	89	52	61	57	82	40	94
18	42	50	76	100	283	111	53	56	50	103	39	55
19	42	52	72	78	190	112	54	54	45	58	40	42
20	38	87	64	71	145	156	57	62	44	20	47	38
21	38	64	54	67	135	162	58	53	61	53	44	38
22	38	53	54	57	142	145	59	55	86	67	40	e80
23	40	48	54	63	127	170	83	69	49	53	37	e130
24	60	128	52	59	98	139	111	66	41	91	33	e70
25	46	273	53	56	95	126	169	57	39	61	34	e75
26	41	133	47	55	91	122	177	52	40	181	34	e145
27	40	101	46	53	80	109	199	45	40	440	171	e85
28	39	164	46	50	84	98	133	45	35	177	76	49
29	75	119	50	48	---	101	96	43	126	82	46	99
30	102	91	54	49	---	96	81	40	204	58	41	69
31	67	---	222	50	---	94	---	40	---	52	41	---
TOTAL	1408	2375	4609	6021	5868	4504	2405	1954	2309	3074	1500	1698
MEAN	45.4	79.2	149	194	210	145	80.2	63.0	77.0	99.2	48.4	56.6
MAX	102	273	704	1140	889	662	199	165	227	440	171	145
MIN	34	31	46	48	41	79	51	40	35	20	33	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2005, BY WATER YEAR (WY)

MEAN	77.2	65.9	88.2	104	159	140	141	129	89.5	76.2	75.8	76.7
MAX	205	104	149	194	301	285	201	330	133	105	119	175
(WY)	2002	2004	2005	2005	2001	1998	1999	2004	2000	2004	2004	2000
MIN	45.4	40.9	43.2	44.6	41.1	62.1	74.8	63.0	47.5	45.1	45.4	43.0
(WY)	2005	1999	1999	2003	2003	2000	2004	2005	2002	2001	2002	1998

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1998 - 2005	
ANNUAL TOTAL	43269		37725			
ANNUAL MEAN	118		103		102	
HIGHEST ANNUAL MEAN					120	2004
LOWEST ANNUAL MEAN					78.5	2003
HIGHEST DAILY MEAN	2020	May 22	1140	Jan 14	2020	May 22 2004
LOWEST DAILY MEAN	31	Nov 11	20	Jul 20	20	Jul 20 2005
ANNUAL SEVEN-DAY MINIMUM	36	Oct 7	31	Sep 8	27	Dec 26 1998
MAXIMUM PEAK FLOW			1250	Jan 14	(a)2150	May 22 2004
MAXIMUM PEAK STAGE			8.47	Jan 14	10.30	Feb 10 2001
10 PERCENT EXCEEDS	224		199		196	
50 PERCENT EXCEEDS	71		61		62	
90 PERCENT EXCEEDS	41		37		37	

(a) Gage height 10.01 ft.
(e) Estimated.

STREAMS TRIBUTARY TO DETROIT RIVER

04168400 LOWER RIVER ROUGE AT DEARBORN, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1999 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1999 to current year.
DISSOLVED OXYGEN: April 1999 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Apr. 13, 14, 18, 19, May 10, 11, 16, 17, May 31 to June 1, June 12-14, July 14, Aug. 1-3, 30, rated good; July 15, 16, rated fair; July 17-19, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 26.0°C, on several days in 1999, 2001, and 2002; minimum recorded, 3.5°C, Apr. 5, 6, 7, 8, 2003.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 21.0 mg/L, Mar. 28, 2001; minimum recorded, 0.4 mg/L, May 22, 2004.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 25.3°C, July 25, 26; minimum recorded, 3.8°C, Mar. 24.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 18.4 mg/L, Mar. 28; minimum recorded, 0.5 mg/L, June 9.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	14.4	15.1	---	---	---	---	---	---	---	---	---
2	16.1	15.4	15.9	---	---	---	---	---	---	---	---	---
3	15.4	13.5	14.2	---	---	---	---	---	---	---	---	---
4	14.1	13.2	13.5	---	---	---	---	---	---	---	---	---
5	13.2	11.7	12.3	---	---	---	---	---	---	---	---	---
6	13.4	11.3	12.2	---	---	---	---	---	---	---	---	---
7	14.5	13.0	13.7	---	---	---	---	---	---	---	---	---
8	16.2	14.0	14.8	---	---	---	---	---	---	---	---	---
9	16.5	15.8	16.3	---	---	---	---	---	---	---	---	---
10	15.8	14.2	14.7	---	---	---	---	---	---	---	---	---
11	14.3	13.0	13.5	---	---	---	---	---	---	---	---	---
12	13.6	12.7	13.2	---	---	---	---	---	---	---	---	---
13	14.1	13.1	13.5	---	---	---	---	---	---	---	---	---
14	14.5	14.0	14.2	---	---	---	---	---	---	---	---	---
15	14.5	14.1	14.3	---	---	---	---	---	---	---	---	---
16	14.2	12.3	13.2	---	---	---	---	---	---	---	---	---
17	12.3	10.8	11.3	---	---	---	---	---	---	---	---	---
18	10.9	10.3	10.6	---	---	---	---	---	---	---	---	---
19	11.4	10.7	11.0	---	---	---	---	---	---	---	---	---
20	12.7	11.4	12.0	---	---	---	---	---	---	---	---	---
21	13.2	12.5	12.8	---	---	---	---	---	---	---	---	---
22	13.6	13.0	13.3	---	---	---	---	---	---	---	---	---
23	14.2	13.2	13.5	---	---	---	---	---	---	---	---	---
24	14.6	14.2	14.5	---	---	---	---	---	---	---	---	---
25	14.5	13.8	14.2	---	---	---	---	---	---	---	---	---
26	14.3	13.4	13.9	---	---	---	---	---	---	---	---	---
27	14.7	14.1	14.4	---	---	---	---	---	---	---	---	---
28	14.7	13.9	14.4	---	---	---	---	---	---	---	---	---
29	15.7	14.4	14.9	---	---	---	---	---	---	---	---	---
30	16.6	15.7	16.1	---	---	---	---	---	---	---	---	---
31	15.9	14.0	14.8	---	---	---	---	---	---	---	---	---
MONTH	16.6	10.3	13.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04168400 LOWER RIVER ROUGE AT DEARBORN, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	10.2	9.1	9.7	11.9	9.9	11.0
2	---	---	---	---	---	---	9.4	7.4	8.2	11.3	9.8	10.6
3	---	---	---	---	---	---	8.9	6.3	7.6	10.6	9.0	9.6
4	---	---	---	---	---	---	11.2	7.1	9.1	11.8	8.2	10.0
5	---	---	---	---	---	---	13.5	9.0	11.1	13.5	9.8	11.6
6	---	---	---	---	---	---	15.3	11.5	13.4	14.8	10.7	12.8
7	---	---	---	---	---	---	14.6	12.2	13.4	16.7	12.7	14.7
8	---	---	---	---	---	---	13.5	10.4	12.0	16.8	13.7	15.5
9	---	---	---	---	---	---	14.1	10.1	12.2	17.3	14.5	16.0
10	---	---	---	---	---	---	14.6	10.9	12.9	18.9	15.8	17.4
11	---	---	---	---	---	---	14.4	11.6	13.2	18.5	15.9	16.9
12	---	---	---	---	---	---	13.3	10.4	11.8	15.9	13.3	14.4
13	---	---	---	---	---	---	12.8	9.4	11.2	14.8	12.6	13.5
14	---	---	---	---	---	---	13.4	9.8	11.8	15.0	13.9	14.5
15	---	---	---	---	---	---	13.6	10.3	12.2	14.4	13.1	13.7
16	---	---	---	---	---	---	14.6	10.8	12.8	13.8	12.2	13.0
17	---	---	---	---	---	---	14.9	11.9	13.6	14.3	12.4	13.4
18	---	---	---	---	---	---	16.5	12.9	14.7	15.9	12.7	14.2
19	---	---	---	---	---	---	17.6	14.2	16.0	15.5	14.0	14.4
20	---	---	---	---	---	---	17.4	15.1	16.3	16.3	13.2	14.6
21	---	---	---	---	---	---	15.1	12.7	14.0	17.3	14.1	15.7
22	---	---	---	---	---	---	14.0	11.3	12.1	17.0	15.1	15.5
23	---	---	---	5.8	4.2	5.3	11.3	8.6	9.8	15.2	14.4	14.7
24	---	---	---	5.9	3.8	4.7	8.6	6.5	7.3	14.5	13.7	14.2
25	---	---	---	7.5	5.3	6.3	9.1	5.9	7.4	16.4	13.4	14.8
26	---	---	---	7.2	5.4	6.3	10.4	8.7	9.8	17.4	14.7	16.0
27	---	---	---	7.1	5.4	6.3	10.3	9.5	9.9	17.2	15.4	16.4
28	---	---	---	9.0	5.9	7.3	11.6	9.1	10.2	17.0	15.4	16.3
29	---	---	---	10.3	7.2	8.7	12.3	10.2	11.1	16.8	15.1	16.0
30	---	---	---	11.4	8.5	9.9	11.8	10.7	11.3	17.3	15.6	16.5
31	---	---	---	11.5	10.1	10.7	---	---	---	18.2	16.0	17.2
MONTH	---	---	---	---	---	---	17.6	5.9	11.5	18.9	8.2	14.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.8	16.6	17.8	23.2	22.0	22.6	24.0	21.3	22.6	21.7	20.3	21.1
2	19.3	17.4	18.4	22.0	20.5	21.2	24.6	22.4	23.5	21.5	19.9	20.7
3	19.2	18.1	18.6	21.7	19.3	20.5	24.9	23.0	24.0	20.9	19.4	20.1
4	20.4	17.8	19.1	23.0	20.3	21.6	24.8	23.4	23.8	20.2	18.9	19.6
5	21.4	19.2	20.3	22.7	21.9	22.1	23.9	22.7	23.4	20.1	18.9	19.6
6	21.8	19.8	20.9	22.0	21.2	21.7	23.4	21.9	22.7	20.6	19.1	19.9
7	22.8	20.0	21.5	21.8	20.1	20.9	23.4	21.7	22.6	21.2	19.7	20.5
8	22.9	21.1	22.1	21.9	20.2	21.1	23.7	22.0	22.9	21.3	20.7	21.0
9	23.6	20.7	22.3	22.2	19.9	21.0	24.9	22.7	23.6	21.0	20.0	20.4
10	24.4	22.2	23.2	23.2	20.2	21.7	24.5	23.0	23.7	20.1	18.9	19.7
11	24.1	22.5	23.4	23.3	21.1	22.3	24.0	22.9	23.3	20.4	19.1	19.8
12	23.7	22.9	23.4	23.2	21.5	22.4	23.5	22.2	22.8	21.1	19.7	20.3
13	23.0	22.2	22.5	24.5	22.1	23.3	23.5	22.5	23.0	21.7	20.5	21.0
14	23.4	21.9	22.5	24.7	22.9	23.7	23.1	21.8	22.3	21.8	21.4	21.6
15	22.6	20.9	21.6	23.7	22.6	23.1	22.4	21.1	21.8	21.4	20.1	20.7
16	20.9	18.7	19.6	23.6	22.7	23.1	22.7	20.7	21.7	20.1	17.5	18.5
17	18.7	17.3	17.9	24.4	22.9	23.7	22.8	21.2	22.1	18.7	17.8	18.3
18	17.9	17.1	17.5	24.8	23.1	23.9	22.8	21.4	22.2	19.6	17.9	18.7
19	18.5	16.7	17.6	24.7	23.5	24.1	23.7	22.2	23.0	19.8	18.5	19.1
20	20.0	17.2	18.5	24.5	22.7	23.7	23.5	22.0	22.7	20.0	19.3	19.7
21	21.8	18.5	19.6	24.6	22.8	23.7	22.9	21.8	22.4	20.0	18.6	19.3
22	21.7	19.9	20.9	24.9	23.4	24.2	22.3	20.1	20.7	20.0	18.9	19.5
23	21.0	18.5	19.9	24.3	22.6	23.5	20.1	19.2	19.5	---	---	---
24	22.4	19.6	21.0	23.9	22.0	23.1	20.1	18.3	19.2	---	---	---
25	24.1	21.9	22.8	25.3	23.4	24.3	20.5	19.1	19.7	---	---	---
26	24.1	22.2	23.3	25.3	23.9	24.5	21.8	20.0	20.8	---	---	---
27	24.3	22.5	23.5	24.0	22.2	22.8	22.5	21.3	21.9	18.8	18.2	18.6
28	24.3	23.0	23.5	22.7	21.7	22.1	22.6	21.0	21.8	18.3	16.6	17.5
29	23.7	22.1	22.9	22.6	20.9	21.8	22.7	20.8	21.8	18.3	16.2	17.2
30	23.3	22.3	22.8	22.7	20.6	21.7	22.6	21.6	21.9	16.2	15.0	15.5
31	---	---	---	22.8	20.4	21.6	21.9	21.2	21.5	---	---	---
MONTH	24.4	16.6	21.0	25.3	19.3	22.6	24.9	18.3	22.2	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04168400 LOWER RIVER ROUGE AT DEARBORN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.4	7.7	8.1	---	---	---	---	---	---	---	---	---
2	8.0	7.0	7.5	---	---	---	---	---	---	---	---	---
3	8.3	7.0	7.8	---	---	---	---	---	---	---	---	---
4	8.7	7.9	8.3	---	---	---	---	---	---	---	---	---
5	9.2	8.2	8.7	---	---	---	---	---	---	---	---	---
6	9.3	8.9	9.1	---	---	---	---	---	---	---	---	---
7	8.9	8.4	8.7	---	---	---	---	---	---	---	---	---
8	8.6	8.0	8.3	---	---	---	---	---	---	---	---	---
9	8.0	7.0	7.4	---	---	---	---	---	---	---	---	---
10	8.2	7.3	7.8	---	---	---	---	---	---	---	---	---
11	8.5	7.8	8.1	---	---	---	---	---	---	---	---	---
12	8.6	8.0	8.3	---	---	---	---	---	---	---	---	---
13	8.4	7.9	8.1	---	---	---	---	---	---	---	---	---
14	7.9	7.2	7.5	---	---	---	---	---	---	---	---	---
15	7.6	6.3	7.2	---	---	---	---	---	---	---	---	---
16	7.7	6.8	7.3	---	---	---	---	---	---	---	---	---
17	8.6	7.4	8.0	---	---	---	---	---	---	---	---	---
18	9.0	8.4	8.7	---	---	---	---	---	---	---	---	---
19	8.8	8.4	8.6	---	---	---	---	---	---	---	---	---
20	8.6	8.1	8.3	---	---	---	---	---	---	---	---	---
21	8.4	7.9	8.1	---	---	---	---	---	---	---	---	---
22	8.2	7.6	7.9	---	---	---	---	---	---	---	---	---
23	8.0	7.2	7.7	---	---	---	---	---	---	---	---	---
24	7.2	6.4	6.7	---	---	---	---	---	---	---	---	---
25	7.4	6.9	7.2	---	---	---	---	---	---	---	---	---
26	7.6	7.1	7.4	---	---	---	---	---	---	---	---	---
27	7.5	7.0	7.3	---	---	---	---	---	---	---	---	---
28	7.4	6.9	7.2	---	---	---	---	---	---	---	---	---
29	7.3	5.1	6.3	---	---	---	---	---	---	---	---	---
30	5.9	4.4	5.2	---	---	---	---	---	---	---	---	---
31	6.9	5.2	6.4	---	---	---	---	---	---	---	---	---
MONTH	9.3	4.4	7.7	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	15.9	9.2	12.1	14.3	8.9	11.4
2	---	---	---	---	---	---	11.6	9.5	10.4	14.2	9.1	11.6
3	---	---	---	---	---	---	17.0	10.2	13.1	13.1	9.2	11.2
4	---	---	---	---	---	---	18.2	10.4	13.8	15.8	9.5	12.5
5	---	---	---	---	---	---	18.1	9.5	13.3	15.2	9.2	12.2
6	---	---	---	---	---	---	17.0	8.4	12.3	14.8	8.5	11.5
7	---	---	---	---	---	---	10.9	7.4	9.2	13.3	7.7	10.5
8	---	---	---	---	---	---	16.2	8.4	11.7	12.5	7.0	9.8
9	---	---	---	---	---	---	16.4	8.7	12.3	11.4	6.8	9.2
10	---	---	---	---	---	---	15.7	8.3	12.0	9.7	6.3	8.1
11	---	---	---	---	---	---	15.4	8.1	11.7	7.7	5.8	6.7
12	---	---	---	---	---	---	15.5	8.4	11.9	10.0	5.9	7.8
13	---	---	---	---	---	---	15.5	8.9	12.3	9.5	4.0	7.8
14	---	---	---	---	---	---	15.0	8.8	12.0	7.2	5.5	6.8
15	---	---	---	---	---	---	14.6	8.9	11.8	8.1	7.1	7.7
16	---	---	---	---	---	---	14.7	8.7	11.8	9.5	7.8	8.6
17	---	---	---	---	---	---	13.2	8.1	10.9	9.1	8.0	8.5
18	---	---	---	---	---	---	13.7	7.9	10.7	8.9	7.4	8.1
19	---	---	---	---	---	---	11.8	7.5	9.8	7.8	6.3	7.0
20	---	---	---	---	---	---	10.1	5.6	7.0	7.4	6.3	7.0
21	---	---	---	---	---	---	12.0	4.8	8.2	7.4	6.5	7.0
22	---	---	---	---	---	---	10.8	7.6	9.2	7.0	6.1	6.5
23	---	---	---	12.5	11.2	11.8	9.1	7.0	8.2	7.2	5.7	6.3
24	---	---	---	15.7	11.9	13.3	10.8	8.4	9.5	7.6	6.3	7.2
25	---	---	---	16.0	11.5	13.3	11.5	10.2	11.0	7.7	7.2	7.5
26	---	---	---	16.7	11.4	13.6	10.8	9.1	9.7	7.3	6.8	7.1
27	---	---	---	16.7	11.5	13.7	10.1	9.1	9.6	6.9	6.5	6.7
28	---	---	---	18.4	11.2	14.2	12.1	9.8	10.7	6.9	6.4	6.6
29	---	---	---	17.5	10.7	13.5	13.1	9.3	10.9	7.4	6.7	7.0
30	---	---	---	17.2	9.9	12.9	12.6	8.8	10.6	7.2	6.8	7.0
31	---	---	---	14.1	9.2	11.3	---	---	---	7.2	6.7	6.9
MONTH	---	---	---	---	---	---	18.2	4.8	10.9	15.8	4.0	8.4

STREAMS TRIBUTARY TO DETROIT RIVER

04168400 LOWER RIVER ROUGE AT DEARBORN, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.1	6.6	6.9	5.9	5.5	5.7	6.7	5.9	6.4	5.8	4.9	5.4
2	6.6	6.2	6.4	6.4	5.5	6.2	6.3	5.8	6.1	6.2	5.3	5.8
3	6.3	6.1	6.2	6.8	5.7	6.4	6.2	5.6	5.9	6.3	5.2	5.8
4	6.3	5.8	6.2	6.3	2.6	5.8	6.0	5.5	5.8	6.7	5.2	6.1
5	5.9	5.0	5.7	6.4	4.6	5.9	5.9	5.6	5.8	6.9	5.7	6.3
6	5.0	3.5	4.6	6.7	6.0	6.3	6.6	5.8	6.3	7.0	5.9	6.5
7	5.1	4.6	4.9	6.6	5.6	6.3	6.8	6.1	6.5	6.9	6.0	6.5
8	5.2	3.6	4.8	6.9	5.9	6.4	6.6	5.9	6.3	6.4	5.9	6.1
9	4.8	0.5	3.7	6.6	6.1	6.4	7.0	3.3	6.1	6.7	5.3	6.0
10	4.7	1.5	4.0	6.8	5.8	6.4	5.8	3.4	5.4	7.0	6.2	6.6
11	5.4	3.4	4.7	6.6	5.7	6.2	6.1	5.0	5.6	7.0	6.3	6.7
12	5.9	5.2	5.6	6.5	5.6	6.1	6.5	5.8	6.2	7.0	6.3	6.7
13	6.1	5.3	5.8	6.7	1.9	5.3	6.2	4.6	5.9	6.8	6.3	6.5
14	6.3	5.4	5.8	5.3	1.1	3.8	6.4	3.8	5.9	6.3	6.0	6.1
15	5.8	5.5	5.7	6.4	4.6	5.6	6.9	6.3	6.6	6.7	5.8	6.3
16	6.3	5.6	6.0	6.4	4.2	5.6	7.0	6.2	6.7	7.7	6.2	7.0
17	6.8	6.3	6.6	6.3	3.8	5.1	6.8	6.0	6.4	7.7	7.4	7.6
18	7.0	6.6	6.8	6.9	3.9	6.2	6.8	5.9	6.4	7.7	7.1	7.5
19	7.0	6.4	6.8	6.1	3.1	4.4	6.4	6.0	6.2	7.7	7.0	7.3
20	7.0	6.2	6.6	3.9	3.0	3.5	6.4	4.1	5.8	7.2	6.8	7.0
21	6.7	2.1	5.9	5.2	1.0	4.4	6.1	5.3	5.8	7.3	6.6	7.0
22	5.7	3.8	5.1	5.9	4.3	5.4	7.2	6.0	6.8	7.1	6.5	6.8
23	6.2	5.1	5.8	6.2	5.5	5.9	7.4	6.9	7.2	---	---	---
24	5.9	4.7	5.4	6.1	2.9	5.4	7.3	6.8	7.1	---	---	---
25	5.0	4.3	4.6	5.6	4.8	5.3	7.4	6.7	7.1	---	---	---
26	5.1	4.0	4.6	6.1	2.7	5.3	7.1	6.5	6.9	---	---	---
27	5.3	4.5	4.9	6.7	4.6	6.3	6.8	4.3	6.0	7.5	7.0	7.2
28	5.0	4.1	4.7	6.7	6.4	6.6	6.3	5.5	6.0	7.5	6.9	7.2
29	5.5	4.4	5.0	6.8	6.4	6.6	6.5	5.4	6.0	7.5	5.9	7.0
30	5.5	2.2	5.1	6.9	6.2	6.6	5.9	5.0	5.6	7.9	7.5	7.8
31	---	---	---	6.9	6.2	6.6	5.6	4.5	5.2	---	---	---
MONTH	7.1	0.5	5.5	6.9	1.0	5.7	7.4	3.3	6.2	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04168530 RIVER ROUGE AT ALLEN PARK, MI

LOCATION.--Lat 42°18'03", long 83°11'58", in private claim 142, T.2 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on right bank 10 ft downstream from bridge on Rotunda Drive in Allen Park, 2.3 mi downstream from Lower River Rouge, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--410 mi^2, approximately.

WATER-LEVEL RECORDS

PERIOD OF RECORD.--May 2001 to September 2003, October 2003 to current year (gage heights only).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 611 ft above sea level, from topographic map. Prior to Oct. 1, 2003, acoustic doppler current meter at site.

REMARKS.--Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 14.47 ft, May 22, 2004; minimum, 7.47 ft, Nov. 13, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 13.52 ft, Jan. 14; minimum, 8.95 ft, Oct. 16.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.63	---	10.24	10.72	10.80	10.37	10.72	10.96	10.94	10.80	10.59	10.39
2	10.37	10.20	10.34	10.58	10.84	10.45	10.97	10.82	10.99	10.88	10.60	10.28
3	---	10.20	9.94	10.75	10.79	10.58	10.60	10.94	11.00	10.84	10.59	10.41
4	---	10.17	9.80	10.84	10.77	10.64	10.90	11.07	10.93	10.75	10.42	10.50
5	10.45	9.77	10.09	11.03	10.69	10.63	11.03	11.10	10.89	10.82	10.56	10.49
6	10.24	9.77	10.41	10.69	10.70	10.53	---	11.04	10.80	10.82	10.60	10.42
7	10.38	9.94	11.00	10.58	10.67	11.00	---	11.03	10.83	10.84	10.53	10.37
8	10.35	9.91	11.68	10.56	11.01	11.48	10.96	11.02	10.88	10.78	10.55	10.38
9	10.06	10.09	10.80	10.56	10.94	10.81	11.01	11.06	11.00	10.75	10.44	10.42
10	10.31	9.97	10.44	10.36	10.63	10.71	10.95	10.95	10.89	10.71	10.41	10.40
11	10.41	10.06	10.37	10.73	10.53	10.62	11.13	11.02	10.99	10.70	10.53	10.32
12	10.35	10.24	10.13	11.08	10.52	10.53	11.46	11.22	10.97	10.77	10.44	10.28
13	10.36	10.14	9.85	12.55	10.78	10.61	11.09	11.36	10.87	10.71	10.49	10.22
14	10.27	10.00	10.04	13.21	11.48	10.59	10.90	11.06	10.88	10.74	10.58	10.16
15	10.10	9.94	9.92	11.98	12.05	10.54	10.98	10.85	10.58	10.78	10.59	10.36
16	9.43	9.88	9.65	11.05	12.91	10.57	10.91	10.95	10.75	10.79	10.50	---
17	9.44	9.89	9.96	10.83	12.42	10.57	10.85	11.02	10.80	10.89	10.52	---
18	10.30	9.92	9.94	10.94	11.01	10.68	10.87	11.04	10.89	10.69	10.64	---
19	10.47	10.10	9.65	10.74	10.78	10.78	10.78	11.14	10.98	10.60	10.26	---
20	10.23	9.98	10.01	10.84	11.10	10.66	10.75	11.12	10.92	10.67	10.41	---
21	10.19	9.86	10.06	10.92	10.73	10.66	10.92	10.94	10.90	10.68	10.19	---
22	10.33	9.92	10.0	11.00	10.74	---	10.94	11.00	10.91	10.70	10.39	10.33
23	10.31	9.90	10.02	10.94	10.76	---	10.59	11.07	10.88	10.73	10.44	10.90
24	10.13	10.46	10.00	10.68	10.84	10.82	10.51	10.99	10.79	10.67	10.50	10.61
25	10.16	10.17	10.32	10.83	10.66	10.79	10.86	10.96	10.82	10.70	10.52	10.27
26	10.18	10.02	10.44	10.77	10.55	10.78	11.17	10.89	10.88	10.64	10.49	10.34
27	10.29	10.16	10.51	10.80	10.78	10.78	11.18	10.83	10.87	11.18	10.57	10.37
28	10.29	9.68	10.58	---	10.71	10.82	11.13	10.86	10.80	10.85	10.44	10.30
29	10.30	10.02	10.69	---	---	10.77	11.21	10.84	10.89	10.72	10.44	9.93
30	---	10.12	10.67	10.69	---	10.93	11.17	10.86	10.96	10.78	10.51	10.28
31	---	---	10.53	10.70	---	10.52	---	10.91	---	10.69	10.57	---
MEAN	---	---	10.26	---	10.97	---	---	11.00	10.88	10.76	10.49	---
MAX	---	---	11.68	---	12.91	---	---	11.36	11.00	11.18	10.64	---
MIN	---	---	9.65	---	10.52	---	---	10.82	10.58	10.60	10.19	---

STREAMS TRIBUTARY TO DETROIT RIVER

04168530 RIVER ROUGE AT ALLEN PARK, MI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2001 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 2001 to current year.
DISSOLVED OXYGEN: April 2001 to current year.

INSTRUMENTATION.--Water-quality monitor telemeter, set for 15 minute measurement interval, not operated during winter months.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Water temperature records rated excellent. Dissolved oxygen records rated excellent except for the following periods: Oct. 5, 6, 11-13, 16, Apr. 1, 2, 17, 18, May 6, 7, 16, 17, 20, 21, 27, 28, June 6, 7, 12-14, 19, 20, 25, 26, July 18, 19, Aug. 2, 3, rated good; Oct. 17-19, Apr. 3-6, 19, May 8, 9, 22, 23, 29, 30, June 21, 22, 27, 28, rated fair; May 10, 11, 24, 25, May 31 to June 1, rated poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded during period of operation, 28.0°C, Aug. 9, 2001; minimum recorded, 2.5°C, Apr. 8, 2003.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.9 mg/L, Mar. 27, 2005; minimum recorded, 0.6 mg/L, Aug. 10, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded during period of operation, 26.2°C, June 27, Aug. 3; minimum recorded, 3.5°C, Mar. 24.
DISSOLVED OXYGEN: Maximum recorded during period of operation, 16.9 mg/L, Mar. 27; minimum recorded, 1.2 mg/L, June 10.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.3	14.4	15.2	---	---	---	---	---	---	---	---	---
2	16.3	14.5	15.2	---	---	---	---	---	---	---	---	---
3	15.1	13.3	14.2	---	---	---	---	---	---	---	---	---
4	14.3	12.8	13.4	---	---	---	---	---	---	---	---	---
5	13.7	11.8	12.6	---	---	---	---	---	---	---	---	---
6	13.3	11.0	12.0	---	---	---	---	---	---	---	---	---
7	13.7	11.5	12.3	---	---	---	---	---	---	---	---	---
8	14.6	12.2	13.2	---	---	---	---	---	---	---	---	---
9	15.9	14.1	14.7	---	---	---	---	---	---	---	---	---
10	15.5	13.6	14.4	---	---	---	---	---	---	---	---	---
11	14.6	12.8	13.6	---	---	---	---	---	---	---	---	---
12	13.9	12.3	13.0	---	---	---	---	---	---	---	---	---
13	13.2	12.2	12.6	---	---	---	---	---	---	---	---	---
14	13.5	12.5	12.9	---	---	---	---	---	---	---	---	---
15	13.4	12.8	13.1	---	---	---	---	---	---	---	---	---
16	12.9	11.6	12.3	---	---	---	---	---	---	---	---	---
17	11.6	10.2	10.8	---	---	---	---	---	---	---	---	---
18	10.2	9.6	9.8	---	---	---	---	---	---	---	---	---
19	9.9	9.5	9.7	---	---	---	---	---	---	---	---	---
20	10.8	9.8	10.3	---	---	---	---	---	---	---	---	---
21	11.3	10.6	10.9	---	---	---	---	---	---	---	---	---
22	11.8	11.2	11.4	---	---	---	---	---	---	---	---	---
23	12.8	11.3	11.8	---	---	---	---	---	---	---	---	---
24	12.9	12.2	12.6	---	---	---	---	---	---	---	---	---
25	13.8	12.7	13.1	---	---	---	---	---	---	---	---	---
26	13.6	12.6	12.9	---	---	---	---	---	---	---	---	---
27	14.1	12.5	13.1	---	---	---	---	---	---	---	---	---
28	14.2	12.8	13.3	---	---	---	---	---	---	---	---	---
29	14.0	13.0	13.5	---	---	---	---	---	---	---	---	---
30	15.1	13.8	14.5	---	---	---	---	---	---	---	---	---
31	14.5	13.4	14.0	---	---	---	---	---	---	---	---	---
MONTH	16.3	9.5	12.8	---	---	---	---	---	---	---	---	---

STREAMS TRIBUTARY TO DETROIT RIVER

04168530 RIVER ROUGE AT ALLEN PARK, MI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	9.5	8.7	9.0	11.2	10.2	10.7
2	---	---	---	---	---	---	8.7	6.9	7.8	10.7	10.1	10.4
3	---	---	---	---	---	---	7.6	6.2	6.9	10.2	9.1	9.6
4	---	---	---	---	---	---	9.2	6.8	8.0	10.3	8.6	9.4
5	---	---	---	---	---	---	11.3	8.7	9.9	11.9	9.6	10.8
6	---	---	---	---	---	---	13.4	11.1	12.1	13.1	11.2	12.1
7	---	---	---	---	---	---	13.5	12.6	13.1	15.1	12.2	13.9
8	---	---	---	---	---	---	12.7	11.4	12.1	16.3	14.2	15.3
9	---	---	---	---	---	---	12.6	11.4	12.0	17.2	15.3	16.2
10	---	---	---	---	---	---	13.1	12.0	12.5	18.8	16.0	17.5
11	---	---	---	---	---	---	13.6	12.5	13.0	18.6	16.4	17.8
12	---	---	---	---	---	---	12.7	11.3	12.2	16.8	14.6	16.0
13	---	---	---	---	---	---	12.4	10.8	11.5	14.9	13.5	14.4
14	---	---	---	---	---	---	12.8	10.8	11.7	14.5	13.8	14.2
15	---	---	---	---	---	---	13.2	11.1	12.1	14.1	13.6	13.8
16	---	---	---	---	---	---	14.0	11.4	12.6	14.1	13.0	13.5
17	---	---	---	---	---	---	14.3	12.2	13.2	14.3	13.1	13.7
18	---	---	---	---	---	---	15.7	12.8	14.2	15.4	13.7	14.3
19	---	---	---	---	---	---	17.1	14.3	15.7	14.9	13.8	14.5
20	---	---	---	---	---	---	17.4	15.5	16.4	15.5	13.7	14.6
21	---	---	---	---	---	---	15.7	14.1	15.1	16.5	14.6	15.6
22	---	---	---	---	---	---	14.1	11.9	13.3	16.5	15.4	16.0
23	---	---	---	5.1	3.9	4.5	11.9	9.1	10.6	15.6	14.7	15.3
24	---	---	---	4.6	3.5	4.0	9.1	6.6	7.6	14.7	14.0	14.3
25	---	---	---	5.8	4.4	5.1	8.0	6.2	7.1	16.0	13.7	14.7
26	---	---	---	5.8	4.7	5.3	9.7	8.0	8.9	17.0	15.2	16.0
27	---	---	---	5.5	4.6	5.1	10.0	9.4	9.6	17.9	16.0	16.9
28	---	---	---	6.9	5.0	5.9	10.6	9.0	9.8	18.0	16.2	17.1
29	---	---	---	8.3	6.3	7.3	11.5	10.1	10.7	17.6	16.3	16.9
30	---	---	---	9.7	7.6	8.7	11.3	10.7	11.1	18.2	16.2	17.1
31	---	---	---	10.4	9.1	9.6	---	---	---	19.6	16.7	17.9
MONTH	---	---	---	---	---	---	17.4	6.2	11.3	19.6	8.6	14.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.4	17.3	18.6	23.7	22.4	23.0	24.9	21.9	23.3	23.1	21.0	22.0
2	21.1	17.9	19.3	23.0	21.6	22.3	25.8	22.8	24.1	23.0	20.5	21.7
3	20.5	18.7	19.5	22.4	21.3	21.8	26.2	23.9	24.9	22.4	20.3	21.3
4	21.4	18.8	19.8	23.8	21.3	22.4	25.8	24.3	25.1	21.6	19.8	20.6
5	23.7	19.9	21.3	23.3	22.3	22.7	25.8	23.9	24.8	21.8	19.5	20.4
6	23.0	20.8	21.9	22.8	21.5	22.2	25.4	23.6	24.3	21.4	19.5	20.3
7	23.5	21.2	22.3	22.6	21.2	21.8	25.0	23.1	23.9	22.2	19.7	20.6
8	24.5	22.6	23.4	22.4	21.5	21.9	25.3	23.0	24.0	21.9	20.5	21.0
9	23.7	22.4	23.3	21.9	20.4	21.2	25.6	23.5	24.2	22.3	20.5	21.3
10	25.0	22.7	23.8	23.4	21.3	22.2	25.8	24.0	24.8	22.0	19.8	20.7
11	24.8	23.9	24.4	24.5	22.2	23.2	25.2	24.2	24.6	22.1	19.7	20.6
12	24.6	23.3	23.9	24.8	22.7	23.6	25.3	23.6	24.2	22.1	19.8	20.6
13	24.0	23.3	23.7	25.6	23.2	24.2	24.7	23.5	24.0	22.6	20.2	21.1
14	24.3	22.6	23.4	25.7	24.1	24.7	23.6	22.7	23.2	22.2	21.1	21.6
15	23.5	22.3	22.8	25.2	24.0	24.6	23.4	22.1	22.7	21.9	20.7	21.3
16	22.3	20.2	21.1	24.6	22.8	24.1	23.5	21.5	22.3	20.7	17.5	19.1
17	20.2	18.9	19.4	24.4	23.4	24.0	23.4	21.7	22.4	18.3	17.3	17.8
18	19.0	18.1	18.6	25.8	24.3	24.8	24.0	21.9	22.9	19.5	18.0	18.6
19	19.4	17.8	18.5	25.9	24.3	25.1	24.9	22.4	23.5	19.9	18.6	19.1
20	20.6	17.9	19.0	25.7	24.3	24.9	24.3	22.8	23.4	21.2	18.7	19.7
21	22.2	18.9	20.1	25.3	24.0	24.7	24.2	22.1	23.2	21.0	18.7	19.7
22	22.5	20.4	21.3	26.1	24.1	25.0	22.4	21.0	22.0	21.6	18.8	19.6
23	22.1	20.6	21.2	25.9	24.3	25.0	21.2	20.2	20.6	20.9	19.4	20.3
24	23.3	20.4	21.7	24.5	23.0	24.0	21.5	19.3	20.1	19.4	18.8	19.0
25	24.9	21.7	22.9	25.3	23.4	24.4	20.9	19.4	20.1	19.5	18.6	19.0
26	26.0	23.2	24.4	25.9	24.6	25.1	22.5	19.9	20.7	20.4	19.4	19.9
27	26.2	24.1	25.1	24.6	22.3	23.2	22.4	21.0	21.6	19.6	18.2	18.9
28	26.1	24.4	25.1	22.9	21.7	22.3	22.6	21.4	22.0	18.5	17.4	17.9
29	24.8	23.3	24.0	23.1	21.6	22.4	23.2	21.5	22.2	17.9	16.1	17.1
30	23.9	22.5	23.2	23.5	22.0	22.6	22.8	22.0	22.4	16.1	15.0	15.6
31	---	---	---	23.8	21.9	22.6	23.4	21.4	22.3	---	---	---
MONTH	26.2	17.3	21.9	26.1	20.4	23.4	26.2	19.3	23.0	23.1	15.0	19.9

STREAMS TRIBUTARY TO DETROIT RIVER

04168530 RIVER ROUGE AT ALLEN PARK, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.5	7.2	7.7	---	---	---	---	---	---	---	---	---
2	8.6	7.5	7.8	---	---	---	---	---	---	---	---	---
3	8.4	7.7	8.1	---	---	---	---	---	---	---	---	---
4	8.7	7.6	8.0	---	---	---	---	---	---	---	---	---
5	9.4	7.5	8.4	---	---	---	---	---	---	---	---	---
6	9.5	8.2	8.7	---	---	---	---	---	---	---	---	---
7	9.5	8.2	8.6	---	---	---	---	---	---	---	---	---
8	9.6	8.2	8.7	---	---	---	---	---	---	---	---	---
9	9.1	7.9	8.5	---	---	---	---	---	---	---	---	---
10	9.0	8.0	8.4	---	---	---	---	---	---	---	---	---
11	9.0	7.9	8.4	---	---	---	---	---	---	---	---	---
12	9.2	7.7	8.4	---	---	---	---	---	---	---	---	---
13	8.8	8.1	8.4	---	---	---	---	---	---	---	---	---
14	9.0	7.9	8.4	---	---	---	---	---	---	---	---	---
15	8.6	7.7	8.1	---	---	---	---	---	---	---	---	---
16	9.3	8.2	8.9	---	---	---	---	---	---	---	---	---
17	9.9	9.3	9.5	---	---	---	---	---	---	---	---	---
18	10.8	9.9	10.5	---	---	---	---	---	---	---	---	---
19	10.7	9.2	10.0	---	---	---	---	---	---	---	---	---
20	9.6	9.1	9.3	---	---	---	---	---	---	---	---	---
21	9.4	8.9	9.1	---	---	---	---	---	---	---	---	---
22	9.3	8.7	8.9	---	---	---	---	---	---	---	---	---
23	9.2	8.2	8.7	---	---	---	---	---	---	---	---	---
24	8.5	7.7	8.2	---	---	---	---	---	---	---	---	---
25	8.4	7.9	8.1	---	---	---	---	---	---	---	---	---
26	8.0	7.7	7.9	---	---	---	---	---	---	---	---	---
27	8.3	7.6	7.9	---	---	---	---	---	---	---	---	---
28	8.1	7.5	7.7	---	---	---	---	---	---	---	---	---
29	8.2	6.6	7.5	---	---	---	---	---	---	---	---	---
30	7.4	6.5	7.1	---	---	---	---	---	---	---	---	---
31	8.3	7.3	7.9	---	---	---	---	---	---	---	---	---
MONTH	10.8	6.5	8.4	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	15.7	11.6	14.0	11.7	10.1	10.8
2	---	---	---	---	---	---	15.0	13.5	14.3	11.8	10.5	11.2
3	---	---	---	---	---	---	15.9	12.5	14.2	11.7	10.8	11.2
4	---	---	---	---	---	---	16.5	11.8	14.4	12.8	11.2	11.9
5	---	---	---	---	---	---	16.3	7.9	12.6	12.9	11.8	12.3
6	---	---	---	---	---	---	13.4	11.3	12.3	12.2	11.1	11.7
7	---	---	---	---	---	---	11.4	9.6	10.1	11.7	10.8	11.2
8	---	---	---	---	---	---	11.9	9.6	10.7	11.6	10.1	10.8
9	---	---	---	---	---	---	12.3	10.6	11.4	11.1	9.6	10.3
10	---	---	---	---	---	---	11.7	10.6	11.2	10.7	9.2	10.0
11	---	---	---	---	---	---	11.4	10.2	10.8	9.3	7.6	8.6
12	---	---	---	---	---	---	11.4	10.5	10.9	9.4	7.3	8.3
13	---	---	---	---	---	---	12.0	10.9	11.4	9.6	7.7	8.8
14	---	---	---	---	---	---	11.7	10.9	11.4	8.0	6.3	7.2
15	---	---	---	---	---	---	11.7	10.7	11.1	8.4	7.3	8.0
16	---	---	---	---	---	---	11.8	10.7	11.1	9.2	8.1	8.6
17	---	---	---	---	---	---	11.2	10.2	10.8	8.8	8.3	8.6
18	---	---	---	---	---	---	11.6	10.1	10.8	8.8	8.0	8.4
19	---	---	---	---	---	---	11.4	9.1	10.5	8.3	7.5	7.9
20	---	---	---	---	---	---	10.1	8.4	9.2	8.4	7.2	7.8
21	---	---	---	---	---	---	10.4	8.1	9.1	8.0	7.3	7.6
22	---	---	---	---	---	---	9.9	8.8	9.4	7.5	6.9	7.2
23	---	---	---	13.1	12.2	12.6	9.4	8.5	9.1	7.5	6.6	7.1
24	---	---	---	15.3	12.4	13.6	10.5	9.2	9.8	8.2	7.2	7.8
25	---	---	---	15.6	13.1	14.1	11.3	10.5	10.9	8.1	7.5	7.8
26	---	---	---	15.9	12.8	14.1	11.0	9.5	10.3	7.8	7.2	7.5
27	---	---	---	16.9	13.2	15.0	10.2	9.5	9.9	7.5	6.9	7.2
28	---	---	---	16.5	13.7	14.9	10.9	10.2	10.5	7.5	6.6	7.0
29	---	---	---	16.3	11.5	13.8	11.3	10.0	10.6	7.2	6.2	6.8
30	---	---	---	15.5	12.1	13.9	11.0	10.1	10.6	7.1	6.1	6.6
31	---	---	---	14.8	11.6	13.6	---	---	---	7.4	6.4	6.9
MONTH	---	---	---	---	---	---	16.5	7.9	11.1	12.9	6.1	8.8

STREAMS TRIBUTARY TO DETROIT RIVER

04168530 RIVER ROUGE AT ALLEN PARK, MI--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.0	6.1	6.6	5.9	4.6	5.6	5.5	4.1	4.9	6.2	4.9	5.5
2	7.4	5.7	6.4	6.3	5.6	5.9	5.4	3.7	4.5	7.0	5.0	5.9
3	6.8	5.6	6.1	6.2	5.2	5.5	5.3	2.8	4.0	6.6	5.0	5.7
4	7.1	5.4	6.1	6.0	4.8	5.3	5.7	3.2	4.2	6.4	4.9	5.5
5	7.9	5.5	6.3	6.0	4.1	5.2	5.5	2.2	3.9	7.1	5.5	6.0
6	6.8	4.7	5.7	6.1	5.5	5.8	5.0	2.6	3.7	7.3	5.7	6.2
7	6.0	4.4	5.1	6.2	5.5	5.8	6.9	3.5	4.9	7.4	5.8	6.4
8	5.7	4.1	4.7	6.4	5.0	5.8	7.2	4.6	5.6	6.7	5.4	6.0
9	5.1	1.6	4.5	6.3	4.3	5.6	7.4	4.9	5.7	7.5	5.2	6.1
10	4.2	1.2	3.2	5.8	5.1	5.5	6.9	3.7	5.4	7.2	5.1	6.0
11	5.3	2.7	4.0	5.7	4.5	5.0	6.7	3.9	4.9	7.1	5.5	6.0
12	4.9	3.4	4.4	6.0	4.2	4.8	7.1	4.6	5.4	6.8	5.2	5.8
13	5.5	4.2	5.0	5.6	4.3	4.8	5.9	4.7	5.2	7.3	5.6	6.1
14	5.9	5.2	5.6	5.6	2.6	4.6	5.8	3.5	5.0	6.8	5.5	6.1
15	5.6	5.1	5.3	4.7	2.8	3.6	6.4	5.4	5.9	6.8	5.1	5.9
16	5.8	5.2	5.5	6.2	3.2	4.1	6.3	5.1	5.5	7.6	5.3	6.4
17	6.2	5.4	5.9	6.3	5.1	5.8	6.0	4.9	5.3	8.0	7.5	7.8
18	6.2	5.1	5.9	7.1	4.9	6.3	6.6	4.7	5.5	8.0	7.2	7.7
19	6.3	5.2	5.8	6.1	5.2	5.5	6.7	5.0	5.8	7.3	6.8	7.0
20	6.5	5.5	6.0	5.8	4.8	5.2	6.2	3.7	5.4	7.4	6.3	6.9
21	6.9	5.6	6.0	6.1	4.2	5.5	6.5	4.2	5.6	7.0	6.2	6.5
22	5.9	4.3	5.0	5.9	5.1	5.4	5.9	5.1	5.6	7.5	5.2	6.1
23	5.2	4.2	4.6	6.2	4.9	5.4	5.8	5.1	5.5	7.1	4.9	6.2
24	5.1	4.4	4.7	5.9	4.0	5.1	6.8	5.4	5.8	7.7	7.1	7.4
25	5.2	3.9	4.4	6.1	5.5	5.8	6.8	5.8	6.2	7.4	7.1	7.3
26	5.5	3.5	4.4	5.5	2.5	4.9	7.0	6.0	6.3	7.4	6.5	7.1
27	6.7	3.8	5.1	6.5	4.7	6.0	7.2	4.1	5.9	7.9	7.4	7.7
28	5.5	4.0	4.7	6.7	6.0	6.5	6.5	5.1	6.0	8.0	7.4	7.7
29	5.5	3.5	4.6	6.5	5.8	6.2	6.7	5.9	6.3	8.2	7.1	7.8
30	5.4	3.9	4.8	6.3	5.0	5.7	5.9	5.1	5.4	8.7	8.1	8.5
31	---	---	---	5.9	4.9	5.3	5.9	4.8	5.3	---	---	---
MONTH	7.9	1.2	5.2	7.1	2.5	5.4	7.4	2.2	5.3	8.7	4.9	6.6

STREAMS TRIBUTARY TO DETROIT RIVER

04168580 ECORSE RIVER AT DEARBORN HEIGHTS, MI

LOCATION.--Lat 42°16'10", long 83°17'23", in SE1/4 SE1/4 sec. 31, T.2 S., R.10 E., Wayne County, Hydrologic Unit 04090004, on left bank 33 ft upstream from bridge on Beech Daly Road in Dearborn Heights, 9.7 mi upstream from mouth.

DRAINAGE AREA.--10.0 mi^2, revised.

PERIOD OF RECORD.--July 2002 to current year.

REVISED RECORDS.--WDR MI-04-1: 2003(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 610 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges and those below 1.0 ft^3/s, which are poor. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.37	1.4	36	18	e1.7	e5.0	3.1	3.0	0.60	8.1	0.39	0.29
2	2.4	12	11	20	1.7	e3.5	11	2.5	0.57	1.7	0.29	0.20
3	1.0	2.9	4.7	25	1.7	e3.1	6.0	2.2	0.46	0.87	0.25	0.18
4	0.46	24	3.3	29	2.2	e2.9	3.7	2.0	0.51	2.2	0.22	0.21
5	0.48	8.0	2.5	e12	2.9	e5.0	3.1	1.8	0.46	7.8	0.19	0.14
6	0.38	2.6	2.9	e8.9	3.0	16	2.8	1.8	0.70	28	0.17	0.15
7	0.37	1.4	69	e6.6	16	70	2.9	1.6	0.49	3.1	0.14	0.14
8	0.41	0.97	32	e6.0	40	42	2.5	1.2	0.64	1.5	0.14	0.25
9	0.70	3.0	12	e5.6	e18	e12	2.2	1.1	13	2.4	0.13	0.15
10	0.66	1.6	16	e8.1	e11	e5.0	1.9	1.1	12	0.94	0.86	0.14
11	0.52	0.73	19	e11	e8.1	e5.1	1.6	0.95	5.4	0.49	0.36	0.13
12	0.49	0.71	14	79	9.7	e4.5	1.5	1.0	2.4	0.86	0.38	0.21
13	0.54	0.58	14	145	11	e3.6	1.3	12	4.8	8.0	0.84	0.12
14	1.5	0.51	8.2	60	81	e3.2	1.3	16	1.6	4.2	3.8	0.14
15	8.1	0.47	e4.0	e16	68	e3.0	1.3	4.3	0.65	12	0.45	0.15
16	6.0	0.46	e2.5	e8.0	105	e3.4	1.3	2.7	1.4	4.4	0.37	7.5
17	2.2	2.4	e2.3	e5.0	38	e4.0	1.0	2.3	0.77	2.2	0.65	1.3
18	1.5	1.8	e2.1	e3.5	e16	e5.0	1.0	2.2	0.43	13	0.26	0.49
19	1.5	4.2	e1.9	e3.0	e7.7	e7.0	0.98	2.1	0.33	5.0	0.17	0.32
20	1.4	9.2	e1.7	e2.7	e4.2	11	3.8	2.7	0.27	0.84	1.9	0.64
21	1.4	2.0	e1.5	e2.5	e5.2	9.4	2.0	1.7	4.5	7.2	0.52	0.24
22	1.3	1.1	e1.4	e2.3	e5.2	8.5	2.7	3.6	8.6	0.79	0.15	6.1
23	3.3	0.88	e1.4	e2.2	e4.5	10	11	9.1	0.81	0.27	0.12	9.2
24	4.8	24	e1.3	e2.1	e4.0	9.9	20	6.2	0.38	8.4	0.11	1.2
25	1.6	25	e1.3	e2.0	e3.6	11	22	3.4	0.29	1.1	0.10	1.4
26	1.3	5.8	e1.3	e2.0	e3.3	9.1	20	2.9	0.21	25	0.09	9.2
27	3.2	5.7	e1.2	e1.9	e3.0	5.6	20	2.6	0.29	61	18	1.8
28	1.6	13	e1.2	e1.9	e3.2	5.2	9.2	2.3	0.41	7.4	5.0	1.0
29	8.4	4.9	e1.3	e1.8	---	4.6	5.3	2.3	3.3	2.6	0.76	11
30	7.5	5.9	e3.5	e1.8	---	3.9	3.8	1.9	24	1.1	0.35	1.6
31	2.7	---	35	e1.8	---	3.7	---	0.73	---	0.69	0.55	---
TOTAL	68.08	167.21	309.5	494.7	478.9	295.2	170.28	101.28	90.27	223.15	37.71	55.59
MEAN	2.20	5.57	9.98	16.0	17.1	9.52	5.68	3.27	3.01	7.20	1.22	1.85
MAX	8.4	25	69	145	105	70	22	16	24	61	18	11
MIN	0.37	0.46	1.2	1.8	1.7	2.9	0.98	0.73	0.21	0.27	0.09	0.12
CFSM	0.22	0.56	1.00	1.60	1.71	0.95	0.57	0.33	0.30	0.72	0.12	0.19
IN.	0.25	0.62	1.15	1.84	1.78	1.10	0.63	0.38	0.34	0.83	0.14	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2005, BY WATER YEAR (WY)

MEAN	2.60	5.87	6.83	6.43	7.81	10.6	5.04	18.3	4.43	4.38	5.88	3.54
MAX	4.48	7.32	9.98	16.0	17.1	15.7	6.69	38.5	5.62	7.20	10.2	7.83
(WY)	2004	2004	2005	2005	2005	2004	2003	2004	2004	2005	2004	2003
MIN	1.13	4.71	2.50	0.92	1.20	6.67	2.76	3.27	3.01	2.38	1.22	1.60
(WY)	2003	2003	2003	2003	2003	2003	2004	2005	2005	2003	2005	2004

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 2002 - 2005	
ANNUAL TOTAL	3234.64		2491.87			
ANNUAL MEAN	8.84		6.83		6.97	
HIGHEST ANNUAL MEAN					9.01	2004
LOWEST ANNUAL MEAN					5.06	2003
HIGHEST DAILY MEAN	362	May 21	145	Jan 13	362	May 21 2004
LOWEST DAILY MEAN	0.26	Jul 11	0.09	Aug 26	0.08	Jul 7 2002
ANNUAL SEVEN-DAY MINIMUM	0.36	Sep 21	0.15	Sep 9	0.10	Jul 11 2002
MAXIMUM PEAK FLOW			172	Dec 7	446	May 21 2004
MAXIMUM PEAK STAGE			5.18	Dec 7	8.46	May 21 2004
INSTANTANEOUS LOW FLOW					0.05	Jul 18 2002
ANNUAL RUNOFF (CFSM)	0.884		0.683		0.697	
ANNUAL RUNOFF (INCHES)	12.03		9.27		9.47	
10 PERCENT EXCEEDS	19		16		16	
50 PERCENT EXCEEDS	2.4		2.4		2.2	
90 PERCENT EXCEEDS	0.52		0.31		0.42	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04170000 HURON RIVER AT MILFORD, MI

LOCATION.--Lat 42°34'44", long 83°37'36", in NE1/4 sec.16, T.2 N., R.7 E., Oakland County, Hydrologic Unit 04090005, on left bank 40 ft downstream from bridge on General Motors Road, 0.5 mi downstream from Sherwood Creek, and 0.5 mi west of Milford.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--September 1948 to current year.

REVISED RECORDS.--WSP 1337: 1952(m). WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 880.00 ft above sea level. Prior to Apr. 1, 1970, at site 240 ft upstream at same datum.

REMARKS.--Records good. Flow below about 300 ft^3/s regulated by powerplant 1.5 mi upstream from station prior to May 20, 1957; occasional regulation for lake level control since. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	81	143	181	147	178	189	118	45	72	79	39
2	40	99	162	185	139	178	182	114	45	62	74	37
3	40	100	149	203	134	173	178	107	44	55	68	36
4	36	112	135	212	130	171	172	99	48	51	63	35
5	36	125	126	207	128	171	156	91	55	56	62	35
6	35	119	120	199	126	174	144	79	66	57	58	34
7	36	109	136	194	134	195	137	79	60	53	50	34
8	38	103	174	189	158	214	130	78	53	84	46	33
9	43	95	176	185	163	213	119	76	50	85	44	27
10	43	86	172	178	155	200	100	75	48	82	39	25
11	41	85	194	178	146	190	89	75	46	70	39	24
12	42	86	197	198	142	186	82	76	55	60	45	27
13	49	81	193	281	142	180	75	80	73	59	44	33
14	52	79	185	352	167	172	72	103	78	58	47	33
15	59	78	173	352	222	165	69	98	66	59	49	34
16	74	75	159	310	269	160	61	95	64	86	45	41
17	77	80	151	267	278	155	59	85	69	138	41	45
18	71	84	145	233	252	154	59	73	64	180	36	42
19	65	88	138	215	228	150	59	70	60	163	29	40
20	62	97	130	204	209	157	60	78	56	137	32	38
21	63	95	128	193	201	160	60	73	54	113	36	36
22	64	92	125	182	195	162	57	74	55	99	37	e38
23	70	90	126	187	189	170	62	89	51	88	40	e43
24	79	105	131	185	183	168	81	89	45	88	39	e48
25	77	126	126	181	177	174	111	84	38	86	37	e59
26	74	123	124	177	175	180	133	79	39	93	33	e68
27	72	125	122	169	173	184	138	74	38	96	41	e81
28	71	139	121	163	173	186	140	67	40	96	46	e75
29	87	137	120	161	---	193	130	60	64	93	45	70
30	97	120	118	158	---	196	124	49	80	89	44	68
31	89	---	149	155	---	192	---	44	---	86	41	---
TOTAL	1817	3014	4548	6434	4935	5501	3228	2531	1649	2694	1429	1278
MEAN	58.6	100	147	208	176	177	108	81.6	55.0	86.9	46.1	42.6
MAX	97	139	197	352	278	214	189	118	80	180	79	81
MIN	35	75	118	155	126	150	57	44	38	51	29	24
CFSM	0.44	0.76	1.11	1.57	1.34	1.34	0.82	0.62	0.42	0.66	0.35	0.32
IN.	0.51	0.85	1.28	1.81	1.39	1.55	0.91	0.71	0.46	0.76	0.40	0.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

MEAN	81.4	98.0	110	107	115	155	156	117	89.5	66.8	55.1	64.8
MAX	283	179	218	211	226	337	389	340	197	233	142	247
(WY)	1982	1993	1951	1993	1951	1976	1950	1956	1996	1968	1968	1975
MIN	32.6	34.0	35.8	42.5	42.0	66.9	64.2	51.8	28.8	19.3	26.3	27.2
(WY)	1965	1964	1964	1964	1963	1964	2004	1988	1988	1988	2003	1964

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	39514		39058			
ANNUAL MEAN	108		107		101	
HIGHEST ANNUAL MEAN					157	1974
LOWEST ANNUAL MEAN					44.6	1964
HIGHEST DAILY MEAN	420	May 25	352	Jan 14	632	Oct 3 1981
LOWEST DAILY MEAN	34	Sep 25	24	Sep 11	5.2	Oct 21 1971
ANNUAL SEVEN-DAY MINIMUM	34	Sep 23	29	Sep 8	11	Jul 9 1988
MAXIMUM PEAK FLOW			367	Jan 14	(a)648	Oct 3 1981
MAXIMUM PEAK STAGE			6.96	Jan 14	8.26	Jun 28 1968
INSTANTANEOUS LOW FLOW			23	(b)		
ANNUAL RUNOFF (CFSM)	0.818		0.811		0.766	
ANNUAL RUNOFF (INCHES)	11.14		11.01		10.40	
10 PERCENT EXCEEDS	195		189		184	
50 PERCENT EXCEEDS	86		88		86	
90 PERCENT EXCEEDS	46		39		37	

(a) Gage height 7.87 ft.
(b) Sept. 11, 12.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04170490 KENT LAKE NEAR NEW HUDSON, MI

LOCATION.--Lat 42°30'45", long 83°40'34", in sec.1, T.1 N., R.6 E., Livingston County, Hydrologic Unit 04090005, at Kent Lake Dam, 2 mi upstream from Woodruff Creek, and 3 mi west of New Hudson.

DRAINAGE AREA.--148 mi^2.

PERIOD OF RECORD.--April 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 868.00 ft above sea level (Huron-Clinton Metropolitan Authority bench mark).

REMARKS.--Records good. The inlet and outlet is the Huron River which enters the northeast end of the lake and leaves the southwest end of the lake. Streamflow records are currently collected on the Huron River at sites about 1 mi upstream (04170000) and 150 ft downstream (04170500) from Kent Lake. Maximum depth, 38 ft, surface area, 1,200 acres. A concrete dam with steel drum spillway is used to control the lake level.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 16.68 ft, Apr. 6, 1950; minimum observed, 9.46 ft, Jan. 9, 1996, due to construction, but may have been lower during period of no gage-height record Dec. 30, 1995 to Jan. 20, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 15.65 ft, Oct. 31; minimum recorded, 12.67 ft, Dec. 7, but may have been lower during period of no gage-height record Dec. 9-27.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.44	15.58	12.83	13.87	13.77	13.86	13.89	15.45	15.30	15.36	15.40	15.35
2	15.47	15.44	12.82	13.93	13.75	13.86	13.88	15.44	15.28	15.34	15.38	15.34
3	15.47	15.33	12.80	13.93	13.73	13.84	13.84	15.44	15.27	15.31	15.36	15.33
4	15.46	15.21	12.77	13.85	13.72	13.83	13.88	15.42	15.27	15.30	15.35	15.33
5	15.45	15.13	12.75	13.78	13.71	13.82	13.99	15.41	15.28	15.32	15.34	15.32
6	15.44	15.09	12.72	13.64	13.70	13.82	14.05	15.39	15.31	15.31	15.33	15.32
7	15.45	15.07	12.72	13.61	13.71	13.85	14.13	15.38	15.32	15.30	15.31	15.32
8	15.45	14.98	12.78	13.74	13.75	13.89	14.18	15.36	15.32	15.36	15.30	15.34
9	15.47	14.79	---	13.79	13.79	13.91	14.27	15.35	15.31	15.37	15.29	15.33
10	15.47	14.64	---	13.81	13.79	13.91	14.32	15.34	15.29	15.37	15.29	15.32
11	15.47	14.47	---	13.83	13.77	13.90	14.35	15.33	15.30	15.36	15.29	15.31
12	15.47	14.37	---	13.88	13.76	13.88	14.43	15.38	15.32	15.33	15.29	15.31
13	15.48	14.32	---	14.00	13.75	13.86	14.47	15.38	15.36	15.30	15.29	15.32
14	15.49	14.28	---	14.13	13.79	13.84	14.50	15.43	15.36	15.31	15.33	15.34
15	15.51	14.21	---	14.18	13.88	13.82	14.56	15.44	15.35	15.30	15.32	15.35
16	---	14.03	---	14.17	14.00	13.80	---	15.45	15.35	15.44	15.31	15.39
17	---	13.89	---	14.12	14.06	13.79	---	15.44	15.34	15.52	15.32	15.40
18	---	13.68	---	14.05	14.06	13.78	---	15.41	15.34	15.55	15.31	15.40
19	15.56	13.54	---	14.00	14.02	13.77	---	15.40	15.32	15.56	15.28	15.40
20	15.55	13.38	---	13.95	14.00	13.78	---	15.40	15.32	15.55	15.29	15.39
21	15.54	13.30	---	13.91	13.98	13.78	---	15.39	15.30	15.54	15.30	15.38
22	15.54	13.25	---	13.90	13.94	13.79	14.88	15.38	15.31	15.51	15.30	15.41
23	15.54	13.18	---	13.88	13.91	13.80	14.94	15.42	15.28	15.47	15.30	15.46
24	15.57	13.10	---	13.87	13.89	13.80	15.01	15.43	15.27	15.46	15.30	15.45
25	15.58	13.07	---	13.86	13.87	13.82	15.10	15.42	15.26	15.45	15.31	15.45
26	15.59	13.05	---	13.84	13.86	13.82	15.18	15.41	15.25	15.44	15.31	15.52
27	15.59	13.05	---	13.82	13.84	13.84	15.26	15.40	15.24	15.45	15.35	15.52
28	15.57	13.06	13.77	13.81	13.84	13.85	15.37	15.39	15.26	15.43	15.38	15.51
29	15.60	13.02	13.76	13.80	---	13.86	15.43	15.36	15.33	15.43	15.38	15.52
30	15.60	12.88	13.76	13.79	---	13.88	15.45	15.35	15.35	15.42	15.38	15.49
31	15.63	---	13.80	13.78	---	13.86	---	15.32	---	15.41	15.37	---
MEAN	---	14.08	---	13.89	13.84	13.84	---	15.40	15.31	15.41	15.32	15.39
MAX	---	15.58	---	14.18	14.06	13.91	---	15.45	15.36	15.56	15.40	15.52
MIN	---	12.88	---	13.61	13.70	13.77	---	15.32	15.24	15.30	15.28	15.31

STREAMS TRIBUTARY TO LAKE ERIE

04170500 HURON RIVER NEAR NEW HUDSON, MI

LOCATION.--Lat 42°30'45", long 83°40'35", in NE1/4 sec.1, T.1 N., R.6 E., Livingston County, Hydrologic Unit 04090005, on right bank 150 ft downstream from Kent Lake Dam, 2 mi upstream from Woodruff Creek, and 3 mi west of New Hudson.

DRAINAGE AREA.--148 mi^2.

PERIOD OF RECORD.--August 1948 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 868.00 ft above sea level (Huron-Clinton Metropolitan Authority bench mark).

REMARKS.--Records fair. Occasional regulation by Kent Lake (see preceding page). Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	150	180	166	182	215	212	125	47	e91	98	40
2	46	174	177	189	e174	212	211	125	44	85	92	38
3	46	180	172	248	168	207	194	121	41	73	85	36
4	45	190	160	263	161	203	134	115	40	66	79	34
5	44	157	154	288	157	198	120	108	42	71	76	33
6	41	141	146	282	154	198	119	98	48	66	69	32
7	42	131	148	179	157	208	120	95	52	65	62	31
8	42	184	171	167	172	226	97	89	51	e82	55	33
9	48	177	181	186	185	235	91	84	50	e96	47	30
10	49	182	167	192	186	235	104	81	49	e94	43	26
11	47	170	205	199	181	230	60	e84	e48	e80	44	23
12	46	129	206	216	175	224	56	81	e60	e70	43	22
13	48	107	214	269	172	214	64	e80	e78	e64	46	24
14	50	95	112	332	186	207	48	92	83	63	60	26
15	54	153	86	348	219	e201	46	96	81	61	56	30
16	62	157	92	348	272	e194	54	96	82	116	52	38
17	72	188	93	332	296	187	60	92	79	146	49	40
18	75	186	94	300	297	184	47	85	80	162	46	41
19	72	185	96	279	283	179	45	80	79	173	35	41
20	68	166	96	e260	270	180	e48	80	75	163	37	40
21	67	137	63	e250	261	181	e58	76	72	157	39	39
22	67	120	128	e240	244	183	52	75	77	134	36	44
23	68	150	203	e230	234	188	52	83	69	117	37	59
24	73	160	171	e222	224	185	71	86	65	113	37	56
25	75	151	154	e217	217	190	96	83	65	113	35	57
26	78	144	142	211	212	193	121	77	63	107	36	78
27	79	140	133	206	208	198	99	74	59	118	46	80
28	75	146	130	204	206	204	103	72	e60	111	52	76
29	83	197	130	199	---	206	122	66	e84	109	52	82
30	85	198	129	193	---	209	127	60	e106	108	53	73
31	92	---	143	187	---	e205	---	52	---	101	47	---
TOTAL	1880	4745	4476	7402	5853	6279	2831	2711	1929	3175	1644	1302
MEAN	60.6	158	144	239	209	203	94.4	87.5	64.3	102	53.0	43.4
MAX	92	198	214	348	297	235	212	125	106	173	98	82
MIN	41	95	63	166	154	179	45	52	40	61	35	22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

MEAN	96.1	154	134	124	131	162	136	124	104	75.2	65.0	74.6
MAX	262	246	248	239	252	315	357	379	228	219	165	231
(WY)	1982	2002	1951	2005	1951	1974	1950	1956	1996	1957	2000	1975
MIN	35.1	70.1	63.2	53.8	53.7	49.8	42.9	34.5	33.6	21.6	27.9	28.0
(WY)	1964	1964	1961	1964	1964	2000	1966	1988	1988	1988	1963	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	43202		44227			
ANNUAL MEAN	118		121		115	
HIGHEST ANNUAL MEAN					181	1974
LOWEST ANNUAL MEAN					52.3	1964
HIGHEST DAILY MEAN	385	May 25	348	Jan 15	582	Apr 6 1950
LOWEST DAILY MEAN	29	Apr 14	22	Sep 12	6.4	May 7 1963
ANNUAL SEVEN-DAY MINIMUM	35	Apr 23	26	Sep 9	12	Jul 10 1988
MAXIMUM PEAK FLOW			350	Jan 15	(a)1080	Dec 29 1950
MAXIMUM PEAK STAGE			2.79	Jan 15	5.05	Dec 29 1950
INSTANTANEOUS LOW FLOW					2.6	May 27 1963
10 PERCENT EXCEEDS	206		214		204	
50 PERCENT EXCEEDS	92		96		102	
90 PERCENT EXCEEDS	46		43		43	

(a) From rating curve extended above 600 ft^3/s.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04172000 HURON RIVER NEAR HAMBURG, MI

LOCATION.--Lat 42°27'55", long 83°48'00", in sec.24, T.1 N., R.5 E., Livingston County, Hydrologic Unit 04090005, on right bank at downstream side of bridge on Hamburg Road, 1.1 mi north of Hamburg, and 3 mi upstream from Strawberry Lake.

DRAINAGE AREA.--308 mi^2.

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 850.00 ft above sea level (levels by Michigan Department of Natural Resources). Prior to Aug. 12, 1953, nonrecording gage at same site and datum.

REMARKS.--Records fair. Occasional regulation by Kent Lake (station 04170490) 11 mi upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	158	315	259	e350	380	474	267	195	139	147	82
2	77	184	332	281	e340	375	463	262	185	137	140	78
3	80	224	327	315	e330	369	447	251	175	129	133	75
4	81	254	316	356	320	362	426	239	166	118	125	71
5	80	282	301	406	309	349	387	224	155	112	120	67
6	78	288	284	440	301	341	340	210	145	113	113	64
7	76	272	281	e440	298	346	312	201	138	111	105	62
8	75	248	299	e410	306	363	290	191	132	108	97	62
9	78	239	309	366	321	389	263	183	126	128	89	62
10	81	251	325	335	337	420	243	177	120	141	83	61
11	83	252	342	324	343	430	234	173	113	141	77	58
12	84	251	353	336	342	429	201	165	107	135	75	55
13	84	231	366	402	335	416	182	168	117	125	73	53
14	85	205	368	534	346	400	173	182	129	114	79	51
15	89	185	338	e730	387	384	157	197	132	108	86	51
16	100	196	276	e850	471	368	149	203	131	116	87	58
17	114	224	240	e780	572	356	149	203	127	162	85	65
18	127	240	220	e700	661	349	153	199	123	192	81	71
19	134	263	205	e620	e650	346	149	193	119	204	76	74
20	135	268	e200	e570	e625	353	150	190	115	211	71	74
21	131	265	e200	e520	e605	361	153	192	112	216	67	73
22	128	243	e200	e480	e575	374	157	193	112	210	66	73
23	126	217	e220	e460	523	392	162	201	111	195	63	87
24	129	217	307	e450	480	406	172	218	108	184	62	98
25	132	240	361	e430	447	425	201	228	104	176	61	103
26	133	246	363	e410	424	440	238	233	101	168	59	119
27	135	248	327	e400	395	451	269	232	99	167	65	136
28	134	260	290	e390	387	462	272	227	97	168	78	142
29	138	265	261	e380	---	471	265	220	114	165	84	146
30	149	276	241	e370	---	477	267	214	132	160	85	144
31	157	---	244	e360	---	480	---	204	---	154	85	---
TOTAL	3308	7192	9011	14104	11780	12264	7498	6440	3840	4707	2717	2415
MEAN	107	240	291	455	421	396	250	208	128	152	87.6	80.5
MAX	157	288	368	850	661	480	474	267	195	216	147	146
MIN	75	158	200	259	298	341	149	165	97	108	59	51
CFSM	0.35	0.78	0.94	1.48	1.37	1.28	0.81	0.67	0.42	0.49	0.28	0.26
IN.	0.40	0.87	1.09	1.70	1.42	1.48	0.91	0.78	0.46	0.57	0.33	0.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	162	241	230	226	244	345	321	267	206	151	130	132
MAX	490	425	374	499	500	705	626	895	406	534	343	424
(WY)	1982	1993	2002	1993	2001	1974	1974	1956	1989	1968	2000	1975
MIN	52.0	100	102	84.5	89.5	122	136	92.3	82.0	41.9	49.4	50.5
(WY)	1965	1964	1961	1961	1964	1964	2004	1958	1965	1965	2003	2002

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	81969		85276			
ANNUAL MEAN	224		234		221	
HIGHEST ANNUAL MEAN					337	1974
LOWEST ANNUAL MEAN					97.2	1964
HIGHEST DAILY MEAN	737	May 27	(e)850	Jan 16	1560	May 15 1956
LOWEST DAILY MEAN	75	Oct 1	51	Sep 14	27	Jul 15 1988
ANNUAL SEVEN-DAY MINIMUM	76	Sep 26	55	Sep 10	28	Jul 10 1988
MAXIMUM PEAK FLOW			(e)860	Jan 16	(a)1560	May 15 1956
MAXIMUM PEAK STAGE			(b)7.44	Jan 16	8.46	Jun 30 1968
INSTANTANEOUS LOW FLOW					26	(c)
ANNUAL RUNOFF (CFSM)	0.727		0.759		0.718	
ANNUAL RUNOFF (INCHES)	9.90		10.30		9.75	
10 PERCENT EXCEEDS	388		425		393	
50 PERCENT EXCEEDS	198		201		193	
90 PERCENT EXCEEDS	99		78		83	

(a) Gage height 8.35 ft.
(b) Backwater from ice.
(c) July 15, 16, 1988.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04173500 MILL CREEK NEAR DEXTER, MI

LOCATION.--Lat 42°18'00", long 83°53'55", in SW1/4 sec.18, T.2 S., R.5 E., Washtenaw County, Hydrologic Unit 04090005, on left bank 12 ft downstream from bridge on Parker Road, 2.5 mi south of Dexter, and 4 mi upstream from mouth.

DRAINAGE AREA.--128 mi^2.

PERIOD OF RECORD.--February 1952 to December 1982, October 1994 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 850 ft above sea level, from topographic map. Prior to May 23, 1958, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	30	132	174	e56	e87	167	72	38	45	29	22
2	24	37	161	157	e54	e85	151	67	37	35	27	21
3	24	40	126	189	e52	e84	135	64	37	30	26	21
4	24	44	98	244	50	e83	120	61	36	28	25	21
5	22	58	82	202	53	e90	112	57	34	63	25	20
6	21	45	73	144	56	e100	106	55	34	47	24	20
7	21	37	125	127	74	311	104	54	33	36	23	19
8	20	33	272	114	186	551	100	51	32	31	22	19
9	22	30	198	106	194	326	94	49	31	29	22	19
10	22	29	155	101	143	210	88	49	30	28	22	20
11	21	28	149	101	119	159	82	47	30	27	23	19
12	21	27	133	165	106	138	76	48	30	27	23	19
13	21	26	128	627	118	120	71	49	38	26	23	20
14	22	25	111	852	281	112	66	98	40	25	27	20
15	23	25	93	641	483	107	62	92	35	29	25	20
16	31	25	83	e420	682	103	60	73	34	45	23	25
17	31	26	76	e300	558	117	58	62	32	45	22	26
18	27	29	67	e200	e340	119	57	56	31	34	21	23
19	26	29	e58	e140	e240	131	55	52	31	31	21	23
20	25	36	e52	e115	e170	187	54	56	30	29	23	23
21	23	35	e46	e97	e155	191	54	50	29	75	25	22
22	23	31	e40	e92	e130	194	53	47	29	58	22	23
23	23	29	e37	e88	e120	238	62	57	28	40	22	28
24	25	31	e43	e86	e110	206	81	57	27	51	22	25
25	25	52	e42	e84	e105	220	109	50	27	62	22	24
26	23	49	e41	e81	e100	218	116	45	25	53	22	37
27	23	63	e40	e75	e95	204	117	44	25	96	25	33
28	23	119	e39	e68	e90	198	107	43	25	75	27	28
29	28	106	e39	e63	---	200	92	42	28	47	23	30
30	40	87	40	e60	---	191	81	41	34	37	23	28
31	36	---	110	e58	---	184	---	40	---	32	23	---
TOTAL	764	1261	2889	5971	4920	5464	2690	1728	950	1316	732	698
MEAN	24.6	42.0	93.2	193	176	176	89.7	55.7	31.7	42.5	23.6	23.3
MAX	40	119	272	852	682	551	167	98	40	96	29	37
MIN	20	25	37	58	50	83	53	40	25	25	21	19
CFSM	0.19	0.33	0.73	1.50	1.37	1.38	0.70	0.44	0.25	0.33	0.18	0.18
IN.	0.22	0.37	0.84	1.74	1.43	1.59	0.78	0.50	0.28	0.38	0.21	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2005, BY WATER YEAR (WY)

MEAN	43.5	59.0	80.5	77.9	110	175	151	104	67.1	40.4	35.3	33.4
MAX	193	122	192	251	337	423	271	265	256	165	146	180
(WY)	1955	1996	1958	1974	1976	1982	1969	1956	1968	1968	1995	1975
MIN	11.0	14.6	13.8	18.8	18.4	47.7	61.5	29.7	20.9	16.0	12.9	11.0
(WY)	1964	1964	1964	1964	1964	1964	2004	1958	1958	1965	1963	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1952 - 2005	
ANNUAL TOTAL	28742		29383			
ANNUAL MEAN	78.5		80.5		81.1	
HIGHEST ANNUAL MEAN					142	1974
LOWEST ANNUAL MEAN					29.9	1964
HIGHEST DAILY MEAN	930	May 22	852	Jan 14	1380	Jun 27 1968
LOWEST DAILY MEAN	20	Oct 8	19	Sep 7	9.5	Oct 7 1963
ANNUAL SEVEN-DAY MINIMUM	21	Oct 6	19	Sep 6	9.9	Oct 5 1963
MAXIMUM PEAK FLOW			880	Jan 14	1500	Jun 26 1968
MAXIMUM PEAK STAGE			11.09	Jan 14	12.95	Jun 26 1968
INSTANTANEOUS LOW FLOW			18	(a)	7.3	Dec 13 1963
ANNUAL RUNOFF (CFSM)	0.614		0.629		0.633	
ANNUAL RUNOFF (INCHES)	8.35		8.54		8.61	
10 PERCENT EXCEEDS	164		172		171	
50 PERCENT EXCEEDS	42		47		48	
90 PERCENT EXCEEDS	24		22		20	

(a) Sept. 7, 11, 12.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04174500 HURON RIVER AT ANN ARBOR, MI

LOCATION.--Lat 42°17'10", long 83°44'00", in NW1/4 sec.28, T.2 S., R.6 E., Washtenaw County, Hydrologic Unit 04090005, on left bank 100 ft upstream from bridge on Maiden Lane Street in Ann Arbor, 0.7 mi downstream from Argo Dam, and 4.2 mi upstream from Geddes Dam.

DRAINAGE AREA.--729 mi^2.

PERIOD OF RECORD.--February 1904 to current year. Monthly discharge only for February 1904 to September 1914 and October 1947 to July 1948, published in WSP 1307. Published as "at Geddes" February 1904 to December 1914 and as "at Barton" January 1914 to September 1940.

REVISED RECORDS.--WSP 874: 1938. WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 744.81 ft above sea level (levels by Michigan Department of Natural Resources). February 1904 to December 1914 at Geddes Dam, 4.2 mi downstream, and January 1914 to September 1947 at Barton Dam, 2.6 mi upstream, flow computed from records of operation of powerplants and records of depth of flow over dam and/or flow through undersluices.

REMARKS.--Records good. Prior to 1955 diversion upstream from station for Ann Arbor municipal supply had negligible effect on natural flow; annual mean discharge and runoff figures adjusted for diversion from 1955 to 1991. Flow regulated by powerplants prior to May 1962. From June 1962 to 1975 occasional regulation for lake level control operations upstream from station. Since 1975 extensive regulation of flow exists due to automation of gates at dams upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	326	736	623	639	672	1160	533	190	246	111	161
2	104	355	805	629	618	669	1120	523	186	190	106	152
3	97	340	832	688	556	780	1000	515	192	114	101	131
4	94	399	789	999	555	771	962	500	192	163	93	131
5	88	403	749	985	562	761	936	475	210	181	100	121
6	86	408	729	902	572	776	820	413	188	188	112	114
7	94	423	840	860	618	967	762	391	166	175	130	109
8	102	441	845	848	738	1300	703	307	154	166	139	118
9	104	522	797	837	788	1150	655	324	153	149	134	98
10	104	495	764	857	718	964	629	336	99	211	139	94
11	103	482	801	800	752	900	590	334	115	160	141	86
12	104	455	871	894	742	887	543	333	122	118	161	78
13	108	418	829	1630	746	878	418	378	187	137	163	72
14	113	399	792	2070	984	862	382	387	170	131	183	76
15	132	395	754	2080	1380	849	367	377	169	162	176	75
16	143	382	726	1770	1710	829	316	361	201	207	163	154
17	147	381	703	1570	1660	846	304	347	264	314	150	117
18	149	376	559	1620	1420	851	257	339	245	136	159	112
19	154	389	436	1460	1310	859	274	343	225	91	147	103
20	160	407	397	1420	1320	916	287	340	205	136	178	103
21	164	416	423	1350	1300	891	296	317	208	293	169	97
22	169	480	308	1230	1260	898	302	311	118	175	152	130
23	184	488	291	1180	1200	955	327	335	119	146	145	140
24	179	542	336	1020	1020	925	376	328	127	178	142	141
25	181	541	358	847	986	982	438	314	127	179	131	173
26	177	523	386	851	959	1030	611	301	125	222	128	245
27	176	559	438	941	914	1060	678	296	126	254	196	280
28	198	608	431	919	891	1110	637	298	130	215	167	280
29	269	602	427	846	---	1120	604	287	165	166	156	285
30	379	605	465	731	---	1220	543	282	255	145	155	258
31	341	---	553	628	---	1190	---	271	---	128	156	---
TOTAL	4698	13560	19170	34085	26918	28868	17297	11196	5133	5476	4483	4234
MEAN	152	452	618	1100	961	931	577	361	171	177	145	141
MAX	379	608	871	2080	1710	1300	1160	533	264	314	196	285
MIN	86	326	291	623	555	669	257	271	99	91	93	72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2005, BY WATER YEAR (WY)

MEAN	273	391	428	455	554	857	843	606	405	243	188	214
MAX	904	1018	1080	1257	1431	2308	2647	2085	1341	1130	689	919
(WY)	1982	1993	1951	1950	1976	1918	1947	1943	1943	1968	2000	1975
MIN	71.6	109	123	131	145	189	274	187	72.0	31.5	21.1	55.8
(WY)	1935	1935	1935	1925	1934	1934	1931	1925	1934	1934	1934	1934

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1915 - 2005	
ANNUAL TOTAL	174269		175118			
ANNUAL MEAN	476		480		(a)454	
HIGHEST ANNUAL MEAN					824	1974
LOWEST ANNUAL MEAN					171	1931
HIGHEST DAILY MEAN	2310	May 22	2080	Jan 15	5840	Mar 14 1918
LOWEST DAILY MEAN	86	Sep 27	72	Sep 13	(b)4.0	(c)
ANNUAL SEVEN-DAY MINIMUM	94	Oct 1	83	Sep 9	13	Jul 28 1934
MAXIMUM PEAK FLOW			2240	Jan 15		
MAXIMUM PEAK STAGE			15.01	Jan 15	(d)17.50	Jun 26 1968
10 PERCENT EXCEEDS	847		984		929	
50 PERCENT EXCEEDS	389		341		335	
90 PERCENT EXCEEDS	147		115		120	

(a) Does not include water year 1948.
(b) Plant leakage, but doubtful due to possible change in leakage.
(c) Aug. 2, Sept. 11, 1931.
(d) Present site and datum.

STREAMS TRIBUTARY TO LAKE ERIE

04174518 MALLETTS CREEK AT ANN ARBOR, MI

LOCATION.--Lat 42°15'53", long 83°41'18", in SE1/4 sec.35, T.2 S., R.6 E., Washtenaw County, Hydrologic Unit 04090005, on right bank 250 ft upstream from bridge on Chalmers Drive in Ann Arbor.

DRAINAGE AREA.--10.9 mi^2.

PERIOD OF RECORD.--October 1973 to August 1975 (operated as a crest-stage partial-record station), April 1999 to current year. Prior to August 1975, published as Pittsfield-Ann Arbor Drain at Ann Arbor.

GAGE.--Water-stage recorder. Elevation of gage is 760 ft above sea level, from topographic map.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.8	44	12	2.9	7.7	4.6	3.3	2.1	9.3	2.8	1.7
2	3.8	11	9.0	18	2.8	5.8	6.0	3.0	2.2	3.2	2.3	1.6
3	1.9	3.1	4.7	19	3.0	5.1	5.3	2.8	2.2	2.2	2.3	1.5
4	1.5	17	3.3	23	3.4	5.4	4.3	2.7	2.2	16	2.4	1.5
5	1.4	5.0	2.7	9.1	3.6	6.9	4.2	2.5	7.5	17	2.5	1.5
6	1.5	2.4	2.9	7.9	4.0	19	3.8	2.6	8.2	3.9	2.4	1.5
7	1.4	1.9	84	6.1	27	50	3.6	2.8	2.9	8.5	2.4	1.4
8	1.5	1.6	21	5.5	40	21	3.4	2.5	3.5	27	2.3	3.6
9	2.4	1.5	7.8	5.4	15	8.8	3.3	2.6	2.4	7.4	2.3	3.2
10	1.5	1.5	9.6	6.3	8.4	6.6	3.2	2.7	2.1	3.1	2.6	1.7
11	1.4	1.4	10	8.7	5.9	8.3	3.1	3.0	30	2.3	2.4	1.5
12	1.3	1.4	9.0	57	7.8	8.8	2.9	2.5	13	2.1	2.8	1.6
13	1.3	1.4	9.5	132	7.4	6.6	3.0	17	32	2.5	6.0	1.4
14	1.6	1.4	5.4	36	85	5.3	2.8	23	9.3	1.9	8.3	1.4
15	6.6	1.4	4.1	11	74	5.1	2.7	5.2	5.1	1.8	3.0	1.7
16	7.4	1.3	3.7	6.6	70	5.5	2.7	3.3	3.5	110	2.2	22
17	3.2	3.5	3.4	4.9	17	5.9	2.7	2.9	2.3	20	2.1	4.8
18	1.8	2.5	3.3	4.3	8.4	6.2	2.8	2.7	2.0	13	1.9	2.3
19	1.5	4.2	2.8	4.9	6.2	8.9	2.7	2.9	1.9	11	2.0	1.8
20	1.5	5.5	2.4	4.3	6.0	12	3.7	3.8	1.8	15	9.9	1.7
21	1.3	2.4	2.6	3.8	10	8.5	2.9	2.7	4.0	156	3.7	1.5
22	1.3	1.8	2.5	4.3	11	9.7	3.9	3.4	3.2	10	2.0	6.5
23	4.0	1.6	2.7	4.0	8.4	9.5	7.5	8.8	2.0	4.6	1.7	6.8
24	3.9	21	2.3	4.1	6.3	7.1	17	4.0	1.8	24	1.7	2.3
25	1.9	18	2.0	4.2	5.7	7.7	20	2.8	1.8	6.8	1.7	9.5
26	1.4	5.3	2.1	3.8	5.4	7.0	17	2.5	1.7	16	1.8	25
27	1.2	11	2.0	2.9	4.5	6.6	11	2.4	1.9	45	3.9	4.5
28	1.3	16	2.1	2.8	5.7	6.8	5.9	3.2	2.2	7.3	3.0	3.1
29	14	5.3	2.3	3.0	---	6.5	4.4	2.5	15	4.2	2.0	20
30	15	7.2	3.3	3.1	---	6.0	3.7	2.6	48	3.0	1.8	3.5
31	3.0	---	40	3.0	---	5.6	---	2.2	---	2.8	1.9	---
TOTAL	94.5	160.4	306.5	421.0	454.8	289.9	164.1	130.9	217.8	556.9	90.1	142.1
MEAN	3.05	5.35	9.89	13.6	16.2	9.35	5.47	4.22	7.26	18.0	2.91	4.74
MAX	15	21	84	132	85	50	20	23	48	156	9.9	25
MIN	1.2	1.3	2.0	2.8	2.8	5.1	2.7	2.2	1.7	1.8	1.7	1.4
CFSM	0.28	0.49	0.91	1.25	1.49	0.86	0.50	0.39	0.67	1.65	0.27	0.43
IN.	0.32	0.55	1.05	1.44	1.55	0.99	0.56	0.45	0.74	1.90	0.31	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2005, BY WATER YEAR (WY)

MEAN	8.00	6.04	7.42	6.13	11.9	9.26	10.4	13.9	10.8	9.03	7.88	7.02
MAX	21.9	9.96	9.89	13.6	24.6	14.5	18.3	29.0	27.6	18.0	15.6	10.9
(WY)	2002	2004	2005	2005	2001	2004	1999	2004	2000	2005	2000	2000
MIN	3.05	3.64	4.22	2.50	2.48	3.84	3.18	4.22	3.44	4.53	2.91	3.12
(WY)	2005	2000	2003	2003	2003	2000	2004	2005	2002	2001	2005	2004

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1999 - 2005	
ANNUAL TOTAL	3131.3		3029.0			
ANNUAL MEAN	8.56		8.30		9.01	
HIGHEST ANNUAL MEAN					10.3	2000
LOWEST ANNUAL MEAN					7.34	2003
HIGHEST DAILY MEAN	316	May 21	156	Jul 21	410	Jun 25 2000
LOWEST DAILY MEAN	1.2	Oct 27	1.2	Oct 27	1.2	Oct 27 2004
ANNUAL SEVEN-DAY MINIMUM	1.4	Nov 10	1.4	Nov 10	1.4	Nov 10 2004
MAXIMUM PEAK FLOW			821	Jul 21	(a)1560	Jun 25 2000
MAXIMUM PEAK STAGE			7.08	Jul 21	9.32	Jun 25 2000
INSTANTANEOUS LOW FLOW			1.0	Sep 13	1.0	Sep 13 2005
ANNUAL RUNOFF (CFSM)	0.785		0.761		0.826	
ANNUAL RUNOFF (INCHES)	10.69		10.34		11.23	
10 PERCENT EXCEEDS	15		17		19	
50 PERCENT EXCEEDS	3.5		3.5		3.7	
90 PERCENT EXCEEDS	1.8		1.6		2.0	

(a) From rating curve extended above 300 ft^3/s on basis of contracted-opening measurement of peak flow.

STREAMS TRIBUTARY TO LAKE ERIE

04175600 RIVER RAISIN NEAR MANCHESTER, MI

LOCATION.--Lat 42°10'05", long 84°04'34", in NE1/4 SE1/4 sec.33, T.3 S., R.3 E., Washtenaw County, Hydrologic Unit 04100002, on left bank at downstream side of bridge on Sharon Valley Road, 2.5 mi northwest of Manchester.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--January 1970 to September 1981, January 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 900 ft above sea level, from topographic map. Prior to July 30, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Occasional regulation caused by many dams upstream from station. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	52	161	129	e140	180	186	90	64	40	76	18
2	24	54	180	118	e135	e170	172	86	59	35	69	17
3	23	59	163	131	e135	e160	161	81	58	32	61	16
4	22	64	144	156	e135	e155	148	77	55	37	55	14
5	20	81	131	151	e135	e150	139	74	52	71	49	14
6	18	72	119	136	140	153	134	71	50	67	43	13
7	17	61	144	136	149	208	131	71	47	58	38	13
8	17	51	213	136	207	256	126	67	42	47	34	12
9	19	43	190	130	206	218	120	65	38	39	32	12
10	19	39	180	125	187	200	113	e66	38	34	32	12
11	17	39	179	124	176	180	107	e65	35	32	31	12
12	17	35	169	145	161	174	97	e63	34	30	28	12
13	18	33	164	298	149	168	91	65	46	28	29	12
14	20	30	147	396	191	162	84	117	e53	27	31	12
15	23	29	e130	e320	265	157	78	128	e56	40	31	12
16	34	31	e120	e280	e315	152	75	119	e60	62	30	18
17	38	34	e110	e240	e280	152	74	108	e57	88	28	22
18	32	37	e105	e215	e270	150	72	100	e54	81	26	20
19	28	41	e100	e200	e250	156	71	95	e52	78	25	18
20	27	62	e92	e185	240	173	74	100	e49	71	29	17
21	28	64	e88	e180	236	174	86	99	e47	123	33	17
22	26	56	e86	e175	237	175	92	96	e45	122	27	17
23	26	54	e84	e170	232	185	95	98	e42	108	25	19
24	31	60	e82	e170	219	181	110	103	20	111	23	18
25	33	91	e81	e165	207	189	127	98	15	110	21	20
26	31	96	e81	e165	196	188	126	93	19	e100	20	36
27	29	107	e80	e160	189	189	126	88	27	e138	21	36
28	29	151	e80	e155	178	188	117	83	29	120	23	30
29	45	148	e83	e150	---	193	103	78	28	102	21	34
30	80	136	e88	e150	---	190	95	73	30	91	20	31
31	70	---	110	e145	---	191	---	68	---	83	19	---
TOTAL	887	1910	3884	5536	5560	5517	3330	2685	1301	2205	1030	554
MEAN	28.6	63.7	125	179	199	178	111	86.6	43.4	71.1	33.2	18.5
MAX	80	151	213	396	315	256	186	128	64	138	76	36
MIN	17	29	80	118	135	150	71	63	15	27	19	12
CFSM	0.22	0.48	0.95	1.35	1.50	1.35	0.84	0.66	0.33	0.54	0.25	0.14
IN.	0.25	0.54	1.09	1.56	1.57	1.55	0.94	0.76	0.37	0.62	0.29	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2005, BY WATER YEAR (WY)

MEAN	63.4	87.8	106	110	128	191	179	125	91.1	53.2	45.9	49.5
MAX	169	212	160	280	241	356	275	191	249	114	116	142
(WY)	1987	1993	1991	1993	1976	1976	1978	1974	1989	1981	1981	1981
MIN	20.9	25.1	30.7	27.6	33.0	84.3	75.6	52.7	13.9	10.4	12.4	12.6
(WY)	2003	1972	1977	1977	2003	2000	2004	1971	1988	1988	1971	1999

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1970 - 2005	
ANNUAL TOTAL	28625		34399			
ANNUAL MEAN	78.2		94.2		103	
HIGHEST ANNUAL MEAN					155	1993
LOWEST ANNUAL MEAN					53.7	2003
HIGHEST DAILY MEAN	306	May 22	396	Jan 14	690	Feb 24 1985
LOWEST DAILY MEAN	12	Sep 24	12	Sep 8	5.7	(a)
ANNUAL SEVEN-DAY MINIMUM	13	Sep 21	12	Sep 8	6.1	Jul 3 1988
MAXIMUM PEAK FLOW			409	Jan 14	869	Feb 24 1985
MAXIMUM PEAK STAGE			5.62	Jan 14	7.21	Feb 24 1985
INSTANTANEOUS LOW FLOW			12	(b)	(c)4.0	(d)
ANNUAL RUNOFF (CFSM)	0.593		0.714		0.777	
ANNUAL RUNOFF (INCHES)	8.07		9.69		10.55	
10 PERCENT EXCEEDS	149		187		206	
50 PERCENT EXCEEDS	65		80		84	
90 PERCENT EXCEEDS	26		20		24	

(a) July 9, 15, 1988.
(b) Part or all of each day Sept. 7-16.
(c) Observed; but may have been less during periods of no gage-height record July 3-11, 14-16, 1988.
(d) Oct. 20, 23, 1999.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04176000 RIVER RAISIN NEAR ADRIAN, MI

LOCATION.--Lat 41°54'15", long 83°58'50", in NW1/4 sec.5, T.7 S., R.4 E., Lenawee County, Hydrologic Unit 04100002, on right bank at downstream side of bridge on Academy Road, 1.7 mi east of Adrian, and 2.6 mi downstream from South Branch.

DRAINAGE AREA.--463 mi^2.

PERIOD OF RECORD.--October 1953 to September 1978, October 1978 to September 1984 (operated as a crest-stage partial-record station), October 1984 to current year. Records for October 1930 to August 1931 and October 1932 to April 1938, published as "Raisin River" in WSP 714, 744, 759, 784, 804, 824, and 854, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 693.2 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuation caused by powerplant at Tecumseh, 11 mi upstream from station, prior to June 27, 1968; occasional regulation since. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	148	434	526	e345	570	590	342	157	98	203	67
2	91	196	518	617	e325	538	569	316	166	91	178	65
3	88	182	508	667	e310	479	551	294	157	86	157	62
4	83	182	431	951	e300	460	507	277	150	82	140	60
5	81	170	371	1090	e290	475	475	255	143	108	128	59
6	77	179	334	963	e280	529	447	214	148	121	116	60
7	75	165	449	689	e270	928	430	225	139	129	105	60
8	72	148	758	551	579	1570	417	222	126	118	100	59
9	75	133	981	503	931	e1600	402	221	121	106	95	58
10	73	123	859	473	1050	e1250	383	174	111	101	91	54
11	75	109	667	464	833	1000	369	182	103	91	91	51
12	97	108	583	625	643	797	341	195	104	82	90	54
13	79	104	521	1420	634	674	285	189	138	93	87	53
14	77	100	462	3260	912	586	302	347	125	83	108	49
15	86	97	412	3090	1560	531	286	433	123	78	97	50
16	104	98	364	e2000	2040	511	274	425	126	77	92	76
17	99	99	340	e1700	2010	513	263	369	123	89	87	62
18	100	102	306	e1300	e1660	511	257	327	116	135	83	67
19	104	120	283	e1050	e1340	515	250	300	111	158	80	71
20	100	147	e250	e900	e1140	589	233	300	106	140	121	77
21	94	138	e230	e800	e1000	667	235	291	102	281	101	68
22	91	143	e220	e700	900	713	258	286	97	410	93	64
23	90	139	e210	e640	839	716	317	284	94	379	90	79
24	106	163	e200	e580	773	726	343	279	91	315	84	67
25	93	238	e195	e520	713	687	373	269	88	278	79	68
26	91	229	e190	e480	651	685	413	260	78	272	75	112
27	92	247	e185	e450	577	678	459	245	71	399	72	93
28	93	324	e185	e420	556	660	443	229	67	496	70	97
29	101	389	e185	e400	---	647	425	214	69	421	69	127
30	119	386	e190	e380	---	627	378	203	101	300	70	101
31	137	---	334	e360	---	612	---	194	---	237	71	---
TOTAL	2825	5106	12155	28569	23461	22044	11275	8361	3451	5854	3123	2090
MEAN	91.1	170	392	922	838	711	376	270	115	189	101	69.7
MAX	137	389	981	3260	2040	1600	590	433	166	496	203	127
MIN	72	97	185	360	270	460	233	174	67	77	69	49
CFSM	0.20	0.37	0.85	1.99	1.81	1.54	0.81	0.58	0.25	0.41	0.22	0.15
IN.	0.23	0.41	0.98	2.30	1.88	1.77	0.91	0.67	0.28	0.47	0.25	0.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2005, BY WATER YEAR (WY)

MEAN	187	275	361	394	502	710	613	416	300	175	139	133
MAX	614	941	871	1271	1181	1517	1115	939	1025	609	520	420
(WY)	2002	1993	1988	1993	2001	1986	1978	1956	1989	1968	1995	1992
MIN	52.1	57.9	66.6	65.6	74.1	179	239	144	69.7	46.1	47.5	46.0
(WY)	1964	1965	1964	1963	1964	1964	1963	1964	1988	1988	1963	1955

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1954 - 2005	
ANNUAL TOTAL	129155		128314			
ANNUAL MEAN	353		352		349	
HIGHEST ANNUAL MEAN					605	1993
LOWEST ANNUAL MEAN					99.8	1964
HIGHEST DAILY MEAN	1950	Jun 18	3260	Jan 14	5350	Feb 25 1985
LOWEST DAILY MEAN	66	Sep 26	49	Sep 14	25	Oct 26 1964
ANNUAL SEVEN-DAY MINIMUM	67	Sep 23	53	Sep 9	27	Oct 25 1964
MAXIMUM PEAK FLOW			3910	Jan 14	6660	Mar 15 1982
MAXIMUM PEAK STAGE			13.70	Jan 14	15.77	Mar 15 1982
INSTANTANEOUS LOW FLOW			48	Sep 14	18	Aug 10 1964
ANNUAL RUNOFF (CFSM)	0.762		0.759		0.755	
ANNUAL RUNOFF (INCHES)	10.38		10.31		10.26	
10 PERCENT EXCEEDS	792		720		745	
50 PERCENT EXCEEDS	220		220		224	
90 PERCENT EXCEEDS	92		76		79	

(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04176500 RIVER RAISIN NEAR MONROE, MI

LOCATION.--Lat 41°57'38", long 83°31'52", Monroe County, Hydrologic Unit 04100002, on left bank 0.8 mi downstream from bridge on Ida Maybee Road, 5.0 mi downstream from Saline River, and 7.5 mi west of Monroe.

DRAINAGE AREA.--1,042 mi^2.

PERIOD OF RECORD.--September 1937 to current year. Published as "Raisin River at Monroe" 1937-52 and as "River Raisin at Monroe" 1952-53.

REVISED RECORDS.--WSP 954: 1938-40(M), 1941. WSP 1437: 1939, 1948. WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 616.26 ft above sea level. Prior to Oct. 1, 1953, at site 9 mi downstream at datum 46.26 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuation caused by powerplants upstream from station prior to June 27, 1968. At times, flow is affected by irrigation pumpage. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	130	714	928	e460	1020	854	675	288	108	366	90
2	79	145	809	1110	e440	960	819	596	274	109	290	89
3	76	155	803	1740	e430	901	787	526	252	131	249	83
4	78	207	779	2420	e420	835	744	475	241	135	211	82
5	92	222	666	2280	e410	793	701	433	239	134	186	79
6	95	219	557	2210	e410	910	656	401	229	156	168	77
7	92	219	729	2000	422	2600	619	384	219	158	152	75
8	90	210	1700	1630	711	3570	587	360	211	154	136	72
9	87	202	1660	1230	1260	3070	556	350	211	164	122	71
10	78	184	1830	1010	e1400	3140	531	347	196	167	107	70
11	80	171	1760	941	e1550	2880	502	334	194	147	105	72
12	76	156	1480	1390	1600	2330	473	306	233	128	113	69
13	81	146	1200	4670	1570	1710	455	295	244	125	110	67
14	85	130	1010	6560	2000	1260	429	340	227	115	132	64
15	110	126	844	e5700	3580	1020	390	386	216	112	124	65
16	111	125	717	e4600	4600	906	384	450	209	128	117	92
17	99	128	634	e3700	5250	862	369	495	198	134	121	90
18	100	127	e530	e3000	e4900	848	358	482	180	147	116	95
19	105	139	e450	e2400	e4500	880	355	440	169	135	115	100
20	110	166	e370	e1750	3770	997	351	409	163	144	127	99
21	106	167	e340	e1400	2880	1100	346	385	157	264	131	94
22	109	182	e320	e1000	2320	1180	346	380	145	288	131	99
23	110	201	e310	e860	1900	1270	360	402	134	461	155	109
24	108	231	e300	e780	1660	1270	407	440	129	563	132	102
25	102	354	e300	e720	1480	1230	514	434	115	460	120	102
26	105	404	e300	e640	1330	1200	699	403	106	392	116	117
27	110	485	e290	e610	1140	1130	856	371	109	413	114	112
28	107	493	e290	e570	1030	1080	904	348	102	495	106	118
29	110	492	e290	e530	---	1020	861	332	97	699	99	146
30	121	541	289	e500	---	955	768	319	99	726	96	134
31	126	---	453	e480	---	913	---	305	---	533	91	---
TOTAL	3012	6857	22724	59359	53423	43840	16981	12603	5586	8025	4458	2734
MEAN	97.2	229	733	1915	1908	1414	566	407	186	259	144	91.1
MAX	126	541	1830	6560	5250	3570	904	675	288	726	366	146
MIN	74	125	289	480	410	793	346	295	97	108	91	64
CFSM	0.09	0.22	0.70	1.84	1.83	1.36	0.54	0.39	0.18	0.25	0.14	0.09
IN.	0.11	0.24	0.81	2.12	1.91	1.57	0.61	0.45	0.20	0.29	0.16	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2005, BY WATER YEAR (WY)

MEAN	307	477	730	817	1122	1648	1444	967	657	340	229	237
MAX	1678	2267	2618	3058	3296	4440	4055	4678	2770	1453	1161	2666
(WY)	1982	1993	1968	1952	1976	1982	1947	1943	1989	1951	1980	1981
MIN	57.2	74.6	87.5	106	107	343	313	248	99.2	60.3	40.3	45.2
(WY)	1964	1965	1964	1964	1963	1964	1946	1941	1988	1988	1941	1963

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1937 - 2005	
ANNUAL TOTAL	258331		239602			
ANNUAL MEAN	706		656		746	
HIGHEST ANNUAL MEAN					1374	1943
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	4330	Jun 18	6560	Jan 14	14600	Mar 16 1982
LOWEST DAILY MEAN	74	Sep 30	64	Sep 14	9.0	Sep 30 1941
ANNUAL SEVEN-DAY MINIMUM	76	Sep 28	68	Sep 9	18	Sep 26 1941
MAXIMUM PEAK FLOW			6800	Jan 14	(a)15300	Mar 16 1982
MAXIMUM PEAK STAGE			8.21	Jan 14	(b)11.16	Mar 15 1982
INSTANTANEOUS LOW FLOW			62	Sep 14	(c)2.0	(d)
ANNUAL RUNOFF (CFSM)	0.677		0.630		0.716	
ANNUAL RUNOFF (INCHES)	9.22		8.55		9.72	
10 PERCENT EXCEEDS	1820		1610		1850	
50 PERCENT EXCEEDS	369		340		364	
90 PERCENT EXCEEDS	110		98		108	

(a) Gage height 10.4 ft.
(b) Backwater from ice.
(c) Approximately, site then in use.
(d) Sept. 4, 1938, Sept. 19, 20, 1941.
(e) Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04176605 OTTER CREEK AT LA SALLE, MI

LOCATION.--Lat 41°52'01", long 83°27'13", in NW1/4 NW1/4 sec.23 (private claim 47), T.7 S., R.8 E., Monroe County, Hydrologic Unit 04100001, on right bank 100 ft upstream from bridge on State Highway 125 in La Salle, 2.3 mi downstream from South Branch, and 4.6 mi southwest of Monroe.

DRAINAGE AREA.--51.0 mi^2.

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 571.07 ft above sea level.

REMARKS.--Records good except for estimated daily discharges and those below 1.0 ft^3/s, which are poor. Several measurements of water temperature were made during the year. Gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.78	4.8	134	204	19	e55	34	49	8.6	1.8	1.1	0.06
2	0.89	4.6	107	154	18	e54	39	40	7.9	1.5	0.80	0.03
3	0.84	5.1	56	184	18	e53	53	34	7.6	0.89	0.60	0.01
4	0.80	9.7	37	315	18	e52	42	29	7.5	0.58	0.40	0.00
5	0.77	19	27	193	18	e60	36	26	6.9	0.40	0.29	0.00
6	0.82	14	23	130	19	155	33	24	6.3	0.35	0.21	0.00
7	0.75	9.3	178	97	31	334	30	23	5.3	0.29	0.16	0.00
8	0.78	6.4	367	82	e235	250	27	21	4.9	0.30	0.10	0.00
9	0.86	4.7	177	75	227	124	24	21	18	1.7	0.06	0.00
10	0.77	3.9	107	77	e115	80	22	27	49	1.5	0.06	0.00
11	0.63	3.4	104	83	e82	65	20	25	22	0.63	0.15	0.00
12	0.57	3.0	99	286	87	63	18	23	15	0.32	0.13	0.00
13	0.91	2.6	77	1140	118	55	17	21	11	0.22	0.21	0.00
14	1.3	2.3	56	732	233	49	16	23	9.0	0.38	0.43	0.00
15	2.8	2.1	43	320	340	46	15	23	7.1	0.38	0.83	0.00
16	4.8	3.4	37	184	369	45	14	18	5.6	0.42	0.47	0.00
17	4.6	6.8	31	e91	306	48	14	14	4.7	0.69	0.25	0.00
18	3.1	7.2	28	e63	178	47	13	13	3.8	1.0	0.12	0.00
19	2.3	8.0	22	e52	112	50	13	12	3.3	0.59	0.08	0.00
20	2.1	23	e20	e40	88	67	13	12	3.0	0.40	0.19	0.00
21	2.0	25	e17	e31	92	69	12	12	2.6	2.6	1.3	0.00
22	1.9	17	15	e21	104	63	13	10	2.4	4.3	1.4	0.00
23	1.9	12	9.2	e20	98	63	22	13	1.9	2.1	0.58	0.00
24	2.1	31	12	28	99	63	64	18	1.5	1.3	0.28	0.00
25	2.5	186	11	29	80	86	196	16	1.3	1.3	0.16	0.00
26	2.3	80	11	29	67	73	162	14	1.1	1.2	0.10	0.00
27	2.3	45	10	24	57	61	207	12	0.97	6.3	0.09	0.00
28	2.3	52	9.8	e21	e56	55	122	11	0.81	12	0.08	0.00
29	2.6	46	11	20	---	47	82	10	0.79	5.2	0.04	0.15
30	3.7	33	13	21	---	41	62	9.6	1.5	2.7	0.04	0.18
31	4.7	---	e164	20	---	40	---	9.2	---	1.7	0.07	---
TOTAL	59.47	670.3	2013.0	4766	3284	2413	1435	612.8	221.37	55.04	10.78	0.43
MEAN	1.92	22.3	64.9	154	117	77.8	47.8	19.8	7.38	1.78	0.35	0.01
MAX	4.8	186	367	1140	369	334	207	49	49	12	1.4	0.18
MIN	0.57	2.1	9.2	20	18	40	12	9.2	0.79	0.22	0.04	0.00
CFSM	0.04	0.44	1.27	3.01	2.30	1.53	0.94	0.39	0.14	0.03	0.01	0.00
IN.	0.04	0.49	1.47	3.48	2.40	1.76	1.05	0.45	0.16	0.04	0.01	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2005, BY WATER YEAR (WY)

MEAN	18.7	28.1	48.0	59.7	77.7	86.3	91.9	64.4	48.3	8.78	6.47	6.41
MAX	138	144	168	181	217	199	228	149	234	55.1	26.1	46.2
(WY)	2002	1993	1991	1993	1998	1993	2002	2000	1997	1989	1998	1992
MIN	0.33	1.93	1.37	1.83	1.20	12.9	26.9	9.47	0.58	0.17	0.15	0.01
(WY)	1995	2000	2000	2000	2003	2000	2004	1988	1988	1988	1988	2005

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1988 - 2005	
ANNUAL TOTAL	13458.72		15541.19			
ANNUAL MEAN	36.8		42.6		45.2	
HIGHEST ANNUAL MEAN					75.0	2002
LOWEST ANNUAL MEAN					18.8	2003
HIGHEST DAILY MEAN	522	May 10	1140	Jan 13	2330	Jun 3 1997
LOWEST DAILY MEAN	0.57	Oct 12	0.00	Sep 4	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.74	Sep 25	0.00	Sep 4	0.00	Jun 21 1988
MAXIMUM PEAK FLOW			1390	Jan 13	(b)3010	Jun 2 1997
MAXIMUM PEAK STAGE			10.70	Jan 13	11.60	Jun 2 1997
ANNUAL RUNOFF (CFSM)	0.721		0.835		0.886	
ANNUAL RUNOFF (INCHES)	9.82		11.34		12.04	
10 PERCENT EXCEEDS	97		107		104	
50 PERCENT EXCEEDS	13		12		15	
90 PERCENT EXCEEDS	1.6		0.10		0.79	

(a) On several days in water years 1988, 1991, 1992, 1994, 1996, 2005.
(b) From rating curve extended above 1,000 ft^3/s.
(e) Estimated.

STREAMS TRIBUTARY TO WISCONSIN RIVER

05390100 LAC VIEUX DESERT NEAR LAND O'LAKES, WI

LOCATION.--Lat 46°07'18", long 89°09'07", in SE1/4 NW1/4 sec.17, T.42 N., R.11 E., Wisconsin Meridian, Vilas County, Hydrologic Unit 07070001, on right bank at dam, 500 ft upstream from culvert on Forest Highway 2205, and 4 mi southeast of Land O'Lakes, WI.

DRAINAGE AREA.--34.4 mi^2.

PERIOD OF RECORD.--September 1973 to September 1992, (gage height record available in files of the U.S. Geological Survey); July 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above sea level.

REMARKS.--Inlets are Misery Creek, Marsh Bay Creek, Lobischer Creek, Scaup Lake Outlet and one unnamed tributary. The outlet is the Wisconsin River. Lake elevation controlled by dam. Surface area of lake is 4,260 acres. Satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height, 81.98 ft, June 23, 24, 1983; minimum daily, 79.32 ft, Feb. 11, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily gage height, 80.62 ft, Nov. 1; minimum daily, 79.39 ft, Mar. 26-28.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80.41	80.62	---	79.98	79.67	79.56	79.58	79.95	80.05	80.27	80.30	80.08
2	80.43	80.61	80.24	79.99	79.67	79.56	79.60	79.94	80.03	80.25	80.29	80.08
3	80.42	80.61	80.23	79.98	79.66	79.55	79.62	79.95	80.03	80.22	80.28	80.09
4	80.41	80.59	80.23	79.95	79.66	79.54	79.65	79.94	80.02	80.22	80.26	80.07
5	80.38	80.58	80.21	79.94	79.65	79.53	79.68	79.93	80.06	80.23	80.24	80.06
6	80.38	80.59	80.20	79.92	79.66	79.52	79.74	79.95	80.10	80.21	80.22	80.05
7	80.38	80.57	80.19	79.91	79.68	79.52	79.79	79.96	80.12	80.20	80.21	80.05
8	80.37	80.58	80.18	79.89	79.67	79.51	79.83	79.95	80.12	80.19	80.19	80.04
9	80.38	80.57	80.17	79.88	---	79.50	79.85	79.95	80.11	80.17	80.20	80.03
10	80.38	80.58	80.17	79.87	79.66	79.50	79.87	79.99	80.11	80.17	80.22	80.03
11	80.38	80.58	80.16	79.86	79.65	79.49	79.89	80.03	80.11	80.16	80.21	80.01
12	80.38	80.58	80.18	79.85	79.64	79.49	79.89	79.99	80.14	80.15	80.19	80.03
13	80.38	80.53	80.19	79.84	79.64	79.48	79.89	79.99	80.16	80.15	80.17	80.10
14	80.39	80.49	80.17	79.83	79.64	79.47	79.90	80.00	80.22	80.13	80.16	80.12
15	80.38	80.47	80.16	79.81	79.63	79.47	79.90	80.01	80.25	80.11	80.14	80.10
16	80.36	80.44	80.14	79.80	79.62	79.46	79.90	80.03	80.23	80.10	80.13	80.09
17	80.36	80.44	80.13	79.79	79.61	79.45	79.93	80.03	80.21	80.09	80.11	80.08
18	80.38	80.41	80.12	79.78	79.60	79.44	79.93	80.03	80.18	80.05	80.15	80.07
19	80.37	80.40	80.11	79.78	79.59	79.45	79.95	80.06	80.17	80.05	80.23	80.10
20	80.36	80.39	80.11	79.77	79.59	79.44	80.00	80.06	80.16	80.02	80.23	80.10
21	80.36	80.37	80.09	79.76	79.59	79.43	79.98	80.06	80.16	80.02	80.20	80.10
22	80.37	80.35	80.07	79.78	79.58	79.42	80.01	80.06	80.13	80.01	80.20	80.11
23	80.46	80.33	80.05	79.77	79.57	79.42	79.99	80.09	80.09	79.98	80.19	80.10
24	80.50	80.32	80.04	79.75	79.57	79.41	79.98	80.07	80.09	80.28	80.17	80.08
25	80.50	---	80.03	79.75	79.56	79.40	79.95	80.06	80.09	80.32	80.16	80.10
26	80.51	---	80.01	79.74	79.55	79.39	79.94	80.03	80.07	80.33	80.15	80.14
27	80.51	80.30	80.00	79.73	79.56	79.39	79.94	80.05	80.07	80.30	80.15	80.11
28	80.51	80.32	79.98	79.72	79.57	79.39	79.95	80.06	80.28	80.30	80.15	80.12
29	80.57	---	79.97	79.71	---	79.44	79.95	80.07	80.28	80.32	80.14	80.12
30	80.60	80.28	79.98	79.70	---	79.49	79.95	80.07	80.25	80.30	80.14	80.11
31	80.61	---	80.00	79.69	---	79.55	---	80.06	---	80.29	80.13	---
MEAN	80.43	---	---	79.82	---	79.47	79.87	80.01	80.14	80.18	80.19	80.08
MAX	80.61	---	---	79.99	---	79.56	80.01	80.09	80.28	80.33	80.30	80.14
MIN	80.36	---	---	79.69	---	79.39	79.58	79.93	80.02	79.98	80.11	80.01

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in time of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at miscellaneous sites and for special studies are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
STREAMS TRIBUTARY TO LAKE SUPERIOR								
Two Hearted River near Paradise, MI (04044813)	Lat 46°41'15", long 85°26'26", in SE1/4 NW1/4 sec.33, T.50 N., R.9 W., Luce County, Hydrologic Unit 04020201, on right bank 300 ft downstream from end of two-track road, 3.2 mi upstream from mouth, and 20 mi northwest of Paradise. Drainage area is 200 mi^2.	1973-05	04-07-05	10.87	1,370	04-19-02	14.53	3,350
West Branch Waiska River near Brimley, MI (04045538) (locally known as Waishkey River)	Lat 46°21'18", long 84°35'35", in SW1/4 NW1/4 sec.29, T.46 N., R.2 W., Chippewa County, Hydrologic Unit 04020203, at Tilson Road, 3.2 mi upstream from mouth, and 3.5 mi south of Brimley. Drainage area is 40.7 mi^2.	1973-05	04-07-05	7.46	479	04-18-74	a9.19	1,200
STREAMS TRIBUTARY TO LAKE MICHIGAN								
Tenmile Creek at Perronville, MI (04059400)	Lat 45°48'38", long 87°22'00", in NW1/4 NW1/4 sec.2, T.39 N., R.25 W., Menominee County, Hydrologic Unit 04030109, at county road, 1.0 mi northwest of Perronville, and 11.5 mi upstream from Ford River. Drainage area is 38.4 mi^2.	1971-77‡, 1978-05	04-06-05	b4.35	328	04-24-75	c5.42	810

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued								
Portage River near Vicksburg, MI (04097170)	Lat 42°06'53", long 85°29'08", in SW1/4 sec.16, T.4 S., R.10 W., Kalamazoo County, Hydrologic Unit 04050001, at W Avenue, 2.4 mi east of Vicksburg. Datum of gage is 839.94 ft above sea level. Drainage area is 68.2 mi^2.	1946-51‡, 1965-80‡, 1980-05	01-15-05	5.21	232	06-02-89	d5.81	416
Rabbit River at Hamilton, MI (04108645)	Lat 42°40'31", long 86°00'13", in NE1/4 sec.6, T.3 N., R.14 W., Allegan County, Hydrologic Unit 04050003, at State Highway 40 in Hamilton. Drainage area is 274 mi^2.	1979-05	01-13-05	16.04	2,780	06-21-97	f21.60	12,000
Sycamore Creek near Mason, MI (04112700)	Lat 42°36'40", long 84°27'58", in NE1/4 NE1/4 sec.31, T.3 N., R.1 W., Ingham County, Hydrologic Unit 04050004, at Harper Road, 0.7 mi downstream from Aurelius and Vevay Drain, and 2.6 mi northwest of Mason. Drainage area is 39.5 mi^2.	1975-05	01-13-05	10.62	492	04-19-75	12.53	1,080
Flat River at Smyrna, MI (04116500)	Lat 43°03'10", long 85°15'53", in NW1/4 sec.28, T.8 N., R.8 W., Ionia County, Hydrologic Unit 04050006, on right bank at downstream side of bridge on Ingalls Road, 0.5 mi south of Smyrna. Datum of gage is 729.53 ft above sea level. Drainage area is 528 mi^2.	1951-86‡, 1993-05	04-02-05	g6.05	1,860	09-13-86	9.05	4,700
Thornapple River near Caledonia, MI (04118000)	Lat 42°48'40", long 85°29'00", in NW1/4 sec.22, T.5 N., R.10 W., Kent County, Hydrologic Unit 04050007, on right bank 200 ft downstream from LaBarge powerplant, 200 ft upstream from 84th Street, 2.3 mi northeast of Caledonia, and 3.3 mi downstream from Coldwater River. Datum of gage is 676.31 ft above sea level. Drainage area is 773 mi^2.	1931-38‡, 1952-82‡, 1984-94‡, 1995-05	01-16-05	9.15	4,410	02-27-85	11.43	6,700

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued								
Grand River at Ada, MI (04118105)	Lat 42°57'19", long 85°28'35", in NE1/4 sec.34, T.7 N., R.10 W., Kent County, Hydrologic Unit 04050006, on left bank at downstream side of bridge on State Highway 21 in Ada, 0.15 mi downstream from Thornapple River, and at mile 62. Datum of gage is 603.95 ft above sea level. Drainage area is 4,473 mi^2.	1999-05	01-16-05	h17.80	e16,000	05-26-04	21.56	27,400
Plaster Creek at Grand Rapids, MI (04119055)	Lat 42°54'46", long 85°39'02", in SE1/4 sec.7, T.6 N., R.11 W., Kent County, Hydrologic Unit 04050006, at 28th Street in Grand Rapids. Drainage area is 46.6 mi^2.	1974-05	01-13-05	11.06	1,450	02-22-97	13.43	2,300
Buck Creek at Grandville, MI (04119160)	Lat 42°54'09", long 85°45'46", in SE1/4 sec.18, T.6 N., R.12 W., Kent County, Hydrologic Unit 04050006, at Wilson Avenue in Grandville. Drainage area is 50.5 mi^2.	1974-05	01-13-05	8.78	873	05-12-81	10.30	1,580
North Branch Pentwater River near Pentwater, MI (04122230)	Lat 43°47'42", long 86°21'30", in NE1/4 SE1/4 sec.8, T.16 N., R.17 W., Oceana County, Hydrologic Unit 04060101, at Oceana Drive, 3.5 mi northeast of Pentwater. Drainage area is 42.3 mi^2.	1975-05	03-31-05	i3.10	260	09-11-86	6.33	2,860
Betsie River near Benzonia, MI (04126600)	Lat 44°36'02", long 86°05'57", in NW1/4 NW1/4 sec.2, T.25 N., R.15 W., Benzie County, Hydrologic Unit 04060104, at U.S. Highway 31, 1.2 mi south of Benzonia. Datum of gage is 602.15 ft above sea level. Drainage area is approximately 170 mi^2.	1975-05	04-01-05	j4.08	710	03-28-89	5.46	993
STREAMS TRIBUTARY TO LAKE HURON								
Rifle River at Selkirk, MI (04140500)	Lat 44°18'48", long 84°04'10", in SE1/4 NE1/4 sec.9, T.22 N., R.3 E., Ogemaw County, Hydrologic Unit 04080101, at State Road in Selkirk. Datum of gage is 828.47 ft above sea level. Drainage area is 117 mi^2.	1950-82‡, 1983-05	03-31-05	k3.03	621	05-20-59	6.76	2,760

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
STREAMS TRIBUTARY TO LAKE HURON--Continued								
North Branch Flint River near Columbiaville, MI (04146450)	Lat 43°11'18", long 83°22'03", in NW1/4 sec. 24, T.9 N., R.9 E., Lapeer County, Hydrologic Unit 04080204, at Barnes Lake Road, 2.9 mi northeast of Columbiaville. Drainage area is 223 mi^2.	1987-05	01-14-05	f13.91	1,210	06-21-96	20.25	4,800
Swartz Creek at Flint, MI (04148300)	Lat 42°59'16", long 83°43'57", in NW1/4 sec. 26, T.7 N., R.6 E., Genesee County, Hydrologic Unit 04080204, at South Ballenger Highway in Flint, 3.6 mi upstream from mouth. Datum of gage is 727.05 ft above sea level. Drainage area is 115 mi^2.	1970-84‡, 1991-05	09-22-05	7.32	1,230	02-09-01	9.21	3,380
Thread Creek near Flint, MI (04148440)	Lat 42°58'30", long 83°38'09", in SE1/4 SE1/4 sec. 28, T.7 N., R.7 E., Genesee County, Hydrologic Unit 04080204, at Bristol Road, 4.0 mi southeast of Flint, and 6.0 mi upstream from mouth. Datum of gage is 764.36 ft above sea level. Drainage area is 54.4 mi^2.	1970-84‡, 1991-05	01-14-05	m	e380	04-19-75	f7.65	1,260
STREAMS TRIBUTARY TO ST. CLAIR RIVER								
Pine River near Rattle Run, MI (04160350)	Lat 42°52'49", long 82°34'04", in NE1/4 sec.9, T.5 N., R.16 E., St. Clair County, Hydrologic Unit 04090001, at Gratiot Road, 1.9 mi northeast of Rattle Run. Drainage area is 135 mi^2.	1974-05	02-16-05	17.32	1,740	05-23-04	25.64	n7,070
STREAMS TRIBUTARY TO LAKE ST. CLAIR								
West Branch Stony Creek near Washington, MI (04161760)	Lat 42°43'53", long 83°06'02", in SE1/4 sec.25, T.4 N., R.11 E., Oakland County, Hydrologic Unit 04090003, at Huron-Clinton Metropolitan Park Road, 3.4 mi west of Washington. Drainage area is 22.5 mi^2.	1965-05	01-14-05	3.12	142	04-19-75	o4.42	470
North Branch Clinton River at Almont, MI (04164010)	Lat 42°54'59", long 83°02'42", in NE1/4 sec.28, T.6 N., R.12 E., Lapeer County, Hydrologic Unit 04090003, at State Highway 53 in Almont. Drainage area is 9.56 mi^2.	1959-62, 1963-68‡, 1969-05	01-13-05	p3.73	115	09-06-85	q8.60	818

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
STREAMS TRIBUTARY TO LAKE ST. CLAIR--Continued								
North Branch Clinton River near Romeo, MI (04164050)	Lat 42°49'11", long 82°58'35", in NW1/4 sec.31, T.5 N., R.13 E., Macomb County, Hydrologic Unit 04090003, at 33 Mile Road, 2.2 mi northeast of Romeo. Drainage area is 49.7 mi^2.	1959-64, 1965-69‡, 1970-05	01-13-05	3.69	694	04-19-75	r5.44	3,500
North Branch Clinton River near Meade, MI (04164150)	Lat 42°43'50", long 82°54'23", in NE1/4 sec.34, T.4 N., R.13 E., Macomb County, Hydrologic Unit 04090003, at 27 Mile Road, 1.9 mi northwest of Meade. Drainage area is 89.6 mi^2.	1959-67, 1968-72‡, 1973-05	02-16-05	7.23	1,350	04-19-75	s7.76	4,500
Coon Creek near Armada, MI (04164200)	Lat 42°47'41", long 82°52'58", in SW1/4 sec.1, T.4 N., R.13 E., Macomb County, Hydrologic Unit 04090003, at North Road, 3.4 mi south of Armada. Drainage area is 10.0 mi^2.	1959-65, 1966-70‡, 1971-05	01-13-05	3.99	182	05-23-04	t5.98	644
Highbank Creek near Armada, MI (04164350)	Lat 42°48'24", long 82°51'08", in NW1/4 sec.6, T.4 N., R.14 E., Macomb County, Hydrologic Unit 04090003, at 32 Mile Road, 3.0 mi southeast of Armada. Drainage area is 14.9 mi^2.	1959-65, 1965-70‡, 1971-05	12-31-04	15.67	e340	09-06-85	u16.77	2,240
East Branch Coon Creek near New Haven, MI (04164360)	Lat 42°45'46", long 82°50'57", in SW1/4 sec.18, T.4 N., R.14 E., Macomb County, Hydrologic Unit 04090003, at 29 Mile Road, 3.4 mi northwest of New Haven. Drainage area is 36.1 mi^2.	1959-67, 1968-72‡, 1973-05	01-13-05	7.69	550	04-19-75	v8.95	2,700
Deer Creek near Meade, MI (04164400)	Lat 42°42'39", long 82°51'32", in NW1/4 sec.6, T.3 N., R.14 E., Macomb County, Hydrologic Unit 04090003, at 25 1/2 Mile Road, 0.9 mi southeast of Meade. Drainage area is 12.7 mi^2.	1959-60, 1960-65‡, 1966-05	01-13-05	6.71	349	05-24-04	w8.64	759
McBride Drain near Macomb, MI (04164450)	Lat 42°41'14", long 82°55'14", in NE1/4 NE1/4 sec.16, T.3 N., R.13 E., Macomb County, Hydrologic Unit 04090003, at 24 Mile Road, 2.2 mi southeast of Macomb. Drainage area is 5.79 mi^2.	1960-64‡, 1965-05	02-16-05	6.31	98.7	02-10-65	x8.82	220

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 2005 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
STREAMS TRIBUTARY TO LAKE ST. CLAIR--Continued								
Middle Branch Clinton River near Macomb, MI (04164600)	Lat 42°42'03", long 82°59'44", in SE1/4 sec.2, T.3 N., R.12 E., Macomb County, Hydrologic Unit 04090003, at Schoenherr Road, 2.0 mi west of Macomb. Drainage area is 22.2 mi^2.	1959-64, 1965-69‡, 1971-05	07-16-05	10.13	516	05-23-04	12.78	1,570
STREAMS TRIBUTARY TO DETROIT RIVER								
Frank and Poet Drain at Trenton, MI (04168660)	Lat 42°09'19", long 83°12'22", in NW1/4 sec.13, T.4 S., R.10 E., Wayne County, Hydrologic Unit 04090004, at King Road in Trenton. Drainage area is 19.3 mi^2.	1972-05	01-13-05	8.10	272	09-07-90	9.55	655
STREAMS TRIBUTARY TO LAKE ERIE								
Saline River near Saline, MI (04176400)	Lat 42°07'50", long 83°46'35", in SW1/4 sec.18, T.4 S., R.6 E., Washtenaw County, Hydrologic Unit 04100002, 50 ft upstream from Maple Road, 2.8 mi south of Saline. Drainage area is 94.6 mi^2.	1966-77‡, 1978-05	01-14-05	11.59	1,760	06-26-68	13.37	3,990

‡ Operated as a continuous-record gaging station.
a Maximum gage height, 9.84 ft, Apr. 6, 1988.
b Maximum gage height, 4.95 ft, sometime during winter period, backwater from ice.
c Maximum gage height, 8.94 ft, Mar. 30, 1977, backwater from ice.
d Maximum gage height, 5.86 ft, Dec. 31, 1988, backwater from ice.
e Estimated.
f From floodmark.
g Maximum gage height, 8.50 ft, Jan. 23, from floodmark, backwater from ice.
h Backwater from ice.
i Maximum gage height, 3.71 ft, Jan. 14, backwater from ice.
j Maximum gage height, 5.01 ft, backwater from ice, date not determined.
k Maximum gage height, 4.05 ft, backwater from ice, date not determined.
m Maximum gage height, 6.14 ft, Jan. 15, backwater from ice.
n From rating curve extended above 3,000 ft^3/s.
o Maximum gage height, 5.93 ft, Jan. 27, 1974, backwater from ice.
p Maximum gage height, 4.10 ft, Mar. 8, backwater from ice.
q Maximum gage height, 8.62 ft, Apr. 19, 1975.
r Maximum gage height, 7.1 ft, Mar. 12 or 13, 1962, backwater from ice; site and datum then in use.
s Maximum gage height, 8.66 ft, May 23, 2004.
t Maximum gage height, 6.95 ft, Sept. 6, 1985.
u Maximum gage height, 18.07 ft, May 23, 2004.
v Maximum gage height, 11.75 ft, May 23, 2004.
w Maximum gage height, 9.09 ft, Feb. 9, 2001.
x Maximum gage height, 9.55 ft, June 26, 1968.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE SUPERIOR				
04001000	Washington Creek	Lake Superior	Lat 47°55'23", long 89°08'42", in NW1/4 sec.28, T.64 N., R.38 W., Keweenaw County, Isle Royale National Park, Hydrologic Unit 04020300, 0.8 mi northeast of Windigo.	13.2	1964, 1965-03‡	08-09-05	0.94
04034100	Bond Falls Lower By-Pass	Middle Branch Ontonagon River	Lat 46°24'27", long 89°07'44", in SE1/4 SW1/4 sec.1, T.46 N., R.39 W., Ontonagon County, Hydrologic Unit 04020102, at Bond Falls Road, 2.2 mi west of Calderwood.	--	1942,1945, 1963-64, 1967,1969, 1971-72, 1974, 1979-81, 1983-84, 1987-01, 2003-04	05-05-05	a49.3
04043096	Denomie Creek	Falls River	Lat 46°42'26", long 88°23'10", in NW1/4 NW1/4 sec.25, T.50 N., R.33 W., Baraga County, Hydrologic Unit 04020105, at Indian Road, 2.2 mi southeast of Bovine.	2.3	--	05-10-05	2.26
04043126	Silver River	Huron Bay	Lat 46°43"16", long 88°19'48", in NW1/4 NE1/4 sec.20, T.50 N., R.32 W., Baraga County, Hydrologic Unit 04020105, upstream from East Branch Silver River, at 2-track road, 6.0 mi southeast of L'Anse.	17.4	--	05-12-05 07-27-05	17.8 5.14
04043131	Silver River	Huron Bay	Lat 46°45'20", long 88°21'19", in NE1/4 SW1/4 sec.6, T.50 N., R.32 W., Baraga County, Hydrologic Unit 04020105, at Arvon Road, 9.0 mi south of L'Anse.	32.5	--	05-11-05 07-27-05	34.9 8.90
04043135	Gomanche Creek	Silver River	Lat 46°42'44", long 88°21'55", in NW1/4 SW1/4 sec.19, T.50 N., R.32 W., Baraga County, Hydrologic Unit 04020105, at Indian Road, 3.2 mi north of Herman.	2.9	--	05-10-05 07-26-05	0.77 0.19
04043137	East Branch Unnamed Tributary	Gomanche Creek	Lat 46°43'30", long 88°21'51", in SW1/4 SW1/4 sec.18, T.50 N., R.32 W., Baraga County, Hydrologic Unit 04020105, at Indian Road, 4.0 mi north of Herman.	0.89	--	05-10-05 07-26-05	0.24 0.02
04043138	West Branch Unnamed Tributary	Gomanche Creek	Lat 46°43'31", long 88°22'07", in NE1/4 SW1/4 sec.13, T.50 N., R.33 W., Baraga County, Hydrologic Unit 04020105, at trail, 4.0 mi north of Herman.	0.33	--	05-11-05 07-26-05	0.20 0.01

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued				
04043140	Gomanche Creek	Silver River	Lat 46°45'04", long 88°21'42", in NW1/4 NW1/4 sec.07, T.50 N., R.32 W., Baraga County, Hydrologic Unit 04020105, at Indian Road, 9.0 mi south of L'Anse.	4.56	--	05-11-05 07-27-05	3.30 1.48
04043146	Dakota Creek	Silver River	Lat 46°46'52", long 88°19'27", in SE1/4 SE1/4 sec.26, T.51 N., R.32 W., Baraga County, Hydrologic Unit 04020105, at trail, 6.0 mi northeast of L'Anse.	9.3	--	05-12-05 07-28-05	6.08 0.83
04043250	Salmon Trout River	Lake Superior	Lat 46°50'55", long 87°47'56", in NE1/4 sec.1, T.51 N., R.28 W., Marquette County, Hydrologic Unit 04020105, at County Road 550, 4.0 mi northwest of Big Bay.	42.9	1970-71, 1976	02-16-05	18.7
04043295	Yellow Dog River	Lake Independence	Lat 46°45'24", long 87°39'42", in SW1/4 sec.31, T.51 N., R.26 W., Marquette County, Hydrologic Unit 04020105, at County Road 550, 5.0 mi southeast of Big Bay.	63.6	1963, 1970, 1976	02-16-05	43.8
04044400	Carp River	Lake Superior	Lat 46°31'29", long 87°34'25", in SE1/4 sec.29, T.48 N., R.26 W., Marquette County, Hydrologic Unit 04020105, at U.S. Highway 41, 2.0 mi northeast of Negaunee.	51.4	1961-86‡, 1987-92†, 1993-04	11-03-04 05-11-05 06-21-05 07-27-05	22.7 74.7 51.0 25.0
04044840	Tahquamenon River	Whitefish Bay	Lat 46°22'21", long 85°46'55", in NE1/4 NE1/4 sec.22, T.46 N., R.12 W., Luce County, Hydrologic Unit 04020202, at County Road 442, 2.0 mi north of Danaher.	29.3	1971-72, 2004	11-08-04	68.1
			STREAMS TRIBUTARY TO LAKE MICHIGAN				
04047980	Fox River	Manistique River	Lat 46°24'01", long 86°01'42", in NW1/4 NW1/4 sec.11, T.46 N., R.14 W., Schoolcraft County, Hydrologic Unit 04060106, at forest campground, adjacent to Fox River Road, 5.3 mi northwest of Seney.	79.0	2004	11-08-04	132
04058120	Green Creek	Middle Branch Escanaba River	Lat 46°22'22", long 87°36'21", in NW1/4 sec.19, T.46 N., R.26 W., Marquette County, Hydrologic Unit 04030110, at County Highway 565, 4.5 mi south of Palmer.	8.42	1961-65, 1970-92†, 1993-04	11-02-04 05-09-05 06-21-05 07-27-05	4.28 10.0 3.45 3.40

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued				
04058500	East Branch Escanaba River	Escanaba River	Lat 46°16'56", long 87°26'07", in SE1/4 sec.21, T.45 N., R.25 W., Marquette County, Hydrologic Unit 04030110, at State Highway 35 in Gwinn.	124	1955-80‡, 1981, 2001, 2004	04-08-05	674
04058570	Bryan Creek	West Branch Escanaba River	Lat 46°11'07", long 87°33'58", in NE1/4 NW1/4 sec.28, T.44 N., R.26 W., Marquette County, Hydrologic Unit 04030110, at County Road 438, 8.0 mi north of Northland.	68.1	--	04-18-05 06-21-05 08-17-05	86.9 39.3 19.0
04059034	Escanaba River	Lake Michigan	Lat 45°48'22", long 87°05'51", in SW1/4 NW1/4 sec.1, T.39 N., R.23 W., Delta County, Hydrologic Unit 04030110, 600 ft downstream from Bichler Creek, 2.5 mi upstream from mouth, and 2.0 mi northwest of Wells.	b920	1981-92†, 1993-04	06-02-05 07-15-05 08-31-05	730 310 235
04059512	Sunny Brook	Green Bay	Lat 45°40'04", long 87°09'50", in SE1/4 SE1/4 sec.20, T.38 N., R.23 W., Delta County, Hydrologic Unit 04030109, at Highway M-35, 1.5 mi southwest of Ford River.	--	--	07-28-05	d0.00
04059610	West Branch Deer Creek	Deer Creek	Lat 45°30'50", long 87°21'10", in NE1/4 SE1/4 sec.14, T.36 N., R.25 W., Menominee County, Hydrologic Unit 04030109, at North Fox Road, 3.1 mi northwest of Fox.	--	--	07-29-05	d0.00
04061500	Paint River	Brule River	Lat 46°06'21", long 88°20'05", in SE1/4 sec.20, T.43 N., R.32 W., Iron County, Hydrologic Unit 04030106, downstream from City of Crystal Falls powerplant, 0.9 mi upstream from State Highway 69 in Crystal Falls.	597	1944-96‡, 1997-98c, 1999-04	10-12-04 04-05-05 08-03-05	a242 a2,460 a205
04062400	Michigamme River	Menominee River	Lat 46°14'48", long 88°00'45", in NW1/4 NW1/4 sec.1, T.44 N., R.30 W., Dickinson County, Hydrologic Unit 04030107, on left bank 20 ft upstream from bridge on unnamed county road, 800 ft downstream from State Highway 95, and 2.0 mi south of Witch Lake.	316	1964-80‡, 1997-98c, 1999-04	04-06-05 05-19-05 07-21-05	1,140 336 125

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued				
04065650	Sturgeon River	Menominee River	Lat 45°46'35", long 87°49'39", in SW1/4 NE1/4 sec.13, T.39 N., R.29 W., Dickinson County, Hydrologic Unit 04030108 at U.S. Highway 2, 0.5 mi west of Loretto.	389	1967, 2002-04	10-13-04 04-06-05 05-18-05 08-03-05	148 1,330 284 51.8
04096517	South Branch Hog Creek Tributary	South Branch Hog Creek	Lat 41°57'33", long 84°49'33", in SW1/4 SW1/4 sec.7, T.6 S., R.4 W., Hillsdale County, Hydrologic Unit 04050001, at Squires Road, 0.3 mi upstream from mouth, and 3.0 mi west of Allen.	2.61	1969-04	10-06-04 11-24-04 04-20-05 06-15-05	1.31 0.27 2.13 0.38
04101531	Osborn Drain	Dowagiac River	Lat 42°03'56", long 86°04'30", in SW1/4 NE1/4 sec.5, T.5 S., R.15 W., Cass County, Hydrologic Unit 04050001, 0.2 mi upstream from Corwin Street, 2.3 mi northwest of Glenwood.	13.6	2004	10-13-04	3.96
04102536	Rogers Creek	Lake Michigan	Lat 42°15'01", long 86°20'21", in NW1/4 SW1/4 sec.31, T.02 S., R.17 W., Van Buren County, Hydrologic Unit 04050002, at 82nd Street, 5.1 mi southwest of Covert.	--	--	09-15-05	d0.12
04102537	Unnamed Tributary	Rogers Creek	Lat 42°15'13", long 86°20'25", in NE1/4 NE1/4 sec.36, T.2 S., R.18 W., Van Buren County, Hydrologic Unit 04050002, at 82nd Street, 5.0 mi southwest of Covert.	--	--	09-15-05	d0.00
041027807	Unnamed Tributary	Black River	Lat 42°23'20", long 86°15'58", in NE1/4 NE1/4 sec.15, T.1 S., R.17 W., Van Buren County, Hydrologic Unit 04050002, at Aylworth Avenue in South Haven.	--	--	07-15-05	d0.01
041088048	North Branch Macatawa River	Macatawa River	Lat 42°46'46", long 86°02'44", in NW1/4 SW1/4 NE1/4 sec.35, T.5 N., R.15 W., Ottawa County, Hydrologic Unit 04050002, 2.2 mi southwest of Zeeland.	--	1997	07-13-05	d0.00
04108814	Bosch and Hulst Drain	Macatawa River	Lat 42°47'57", long 86°02'44", in SW1/4 SE1/4 sec. 23, T.5 N., R.15 W., Ottawa County, Hydrologic Unit 04050002, at Perry Road, 1.0 mi southwest of Zeeland.	--	1997	07-13-05	d5.56

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued				
04108831	Unnamed Tributary	Macatawa River	Lat 42°48'12", long 86°04'59", in NW1/4 SE1/4 sec.21, T.5 N., R.15 W., Ottawa County, Hydrologic Unit 04050002, at Chesapeake and Ohio Railway bridge, 0.5 mi north of Holland.	--	1997	07-13-05	d1.52
04108834	Unnamed Tributary	Macatawa River	Lat 42°47'32", long 86°05'25", in SE1/4 NW1/4 sec.28, T.5 N., R.15 W., Ottawa County, Hydrologic Unit 04050002, at 6th Avenue, 0.5 mi northeast of Holland.	--	1997	07-13-05	d0.64
04108841	Pine Creek	Lake Macatawa	Lat 42°48'16", long 86°08'33", in NW1/4 SE1/4 sec.24, T.5 N., R.16 W., Ottawa County, Hydrologic Unit 04050002, at Lakewood Boulevard, 0.7 mi east of Tasmas Corners.	--	1997	07-13-05	d4.54
04121239	Clam River	Muskegon River	Lat 44°15'49", long 85°24'04", in NE1/4 NE1/4 sec.33, T.22 N., R.9 W., Wexford County, Hydrologic Unit 04060102, 1.0 mi downstream from dam at outlet of Lake Cadillac, at Smith Street in Cadillac.	b48	1983-84†, 1986-92†, 1993-04	11-09-04 03-09-05 05-13-05 09-13-05	a25.5 a42.9 a20.5 a11.9
04121445	Doc and Tom Creek	Muskegon River	Lat 43°56'01", long 85°00'34", in NW1/4 SW1/4 sec.23, T.18 N., R.06 W., Clare County, Hydrologic Unit 04060102, at Lake Station Avenue, 3.9 mi southwest of Lake George.	--	--	05-08-05	d0.00
04126785	Hatlems Creek	Glen Lake	Lat 44°50'44", long 85°57'42", in SW1/4 NE1/4 sec.11, T.28 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, at mouth, 0.8 mi southwest of Burdickville.	--	1990	09-08-05	7.2
04126795	Glen Lake Outlet	Fisher Lake	Lat 44°53'32", long 85°56'46", in SW1/4 NE1/4 sec.25, T.29 N., R.13 W., Leelanau County, Hydrologic Unit 04060104, in narrows between Glen and Fisher Lakes, 2.0 mi east of Glen Arbor.	--	1990	09-08-05 09-08-05	a23.5 a23.4
04126796	Unnamed Tributary	Fisher Lake	Lat 44°53'35", long 85°56'42", in NE1/4 sec.25, T.29 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, at South Tamarack Cove Road, 2.2 mi east of Glen Arbor.	--	--	09-08-05	0.40

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued				
04126801	Crystal River	Lake Michigan	Lat 44°53'56", long 85°57'23", in SW1/4 sec.24, T.29 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, downstream from Glen Lake dam, 1.6 mi east of Glen Arbor.	44.5	2003-04	10-07-04	a28.5
						12-15-04	a72.6
						01-20-05	a67.6
						02-23-05	a65.1
						02-23-05	a63.3
						03-30-05	a60.1
						03-30-05	a59.3
						04-19-05	a28.3
						05-10-05	a31.1
						05-10-05	a30.8
						07-13-05	a31.8
						07-13-05	a30.4
						08-31-05	a24.9
						09-08-05	a24.0
						09-08-05	a24.4
04126803	Crystal River	Lake Michigan	Lat 44°54'15", long 85°58'10", in SE1/4 NW1/4 sec.23, T.29 N., R.14 W., Leelanau County, Hydrologic Unit 04060104, 1.1 mi northeast of Glen Arbor.	45.3	2003-04	10-07-04	a27.2
						12-15-04	a68.5
						02-23-05	a69.7
						02-23-05	a66.9
						03-30-05	a64.0
						03-30-05	a63.7
						05-10-05	a31.9
						05-10-05	a32.5
						07-13-05	a31.6
						07-13-05	a31.9
						08-31-05	a26.4
			STREAMS TRIBUTARY TO LAKE HURON				
04127915	Bear Creek	Pine River	Lat 46°12'17", long 84°41'52", in NE1/4 SE1/4 sec.17, T.44 N., R.3 W., Chippewa County, Hydrologic Unit 04070002, at Biscuit Road, 1.0 mi southwest of Dryburg.	17.1	2004	11-09-04	7.55
041279568	South Branch Little Black River	Little Black River	Lat 45°37'22", long 84°32'21", in SE1/4 SW1/4 sec.3, T.37 N., R.2 W., Cheboygan County, Hydrologic Unit 04070003, at Schmidt Road, 3.5 mi southwest of Cheboygan.	--	--	09-22-05	d0.00
0412795683	South Branch Little Black River	Little Black River	Lat 45°37'14", long 84°31'44", in SE1/4 SE1/4 sec.3, T.37 N., R.2 W., Cheboygan County, Hydrologic Unit 04070003, at Inverness Trail Road, 3.1 mi southwest of Cheboygan.	--	--	09-22-05	d0.00
04128980	Pigeon River	Mullett Lake	Lat 45°07'42", long 84°30'24", in SW1/4 SW1/4 sec.25, T.32 N., R.2 W., Otsego County, Hydrologic Unit 04070004, at Old Vanderbilt Road, 7.8 mi east of Vanderbilt.	55.0	1966, 1971-72	06-27-05	d44.7

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE HURON--Continued				
04128998	Pigeon River	Mullett Lake	Lat 45°10'18", long 84°26'53", in SE1/4 SE1/4 sec.8, T.32 N., R.1 W., Otsego County, Hydrologic Unit 04070004, at campground 80, 10.6 mi east of Vanderbilt.	--	--	06-27-05	d46.9
04129005	Pigeon River	Mullett Lake	Lat 45°10'40", long 84°25'32", in NW1/4 SW1/4 sec.10, T.32 N., R.1 W., Otsego County, Hydrologic Unit 04070004, at State Forest Campground, 11.9 mi east of Vanderbilt.	65.0	1971-72	06-27-05	d51.1
04129045	Pigeon River	Mullett Lake	Lat 45°16'20", long 84°27'35", in SE1/4 SW1/4 sec.5, T.33 N., R.1 W., Cheboygan County, Hydrologic Unit 04070004, at Red Bridge, 7.1 mi east of Wolverine.	90.0	1966, 1971-72	06-27-05	d62.4
04129500	Pigeon River	Mullett Lake	Lat 45°22'26", long 84°30'54", in NW1/4 NE1/4 sec.2, T.34 N., R.2 W., Cheboygan County, Hydrologic Unit 04070004, at State Highway M-68, 0.9 mi west of Afton.	139	1942-81‡	05-19-05 07-20-05 09-12-05	108 66.8 80.2
04132052	Cheboygan River	Lake Huron	Lat 45°38'02", long 84°28'52", in NW1/4 NE1/4 sec.6, T.37 N., R.1 W., Cheboygan County, Hydrologic Unit 04070004, at Lincoln Avenue in Cheboygan.	b1,500	1975-86	04-26-05	a1,770
04132275	Thunder Bay River	Lake Huron	Lat 44°58'27", long 84°05'34", in SE1/4 SE1/4 sec.20, T.30 N., R.3 E., Montmorency County, Hydrologic Unit 04070006, at McMurphy Road, 3.5 mi southeast of Atlanta.	99.5	--	05-18-05 07-19-05 09-13-05	74.8 50.6 52.3
04148035	Kearsley Creek	Flint River	Lat 42°51'08", long 83°26'47", in SE1/4 SW1/4 sec.7, T.5 N., R.9 E., Oakland County, Hydrologic Unit 04080204, at Mill Street in Ortonville.	--	2002-03	09-19-05	4.08
			STREAMS TRIBUTARY TO ST. CLAIR RIVER				
04160075	Black River	St. Clair River	Lat 42°59'40", long 82°26'42", in NE1/4 NE1/4 sec.4, T.6 N., R.17 E., St. Clair County, Hydrologic Unit 04090001, in Port Huron.	--	1973, 2004	10-13-04 05-12-05 08-19-05 08-26-05	a24.5 a782 a889 a550

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO LAKE ST. CLAIR				
04160648	Swan Creek	Lake St. Clair	Lat 42°46'06", long 82°38'30", in NW1/4 NE1/4 sec.23, T.4 N., R.15 E., St. Clair County, Hydrologic Unit 04090002, at Lindsey Road, 1.7 mi northwest of Peters.	--	--	03-28-05	d15.5
04160670	Marsac Creek	Lake St. Clair	Lat 42°41'37", long 82°42'30", in SW1/4 sec.8, T.3 N., R.15 E., St. Clair County, Hydrologic Unit 04090002, at Bethuy Road in New Baltimore.	5.68	1971-72	03-28-05	d8.25
04160676	Salt River	Lake St. Clair	Lat 42°46'45", long 82°46'51", in NW1/4 NE1/4 sec.15, T. 4 N., R.14 E., Macomb County, Hydrologic Unit 04090002, at 30 Mile Road, 3.7 mi northeast of New Haven.	--	--	03-28-05	d7.33
			STREAMS TRIBUTARY TO DETROIT RIVER				
04165980	River Rouge	Detroit River	Lat 42°34'27", long 83°12'26", in NW1/4 NW1/4 sec.19, T.2 N., R.11 E., Oakland County, Hydrologic Unit 04090004, at Adams Road in Troy.	12.0	1994-97	06-22-05 08-24-05	d4.01 d1.61
04166024	Franklin Branch	River Rouge	Lat 42°31'51", long 83°20'26", in SW1/4 SW1/4 sec.36, T.2 N., R.9 E., Oakland County, Hydrologic Unit 04090004, at Middle Belt Road, 1.8 mi west of Franklin.	--	--	06-22-05 08-24-05	d0.25 d0.12
04166026	Unnamed Tributary	Franklin Branch	Lat 42°33'07", long 83°20'29", in SW1/4 NW1/4 sec.25, T.2 N., R.9 E., Oakland County, Hydrologic Unit 04090004, at Middle Belt Road, 2.4 mi northwest of Franklin.	--	--	06-22-05 08-24-05	d0.46 d0.02
04166028	Franklin Branch	River Rouge	Lat 42°31'47", long 83°18'19", in SE1/4 SE1/4 sec.31, T.2 N., R.10 E., Oakland County, Hydrologic Unit 04090004, at Franklin Road in Franklin.	--	--	06-22-05 08-24-05	d3.56 d1.67
04166046	River Rouge	Detroit River	Lat 42°28'18", long 83°17'19", in SW1/4 SE1/4 sec.20, T.1 N., R.10 E., Oakland County, Hydrologic Unit 04090004, at 10 Mile Road in Southfield.	--	--	08-24-05	d12.4

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO DETROIT RIVER--Continued				
04166065	Pebble Creek	River Rouge	Lat 42°30'42", long 83°20'22", in NW1/4 NW1/4 sec.12, T.1 N., R.9 E., Oakland County, Hydrologic Unit 04090004, at Middle Belt Road in Farmington Hills.	--	--	06-22-05 08-24-05	d1.13 d0.68
04166087	Unnamed Tributary	Pebble Creek	Lat 42°29'04", long 83°17'20", in NW1/4 NE1/4 sec.20, T.1 N., R.10 E., Oakland County, Hydrologic Unit 04090004, at Franklin Road in Southfield.	--	--	06-22-05 08-24-05	d0.68 d0.53
04166301	Upper River Rouge	River Rouge	Lat 42°27'42", long 83°22'00", in NE1/4 SW1/4 sec.27, T.1 N., R.9 E., Oakland County, Hydrologic Unit 04090004, at Powers Road in Farmington.	--	--	06-15-05	d11.5
04166397	Unnamed Tributary	Bell Branch	Lat 42°24'42", long 83°22'45", in NW1/4 NE1/4 sec.16, T.1 S., R.9 E., Wayne County, Hydrologic Unit 04090004, at 6 Mile Road in Livonia.	--	--	06-15-05	d0.70
04166416	Tarabusi Creek	Bell Branch	Lat 42°25'35", long 83°21'48", in SW1/4 SE1/4 sec.3, T.1 S., R.9 E., Wayne County, Hydrologic Unit 04090004, at 7 Mile Road in Livonia.	--	--	06-15-05	d3.48
04166428	Unnamed Tributary	Bell Branch	Lat 42°26'29", long 83°20'55", in SE1/4 SW1/4 sec.35, T.1 N., R.9 E., Oakland County, Hydrologic Unit 04090004, at 8 Mile Road in Farmington Hills.	--	--	06-15-05	d0.41
04166435	Bell Branch	Upper River Rouge	Lat 42°24'23", long 83°18'55", in SE1/4 NE1/4 sec.13, T.1 S., R.9 E., Wayne County, Hydrologic Unit 04090004, at Inkster Road in Livonia.	--	1995-97	06-15-05	d10.1
04166602	Walled Lake Branch	Middle River Rouge	Lat 42°26'18", long 83°28'24", in SE1/4 SE1/4 sec.34, T.1 N., R.8 E., Oakland County, Hydrologic Unit 04090004, at Old Novi Road in Northville.	--	--	07-28-05	d14.1
04166700	Johnson Creek	Middle River Rouge	Lat 42°25'33", long 83°28'52", in SW1/4 SE1/4 sec.3, T.1 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Hines Drive, 0.1 mi upstream from confluence with Walled Lake Branch in Northville.	26.1	1994-99	07-28-05	d7.55

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO DETROIT RIVER--Continued				
04166703	Middle River Rouge	River Rouge	Lat 42°25'24", long 83°28"32", in NE1/4 NE1/4 sec.10, T.1 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Recreation Drive, 1.0 mi south of Northville.	--	--	07-28-05	d24.6
04166792	Tonquish Creek	Middle River Rouge	Lat 42°21'06", long 83°27'45", in SE1/4 SW1/4 sec.35, T.1 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Joy Road in Plymouth.	--	--	07-28-05	d3.42
04166900	Tonquish Creek	Middle River Rouge	Lat 42°21'07", long 83°23'10", in NW1/4 NW1/4 sec.4, T.2 S., R.9 E., Wayne County, Hydrologic Unit 04090004, at Wayne Road, 0.7 mi west of Nankin Mills.	24.2	1967-68, 1976-77, 1986-88	07-28-05	d13.1
04167300	Lower River Rouge	River Rouge	Lat 42°17'01", long 83°30'20", in NW1/4 SW1/4 sec.28, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Beck Road, 1.5 mi northwest of Sheldon.	9.01	1967-68, 1994-95	07-18-05 09-14-05	d0.86 d0.16
04167340	Fowler Creek	Lower River Rouge	Lat 42°16'56", long 83°30'20", in NW1/4 SW1/4 sec.28, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Beck Road, 1.5 mi northwest of Sheldon.	12.0	1967-68, 1994	07-18-05 09-14-05	d1.21 d0.00
04167440	Sines Drain	Lower River Rouge	Lat 42°16'54", long 83°28'34", in SE1/4 SW1/4 sec.27, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Sheldon Road in Canton Township.	--	--	07-18-05 09-14-05	d1.38 d0.48
04167490	McKinstry Drain	Lower River Rouge	Lat 42°16'34", long 83°27'56", in NW1/4 NW1/4 sec.35, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Michigan Avenue in Canton Township.	--	--	07-18-05 09-14-05	d0.03 d0.10
04167497	Lower River Rouge	River Rouge	Lat 42°16'47", long 83°26'49", in SE1/4 SE1/4 sec.26, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Haggerty Road in Canton Township.	--	--	07-18-05 09-09-05	d19.4 d25.1

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 2005--Continued

Station No.	Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
						Date	Discharge (ft^3/s)
			STREAMS TRIBUTARY TO DETROIT RIVER--Continued				
04167575	Fellows Creek	Lower River Rouge	Lat 42°19'20", long 83°29'02", in SW1/4 SW1/4 sec.10, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Ford Road in Canton Township.	--	--	07-18-05	d4.42
04167600	Fellows Creek	Lower River Rouge	Lat 42°17'38", long 83°26'11", in NW1/4 NE1/4 sec.25, T.2 S., R.8 E., Wayne County, Hydrologic Unit 04090004, at Palmer Road, 2.7 mi northwest of Wayne.	16.0	1967-68, 1976-77, 1994	07-18-05 09-09-05	d2.36 d0.48
04167655	McClaughrey Drain	Lower River Rouge	Lat 42°16'25", long 83°24'03", in NE1/4 SW1/4 sec.32, T.2 S., R.9 E., Wayne County, Hydrologic Unit 04090004, at Annapolis Street in Wayne.	--	--	09-09-05	d0.23
			STREAMS TRIBUTARY TO LAKE ERIE				
04172203	Unnamed Tributary	Anderson Drain	Lat 42°28'55", long 84°01'37", in SE1/4 SE1/4 sec.12, T.1 N., R.3 E., Livingston County, Hydrologic Unit 04090005, at Spears Road, 4.4 mi northwest of Pinckney.	--	--	09-06-05	d0.00
04172204	Unnamed Tributary	Anderson Drain	Lat 42°28'14", long 84°01'32", in SW1/4 SW1/4 sec.18, T.1 N., R.4 E., Livingston County, Hydrologic Unit 04090005, at Highway M-36, 4.2 mi northwest of Pinckney.	--	--	09-06-05	d0.00
04175378	Unnamed Tributary	Ross Drain	Lat 42°01'12", long 83°29'56", in NE1/4 SE1/4 sec.29, T.5 S., R.8 E., Monroe County, Hydrologic Unit 04100001, adjacent to Doty Road, 1.0 mi east of Scofield.	--	2003	11-08-01	0.28
04176730	North Branch Tenmile Creek	Tenmile Creek	Lat 41°44'02", long 83°41'20", in SE1/4 SE1/4 sec.34, T.8 S., R.6 E., Monroe County, Hydrologic Unit 04100001, at Hicker Road, 3.6 mi southwest of Lambertville.	33.5	1971-73	06-28-05	d0.00

† Operated as a low-flow partial-record station.
‡ Operated as a continuous-record gaging station.
a Affected by regulation and/or diversion.
b Approximately.
c Operated as a crest-stage partial-record station.
d Discharge measurement made by employees of Michigan Department of Environmental Quality.

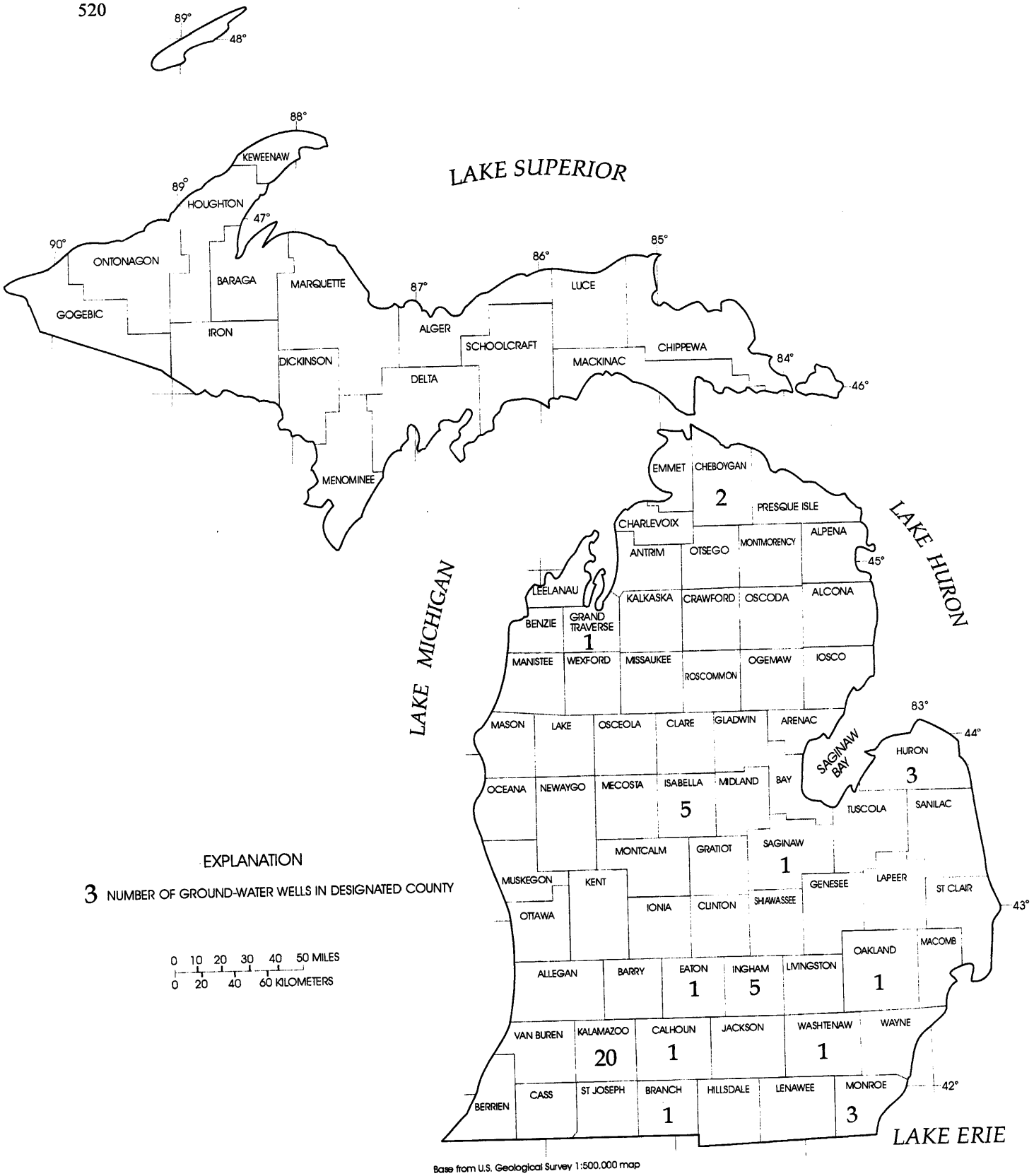


Figure 9. Number of ground-water wells by county published in this report.

GROUND-WATER LEVELS

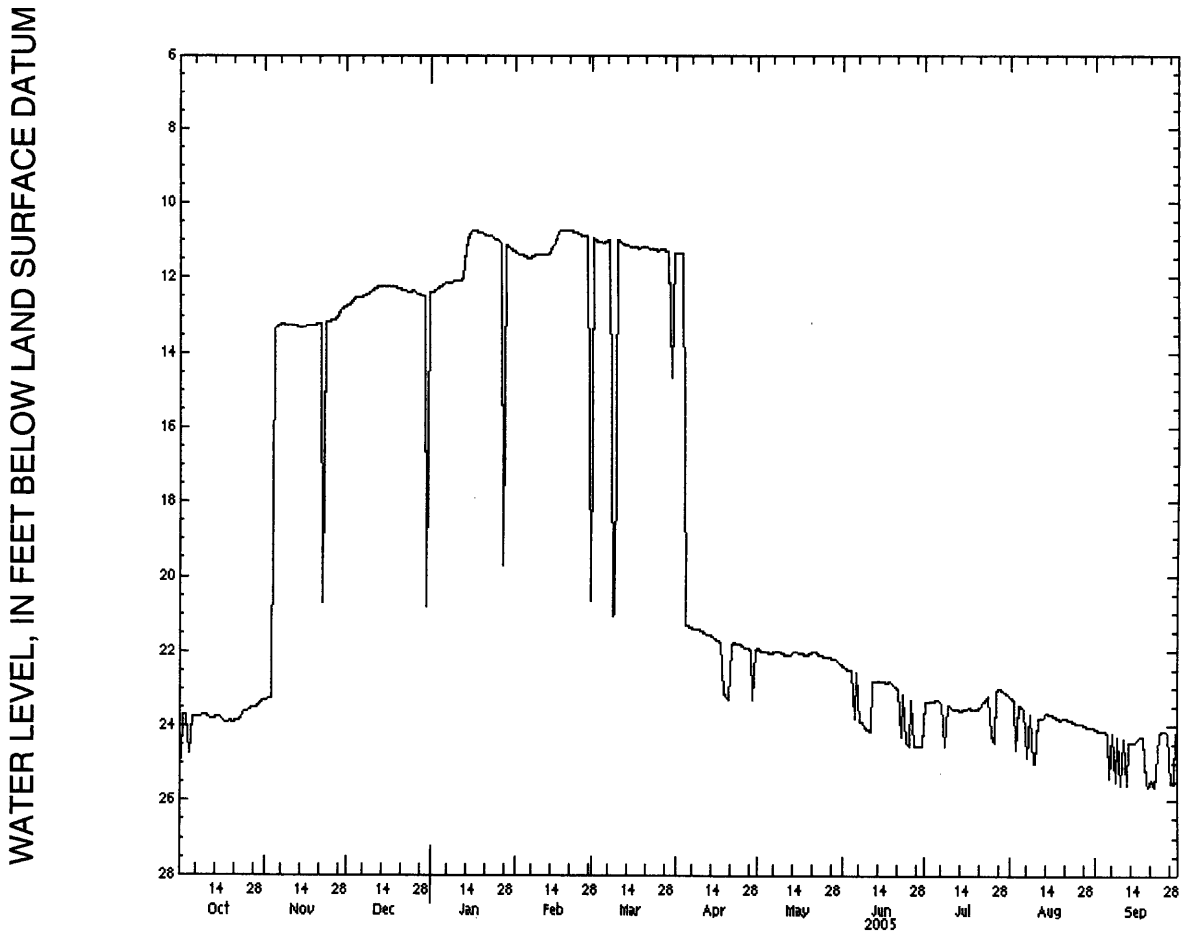
BRANCH COUNTY

415602084593701. Local number, 6S 6W 22CABA.
LOCATION.--Lat 41°56'02", long 84°59'37", Hydrologic Unit 04050001, at North Waterworks Drive in Coldwater. Owner: City of Coldwater.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 113 ft, screened 108 ft to 113 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 970 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.5 ft above land-surface datum.
REMARKS.--Water levels affected by nearby pumping.
PERIOD OF RECORD.--January 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.77 ft below land-surface datum, June 4, 1989; lowest recorded, 27.38 ft below land-surface datum, Sept. 21, 2004.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.75	13.33	12.53	12.17	11.47	11.08	21.33	22.05	23.82	23.31	23.49	24.17
10	23.72	13.28	12.34	12.09	11.39	11.00	21.47	22.07	24.11	23.45	25.01	25.58
15	23.74	13.33	12.22	10.81	11.07	11.16	21.68	22.02	22.81	23.56	23.68	24.44
20	23.88	13.24	12.27	10.86	10.72	11.17	23.29	22.05	22.94	23.55	23.81	25.61
25	23.61	13.13	12.35	10.99	10.87	11.26	21.87	22.16	24.53	24.25	23.93	24.15
EOM	23.30	12.79	12.38	11.27	20.67	11.32	21.95	22.35	24.52	23.15	24.07	24.16

WTR YR 2005 HIGHEST 10.21 JAN 18, FEB 18, 20, 21 LOWEST 25.63 SEP 22



GROUND-WATER LEVELS

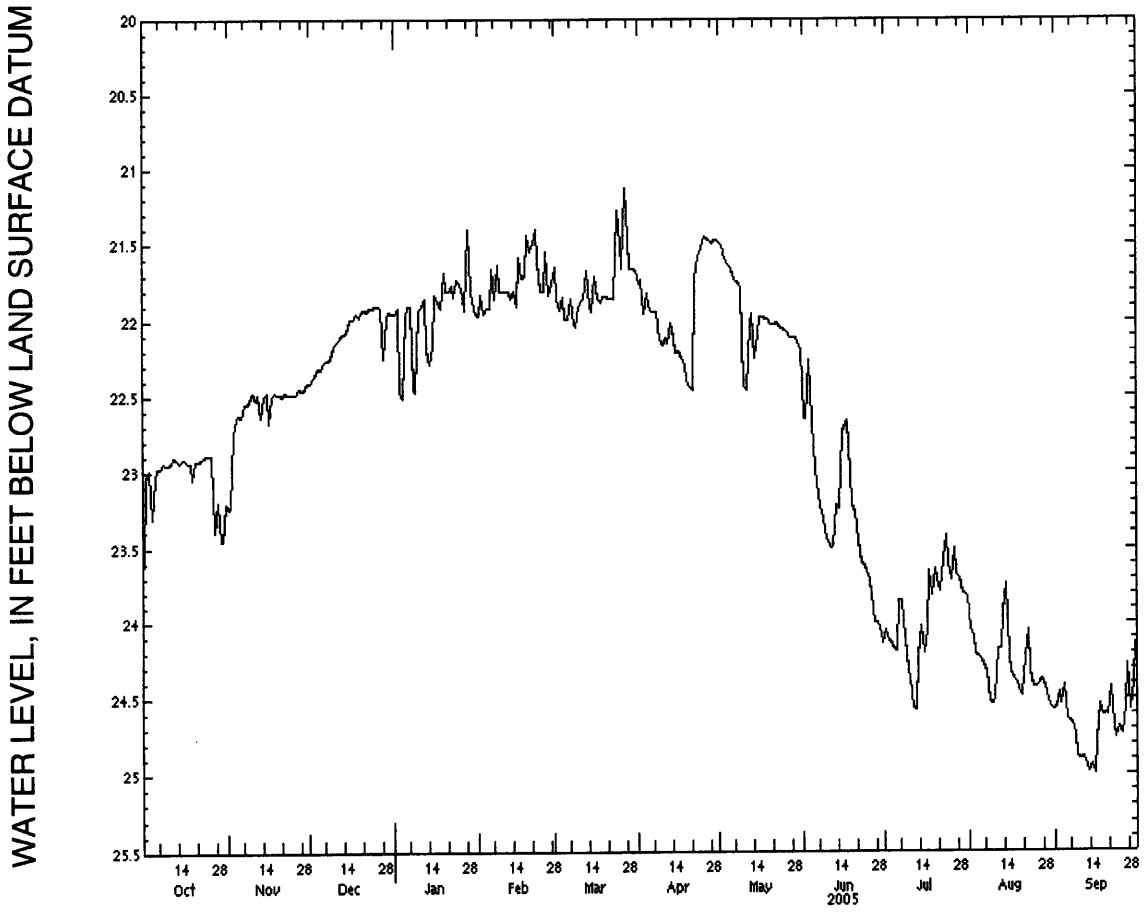
CALHOUN COUNTY

422032085091801. Local number, 1S 7W 32BDCC1.
LOCATION.--Lat 42°20'31", long 85°09'19", Hydrologic Unit 04050003, at Hopkins Street and State Highway 66 in Battle Creek. Owner: Pennfield Township.
AQUIFER.--Marshall Formation.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 95 ft, cased to about 40 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 845 ft above sea level, from topographic map. Measuring point: Top of shelter base, 1.0 ft above land-surface datum.
REMARKS--Water levels affected by nearby pumping.
PERIOD OF RECORD.--February 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.6 ft below land-surface datum, April 1974; lowest recorded, 27.0 ft below land-surface datum, August 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.03	22.62	22.33	21.97	21.92	21.99	21.91	21.65	22.99	24.19	24.25	24.63
10	22.95	22.48	22.16	21.93	21.81	21.91	22.16	22.44	23.47	24.38	24.50	24.89
15	22.91	22.48	22.04	22.16	21.90	21.94	22.22	22.09	22.74	24.20	24.22	25.00
20	22.92	22.49	21.94	21.81	21.55	21.84	22.44	22.03	23.27	23.72	24.49	24.61
25	22.89	22.49	21.91	21.75	21.81	21.50	21.44	22.06	23.72	23.72	24.43	24.74
EOM	23.21	22.41	21.96	21.96	21.76	21.67	21.47	22.19	24.14	23.83	24.57	24.13

WTR YR 2005 HIGHEST 20.98 MAR 28 LOWEST 25.00 SEP 15



GROUND-WATER LEVELS

CHEBOYGAN COUNTY

454427084424001. Local number, 39N 3W 29CBCB1.
LOCATION.--Lat 45°44'27", long 84°42'40", Hydrologic Unit 04070003, at Stimpson Road, 3 mi southeast of Mackinaw City. Owner: U.S. Geological Survey.
AQUIFER.--Dundee Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 121 ft, cased to 104 ft.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 705 ft above sea level, from topographic map. Measuring point: Top of casing, 1.9 ft above land-surface datum.
PERIOD OF RECORD.--January 1979 to May 1992, December 1997 to current year. Records for the 1992 water year are unpublished and available in files of the U.S. Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.57 ft below land-surface datum, Apr. 26, 2004; lowest measured, 11.68 ft below land-surface datum, Feb. 11, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	7.45	FEB 4	5.55	APR 4	4.10	MAY 20	4.47	JUL 20	6.79	AUG 5	7.28
DEC 17	5.26										

GROUND-WATER LEVELS

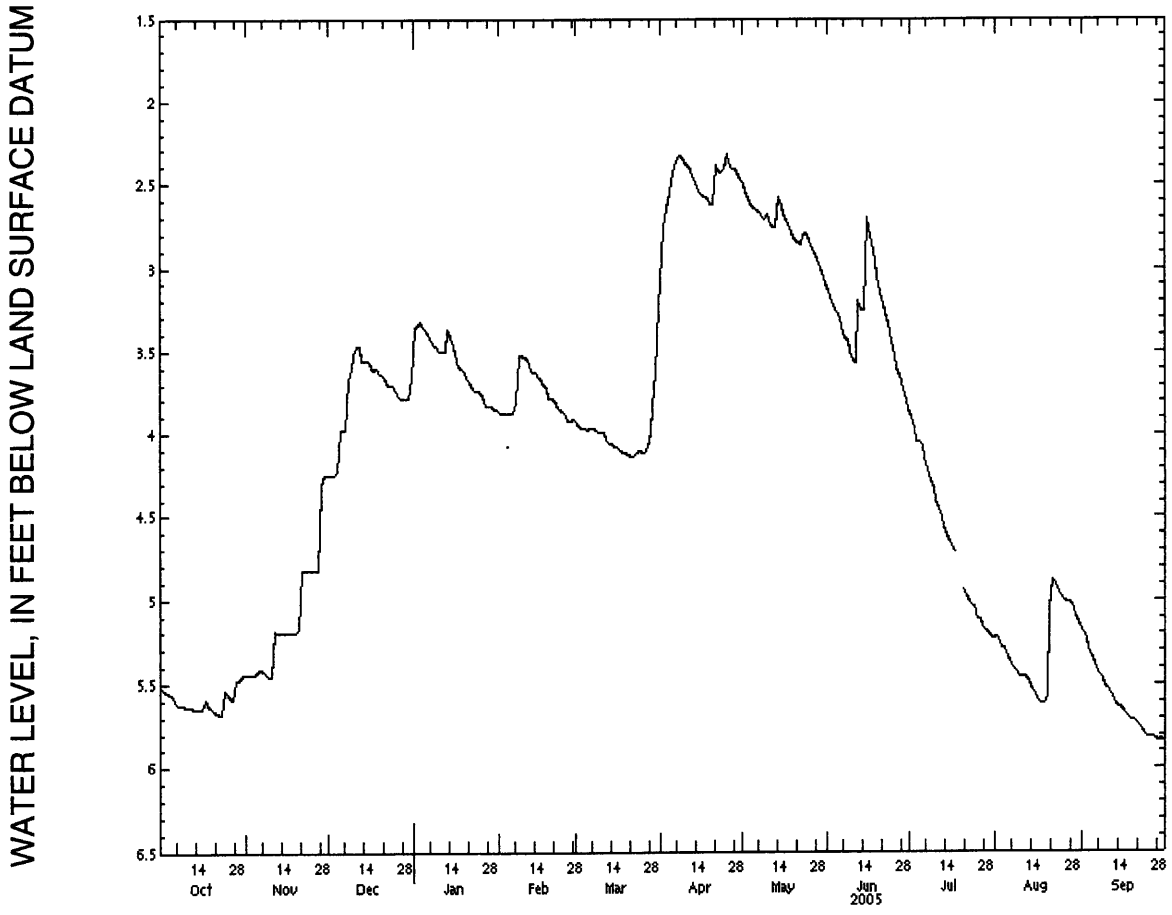
CHEBOYGAN COUNTY

454427084424002. Local number, 39N 3W 29CBCB2.
LOCATION.--Lat 45°44'27", long 84°42'40", Hydrologic Unit 04070003, at Stimpson Road, 3 mi southeast of Mackinaw City. Owner: U.S. Geological Survey.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 6 in, depth 55 ft, screened 40 ft to 55 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 705 ft above sea level, from topographic map. Measuring point: Top of casing, 2.5 ft above land-surface datum.
REMARKS.--Water-level telemeter at well.
PERIOD OF RECORD.--February 1979 to May 1992, December 1997 to September 2001 (periodic measurements), September 2001 to current year (water-level recorder). Records for the 1992 water year are unpublished and available in files of the U.S. Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.57 ft below land-surface datum, May 9, 2002; lowest measured, 6.58 ft below land-surface datum, Nov. 2, 2000, Jan. 23, 2001.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.57	5.42	3.98	3.38	3.87	3.98	2.48	2.65	3.30	4.07	5.34	5.38
10	5.63	5.45	3.52	3.50	3.54	3.99	2.38	2.68	3.56	4.40	5.45	5.52
15	5.65	5.20	3.56	3.47	3.66	4.08	2.54	2.63	2.70	4.65	5.56	5.65
20	5.66	5.17	3.64	3.66	3.78	4.12	2.62	2.84	3.15	4.93	5.06	5.73
25	5.56	4.82	3.74	3.75	3.89	4.11	2.32	2.84	3.53	5.12	5.00	5.81
EOM	5.44	4.25	3.66	3.85	3.91	3.23	2.47	3.10	3.85	5.23	5.16	5.85

WTR YR 2005 HIGHEST 2.30 APR 25 LOWEST 5.85 SEP 30



GROUND-WATER LEVELS

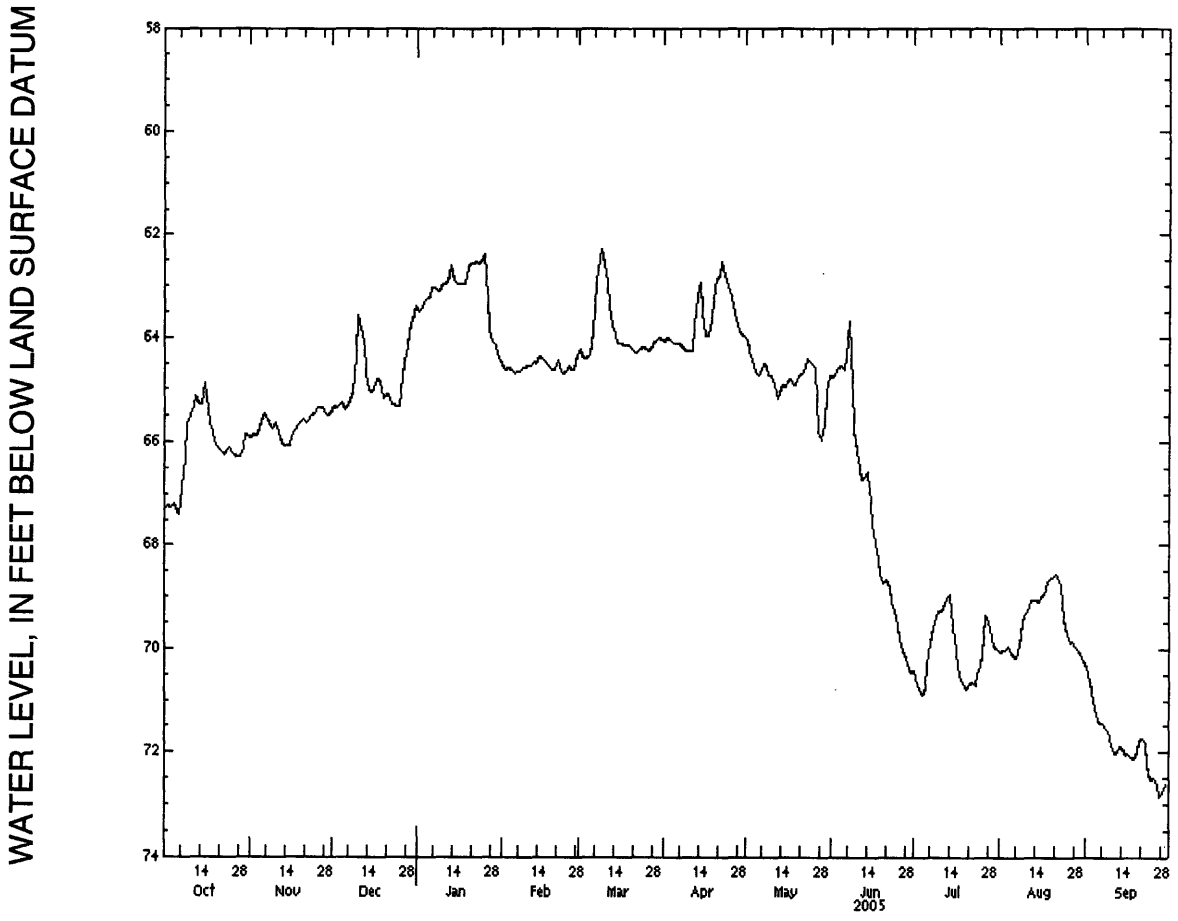
EATON COUNTY

424435084365001. Local number, 4N 3W 12CDAD.
LOCATION.--Lat 42°44'35", long 84°36'50", Hydrologic Unit 04050004, at Robins Road in Delta Township, 0.5 mi west of Lansing. Owner: F. Wheeler.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 381 ft, cased to 140 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 861.91 ft above sea level. Measuring point: Plywood instrument shelf, 1.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--October 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 55.19 ft below land-surface datum, June 24, 25, 26, 1996; lowest recorded, 103.6 ft below land-surface datum, Aug. 28, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	67.32	65.60	65.37	63.23	64.68	64.34	64.10	64.74	64.63	70.75	70.08	71.38
10	65.48	65.64	63.59	62.97	64.54	62.55	64.26	64.72	66.18	69.30	69.35	71.85
15	64.88	66.05	65.04	62.95	64.39	64.10	63.51	64.94	67.18	69.57	69.11	72.07
20	66.11	65.55	65.14	62.58	64.64	64.22	62.86	64.72	68.73	70.80	68.65	71.76
25	66.20	65.36	65.31	62.37	64.56	64.23	63.22	64.54	69.54	70.36	69.71	72.49
EOM	65.90	65.46	63.41	64.46	64.35	64.04	63.99	64.72	70.49	70.02	70.23	72.62

WTR YR 2005 HIGHEST 62.03 MAR 9 LOWEST 72.86 SEP 27



GROUND-WATER LEVELS

GRAND TRAVERSE COUNTY

443921085213501. Local number, 26N 9W 14ABAA.
LOCATION.--Lat 44°39'21", long 85°21'35", Hydrologic Unit 04060105, 5.5 mi north of Fife Lake. Owner: U.S. Geological Survey.
AQUIFER.--Sand.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 6 in, depth 80 ft, PVC pipe and screen.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 960 ft above sea level, from topographic map. Measuring point: Top of casing, 1.24 ft above land-surface datum.
PERIOD OF RECORD.--June 1976 to September 1991 (water-level recorder), August 2000 to current year (periodic measurements).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.32 ft below land-surface datum, Oct. 22, 26, 27, 1986; lowest measured, 29.24 ft below land-surface datum, Feb. 23, 2001.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR, OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	26.10	DEC 22	26.81	FEB 15	26.62	APR 22	26.46	JUN 14	26.27	SEP 1	27.03

GROUND-WATER LEVELS

HURON COUNTY

434103083130301. Local number, 15N 11E 32BBCB.
LOCATION.--Lat 43°40'59", long 83°13'04", Hydrologic Unit 04080103, 2 mi northeast of Gagetown at Gagetown State Game Area. Owner: Huron County.
AQUIFER.--Sand.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 4 in, depth 91 ft, screened 87 ft to 91 ft.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 746 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum.
COOPERATION.--Water-level measurements Dec. 2, Mar. 4, May 24, June 3 and Sept. 2 were provided by Huron Conservation District.
PERIOD OF RECORD.--June 1988 to March 1990 (periodic measurements), February 1991 to December 2003 (water-level recorder), January 2004 to current year (periodic measurements).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 30.38 ft below land-surface datum, May 6, 1991; lowest recorded, 36.29 ft below land-surface datum, Aug. 29, 30, 2001.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	35.10	DEC 14	34.16	MAR 4	32.23	MAY 12	31.98	JUN 3	32.31	SEP 2	34.67
DEC 2	34.52	JAN 25	32.88	MAR 11	32.13	MAY 24	31.83	JUL 20	33.18		

GROUND-WATER LEVELS

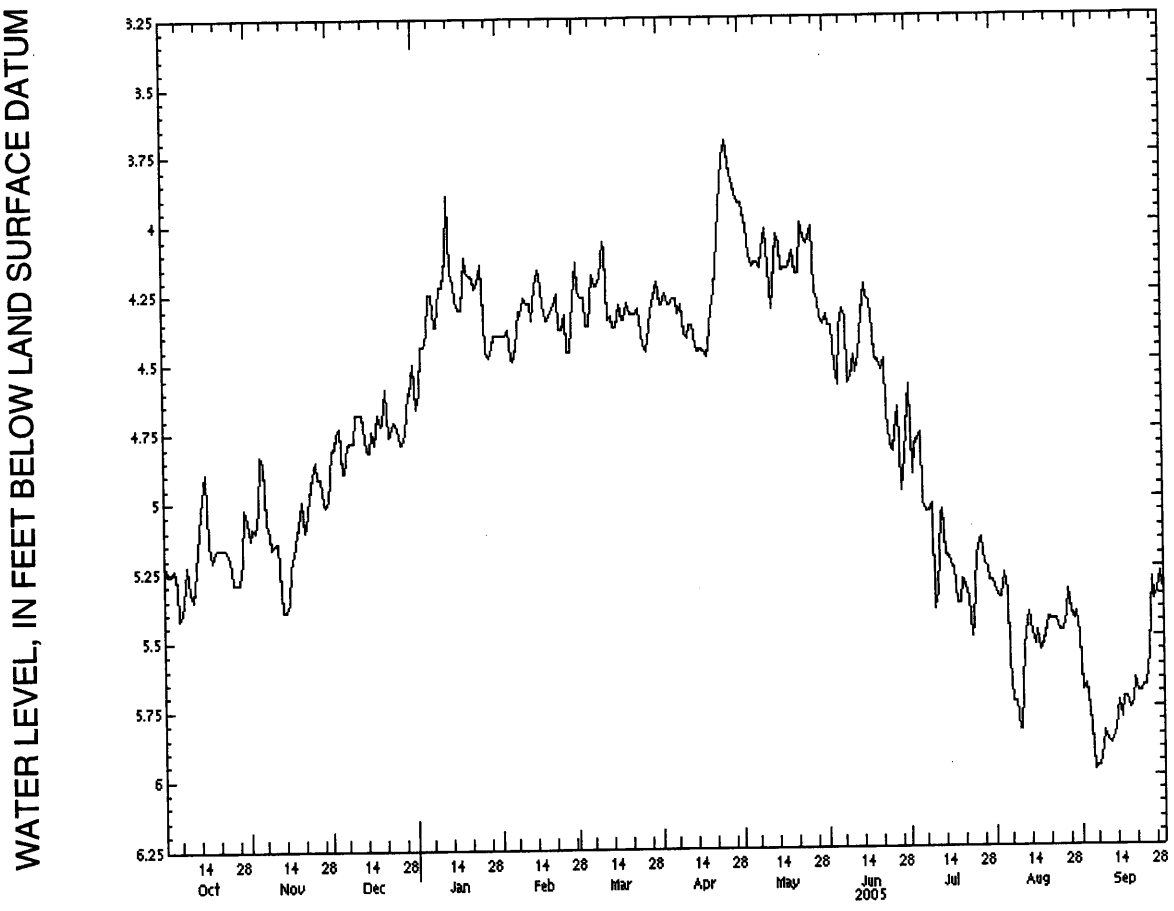
HURON COUNTY

434947083233301. Local number, 16N 9E 2CDCA.
LOCATION.--Lat 43°49'42", long 83°23'31", Hydrologic Unit 04080103, 6 mi west of Pigeon at Wildfowl Bay State Wildlife Area. Owner: Huron County.
AQUIFER.--Saginaw, Marshall Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 4 in, depth 180 ft, cased to 147 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 582 ft above sea level, from topographic map. Measuring point: Top of casing, 2.67 ft above land-surface datum.
PERIOD OF RECORD.--June 1988 to September 1989 (periodic measurements), February 1991 to current year (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.12 ft below land-surface datum, Apr. 20, 1993; lowest recorded, 9.21 ft below land-surface datum, Aug. 4, 1998.
EXTREMES OUTSIDE PERIOD OF RECORD.--Lowest water level measured, 12.30 ft below land-surface datum, June 2, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.29	4.83	4.89	4.39	4.48	4.36	4.29	4.15	4.59	4.76	5.34	5.98
10	5.32	5.15	4.68	4.22	4.26	4.19	4.40	4.02	4.56	5.40	5.83	5.87
15	4.93	5.36	4.82	4.21	4.16	4.37	4.46	4.07	4.22	5.21	5.53	5.79
20	5.16	4.99	4.71	4.17	4.31	4.28	4.31	4.10	4.50	5.29	5.43	5.65
25	5.23	4.85	4.73	4.14	4.32	4.39	3.70	4.07	4.83	5.21	5.48	5.56
EOM	5.06	4.99	4.50	4.40	4.26	4.21	3.92	4.36	4.75	5.30	5.50	5.33

WTR YR 2005 HIGHEST 3.62 APR 24, 25 LOWEST 5.98 SEP 5



GROUND-WATER LEVELS

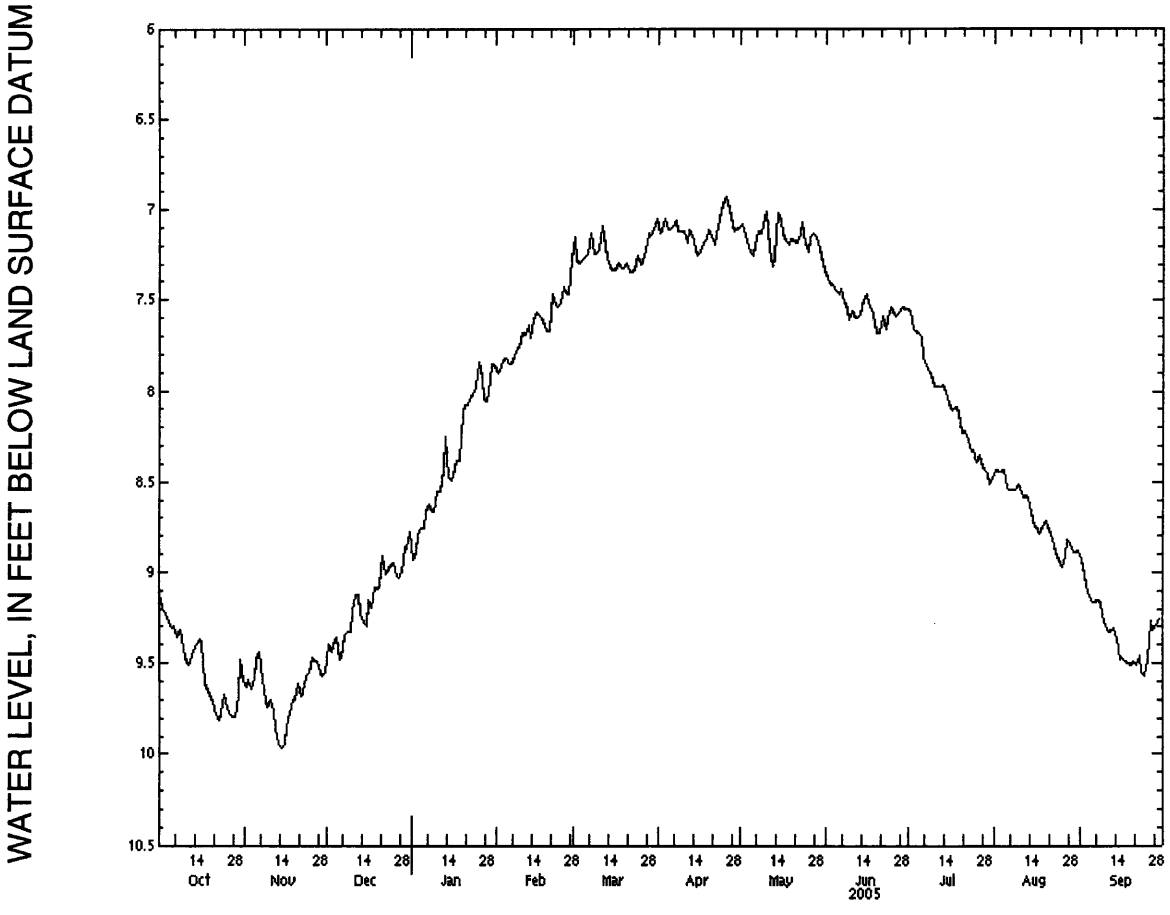
HURON COUNTY

435736083094801. Local number, 18N 11E 27AADD.
LOCATION.--Lat 43°57'36", long 83°09'55", Hydrologic Unit 04080103, 6 mi northeast of Caseville at Rush Lake State Game Area. Owner: Huron County.
AQUIFER.--Marshall Sandstone.
WELL CHARACTERISTICS.--Rotary drilled observation well, diameter 4 in, depth 200 ft, cased to 179 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 600 ft above sea level, from topographic map. Measuring Point: Top of casing, 4.03 ft above land-surface datum.
PERIOD OF RECORD.--June 1988 to August 1989 (periodic measurements), December 1992 to current year (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.71 ft below land-surface datum, Mar. 21, 1997; lowest recorded, 10.96 ft below land-surface datum, Sept. 10, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.31	9.48	9.48	8.76	7.85	7.26	7.11	7.25	7.47	7.70	8.53	9.16
10	9.47	9.70	9.21	8.55	7.68	7.22	7.12	7.01	7.56	7.97	8.53	9.29
15	9.37	9.95	9.30	8.49	7.57	7.33	7.25	7.06	7.47	8.07	8.75	9.48
20	9.71	9.61	9.07	8.08	7.67	7.29	7.14	7.17	7.68	8.23	8.75	9.49
25	9.74	9.47	8.95	7.84	7.43	7.30	6.93	7.23	7.58	8.39	8.97	9.48
EOM	9.60	9.55	8.78	7.86	7.27	7.05	7.10	7.33	7.55	8.48	8.88	9.25

WTR YR 2005 HIGHEST 6.83 APR 24 LOWEST 9.97 NOV 14



GROUND-WATER LEVELS

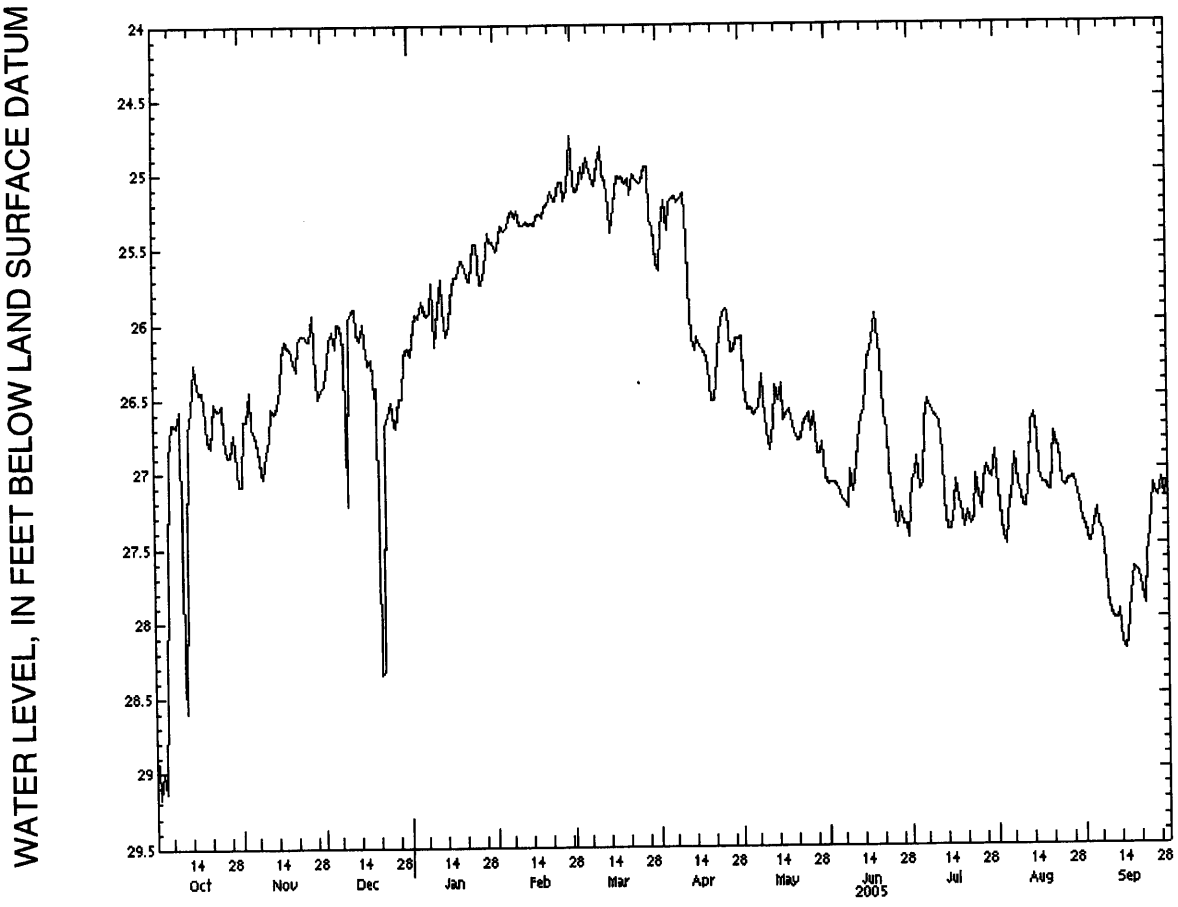
INGHAM COUNTY

423127084321901. Local number, 4N 2W 16DAAA.
LOCATION.--Lat 42°43'57", long 84°32'51", Hydrologic Unit 04050004, between Cedar Street and Museum Drive, Lansing Township in Lansing. Owner: City of Lansing.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 12 in, depth 417 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 829.10 ft above sea level. Measuring point: Plywood instrument shelf, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--September 1945 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 17.59 ft below land-surface datum, May 13, 1999; lowest recorded, 67.0 ft below land-surface datum, August 1949.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	27.75	26.70	26.16	25.86	25.36	25.04	25.20	26.63	27.16	27.09	27.20	27.27
10	26.57	26.86	25.98	26.15	25.35	24.94	25.14	26.73	27.15	26.65	27.25	27.97
15	26.27	26.42	26.00	26.02	25.35	25.40	26.10	26.41	26.24	27.41	26.77	28.21
20	26.77	26.25	26.42	25.58	25.21	25.07	26.52	26.73	26.25	27.39	27.15	27.70
25	26.54	26.12	26.53	25.47	25.06	25.07	25.92	26.61	27.33	27.18	27.12	27.11
EOM	27.08	26.44	26.16	25.46	24.75	25.61	26.11	27.05	27.45	26.87	27.35	27.10

WTR YR 2005 HIGHEST 24.58 MAR 12 LOWEST 29.17 OCT 2



GROUND-WATER LEVELS

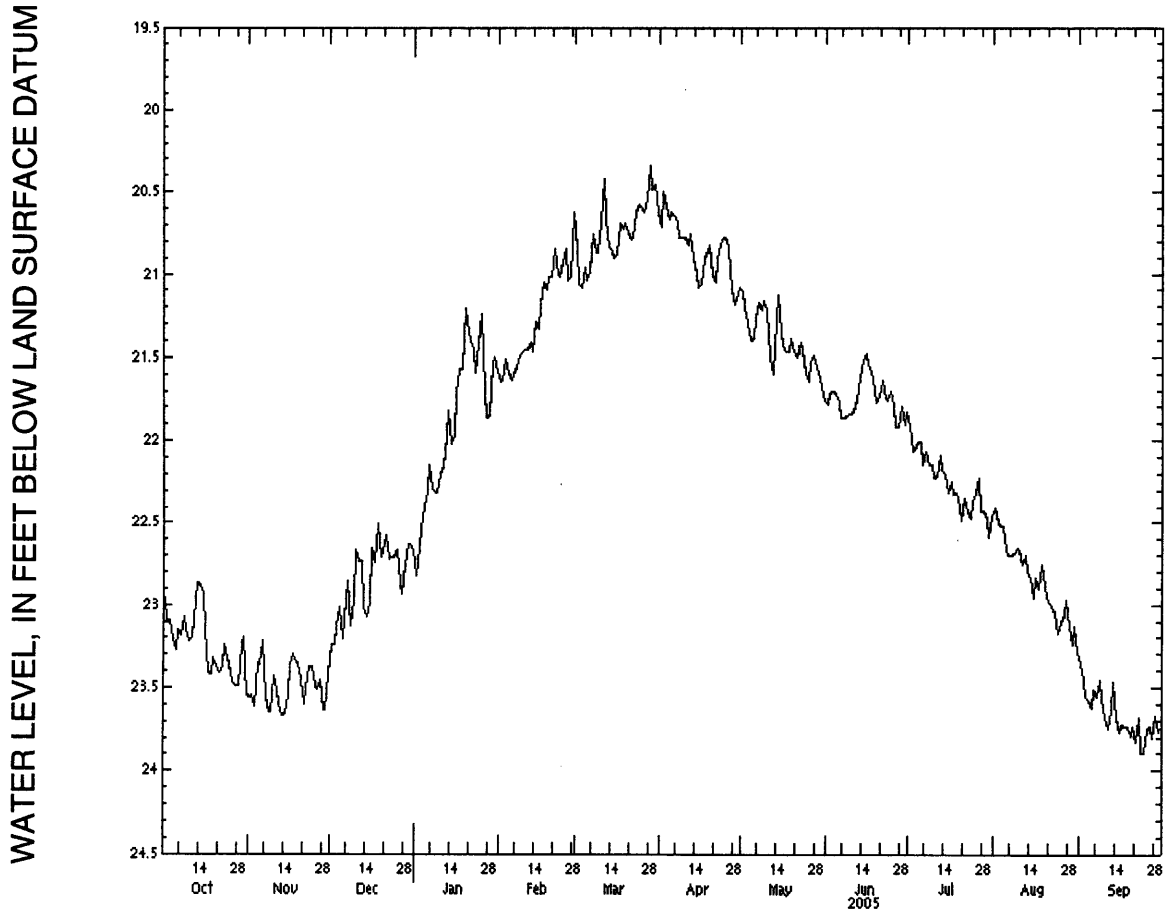
INGHAM COUNTY

423805084311801. Local number, 3N 2W 23BCBD.
LOCATION.--Lat 42°38'05", long 84°31'18", Hydrologic Unit 04050004, at Holt High School, at Sycamore Street, Delhi Township in Holt. Owner: Holt High School.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 8 in, depth 188 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 895 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.3 ft below land-surface datum, May 1983; lowest recorded, 30.57 ft below land-surface datum, March 25, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.27	23.36	23.21	22.30	21.64	21.04	20.62	21.39	21.77	22.01	22.66	23.62
10	23.22	23.43	22.66	22.20	21.46	20.68	20.78	21.22	21.84	22.22	22.66	23.68
15	22.93	23.55	22.99	21.97	21.33	20.90	21.08	21.34	21.48	22.32	22.96	23.77
20	23.37	23.46	22.68	21.29	21.02	20.75	21.00	21.47	21.74	22.48	22.96	23.74
25	23.41	23.49	22.67	21.24	20.85	20.60	20.79	21.65	21.78	22.31	23.10	23.75
EOM	23.55	23.42	22.67	21.58	20.62	20.62	21.09	21.76	21.83	22.46	23.29	23.74

WTR YR 2005 HIGHEST 20.16 MAR 12 LOWEST 23.90 SEP 23, 24



GROUND-WATER LEVELS

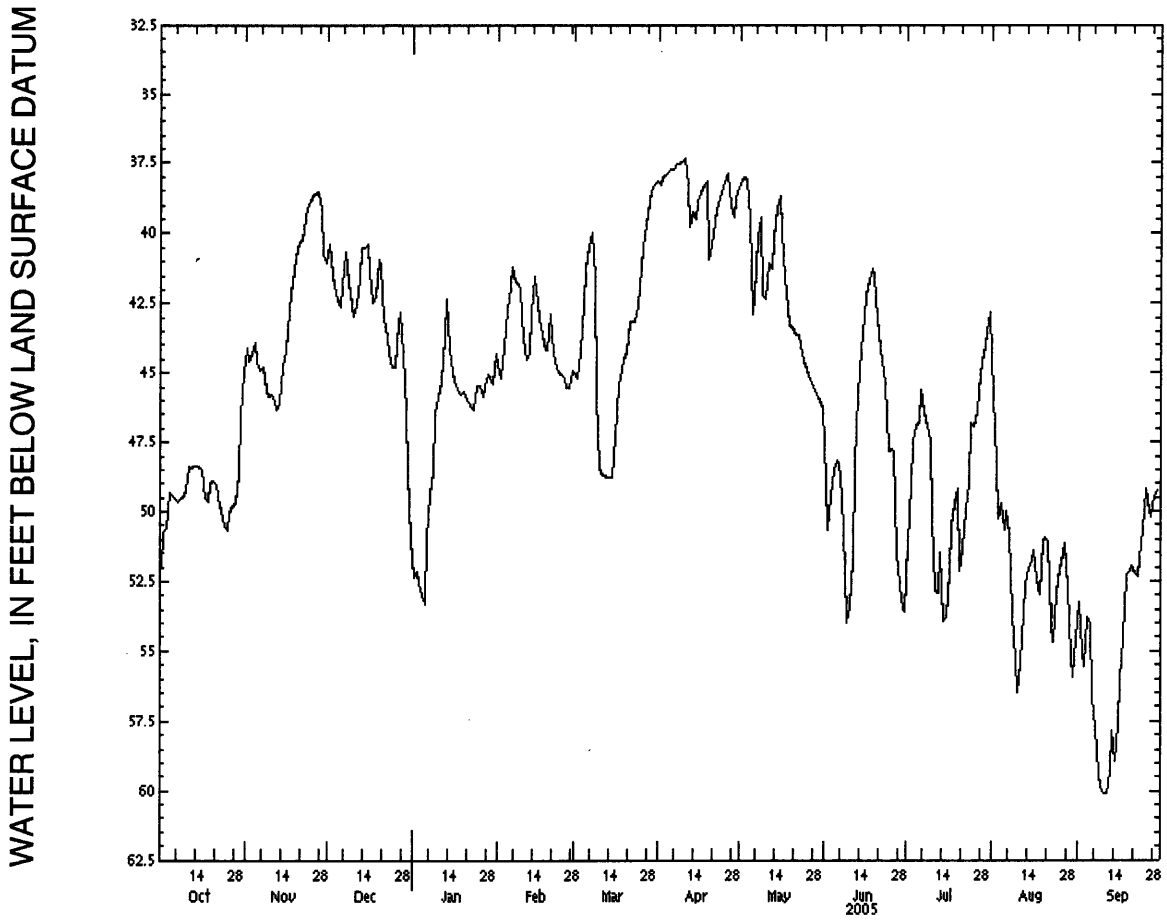
INGHAM COUNTY

424235084311201. Local number, 4N 2W 26BBDB.
LOCATION.--Lat 42°42'35", long 84°31'12", Hydrologic Unit 04050004, at Fenner Arboretum in Lansing. Owner: U.S. Geological Survey.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in, depth 215 ft, cased to 51 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 835 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.7 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--July 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 20.24 ft below land-surface datum, Dec. 29, 1993; lowest recorded, 89.5 ft below land-surface datum, October 1972.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	49.46	44.58	42.60	53.32	41.86	41.23	37.74	42.90	48.18	46.82	50.66	54.02
10	49.25	45.79	42.97	45.84	43.77	48.41	37.34	42.36	53.38	50.29	56.49	60.07
15	48.44	44.27	40.35	45.02	42.48	48.75	38.86	38.70	42.94	53.76	51.80	57.68
20	48.90	40.30	41.20	45.89	42.92	44.24	40.45	43.35	43.05	52.19	50.95	51.99
25	50.69	38.60	44.76	45.48	45.21	41.26	38.04	44.85	47.75	46.96	52.08	49.20
EOM	44.99	41.06	51.01	44.31	44.90	38.17	38.33	46.28	53.58	42.84	54.52	49.17

WTR YR 2005 HIGHEST 37.26 APR 10 LOWEST 60.11 SEP 11



GROUND-WATER LEVELS

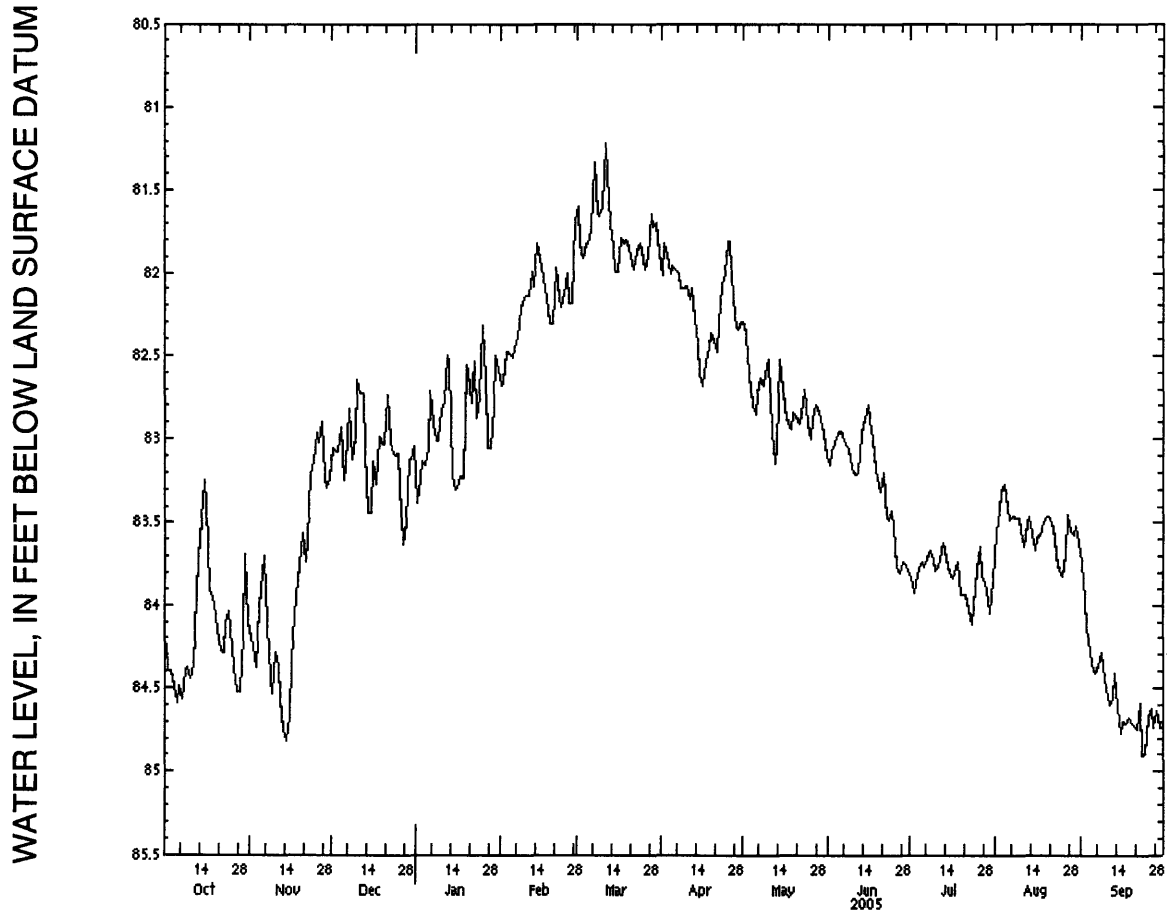
INGHAM COUNTY

424424084340301. Local number, 4N 2W 17ABAA.
LOCATION.--Lat 42°44'24", long 84°34'03", Hydrologic Unit 04050004, at Kirby and Logan Streets in Lansing. Owner: City of Lansing.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 20 in, depth 424 ft.
INSTRUMENTATION.--Water-level recorder. Monthly measurements prior to August 1960.
DATUM.--Elevation of land-surface datum is 858.72 ft above sea level. Measuring point: Plywood instrument shelf, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--December 1929 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.3 ft below land-surface datum, December 1929; lowest recorded, 168.3 ft below land-surface datum, May 7, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	84.59	83.90	83.25	83.06	82.51	81.82	81.96	82.85	82.95	83.73	83.40	84.40
10	84.44	84.29	82.65	82.82	82.14	81.60	82.09	82.53	83.20	83.79	83.54	84.50
15	83.25	84.67	83.44	83.30	81.92	81.99	82.62	82.70	82.80	83.80	83.66	84.77
20	84.15	83.56	83.03	82.60	82.31	81.85	82.41	82.86	83.32	83.94	83.46	84.72
25	84.25	82.96	83.09	82.32	82.00	81.92	81.81	83.00	83.63	83.78	83.82	84.67
EOM	84.11	83.24	83.04	82.58	81.68	81.88	82.30	83.10	83.79	83.85	83.62	84.75

WTR YR 2005 HIGHEST 80.83 MAR 12 LOWEST 84.91 SEP 23



GROUND-WATER LEVELS

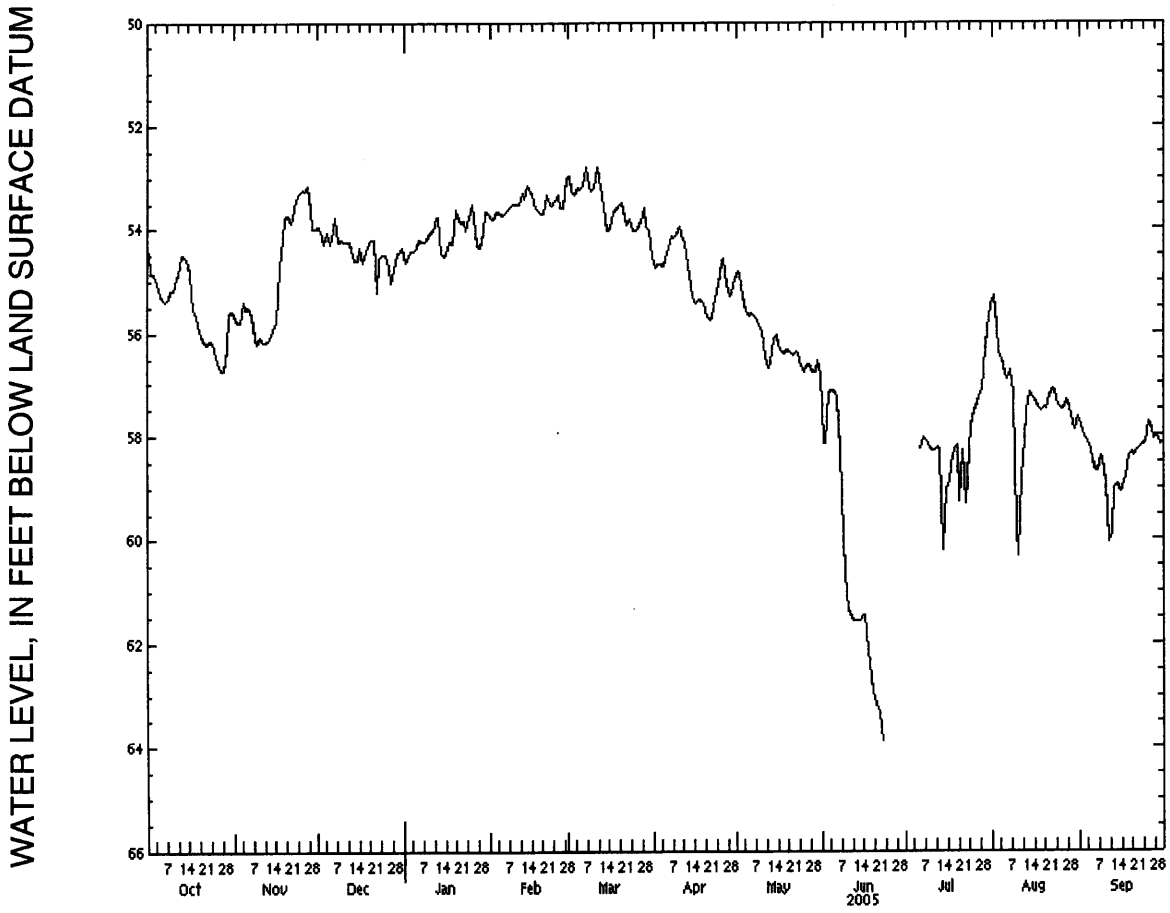
INGHAM COUNTY

424502084331301. Local number, 4N 2W 9BDAD.
LOCATION.--Lat 42°45'02", long 84°33'13", Hydrologic Unit 04050004, at North Grand River Avenue, Lansing Township in Lansing. Owner: City of Lansing.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 14 in, depth 401 ft, cased to 49 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 828.81 ft above sea level. Measuring point: Plywood instrument shelf, 4.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--1929 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.6 ft below land-surface datum, March 1931; lowest recorded, 179.4 ft below land-surface datum, April 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	55.25	55.55	54.27	54.34	53.75	53.24	54.56	55.68	57.17	---	56.81	58.42
10	55.18	56.07	54.23	54.07	53.53	53.19	53.94	55.98	61.34	58.28	60.29	58.89
15	54.62	55.84	54.59	54.53	53.27	54.04	55.32	56.06	61.47	59.01	57.26	59.07
20	56.03	53.72	54.19	53.73	53.70	53.49	55.67	56.38	63.17	59.25	57.48	58.40
25	56.43	53.24	54.51	53.50	53.34	54.03	54.64	56.78	---	57.54	57.50	57.74
EOM	55.56	53.99	54.34	53.70	53.03	54.54	54.95	56.80	---	55.46	57.63	58.09

WTR YR 2005 HIGHEST 52.37 MAR 7 LOWEST 64.31 JUN 24



GROUND-WATER LEVELS

ISABELLA COUNTY

433552084415401. Local number, 14N 3W 17CD01.
LOCATION.--Lat 43°35'52", long 84°41'54", Hydrologic Unit 04080202, 220 ft north of Remus Road, 0.5 mi east of Leaton Road, and 3 mi east of Mount Pleasant.
Owner: Saginaw Chippewa Indian Tribe.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Rotary drilled observation well, diameter 4.5 in, depth 455 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 750 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.5 ft above land-surface datum; prior to July 7, 2005, 1.2 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--April to June 2005 (periodic measurements), July to September 2005 (water level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.20 ft below land-surface datum, Apr. 25, 2005; lowest recorded, 19.37 ft below land-surface datum, Sept. 22, 2005.

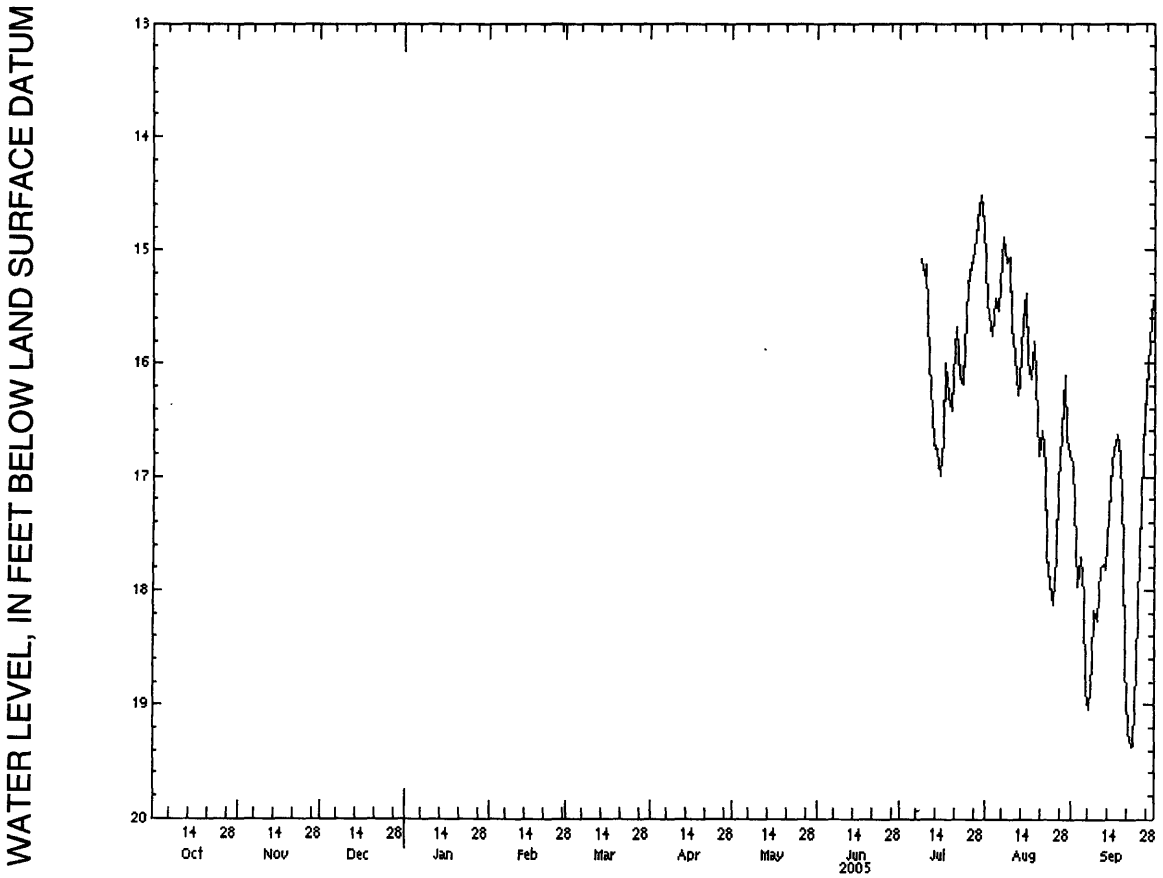
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL
APR 25	9.20

LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	15.54	18.05
10	---	---	---	---	---	---	---	---	---	15.13	15.66	18.27
15	---	---	---	---	---	---	---	---	---	16.99	15.37	16.88
20	---	---	---	---	---	---	---	---	---	16.11	16.81	18.65
25	---	---	---	---	---	---	---	---	---	15.31	18.12	17.66
EOM	---	---	---	---	---	---	---	---	---	14.77	16.80	15.42

WTR YR 2005 HIGHEST 9.20 APR 25 LOWEST 19.37 SEP 22



GROUND-WATER LEVELS

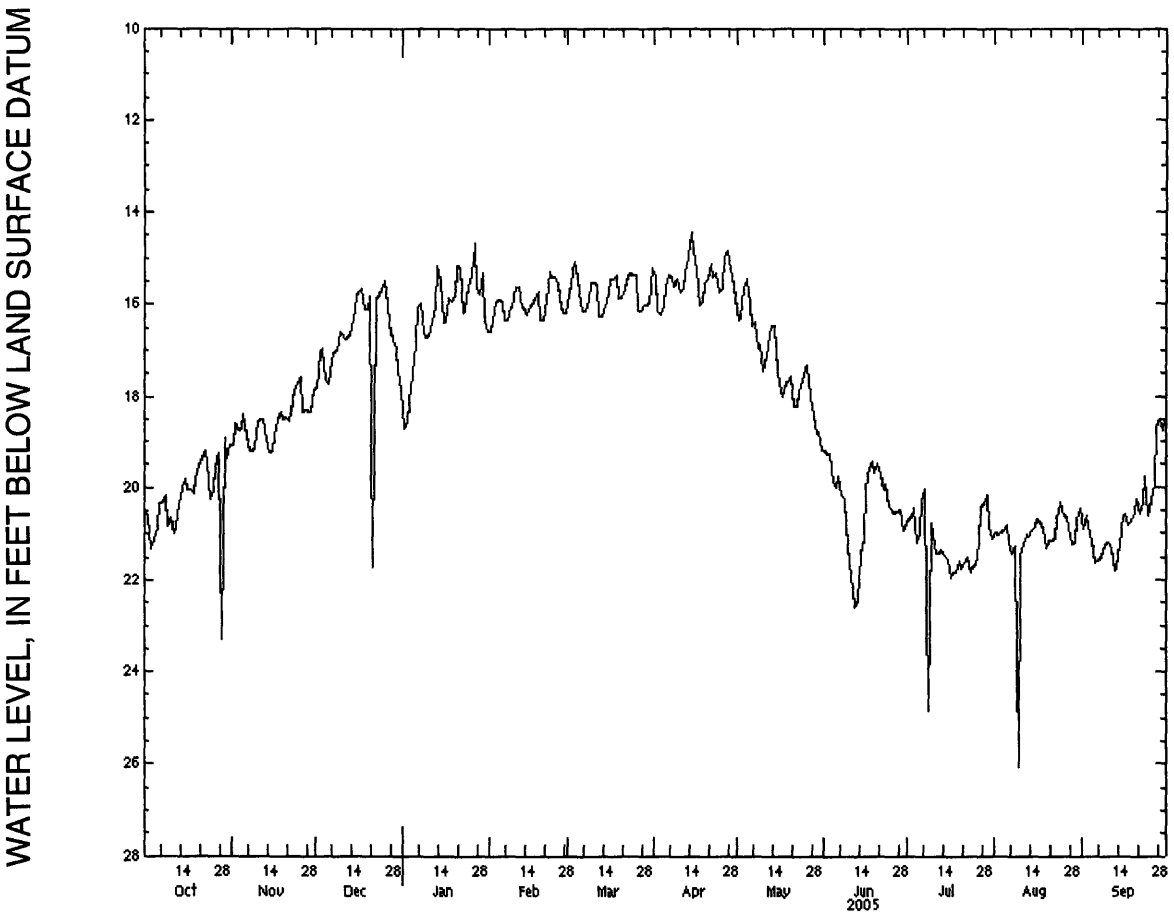
ISABELLA COUNTY

433554084415401. Local number, 14N 3W 17CD03.
LOCATION.--Lat 43°35'54", long 84°41'54", Hydrologic Unit 04080202, 300 ft north of Remus Road, 0.5 mi east of Leaton Road, and 3 mi east of Mount Pleasant.
Owner: Saginaw Chippewa Indian Tribe.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Rotary drilled observation well, diameter 5 in, depth 301.5 ft, screened 286 ft to 290 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 752 ft above sea level, from topographic map. Measuring point: Top of casing, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--February to June 2003 (periodic measurements), June 2003 to current year (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.74 ft below land-surface datum, Mar. 12, 2004; lowest recorded, 33.97 ft below land-surface datum, Oct. 13, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.87	18.37	17.75	16.85	15.94	15.76	15.64	16.00	20.01	20.98	20.82	21.64
10	20.65	18.55	16.63	16.68	15.64	15.56	15.76	17.44	21.65	21.01	21.46	21.17
15	19.79	19.21	15.81	16.41	16.04	15.99	14.84	17.45	21.12	21.57	20.88	20.64
20	19.53	18.48	15.84	15.19	16.35	15.85	15.47	17.59	19.49	21.74	21.16	20.25
25	20.06	17.58	15.51	15.36	15.56	15.39	15.65	17.43	20.51	21.67	20.62	20.31
EOM	19.07	17.86	17.85	16.61	16.19	15.22	15.85	19.21	20.85	21.09	20.45	18.50

WTR YR 2005 HIGHEST 13.10 APR 15 LOWEST 26.06 AUG 9



GROUND-WATER LEVELS

ISABELLA COUNTY

433555084412101. Local number, 14N 3W 17DD01.
LOCATION.--Lat 43°35'55", long 84°41'21", Hydrologic Unit 04080202, 350 ft north of Remus Road, 350 ft west of Shepherd Road, and 3 mi east of Mount Pleasant.
Owner: Saginaw Chippewa Indian Tribe.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Rotary drilled observation well, diameter 5 in, depth 212 ft, screened 83 ft to 87 ft.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 745 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--February 2003 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.26 ft below land-surface datum, May 19, 2004; lowest measured, 10.52 ft below land-surface datum, Sept. 3, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	9.97	DEC 3	9.73	FEB 23	7.96	MAY 25	7.83	AUG 4	8.88	SEP 6	9.28
OCT 25	10.12	JAN 13	8.60	APR 5	7.51						

GROUND-WATER LEVELS

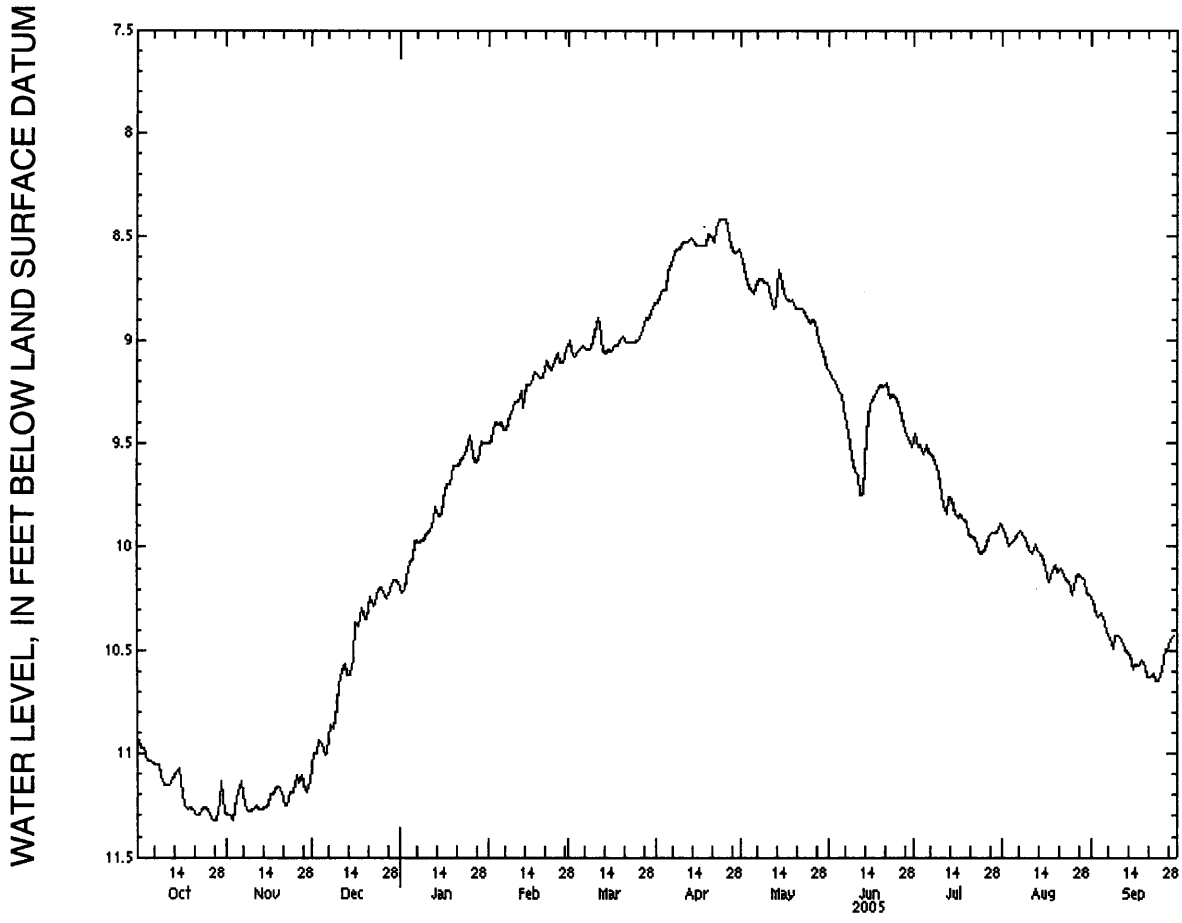
ISABELLA COUNTY

433604084412501. Local number, 14N 3W 17DA01.
LOCATION.--Lat 43°36'04", long 84°41'25", Hydrologic Unit 04080202, 1,400 ft north of Remus Road, 575 ft west of Shepherd Road, and 3 mi east of Mount Pleasant.
Owner: Saginaw Chippewa Indian Tribe.
AQUIFER.--Glacial deposits of Pleistocene age.
WELL CHARACTERISTICS.--Rotary drilled observation well, diameter 5 in, depth 145 ft, screened 136 ft to 140 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 750 ft above sea level, from topographic map. Measuring point: Top of casing, 3.8 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--February to June 2003 (periodic measurements), June 2003 to current year (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.64 ft below land-surface datum, June 1, 2004; lowest recorded, 12.28 ft below land-surface datum, Oct. 30, Nov. 1, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.03	11.19	11.01	10.06	9.40	9.05	8.67	8.78	9.26	9.51	9.96	10.37
10	11.15	11.27	10.66	9.93	9.30	8.97	8.52	8.72	9.63	9.70	10.01	10.43
15	11.07	11.25	10.54	9.84	9.22	9.05	8.54	8.72	9.31	9.84	10.07	10.59
20	11.27	11.19	10.35	9.61	9.18	8.98	8.50	8.85	9.23	9.94	10.12	10.63
25	11.27	11.11	10.19	9.46	9.07	9.00	8.42	8.92	9.31	10.02	10.23	10.59
EOM	11.29	11.13	10.17	9.50	9.05	8.82	8.56	9.14	9.52	9.89	10.23	10.42

WTR YR 2005 HIGHEST 8.38 APR 23, 24, 25 LOWEST 11.32 OCT 27, 28, NOV 3



GROUND-WATER LEVELS

ISABELLA COUNTY

433622084420801. Local number, 14N 3W 17BD02.
LOCATION.--Lat 43°36'22", long 84°42'08", Hydrologic Unit 04080202, 630 ft north of East Broadway Road, 0.3 mi east of South Leaton Road, and 3.3 mi east of Mount Pleasant. Owner: Saginaw Chippewa Indian Tribe.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Rotary drilled observation well, diameter 8 in, depth 126 ft, screened 116 ft to 126 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 760 ft above sea level, from topographic map. Measuring point: Top of casing, 3.0 ft above land-surface datum; prior to Aug. 11, 2005, 0.8 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--April to July 2005 (periodic measurements), August to September 2005 (water level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.34 ft below land-surface datum, Apr. 25, 2005; lowest recorded, 20.53 ft below land-surface datum, Sept. 23, 24, 2005.

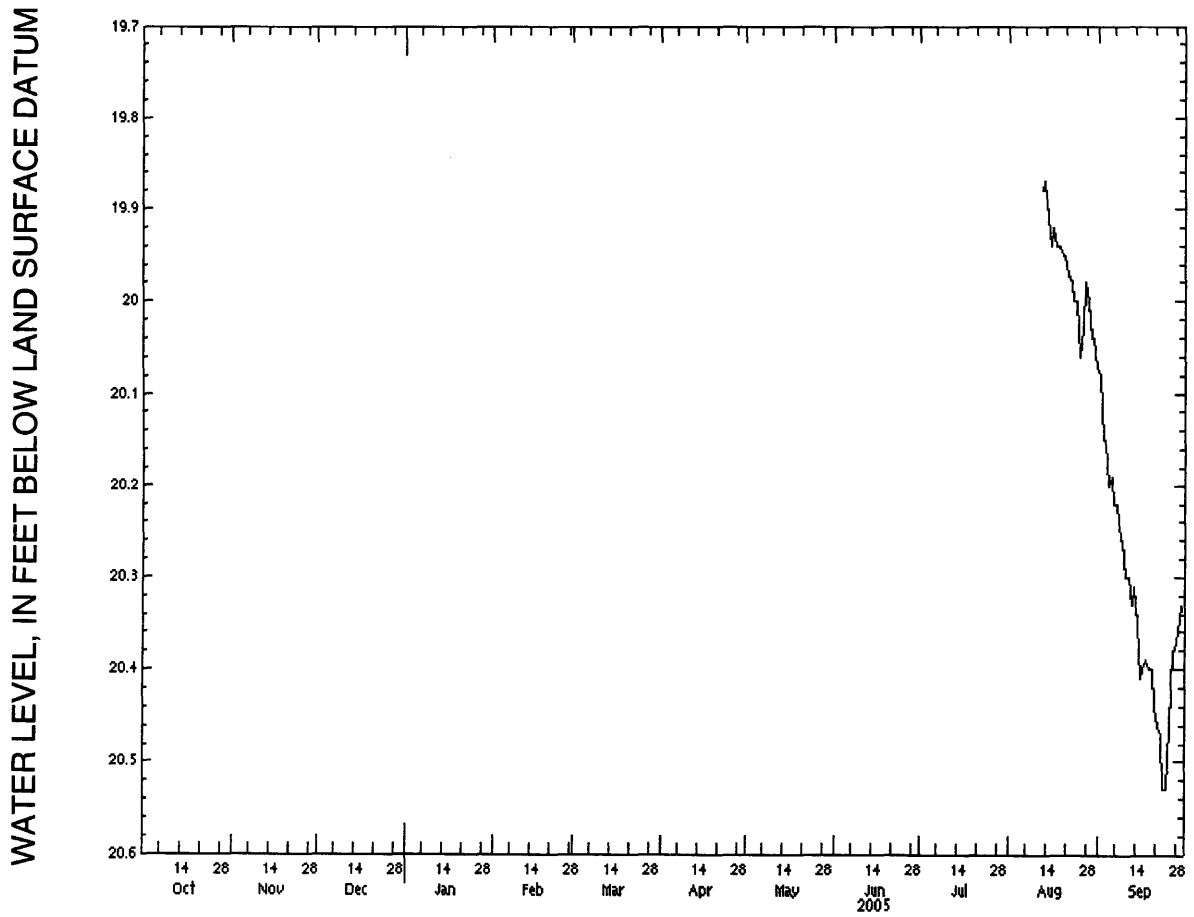
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL
APR 25	18.34	MAY 2	18.55

LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	---	20.19
10	---	---	---	---	---	---	---	---	---	---	---	20.30
15	---	---	---	---	---	---	---	---	---	---	19.94	20.41
20	---	---	---	---	---	---	---	---	---	---	19.95	20.44
25	---	---	---	---	---	---	---	---	---	---	20.06	20.46
EOM	---	---	---	---	---	---	---	---	---	---	20.07	20.33

WTR YR 2005 HIGHEST 18.34 APR 25 LOWEST 20.53 SEP 23, 24



GROUND-WATER LEVELS

KALAMAZOO COUNTY

421127085321701. Local number, 3S 11W 24DBCA.
LOCATION.--Lat 42°11'32" (revised), long 85°32'17", Hydrologic Unit 04050003, in Ramona Park in Portage. Owner: City of Portage.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 183 ft, screened 178 ft to 183 ft.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 862.22 ft above sea level. Measuring point: Top of casing, 0.3 ft below land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--March 1999 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.35 ft below land-surface datum, Apr. 18, 2002, June 29, 2004, Jan. 20, 2005; lowest measured, 15.87 ft below land-surface datum, May 8, 2000.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	12.87	JAN 20	9.35	MAR 11	9.39	APR 22	10.04	JUN 15	9.83	AUG 15	12.57
DEC 03	11.97										

WTR YR 2005	HIGHEST	9.35	JAN 20	LOWEST	12.87	OCT 15		

GROUND-WATER LEVELS

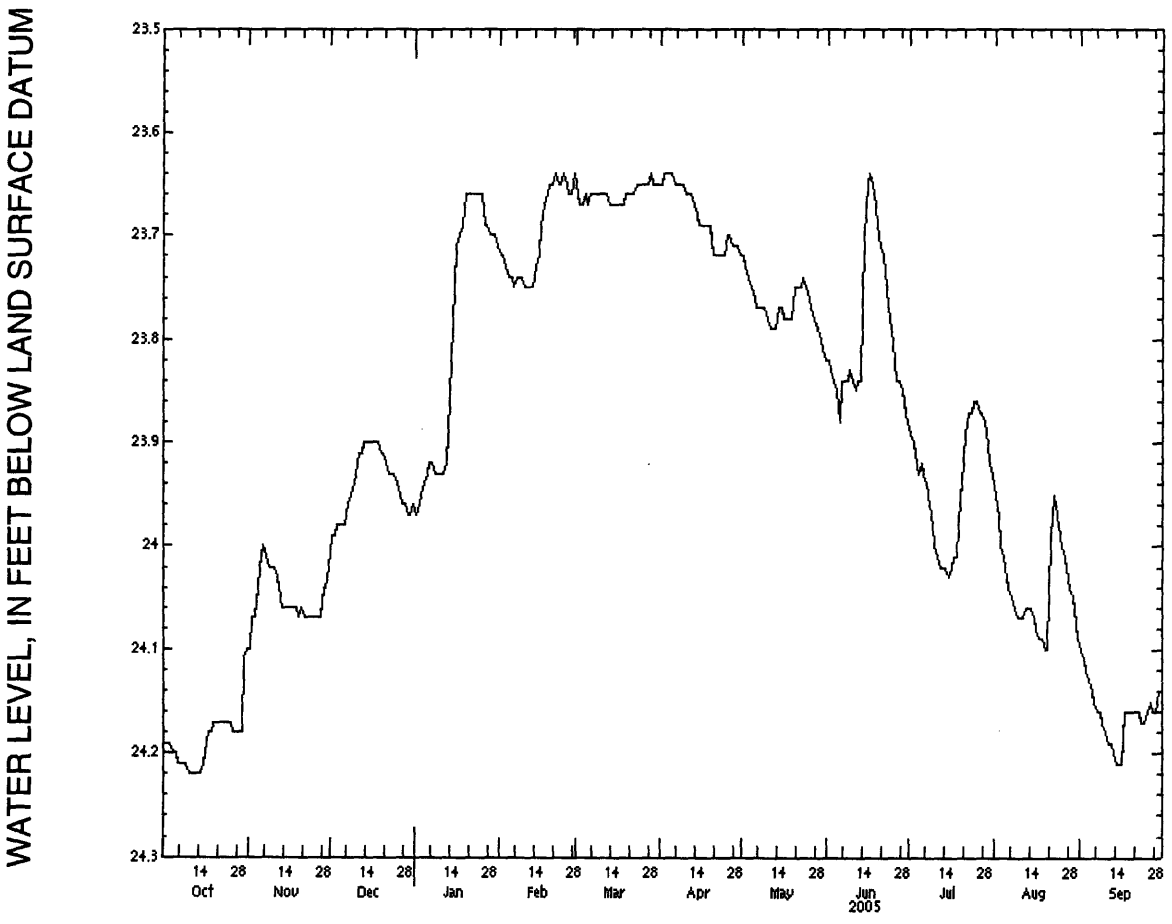
KALAMAZOO COUNTY

421150085383901. Local number, 3S 11W 19BBDD1.
LOCATION.--Lat 42°11'50", long 85°38'39", Hydrologic Unit 04050003, in Gourdneck State Game Area, near intersection of Angling Road and Centre Avenue, 1.5 mi southwest of Portage. Owner: Pfizer.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in, depth 65 ft, screened 63 ft to 65 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 890.18 ft above sea level (City of Portage bench mark). Measuring point: Plywood shelter base, 2.8 ft above land-surface datum.
PERIOD OF RECORD.--November 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 23.55 ft below land-surface datum, May 23, 24, 2002; lowest recorded, 24.81 ft below land-surface datum, Sept. 8-10, 2000.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.20	24.02	23.98	23.93	23.74	23.67	23.64	23.76	23.88	23.92	24.03	24.14
10	24.22	24.02	23.93	23.93	23.75	23.66	23.66	23.78	23.84	24.00	24.07	24.18
15	24.21	24.06	23.90	23.75	23.72	23.67	23.69	23.77	23.65	24.03	24.07	24.21
20	24.17	24.06	23.91	23.66	23.65	23.66	23.72	23.75	23.71	23.94	24.10	24.16
25	24.17	24.07	23.94	23.66	23.65	23.65	23.70	23.76	23.82	23.86	24.00	24.16
EOM	24.10	24.02	23.96	23.71	23.64	23.65	23.72	23.82	23.88	23.93	24.09	24.14

WTR YR 2005 HIGHEST 23.63 FEB 20, 21, MAR 28, 31, JUN 15, 16 LOWEST 24.22 OCT 10-14



GROUND-WATER LEVELS

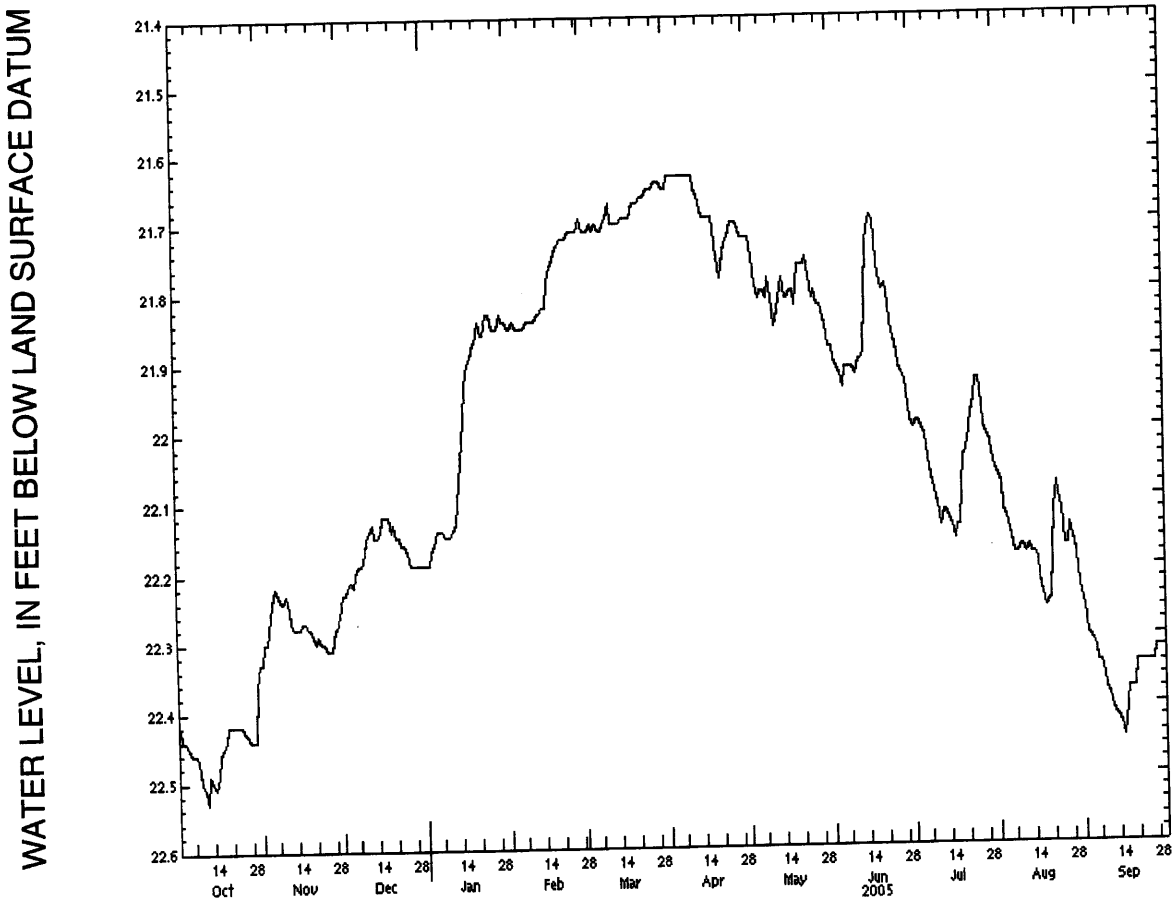
KALAMAZOO COUNTY

421150085383902. Local number, 3S 11W 19BBDD2.
LOCATION.--Lat 42°11'50", long 85°38'39", Hydrologic Unit 04050003, in Gourdneck State Game Area, near intersection of Angling Road and Centre Avenue, 1.5 mi southwest of Portage. Owner: Pfizer.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in, depth 177 ft, screened 175 ft to 177 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 889.90 ft above sea level (City of Portage bench mark). Measuring point: Plywood shelter base, 3.0 ft above land-surface datum.
PERIOD OF RECORD.--November 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.50 ft below land-surface datum, May 23, 24, 2002; lowest recorded, 23.34 ft below land-surface datum, Sept. 8-10, 2000.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	22.46	22.24	22.22	22.14	21.85	21.71	21.63	21.81	21.94	22.01	22.15	22.32
10	22.51	22.23	22.15	22.15	21.84	21.69	21.63	21.81	21.92	22.11	22.17	22.39
15	22.49	22.28	22.14	21.98	21.82	21.70	21.69	21.81	21.70	22.14	22.19	22.45
20	22.42	22.29	22.13	21.87	21.73	21.67	21.75	21.76	21.80	22.04	22.25	22.34
25	22.43	22.31	22.17	21.83	21.71	21.65	21.70	21.81	21.89	21.93	22.17	22.34
EOM	22.33	22.26	22.19	21.84	21.69	21.65	21.72	21.88	21.99	22.06	22.24	22.32

WTR YR 2005 HIGHEST 21.62 MAR 31, APR 6, 7 LOWEST 22.53 OCT 11



GROUND-WATER LEVELS

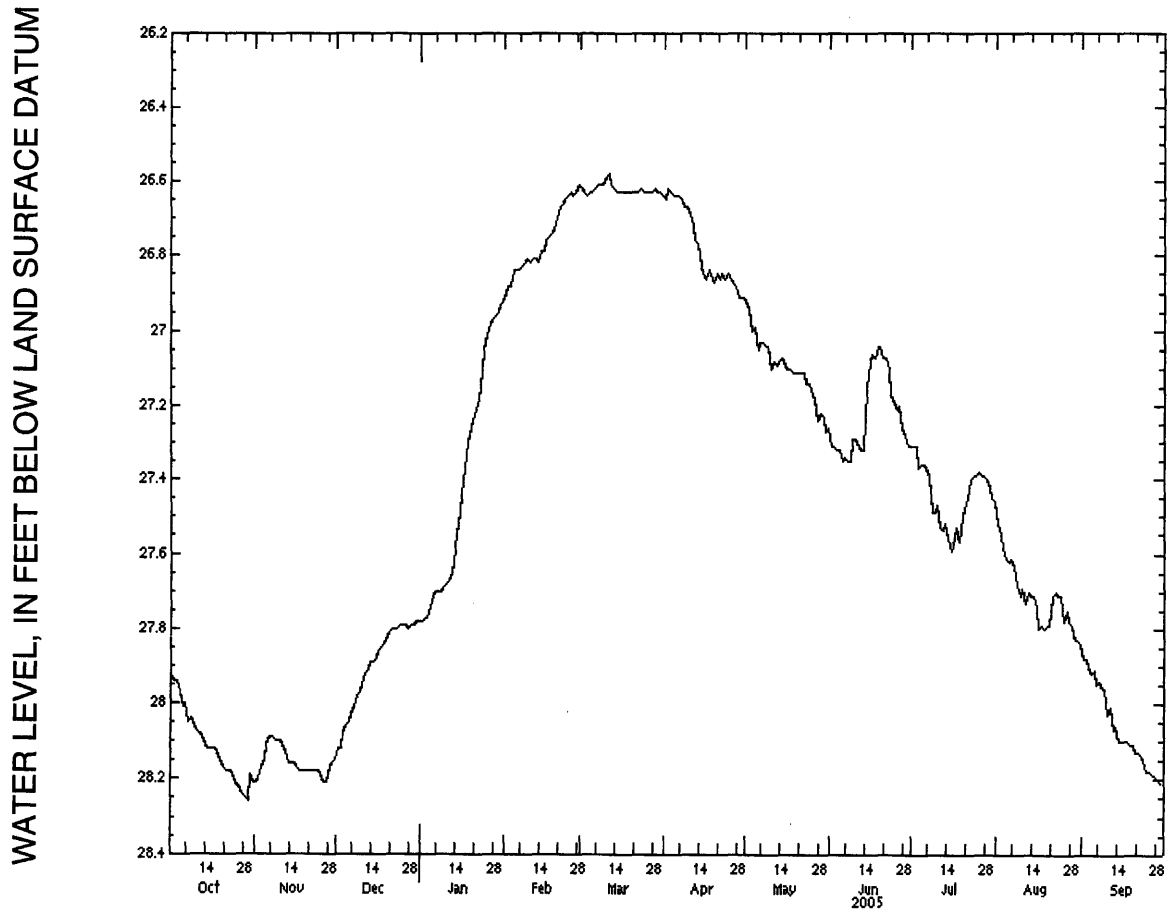
KALAMAZOO COUNTY

421151085351601. Local number, 3S 11W 22BBCD.
LOCATION.--Lat 42°11'51", long 85°35'16", Hydrologic Unit 04050003, at Portage Central High School, Kalamazoo Township in Portage. Owner: Portage Public Schools.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 12 in, depth 102 ft, screened 87 ft to 102 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 877 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--June 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.8 ft below land-surface datum, April 1985; lowest recorded, 30.58 ft below land-surface datum, Feb. 21, 22, 2000.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.01	28.11	28.05	27.71	26.84	26.63	26.64	27.05	27.35	27.36	27.62	27.91
10	28.07	28.10	27.95	27.68	26.82	26.59	26.69	27.10	27.29	27.47	27.69	28.03
15	28.12	28.16	27.88	27.49	26.79	26.63	26.85	27.09	27.08	27.59	27.74	28.10
20	28.17	28.18	27.81	27.24	26.70	26.63	26.85	27.11	27.07	27.48	27.79	28.13
25	28.22	28.20	27.79	27.01	26.63	26.63	26.86	27.17	27.21	27.38	27.78	28.18
EOM	28.21	28.15	27.78	26.92	26.61	26.64	26.91	27.26	27.31	27.46	27.84	28.21

WTR YR 2005 HIGHEST 26.57 MAR 10-12 LOWEST 28.26 OCT 29



GROUND-WATER LEVELS

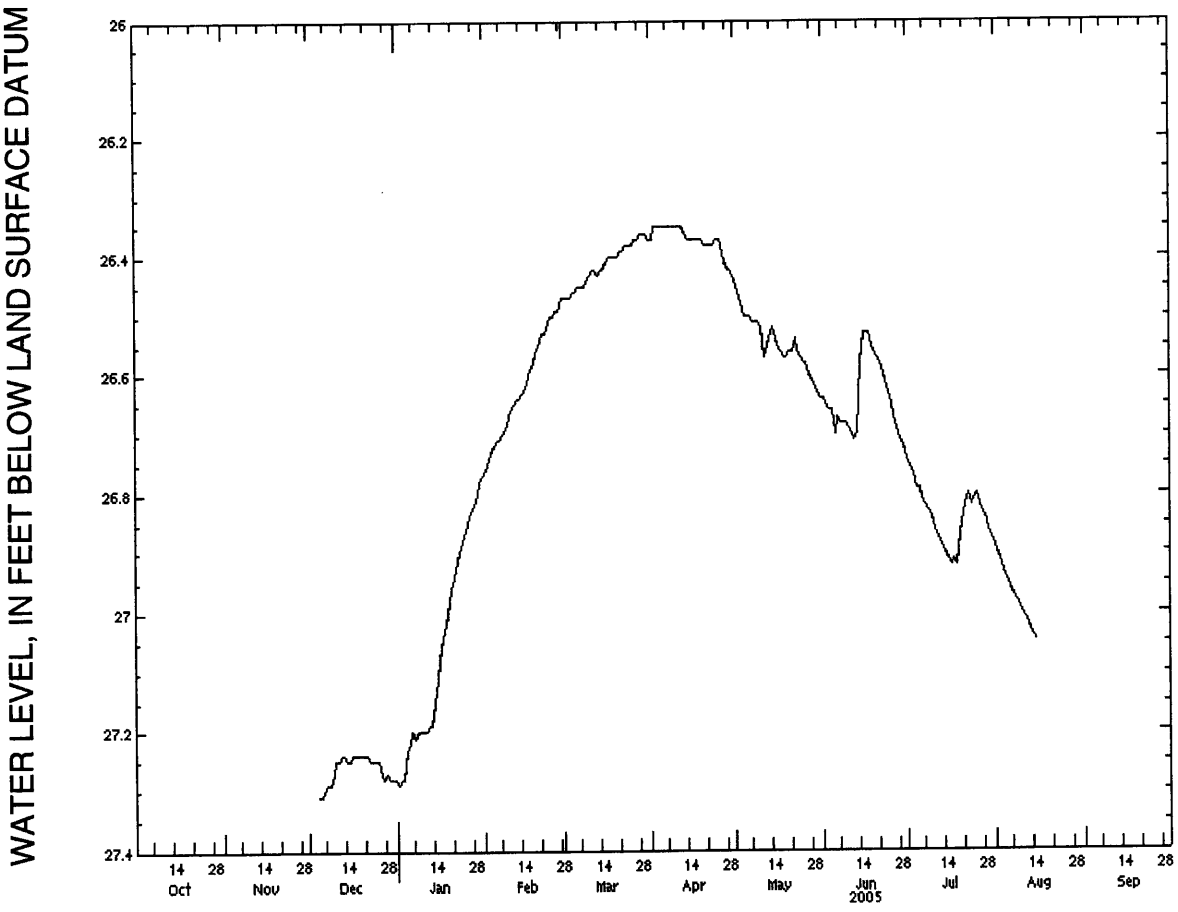
KALAMAZOO COUNTY

421203085370401. Local number, 3S 11W 20ABBA.
LOCATION.--Lat 42°12'03", long 85°37'01", Hydrologic Unit 04050003, near intersection of Centre Avenue and Oakland Drive in Portage. Owner: Kalamazoo County.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 58 ft, screened 54 ft to 58 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 890 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.
PERIOD OF RECORD.--March 1987 to August 1988 and August 2001 to September 2002 (periodic measurements), December 2004 to September 2005 (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.23 ft below land-surface datum, June 12, 2002; lowest measured, 27.70 ft below land-surface datum, Aug. 27, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	27.31	27.22	26.71	26.46	26.35	26.50	26.70	26.79	26.95	---
10	---	---	27.25	27.20	26.66	26.43	26.35	26.52	26.69	26.85	27.00	---
15	---	---	27.25	27.11	26.62	26.42	26.37	26.54	26.53	26.91	27.05	---
20	---	---	27.24	26.96	26.55	26.40	26.38	26.56	26.57	26.85	---	---
25	---	---	27.25	26.86	26.50	26.38	26.37	26.58	26.65	26.80	---	---
EOM	---	---	27.28	26.77	26.47	26.37	26.43	26.64	26.73	26.88	---	---

WTR YR 2005 HIGHEST 26.33 APR 12 LOWEST 27.35 DEC 1



GROUND-WATER LEVELS

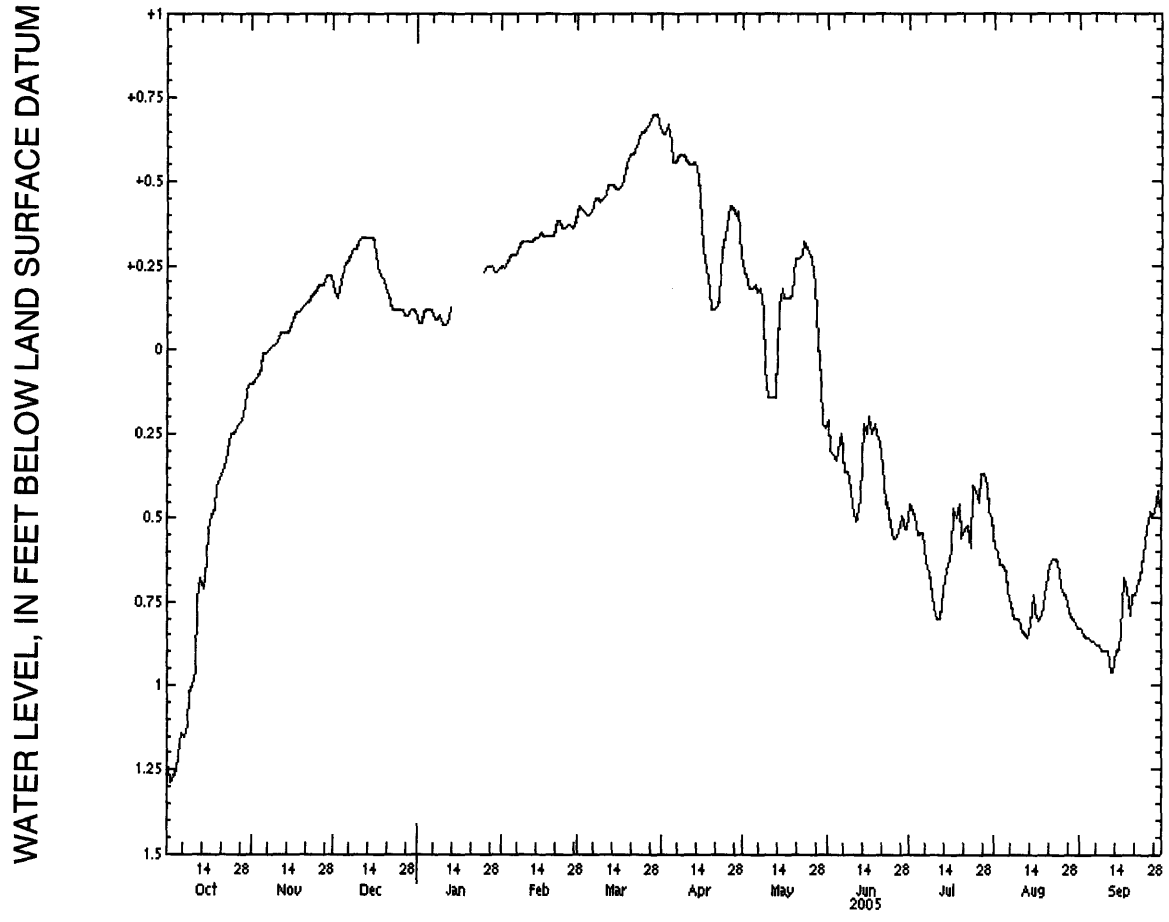
KALAMAZOO COUNTY

421325085404801. Local number, 3S 12W 11BDAD.
LOCATION.--Lat 42°13'25", long 85°40'48", Hydrologic Unit 04050003, at Kalamazoo Valley Community College. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 3 in, depth 248 ft, screened 245 ft to 248 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 880 ft above sea level, from topographic map. Measuring point: Top of shelter base, 3.5 ft above land-surface datum.
PERIOD OF RECORD.--March 1961 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +2.98 ft above land-surface datum, Sept 4, 1969; lowest recorded, 2.48 ft below land-surface datum, Sept. 13, 14, 2003.

WATER LEVEL, IN FEET ABOVE (+) AND BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	1.17	0.01	+0.26	+0.12	+0.28	+0.40	+0.56	+0.19	0.27	0.54	0.66	0.87
10	1.00	+0.02	+0.32	+0.07	+0.32	+0.45	+0.56	0.14	0.46	0.77	0.80	0.90
15	0.63	+0.07	+0.33	---	+0.35	+0.48	+0.46	+0.18	0.25	0.64	0.73	0.89
20	0.38	+0.13	+0.18	---	+0.34	+0.58	+0.12	+0.27	0.28	0.56	0.70	0.73
25	0.25	+0.19	+0.12	+0.23	+0.37	+0.65	+0.40	+0.28	0.56	0.42	0.70	0.53
EOM	0.10	+0.22	+0.11	+0.24	+0.38	+0.66	+0.28	0.23	0.53	0.50	0.83	0.47

WTR YR 2005 HIGHEST +0.72 MAR 28-30 LOWEST 1.29 OCT 2



GROUND-WATER LEVELS

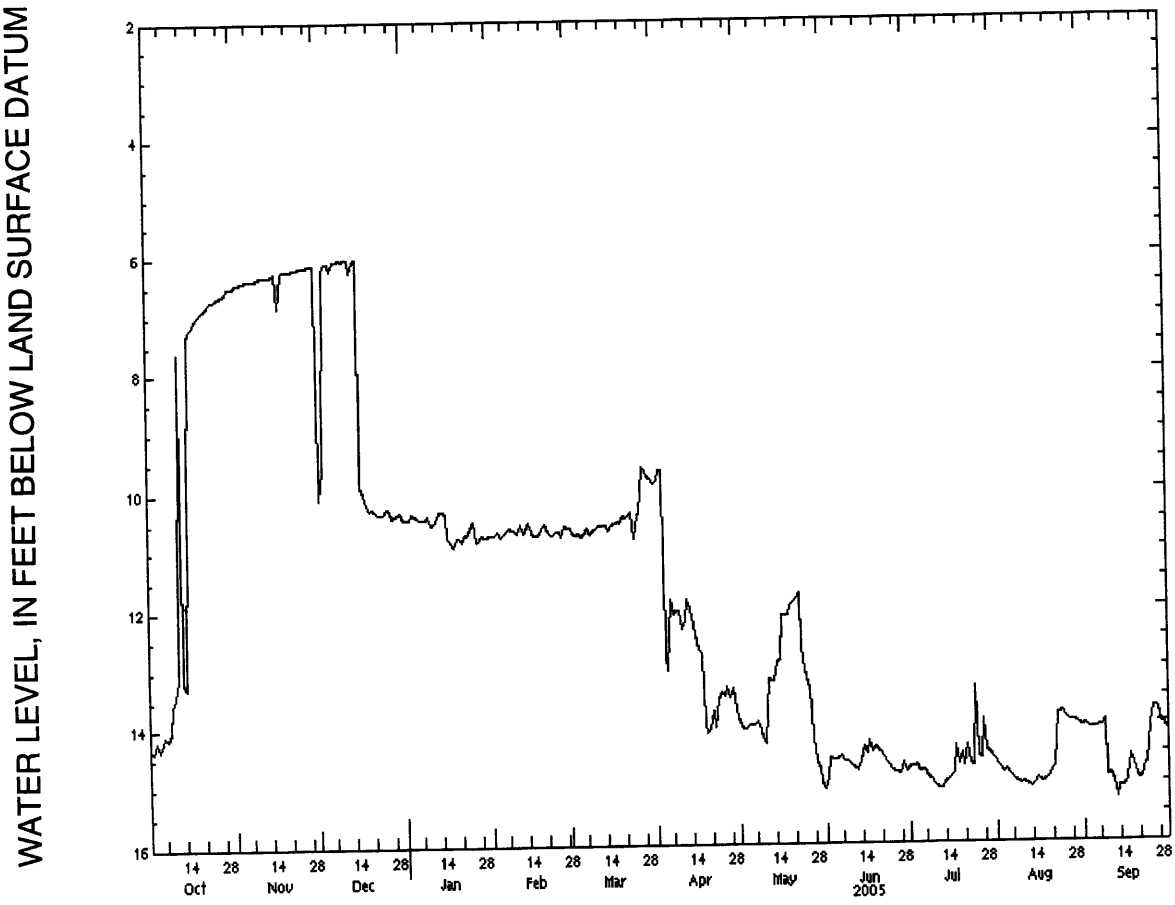
KALAMAZOO COUNTY

421332085401901. Local number, 3S 12W 11AD1.
LOCATION.--Lat 42°13'32", long 85°40'19", Hydrologic Unit 04050003, at Al Sabo Land Preserve, Texas Township, 3.0 mi west of Portage. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 300 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 877 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.5 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--December 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.5 ft below land-surface datum, July 1973; lowest recorded, 17.17 ft below land-surface datum, July 20, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.17	6.39	6.09	10.41	10.70	10.77	13.04	13.99	14.56	14.79	14.86	14.07
10	13.42	6.33	6.06	10.53	10.70	10.64	12.36	14.31	14.71	15.05	14.99	14.88
15	7.36	6.28	6.04	10.36	10.68	10.68	12.44	12.89	14.49	14.92	14.93	15.05
20	6.93	6.21	10.26	10.78	10.55	10.43	14.05	11.90	14.45	14.72	14.82	14.98
25	6.71	6.15	10.25	10.48	10.67	10.38	13.47	13.30	14.82	14.55	13.89	13.74
EOM	6.51	6.11	10.46	10.74	10.61	9.87	13.87	15.10	14.74	14.63	14.05	14.14

WTR YR 2005 HIGHEST 6.00 DEC 12, 16 LOWEST 15.29 SEP 12



GROUND-WATER LEVELS

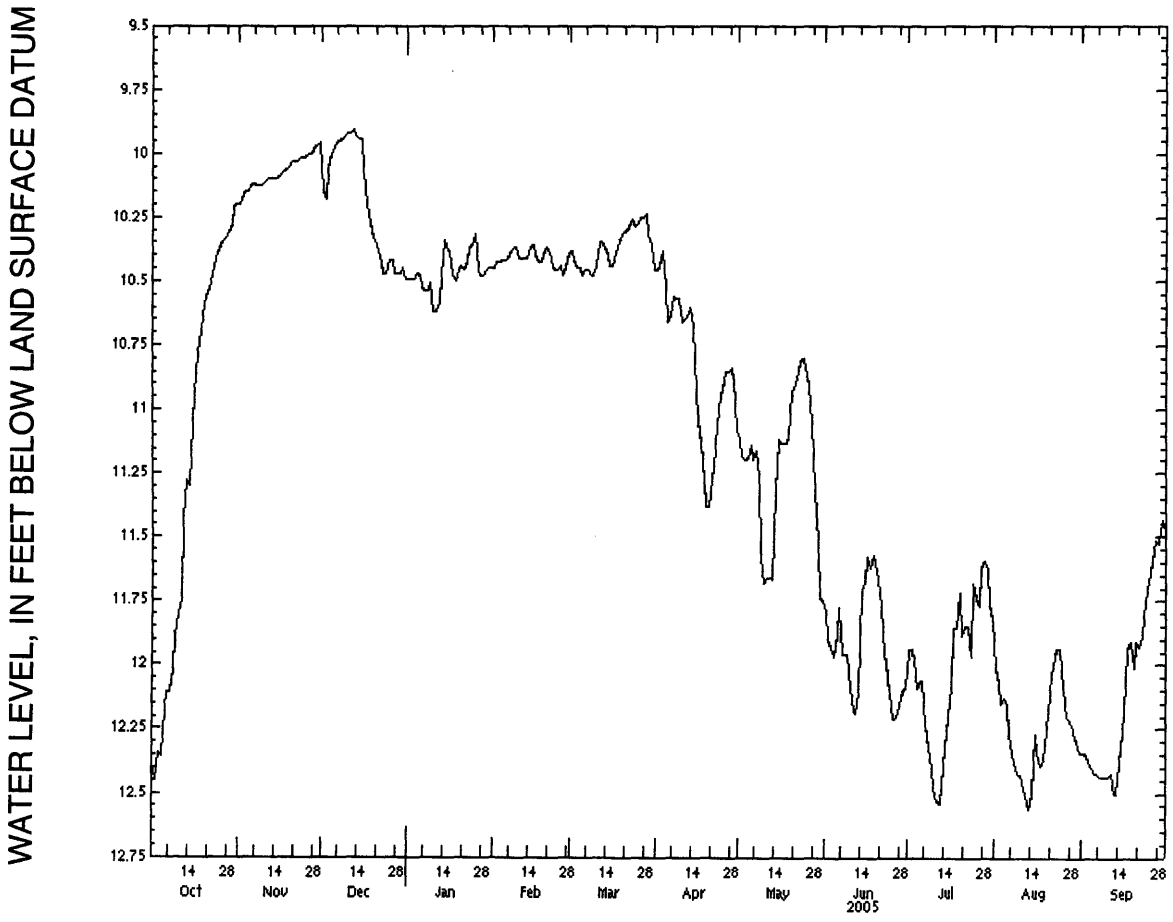
KALAMAZOO COUNTY

421332085401902. Local number, 3S 12W 11AD2.
LOCATION.--Lat 42°13'32", long 85°40'19", Hydrologic Unit 04050003, at Al Sabo Land Preserve, Texas Township, 3.0 mi west of Portage. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in, depth 38 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 877 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.5 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--January 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.08 ft below land-surface datum, Aug. 31, 1975; lowest recorded, 13.82 ft below land-surface datum, Sept. 13, 14, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	12.17	10.13	9.98	10.48	10.42	10.48	10.66	11.14	11.88	12.06	12.15	12.42
10	11.81	10.11	9.92	10.62	10.41	10.44	10.66	11.68	12.09	12.48	12.43	12.44
15	11.06	10.09	9.94	10.38	10.36	10.44	10.80	11.12	11.68	12.20	12.27	12.26
20	10.56	10.03	10.34	10.44	10.37	10.31	11.38	10.93	11.67	11.89	12.18	11.91
25	10.36	10.01	10.42	10.32	10.44	10.27	10.89	10.87	12.21	11.74	12.09	11.64
EOM	10.20	9.96	10.49	10.45	10.39	10.46	11.08	11.75	12.09	11.82	12.34	11.47

WTR YR 2005 HIGHEST 9.90 DEC 12, 13 LOWEST 12.56 AUG 13



GROUND-WATER LEVELS

KALAMAZOO COUNTY

421358085322401. Local number, 3S 11W 1DCBB.
LOCATION.--Lat 42°13'58", long 85°32'24", Hydrologic Unit 04050003, near intersection of Sprinkle Road and Winthrop Avenue in Portage. Owner: City of Portage.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in, depth 179 ft, screened 134 ft to 179 ft.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 854.64 ft above sea level (levels by City of Portage). Measuring point: Top of casing, 2.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--March 1999 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.59 ft below land-surface datum, Apr. 2, 2002; lowest measured, 18.73 ft below land-surface datum, Feb. 23, 2000.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	15.59	JAN 20	13.49	MAR 11	12.70	APR 22	13.15	JUN 15	13.85	AUG 15	14.32
DEC 03	15.33										

WTR YR 2005	HIGHEST	12.70	MAR 11		LOWEST	15.59	OCT 15	

GROUND-WATER LEVELS

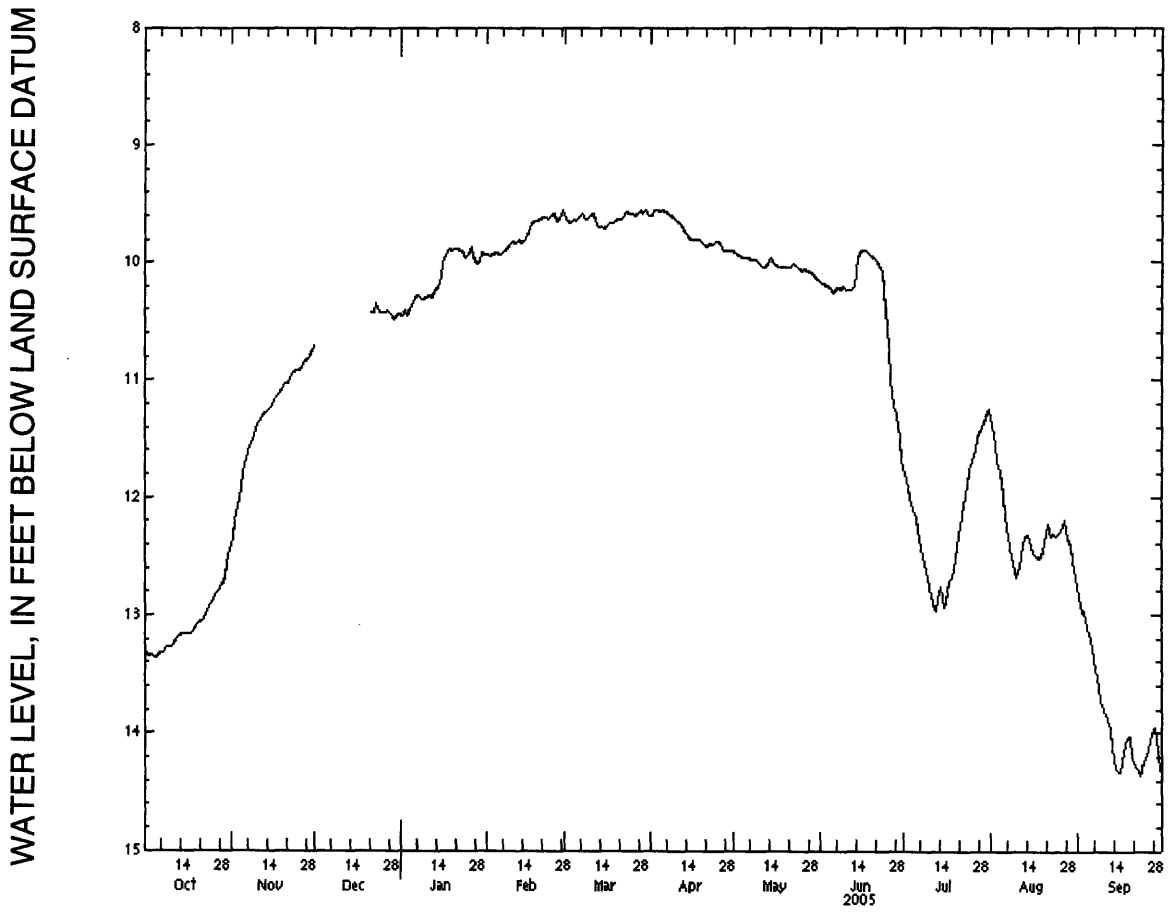
KALAMAZOO COUNTY

421435085353701. Local number, 3S 11W 4ABAD1.
LOCATION.--Lat 42°14'35", long 85°35'37", Hydrologic Unit 04050003, at Kilgore Road pump station No. 9 in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 36 ft, screened 33 ft to 36 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 860 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--September 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.17 ft below land-surface datum, Apr. 27, 1993; lowest recorded, 17.78 ft below land-surface datum, Sept. 22, 2003

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.35	11.79	---	10.35	9.93	9.65	9.56	9.97	10.27	12.17	11.97	13.21
10	13.26	11.37	---	10.30	9.82	9.60	9.65	10.01	10.23	12.77	12.69	13.80
15	13.15	11.22	---	10.13	9.78	9.71	9.80	10.01	9.91	12.93	12.42	14.33
20	13.07	11.03	---	9.89	9.64	9.64	9.86	10.04	9.96	12.42	12.39	14.20
25	12.87	10.91	10.43	9.94	9.59	9.59	9.82	10.07	10.72	11.69	12.31	14.18
EOM	12.45	10.74	10.44	9.93	9.56	9.61	9.91	10.16	11.68	11.24	12.68	14.33

WTR YR 2005 HIGHEST 9.50 MAR 7, 12, 30 LOWEST 14.36 SEP 23



GROUND-WATER LEVELS

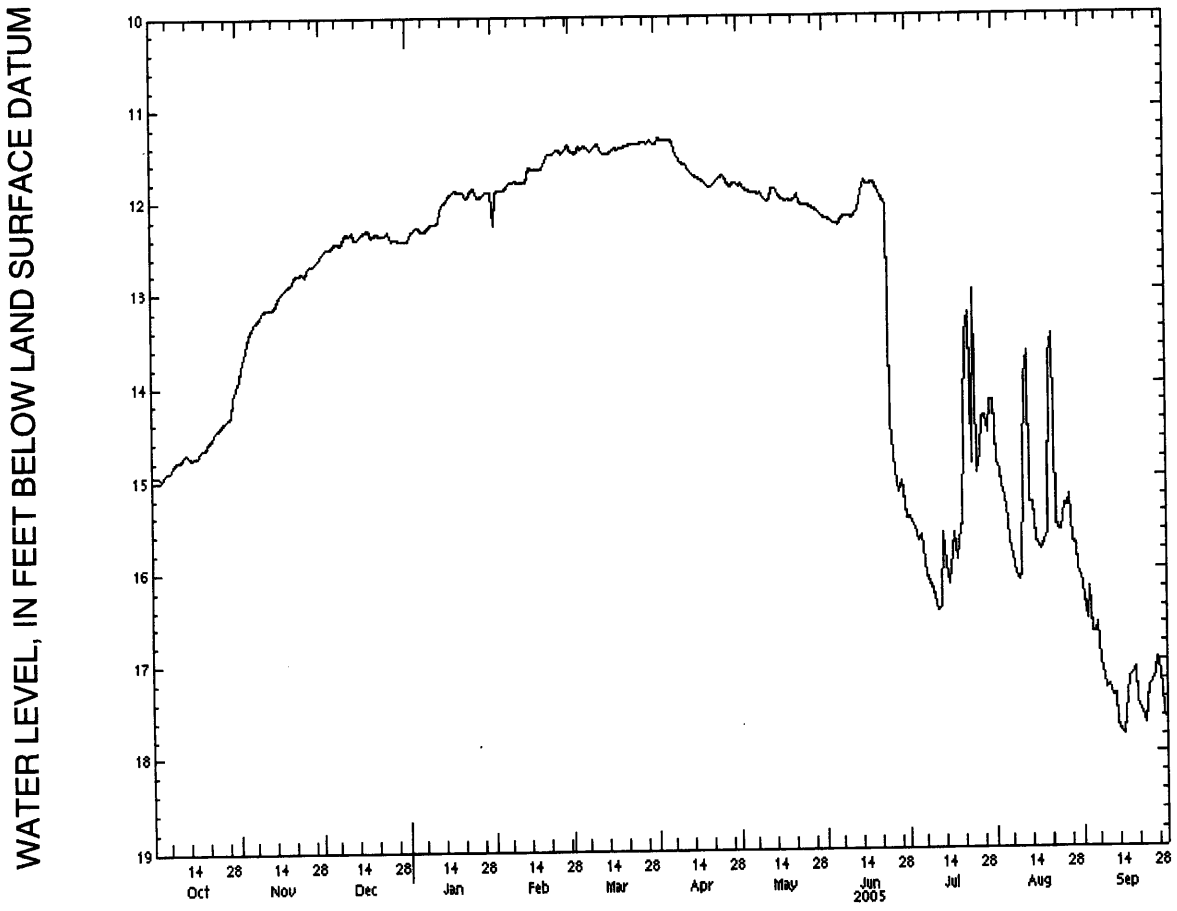
KALAMAZOO COUNTY

421435085353702. Local number, 3S 11W 4ABAD2.
LOCATION.--Lat 42°14'35", long 85°35'37", Hydrologic Unit 04050003, at Kilgore Road pump station No. 9 in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 148 ft, screened 145 ft to 148 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 860 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--September 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.73 ft below land-surface datum, May 4, 5, 1993; lowest recorded, 21.11 ft below land-surface datum, Sept. 21, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.92	13.45	12.48	12.29	11.88	11.46	11.34	11.91	12.27	15.64	15.49	16.69
10	14.78	13.18	12.35	12.25	11.80	11.42	11.60	11.97	12.19	16.30	16.04	17.27
15	14.77	13.05	12.37	12.00	11.66	11.50	11.73	11.94	11.80	16.16	15.70	17.80
20	14.66	12.89	12.36	11.90	11.56	11.43	11.85	12.01	11.90	15.51	13.70	17.45
25	14.44	12.82	12.32	11.85	11.46	11.39	11.74	12.07	14.76	14.96	15.32	17.25
EOM	14.00	12.62	12.42	11.89	11.38	11.39	11.81	12.18	15.46	14.20	16.08	17.65

WTR YR 2005 HIGHEST 11.29 APR 2 LOWEST 17.80 SEP 15



GROUND-WATER LEVELS

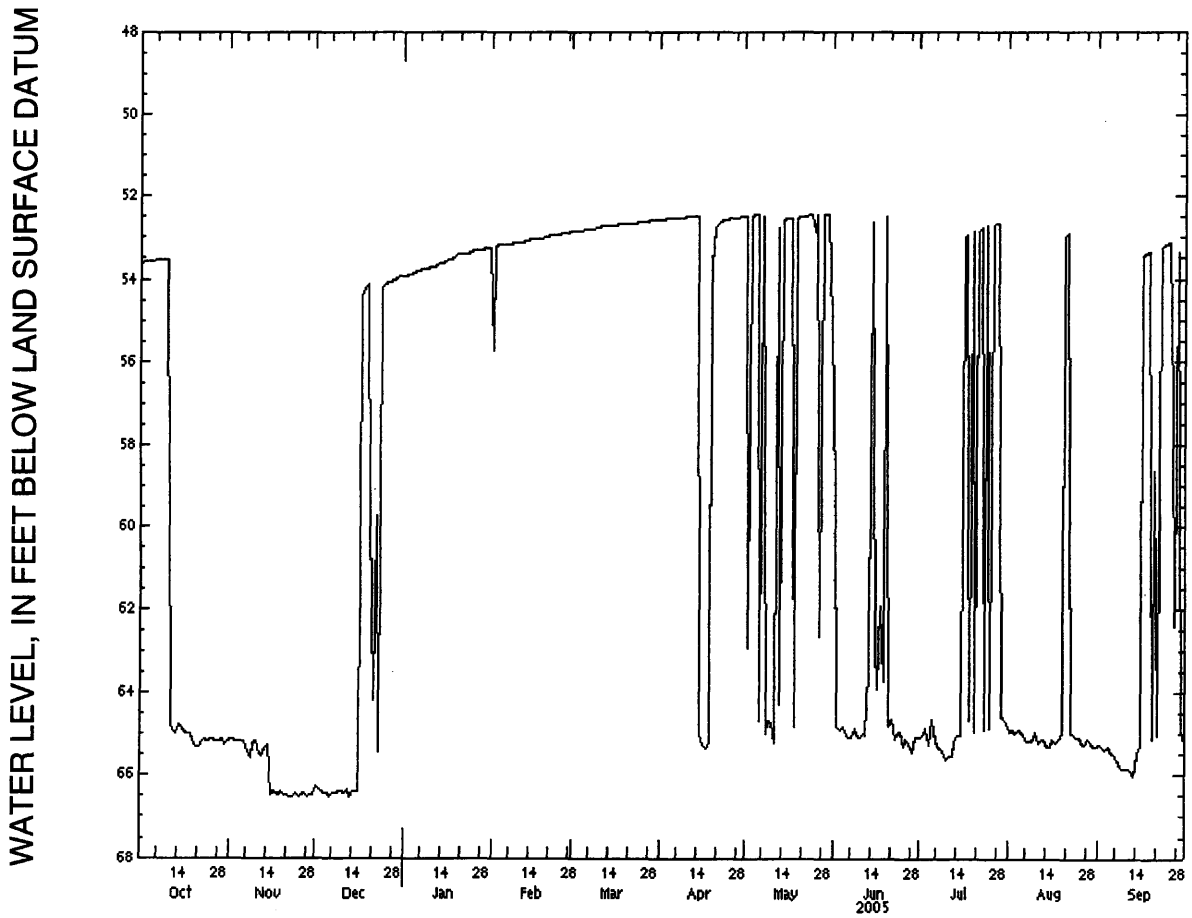
KALAMAZOO COUNTY

421448085383601. Local number, 2S 11W 31CD.
LOCATION.--Lat 42°14'48", long 85°38'36", Hydrologic Unit 04050003, at city well field, 1,000 ft from U.S. Highway 131 in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 226 ft, screened 216 ft to 226 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 910 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--August 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 41.39 ft below land-surface datum, Sept. 12, 1982; lowest recorded, 71.75 ft below land-surface datum, May 22, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	53.56	65.18	66.42	53.81	53.16	52.81	52.54	52.45	65.04	64.65	64.93	65.48
10	53.51	65.17	66.38	53.70	53.11	52.76	52.49	64.73	65.10	65.63	64.96	65.87
15	64.86	66.47	66.39	53.59	53.04	52.72	65.01	52.54	62.81	65.02	65.30	65.24
20	65.33	66.46	59.67	53.41	52.97	52.66	52.74	52.48	64.80	64.94	52.97	58.61
25	65.14	66.53	54.12	53.31	52.91	52.63	52.54	52.84	65.32	64.85	65.08	53.14
EOM	65.18	66.46	53.91	53.24	52.85	52.58	52.48	55.05	65.06	64.72	65.33	65.17

WTR YR 2005 HIGHEST 52.44 MAY 5, 6, 23, 24, 26, 27 LOWEST 66.54 NOV 23



GROUND-WATER LEVELS

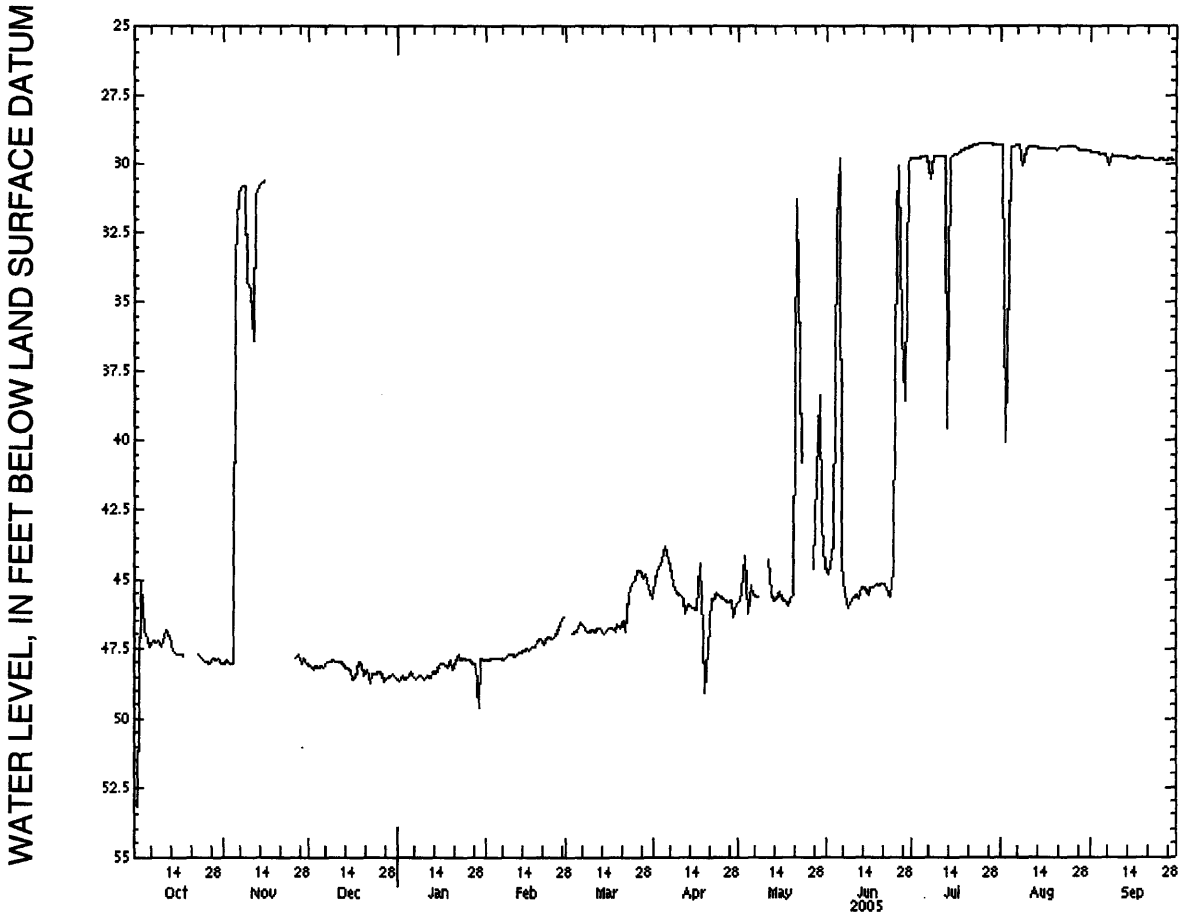
KALAMAZOO COUNTY

421457085325801. Local number, 2S 11W 36CB.
LOCATION.--Lat 42°14'57", long 85°32'58", Hydrologic Unit 04050003, in city well field, 500 ft from Emerald Street in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 226 ft, screened 216 ft to 226 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 860 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 3.5 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--August 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 25.35 ft below land-surface datum, April 1985; lowest recorded, 53.17 ft below land-surface datum, Oct. 2, 2004.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	47.14	33.54	48.13	48.34	47.87	46.88	43.76	45.20	29.79	29.71	29.33	29.63
10	47.43	34.49	48.00	48.59	47.70	46.83	45.53	---	45.60	29.72	29.35	29.69
15	47.71	30.60	48.22	48.10	47.50	46.92	46.02	45.42	45.56	29.64	29.45	29.78
20	---	---	48.43	48.23	47.18	46.73	47.50	45.57	45.15	29.41	29.47	29.79
25	47.99	---	48.33	47.91	47.03	44.99	45.68	43.98	31.88	29.24	29.39	29.80
EOM	48.04	48.08	48.51	47.94	46.29	45.69	45.88	44.51	29.79	29.27	29.53	29.80

WTR YR 2005 HIGHEST 29.21 JUL 24-26 LOWEST 53.17 OCT 2



GROUND-WATER LEVELS

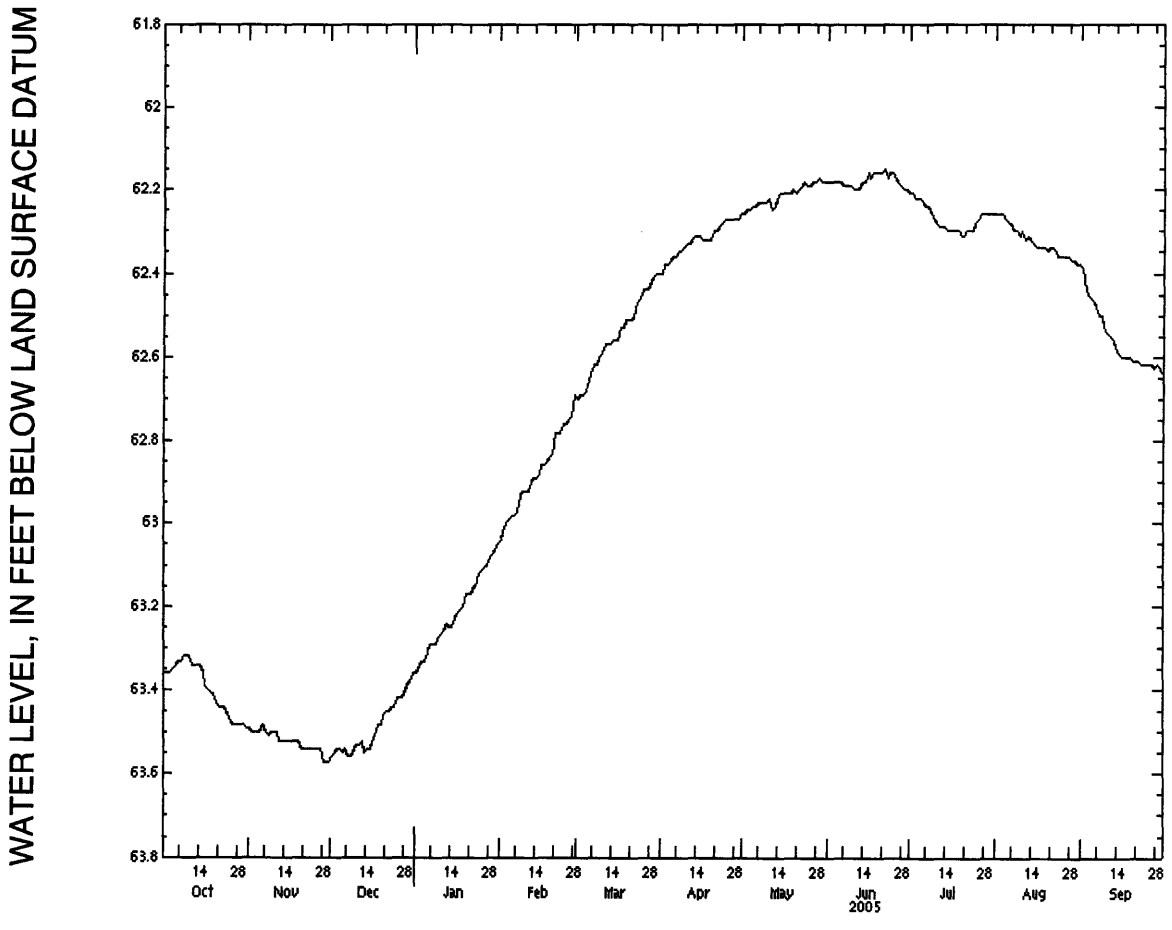
KALAMAZOO COUNTY

421552085384001. Local number, 2S 11W 30CBDC1.
LOCATION.--Lat 42°15'52", long 85°38'40", Hydrologic Unit 04050003, at Western Michigan University Baker Farm in Kalamazoo. Owner: Western Michigan University.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 5 in, depth 240 ft, screened 215 ft to 240 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 936.01 ft above sea level (levels by City of Kalamazoo). Measuring point: Plywood instrument shelf, 1.6 ft above land-surface datum.
PERIOD OF RECORD.--October 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 61.68 ft below land-surface datum, June 3, 2002; lowest recorded, 64.58 ft below land-surface datum, Jan. 12, 2001.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	63.34	63.50	63.55	63.31	62.98	62.67	62.36	62.24	62.18	62.23	62.28	62.47
10	63.32	63.50	63.53	63.27	62.92	62.59	62.33	62.22	62.20	62.28	62.30	62.54
15	63.36	63.52	63.54	63.23	62.88	62.56	62.31	62.21	62.16	62.30	62.34	62.60
20	63.43	63.54	63.46	63.17	62.83	62.51	62.30	62.21	62.16	62.31	62.34	62.61
25	63.47	63.54	63.42	63.11	62.76	62.44	62.27	62.19	62.17	62.27	62.36	62.62
EOM	63.49	63.57	63.36	63.05	62.69	62.40	62.26	62.18	62.21	62.26	62.38	62.64

WTR YR 2005 HIGHEST 62.14 JUN 19-24 LOWEST 63.57 NOV 28-30



GROUND-WATER LEVELS

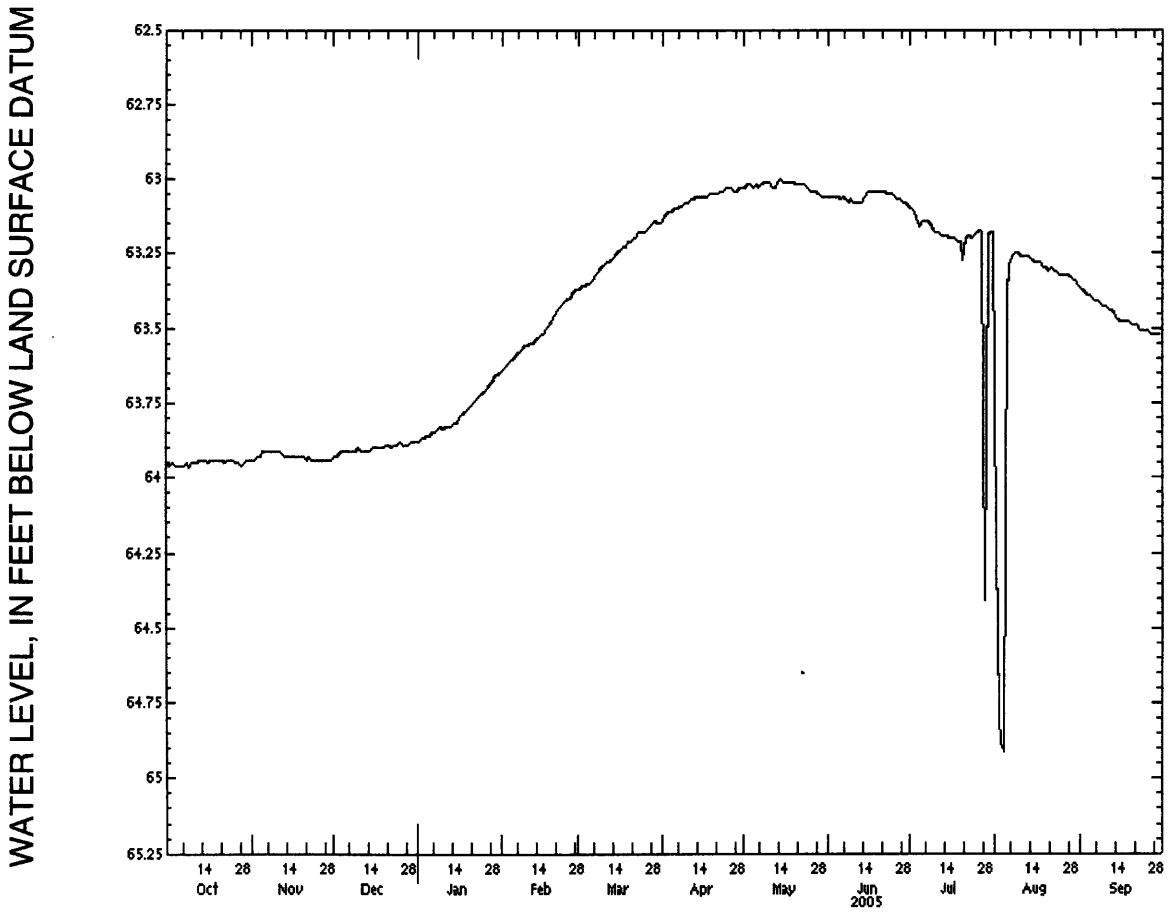
KALAMAZOO COUNTY

421552085384002. Local number, 2S 11W 30CBDC2.
LOCATION.--Lat 42°15'52", long 85°38'40", Hydrologic Unit 04050003, at Western Michigan University Baker Farm in Kalamazoo. Owner: Western Michigan University.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 5 in, depth 89 ft, screened 74 ft to 89 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 936.34 ft above sea level (levels by City of Kalamazoo). Measuring point: Plywood shelter base, 2.2 ft above land-surface datum; prior to Sept. 11, 2003, 3.0 ft above land-surface datum.
PERIOD OF RECORD.--October 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 62.59 ft below land-surface datum, May 23, June 4, 2002; lowest recorded, 65.69 ft below land-surface datum, Aug. 3, 2000.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	63.96	63.91	63.91	63.86	63.60	63.35	63.10	63.02	63.07	63.14	63.39	63.40
10	63.95	63.91	63.90	63.84	63.56	63.29	63.08	63.01	63.08	63.18	63.26	63.43
15	63.94	63.93	63.90	63.82	63.52	63.25	63.06	63.01	63.04	63.20	63.28	63.48
20	63.94	63.93	63.89	63.76	63.46	63.21	63.05	63.02	63.04	63.27	63.31	63.49
25	63.94	63.94	63.88	63.71	63.40	63.18	63.03	63.04	63.06	63.18	63.32	63.51
EOM	63.94	63.94	63.88	63.65	63.37	63.15	63.03	63.06	63.09	63.18	63.36	63.52

WTR YR 2005 HIGHEST 62.98 MAY 13 LOWEST 64.91 AUG 4



GROUND-WATER LEVELS

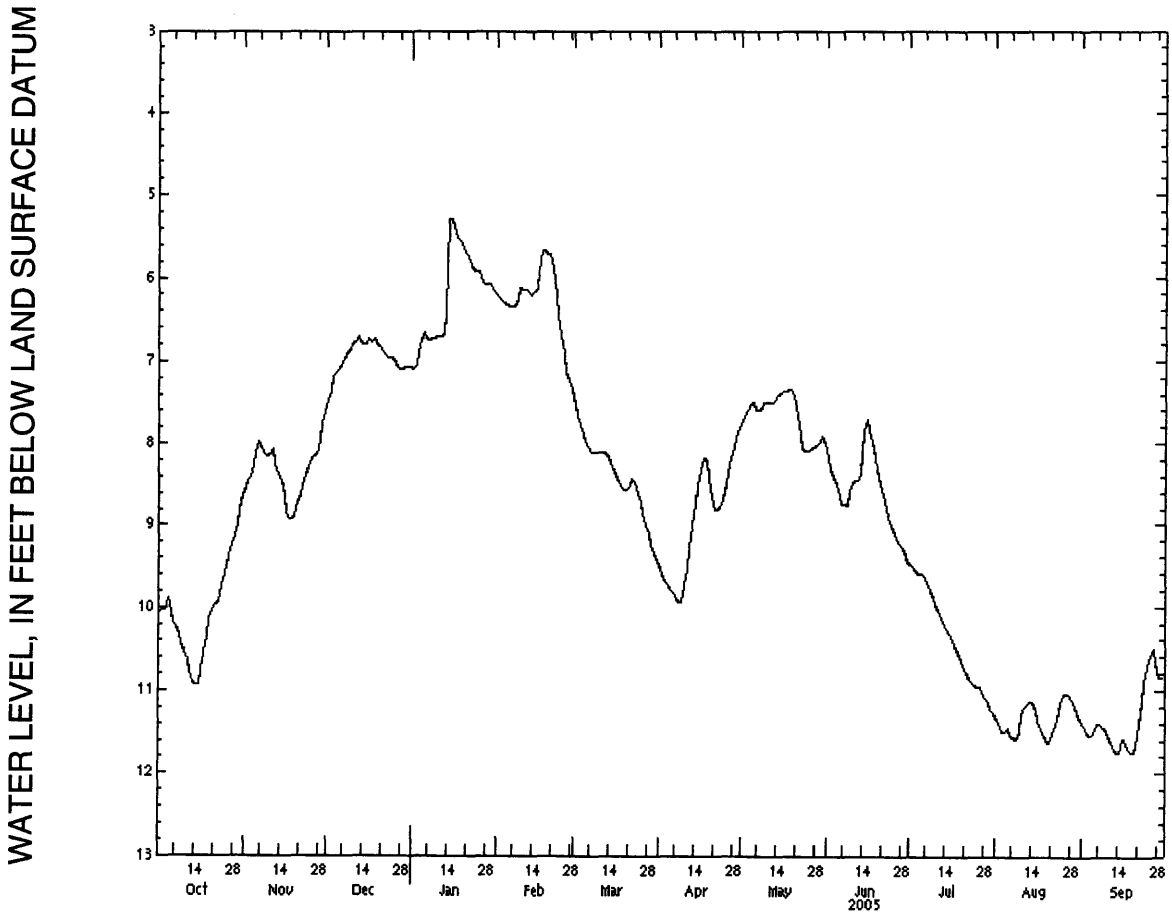
KALAMAZOO COUNTY

421614085270801. Local number, 2S 10W 26BBCC.
LOCATION.--Lat 42°16'14", long 85°27'08", Hydrologic Unit 04050003, at end of Miller Road by Morrow Lake, Comstock Township, 4 mi east of Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 27 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 790 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.5 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--February 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 5.23 ft below land-surface datum, Jan. 14, 2004; lowest recorded, 13.42 ft below land-surface datum, Mar. 12, 13, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	10.05	8.12	7.09	6.67	6.34	7.98	9.78	7.49	8.64	9.60	11.46	11.47
10	10.53	8.13	6.80	6.72	6.14	8.11	9.74	7.49	8.48	9.96	11.27	11.54
15	10.93	8.64	6.79	5.30	6.14	8.30	8.52	7.38	7.70	10.32	11.23	11.58
20	10.03	8.73	6.83	5.69	5.72	8.56	8.66	7.42	8.49	10.70	11.62	11.65
25	9.52	8.18	6.99	5.92	6.92	8.73	8.49	8.09	9.10	10.95	11.04	10.58
EOM	8.64	7.61	7.08	6.19	7.35	9.44	7.80	7.99	9.47	11.28	11.36	10.81

WTR YR 2005 HIGHEST 5.23 JAN 14 LOWEST 11.74 SEP 13, 14, 18, 19



GROUND-WATER LEVELS

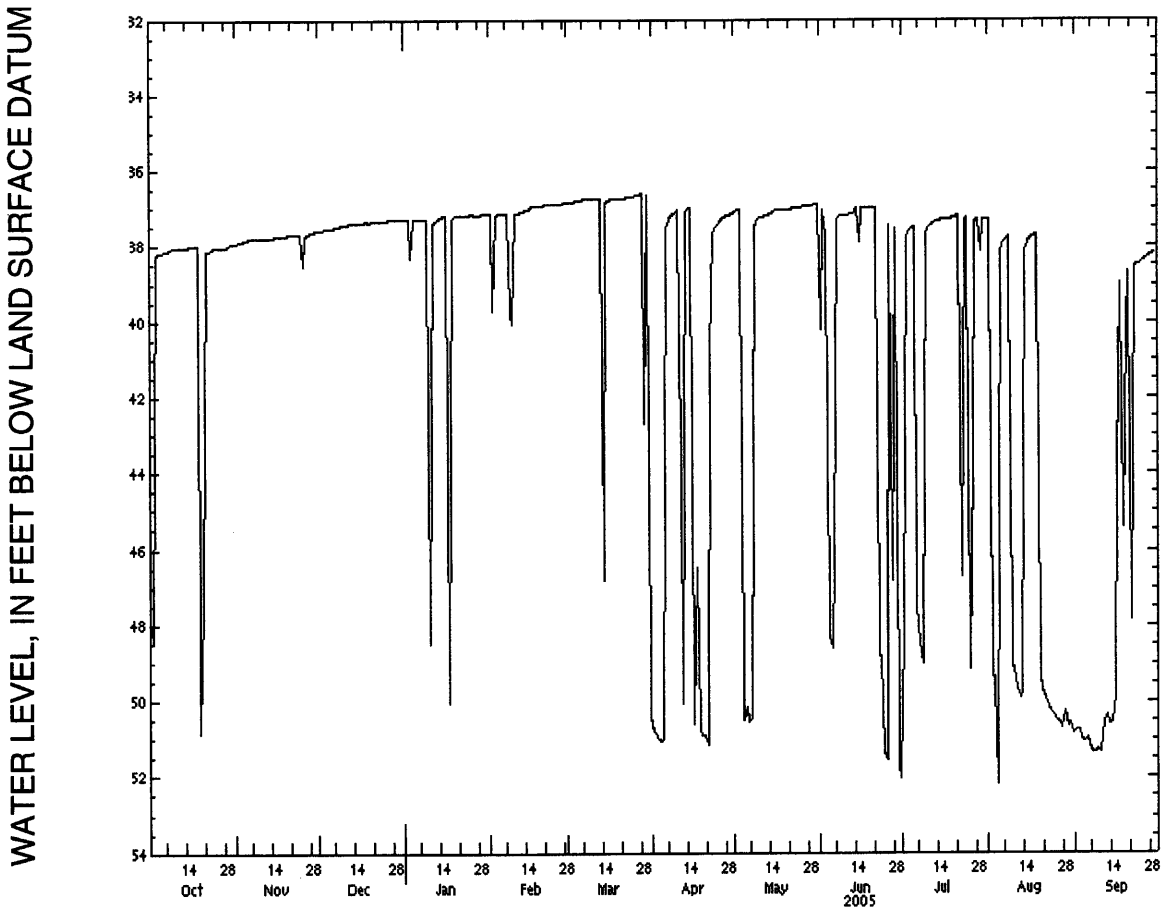
KALAMAZOO COUNTY

421614085354001. Local number, 2S 11W 28AA.
LOCATION.--Lat 42°16'14", long 85°35'40", Hydrologic Unit 04050003, near intersection of Peeler Street and Crosstown Parkway in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 245 ft, screened 235 ft to 245 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 820 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 4.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--August 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 29.0 ft below land-surface datum, May 1988; lowest recorded, 64.63 ft below land-surface datum, July 15, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	38.17	37.81	37.54	37.27	37.14	36.81	51.00	50.15	48.62	37.47	38.16	50.93
10	38.05	37.76	37.43	48.50	37.14	36.73	37.06	37.24	37.16	37.52	49.15	51.32
15	38.00	37.75	37.38	37.19	37.03	36.86	36.98	37.08	37.88	37.28	37.88	49.87
20	47.51	37.68	37.35	37.19	36.92	36.73	50.91	37.02	36.98	37.24	49.72	38.66
25	38.03	38.52	37.33	37.14	36.88	36.67	37.36	36.98	51.53	49.17	50.50	38.39
EOM	37.91	37.60	37.27	37.12	36.83	50.41	37.14	36.88	52.03	37.28	50.82	38.17

WTR YR 2005 HIGHEST 36.60 MAR 28 LOWEST 52.20 AUG 4



GROUND-WATER LEVELS

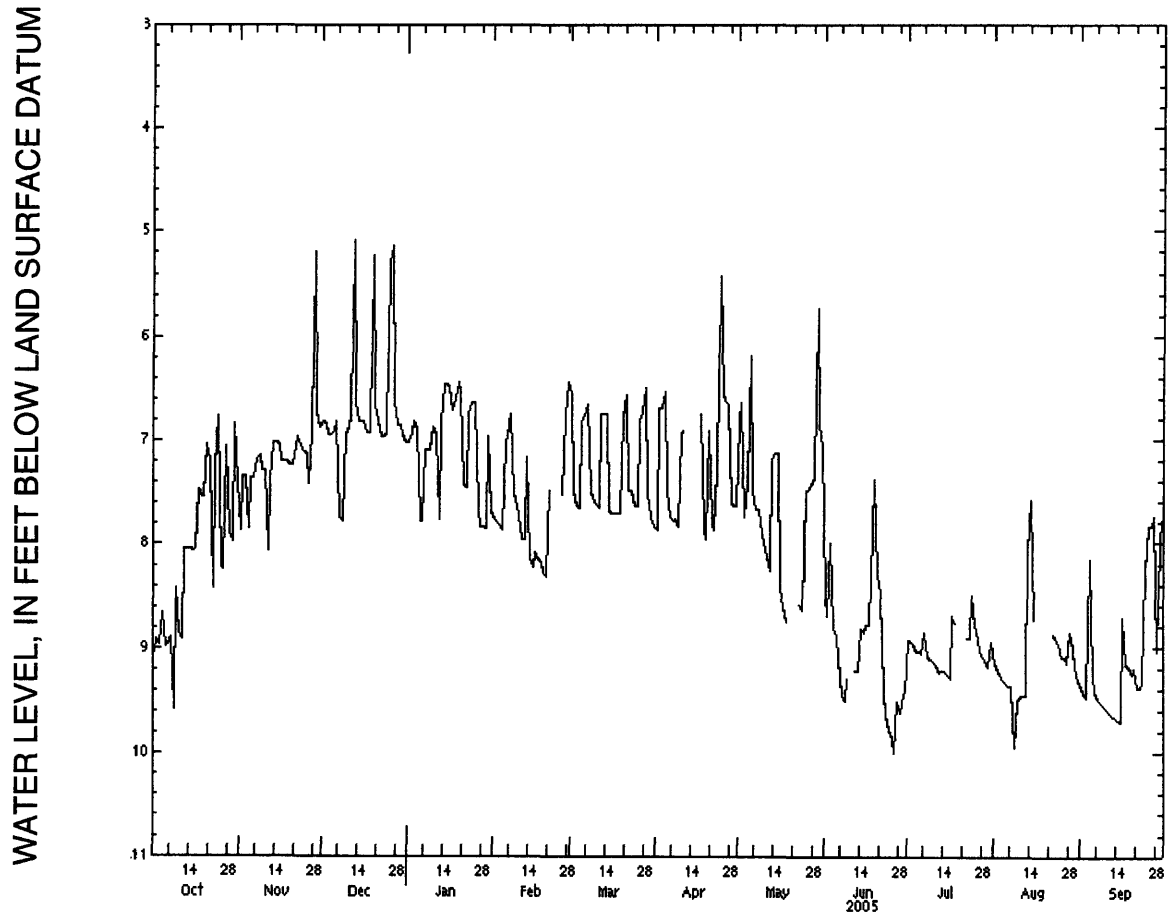
KALAMAZOO COUNTY

421641085350601. Local number, 2S 11W 22CD.
LOCATION.--Lat 42°16'41", long 85°35'06", Hydrologic Unit 04050003, at intersection of Crosstown Parkway and Stockbridge Avenue in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 137 ft, screened 134 ft to 137 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 764.7 ft above sea level. Measuring point: Plywood instrument shelf, 2.6 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--August 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.42 ft below land-surface datum, Feb. 8, 2002; lowest recorded, 31.1 ft below land surface datum, August 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.98	7.35	6.91	7.77	7.02	6.82	7.49	6.19	8.90	9.04	9.35	9.26
10	8.86	7.28	6.92	6.87	7.72	7.61	6.93	7.99	---	9.12	9.47	9.58
15	8.06	7.03	6.82	6.46	8.22	7.68	---	7.13	8.85	9.26	8.75	9.70
20	7.04	7.24	6.65	6.55	8.31	6.79	6.90	---	8.29	---	---	9.20
25	8.20	7.12	5.30	6.63	---	7.63	6.55	7.49	9.85	8.79	9.09	7.83
EOM	7.40	6.87	7.02	7.69	6.43	7.83	7.63	7.05	9.41	8.94	9.31	7.75

WTR YR 2005 HIGHEST 3.82 NOV 30, DEC 26 LOWEST 9.99 JUN 26



GROUND-WATER LEVELS

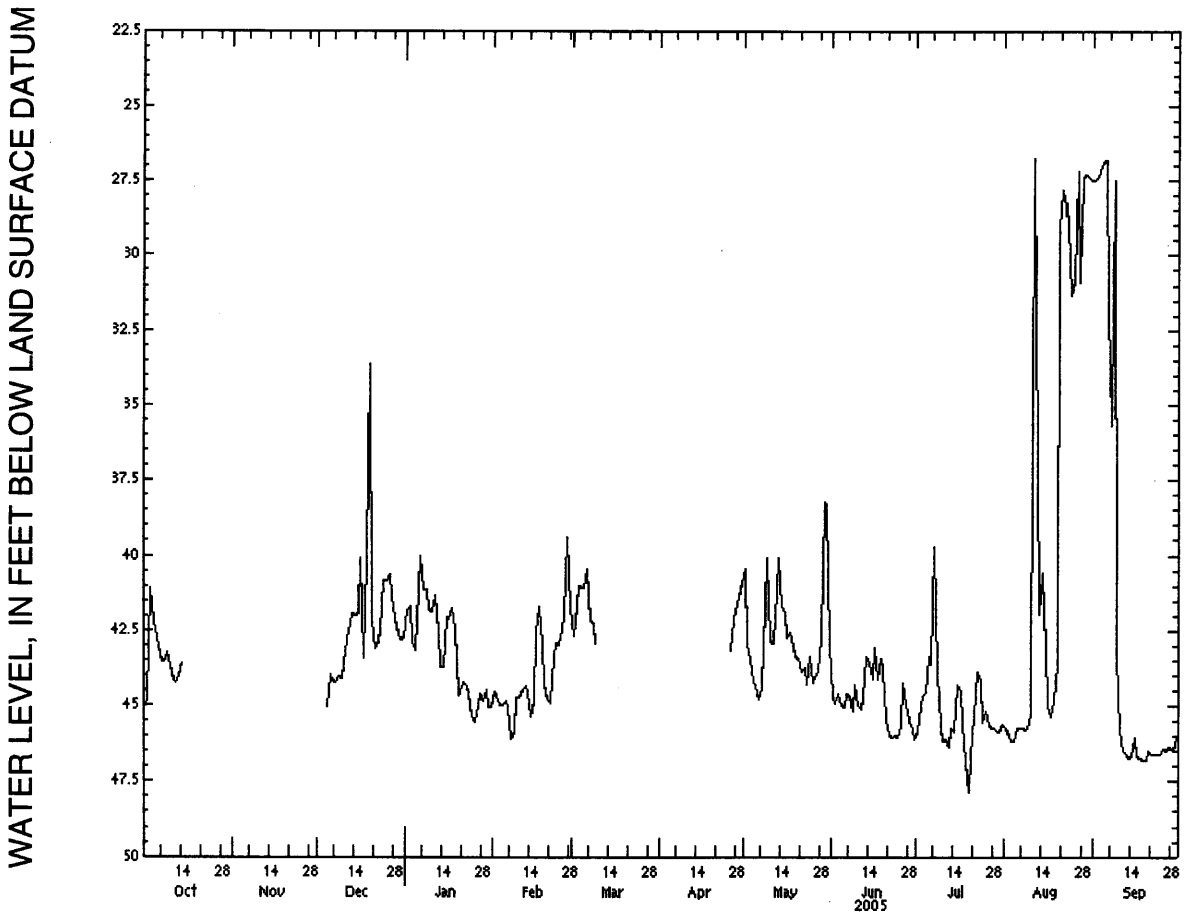
KALAMAZOO COUNTY

421716085373702. Local number, 2S 11W 20BB2.
LOCATION.--Lat 42°17'16", long 85°37'37", Hydrologic Unit 04050003, at intersection of Howard Street and Kendall Street in Kalamazoo Township, in Kalamazoo. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 106 ft, screened 103 ft to 106 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 880 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.3 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.5 ft below land-surface datum, February 1976; lowest recorded, 48.4 ft below land-surface datum, June 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	42.77	---	44.02	41.16	44.85	41.09	---	44.59	45.04	43.35	45.77	26.83
10	43.67	---	43.66	41.92	44.75	---	---	42.91	45.01	46.15	45.19	45.80
15	---	---	41.98	42.07	44.86	---	---	41.87	44.13	44.34	43.07	46.02
20	---	---	42.18	44.58	44.80	---	---	43.44	45.43	46.70	29.10	46.48
25	---	---	40.84	45.55	42.46	---	---	44.24	45.65	45.18	30.85	46.45
EOM	---	---	42.78	45.05	41.75	---	40.89	42.93	46.09	45.62	27.47	45.91

WTR YR 2005 HIGHEST 23.74 MAY 30, AUG 11 LOWEST 47.86 JUL 19



GROUND-WATER LEVELS

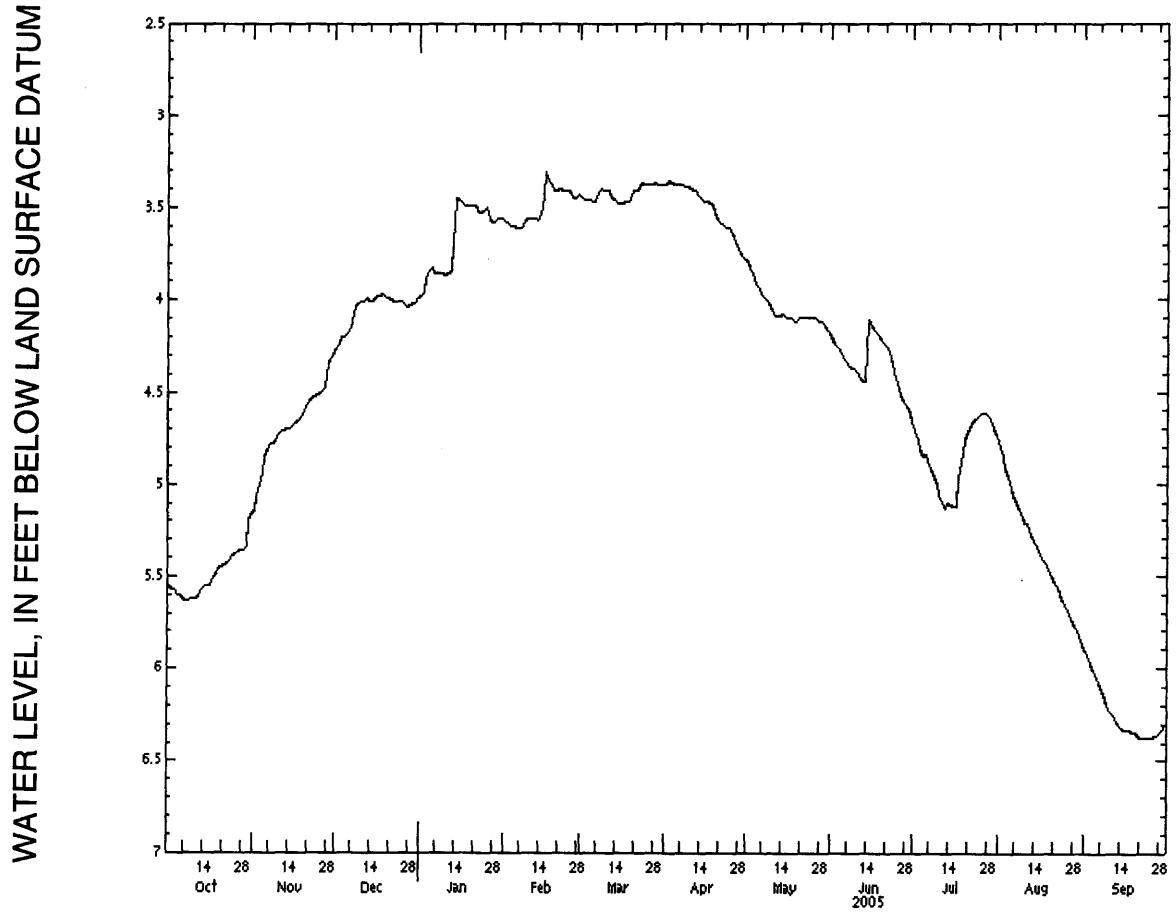
KALAMAZOO COUNTY

421918085283801. Local number, 2S 10W 4D.
LOCATION.--Lat 42°19'18", long 85°28'38", Hydrologic Unit 04050003, at Campbell well field near Campbell Lake, 2 mi east of Eastwood. Owner: City of Kalamazoo.
AQUIFER.--Glacial deposits.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 13 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 836.50 ft above sea level. Measuring point: Plywood instrument shelf, 1.0 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--March 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.9 ft below land-surface datum, April 1974; lowest recorded, 7.51 ft below land-surface datum, Sept. 27 to Oct. 9, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.60	4.85	4.18	3.82	3.61	3.47	3.38	3.94	4.32	4.84	5.02	6.05
10	5.62	4.73	4.01	3.87	3.56	3.41	3.40	4.06	4.39	5.05	5.22	6.23
15	5.55	4.68	4.00	3.46	3.44	3.48	3.47	4.10	4.14	5.12	5.36	6.33
20	5.45	4.58	3.99	3.49	3.41	3.41	3.57	4.10	4.24	4.74	5.50	6.36
25	5.38	4.50	4.01	3.50	3.42	3.38	3.64	4.10	4.48	4.62	5.67	6.37
EOM	5.16	4.30	3.99	3.56	3.43	3.38	3.78	4.18	4.66	4.74	5.88	6.29

WTR YR 2005 HIGHEST 3.28 FEB 15, 16 LOWEST 6.37 SEP 21-25



GROUND-WATER LEVELS

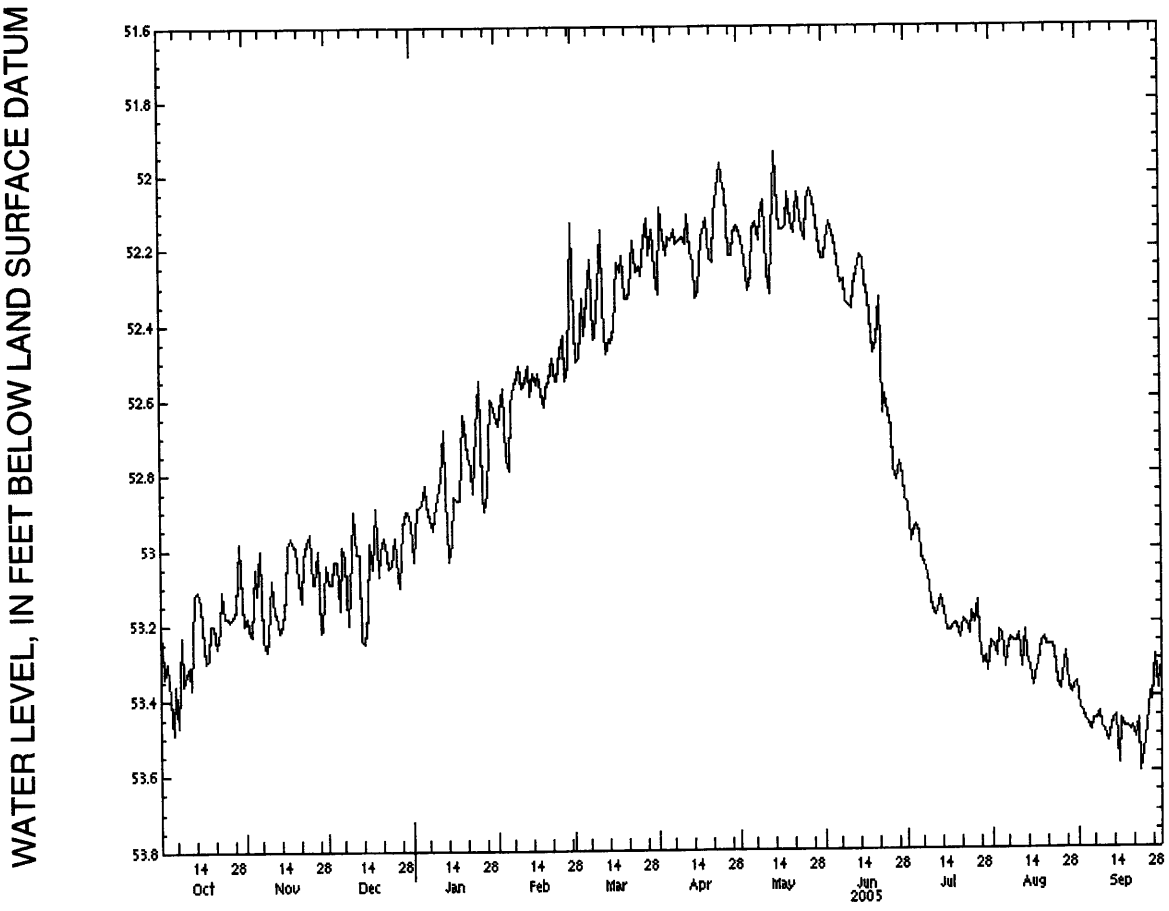
MONROE COUNTY

415206083414401. Local number, 7S 6E 15ACAA.
LOCATION.--Lat 41°52'06", long 83°41'44", Hydrologic Unit 04100002, at Teal Road, 2 mi southeast of Petersburg. Owner: U.S. Geological Survey.
AQUIFER.--Detroit River Group.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 72 ft, cased to 53 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 680 ft above sea level, from topographic map. Measuring point: Top of casing, 2.5 ft above land-surface datum.
REMARKS.--Water-level telemeter at well.
PERIOD OF RECORD.--November 1978 to September 1988 and December 1997 to September 1998 (periodic measurements), October 1988 to September 1991 and October 1998 to current year (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.30 ft below land-surface datum, Mar. 26, 1982; lowest recorded, 53.60 ft below land-surface datum, Sept. 23, 2005.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	53.49	53.12	53.16	52.83	52.79	52.43	52.17	52.27	52.20	52.96	53.32	53.49
10	53.33	53.08	52.90	52.86	52.57	52.30	52.17	52.07	52.35	53.16	53.23	53.49
15	53.14	53.12	53.17	52.98	52.56	52.45	52.33	52.10	52.23	53.22	53.37	53.58
20	53.20	53.08	53.00	52.67	52.55	52.33	52.23	52.13	52.45	53.24	53.26	53.48
25	53.18	53.09	52.97	52.55	52.43	52.25	52.04	52.18	52.68	53.20	53.38	53.48
EOM	53.20	53.04	52.93	52.64	52.13	52.26	52.14	52.23	52.87	53.25	53.36	53.32

WTR YR 2005 HIGHEST 51.84 MAY 23 LOWEST 53.60 SEP 23



GROUND-WATER LEVELS

MONROE COUNTY

415235083414001. Local number, 7S 6E 15ADBB.
LOCATION.--Lat 41°52'35", long 83°41'40", Hydrologic Unit 04100002, at Teal Road, 1.5 mi southeast of Petersburg. Owner: Michigan Department of Natural Resources.
AQUIFER.--Sand.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in, depth 17 ft, screened 14 ft to 17 ft.
INSTRUMENTATION.--Periodic measurements.
DATUM.--Elevation of land-surface datum is 675 ft above sea level, from topographic map. Measuring point: Top of casing, 4.0 ft above land-surface datum.
PERIOD OF RECORD.--December 1965 to September 1991 and February 1998 to June 2002 (periodic measurements), July 2002 to September 2003 (water-level recorder), October 2003 to current year (periodic measurements).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.00 ft below land-surface datum, Feb. 14, 1966; lowest recorded, 9.77 ft below land-surface datum, Dec. 25, 2002 to Jan. 7, 2003.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	9.36	JAN 26	8.03	MAR 15	7.91	MAY 3	8.32	JUL 5	9.00	AUG 30	9.28
DEC 13	9.03										

GROUND-WATER LEVELS

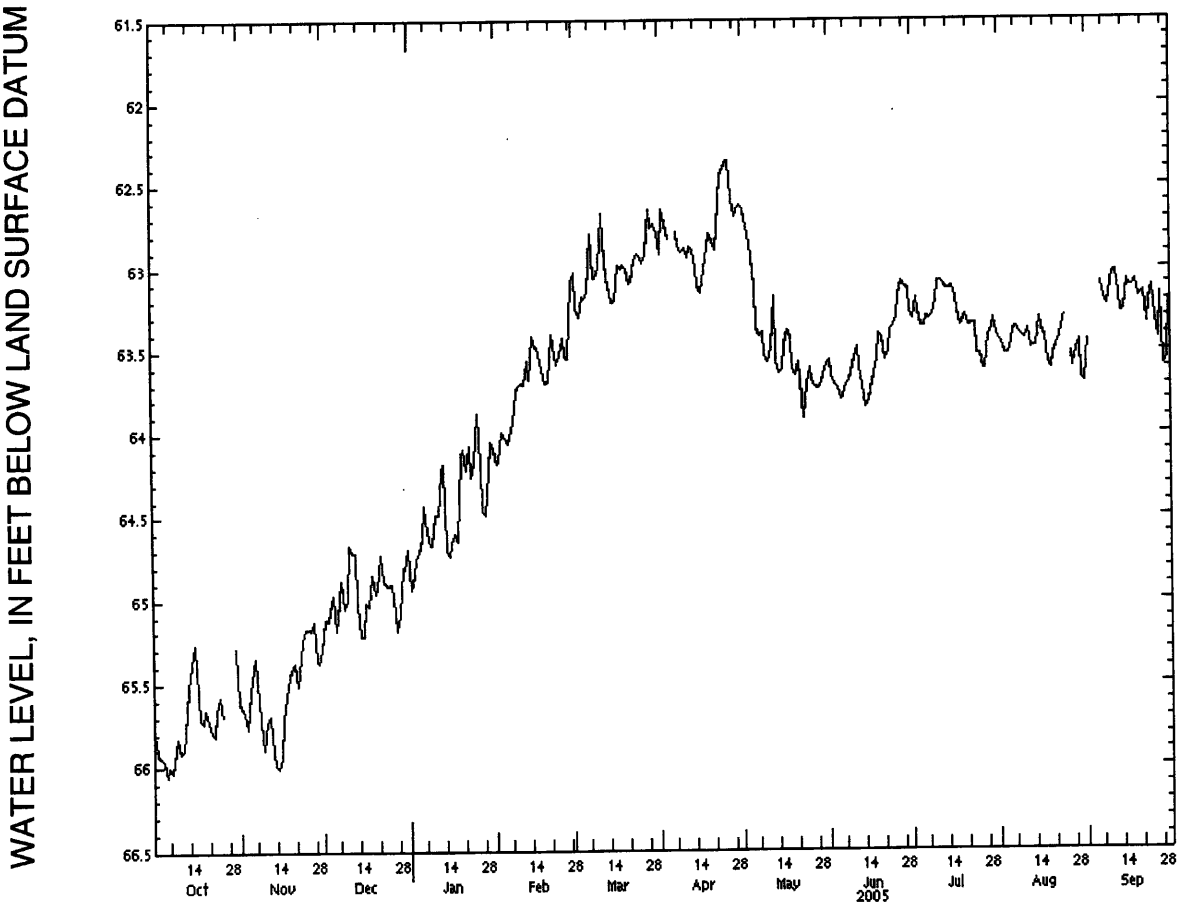
MONROE COUNTY

420414083351501. Local number, 5S 7E 10ABB.
LOCATION.--Lat 42°04'15", long 83°35'17", Hydrologic Unit 04100001, 800 ft southwest from intersection of Darling Road and Tuttle Hill Road, 3.0 mi south of Oakville. Owner: London Township.
AQUIFER.--Silurian-Devonian.
WELL CHARACTERISTICS.--Drilled observation well, diameter 5 in, depth 95 ft, cased to 72 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 665 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.45 ft above land-surface datum.
PERIOD OF RECORD.--December 1990 to July 1994 (periodic measurements), August 1994 to October 1995 and November 2001 to current year (water-level recorder).
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 47.20 ft below land-surface datum, Dec. 1, 1990; lowest recorded, 84.62 ft below land-surface datum, Jan. 16, 2002.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	66.05	65.47	65.18	64.62	64.05	63.19	62.82	63.12	63.79	63.36	63.46	---
10	65.92	65.73	64.66	64.48	63.69	62.99	62.88	63.57	63.55	63.09	63.43	63.04
15	65.26	65.94	65.22	64.73	63.48	63.21	63.11	63.61	63.81	63.12	63.31	63.09
20	65.73	65.37	64.92	64.09	63.68	63.00	62.84	63.65	63.42	63.29	63.52	63.17
25	65.70	65.17	64.90	63.88	63.42	62.94	62.35	63.60	63.30	63.52	---	63.32
EOM	65.61	65.30	64.69	64.09	63.09	62.79	62.62	63.58	63.28	63.41	63.69	63.20

WTR YR 2005 HIGHEST 62.25 APR 25 LOWEST 66.05 OCT 5



GROUND-WATER LEVELS

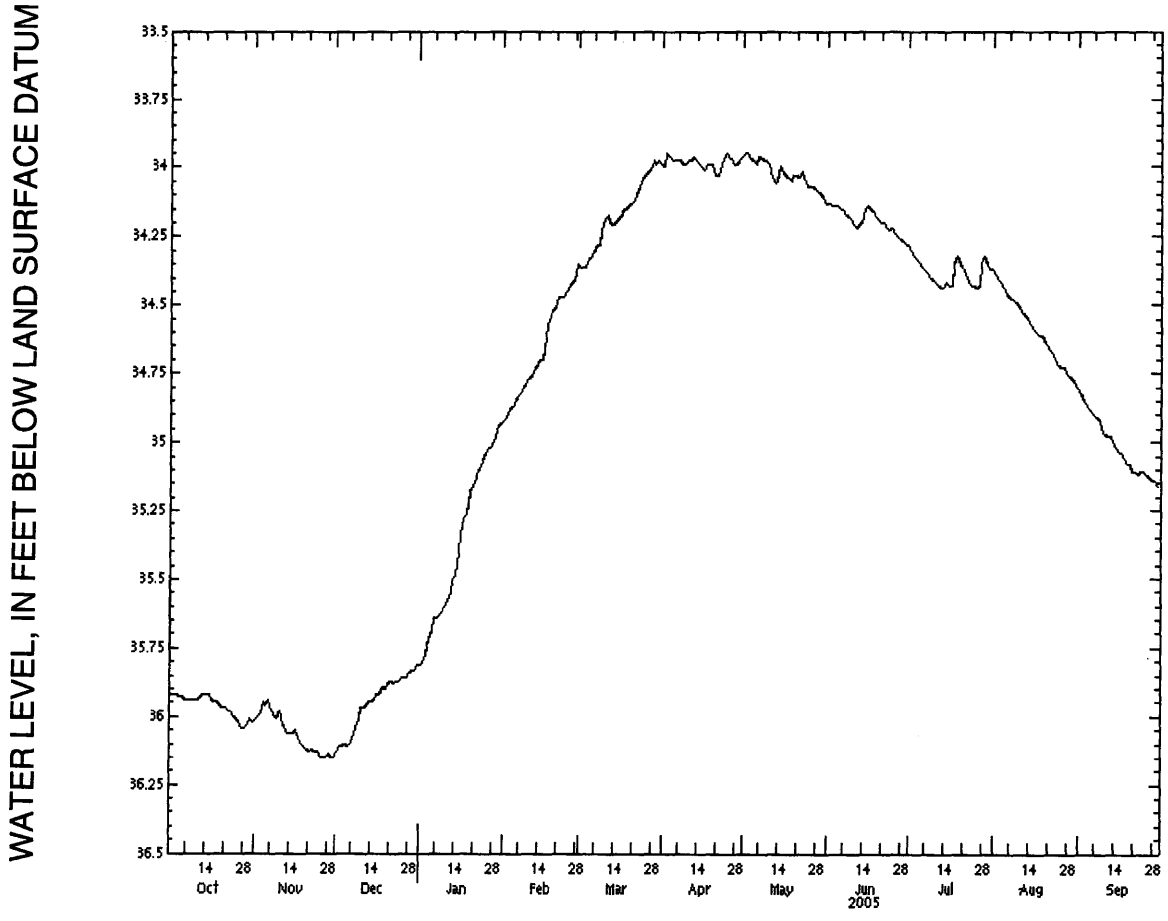
OAKLAND COUNTY

424109083384301. Local number, 3N 7E 5DA.
LOCATION.--Lat 42°41'09", long 83°38'44", Hydrologic Unit 04080203, 150 ft west of Fish Lake Road, 1.2 mi east of Clyde. Owner: American Aggregates Company.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in, depth 49 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1,055 ft above sea level, from topographic map. Measuring point: Top of flange, 3.0 ft above land-surface datum.
PERIOD OF RECORD.--April 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 29.5 ft below land-surface datum, June 1976; lowest recorded, 38.7 ft below land-surface datum, December 1972.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	35.93	35.96	36.11	35.69	34.85	34.33	33.98	33.99	34.15	34.36	34.46	34.89
10	35.94	35.98	35.97	35.60	34.77	34.19	33.98	33.99	34.21	34.42	34.51	34.97
15	35.92	36.06	35.94	35.40	34.70	34.19	34.00	34.02	34.14	34.43	34.59	35.04
20	35.97	36.12	35.88	35.17	34.51	34.13	34.03	34.03	34.20	34.36	34.65	35.11
25	36.01	36.15	35.86	35.04	34.43	34.03	33.97	34.07	34.24	34.44	34.73	35.12
EOM	36.02	36.15	35.81	34.93	34.35	33.99	33.96	34.13	34.28	34.37	34.80	35.16

WTR YR 2005 HIGHEST 33.91 APR 24 LOWEST 36.15 NOV 25, 26, 27, 29, 30



GROUND-WATER LEVELS

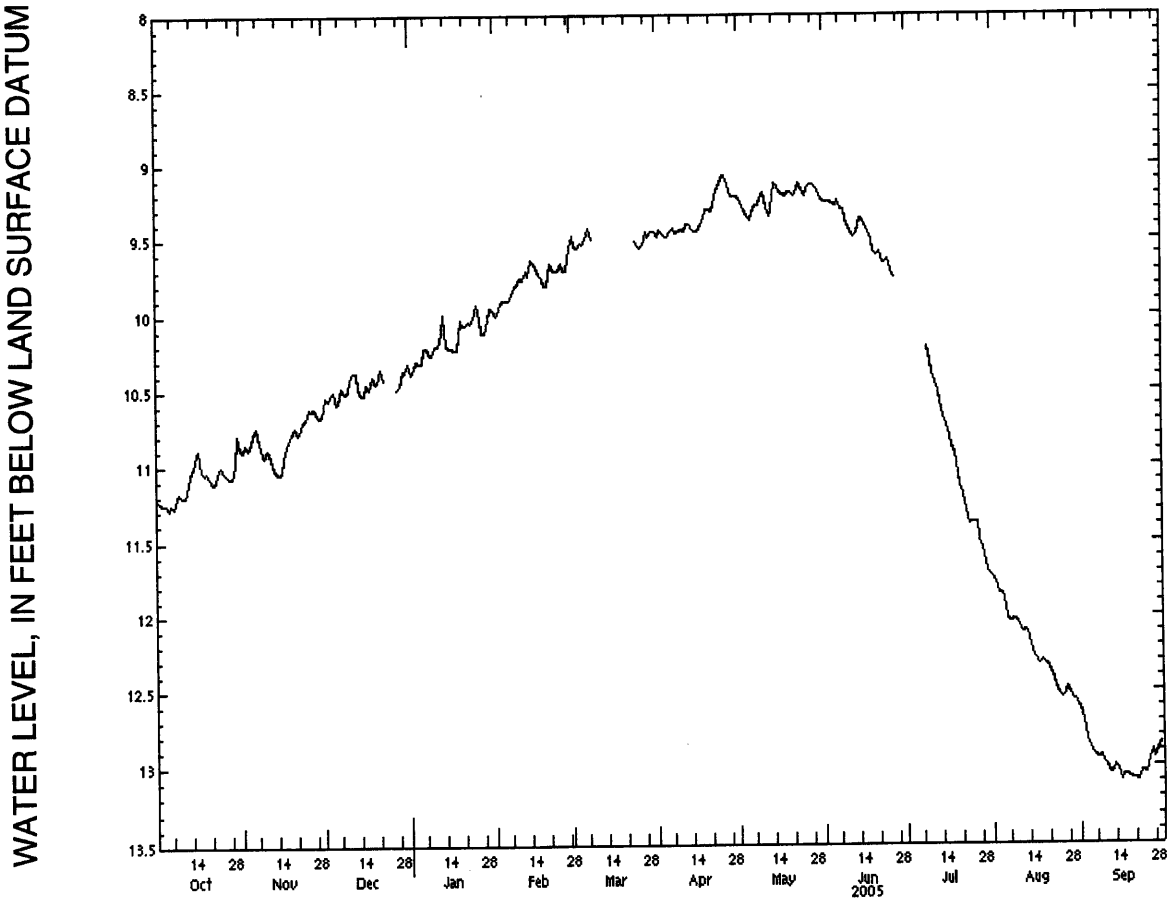
SAGINAW COUNTY

431457084194401. Local number, 10N 1E 22DAD01.
LOCATION.--Lat 43°14'57", long 84°19'44", Hydrologic Unit 04080203, at west side of Merrill Road, 0.35 mi north of Marion Springs. Owner: U.S. Geological Survey.
AQUIFER.--Saginaw Formation.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 210 ft, cased to 170 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 657 ft above sea level, from topographic map. Measuring point: Plywood instrument shelf, 2.5 ft above land-surface datum or top of well casing, 2.12 ft above land-surface datum.
REMARKS.--Water-level telemeter at well.
PERIOD OF RECORD.--December 1977 to September 1991, September 2000 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.93 ft below land-surface datum, Feb. 10, 1981; lowest recorded, 13.09 ft below land-surface datum, Sept. 15, 21, 2005.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.28	10.78	10.59	10.31	9.91	9.53	9.48	9.37	9.27	---	11.94	12.92
10	11.20	10.88	10.41	10.20	9.76	---	9.43	9.18	9.42	10.39	12.08	13.00
15	10.91	11.03	10.53	10.22	9.66	---	9.45	9.15	9.37	10.74	12.27	13.09
20	11.07	10.74	10.44	10.06	9.80	---	9.30	9.18	9.61	11.13	12.33	13.08
25	11.03	10.61	---	9.93	9.66	9.54	9.07	9.21	9.70	11.38	12.55	12.96
EOM	10.89	10.66	10.31	9.97	9.55	9.44	9.21	9.23	---	11.73	12.60	12.85

WTR YR 2005 HIGHEST 9.02 APR 4, 5, MAY 23 LOWEST 13.09 SEP 15, 21



GROUND-WATER LEVELS

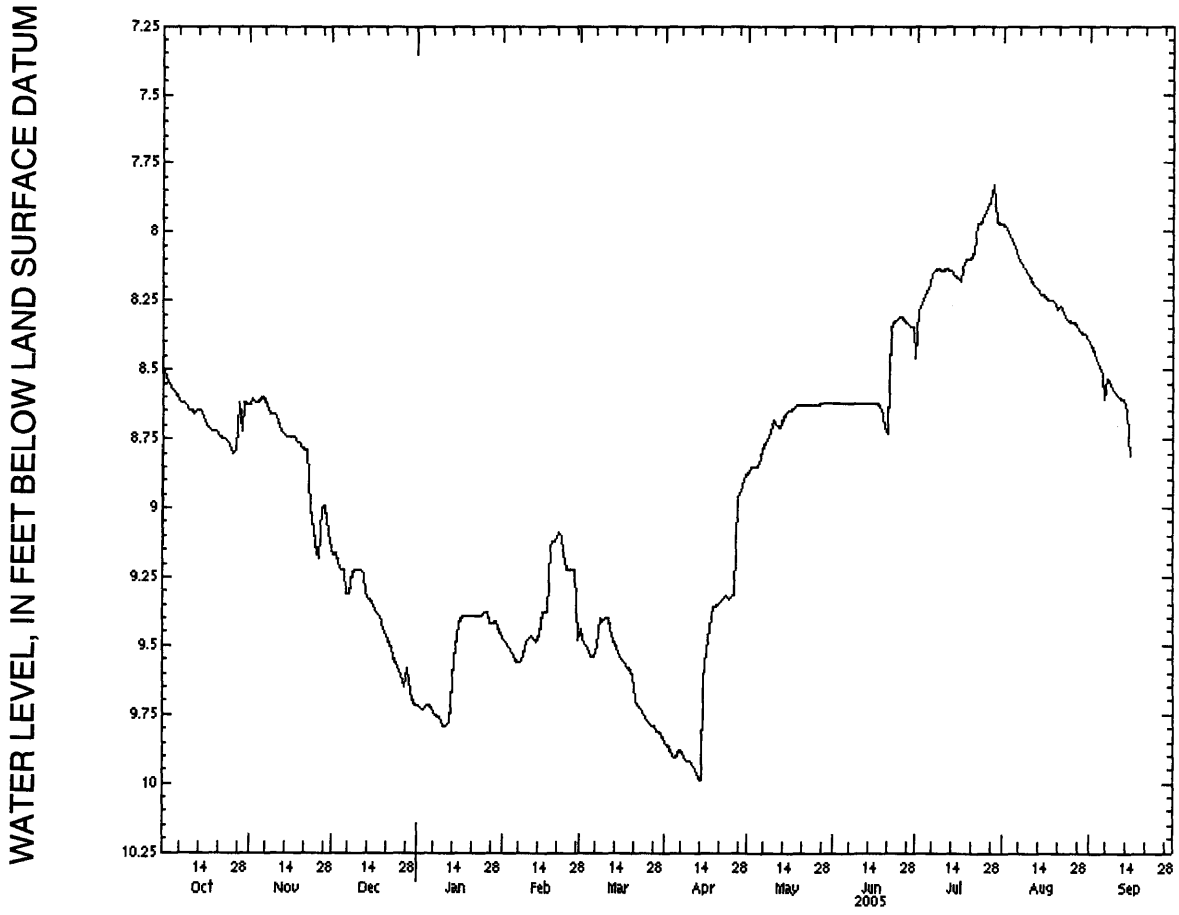
WASHTENAW COUNTY

421322083441301. Local number, 3S 6E 16BCCD.
LOCATION.--Lat 42°13'22", long 83°44'13", Hydrologic Unit 04090005, at Ann Arbor Municipal Airport. Owner: City of Ann Arbor.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 10 in, depth 55 ft, screened 35 ft to 55 ft.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 821.50 ft above sea level. Measuring point: Plywood instrument shelf, 2.5 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.69 ft below land-surface datum, Mar. 10, 1974; lowest recorded, 15.86 ft below land-surface datum, Oct. 18, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.59	8.61	9.22	9.72	9.55	9.54	9.91	8.82	8.62	8.19	8.07	8.51
10	8.65	8.66	9.22	9.79	9.48	9.40	9.92	8.68	8.62	8.14	8.16	8.59
15	8.67	8.74	9.34	9.47	9.38	9.53	9.62	8.65	8.62	8.17	8.23	8.82
20	8.72	8.78	9.45	9.39	9.12	9.61	9.35	8.63	8.73	8.10	8.28	---
25	8.78	9.16	9.59	9.38	9.22	9.77	9.32	8.63	8.31	7.92	8.33	---
EOM	8.63	9.12	9.72	9.46	9.48	9.84	8.88	8.62	8.46	7.97	8.39	---

WTR YR 2005 HIGHEST 7.80 JUL 29 LOWEST 9.99 APR 14



Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter (m)
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic foot per second per day [(ft^3/s)/d]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.233×10^{3}	cubic meter (m^3)
	1.233×10^{-3}	cubic hectometer (hm^3)
	1.233×10^{-6}	cubic kilometer (km^3)
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second (m^3/s)
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton (short)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

°F = (1.8 x °C) + 32

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