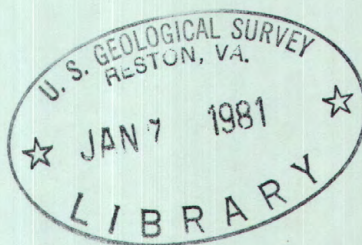


1974

R  
(200)  
Ga 3  
Ohio  
1974  
pt. 2

# Water Resources Data for Ohio

## Part 2. Water Quality Records



**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY**

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



# CALENDAR FOR WATER YEAR 1974

1973

## OCTOBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

## NOVEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

## DECEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

1974

## JANUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

## FEBRUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

## MARCH

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

## APRIL

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

## MAY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

## JUNE

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

## JULY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

## AUGUST

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## SEPTEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					



# 1974

# Water Resources Data

# for

# Ohio

## Part 2. Water Quality Records



**UNITED STATES**  
**DEPARTMENT OF THE INTERIOR**  
**GEOLOGICAL SURVEY**

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



Prepared in cooperation with  
Ohio Department of Natural Resources  
Ohio Environmental Protection Agency  
Miami Conservancy District  
Three Rivers Watershed District  
Corps of Engineers, U.S. Army

Water resources records, 1974, for Ohio are in  
the following reports of the U.S. Geological Survey:

1. Water Resources Data for Ohio  
Part 1. Surface Water Records
2. Water Resources Data for Ohio  
Part 2. Water Quality Records

Copies of this report may be obtained from  
District Chief, Water Resources Division  
U.S. Geological Survey  
975 West Third Avenue  
Columbus, Ohio 43212



## CONTENTS

	Page
List of water-quality stations, in downstream order, for which records are published.....	IV
Introduction.....	1
Cooperation.....	1
Definition of terms.....	2
Special networks and programs.....	9
Downstream order and station number.....	10
Numbering system for wells.....	11
Explanation of water-quality data.....	12
Collection and examination of data.....	12
Solutes.....	14
Temperature.....	14
Sediment.....	15
Water-supply papers.....	16
Selected references.....	16
Water-quality station records.....	22
Analyses of surface-water samples collected at water- quality partial-record stations.....	382
Analyses of ground-water samples.....	426
Analyses of surface-water samples collected at partial- record sediment stations.....	433
Index.....	453

## ----- ILLUSTRATIONS -----

Figure 1. Map showing location of water-quality stations in Ohio.....	Inside back cover
2. System for numbering wells (latitude and longitude).....	11

## ----- TABLES -----

Table 1. Factors for conversion of chemical constituents in milligrams or micrograms per litre to milliequivalents per litre.....	5
2. Factors for conversion of sediment concentra- tion in milligrams per litre to parts per million.....	5
3. Degrees Celsius (°C) to degrees Fahrenheit (°F)	13
4. Water-supply paper numbers and parts, water years 1947-71.....	16
5. Factors for converting English units to International System units (SI) .....	20



IV                    WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER,  
                              FOR WHICH RECORDS ARE PUBLISHED

(Letters after station name designate type of data: (c) chemical,  
(b) biological, (m) microbiological, (t) water temperature,  
and (s) sediment)

OHIO RIVER BASIN

Page

Ohio River:

BEAVER RIVER BASIN

Mahoning River (head of Beaver River):

West Branch Mahoning River near Ravenna (ct).....	22
Mahoning River above Duck Creek at Leavittsburg (ct)....	24
Mahoning River at Ohio-Pennsylvania State line, below Lowellville (ct).....	30

MUSKINGUM RIVER BASIN

Tuscarawas River (head of Muskingum River)

at Navarre (ct).....	36
----------------------	----

Black Fork (head of Walhonding River):

Rocky Fork near Lucas (ct).....	42
Black Fork at Loudonville (ct).....	48

Muskingum River (continuation of Tuscarawas River)

at Conesville (ct).....	54
-------------------------	----

Muskingum River at Dresden (cts).....	60
---------------------------------------	----

Licking River near Newark (ct).....	64
-------------------------------------	----

Licking River below Dillon Dam, near Dillon

Falls (ct).....	70
-----------------	----

Muskingum River at Philo (ct).....	72
------------------------------------	----

Muskingum River at McConnelsville (cbmts).....	78
--	----

HOCKING RIVER BASIN

Hocking River below Athens (ct).....	86
--------------------------------------	----

RACCOON CREEK BASIN

Raccoon Creek:

Sandy Run above Big Four Hollow Creek near

Lake Hope (ct).....	92
---------------------	----

Big Four Hollow Creek near Lake Hope (ct).....	98
--	----

Sandy Run near Lake Hope (ct).....	104
------------------------------------	-----

Raccoon Creek at Adamsville (cts).....	110
--	-----

SCIOTO RIVER BASIN

Scioto River below Shadeville (ct).....	116
---	-----

Scioto River at Chillicothe (ct).....	122
---------------------------------------	-----

Paint Creek:

Rattlesnake Creek near Centerfield (ct).....	128
--	-----

Scioto River at Higby (cts).....	130
----------------------------------	-----

Salt Creek above damsite near Londonderry (t).....	138
--	-----

Scioto River at Lucasville (ct).....	140
--------------------------------------	-----

UPPER TWIN CREEK BASIN

Upper Twin Creek at McGaw (cmts).....	143
---------------------------------------	-----



## WATER-QUALITY STATIONS IN DOWNSTREAM ORDER

V

OHIO RIVER BASIN--Continued	Page
Ohio River--Continued	
LITTLE MIAMI RIVER BASIN	
Little Miami River near Spring Valley (ct).....	148
Caesar Creek at Harveysburg (ct).....	154
Little Miami River at Miamiville (ct).....	158
East Fork Little Miami River near Willamsburg (ct)....	164
GREAT MIAMI RIVER BASIN	
Great Miami River at Sidney (cts).....	168
Loramie Creek near Newport (ts).....	172
Great Miami River near Taylorsville Dam, at Taylorsville (c).....	175
Stillwater River at Pleasant Hill (s).....	176
Stillwater River at Englewood (c).....	179
Mad River:	
Buck Creek at New Moorefield (ct).....	180
Mad River near Dayton (ct).....	184
Great Miami River at West Carrollton (c).....	189
Great Miami River near Miamisburg (ct).....	190
Twin Creek at Germantown (c).....	196
Great Miami River at Middletown (c).....	197
Great Miami River near Middletown (c).....	198
Great Miami River at Hamilton (t).....	199
Great Miami River near Hamilton (c).....	201
Great Miami River at New Baltimore (ct).....	202
Great Miami River at Elizabethtown (ct).....	208
<u>ST. LAWRENCE RIVER BASIN</u>	
STREAMS TRIBUTARY TO LAKE ERIE	
Maumee River at Defiance (ct).....	212
Tiffin River at Evansport (ct).....	218
Auglaize River near Fort Jennings (cts).....	224
Ottawa River at Allentown (ct).....	230
Auglaize River at Cloverdale (ct).....	234
Blanchard River near Findlay (cts).....	240
Auglaize River near Defiance (cts).....	246
Maumee River at Waterville (cbmts).....	252
Maumee River at Toledo Overseas Terminal Dock, at Toledo (c).....	262
Maumee River at mouth, at U.S. Coast Guard Station at Toledo (ct).....	264
Maumee River at Center C. and D. Railroad Dock, at Toledo (c).....	270

## VI

## WATER-QUALITY STATIONS IN DOWNSTREAM ORDER

ST. LAWRENCE RIVER BASIN--Continued	Page
STREAMS TRIBUTARY TO LAKE ERIE--Continued	
Portage River:	
Middle Branch Portage River near Portage (ct).....	272
Portage River at Railroad Bridge, at Woodville (ct).....	276
Sandusky River near Upper Sandusky (ct).....	282
Tymochtee Creek at Crawford (cts).....	288
Sandusky River at St. Johns bridge, near Mexico (ct)....	294
Sandusky River below Fremont (ct).....	300
Huron River:	
West Branch Huron River near Willard (ct).....	306
Huron River below Milan (ct).....	310
Vermilion River near Vermilion (cts).....	316
Black River:	
East Branch Black River at Grafton (ct).....	320
West Branch Black River near Elyria (ct).....	324
Black River below Elyria (ct).....	328
Rocky River near Berea (cs).....	333
Cuyahoga River at Old Portage (cts).....	336
Tinkers Creek at Bedford (cs).....	344
Cuyahoga River at Independence (cbmts).....	348
Cuyahoga River at Dupont Intake, in Cleveland (c).....	358
Cuyahoga River at West Third Street bridge, in Cleveland (ct).....	360
Chagrin River at Willoughby (cs).....	366
Grand River at Painesville (ct).....	370
Ashtabula River at Ashtabula (ct).....	376
Analyses of samples collected at water-quality partial-record stations in Ohio River basin.....	382
Analyses of samples collected at water-quality partial-record stations in St. Lawrence River basin.....	416
Chemical analyses of ground water.....	426
Sediment partial-record stations in Ohio River basin....	433
Sediment partial-record stations in St. Lawrence River basin.....	448
Index.....	453



# WATER RESOURCES DATA FOR OHIO, 1974

## Part 2. Water Quality Records

### INTRODUCTION

Water resources data for the 1974 water year for Ohio include records of data for the chemical and physical characteristics of surface- and ground water. Water-quality data on chemical, physical, and biological characteristics of surface and ground water were collected from designated sampling sites at predetermined intervals such as once daily, weekly, monthly or less frequently, and at some sites data were recorded continuously either on a strip chart or on punched paper tape at 60-minute intervals. Records are given for 292 sampling stations of which 58 are continuous record stations, and 218 are partial-record stations. Records of chemical analyses also are given for 16 ground-water sites. Locations of surface water-quality stations, excluding partial-record stations are shown in figure 1. The records were collected by the Water Resources Division of the U.S. Geological Survey under the direction of J. J. Molloy, district chief, succeeded by James F. Blakey. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Ohio.

The Geological Survey has published records of chemical quality, water temperatures, and sediment since 1941 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Beginning with the 1964 water year, water-quality records have been released by the Geological Survey in annual reports on a State-boundary basis. These reports are for limited distribution and are designed primarily for rapid release of data shortly after the end of the water year. These records will be published later in Geological Survey water-supply papers.

### COOPERATION

This report was prepared by the U.S. Geological Survey under cooperative agreements with the following organizations:

Ohio Department of Natural Resources, W. B. Nye,  
director, and H. R. Collins, Chief, Division of Geological  
Survey.

Ohio Environmental Protection Agency, I. L. Whitman,  
director, and Ernie Neal, chief, Division of Surveillance.

Miami Conservancy District, L. B. Coy, general manager  
and secretary.

## WATER RESOURCES DATA FOR OHIO, 1974

Three Rivers Watershed District, G. H. Watkins,  
secretary-treasurer.

Agencies furnishing assistance were:

Corps of Engineers, U.S. Army.

## DEFINITION OF TERMS

Terms related to water-quality and hydrologic data, as used in this report are defined below. See also table for converting English units to International System of units (S ) on page

Bacteria are microscopic unicellular organisms, typically spherical, rod-like, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, 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.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C  $\pm$  1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 ml of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C  $\pm$  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.

Fecal streptococcal bacteria are bacteria found also in the intestine of warmblooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C  $\pm$  1.0°C



on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 ml of sample.

Bed material is the shifting portion of fragmented alluvial material of which the streambed is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per litre, used 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 the weight per unit area or volume of habitat.

Ash weight is the weight or amount of residue present after the residue from the dry weight determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash weight values of zooplankton and phytoplankton are expressed in g/m<sup>3</sup> (grams per cubic metre), and periphyton and benthic organisms in g/m<sup>2</sup> (grams per square metre).

Cfs-day 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, or about 646,000 gallons or 2,445 cubic metres. It represents a runoff of approximately 0.0372 inches from 1 square mile or 0.3468 millimetre from 1 square kilometre.

Chemical oxygen demand (COD) indicates the quantity of oxidizable compounds in water and varies with water composition(s), temperature, period of contact, and other factors.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Continuing record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.
2. When water temperature records include observations taken once or more times daily.
3. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

## WATER RESOURCES DATA FOR OHIO, 1974

Cubic foot per second (CFS,cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic metres per second.

Discharge is the volume of water (or more broadly, total fluids) that passes a given point within a given period of time.

Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a given time.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ( $\text{CaCO}_3$ ).

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per litre (UG/L,ug/l) is a unit expressing the concentration of chemical constituents in solution as weight (micrograms) of solute per unit volume (litre) of water. One thousand micrograms per litre is equivalent to one milligram per litre.

Milligrams per litre (MG/L,mg/l) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per litre represents the weight of solute per unit volume of



Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per litre to milliequivalents per litre.

<u>Ion</u>	<u>Multi- ply_by</u>	<u>Ion</u>	<u>Multi- ply_by</u>
Aluminum ( $\text{Al}^{+3}$ )*...	0.11119	Hydroxide ( $\text{OH}^{-1}$ )..	0.05880
Ammonia as $\text{NH}^{+1}$ ...	.05544	Iodide ( $\text{I}^{-1}$ ).....	.00788
Arsenic ( $\text{As}^{+3}$ ).....	.04004	Iron ( $\text{Fe}^{+3}$ )*.....	.05372
Barium ( $\text{Ba}^{+2}$ ).....	.01456	Lead ( $\text{Pb}^{+2}$ )*.....	.00965
Bicarbonate ( $\text{HCO}_3^{-1}$ )	.01639	Lithium ( $\text{Li}^{+1}$ )*...	.14411
Bromide ( $\text{Br}^{-1}$ ).....	.01251	Magnesium ( $\text{Mg}^{+2}$ )..	.08226
Cadmium ( $\text{Cd}^{+2}$ ).....	.01779	Manganese ( $\text{Mn}^{+2}$ )*.	.03640
Calcium ( $\text{Ca}^{+2}$ ).....	.04990	Nickel ( $\text{Ni}^{+2}$ )*....	.03406
Carbonate ( $\text{CO}_3^{-2}$ )..	.03333	Nitrate ( $\text{NO}_3^{-1}$ )...	.01613
Chloride ( $\text{Cl}^{-1}$ )....	.02821	Nitrite ( $\text{NO}_2^{-1}$ )...	.02174
Chromium ( $\text{Cr}^{+6}$ )*...	.11539	Phosphate ( $\text{PO}_4^{-3}$ )..	.03159
Cobalt ( $\text{Co}^{+2}$ )*.....	.03394	Potassium ( $\text{K}^{+1}$ )...	.02557
Copper ( $\text{Cu}^{+2}$ )*.....	.03148	Sodium ( $\text{Na}^{+1}$ ).....	.04350
Cyanide ( $\text{CN}^{-1}$ ).....	.03844	Strontium ( $\text{Sr}^{+2}$ )*.	.02283
Fluoride ( $\text{F}^{-1}$ ).....	.05264	Sulfate ( $\text{SO}_4^{-2}$ )...	.02082
Hydrogen ( $\text{H}^{+1}$ ).....	.99209	Zinc ( $\text{Zn}^{+2}$ )*.....	.03060

\*Constituent reported in micrograms per litre; multiply by factor and divide results by 1,000.

Table 2.--Factors for conversion of sediment concentration in milligrams per litre to parts per million\*  
(All values calculated to three significant figures)

Range of concentration in 1000 mg/l	Di- vide by	Range of concentration in 1000 mg/l	Di- vide by	Range of concentration in 1000 mg/l	Di- vide by	Range of concentration in 1000 mg/l	Di- vide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170 -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

\*Based on water density of 1.000 g/ml and a specific gravity of sediment of 2.65.

## WATER RESOURCES DATA FOR OHIO, 1974

water. Milligrams or micrograms per litre may be converted to milliequivalents (one-thousandth of a gram-equivalent weight of a constituent) per litre by multiplying by the factors in table 1, page 5. Concentration of suspended sediment also is expressed in mg/l, and is based on the weight of sediment per litre of water-sediment mixture. Sediment concentrations may be converted to parts per million by using the factors in table 2, page 5.

Odor is reported in terms of the threshold number which is the dilution ratio at which odor is just detectable.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multi-celled and are counted according to the number of contained cells per sample volume, usually millilitres (ml) or litres (l).

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 metres (m<sup>2</sup>), acres, or hectares. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Partial-record station is a particular site where limited streamflow or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimetres (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemical dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, used in this report agrees with recommendations 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.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material 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.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually 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 are commonly known as algae.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it 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 influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time. It is computed by multiplying discharge times mg/l times 0.0027.

Total sediment discharge or total sediment load is the sum of the suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured



by dry weight or by volume, that is discharged during a given time.

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 ft above the bed) expressed as milligrams of dry sediment per litre of water sediment mixture (mg/l).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimetre at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per litre) is about 65 percent of the specific conductance (in micromhos per cm at 25°C). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

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." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph or a digital mechanism that automatically records water temperature on paper tape.

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 that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the water year.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Turbidity is the reduction of transparency of a liquid due to the presence of suspended particulate matter.

#### SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network is an accounting network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated in the network design. Areal configuration of the network is based on river-basin accounting units designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of water-quality conditions nationwide on a year-to-year basis and (2) to detect and assess long-term changes in stream quality.

Pesticide program is a network of regularly sampled water-quality stations where additional monthly samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

Pesticides are chemical compounds used to control the growth of undesirable plants and animals. Major categories of pesticides includes insecticides, miticides, fungicides, herbicides, and rodenticides. Since the first application of DDT as an insecticide in the early 1930's, there have been almost 60,000 pesticide formulations registered, each containing at least one of the approximately 800 different basic pesticide compounds. The United States annually produces about 1 billion pounds of these compounds. Although efforts are being made to substitute many of the chlorinated hydrocarbon pesticides with more specific, fast-

acting, and easily degradable compounds, chlorinated hydrocarbon pesticides are still commonly used in many areas of the country.

Radiochemical program is a network of regularly sampled water-quality stations where additional samples are collected twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Radioisotopes are isotope forms of an element 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 35 and 37, with the natural mixture having atomic weight 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 (Rose, 1966). There are 275 isotopes of the 81 stable elements in addition to over 800 radioactive isotopes.

Radioisotopes that are determined in this program are natural uranium in ug/l (micrograms per litre), radium as radium - 226 in PC/L, (pCi/l, picocuries per litre), gross beta radiation as equivalent strontium/yttrium-90 or cesium-137 in PC/L, and gross alpha radiation as micrograms of uranium equivalent per litre (ug/l). Gross alpha and beta radioactivity associated with the fine grained (silt and clay sized) sediments in the samples are also determined.

A picocurie (PC,pCi) is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

#### DOWNSTREAM ORDER AND STATION NUMBER

Stations are listed in downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the list of water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.



As an added means of identification, each water-quality station, gaging station, and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record and continuous-record stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 03276600 which appears just to left of the station name includes the two-digit part number "03" plus the six-digit downstream order number "276600". In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 3 (Ohio River basin) and Part 4 (St. Lawrence River basin). All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

#### NUMBERING SYSTEM FOR WELLS

The well numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well 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, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits is a sequential number for wells within a 1-second grid. See figure 2.

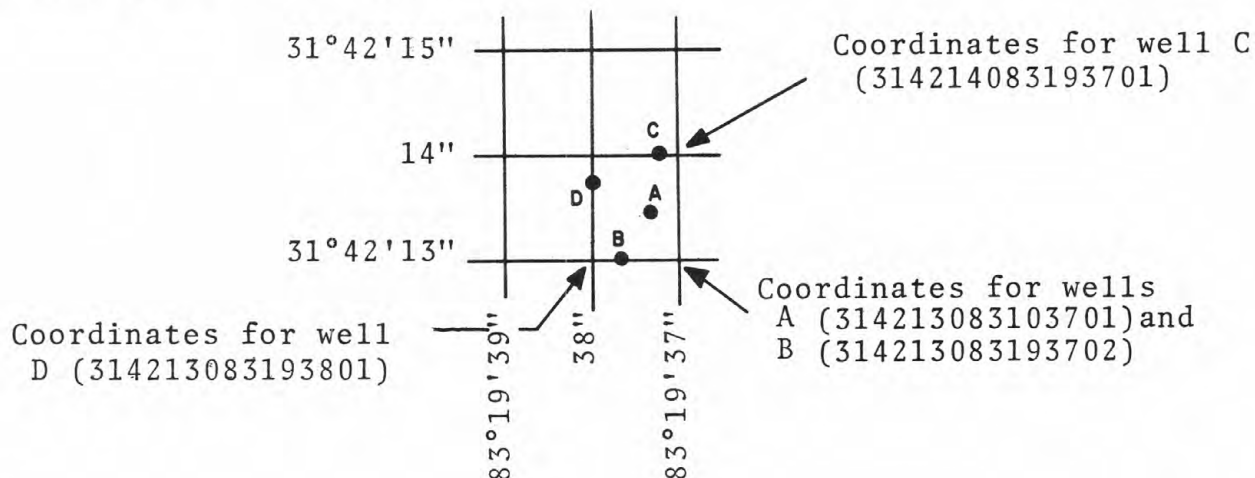


Figure 2.--System for numbering wells  
(latitude and longitude)

## WATER QUALITY RECORDS, 1974

## EXPLANATION OF WATER QUALITY DATA

## Collection and examination of data

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads. Discharge records for streams in Ohio have been released in the report, "Water Resources Data for Ohio, 1974, Part 1. Surface Water Records."

The data in this report include a description of the sampling station and tabulations of the samples analyzed. The description of the sampling station gives the location, drainage area, periods of record for the various water-quality data, extremes of the pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations. For ground-water sampling stations, no descriptive statements are given. However, the well number, depth of well, date of sampling, and/or other pertinent data are given in the table containing the chemical analyses of ground water.

Water-quality information is presented for chemical, biological, and microbiological quality, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, specific conductance, and pH. The biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder (thermograph) furnishes information from which daily minimums and maximums are obtained. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the U.S. Geological Survey began reporting data for chemical constituents and concentrations of suspended sediment in milligrams per litre (mg/l), and water temperatures in degrees Celsius (°C). In waters with a density of 1.000 g/ml (grams per millilitre), parts per million and milligrams per litre can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million

should be multiplied by the density to convert to milligrams per liter. Temperature reported in degrees Celsius may be converted to degrees Fahrenheit by using the table below.

In October 1968 the Geological Survey began reporting many of the chemical constituents as well as the minor elements in micrograms per litre instead of milligrams per litre. (See "Definitions of Terms," p. 4 and table for converting English units to SI units, p. 20).

Table 3.--Degrees Celsius ( $^{\circ}\text{C}$ ) to degrees Fahrenheit ( $^{\circ}\text{F}$ )\*  
(Temperature reported to nearest  $0.5^{\circ}\text{C}$ )

$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

\* $^{\circ}\text{C}$   $5/9$  ( $^{\circ}\text{F} - 32$ ) or  $^{\circ}\text{F}$   $9/5$  ( $^{\circ}\text{C}$ )  $+ 32$ .



### Solutes

Most methods for collecting and analyzing water samples to determine the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman. The method for determining elemental constituents by emission spectrographic techniques is described by Barnett and Mallory. Analysis of pesticides, herbicides, and organic substances in water are described by Goerlitz and Lamar, Larmar, Goerlitz, and Law, and Goerlitz and Brown. The collection and analysis of aquatic, biological and microbiological samples are described by Slack and others.

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 widely with different rates of water discharge, depending on the source of material and the turbulence and the mixing of the stream. Some streams must be sampled through several vertical sections 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 the 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 noncontinuous-digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey district office at the address given on the back of the title page of this report.

Ground water normally does not change significantly during short periods of time; infrequent sampling and analysis of ground water adequately defines ground-water quality at a given site. Water samples from wells are analyzed individually.

### Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of

discharge measurements for surface-water stations. For daily stations, the water temperatures are taken at about the same time each day when the sample is collected. 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 continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and the monthly extremes.

### 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 sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the sub-divided 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 sub-divided day method. For periods when no samples were collected, daily loads 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 were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

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

## WATER QUALITY RECORDS, 1974

## WATER-SUPPLY PAPERS

The annual series of water-supply papers that give information on quality of surface waters in Ohio are shown in the following table.

Table 4.--Water-supply paper numbers and parts,  
water years 1941-71

<u>Water year</u>	<u>WSP No.</u>	<u>Water year</u>	<u>Parts 3-4</u>	<u>WSP No.</u>
1941	942	1958	-----	1571
1942	950	1959	-----	1642
1943	970	1960	-----	1742
1944	1022	1961	-----	1882
1945	1030	1962	-----	1942
1946	1050	1963	-----	1948
1947	1102	1964	-----	1955
1948	1132	1965	-----	1962
1949	1162	1966	-----	1992
1950	1186	1967	-----	2012
1951	1197	1968	Part 3	2093
1952	1251		Part 4	2094
1953	1290	1969	Part 3	2143
1954	1350		Part 4	2144
1955	1400	A1970	Part 3	A2153
1956	1451		Part 4	2154
1957	1520	1971	Part 3	B2163
			Part 4	B2164

A In press

B In preparation

## SELECTED REFERENCES

American Public Health Association, and others 1971, Standard methods for the examination of water and wastewater, 13th ed.: Am. Public Health Assoc., New York, 874 p.

Barker, F. B., and Johnson, J. O., 1964, Determination of radium in water: U.S. Geological Survey Water-Supply Paper 1969-B, 29 p.

Barker, F. B., and others, 1965, Determination of uranium in natural water: U.S. Geol. Survey Water-Supply Paper 1969-C, 25 p.

Barker, F. B., and Robinson, B. P., 1963, Determination of beta



activity in water: U.S. Geol. Survey Water-Supply Paper 1696-A, 32 p.

Barnett, P. R., and Mallory, Jr., E. C., 1971, Determination of minor elements in water by emission spectroscopy: U.S. Geol. Survey Techniques of Water Resources Inv., book 5, chap. A2, 31 p.

Brown, Eugene, Skougstad, M. W., and Fishman, M. J., 1970, Methods for collection and analysis of water samples for dissolved minerals and gases: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. A1, 160 p.

Colby, B. R., 1963, Fluvial sediments--a summary of source, transportation, deposition, and measurement of sediment discharge: U.S. Geol. Survey Bull. 1181-A, 47 p.

Colby, B. R., and Hembree, C. H., 1955, Computations of total sediment discharge, Niobrara River near Cody, Nebraska: U.S. Geol. Survey Water-Supply Paper 1357, 187 p.

Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geol. Survey Water-Supply Paper 1593, 17 p.

Goerlitz, D. F., and Brown, Eugene, 1972, Methods for analysis of organic substances in water: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5 chap. A3, 40 p.

Goerlitz, D. F., and Lamar, W. L., 1967, Determination of phenoxy acid herbicides in water by electron-capture and microcoulometric gas chromatography: U.S. Geol. Survey Water-Supply Paper 1817-C, 21 p.

Guy, H. R., 1969, Laboratory theory and methods for sediment analysis: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. C1, 58 p.

---- 1970, Fluvial sediment concepts: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. C1, 55 p.

Guy, H. P., and Norman, V. W., 1970, Field methods for measurement of fluvial sediment: U.S. Geol. Survey Techniques of Water-Resources Inv., book 3, chap. C2, 59 p.

- Hem, J. D., 1970, Study and interpretation of the chemical characteristics of natural water, 2d ed.: U.S. Geol. Survey Water-Supply Paper 1473, 363 p.
- Lamar, W. L. Goerlitz, D. F., and Law, L. M., 1965, Identification and measurement of chlorinated organic pesticides in water by electron-capture gas chromatography: U.S. Geol. Survey Water-Supply Paper 1817-B, 12 p.
- Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.
- Lohman, S. W., and others, 1972, Definitions of selected ground-water terms--revisions and conceptual refinements: U.S. Geol. Survey Water-Supply Paper 1988, p. 2.
- Porterfield, George, 1972, Computations of fluvial-sediment discharge: U.S. Geol. Survey Techniques of Water Resources Inv., book 3, chap. C3, 66 p.
- Ritter, J. R., and Helley, E. J., 1969, Optical method for determining particle sizes of coarse sediment: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. C3, 33 p (open file).
- Rose, Arthur and Elizabeth, 1966, The condensed chemical dictionary: Reinhold Pub. Corp., New York, 7th ed., p. 257.
- Slack, K. V., and others, 1973, Methods for collection and analysis of aquatic, biological and microbiological samples: U.S. Geol. Survey Techniques of Water Resources Inv., book 5, chap. A-4, 165 p.
- U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.
- 1941, Methods of analyzing sediment samples: Rept. 4.
- 1953, Accuracy of sediment size analyses made by the bottom-withdrawal-tube method: Rept. 10.
- 1957, The development and calibration of visual accumulation tube: Rept. 11.

U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

-----1957, Some fundamentals of particle-size analysis:  
Rept. 12.

-----1959, Federal Inter-agency sedimentation instruments and reports: Rept. AA.

-----1961, The single stage sampler for suspended sediment: Rept. 13.

-----1963, Determinations of fluvial sediment discharge:  
Rept. 14.



## WATER QUALITY RECORDS, 1974

**Table 5.--Factors for converting English units to International System units (SI)**

The following factors may be used to convert the English units published herein to the International System of Units (SI). Subsequent reports will contain both the English and SI unit equivalents in the station manuscript descriptions until such time that all data will be published in SI units.

Multiply English units	By	To obtain SI units
<i>Length</i>		
inches (in)	25.4	millimetres (mm)
	.0254	metres (m)
feet (ft)	.3048	metres (m)
yards (yd)	.9144	metres (m)
rods	5.0292	metres (m)
miles (mi)	1.609	kilometres (km)
<i>Area</i>		
acres	4047	square metres (m <sup>2</sup> )
	.4047	*hectares (ha)
	.4047	square hectometres (hm <sup>2</sup> )
	.004047	square kilometres (km <sup>2</sup> )
square miles (mi <sup>2</sup> )	2.590	square kilometres (km <sup>2</sup> )
<i>Volume</i>		
gallons (gal)	3.785	**litres (l)
	3.785	cubic decimetres (dm <sup>3</sup> )
	3.785x10 <sup>-3</sup>	cubic metres (m <sup>3</sup> )
million gallons (10 <sup>6</sup> gal)	3785	cubic metres (m <sup>3</sup> )
	3.785x10 <sup>-3</sup>	cubic hectometres (hm <sup>3</sup> )
cubic feet (ft <sup>3</sup> )	28.32	cubic decimetres (dm <sup>3</sup> )
	.02832	cubic metres (m <sup>3</sup> )
cfs-days [(ft <sup>3</sup> /s) · d]	2447	cubic metres (m <sup>3</sup> )
	2.447x10 <sup>-3</sup>	cubic hectometres (hm <sup>3</sup> )
acre-feet (acre-ft)	1233	cubic metres (m <sup>3</sup> )
	1.233x10 <sup>-3</sup>	cubic hectometres (hm <sup>3</sup> )
	1.233x10 <sup>-6</sup>	cubic kilometres (km <sup>3</sup> )
<i>Flow</i>		
cubic feet per second (ft <sup>3</sup> /s)	28.32	litres per second (l/s)
	28.32	cubic decimetres per second (dm <sup>3</sup> /s)
	.02832	cubic metres per second (m <sup>3</sup> /s)
gallons per minute (gpm)	.06309	litres per second (l/s)
	.06309	cubic decimetres per second (dm <sup>3</sup> /s)
	6.309x10 <sup>-5</sup>	cubic metres per second (m <sup>3</sup> /s)
million gallons per day (mgd)	43.81	cubic decimetres per second (dm <sup>3</sup> /s)
	.04381	cubic metres per second (m <sup>3</sup> /s)
<i>Mass</i>		
tons (short)	.9072	tonnes (t)

\*The unit hectare is approved for use with the International System (SI) for a limited time. See NBS Special Bulletin 330, p.15, 1972 edition.

\*\*The unit litre is accepted for use with the International System (SI). See NBS Special Bulletin 330, p. 13, 1972 edition.



## WATER QUALITY RECORDS

## BEAVER RIVER BASIN

03092090 WEST BRANCH MAHONING RIVER NEAR RAVENNA, OHIO

LOCATION.--Lat 41°09'41", long 81°11'50", in T.3 N., R.8 W., Portage County, at gaging station on left bank at downstream side of bridge on Newton Falls Road, 2.5 mi (4.0 km) east of Ravenna.

DRAINAGE AREA.--21.8 mi<sup>2</sup> (56.5 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1967-74 (partial-record station).  
Water temperatures: October 1965 to September 1974.

EXTREMES.--1972-73:  
Water temperatures: Maximum, 25.0°C July 4; minimum, freezing point on several days during December to February.

EXTREMES.--Period of record:  
Water temperatures: Maximum, 28.0°C Aug. 24, 1968; minimum, freezing point on many days during winter periods.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
DEC., 1973												
14...	1415	37	1.5	--	373	7.3	--	--	--	--	--	--
FEB., 1974												
11...	1430	7.7	.5	--	--	8.2	--	55	11	--	--	--
APR.												
19...	1300	18	12.0	--	--	7.8	--	17	10	--	--	0
SEP.												
11...	1345	4.2	17.0	5.9	399	8.2	7.3	48	12	15	2.7	0

DATE	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
DEC., 1973												
14...	--	57	36	--	--	.00	1.1	--	--	--	--	--
FEB., 1974												
11...	--	58	47	--	--	.00	1.1	--	--	180	--	--
APR.												
19...	91	46	22	--	--	.00	.33	--	--	84	--	--
SEP.												
11...	172	38	23	.2	.12	.00	.23	.07	231	170	110	100



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974  
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

[illegible]

## BEAVER RIVER BASIN

03093800 MAHONING RIVER ABOVE DUCK CREEK, AT LEAVITTSBURG, OHIO

LOCATION.--Lat 41°14'22", long 80°52'56", Trumbull County, on left bank 10 ft (3 m) upstream from Ohio Edison Company diversion dam, 30 ft (9 m) upstream from Duck Creek, and 330 ft (101 m) upstream from gaging station at bridge on Leavitt Road in Leavittsburg.

DRAINAGE AREA.--542 mi<sup>2</sup> (1,404 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1951 to September 1953, July 1967 to September 1968 (published as "at Leavittsburg"), October 1968 to September 1974.

Water temperatures: October 1949 to September 1968 (published as "at Leavittsburg"), October 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 509 micromhos Jan. 15; minimum, 128 micromhos May 14.

pH: Maximum, 7.7 Jan. 16, 17; minimum, 6.1 May 13.

Dissolved oxygen: Maximum, 13.9 mg/l Feb. 4, 5; minimum, 4.6 mg/l July 7.

Water temperatures: Maximum, 25.5°C Aug. 24; minimum, freezing point on several days during December and February.

## EXTREMES.--Period of record:

Specific conductance (1967-74): Maximum, 780 micromhos May 27, 1969; minimum, 128 micromhos May 14, 1974.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
06...	0900	410	16.5	--	404	8.4	--	38	12	--	--	0
25...	1640	181	14.5	--	452	8.4	--	43	14	--	--	0
NOV.												
17...	0745	232	8.5	--	472	7.7	--	--	--	--	--	0
27...	1620	638	9.0	--	302	7.1	--	--	--	--	--	0
DEC.												
01...	1340	402	6.0	--	341	7.5	--	--	--	--	--	0
12...	1510	304	3.5	--	462	7.4	--	--	--	--	--	0
JAN.												
16...	1300	820	2.0	--	493	7.2	--	59	16	--	--	0
19...	0930	3090	1.5	--	283	6.8	--	27	8.6	--	--	0
FEB.												
09...	1745	304	1.0	--	450	7.8	--	51	14	--	--	0
23...	1305	895	3.0	--	358	7.7	--	37	11	--	--	0
MAR.												
06...	1100	1300	7.0	--	324	7.7	--	34	8.9	--	--	0
23...	0925	1460	5.0	--	404	7.6	--	42	12	--	--	0
APR.												
03...	1210	2840	10.5	--	177	6.6	--	18	4.8	--	--	0
30...	1235	307	17.0	--	400	7.1	--	42	12	--	--	0
MAY												
14...	1215	1430	13.5	7.7	179	6.6	--	20	5.0	--	--	0
29...	1615	374	16.5	--	370	7.1	--	40	11	--	--	0
JUNE												
02...	0915	288	18.0	--	330	7.0	--	37	10	--	--	0
26...	1610	352	19.0	--	386	7.1	--	40	12	--	--	0
SEP.												
26...	1530	324	12.5	6.8	490	7.3	3.4	43	15	15	2.8	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
31...	1600	<.5	--
APR.			
17...	1530	.1	6.1

## BEAVER RIVER BASIN

25

## 03093800 MAHONING RIVER ABOVE DUCK CREEK, AT LEAVITTSBURG, OHIO--Continued

## EXTREMES.--Period of record--Continued

pH (1967-74): Maximum, 8.5 Aug. 5, 1968; minimum, 5.2 Jan. 8, 1973.

Dissolved oxygen (1967-74): Maximum, 15.0 mg/l or higher Dec. 31, 1972, Jan. 1-3, 1973; minimum, 4.2 mg/l June 12, 13, 1971.

Water temperatures (1967-74): Maximum, 28.0°C June 29, 30, 1952; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since July 1967. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Additional samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Mahoning River at Leavittsburg, Ohio (station 03094000, drainage area 575 mi<sup>2</sup> (1,489 km<sup>2</sup>)).

REVISIONS.--Revised figure for water year 1973 extremes period of record superseding those previously published are given herewith: Change water temperatures maximum to 28.0°C June 29, 30, 1952.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
06...	98	81	33	.1	--	.00	.70	--	--	140	--	--
25...	109	93	25	--	--	.00	.49	--	--	160	--	--
NOV.												
17...	111	100	28	.2	--	.00	.57	--	--	--	--	--
27...	56	64	21	.2	--	.00	.65	--	--	--	--	--
DEC.												
01...	66	77	23	.2	--	.00	.41	--	--	--	--	--
12...	104	110	24	.3	--	.00	.59	--	--	--	--	--
JAN.												
16...	109	110	32	.3	--	.00	.42	--	--	210	--	--
19...	52	63	22	.2	--	.00	.46	--	--	100	--	--
FEB.												
09...	96	95	34	.2	--	.00	1.4	--	--	190	--	--
23...	69	74	29	.2	--	.00	1.1	--	--	140	--	--
MAR.												
06...	55	68	25	.2	--	.00	.96	--	--	120	--	--
23...	72	90	28	.2	--	.01	1.2	--	--	150	--	--
APR.												
03...	30	34	12	.3	--	.00	.35	--	--	65	--	--
30...	89	68	26	.4	--	.00	.58	--	--	150	--	--
MAY												
14...	37	33	12	.2	--	.00	.34	--	--	71	--	--
29...	78	75	25	.3	--	.01	.84	--	--	150	--	--
JUNE												
02...	77	65	20	.6	--	.00	.85	--	--	130	--	--
26...	90	76	24	.4	--	.00	.72	--	--	150	--	--
SEP.												
26...	98	88	24	.3	.17	.01	.35	.20	240	170	20	250



SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	421	401	369	345	---	---	---	---	404	398	390	339
2	433	422	345	336	---	---	---	---	419	404	342	267
3	429	411	347	332	---	---	---	---	426	417	269	243
4	414	384	371	344	---	---	466	460	428	413	285	245
5	404	386	398	372	398	389	467	458	428	417	302	285
6	404	368	416	399	401	395	466	458	417	407	330	291
7	390	369	417	414	405	396	476	466	417	401	351	332
8	402	390	423	419	410	402	484	475	419	410	356	347
9	410	401	431	423	429	405	484	476	437	414	344	296
10	407	396	429	417	420	417	487	482	438	425	302	228
11	410	405	440	417	423	420	487	475	429	420	296	228
12	420	407	443	420	428	423	491	475	426	419	345	297
13	413	404	459	443	429	422	485	479	434	422	362	348
14	413	399	447	420	437	407	488	481	438	425	369	360
15	417	411	437	422	410	396	509	490	428	408	369	366
16	419	404	447	422	393	380	506	478	416	407	372	324
17	423	414	450	420	386	380	468	417	422	410	321	285
18	426	419	426	420	389	384	406	353	429	419	342	303
19	429	413	426	423	398	384	329	191	423	419	378	344
20	431	411	435	423	435	377	185	167	431	411	368	365
21	426	413	443	423	371	284	239	188	419	408	378	366
22	444	420	---	---	291	261	340	245	419	368	381	377
23	438	410	---	---	360	291	360	333	365	318	381	374
24	426	408	---	---	390	360	339	306	323	315	374	366
25	429	416	---	---	402	390	351	311	338	323	374	369
26	426	413	---	---	396	345	378	354	365	339	381	369
27	423	413	---	---	347	293	383	380	383	357	375	357
28	426	414	---	---	296	279	387	382	389	375	357	354
29	443	422	---	---	318	296	389	379	---	---	365	357
30	423	387	---	---	---	---	387	382	---	---	366	329
31	405	371	---	---	---	---	398	389	---	---	326	297
MONTH	444	368	---	---	437	261	509	167	438	315	390	228
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	323	299	362	308	305	266	377	357	378	368	375	366
2	330	269	320	291	348	306	366	254	371	362	378	372
3	254	174	333	321	347	338	357	350	371	365	381	377
4	273	216	333	326	354	347	359	353	381	360	377	360
5	302	273	345	326	357	351	354	348	368</			

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.1	6.9	8.2	7.9	10.5	10.2	---	---	12.2	11.7	12.8	12.1
2	7.9	6.7	8.2	7.9	10.6	10.5	---	---	13.2	11.8	12.6	12.2
3	8.2	7.7	8.2	7.9	---	---	---	---	13.4	13.1	12.4	11.9
4	8.3	8.0	8.2	8.0	11.0	10.6	12.8	12.6	13.9	12.6	11.9	11.0
5	8.5	8.0	8.3	7.9	10.6	10.0	12.8	12.7	13.9	13.1	11.0	10.3
6	8.5	7.0	8.6	8.2	10.1	9.8	12.7	12.5	13.4	12.8	11.9	10.2
7	7.8	7.5	8.8	8.5	10.3	10.0	12.7	12.5	12.8	11.8	12.3	11.7
8	7.6	7.1	8.9	8.7	10.8	10.3	12.8	12.5	12.1	11.6	12.2	11.6
9	7.6	7.0	9.2	8.8	11.1	10.6	12.7	12.4	12.3	11.6	11.5	10.9
10	7.1	6.8	9.3	7.9	10.9	10.6	12.5	12.2	12.4	11.9	11.1	9.8
11	7.1	6.7	8.2	7.9	10.8	10.6	12.5	12.2	12.2	11.8	12.1	9.7
12	6.9	6.7	8.0	7.7	11.6	11.5	12.5	12.2	12.2	11.6	13.1	12.1
13	6.9	5.3	7.8	7.5	11.7	11.2	12.7	12.5	12.1	11.6	13.3	12.0
14	6.9	5.8	7.7	7.4	11.5	11.2	12.7	12.4	12.5	11.6	12.7	12.3
15	6.9	6.7	7.4	6.8	11.7	11.5	12.4	12.1	12.4	11.7	12.5	12.2
16	7.1	6.8	6.9	6.3	11.9	11.6	12.3	12.0	12.7	12.4	12.3	11.6
17	7.2	7.0	7.1	6.2	12.5	11.9	12.4	12.2	12.7	12.5	12.4	11.9
18	7.6	7.2	7.0	6.6	12.6	12.2	12.4	11.8	12.6	12.3	12.6	12.0
19	7.8	7.5	7.3	6.9	12.5	12.2	12.0	11.1	12.4	12.3	12.4	12.0
20	7.8	7.6	7.7	7.3	12.6	12.2	11.5	11.0	12.5	11.9	12.8	12.1
21	7.8	7.6	7.7	7.4	12.6	12.3	11.0	10.2	12.7	11.6	12.8	12.3
22	7.6	7.2	7.5	7.1	12.5	12.1	11.0	10.1	12.8	12.2	13.1	12.6
23	7.5	7.1	---	---	12.7	12.3	11.7	10.8	12.1	11.1	12.8	11.3
24	7.6	7.3	---	---	13.0	12.7	11.8	11.3	12.5	11.2	13.2	11.2
25	7.7	7.2	---	---	13.1	12.6	12.1	11.5	12.4	12.0	13.2	12.7
26	7.3	7.2	---	---	12.6	12.0	12.5	12.0	12.8	12.1	13.1	12.8
27	7.3	6.7	---	---	12.1	11.8	12.5	11.2	13.1	12.7	12.8	12.4
28	7.0	6.8	---	---	11.9	11.7	11.2	10.7	13.1	12.7	12.5	12.2
29	7.0	6.7	---	---	12.1	12.0	11.5	10.7	---	---	12.3	12.1
30	7.1	6.9	10.5	9.9	---	---	11.5	10.8	---	---	12.0	10.8
31	8.0	7.2	---	---	---	---	11.8	11.1	---	---	11.1	10.7
MONTH	8.5	5.3	---	---	13.1	9.8	12.8	10.1	13.9	11.1	13.3	9.7
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.3	11.2	7.8	6.4	6.6	6.2	6.4	5.7	6.5	5.8	6.8	6.4
2	11.7	10.1	8.6	7.2	6.4	5.5	6.5	6.0	6.7	6.1	6.9	6.4
3	10.2	8										



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## EEAVER RIVER BASIN

03099510 MAHONING RIVER AT OHIO-PENNSYLVANIA STATE LINE, BELOW LOWELLVILLE, OHIO

LOCATION.--Lat 41°01'53", long 80°31'10", Mahoning County, on left bank 800 ft (244 m) upstream from Ohio-Pennsylvania State line, just below Lowellville, 0.9 mi (1.4 km) downstream from gaging station at Lowellville, and 3.9 mi (6.3 km) downstream from Yellow Creek.

DRAINAGE AREA.--1,075 mi<sup>2</sup> (2,784 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: January 1967 to September 1974.  
Water temperatures: January 1967 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 947 micromhos Dec. 20; minimum, 232 micromhos May 14.

pH: Maximum, 8.3 Mar. 10; minimum, 6.4 May 9.

Dissolved oxygen: Maximum, 11.8 mg/l Mar. 24; minimum, 0.2 mg/l Aug. 27.

Water temperatures: Maximum, 36.0°C July 9-11; minimum, 3.5°C Dec. 22, Jan. 20.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
NOV.												
23...	0925	468	24.0	--	755	7.5	--	--	--	--	--	0
28...	1230	1350	18.0	--	516	8.1	--	--	--	--	--	0
DEC.												
19...	1435	474	15.5	--	721	7.3	--	--	--	--	--	0
24...	0913	1250	5.0	--	462	6.5	--	--	--	--	--	0
JAN.												
16...	0930	1470	9.0	--	705	6.9	--	65	17	--	--	0
21...	1037	3600	11.0	--	324	6.7	--	33	8.2	--	--	0
FEB.												
05...	0920	1670	6.0	--	501	7.3	--	28	15	--	--	0
20...	1155	622	15.0	--	754	7.3	--	62	17	--	--	0
MAR.												
04...	1227	2270	10.0	--	625	7.5	--	57	15	--	--	0
11...	1020	6230	8.0	--	366	6.9	--	40	9.6	--	--	0
APR.												
03...	0900	4800	10.0	--	395	6.9	--	41	10	--	--	0
17...	1330	2050	15.0	--	454	--	--	--	--	--	--	--
29...	0920	486	26.0	--	636	6.6	--	58	16	--	--	0
MAY												
08...	1235	643	20.0	--	578	7.2	--	53	14	--	--	0
13...	1240	10140	15.0	--	291	7.0	--	37	7.8	--	--	0
JUNE												
05...	1225	608	30.0	--	541	6.6	--	53	14	--	--	0
19...	1010	438	30.0	--	624	6.6	--	56	15	--	--	0
AUG.												
15...	1430	692	33.0	3.8	540	7.2	5.3	42	16	30	8.0	0

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL MERCURY (MG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV.				
01...	0900	0	<.5	--
APR.				
17...	1330	4	.0	8.9

## BEAVER RIVER BASIN

31

03099510 MAHONING RIVER AT OHIO-PENNSYLVANIA STATE LINE, BELOW LOWELLVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1967-74): Maximum, 1,480 micromhos Feb. 5, 1971; minimum, 219 micromhos Dec. 24, 1972.

pH (1967-74): Maximum, 9.9 Jan. 26, 1969; minimum, 3.0 Jan. 24, 1967.

Dissolved oxygen (1967-74): Maximum, 14.2 mg/l Mar. 25, 1970; minimum, 0.2 mg/l Feb. 3, 1967, Dec. 15-19, 1969, Jan. 13-17, 1970.

Water temperatures (1967-74): Maximum, 39.0°C June 29, 1971; minimum, 2.0°C Feb. 21, 1971.

REMARKS.--Water-quality recorder operated since January 1967. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Determinations for trace metals were made on quarterly composites of the special monthly samples. Additional samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Mahoning River at Lowellville, Ohio, station 03099500, drainage area 1,073 mi<sup>2</sup> (2,779 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
NOV.												
23...	62	150	86	1.3	--	.00	7.3	--	--	--	--	--
28...	95	110	39	.6	--	.00	2.7	--	--	--	--	--
DEC.												
19...	66	150	76	1.0	--	.01	7.1	--	--	--	--	--
24...	57	100	40	.4	--	.01	3.0	--	--	--	--	--
JAN.												
16...	99	140	84	.6	--	.00	1.5	--	--	230	--	--
21...	53	72	28	.4	--	.00	.36	--	--	120	--	--
FEB.												
05...	83	100	38	.6	--	.00	2.9	--	--	130	--	--
20...	105	140	89	1.0	--	.00	6.6	--	--	220	--	--
MAR.												
04...	84	120	70	.5	--	.01	3.4	--	--	200	--	--
11...	73	75	24	.4	--	.01	.99	--	--	140	--	--
APR.												
03...	65	77	30	.5	--	.01	1.3	--	--	140	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
29...	81	130	59	.9	--	.01	5.7	--	--	210	--	--
MAY												
08...	79	110	56	.8	--	.00	4.2	--	--	190	--	--
13...	68	58	17	.5	--	.00	.38	--	--	120	--	--
JUNE												
05...	83	110	48	1.7	--	.00	2.8	--	--	190	--	--
19...	68	130	56	1.7	--	.00	5.5	--	--	200	--	--
AUG.												
15...	94	110	46	.2	3.3	.24	.57	3.1	304	170	20	380

## 03099510 MAHONING RIVER AT OHIO-PENNSYLVANIA STATE LINE, BELOW LOWELLVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	602	536	554	519	557	531	629	542	477	459	713	594
2	647	602	555	528	557	538	555	512	480	465	602	507
3	714	631	551	527	607	552	573	548	494	477	498	462
4	648	597	566	531	651	603	581	551	507	473	482	456
5	597	531	599	546	656	614	570	539	527	492	479	452
6	599	575	624	588	654	635	566	540	600	519	462	441
7	584	554	629	600	701	648	567	540	885	618	486	437
8	611	562	694	618	711	686	599	542	671	620	507	468
9	620	554	724	676	720	662	747	581	654	615	498	399
10	666	613	---	---	684	632	729	615	638	612	434	357
11	651	630	---	---	653	615	707	668	680	614	350	323
12	669	624	729	701	666	614	678	654	770	654	410	350
13	691	635	763	720	747	653	675	615	816	701	464	407
14	648	518	742	710	681	651	638	611	773	743	492	459
15	664	622	744	725	677	642	803	645	816	729	491	468
16	707	635	772	715	657	639	782	684	741	707	474	438
17	674	632	739	697	680	651	680	603	735	702	438	395
18	703	669	729	704	710	677	602	518	750	716	441	381
19	711	675	744	721	746	710	510	369	773	728	474	435
20	748	698	759	739	947	560	363	279	813	743	479	452
21	761	728	772	736	560	473	---	---	765	726	564	441
22	742	709	769	726	471	413	---	---	750	657	510	471
23	770	722	769	739	444	411	---	---	654	573	489	461
24	770	710	781	716	549	444	---	---	564	515	621	455
25	812	726	719	480	609	513	---	---	689	524	512	461
26	784	743	609	571	600	498	---	---	752	599	501	482
27	814	754	577	520	542	479	---	---	738	656	494	468
28	764	588	533	494	479	443	465	443	680	651	476	453
29	588	521	529	500	476	440	465	453	---	---	476	446
30	565	484	561	511	507	461	474	455	---	---	473	440
31	573	547	---	---	662	503	477	456	---	---	443	398
MONTH	814	484	781	480	947	411	---	---	885	459	713	323

[illegible]



PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.8	4.3	7.0	5.6	4.9	4.5	10.2	9.6	11.0	10.3	9.5	8.4
2	4.3	3.7	6.9	6.2	5.0	4.7	10.5	9.9	11.0	10.8	10.6	10.0
3	4.2	2.9	6.6	6.2	4.8	3.4	10.5	9.7	10.9	10.7	10.9	9.6
4	3.6	3.0	6.2	5.8	5.0	3.7	10.0	9.6	11.1	10.6	10.3	9.7
5	4.0	2.9	5.8	4.9	4.8	4.1	10.1	9.5	10.9	10.4	9.7	8.6
6	4.1	3.3	5.2	4.4	5.1	4.3	10.2	9.8	10.5	9.4	10.0	9.4
7	4.0	3.3	4.8	3.9	5.2	4.5	10.1	9.6	9.6	8.8	9.6	9.1
8	3.3	2.1	4.4	3.4	5.4	4.2	9.9	9.2	9.5	8.8	9.5	8.8
9	2.6	2.0	4.2	3.6	5.6	4.7	9.4	8.6	9.1	8.4	8.9	7.9
10	2.6	1.8	---	---	5.7	5.1	8.9	8.1	9.3	8.5	9.3	7.6
11	2.9	2.6	---	---	6.5	5.7	8.9	8.2	9.1	7.8	10.2	9.0
12	3.4	1.5	3.8	3.1	6.9	6.0	9.1	8.2	8.0	6.2	10.7	10.3
13	2.9	2.1	3.6	2.7	5.9	5.3	9.5	9.2	6.6	5.5	10.9	10.3
14	3.4	2.6	3.5	2.4	7.3	5.8	9.5	8.5	7.3	5.8	10.5	9.9
15	3.3	2.8	2.9	2.0	7.8	7.2	8.9	8.4	7.9	7.0	10.3	9.9
16	3.4	2.3	3.9	2.7	7.9	7.3	9.7	8.9	7.2	6.4	11.0	10.2
17	3.2	2.5	3.9	3.6	7.4	6.0	10.5	9.9	6.7	6.0	11.4	11.1
18	3.1	2.2	4.2	3.3	7.2	6.1	10.8	10.0	6.9	5.9	11.3	10.7
19	2.9	2.1	3.8	3.1	6.3	4.9	9.8	7.5	6.0	4.8	10.8	10.5
20	2.9	2.4	3.3	2.6	6.9	5.0	9.9	8.6	6.1	5.5	11.1	10.6
21	2.7	2.1	2.6	1.7	9.9	6.9	---	---	6.2	5.3	10.8	10.6
22	2.4	1.8	2.2	1.9	10.4	9.6	---	---	8.9	5.6	11.0	10.7
23	3.6	2.1	2.4	1.5	10.7	10.4	---	---	10.1	9.1	11.1	10.9
24	3.1	1.9	3.1	2.4	10.7	10.3	---	---	10.9	10.0	11.8	11.1
25	2.7	1.6	4.5	2.9	10.2	9.6	---	---	9.7	8.7	11.7	10.9
26	2.2	1.4	6.0	4.5	10.2	9.6	---	---	9.7	8.2	11.1	10.5
27	3.3	1.8	5.5	4.8	10.1	9.7	---	---	9.0	7.7	11.4	11.0
28	4.1	3.1	5.7	5.0	10.3	10.0	10.5	10.1	8.5	7.8	11.2	10.8
29	5.5	3.1	6.9	5.0	10.2	9.7	10.4	10.3	---	---	11.0	10.4
30	7.9	4.9	6.6	4.6	10.3	9.9	10.6	10.4	---	---	11.0	10.6
31	8.7	6.1	---	---	10.3	9.7	10.5	10.2	---	---	11.2	11.0
MONTH	8.7	1.4	7.0	1.5	10.7	3.4	---	---	11.1	4.8	11.8	7.6
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.1	10.7	6.4	3.3	4.3	3.7	7.3	4.9	3.9	2.9	6.0	5.1
2	10.8	10.3	7.3	6.1	3.9	3.2	5.7	4.8	3.8	2.7	6.1	5.1
3	10.4	9.0	6.6	5.5	3.8	3.2	5.7	4.7	3.4	2.9	6.0	5.3
4	9.1	8.7	6.3									

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	27.0	25.0	18.0	16.0	15.5	14.0	9.0	7.5	8.0	7.0	12.5	9.0
2	29.0	26.5	19.5	17.5	15.0	13.5	8.0	7.0	7.5	7.0	9.0	7.0
3	30.5	28.5	19.0	18.0	18.0	14.5	8.0	7.5	7.0	6.0	9.0	7.0
4	31.0	29.5	19.5	18.5	20.5	18.0	8.0	7.5	6.5	5.5	12.0	8.5
5	29.5	27.5	20.0	19.5	21.5	20.0	7.5	6.5	7.0	6.0	12.0	11.5
6	28.5	26.5	21.0	19.0	20.5	19.0	7.0	6.5	9.0	6.5	12.5	11.0
7	28.0	26.5	22.0	21.0	20.5	19.0	7.5	6.0	10.0	9.0	14.0	12.0
8	30.0	27.5	23.0	21.0	20.0	18.0	8.0	6.5	11.0	9.5	13.0	12.0
9	31.0	29.0	21.5	21.0	18.5	17.5	9.0	7.5	11.0	10.5	12.0	10.0
10	32.0	30.5	---	---	17.5	16.0	10.5	8.5	10.5	9.0	10.0	8.5
11	32.0	30.5	---	---	16.0	14.5	11.0	10.0	11.0	8.5	8.5	8.0
12	32.5	30.0	21.5	19.5	15.0	13.5	10.5	8.5	15.0	11.0	9.0	8.0
13	32.0	30.5	24.0	21.5	15.5	14.0	8.0	7.0	16.5	14.5	9.0	8.0
14	30.5	26.5	26.5	23.0	14.5	12.0	9.5	7.5	15.5	14.5	10.0	8.5
15	28.5	27.0	28.0	26.0	13.0	11.5	11.0	9.5	14.5	12.0	10.5	9.0
16	27.0	26.0	27.5	23.5	11.5	10.5	10.0	8.5	14.5	13.0	9.5	7.5
17	27.5	26.0	23.5	22.5	12.0	10.5	8.0	7.0	14.0	12.5	7.0	6.5
18	27.5	26.5	22.5	21.0	14.5	12.0	7.0	6.0	15.0	11.5	7.5	6.5
19	28.0	26.0	23.0	22.0	16.0	14.5	6.5	4.0	16.5	15.0	8.0	7.5
20	29.0	28.0	24.5	22.5	16.5	9.0	4.5	3.5	18.0	15.5	9.5	8.0
21	29.0	27.0	26.0	23.0	9.0	4.5	---	---	17.5	16.0	9.0	8.0
22	28.5	27.0	26.0	24.5	4.5	3.5	---	---	18.0	10.5	9.5	7.5
23	29.5	27.0	26.5	25.0	6.0	4.5	---	---	10.0	7.5	9.0	8.0
24	30.0	28.0	26.0	23.0	7.5	6.0	---	---	8.0	7.0	7.5	6.5
25	30.5	28.5	23.0	17.0	9.5	7.5	---	---	10.0	7.5	8.5	6.0
26	31.0	29.5	17.0	16.5	8.5	7.5	---	---	12.5	9.0	9.0	7.5
27	30.5	28.5	17.0	16.0	8.0	7.0	---	---	13.5	11.0	8.5	7.5
28	28.5	23.0	17.5	16.5	7.5	7.0	8.0	7.0	13.5	12.5	8.5	8.0
29	23.0	18.5	16.5	15.5	8.5	7.0	8.0	7.5	---	---	9.0	8.5
30	18.5	17.0	16.0	14.5	8.0	7.0	8.0	7.0	---	---	8.5	7.5
31	17.5	17.0	---	---	8.5	7.5	8.5	7.5	---	---	7.5	7.0
MONTH	32.5	17.0	28.0	14.5	21.5	3.5	---	---	18.0	5.5	14.0	6.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	7.5	25.0	22.0	27.0	25.0	25.0	21.0	34.0	32.0	25.0	24.0
2	10.5	8.5	22.0	20.0	29.5	26.0	26.5	23.5	34.5	32.5	25.0	23.5

## MUSKINGUM RIVER BASIN

## 03117100 TUSCARAWAS RIVER AT NAVARRE, OHIO

LOCATION.--Lat 40°43'36", long 81°31'47", Stark County, on left bank at Navarre water treatment plant, 800 ft (244 m) upstream from bridge on Elton Road at Navarre, 3.5 mi (5.6 km) downstream from gaging station at Massillon, 1.2 mi (1.9 km) downstream from Pigeon Run, and just upstream from Wolf Creek.

DRAINAGE AREA.--534 mi<sup>2</sup> (1,383 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1968 to September 1974.  
Water temperatures: March 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 8,010 micromhos Oct. 19; minimum, 236 micromhos Jan. 17.

pH: Maximum, 8.5 Jan. 17, 19; minimum, 6.0 July 31.

Dissolved oxygen: Maximum, 12.0 mg/l Dec. 25; minimum, 0.1 mg/l July 13, 14.

Water temperatures: Maximum, 28.5°C July 10, 14; minimum, 0.5°C Dec. 22.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
01...	1425	199	18.0	--	4280	8.3	--	--	--	--	--	0
17...	0900	131	14.0	--	5710	6.8	--	--	--	--	--	0
NOV.												
12...	0845	139	7.0	--	4810	8.4	--	--	--	--	--	6
28...	1545	1230	13.0	--	2020	7.1	--	--	--	--	--	0
DEC.												
18...	1550	235	2.5	--	4620	6.8	--	--	--	--	--	0
27...	1500	1510	6.0	--	1070	7.5	--	--	--	--	--	0
JAN.												
21...	1400	2990	5.0	--	799	7.5	--	83	11	--	--	0
FEB.												
11...	1500	292	4.0	--	3770	7.0	--	--	--	--	--	0
15...	1400	492	5.0	--	2200	7.2	--	220	16	--	--	0
MAR.												
11...	1500	3530	9.0	--	620	7.7	--	65	10	--	--	0
27...	1400	772	6.0	--	1800	7.5	--	170	15	--	--	0
APR.												
04...	0905	3170	13.0	--	720	6.8	--	70	9.5	--	--	0
30...	2115	569	18.0	--	3420	7.1	--	270	19	--	--	0
MAY												
13...	1500	2330	15.0	--	658	7.2	--	73	11	--	--	0
22...	1115	311	21.0	--	3200	7.0	--	280	17	--	--	0
JUNE												
02...	1000	390	20.0	--	1910	7.1	--	200	17	--	--	0
25...	1520	268	21.0	--	4580	7.0	--	470	19	--	--	0
SEP.												
25...	1230	167	15.0	3.1	4600	7.2	13	330	19	550	7.4	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
23...	1630	<.5	--
APR.			
18...	1100	.1	8.3



## MUSKINGUM RIVER BASIN

37

## 03117100 TUSCARAWAS RIVER AT NAVARRE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 16,700 micromhos Jan. 27, 1970; minimum, 236 micromhos Jan. 17, 1974.

pH (1968-74): Maximum, 10.7 Oct. 27, 1971; minimum, 3.9 Oct. 26, 1969.

Dissolved oxygen (1968-74): Maximum, 12.5 mg/l Feb 17, 1973; minimum, 0.0 mg/l on many days during 1971 to 1973.

Water temperatures (1968-74): Maximum, 30.0°C June 27, 28, 1969; minimum, freezing point on several days during winter periods.

REMARKS.--Water-quality recorder operated since March 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Tuscarawas River at Massillon, Ohio, station 03117000, drainage area 518 mi<sup>2</sup> (1,342 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
01...	202	120	1300	.7	--	.00	5.3	--	--	--	--	--
17...	164	130	1200	1.6	--	.01	2.4	--	--	--	--	--
NOV.												
12...	177	95	1300	.2	--	.00	5.2	--	--	--	--	--
28...	167	100	470	.5	--	.00	2.6	--	--	--	--	--
DEC.												
18...	178	130	1400	.8	--	.00	5.3	--	--	--	--	--
27...	121	85	210	.3	--	.00	4.3	--	--	--	--	--
JAN.												
21...	106	66	150	.3	--	.00	2.3	--	--	250	--	--
FEB.												
11...	161	83	1100	.5	--	.01	2.6	--	--	--	--	--
15...	161	110	550	.7	--	.02	1.6	--	--	620	--	--
MAR.												
11...	105	63	100	.3	--	.01	1.8	--	--	200	--	--
27...	139	99	470	.4	--	.00	2.4	--	--	490	--	--
APR.												
04...	99	61	120	.5	--	.00	1.3	--	--	210	--	--
30...	162	170	940	1.0	--	.01	3.2	--	--	750	--	--
MAY												
13...	158	63	110	.4	--	.00	1.6	--	--	230	--	--
22...	178	96	750	1.4	--	.00	1.2	--	--	770	--	--
JUNE												
02...	162	93	480	--	--	.00	5.9	--	--	570	--	--
25...	192	150	1400	.7	--	.01	1.7	--	--	1300	--	--
SEP.												
25...	177	220	1300	1.6	2.8	.27	2.5	.63	2530	900	70	280

## 03117100 TUSCARAWAS RIVER AT NAVARRE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5190	3120	2290	1810	2090	1460	2490	2010	2160	1890	2460	1410
2	4860	3210	2190	1770	2380	2020	2660	2210	2500	2170	1680	992
3	5100	2550	2280	1980	2650	2350	5690	2270	2570	2420	1410	1020
4	3300	2550	3540	2280	3030	2490	3160	2710	2770	2500	1650	1110
5	5580	3360	3870	3030	5730	2610	3220	2800	2990	2750	1530	1080
6	6570	3270	4090	3610	2990	2780	3880	2860	3490	2680	1500	1020
7	4500	3420	4420	3640	3280	2830	3390	2910	3380	2330	1770	1140
8	5790	4620	4870	4060	3660	3030	3750	3270	2570	1940	1830	660
9	5820	3540	5080	3520	3740	3380	4410	3150	2510	2000	600	240
10	4290	3240	4670	3710	3930	3690	4120	3550	3320	2600	630	240
11	5280	4260	4640	3860	4070	3770	4180	3100	3790	2830	720	240
12	5340	5100	4520	3800	4120	3670	3790	3130	3520	3160	930	720
13	6480	5430	4470	3870	4620	3900	4190	3770	3520	2740	1110	810
14	6780	4710	4750	3790	5060	3350	4850	3680	2830	2050	1440	1020
15	6630	2940	4400	3680	3350	2650	4290	3390	2080	1870	1590	1410
16	4920	3690	5460	3840	3410	2720	3510	1650	2980	1570	1560	1020
17	5940	2970	4900	3250	3850	3040	1710	236	2640	1770	1050	810
18	7380	2970	4760	3020	4980	3510	1460	1310	2850	2700	1230	900
19	8010	2580	4790	3650	4920	3810	1220	557	3150	2760	1590	1170
20	6330	3420	4890	4050	4720	3010	612	402	3300	2220	1680	1410
21	5700	5220	4510	3040	4450	1420	848	608	2250	1950	1950	1530
22	5670	5010	4790	3290	1660	1420	963	753	2330	2000	1980	1530
23	5640	5140	3290	2820	2030	1660	1080	809	1820	1190	2010	1560
24	5200	4840	3860	3200	2420	1940	1070	924	1960	1300	2100	1800
25	5850	4830	3660	2010	2570	2300	1280	1040	2320	1990	2370	1800
26	5160	4860	2680	1180	2370	1230	1530	1290	2650	2320	2430	1860
27	5880	4860	1730	1040	1530	1020	1850	1280	3160	2380	1980	1470
28	5840	2450	2040	1080	1340	1130	1440	1230	2920	2440	1950	1470
29	5180	2240	1410	1200	1600	1300	1700	1340	---	---	1680	990
30	2540	1820	1490	1220	1800	1560	1530	1290	---	---	1230	1020
31	2530	1870	---	---	2080	1720	1960	1450	---	---	1200	1050
MONTH	8010	1820	5460	1040	5730	1020	5690	236	3790	1190	2460	240
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1200	1020	---	---								



## 03117100 TUSCARAWAS RIVER AT NAVARRE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	0.9	0.5	3.8	3.0	6.7	6.3	10.7	10.4	8.4	8.0	8.9	8.0
2	0.9	0.7	4.2	3.7	6.8	6.4	10.4	10.1	8.4	8.0	9.3	8.8
3	0.9	0.7	4.0	3.7	6.8	6.3	10.5	10.0	8.5	8.1	8.9	8.0
4	1.1	0.7	4.6	3.9	6.4	5.1	10.0	9.5	8.5	8.1	8.0	6.6
5	1.1	0.7	4.4	3.7	5.7	4.8	9.6	9.4	9.1	8.8	6.8	6.4
6	1.3	0.7	4.6	3.8	6.7	5.3	9.6	9.2	9.4	8.6	7.3	6.9
7	1.4	1.0	4.6	4.0	5.7	5.2	9.5	9.0	10.2	9.2	8.7	7.1
8	1.0	0.8	4.7	3.9	5.7	5.2	9.8	8.9	10.6	9.9	8.8	8.1
9	1.4	0.7	4.0	3.4	5.7	4.5	9.5	9.0	10.5	10.2	8.9	8.4
10	0.9	0.7	4.3	3.7	4.7	4.3	9.4	8.7	10.1	9.7	8.4	8.3
11	0.8	0.7	4.8	4.1	6.9	4.4	9.5	8.8	9.9	9.6	8.4	8.3
12	0.7	0.7	4.9	3.7	5.5	4.5	9.4	8.8	9.6	9.0	8.5	8.3
13	0.8	0.7	3.8	3.0	5.2	4.2	9.9	9.3	9.1	8.4	9.0	8.5
14	1.9	0.7	3.0	1.9	5.3	4.1	9.2	8.5	9.5	8.7	9.2	8.8
15	1.9	0.8	2.3	1.7	5.8	5.2	9.5	9.0	10.1	9.5	8.9	8.4
16	1.5	0.7	2.7	1.8	6.3	5.6	10.7	9.4	9.9	9.1	9.0	8.5
17	1.5	0.8	3.1	2.3	6.6	6.3	10.9	10.6	9.6	8.9	9.1	8.9
18	1.9	0.8	3.9	3.1	9.7	6.3	11.2	10.9	8.9	8.2	9.3	8.9
19	1.6	0.9	4.1	3.4	10.5	8.4	11.4	10.2	8.3	7.6	9.0	8.3
20	1.5	0.8	4.0	3.3	10.5	7.9	10.6	10.3	8.2	7.9	9.4	8.4
21	1.9	1.1	3.8	3.1	11.5	9.8	10.6	9.9	8.5	7.7	9.8	8.6
22	1.8	0.9	4.3	3.5	11.5	11.3	10.3	9.8	8.6	7.3	9.3	8.7
23	2.5	0.8	4.4	3.1	11.3	10.9	10.2	9.7	9.9	8.6	9.1	8.7
24	2.8	1.5	3.9	3.2	11.0	10.5	10.1	9.6	10.2	9.8	9.5	8.7
25	2.3	1.4	4.9	3.7	12.0	10.4	10.0	9.4	10.2	9.8	9.8	9.2
26	2.0	1.3	5.3	4.3	10.9	10.6	9.9	9.5	9.6	9.0	9.3	8.9
27	2.4	1.5	5.4	5.1	10.8	10.3	10.9	9.4	9.2	8.8	9.0	8.5
28	2.1	1.5	5.6	4.9	10.5	10.3	9.9	9.4	8.8	7.9	8.5	7.8
29	2.4	2.1	7.2	5.6	10.5	10.2	10.2	9.5	---	---	8.3	7.6
30	3.3	2.4	6.6	6.3	10.6	10.2	10.0	8.8	---	---	8.3	7.9
31	3.2	2.9	---	---	10.9	10.5	9.2	8.1	---	---	8.4	8.3
MONTH	3.3	0.5	7.2	1.7	12.0	4.1	11.4	8.1	10.6	7.3	9.8	6.4
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	8.0	---	---	2.9	2.3	1.3	0.6	1.2	0.2	3.7	2.6
2	8.0	6.7	5.6	4.5	2.8	2.5	1.5	1.2	0.8	0.4	3.9	2.6
3	6.8	6.2	4.7	4.1	---	---	1.2	0.9	1.5	1.0	3.6	2.5
4	6.3	6.0	5.									



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.5	18.0	12.5	11.0	7.5	6.0	2.5	2.0	6.5	5.5	5.5	4.5
2	19.0	17.5	12.5	11.0	6.5	5.0	2.5	1.0	5.5	4.5	6.0	4.5
3	20.5	17.5	13.0	11.0	9.0	5.5	2.5	1.5	5.0	4.0	9.5	5.5
4	20.0	18.0	11.5	10.0	10.5	8.5	3.5	2.0	4.5	3.0	12.5	9.5
5	19.5	18.0	11.0	10.0	11.5	10.0	3.0	1.0	4.0	2.0	12.5	11.0
6	18.5	15.5	9.5	8.0	9.5	7.0	2.5	1.5	4.0	2.5	11.0	9.5
7	18.5	15.5	9.0	7.0	7.0	6.0	3.5	2.0	4.0	2.5	12.5	9.5
8	18.5	17.0	9.0	7.5	6.5	5.5	3.0	1.5	3.5	2.5	12.0	10.5
9	19.0	17.0	8.5	6.5	6.0	5.5	3.5	1.5	3.5	1.5	11.5	9.5
10	19.5	17.0	7.5	6.0	6.0	5.0	4.0	2.0	2.5	1.0	11.5	10.0
11	20.0	17.0	6.0	5.0	5.0	4.0	4.0	3.0	4.0	1.0	10.0	8.0
12	20.0	17.0	8.0	5.5	5.0	3.5	4.0	2.5	6.0	2.5	8.0	6.5
13	19.0	17.0	10.5	7.5	6.5	4.0	2.0	1.0	7.5	4.0	6.0	5.0
14	18.0	16.0	14.5	10.5	6.5	5.0	3.5	1.5	7.0	4.5	6.5	4.5
15	17.5	15.0	15.5	13.5	5.0	4.0	5.5	4.0	5.0	2.5	7.0	5.5
16	16.5	14.0	14.5	11.0	4.0	3.0	4.5	3.0	6.0	3.0	7.5	6.5
17	14.0	13.0	11.0	9.0	3.0	1.5	3.5	2.5	6.0	4.0	6.5	5.5
18	13.0	12.0	9.0	8.0	3.0	1.0	4.5	3.0	6.5	4.0	7.0	5.5
19	14.0	11.0	11.0	8.5	4.0	2.0	6.0	4.0	7.0	5.5	7.5	6.0
20	14.0	11.5	12.0	9.5	4.5	3.0	5.0	3.5	8.5	5.5	9.0	6.5
21	14.0	11.0	12.5	11.0	3.5	1.0	6.0	5.5	8.5	5.5	7.5	6.5
22	14.5	11.0	12.5	10.5	1.5	0.5	6.5	6.0	9.0	7.0	8.0	5.0
23	15.0	11.5	11.5	10.0	2.0	1.0	6.5	6.0	7.0	3.5	8.0	6.0
24	16.0	12.0	12.5	10.5	3.5	2.0	5.5	4.5	4.0	3.0	7.0	4.5
25	16.0	12.0	12.5	10.5	5.0	3.0	4.5	3.5	4.0	2.0	6.0	3.0
26	16.0	13.5	10.5	10.0	5.5	5.0	5.5	3.5	4.5	1.5	7.5	4.0
27	15.5	12.5	13.0	10.5	6.0	5.0	7.5	5.5	5.5	1.5	8.0	5.0
28	15.0	13.5	13.5	11.5	5.0	4.0	7.5	6.5	6.0	4.5	9.5	6.5
29	14.5	13.0	11.0	7.5	4.0	3.5	7.0	6.0	---	---	8.5	7.5
30	13.0	12.0	7.5	6.5	3.5	2.5	7.0	5.5	---	---	8.0	7.5
31	12.5	12.0	---	---	2.5	2.0	8.0	6.0	---	---	7.5	6.0
MONTH	20.5	11.0	15.5	5.0	11.5	0.5	8.0	1.0	9.0	1.0	12.5	3.0

APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	6.0	---	---	21.0	19.5	22.5	20.0	24.5	20.0	22.0	21.0
2	12.0	7.5	18.0	16.5	22.0	18.0	23.5	21.5	25.5	21.0	22.0	20.0
3	12.5	10.0	16.5	15.5	23.0							

## MUSKINGUM RIVER BASIN

03131100 ROCKY FORK NEAR LUCAS, OHIO

LOCATION.--Lat 40°44'02", long 82°24'15", in E 1/2 sec. 33, T.23 N., R.17 W., Richland County, on left bank on Mount Zion Road, 0.2 mi (0.3 km) west of junction with Smart Road and 2.2 mi (3.5 km) northeast of Lucas.

DRAINAGE AREA.--63.7 mi<sup>2</sup> (165 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: May 1973 to June 1974 (discontinued).  
Water temperatures: May 1973 to June 1974 (discontinued).

EXTREMES.--1973-74: Specific conductance: Maximum, 1,500 micromhos Feb. 12, 13; minimum, 238 micromhos Nov. 25.  
pH: Maximum, 9.0 Nov. 7; minimum, 6.5 Mar. 2, June 15.  
Dissolved oxygen: Maximum, 15.0 mg/l Jan. 8, 9, 13, 14; minimum, 3.5 mg/l May 22.  
Water temperatures: Maximum, 24.5°C June 7, 9, 20; minimum, freezing point on Mar. 25.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	TIME	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.								
03...	1030	18.0	--	677	7.2	--	--	0
16...	1130	15.0	--	784	8.2	--	--	0
NOV.								
14...	1100	13.5	--	819	8.4	--	--	3
26...	0935	5.0	--	504	7.2	--	--	0
DEC.								
04...	1625	6.0	--	591	7.1	--	--	0
12...	1445	5.0	--	1110	8.0	--	--	0
JAN.								
15...	1235	2.0	--	1580	4.2	120	30	0
24...	1335	8.5	--	528	7.0	57	15	0
FEB.								
13...	1005	11.5	--	1390	8.1	77	19	0
21...	1800	18.5	--	659	8.1	37	20	0
MAR.								
11...	1210	9.0	--	531	7.1	58	17	0
29...	1805	11.5	--	768	7.0	72	20	0
APR.								
02...	1100	9.5	--	400	8.1	45	12	0
09...	1715	14.5	--	960	8.2	63	17	0
MAY								
07...	1130	11.0	11.0	750	7.7	69	20	0
29...	1125	20.0	--	489	7.1	44	12	0
JUNE								
19...	1530	24.0	--	761	7.5	72	21	0
24...	1545	21.0	--	681	7.6	63	17	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
16...	1200	<.5	--
APR.			
16...	1200	.0	5.9

## MUSKINGUM RIVER BASIN

43

03131100 ROCKY FORK NEAR LUCAS, OHIO--Continued

EXTREMES.--Period record: Specific conductance (May 1973 to June 74): Maximum, 1,500 micromhos Feb. 12, 13, 1974; minimum, 212 micromhos June 19, 1973.  
 pH (May 1973 to June 1974): Maximum, 9.0 Nov. 7, 1973; minimum, 6.1 May 5, 1973.  
 Dissolved oxygen (May 1973 to June 1974): Maximum, 15.0 mg/l or higher Jan. 8, 9, 13, 14, 1974; minimum, 1.5 mg/l Sept. 5, 6, 1973.  
 Water temperatures (May 1973 to June 1974): Maximum, 27.0°C Aug. 28, 1973; minimum, freezing point on Mar. 25, 1974.

REMARKS.--Water-quality recorder operated from May 1973 to June 1974. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month. Special samples were also collected once during the period to further define the quality of water. Outflow from the city of Mansfield sewage treatment plant enters the stream 5.0 mi (8.0 km) upstream from the station. Water is diverted from Clear Creek for the city of Mansfield water supply. No discharge records available.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	HARD- NESS (CA,MG) (MG/L)
OCT.							
03...	195	89	55	.4	.00	3.6	--
16...	206	92	76	.3	.00	5.1	--
NOV.							
14...	173	150	71	.3	.00	6.7	--
26...	146	75	33	.2	.00	3.2	--
DEC.							
04...	174	79	45	.2	.00	3.8	--
12...	149	68	220	.2	.00	3.9	--
JAN.							
15...	0	360	270	.5	.00	1.4	420
24...	156	70	47	.2	.00	.21	200
FEB.							
13...	183	87	290	.6	.00	3.6	270
21...	177	78	66	.2	.00	3.8	170
MAR.							
11...	158	71	44	.2	.00	3.0	210
29...	196	76	96	.3	.00	4.4	260
APR.							
02...	114	50	30	.4	.01	2.3	160
09...	180	71	160	.3	.00	3.3	230
MAY							
07...	207	89	65	.4	.00	4.7	250
29...	143	52	40	.3	.00	2.7	160
JUNE							
19...	234	86	72	.4	.00	4.6	270
24...	221	73	60	.4	.00	4.8	230

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), OCTOBER 1973 TO JUNE 1974

[illegible]





03131100 ROCKY FORK NEAR LUCAS, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, OCTOBER 1973 TO JUNE 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.4	4.4	---	---	9.9	8.8	---	---	10.7	10.0	10.4	9.5
2	5.3	4.4	---	---	10.5	8.2	---	---	10.6	10.0	10.1	8.0
3	6.3	4.5	---	---	9.3	7.9	---	---	10.9	10.2	9.2	8.3
4	5.6	3.8	---	---	8.5	7.3	---	---	10.8	10.2	9.8	8.1
5	5.9	4.3	---	---	8.5	7.7	---	---	11.5	10.4	10.1	8.5
6	7.3	5.2	11.4	10.1	9.4	8.1	---	---	10.9	9.7	10.8	9.7
7	7.2	5.1	10.1	8.7	9.2	8.6	---	---	11.4	9.7	10.1	9.3
8	7.0	5.0	---	---	9.4	8.7	15.0	12.0	11.2	10.4	10.2	9.1
9	7.2	4.8	---	---	10.0	8.2	15.0	12.5	12.1	10.4	10.1	7.8
10	7.6	5.2	---	---	9.7	8.5	14.3	12.8	11.9	11.3	8.6	7.7
11	8.2	5.8	---	---	10.0	9.1	14.4	11.4	11.9	10.9	10.5	8.3
12	8.2	5.9	---	---	10.4	9.2	14.6	12.2	11.4	10.0	10.9	10.1
13	7.2	6.0	---	---	10.6	8.5	15.0	12.6	11.7	10.2	11.5	10.0
14	7.8	6.4	9.3	7.5	10.1	7.9	15.0	12.5	11.9	11.3	11.1	9.5
15	7.7	5.7	7.9	5.9	9.8	8.8	14.5	10.0	11.6	11.0	10.4	9.7
16	7.8	6.1	10.0	7.7	9.2	8.6	12.8	10.9	12.0	10.9	11.0	10.3
17	8.0	6.1	11.0	9.2	9.5	8.8	12.9	11.6	11.7	10.8	11.1	10.1
18	7.6	6.3	10.1	9.0	10.2	6.6	13.3	11.4	11.8	10.3	11.0	9.6
19	8.0	6.0	9.9	8.3	7.2	6.4	---	---	11.0	9.6	10.2	9.4
20	7.8	6.0	9.6	7.9	7.3	6.0	---	---	11.3	10.4	10.5	8.8
21	---	---	8.8	7.3	7.5	6.5	---	---	11.1	9.8	10.7	8.8
22	---	---	9.7	8.1	7.4	7.3	11.7	8.0	10.7	10.0	11.0	9.5
23	---	---	9.8	8.1	---	---	12.0	10.2	11.6	10.8	10.6	9.5
24	---	---	8.1	5.8	---	---	13.3	10.5	11.4	10.7	11.6	10.2
25	---	---	8.9	5.8	---	---	13.3	10.2	11.5	10.9	11.9	10.0
26	---	---	8.1	7.1	---	---	13.3	10.0	11.2	10.3	10.8	9.4
27	---	---	8.1	7.6	---	---	12.0	10.0	11.0	9.5	10.5	9.2
28	---	---	7.9	6.8	---	---	12.7	10.6	10.2	9.3	10.0	8.6
29	---	---	10.2	7.6	---	---	13.3	10.8	---	---	10.2	8.3
30	---	---	9.9	8.8	---	---	13.3	10.5	---	---	9.8	9.4
31	---	---	---	---	---	---	12.3	10.2	---	---	10.4	9.5
MONTH	---	---	---	---	---	---	---	---	12.1	9.3	11.9	7.7

[illegible]

TEMPERATURE (°C) OF WATER, OCTOBER 1973 TO JUNE 1974

[illegible]

## MUSKINGUM RIVER BASIN

03131500 BLACK FORK AT LOUDONVILLE, OHIO

LOCATION.--Lat 40°38'09", long 82°14'22", in NW 1/4 sec.1, T.19 N., R.16 W., Ashland County, at gaging station on right bank on upstream side of bridge at Loudonville, 1.5 mi (2.4 km) downstream from Big Run. Water-quality recorder located just downstream from the gaging station, at Loudonville water treatment plant.

DRAINAGE AREA.--349 mi<sup>2</sup> (904 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1957 to September 1958, April 1968 to September 1974.  
Water temperatures: April 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,270 micromhos Dec. 20; minimum, 204 micromhos July 29.

pH: Maximum, 8.6 Apr. 25; minimum, 6.8 Jan. 16.

Dissolved oxygen: Maximum, 13.0 mg/l Mar. 24; minimum, 2.0 mg/l July 29.

Water temperatures: Maximum, 23.5°C July 9, 10; minimum, freezing point on Jan. 9.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
01...	1100	124	16.5	--	478	8.6	--	--	--	--	--	6
25...	1600	114	--	--	577	8.7	--	60	18	--	--	7
NOV.												
13...	1100	136	7.0	--	593	8.4	--	--	--	--	--	2
30...	1300	934	9.0	--	495	7.9	--	--	--	--	--	0
DEC.												
03...	1600	831	9.0	--	459	8.4	--	--	--	--	--	1
14...	0910	605	5.0	--	628	8.2	--	--	--	--	--	0
JAN.												
10...	1300	312	4.0	--	622	7.5	--	67	18	--	--	0
25...	1300	1500	5.0	--	323	7.1	--	40	10	--	--	0
FEB.												
13...	1600	422	5.0	--	766	7.9	--	64	18	71	--	0
23...	0900	686	4.0	--	495	8.0	--	58	15	--	--	0
MAR.												
02...	1700	339	7.0	--	494	8.0	--	62	17	--	--	0
12...	1300	1310	8.5	--	373	6.9	--	46	13	--	--	0
APR.												
04...	1230	1160	12.0	--	408	7.1	--	48	13	--	--	0
29...	1300	211	17.0	--	503	7.3	--	58	18	--	--	0
MAY												
10...	0600	231	11.0	--	543	7.4	--	65	17	--	--	0
13...	0800	673	13.0	--	433	7.2	--	39	14	--	--	0
JUNE												
03...	0800	803	19.0	--	396	7.5	--	52	14	--	--	0
19...	1300	155	18.0	--	537	7.5	--	64	20	--	--	0
SEP.												
24...	1300	126	12.0	9.2	565	7.8	7.5	65	21	22	2.5	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
23...	1115	6.2	--
APR.			
18...	1330	.0	6.1



## MUSKINGUM RIVER BASIN

49

## 03131500 BLACK FORK AT LOUDONVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,030 micromhos Feb. 3, 1972; minimum, 84 micromhos Aug. 18, 1972.

pH (1968-74): Maximum, 10.9 Mar. 15, 1971; minimum, 4.7 June 30, July 1, 1971.

Dissolved oxygen (1968-74): Maximum, 14.9 mg/l Feb. 28, 1973; minimum, 0.0 mg/l July 30, 1970.

Water temperatures (1968-74): Maximum, 28.0°C July 12, 1969; minimum, freezing point on Feb 12-14, 17, 1970, Jan. 9, 1974.

REMARKS.--Water-quality recorder operated since April 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
01...	180	45	24	.2	--	.00	1.7	--	--	--	--	--
25...	210	63	32	.3	--	.00	2.2	--	--	220	--	--
NOV.												
13...	211	81	31	.2	--	.00	2.9	--	--	--	--	--
30...	162	74	24	.2	--	.00	2.5	--	--	--	--	--
DEC.												
03...	147	69	22	.2	--	.01	3.6	--	--	--	--	--
14...	161	68	71	.2	--	.01	2.6	--	--	--	--	--
JAN.												
10...	194	71	54	.1	--	.00	1.2	--	--	240	--	--
25...	92	50	16	.1	--	.01	1.7	--	--	140	--	--
FEB.												
13...	180	63	130	.2	--	.01	2.6	.34	--	230	--	--
23...	156	59	36	.4	--	.01	2.2	--	--	210	--	--
MAR.												
02...	168	63	37	.2	--	.00	2.3	--	--	220	--	--
12...	123	55	24	.2	--	.00	1.3	--	--	170	--	--
APR.												
04...	140	50	23	.4	--	.01	1.1	--	--	170	--	--
29...	204	57	27	.2	--	.00	.82	--	--	220	--	--
MAY												
10...	204	59	38	.3	--	.01	1.6	--	--	230	--	--
13...	164	57	22	.3	--	.00	1.1	--	--	160	--	--
JUNE												
03...	145	53	18	.2	--	.01	2.3	--	--	190	--	--
19...	213	56	28	.7	--	.01	2.3	--	--	240	--	--
SEP.												
24...	226	63	30	.3	.22	.00	1.7	.43	323	250	30	20

## 03131500 BLACK FORK AT LOUDONVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	480	435	629	488	---	---	456	405	369	315	581	488
2	540	357	512	491	---	---	453	435	375	369	509	491
3	477	456	548	512	---	---	456	447	390	369	539	494
4	486	471	536	515	---	---	471	456	390	387	521	467
5	471	453	530	518	---	---	498	471	453	390	530	479
6	471	450	539	521	470	458	498	486	465	438	482	467
7	543	438	572	533	473	461	501	495	696	453	479	470
8	---	---	561	519	482	473	510	501	578	479	484	472
9	---	---	549	516	662	482	---	---	542	509	532	364
10	---	---	549	534	506	485	---	---	512	485	427	346
11	---	---	567	543	581	491	---	---	536	491	415	370
12	---	---	585	555	578	530	---	---	536	503	391	334
13	---	---	633	564	581	518	---	---	761	521	340	286
14	---	---	582	567	707	500	585	579	827	488	319	292
15	---	---	585	567	522	501	720	582	518	491	328	310
16	---	---	657	519	569	521	1120	684	551	506	451	313
17	---	---	558	531	546	534	843	534	518	506	376	298
18	---	---	576	546	543	531	558	480	506	500	391	343
19	543	495	571	559	552	537	510	246	548	500	403	364
20	555	525	577	559	1270	540	420	312	602	485	391	373
21	543	528	682	538	858	555	474	354	503	479	406	349
22	546	537	542	443	579	546	351	324	515	482	526	406
23	537	480	563	488	591	546	363	306	506	467	466	430
24	566	506	---	---	597	540	306	300	599	491	469	430
25	575	509	---	---	843	552	315	306	518	470	568	454
26	533	494	---	---	735	486	324	309	521	473	496	472
27	530	473	---	---	534	405	384	327	533	497	523	454
28	530	491	---	---	513	483	336	330	551	503	466	451
29	596	515	---	---	486	426	375	330	---	---	475	409
30	536	452	---	---	441	402	420	333	---	---	427	406
31	560	500	---	---	405	399	525	354	---	---	451	409
MONTH	---	---	---	---	1270	399	1120	246	827	315	581	286
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	457	439	520	466	459	438	520	505	543	504	459	447
2	421	328	502	474	435	369	535	523	---	---	459	432
3	421	400	519	480	474	372	541	532	---	---	516	402
4	436	388	522	474	402	393	544	535	---	---	417	402
5	433	415	492	486	420	405	550	535	---	---	432	414
6	424	406	510	486	432	423						

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.7	7.4	---	---	---	---	---	---	7.7	7.4	7.4	7.3
2	---	---	---	---	---	---	---	---	7.5	7.5	7.6	7.3
3	---	---	---	---	---	---	---	---	7.5	7.4	7.8	7.5
4	---	---	---	---	---	---	---	---	7.4	7.4	7.9	7.7
5	---	---	---	---	---	---	---	---	7.4	7.3	7.8	7.7
6	---	---	---	---	---	---	---	---	7.4	7.3	7.9	7.7
7	---	---	---	---	---	---	---	---	7.5	7.4	7.8	7.7
8	---	---	---	---	---	---	---	---	7.8	7.4	7.8	7.7
9	---	---	---	---	---	---	---	---	7.8	7.5	7.7	7.5
10	---	---	---	---	---	---	---	---	7.6	7.5	7.7	7.4
11	---	---	---	---	---	---	---	---	7.6	7.5	7.7	7.5
12	---	---	8.4	7.5	---	---	---	---	7.6	7.5	7.6	7.4
13	---	---	8.3	7.5	---	---	---	---	7.7	7.6	7.5	7.3
14	---	---	8.2	7.5	---	---	7.6	7.1	7.7	7.4	7.4	7.3
15	---	---	8.0	7.2	---	---	7.5	7.3	7.6	7.4	7.4	7.3
16	---	---	7.7	7.3	---	---	7.3	6.8	7.9	7.6	7.4	7.3
17	---	---	8.2	7.4	---	---	7.2	6.9	7.9	7.8	7.5	7.4
18	---	---	8.2	7.5	---	---	7.3	7.1	7.9	7.8	7.6	7.5
19	---	---	8.0	7.4	---	---	7.3	7.0	8.0	7.8	7.6	7.5
20	---	---	8.1	7.6	---	---	7.3	7.0	8.0	7.3	7.6	7.5
21	---	---	7.8	7.1	---	---	7.6	6.9	7.7	7.3	7.9	7.6
22	---	---	7.7	7.2	---	---	7.0	6.9	7.6	7.4	7.7	7.4
23	---	---	8.1	7.6	---	---	7.3	7.0	7.5	7.3	7.6	7.5
24	---	---	---	---	---	---	7.2	7.1	7.3	7.2	7.8	7.3
25	---	---	---	---	---	---	7.2	7.0	7.2	7.1	7.8	7.4
26	---	---	---	---	---	---	7.3	7.1	7.4	6.9	8.0	7.6
27	---	---	---	---	---	---	7.5	7.3	7.6	7.3	8.1	7.6
28	---	---	---	---	---	---	7.5	7.4	7.4	7.3	8.4	7.9
29	---	---	---	---	---	---	7.6	7.5	---	---	8.2	7.6
30	---	---	---	---	---	---	7.6	7.5	---	---	8.0	7.7
31	---	---	---	---	---	---	7.7	7.5	---	---	8.0	7.9
MONTH	---	---	---	---	---	---	---	---	8.0	6.9	8.4	7.3

APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.1	7.8	8.0	7.6	8.1	7.6	7.6	7.5	7.6	7.5	8.0	7.7
2	7.9	7.5	8.2	7.8	8.1	7.9	7.6	7.5	7.7	7.5	7.9	7.8
3	8.0	7.7	8.0	7.8	8.1	7.9	7.6	7.5	7.7	7.5	7.8	7.6
4	7.9	7.7	8.2	7.8	8.1	7.7	7.6	7.5	7.5	7.3	7.8	7.7
5	7.9	7.7	8.2	8.0	7.7	7.5	7.7	7.5	7.5	7.3	7.9	7.8
6	7.7	7.6	8.2	7.9	7.7	7.5	7.7	7.5	7.7	7.5	7.8	7.7
7	7.6	7.5	8.0	7.8	7.7	7.6	7.7	7.5	7.7	7.5	7.9	7.7
8	7.6	7.5	8.1	7.8	7.7	7.6	7.8	7.6	7.6	7.5	7.9	7.7
9	7.5	7.3	7.8	7.6	7.7	7.6	7.9	7.5	7.5	7.4	7.9	7.7
10	7.4	7.3	7.9	7.6	7.8	7.7	7.8	7.5	7.5	7.2	7.7	7.6
11	7.5	7.4	8.1	7.8	7.8	7.7	8.0	7.5	7.7	7.4	7.7	7.5
12	7.5	7.4	7.7	7.3	7.8	7.7	8.0	7.7	7.7	7.6	7.7	7.3
13	7.7	7.5	7.9	7.5	7.8	7.7	8.0	7.6	7.7	7.6	7.6	7.3
14	7.8	7.6	8.1	7.6	7.9	7.7	---	---	7.6	7.4	7.9	7.6
15	7.8	7.7	8.0	7.7	7.8	7.7	8.0	7.5	7.7	7.5	8.0	7.8
16	7.9	7.7	8.2	7.8	7.8	7.5	8.1	7.7	7.7	7.6	8.0	7.8
17	8.1	7.8	8.2	8.0	7.8	7.7	8.1	7.7	7.6	7.2	7.9	7.6
18	8.2	7.8	8.2	8.0	7.9	7.7	8.0	7.6	7.5	7.3	7.8	7.6
19	8.3	7.8	8.3	8.1	7.7	7.7	8.0	7.5	7.6	7.5	7.8	7.6
20	8.3	8.0	8.3	7.8	7.7	7.5	8.0	7.6	7.7	7.6	7.8	7.6
21	8.4	8.2	8.3	7.7	7.7	7.5	7.9	7.6	7.8	7.6	7.7	7.6
22	8.4	8.1	8.0	7.7	7.7	7.6	7.9	7.6	7.9	7.6	7.7	7.6
23	8.2	7.8	7.7	7.5	7.7	7.6	7.7	7.5	7.9	7.7	7.7	7.5
24	8.5	8.0	7.8	7.6	7.8	7.6	7.8	7.5	7.9	7.8	7.7	7.5
25	8.6	8.2	7.9	7.6	7.8	7.8	7.9	7.6	8.0	7.7	7.8	7.5
26	8.5	8.1	7.9	7.8	7.8	7.6	8.0	7.6	7.9	7.6	7.8	7.6
27	8.3	8.0	8.0	7.8	7.8	7.5	8.0	7.6	7.9	7.6	7.8	7.5
28	8.4	8.1	8.0	7.8	7.8	7.7	7.9	7.6	7.7	7.4	7.7	7.2
29	8.4	7.9	7.8	7.5	7.7	7.6	7.8	7.2	7.6	7.4	7.5	7.3
30	8.4	7.6	7.5	7.2	7.6	7.5	7.4	7.2	7.8	7.5	7.7	7.4
31	---	---	7.7	7.5	---	---	7.5	7.3	7.8	7.7	---	---
MONTH	8.6	7.3	8.3	7.2	8.1	7.5	8.1	7.2	8.0	7.2	8.0	7.2
YEAR	8.6	6.8										

## 03131500 BLACK FORK AT LOUDONVILLE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	5.0	7.4	5.3	---	---	12.6	12.0	11.2	10.2	11.9	10.8
2	6.1	4.1	7.7	6.6	---	---	12.8	12.2	11.2	11.1	11.4	10.4
3	6.9	5.9	9.1	6.6	---	---	12.5	12.1	11.7	11.2	10.9	9.8
4	7.7	6.4	9.8	8.0	---	---	12.3	12.0	12.4	11.4	10.7	9.2
5	6.9	5.3	---	---	---	---	12.8	12.1	12.4	11.4	10.9	10.0
6	7.4	6.8	---	---	10.6	10.5	12.4	11.9	12.0	11.2	11.0	10.6
7	7.5	6.5	---	---	10.7	10.5	12.2	11.8	12.2	11.1	10.4	10.0
8	7.1	6.3	10.9	8.5	11.1	10.4	12.5	12.2	12.4	11.5	10.6	9.4
9	7.4	6.4	10.5	8.2	11.1	10.4	---	---	12.2	11.8	9.8	8.6
10	7.4	6.4	10.7	8.7	10.8	10.1	---	---	12.5	11.4	10.2	8.6
11	7.9	6.6	10.9	8.8	11.4	10.6	---	---	11.6	11.0	10.4	10.1
12	8.1	6.9	9.9	7.7	11.6	10.9	---	---	11.2	10.6	10.8	10.0
13	7.4	6.6	8.6	6.3	11.4	9.8	---	---	11.4	10.4	11.1	10.1
14	7.3	4.4	6.6	5.4	11.2	9.7	11.8	11.5	11.5	10.4	10.7	9.8
15	8.7	7.3	5.4	4.6	11.9	11.2	12.6	11.0	11.6	11.1	10.4	9.9
16	8.4	7.3	6.1	4.0	12.3	11.5	11.7	10.9	11.7	11.1	10.4	9.3
17	8.9	7.1	8.2	6.1	12.2	11.9	12.1	11.2	11.6	11.1	10.5	10.1
18	8.8	7.8	7.9	7.0	12.3	11.8	11.9	11.5	11.8	11.2	10.9	10.1
19	9.3	8.3	8.4	6.4	12.5	11.9	11.4	11.1	11.9	11.4	10.4	9.9
20	9.1	8.2	8.9	6.7	12.3	10.8	11.1	10.5	11.7	10.8	10.3	9.7
21	8.9	7.5	7.8	4.0	12.1	11.5	11.9	10.0	11.8	11.0	11.4	9.6
22	8.2	7.2	7.4	4.5	12.4	11.9	12.0	11.5	11.7	11.0	11.7	10.5
23	8.4	6.9	9.7	6.8	12.1	11.7	11.4	10.4	12.2	11.7	11.8	11.3
24	8.2	6.6	---	---	12.1	11.6	11.4	10.3	11.6	11.4	13.0	11.5
25	8.2	6.9	---	---	12.0	10.8	10.9	9.8	12.1	11.6	11.9	11.1
26	7.5	6.0	---	---	11.8	10.9	10.4	10.0	12.9	12.0	11.6	10.7
27	8.1	6.5	---	---	12.1	10.6	10.6	9.6	12.5	11.6	11.5	10.7
28	7.5	6.0	---	---	12.3	12.0	10.9	10.1	11.6	11.2	11.7	9.9
29	7.4	5.3	---	---	12.2	11.8	11.1	10.4	---	---	10.8	8.7
30	7.6	5.1	---	---	12.3	11.9	11.2	9.4	---	---	10.6	9.5
31	7.4	5.5	---	---	12.4	12.1	10.4	8.9	---	---	10.7	9.9
MONTH	9.3	4.1	---	---	12.5	9.7	12.8	8.9	12.9	10.2	13.0	8.6
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.1	10.2	9.6	6.9	7.8	6.1	6.4	5.7	6.9	5.7	6.7	5.7
2	10.3	8.5	9.4	7.5	7.7	6.8	6.8	5.7	6.9	5.7	6.9	6.0
3	9.7	9.3	8.4	7.2	7.5	6.7	6.4	5.4	6.2	5.1		



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	17.5	16.5	11.5	10.5	---	---	2.0	1.5	4.5	4.0	4.0	3.5
2	18.0	17.0	11.0	10.0	---	---	1.5	0.5	4.0	3.5	7.0	4.0
3	17.5	16.0	11.0	9.5	---	---	1.5	1.0	3.5	2.5	10.5	7.0
4	18.0	16.5	10.0	9.0	---	---	2.0	1.0	2.5	2.0	10.5	9.0
5	18.5	17.0	9.5	8.5	---	---	1.5	0.5	2.0	1.0	9.5	8.5
6	16.5	14.5	8.5	7.0	6.0	5.5	2.0	1.5	2.0	1.5	9.0	8.0
7	17.0	15.0	7.0	6.0	5.5	5.0	2.0	1.0	2.5	2.0	11.0	9.0
8	18.0	17.0	7.0	6.0	5.0	4.5	1.0	0.0	2.5	2.0	11.0	10.0
9	18.0	17.0	7.0	5.5	5.0	4.5	---	---	2.5	1.5	11.5	10.0
10	18.0	17.0	5.5	5.0	5.0	3.5	---	---	2.0	1.0	11.5	9.5
11	17.5	16.0	5.0	4.0	3.5	2.5	---	---	2.5	1.5	9.0	8.0
12	17.5	16.0	6.5	4.5	3.5	2.5	---	---	4.0	2.0	8.0	7.0
13	17.0	16.0	8.5	6.0	5.0	3.0	---	---	5.0	3.5	7.0	5.5
14	16.5	15.5	11.0	8.5	5.0	3.5	3.0	2.0	5.0	2.5	6.5	5.0
15	16.5	14.5	12.5	11.0	3.0	2.5	4.0	3.0	3.5	2.0	6.0	5.5
16	15.5	13.5	11.5	8.0	2.5	1.5	4.0	3.0	4.0	2.0	6.5	5.5
17	13.5	12.0	8.0	6.5	1.5	1.0	4.0	2.5	4.5	3.0	6.0	5.0
18	12.5	11.5	7.5	6.5	1.0	0.5	4.5	3.0	4.0	2.5	5.5	4.5
19	12.0	10.0	9.0	7.5	1.5	1.0	5.0	4.0	4.5	4.0	6.0	5.5
20	12.5	11.5	9.0	8.0	3.0	1.5	7.5	4.0	5.0	3.5	7.0	5.0
21	12.5	11.0	11.5	9.0	2.0	1.0	8.0	3.5	5.5	3.5	6.5	5.0
22	12.5	10.5	11.0	9.0	1.5	0.5	4.0	3.5	6.5	4.5	5.5	3.5
23	12.5	10.5	9.5	8.5	2.0	1.5	5.5	4.0	4.5	2.5	5.5	4.0
24	12.5	10.5	---	---	2.5	2.0	4.0	3.5	3.0	2.0	4.5	2.5
25	13.0	11.0	---	---	4.5	2.5	4.0	3.5	2.0	1.0	4.0	2.0
26	13.0	12.0	---	---	4.5	4.0	5.0	4.0	2.5	0.5	6.0	2.5
27	12.5	11.0	---	---	5.5	3.0	5.0	3.5	4.0	1.5	6.5	4.5
28	12.5	11.5	---	---	3.5	2.5	4.5	4.0	4.0	3.5	7.5	5.5
29	11.5	11.0	---	---	3.0	2.5	4.5	4.0	---	---	7.0	6.0
30	11.5	10.5	---	---	2.5	2.0	4.5	3.5	---	---	8.0	7.0
31	11.5	11.0	---	---	2.5	1.5	6.0	4.0	---	---	7.5	6.0
MONTH	18.5	10.0	---	---	6.0	0.5	8.0	0.0	6.5	0.5	11.5	2.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	6.0	17.0	14.0	19.0	18.0	20.5	17.0	20.0	18.0	21.0	20.5
2	11.0	9.0	16.0	14.0	20.0	17.5	21.0	18.5	21.0	18.5	20.5	19.5
3	11.0	9.0	14.5	13.5	21.0	19.0	23.0	20.0	21.0	19.5	20.0	17.5
4	13.0	11.0	15.5	12.5	21.5	19.0	2					

## MUSKINGUM RIVER BASIN

## 03140600 MUSKINGUM RIVER AT CONESVILLE, OHIO

LOCATION.--Lat 40°11'08", long 81°53'07", Coshocton County, on left bank 150 ft (46 m) downstream from NY, Chicago and St. Louis Railroad Bridge, 0.4 mi (0.6 km) upstream from Columbus and Southern Ohio Power Co. outlet, 0.4 mi (0.6 km) east of Conesville and 3.2 mi (5.1 km) upstream from Wills Creek.

DRAINAGE AREA.--4,878 mi<sup>2</sup> (12,634 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1973 to June 1974 (discontinued).

Water temperatures: June 1973 to June 1974 (discontinued).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,600 micromhos Oct. 10; minimum, 270 micromhos Jan. 22.

pH: Maximum, 9.3 June 10; minimum, 3.2 June 1.

Dissolved oxygen: Maximum, 15.0 mg/l June 9; minimum, 4.4 mg/l Nov. 25.

Water temperatures: Maximum, 25.5°C June 10; minimum, 0.5°C Jan. 14, Feb. 10, 11.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	TIME	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH.  (UNITS)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.								
11...	1100	18.0	--	1210	8.4	120	21	10
NOV.								
24...	1600	10.0	--	1050	8.4	--	--	2
27...	1340	10.5	--	588	8.2	--	--	0
DEC.								
15...	1830	9.5	--	910	7.1	--	--	0
29...	1600	9.5	--	507	7.2	--	--	0
JAN.								
12...	1700	9.5	--	951	7.4	47	13	0
25...	1200	4.5	--	447	7.4	50	12	0
FEB.								
03...	1230	.0	--	550	6.8	60	17	0
15...	0850	3.0	--	788	7.2	83	21	0
MAR.								
09...	1600	9.0	--	643	8.2	71	18	0
30...	1600	9.5	--	435	7.4	44	13	0
APR.								
06...	1600	10.0	--	378	7.7	41	11	0
27...	1400	20.0	--	761	7.4	83	20	0
MAY								
04...	1400	15.5	--	766	8.2	80	20	0
31...	0945	18.5	7.4	900	7.6	89	21	0
JUNE								
01...	1600	10.0	--	612	7.5	47	10	0
18...	1700	10.0	--	1100	7.4	95	23	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV.			
02...	1435	<.5	--
APR.			
26...	1135	.1	4.8

## MUSKINGUM RIVER BASIN

55

## 03140600 MUSKINGUM RIVER AT CONESVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (June 1973-June 1974): Maximum, 1,600 micromhos Sept. 25, Oct. 10, 1973; minimum, 270 micromhos Jan. 22, 1974.

pH (June 1973-June 1974): Maximum, 9.3 June 10, 1974; minimum, 3.2 June 1, 1974.

Dissolved oxygen (June 1973-June 1974): Maximum, 15.0 mg/l or higher June 9, 1974; minimum, 0.9 mg/l Aug. 16, 1973.

Water temperatures (June 1973-June 1974): Maximum, 27.5°C July 9, 1973; minimum, 0.5°C Jan. 14, Feb. 10, 11, 1974.

REMARKS.--Water-quality recorder operated from June 1973 to June 1974. Dissolved oxygen concentrations listed as 15.0 mg/l represents concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder samples were collected by a local observer on an approximate once-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected once during the period to further define the quality of water.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	HARD- NESS (CA,MG) (MG/L)
OCT.							
11...	157	150	210	.5	.00	2.2	390
NOV.							
24...	148	190	140	.3	--	--	--
27...	95	110	67	.3	.01	2.4	--
DEC.							
15...	132	160	120	.4	.00	2.4	--
29...	91	97	45	.2	.00	2.7	--
JAN.							
12...	133	120	160	.4	.01	1.5	170
25...	74	80	43	.2	.00	2.1	170
FEB.							
03...	117	96	55	.2	.00	.26	220
15...	128	140	97	.2	.00	1.4	290
MAR.							
09...	117	110	79	.3	.00	2.1	250
30...	67	87	44	.2	.00	1.9	160
APR.							
06...	71	75	30	.3	.00	1.7	150
27...	137	140	95	.4	.00	1.4	290
MAY							
04...	135	140	95	.4	.00	1.4	280
31...	133	150	140	.3	.00	1.9	310
JUNE							
01...	111	110	65	.4	.00	2.4	160
18...	147	180	170	.5	.00	1.9	330

## 03140600 MUSKINGUM RIVER AT CONESVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), OCTOBER 1973 TO JUNE 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1320	1030	1140	790	455	419	727	705	590	545	828	633
2	1340	1090	800	715	494	446	734	697	558	525	825	636
3	1100	963	748	706	553	487	744	656	570	522	825	576
4	1120	975	769	706	616	523	662	642	585	519	690	573
5	1120	915	718	694	682	616	711	634	567	543	603	468
6	1090	918	739	709	787	652	694	652	585	552	636	570
7	1190	1090	865	733	753	675	690	657	611	560	657	615
8	1130	912	877	823	783	699	700	658	713	608	606	576
9	1070	906	868	838	774	729	678	648	713	659	657	594
10	1600	1090	889	859	821	767	646	613	686	635	708	657
11	1170	990	928	853	836	761	657	627	662	629	---	---
12	1180	991	970	886	878	767	934	610	734	659	---	---
13	1230	1170	949	859	860	782	---	---	767	716	---	---
14	1180	1050	934	895	844	742	878	848	842	701	---	---
15	1080	942	937	886	865	712	865	793	896	716	525	468
16	1280	1080	946	847	853	766	822	708	791	731	555	510
17	1340	1270	976	916	853	688	746	683	796	724	651	552
18	1350	1250	1190	904	738	570	703	592	768	738	681	528
19	1530	1350	1010	895	741	606	603	498	860	764	561	495
20	1460	1100	1040	898	755	725	497	374	835	766	---	---
21	1220	1110	919	862	740	602	367	283	912	765	---	---
22	1350	1240	964	895	742	634	273	270	931	687	---	---
23	1520	1360	970	916	612	495	---	---	719	656	---	---
24	1540	1520	1050	964	545	476	---	---	710	659	---	---
25	1560	1130	964	526	568	514	437	419	692	620	---	---
26	1390	1130	576	492	570	519	449	434	686	602	---	---
27	1400	1370	607	517	566	503	468	438	737	611	---	---
28	1450	1400	515	356	547	439	495	474	806	653	---	---
29	1490	1380	420	390	489	342	520	481	---	---	---	---
30	1450	1140	463	412	600	522	505	475	---	---	---	---
31	1340	1040	---	---	684	597	557	512	---	---	---	---
MONTH	1600	906	1190	356	878	342	934	270	931	519	---	---

[illegible]



## PH (UNITS), OCTOBER 1973 TO JUNE 1974

[illegible]

## DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, OCTOBER 1973 TO JUNE 1974

[illegible]

TEMPERATURE (°C) OF WATER, OCTOBER 1973 TO JUNE 1974

[illegible]

## MUSKINGUM RIVER BASIN

03144500 MUSKINGUM RIVER AT DRESDEN, OHIO

LOCATION.--Lat 40°07'13", long 81°59'59", Muskingum County, at gaging station on left bank 70 ft (21 m) downstream from bridge on State Highway 208, 0.5 mi (0.8 km) east of Dresden, and 0.5 mi (0.8 km) downstream from Wakatomika Creek.

DRAINAGE AREA.--5,993 mi<sup>2</sup> (15,522 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1966, 1969-1974 (partial-record station).

Water temperatures: October 1952 to September 1961, October 1963 to September 1974 (discontinued).

Sediment records: October 1952 to September 1974 (discontinued).

## EXTREMES.--1973-74:

Water temperatures: Maximum, 27.0°C July 10, 19, 20, 18; minimum, freezing point Jan. 13, Feb. 10, 11.

Sediment concentrations: Maximum daily, 474 mg/l Nov. 26, Apr. 4; minimum daily, 8 mg/l Nov. 13.

Sediment discharges: Maximum daily, 37,900 tons (34,400 tonnes) Apr. 4; minimum daily, 33 tons (30 tonnes) Oct. 27.

## EXTREMES.--Period of record:

Water temperatures (1952-60, 1964-74): Maximum, 31.0°C Aug. 4, 1955; minimum, freezing point on many days during 1952-59, 1965, 1967-74.

Sediment concentrations: Maximum daily, 1,600 mg/l Jan. 22, 1959; minimum daily, 1 mg/l on several days during 1952, 1954, 1956, and 1960.

Sediment discharges: Maximum daily, 160,000 tons (145,000 tonnes) Jan. 22, 1959; minimum daily, 2.7 tons (2.4 tonnes) Dec. 17, 1960.

REMARKS.--Flow is regulated by 15 flood control reservoirs at points 15 mi (24 km) to 105 mi (169 km) upstream.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT., 1973												
01...	1215	1960	21.0	--	1100	7.3	--	72	25	--	--	0
NOV.												
30...	1245	18400	8.5	--	479	7.2	--	--	--	--	--	--
FEB., 1974												
01...	1335	13600	5.0	--	--	8.2	--	78	16	--	--	--
APR.												
01...	1450	23200	8.5	--	--	7.3	--	49	13	--	--	0
SEP.												
25...	1230	4000	14.5	7.4	800	7.3	7.4	82	21	37	3.0	0

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT., 1973												
01...	168	150	160	.4	--	.00	1.7	.09	--	--	--	--
NOV.												
30...	--	81	47	--	--	.00	2.4	--	--	--	--	--
FEB., 1974												
01...	--	110	51	--	--	.00	2.1	--	--	260	--	--
APR.												
01...	73	79	36	--	--	.00	1.9	--	--	180	--	--
SEP.												
25...	126	140	84	.3	.20	.03	.77	.12	437	290	220	250

## MUSKINGUM RIVER BASIN

61

## 03144500 MUSKINGUM RIVER AT DRESDEN, CHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974  
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 1200)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	11.0	7.0	2.0	5.0	4.0	7.0	17.0	18.5	21.0	---	21.0
2	21.0	11.0	6.0	1.5	5.0	---	8.5	17.0	18.0	22.0	25.0	20.0
3	20.5	10.5	6.5	1.5	3.5	7.0	10.0	16.0	19.0	24.0	25.0	19.0
4	20.5	10.0	8.0	1.0	3.0	10.0	12.0	15.0	20.0	25.0	25.0	18.0
5	20.0	10.0	9.0	1.0	2.0	10.5	---	14.0	21.0	25.0	23.0	17.0
6	18.0	8.0	8.0	1.0	2.0	10.0	10.5	---	21.0	23.5	23.0	17.0
7	18.0	8.0	7.0	1.0	---	10.0	10.5	13.0	22.0	24.0	23.0	17.0
8	19.0	7.5	5.0	---	---	10.0	10.0	13.0	22.5	25.0	24.0	17.0
9	20.0	7.0	5.0	1.5	1.0	12.0	8.0	13.0	23.0	26.5	25.0	18.0
10	19.0	6.0	5.0	2.0	0.0	11.0	8.0	13.0	24.0	27.0	24.5	19.0
11	19.0	5.5	4.0	2.0	0.0	10.0	8.0	14.0	23.0	26.5	24.0	20.0
12	19.0	5.0	3.0	1.0	1.0	8.0	9.5	15.0	22.0	25.0	23.0	21.0
13	19.5	7.0	---	0.0	3.0	---	10.0	14.0	21.0	25.0	24.0	21.0
14	18.5	9.0	4.0	---	4.0	6.0	12.0	15.0	21.5	26.0	24.0	20.0
15	18.0	12.0	4.0	2.0	3.0	6.0	12.0	16.5	22.0	26.5	24.0	18.5
16	17.5	10.5	3.0	3.0	3.0	6.0	11.0	16.5	21.0	26.0	25.0	18.0
17	16.0	8.5	---	3.0	3.5	6.0	11.0	18.5	19.5	25.0	25.0	19.0
18	15.0	---	---	3.0	---	5.5	11.5	19.0	19.0	25.0	24.0	19.0
19	14.0	9.0	1.5	5.0	---	6.5	12.0	20.0	20.0	27.0	23.0	19.0
20	15.0	9.0	3.0	6.0	---	6.0	12.0	19.0	21.0	27.0	23.0	20.0
21	14.5	10.0	2.0	7.0	6.0	---	13.5	20.0	23.0	25.5	25.0	18.0
22	14.0	10.0	1.0	6.5	7.0	6.0	15.0	20.0	22.0	25.0	25.0	17.0
23	15.0	9.5	1.0	7.0	---	6.0	13.0	20.0	20.0	26.0	25.5	15.0
24	15.0	10.0	1.5	6.0	3.5	5.0	11.5	20.5	19.0	24.0	25.0	14.0
25	---	10.5	3.0	5.0	---	---	11.5	19.0	19.0	23.5	24.0	15.0
26	16.0	10.0	5.0	5.0	---	---	12.0	18.0	18.5	25.0	24.0	15.0
27	15.0	10.5	5.0	6.0	2.0	6.0	14.0	17.0	18.5	26.0	26.0	15.0
28	15.0	12.0	5.0	6.0	---	7.5	16.0	17.0	19.5	27.0	25.0	17.0
29	13.5	10.0	5.0	6.0	---	8.0	16.5	18.0	19.0	26.0	24.0	17.0
30	12.5	9.0	3.5	5.0	---	8.0	19.0	18.0	20.0	25.0	22.0	15.5
31	12.0	---	3.0	6.0	---	8.0	---	19.0	---	23.0	21.5	---
MONTH	17.0	9.0	4.5	3.5	---	7.5	11.5	17.0	20.5	25.0	24.0	18.0
YEAR	MAX	27.0	MIN	0.0	MEAN	14.0						

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1880	36	183	5930	183	2930	18500	100	5000
2	2100	32	181	6860	182	3370	16200	81	3540
3	2750	40	297	6290	125	2120	12900	54	1880
4	2630	35	249	5060	82	1120	10200	46	1270
5	2480	36	241	4030	53	577	9340	54	1360
6	2350	32	203	3470	38	356	9070	63	1540
7	2400	32	207	3170	25	214	8820	61	1450
8	2160	31	181	2990	20	161	7910	49	1050
9	2130	35	201	2810	18	137	6940	34	637
10	2670	43	310	2670	13	94	6230	25	421
11	2450	43	284	2560	11	76	5860	26	411
12	2040	35	193	2440	9	59	5490	23	341
13	1810	31	151	2370	8	51	5060	26	355
14	1730	27	126	2350	15	95	5220	51	719
15	2100	32	181	2400	35	227	6670	56	1010
16	2170	32	187	3050	64	527	6310	52	886
17	1910	26	134	3580	67	648	5510	28	417
18	1710	21	97	3800	45	462	4830	18	235
19	1580	19	81	3660	37	366	4520	15	183
20	1510	16	65	3400	32	294	4420	25	300
21	1420	12	46	3250	29	254	8220	135	3200
22	1360	12	44	3310	34	304	11400	176	5420
23	1310	14	50	3590	33	320	10700	97	2800
24	1290	14	49	3580	31	300	9030	52	1270
25	1280	13	45	6400	298	6740	7690	30	623
26	1240	13	44	15300	474	19600	7990	44	949
27	1220	10	33	16500	284	12700	12500	194	6550
28	1390	13	49	21300	317	18200	16300	312	13700
29	1960	30	159	23100	232	14500	16700	150	6760
30	3260	84	739	19200	164	8500	15200	88	3610
31	4870	148	1950	---	---	---	13200	63	2250
TOTAL	63160	--	6960	188420	--	95302	288930	--	70137



## MUSKINGUM RIVER BASIN

03144500 MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11300	48	1460	14300	63	2430	7370	23	458
2	9610	38	986	12900	48	1670	8610	38	883
3	8460	34	777	12200	42	1380	8710	65	1530
4	7910	37	790	11200	51	1540	8400	75	1700
5	7270	29	569	10500	37	1050	9150	69	1700
6	6610	26	464	9580	29	750	9720	77	2020
7	6040	22	359	11000	65	1930	9450	77	1960
8	5490	19	282	12400	71	2380	8940	62	1500
9	5080	18	247	12400	60	2010	8820	72	1710
10	5110	15	207	11200	59	1780	11800	300	9560
11	5490	18	267	9430	36	917	14000	353	13300
12	6440	28	487	8070	22	479	14800	215	8590
13	7200	34	661	7810	21	443	15100	158	6440
14	6610	37	660	8180	21	464	14600	124	4890
15	6330	33	564	8920	36	867	13900	106	3980
16	8610	110	2560	7990	25	539	14300	96	3710
17	12600	142	4830	7080	12	229	15400	124	5160
18	15200	153	6280	6420	10	173	15600	89	3750
19	18800	172	8730	5970	10	161	14500	65	2540
20	24200	298	19500	6190	15	251	12800	63	2180
21	23700	143	9150	7120	28	538	11500	62	1930
22	23300	124	7800	7630	37	762	11200	50	1510
23	23600	105	6690	9540	58	1490	10800	47	1370
24	24500	99	6550	10000	68	1840	10600	41	1170
25	24000	83	5380	9050	52	1270	9870	34	906
26	23200	79	4950	7910	46	982	9240	32	798
27	22800	73	4490	7390	45	898	9300	32	804
28	21200	73	4180	7000	23	435	10000	42	1130
29	19700	70	3720	--	--	--	10600	129	3980
30	19700	60	3190	--	--	--	19600	412	21800
31	18300	55	2720	--	--	--	23100	220	13700
TOTAL	428360	--	109500	259380	--	29658	371780	--	126659

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	23200	137	8580	5690	35	538	9030	196	4780
2	24100	194	12600	6520	49	863	7770	97	2030
3	25500	220	15100	6520	48	845	6610	72	1280
4	29600	474	37900	6230	39	656	5860	69	1090
5	27300	194	14300	6170	34	566	5200	41	576
6	25600	141	9750	5950	26	418	4660	45	566
7	25400	112	7680	5580	21	316	4250	83	952
8	24600	94	6240	5220	20	282	3910	85	897
9	24800	80	5360	5130	20	277	3510	59	559
10	24600	81	5380	5430	38	557	3260	79	695
11	24300	60	3940	5540	35	524	3000	94	761
12	23100	57	3560	6010	50	811	2810	93	706
13	20300	77	4220	11300	214	6530	2640	68	485
14	17300	75	3500	13900	181	6790	2530	35	239
15	14900	88	3540	13700	135	4990	2540	38	261
16	13200	102	3640	13100	126	4460	3000	78	632
17	11900	69	2220	11800	104	3310	3440	46	427
18	10700	60	1730	11100	86	2580	3390	48	439
19	9410	55	1400	11600	125	3920	3130	42	355
20	8420	47	1070	11000	114	3390	2940	36	286
21	7290	38	748	10300	104	2890	3750	72	771
22	6690	30	542	9720	104	2730	5600	138	2090
23	6710	31	562	8730	100	2360	7590	198	4060
24	6750	27	492	8260	111	2480	8820	187	4450
25	6670	25	450	7610	79	1620	8380	106	2400
26	6350	28	480	6420	64	1110	7510	78	1580
27	5930	32	512	5630	40	608	6860	64	1190
28	5510	29	431	4990	28	377	6380	56	965
29	5150	24	334	4810	36	468	5560	53	796
30	4950	26	347	5490	49	726	4590	44	545
31	--	--	--	8440	133	3030	--	--	--
TOTAL	470230	--	156608	247890	--	61022	148520	--	36863

## MUSKINGUM RIVER BASIN

63

03144500 MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	4030	38	413	2100	29	164	11600	252	7890
2	3860	37	386	1920	28	145	13000	208	7300
3	4110	42	466	1760	24	114	12200	185	6090
4	3850	44	457	1780	23	111	13000	138	4840
5	3530	43	410	2560	44	304	13100	123	4350
6	3060	41	339	3480	63	592	12000	98	3180
7	2880	48	373	3330	48	432	10800	81	2360
8	2590	44	308	2760	36	268	9670	71	1850
9	2340	48	303	2500	39	263	8050	62	1350
10	2200	38	226	3640	93	982	6330	62	1060
11	2180	40	235	4470	122	1470	5490	56	830
12	2090	49	277	3830	77	796	5130	54	748
13	1970	31	165	3030	74	605	5020	52	705
14	1960	32	169	2640	54	385	5290	45	643
15	1840	40	199	2730	65	479	5220	54	761
16	1750	37	175	2690	59	429	5250	46	652
17	1960	27	143	2720	49	360	4970	45	604
18	1800	27	131	3560	82	788	4120	39	434
19	1640	52	230	4140	136	1520	3740	32	323
20	1530	70	289	3310	101	903	3610	32	312
21	1470	55	218	2780	78	585	3750	37	375
22	1400	23	87	2450	42	278	4120	35	389
23	1370	22	81	2090	25	141	4590	33	409
24	1400	24	91	1880	23	117	4680	27	341
25	1470	23	91	1770	29	139	4030	25	272
26	1430	22	85	1660	28	125	3590	24	233
27	1370	20	74	1610	27	117	3370	22	200
28	1330	22	79	1950	43	226	3260	21	185
29	1410	34	129	4450	102	1340	3290	27	240
30	1990	75	403	8920	335	8070	3330	28	252
31	2310	38	237	11400	353	10900	--	--	--
TOTAL	68120	--	7269	99910	--	33148	195600	--	49178
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)									2830300
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)									782304

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
Dec.						.002	.004	.008	.016	.031	.062	.125	.250	.500	
28...	0915	5.0	16300	382	16800	46	58	70	81	87	91	92	94	100	
Jan.															
20...	0930	6.0	24100	365	23800	48	61	73	81	87	92	93	100	--	
Mar.															
11...	0745	10.0	13900	402	15100	47	58	71	82	88	94	95	97	100	

## MUSKINGUM RIVER BASIN

03146500 LICKING RIVER NEAR NEWARK, OHIO

LOCATION.--Lat 40°03'33", long 82°20'23", in SW 1/4 T.2 N., R.11 W., Licking County, at gaging station on right bank at downstream side of Stadden Bridge, 1.0 mi (1.6 km) downstream from Shawnee Run, 1.5 mi (2.4 km) upstream from Equality Run, and 3.5 mi (5.6 km) east of Newark.

DRAINAGE AREA.--537 mi<sup>2</sup> (1,391 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: July 1968 to September 1974.

Water temperatures: June 1962 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 1,170 micromhos Sept. 13; minimum, 183 micromhos Apr. 4.

pH: Maximum, 10.2 Mar. 8; minimum, 6.2 Mar. 21.

Dissolved oxygen: Maximum, 12.9 mg/l Mar. 14; minimum, 2.2 mg/l Aug. 28.

Water temperatures: Maximum, 28.0°C July 3, 4, 7, 10; minimum, 1.0°C Dec. 17, 18, 21, 22, Feb. 8, 26.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974.

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
04...	1550	588	20.0	--	590	7.7	--	50	14	--	--	0
25...	1610	91	15.0	--	889	8.6	--	78	27	--	--	11
NOV.												
15...	1550	228	14.0	--	804	7.1	--	--	--	--	--	0
26...	1555	4190	9.0	--	300	7.4	--	--	--	--	--	0
DEC.												
19...	1515	424	2.5	--	677	8.5	--	--	--	--	--	6
27...	1745	2820	6.0	--	324	7.6	--	--	--	--	--	0
JAN.												
10...	1550	602	3.0	--	709	7.6	--	77	28	--	--	0
17...	1600	2420	2.5	--	332	7.1	--	42	14	--	--	0
FEB.												
07...	1600	2640	1.0	--	327	7.0	--	42	13	--	--	0
18...	1600	441	5.0	--	592	8.0	--	69	26	--	--	0
MAR.												
14...	1600	402	8.0	--	567	8.5	--	65	24	--	--	6
28...	1600	814	10.0	--	439	8.3	--	53	17	--	--	0
APR.												
04...	1600	8030	14.0	--	221	7.4	--	42	13	--	--	0
26...	1335	346	14.0	--	593	7.9	--	69	22	--	--	0
MAY												
09...	1600	370	13.0	--	567	8.3	--	66	20	--	--	0
30...	1555	1200	18.0	--	352	7.9	--	52	15	--	--	0
JUNE												
06...	1600	231	21.0	--	667	7.2	--	78	25	--	--	0
24...	1600	795	19.0	--	453	7.5	--	58	17	--	--	0
AUG.												
21...	0945	138	21.0	5.5	650	7.6	6.3	62	19	29	5.5	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV.			
05...	1530	<.5	--
APR.			
26...	1430	.0	5.8

## MUSKINGUM RIVER BASIN

65

03146500 LICKING RIVER NEAR NEWARK, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,650 micromhos Feb. 4, 1971; minimum, 100 micromhos Aug. 18, 1969.

pH (1968-74): Maximum, 10.2 Mar. 8, 1974; minimum, 4.5 May 24, 1970.

Dissolved oxygen (1968-74): Maximum, 14.7 mg/l Dec. 8, 1972; minimum, 0.0 mg/l Sept. 1, 1970.

Water temperatures (1968-74): Maximum, 31.5°C July 14, 15, 1972; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since July 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLORIDE (CL) (MG/L)	DIS- SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	176	60	27	.3	--	.00	3.0	--	--	180	--	--
25...	224	99	96	.6	--	.00	7.9	--	--	310	--	--
NOV.												
15...	232	91	78	--	--	.01	5.1	--	--	--	--	--
26...	104	38	12	.2	--	.01	2.6	--	--	--	--	--
DEC.												
19...	228	76	50	.3	--	.00	4.2	--	--	--	--	--
27...	100	44	17	.2	--	.00	3.1	--	--	--	--	--
JAN.												
10...	222	72	72	.3	--	.01	2.1	--	--	310	--	--
17...	115	50	17	.2	--	.00	1.8	--	--	160	--	--
FEB.												
07...	118	37	20	.2	--	.01	1.3	--	--	160	--	--
18...	213	65	36	.4	--	.01	3.7	--	--	280	--	--
MAR.												
14...	202	73	35	.3	--	.00	3.1	--	--	260	--	--
28...	166	57	21	.2	--	.00	2.5	--	--	200	--	--
APR.												
04...	103	25	6.5	.2	--	.01	1.7	--	--	160	--	--
26...	234	74	28	.3	--	.00	2.9	--	--	260	--	--
MAY												
09...	225	65	30	.3	--	.01	2.4	--	--	250	--	--
30...	138	37	14	.3	--	.00	3.4	--	--	190	--	--
JUNE												
06...	234	79	44	1.0	--	.00	5.0	--	--	300	--	--
24...	152	48	22	.7	--	.00	8.3	--	--	210	--	--
AUG.												
21...	207	73	44	.3	3.9	.20	.60	.31	341	230	50	170

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]





## 03146500 LICKING RIVER NEAR NEWARK, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.4	3.4	9.0	8.3	9.8	9.4	10.1	9.0	---	---	11.3	11.1
2	7.6	5.1	9.5	8.7	10.0	9.6	9.6	7.7	---	---	---	---
3	8.7	6.9	9.8	9.3	10.2	8.3	8.4	7.2	---	---	---	---
4	8.0	6.8	10.2	9.4	8.9	7.6	11.5	7.8	---	---	---	---
5	8.9	7.2	10.2	9.0	8.8	8.0	11.8	10.9	---	---	---	---
6	9.2	8.0	9.8	8.8	9.0	7.8	11.2	11.1	---	---	---	---
7	8.6	7.2	9.8	9.0	9.7	9.0	11.9	11.2	---	---	10.7	8.8
8	7.5	6.0	10.0	8.9	9.9	9.3	11.9	11.5	---	---	9.4	8.2
9	8.0	5.5	9.3	8.6	9.4	9.1	11.5	10.9	---	---	10.2	8.0
10	7.6	5.1	9.7	8.3	9.7	8.7	11.4	11.0	---	---	11.1	8.0
11	7.2	5.9	9.8	9.0	10.9	9.7	11.5	11.3	---	---	11.2	9.1
12	6.2	4.3	9.6	8.4	11.9	10.2	12.1	11.5	---	---	12.1	9.4
13	5.4	3.7	8.4	7.6	10.8	10.1	12.4	12.0	---	---	12.7	10.4
14	6.1	3.7	7.6	6.4	10.6	9.9	---	---	---	---	12.9	10.3
15	8.5	4.5	6.4	5.2	10.4	9.9	---	---	---	---	11.9	10.0
16	8.0	4.8	7.3	6.0	10.5	10.1	---	---	---	---	10.5	9.4
17	8.6	5.0	7.5	6.9	10.6	9.2	---	---	---	---	10.8	10.2
18	8.3	6.3	6.9	5.9	11.4	10.7	---	---	---	---	11.3	10.2
19	9.3	5.6	6.7	5.6	11.1	10.3	---	---	---	---	10.6	9.8
20	9.6	6.6	5.9	5.4	11.2	10.1	---	---	---	---	11.0	9.5
21	9.9	6.3	5.8	5.1	11.9	11.0	---	---	---	---	11.1	8.9
22	10.6	6.4	6.3	5.3	11.9	10.8	---	---	---	---	11.9	10.3
23	10.7	6.5	6.1	5.1	10.8	10.3	---	---	---	---	11.6	10.1
24	10.6	6.5	6.3	4.8	10.5	9.9	---	---	---	---	12.2	10.2
25	9.7	5.8	6.5	5.7	10.2	9.6	---	---	---	---	12.5	10.8
26	10.2	5.5	7.1	6.1	10.4	9.8	---	---	---	---	12.3	10.4
27	10.0	5.9	7.5	6.9	10.9	10.2	---	---	---	---	11.4	9.9
28	8.4	5.7	8.0	7.4	10.9	10.5	---	---	---	---	11.3	9.3
29	8.0	6.1	9.0	7.9	10.7	10.4	---	---	---	---	9.4	8.6
30	8.8	7.8	9.4	9.0	10.8	10.4	---	---	---	---	10.0	8.9
31	8.8	8.2	---	---	10.4	9.4	---	---	---	---	10.0	8.8
MONTH	10.7	3.4	10.2	4.8	11.9	7.6	---	---	---	---	12.9	8.8

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.5	18.5	10.5	9.5	9.0	8.0	4.0	3.5	6.5	5.5	5.0	4.5
2	20.0	18.0	11.0	9.0	8.5	7.5	4.0	2.5	8.5	5.0	---	---
3	21.0	17.5	11.5	9.5	9.5	7.5	5.0	4.0	5.5	4.5	---	---
4	21.0	18.0	10.5	8.0	9.5	8.0	6.0	3.0	5.0	3.5	---	---
5	19.5	17.5	10.5	8.0	9.5	7.5	3.5	2.0	3.5	2.0	---	---
6	18.0	14.5	9.0	7.0	7.5	5.0	3.5	2.5	3.5	2.0	---	---
7	18.5	15.0	8.5	7.0	5.0	4.5	4.5	3.0	3.5	1.5	13.5	13.0
8	20.0	17.0	8.5	6.5	5.0	3.5	3.5	2.0	3.0	1.0	14.5	11.0
9	20.5	17.0	8.0	6.0	5.0	4.0	4.5	3.0	3.0	1.5	15.0	12.5
10	20.0	17.0	6.5	5.0	4.5	3.5	4.5	4.0	2.5	1.5	14.5	10.5
11	20.0	16.5	6.5	4.0	3.5	2.5	4.0	4.0	4.0	2.0	10.5	7.5
12	20.0	16.5	7.0	4.5	3.5	2.5	4.0	2.5	6.5	2.5	7.5	5.5
13	19.0	17.0	10.0	7.0	5.0	3.0	3.5	2.0	8.0	4.5	7.5	3.5
14	17.5	15.5	14.0	10.0	4.5	3.5	4.0	3.0	6.5	4.0	8.5	4.0
15	19.0	14.5	14.5	13.5	3.5	3.0	5.0	3.0	5.0	2.5	7.0	5.5
16	18.0	14.5	13.5	10.5	3.0	2.0	4.0	2.0	6.0	3.0	7.0	5.5
17	14.5	12.0	11.0	9.0	2.0	1.0	4.0	3.5	5.5	3.5	7.0	4.5
18	14.0	12.0	10.5	8.5	2.5	1.0	6.5	4.5	6.0	3.0	7.0	5.0
19	14.5	10.5	12.5	10.0	3.5	2.0	7.5	6.5	7.0	5.5	8.0	7.0
20	15.0	12.5	10.5	8.5	4.5	2.0	8.5	7.0	6.5	4.5	10.0	6.0
21	14.0	11.5	11.5	10.0	1.5	1.0	9.0	8.5	7.5	4.0	9.0	5.5
22	14.5	11.0	10.5	8.5	2.0	1.0	9.0	8.0	7.5	5.5	8.0	4.0
23	15.0	11.5	10.0	8.0	3.0	1.5	9.0	7.5	5.5	3.5	7.5	5.5
24	15.5	12.0	11.5	10.0	4.5	3.0	7.5	6.0	4.0	2.0	6.5	3.5
25	16.0	12.0	11.5	10.5	6.5	4.0	6.5	5.0	3.5	1.5	7.0	2.0
26	16.0	13.5	10.5	9.0	6.5	6.0	7.0	5.0	4.5	1.0	8.0	3.5
27	15.0	12.0	12.5	9.5	6.5	5.5	9.0	7.0	6.0	2.0	9.0	5.5
28	14.5	13.0	13.0	10.5	6.0	5.0	8.5	7.0	5.5	4.5	11.0	6.5
29	12.5	10.0	11.5	8.5	5.5	4.5	7.5	6.5	---	---	10.0	8.5
30	10.0	9.5	9.0	8.0	4.5	3.5	8.0	6.0	---	---	9.0	8.5
31	11.0	10.0	---	---	4.0	3.0	8.5	6.5	---	---	8.5	7.0
MONTH	21.0	9.5	14.5	4.0	9.5	1.0	9.0	2.0	8.5	1.0	15.0	2.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	6.5	19.5	14.5	19.0	17.0	25.0	19.0	25.0	20.5	22.5	19.5
2	13.0	10.5	17.5	14.0	21.5	15.0	26.0	20.0	25.5	21.5	20.5	19.0
3	13.5	11.0	15.5	14.0	22.5	16.0	28.0	22				

## MUSKINGUM RIVER BASIN

03147500 LICKING RIVER BELOW DILLON DAM, NEAR DILLON FALLS, OHIO

LOCATION.--Lat 39°59'18", long 82°04'50", in T.1 N., R.8 W., Muskingum County, at gaging station on left bank 500 ft (152 m) downstream from Dillon Dam, 2.0 mi (3.2 km) northwest of Dillon Falls, and 5.8 mi (9.3 km) upstream from mouth.

DRAINAGE AREA.--742 mi<sup>2</sup> (1,922 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1965-74 (partial-record station).  
Water temperatures: October 1961 to September 1974.

EXTREMES.--1973-74:

Water temperatures: Maximum, 25.0°C Aug. 17, 18; minimum, 2.0°C Dec. 20-27, Jan. 3-16, Feb. 8-15.

EXTREMES.--Period of record:

Water temperatures: Maximum, 29.0°C July 23, 24, 1973; minimum, freezing point Feb. 7-12, 1967.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (C03) (MG/L)
NOV., 1973												
15...	1010	328	7.0	--	495	8.3	--	--	--	--	--	--
MAR., 1974												
06...	1610	1090	9.0	--	--	7.5	--	57	16	--	--	0
MAY												
07...	1135	343	15.5	--	--	7.9	--	61	19	--	--	0
AUG.												
19...	1000	408	24.5	5.5	560	7.9	4.3	51	21	23	4.2	0

DATE	BICAR- BONATE (HC03) (MG/L)	DIS- SOLVED SULFATE (S04) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
NOV., 1973												
15...	--	64	32	--	--	.00	2.3	--	--	--	--	--
MAR., 1974												
06...	164	53	26	--	--	.01	1.7	--	--	210	--	--
MAY												
07...	193	58	25	--	--	.00	1.8	--	--	230	--	--
AUG.												
19...	194	63	33	.2	1.4	.03	.68	.09	296	210	20	290

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974  
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	20.0	14.0	13.5	10.0	10.0	4.5	3.5	6.0	6.0	4.5	4.5
2	20.5	20.0	13.5	12.0	10.0	10.0	3.5	3.0	6.0	5.5	4.5	4.5
3	21.0	20.5	12.0	12.0	10.0	10.0	3.0	3.0	5.5	5.5	5.5	4.5
4	21.0	21.0	12.0	11.0	10.0	9.0	3.0	2.0	5.5	4.5	6.5	5.5
5	21.0	21.0	11.0	11.0	9.5	9.0	2.0	2.0	4.5	4.5	9.0	6.5
6	21.0	20.5	11.0	10.5	9.5	9.0	2.0	2.0	4.5	4.0	9.5	9.0
7	20.5	20.5	10.5	10.0	9.0	8.0	2.0	2.0	4.0	3.0	11.0	9.5
8	20.5	20.0	10.0	10.0	8.0	8.0	2.0	2.0	3.0	2.0	11.0	11.0
9	20.0	19.5	10.0	10.0	8.0	7.0	2.0	2.0	2.0	2.0	11.5	11.0
10	19.5	19.5	9.0	8.5	7.0	6.5	2.0	2.0	2.0	2.0	12.0	11.5
11	19.5	19.5	8.5	8.0	6.5	5.0	2.0	2.0	2.0	2.0	12.0	11.5
12	19.5	19.5	8.0	7.0	5.0	4.5	2.0	2.0	2.0	2.0	11.5	11.0
13	19.5	19.0	7.0	7.0	4.5	4.5	2.0	2.0	2.0	2.0	11.0	10.0
14	19.5	19.0	7.0	7.0	4.5	4.5	2.0	2.0	2.0	2.0	10.5	9.0
15	19.5	19.0	8.0	7.0	4.5	4.5	2.0	2.0	3.5	2.0	9.0	8.0
16	19.5	19.0	8.0	8.0	4.5	4.0	3.0	2.0	4.0	3.5	8.5	8.0
17	19.0	18.5	8.0	8.0	4.0	3.5	3.0	3.0	4.0	4.0	8.0	7.0
18	18.5	18.0	8.0	8.0	3.5	3.0	3.0	3.0	4.0	4.0	7.0	6.5
19	18.0	17.0	8.0	8.0	3.0	3.0	3.5	3.0	4.0	4.0	6.5	6.5
20	17.0	16.5	8.0	8.0	3.0	2.0	4.5	3.5	4.0	4.0	7.0	6.5
21	16.5	16.5	8.0	8.0	2.0	2.0	5.0	4.5	5.0	4.0	7.0	6.5
22	16.5	16.0	8.0	8.0	2.0	2.0	5.5	5.0	5.0	5.0	6.5	6.5
23	16.0	15.5	8.0	8.0	2.0	2.0	6.0	5.5	5.0	5.0	6.5	6.5
24	15.5	15.5	8.0	8.0	2.0	2.0	6.5	6.0	5.0	5.0	6.5	6.0
25	15.5	15.0	9.0	8.0	2.0	2.0	6.5	6.5	5.0	5.0	6.5	6.0
26	15.0	15.0	9.5	9.0	2.0	2.0	6.5	6.5	5.0	4.5	6.5	6.0
27	15.0	15.0	10.0	9.5	3.0	2.0	6.5	6.5	4.5	4.5	6.5	6.0
28	15.0	15.0	10.0	10.0	5.0	3.0	6.5	6.0	4.5	4.5	6.5	6.5
29	15.0	15.0	10.0	10.0	5.0	3.0	6.0	6.0	---	---	7.0	6.5
30	15.0	14.5	10.0	10.0	5.0	4.5	6.0	6.0	---	---	8.5	7.0
31	14.5	14.0	---	---	4.5	4.5	6.0	6.0	---	---	8.5	8.0
MONTH	21.0	14.0	14.0	7.0	10.0	2.0	6.5	2.0	6.0	2.0	12.0	4.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	8.0	16.5	15.0	18.5	18.5	20.5	20.0	23.5	23.5	24.0	24.0
2	9.0	8.0	16.0	15.5	18.5	18.0	20.5	20.0	23.5	23.5	24.0	



## MUSKINGUM RIVER BASIN

03149200 MUSKINGUM RIVER AT PHILO, OHIO

LOCATION.--Lat 39°51'51", long 81°54'22", Muskingum County, on diversion canal on right bank of Muskingum River, 2,000 ft (610 m) downstream from canal headgates of Ohio Power Company Generating Division at Philo.

DRAINAGE AREA.--7,196 mi<sup>2</sup> (18,638 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: April 1965 to September 1974 (discontinued).  
Water temperatures: April 1965 to September 1974 (discontinued).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,460 micromhos July 5; minimum, 310 micromhos Apr. 4.

pH: Maximum, 8.8 Feb. 12; minimum, 6.4 Aug. 5.

Dissolved oxygen: Maximum, 15.0 mg/l Dec. 25; minimum, 3.9 mg/l Aug. 29.

Water temperatures: Maximum, 29.0°C July 7-10, 19, 20; minimum, 0.5°C Feb. 9-12.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPE-CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS-SOLVED CAL- CIUM (CA) (MG/L)	DIS-SOLVED MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.								
04...	1440	21.5	--	1100	7.2	93	24	0
NOV.								
01...	0830	--	--	1020	8.4	--	--	1
08...	0730	--	--	746	8.4	--	--	1
DEC.								
03...	0645	9.0	--	433	8.1	--	--	0
18...	1430	2.0	--	749	8.4	--	--	1
JAN.								
14...	0930	1.0	--	738	7.5	38	24	0
24...	1540	6.0	--	404	7.2	43	14	0
FEB.								
15...	1530	4.0	--	673	7.9	69	25	0
22...	1000	5.0	--	632	8.0	68	24	0
MAR.								
14...	1520	6.5	--	475	7.8	51	14	0
29...	1045	7.0	--	469	7.9	65	19	0
APR.								
05...	1100	12.0	--	333	7.1	37	12	0
29...	1145	16.0	--	732	7.9	75	24	0
MAY								
01...	0900	18.5	8.6	763	7.4	90	22	0
20...	1100	19.0	--	481	7.9	53	17	0
JUNE								
17...	1200	22.0	--	890	7.2	85	24	0
24...	1100	19.0	--	575	7.2	59	18	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV.			
06...	1415	<.5	--
APR.			
25...	1635	.0	3.8

## MUSKINGUM RIVER BASIN

73

03149200 MUSKINGUM RIVER AT PHILO, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1965-74): Maximum, 2,130 micromhos Oct. 19, 1970; minimum, 170 micromhos Apr. 28, 1965.

pH (1965-74): Maximum, 10.0 Jan. 1, 1969; minimum, 2.4 Sept. 24, 1971.

Dissolved oxygen (1965-74): Maximum, 15.0 mg/l or higher on many days during 1966-67, 1970-74; minimum, 1.5 mg/l May 30, 1970.

Water temperatures (1965-74): Maximum, 32.0°C July 26, 1969; minimum, freezing point on many days in 1967 to 1969.

REMARKS.--Water-quality recorder operated from April 1965 to September 1974. The recorder is located in the basement of the generating plant. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on a daily basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water. No discharge available.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	HARDNESS (CA,MG) (MG/L)
OCT.							
04...	143	170	160	.6	.00	2.0	330
NOV.							
01...	131	170	150	.4	.01	2.0	--
08...	122	150	75	.4	.01	2.1	--
DEC.							
03...	96	88	28	.2	.01	2.3	--
18...	131	130	89	.2	.00	2.0	--
JAN.							
14...	106	150	81	.2	.00	1.2	190
24...	69	76	32	.4	.00	1.6	170
FEB.							
15...	111	140	65	.4	.00	2.0	280
22...	116	120	61	.3	.01	2.2	270
MAR.							
14...	91	92	42	.2	.00	2.1	190
29...	105	120	58	.3	.00	1.7	240
APR.							
05...	52	85	18	.3	.00	1.5	140
29...	123	170	69	.3	.01	1.3	290
MAY							
01...	123	170	80	.4	.00	1.5	320
20...	106	110	34	.3	.00	1.4	200
JUNE							
17...	104	180	110	.4	.00	.94	310
24...	77	150	48	.3	.00	1.3	220

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1220	1020	970	870	440	380	510	510	500	470	---	---
2	1120	1050	---	---	440	380	520	500	540	500	---	---
3	---	---	---	---	450	390	590	510	540	500	---	---
4	---	---	---	---	430	390	600	590	550	530	---	---
5	---	---	---	---	420	390	620	590	580	550	---	---
6	---	---	---	---	410	370	660	610	600	560	---	---
7	---	---	---	---	430	390	670	660	580	440	---	---
8	---	---	---	---	460	440	720	670	530	450	---	---
9	---	---	---	---	480	440	800	710	540	520	---	---
10	---	---	---	---	480	440	770	650	530	510	---	---
11	---	---	---	---	550	460	660	580	550	500	---	---
12	---	---	---	---	620	560	680	610	580	550	---	---
13	---	---	---	---	700	610	740	670	620	580	---	---
14	---	---	---	---	720	640	740	680	630	610	470	470
15	---	---	---	---	720	640	680	620	630	620	500	470
16	---	---	---	---	700	640	620	590	690	630	540	500
17	---	---	---	---	740	660	590	540	660	650	520	490
18	---	---	---	---	740	640	570	520	650	630	510	480
19	---	---	---	---	700	640	530	420	630	620	490	460
20	---	---	880	830	740	670	430	400	660	600	490	460
21	---	---	840	800	730	540	400	360	610	580	530	490
22	---	---	850	790	620	530	380	360	640	590	530	500
23	---	---	800	760	680	530	400	380	630	590	540	510
24	---	---	800	760	540	520	400	370	590	560	570	530
25	---	---	800	610	580	540	410	380	610	580	580	550
26	---	---	620	440	600	530	410	400	590	550	580	550
27	---	---	470	430	530	480	430	410	610	560	590	570
28	---	---	460	350	510	460	440	430	590	560	590	550
29	---	---	370	350	460	440	450	430	---	---	570	530
30	---	---	420	380	460	440	470	440	---	---	530	420
31	---	---	---	---	520	460	---	---	---	---	420	390
MONTH	---	---	---	---	740	370	800	360	690	440	---	---
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	390	390	780	700	760	600	1050	810	1220	1120	590	410
2	390	360	730	680	630	540	1050	760	1140	1000	450	380
3	370	340	790	690	600	560	850	760	1090	990	480	400
4	380	310	810	690	640	600	1030	850	1060	890	460	410
5	350	320	700	650	640	610	1460	1030	1000	850	470	420
6	370	350	690	660	700	600	1450	940	1000	970	480	460
7	380	370	700	690	740	700	1170	1030	1190	960	520	460
8												

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## MUSKINGUM RIVER BASIN

03150000 MUSKINGUM RIVER AT McCONNELLSVILLE, OHIO  
(National stream-quality accounting network station)

LOCATION.--Lat 39°38'42", long 89°51'00", in SE 1/4 sec.11, T.10 N., R. 12 W., Morgan County, at gaging station on left bank just upstream from Dam 7, at McConnellsville, and 3.5 mi (5.6 km) downstream from Oilspring Run. Water-quality recorder located on left bank, 1.0 mi (1.6 km) upstream from gaging station, 240 ft (73 m) upstream from bridge on State Highways 37 and 78.

DRAINAGE AREA.--7,422 mi<sup>2</sup> (19,223 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1950-72 (partial-record station), January 1973 to September 1974.

Water temperatures: October 1950 to September 1951, July 1954 to September 1963, June to September 1965, February 1973 to September 1974.

Sediment records: Water years 1973-74 (partial-record station).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,440 micromhos July 7; minimum, 285 micromhos Apr. 5.

pH: Maximum, 9.3 Feb. 16; minimum, 6.8 Oct. 31, Feb. 7.

Dissolved oxygen: Maximum, 14.1 mg/l Jan. 10; minimum, 2.8 mg/l July 24, Aug. 29.

Water temperatures: Maximum, 29.5°C July 14, 22; minimum, freezing point on Dec. 23-26, Jan. 5, 9, 10.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
OCT.											
02...	1430	2360	--	.2	140	26	120	9.2	114	0	290
02...	1800	2480	24.0	--	130	27	--	--	112	0	300
10...	1300	2560	22.0	--	64	25	--	--	138	0	130
NOV.											
06...	1330	4410	--	--	--	--	--	--	--	--	--
07...	0945	3750	9.5	--	--	--	--	--	--	--	--
15...	1330	2820	11.0	--	--	--	--	--	136	0	120
27...	1325	20800	11.0	--	--	--	--	--	83	0	24
DEC.											
05...	1400	14100	11.0	--	--	--	--	--	97	0	38
18...	1120	6120	3.0	--	--	--	--	--	127	0	96
18...	1130	6120	3.0	--	--	--	--	--	--	--	--
JAN.											
03...	1300	11000	2.0	--	--	--	--	--	--	--	--
10...	0915	7450	11.0	--	41	20	--	--	127	0	79
24...	1235	27800	6.5	--	22	13	--	--	77	0	36
FEB.											
05...	1220	11800	4.0	--	60	16	--	--	102	0	51
05...	1400	11800	4.0	7.9	60	17	22	3.1	103	0	54
18...	1400	7900	5.0	--	74	20	--	--	117	0	70
MAR.											
03...	1640	10300	8.0	--	60	18	--	--	115	0	69
05...	1145	10200	9.5	--	--	--	--	--	--	--	--
15...	1730	15200	6.0	--	49	13	--	--	89	0	48
APR.											
04...	1320	32100	12.0	--	40	12	--	--	59	0	25
10...	1400	28800	8.0	7.1	45	13	16	2.8	78	0	30
16...	0930	18100	--	--	--	--	--	--	--	--	--
25...	1445	7420	14.0	--	--	--	--	--	--	--	--
27...	1535	6800	15.0	--	77	21	--	--	122	0	83
MAY											
01...	1015	6060	18.5	--	--	--	--	--	--	--	--
04...	2000	7590	17.0	--	81	22	--	--	116	0	97
16...	0915	14600	17.0	--	49	13	--	--	94	0	30
JUNE											
03...	1400	8180	20.0	--	--	--	--	--	--	--	--
20...	1415	3880	22.0	--	84	22	--	--	141	0	130
25...	2130	11200	20.0	--	56	15	--	--	98	0	56
JULY											
01...	1000	5110	--	--	--	--	--	--	--	--	--
01...	1345	5020	23.0	7.8	80	21	45	4.5	117	0	110
31...	1000	2200	26.0	--	--	--	--	--	--	--	--
SEP.											
04...	1100	17400	19.0	--	--	--	--	--	--	--	--

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
OCT.					
02...	1430	2360	--	28	178
JAN.					
03...	1300	11000	2.0	24	713
FEB.					
05...	1400	11800	4.0	48	1530
MAR.					
05...	1145	10200	9.5	58	1600
APR.					
10...	1400	28800	8.0	101	7850
MAY					
01...	1015	6060	18.5	136	2230
JUNE					
03...	1400	8180	20.0	105	2320
JULY					
01...	1345	5020	23.0	55	745
31...	1000	2200	26.0	45	267
SEP.					
04...	1100	17400	19.0	234	11000

## MUSKINGUM RIVER BASIN

79

## 03150000 MUSKINGUM RIVER AT McCONNELLSVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1973-74): Maximum, 1,440 micromhos July 7, 1974; minimum, 285 micromhos Apr. 5, 1974.

pH (1973-74): Maximum, 9.3 Feb. 16, 1974; minimum, 5.4 Apr. 15, 1973.

Dissolved oxygen (1973-74): Maximum, 14.1 mg/l Aug. 29, 1973, Jan. 10, 1974; minimum, 2.8 mg/l July 24, Aug. 29, 1974.

Water temperatures (1973-74): Maximum, 33.5°C Aug. 8, 1973; minimum, freezing point on several days during winter periods.

REMARKS.--Prior to January 1973, sampling site was at gaging station. Water-quality recorder operated since February 1973. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Samples were collected each month to further define the quality of water as part of the National Stream Quality Accounting Network.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)
OCT.										
02...	190	.6	946	836	1440	1.6	.00	.60	1.0	.60
02...	200	.6	--	--	1470	--	.00	1.6	--	1.6
10...	150	.4	--	--	960	--	.00	1.7	--	1.7
NOV.										
06...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	2.3	.00	1.6	.70	1.6
15...	140	.3	--	--	897	--	.00	1.7	--	1.7
27...	76	.2	--	--	399	--	.00	2.1	--	2.1
DEC.										
05...	97	.2	--	--	484	--	.01	2.0	--	2.0
18...	140	.3	--	--	792	--	.01	2.3	--	2.3
18...	--	--	--	--	740	1.9	--	--	.61	1.3
JAN.										
03...	--	--	--	--	525	2.6	--	--	.50	2.1
10...	110	.3	--	--	700	--	.00	1.3	--	1.3
24...	77	.3	--	--	412	--	.00	1.4	--	1.4
FEB.										
05...	95	.4	--	--	548	--	.01	2.1	--	2.1
05...	96	.3	346	311	555	2.2	--	--	.20	2.0
18...	130	.4	--	--	679	--	.00	1.8	--	1.8
MAR.										
03...	100	.3	--	--	602	--	.00	1.9	--	1.9
05...	--	--	--	--	590	2.1	--	--	.13	2.0
15...	83	.2	--	--	465	--	.01	2.0	--	2.0
APR.										
04...	84	.4	--	--	359	--	.00	1.7	--	1.7
10...	89	.2	272	242	415	1.8	--	--	.33	1.5
16...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
27...	150	.3	--	--	737	--	.00	1.5	--	1.5
MAY										
01...	--	--	--	--	732	1.3	--	--	.37	.93
04...	160	.4	--	--	780	--	.00	1.3	--	1.3
16...	97	.4	--	--	455	--	.00	1.4	--	1.4
JUNE										
03...	--	--	--	--	550	2.2	--	--	.64	1.6
20...	160	.4	--	--	937	--	.00	1.3	--	1.3
25...	100	.8	--	--	559	--	.01	1.5	--	1.5
JULY										
01...	--	--	--	--	--	--	--	--	--	--
01...	140	.3	542	467	775	2.2	--	--	1.3	.92
31...	--	--	--	--	1090	1.7	--	--	1.2	.51
SEP.										
04...	--	--	--	--	420	1.7	--	--	1.0	.73

MUSKINGUM RIVER BASIN  
03150000 MUSKINGUM RIVER AT McCONNELLSVILLE, OHIO--Continued  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)	TOTAL NITRO- GEN (NO3) (MG/L)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	PH (UNITS)	CARBON DIOXIDE (CO2) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	TOTAL RESI- DUE (MG/L)
OCT.										
02...	.11	2.9	.34	7.1	--	--	7.2	12	94	--
02...	--	--	--	--	--	--	8.2	1.1	92	1180
10...	.10	--	.31	--	--	--	7.9	2.8	113	665
NOV.										
06...	--	--	--	--	--	--	--	--	--	--
07...	.11	7.2	.35	10	10.2	89	--	--	--	--
15...	--	--	--	--	--	--	8.2	1.4	112	612
27...	--	--	--	--	--	--	7.9	1.7	68	858
DEC.										
05...	--	--	--	--	--	--	8.0	1.6	80	394
18...	--	--	--	--	--	--	7.2	13	104	550
18...	.04	--	--	8.5	13.0	96	7.5	--	--	--
JAN.										
03...	1.1	--	--	12	12.8	93	7.2	--	--	--
10...	--	--	--	--	--	--	7.5	6.4	104	547
24...	--	--	--	--	--	--	7.1	9.8	63	504
FEB.										
05...	--	--	--	--	--	--	7.7	3.3	84	--
05...	.03	--	--	9.7	13.8	100	7.7	3.3	84	--
18...	--	--	--	--	--	--	8.0	1.9	96	--
MAR.										
03...	--	--	--	--	--	--	7.1	15	94	486
05...	.08	--	--	9.4	10.1	88	7.5	--	--	--
15...	--	--	--	--	--	--	7.7	2.8	73	450
APR.										
04...	--	--	--	--	--	--	7.7	1.9	48	--
10...	.21	--	--	8.1	11.2	93	7.3	6.3	64	--
16...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	7.4	7.8	100	642
MAY										
01...	.03	--	--	5.8	8.8	94	7.5	--	--	--
04...	--	--	--	--	--	--	7.4	7.4	95	--
16...	--	--	--	--	8.2	85	7.6	3.8	77	540
JUNE										
03...	.13	--	--	9.9	8.0	87	7.3	--	--	--
20...	--	--	--	--	--	--	7.6	5.7	116	766
25...	--	--	--	--	--	--	7.4	6.2	80	592
JULY										
01...	--	--	--	--	--	--	--	--	--	--
01...	.11	--	--	9.8	9.2	110	7.0	19	96	--
31...	.12	--	--	7.6	4.7	57	7.5	--	--	--
SEP.										
04...	.34	--	--	7.7	8.4	89	7.4	--	--	--

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT.												
02...	1430	5	7	1	1	0	8	7	9	11	20	3600
NOV.												
06...	1330	--	0	--	--	--	--	--	--	--	--	--
FEB.												
05...	1400	0	8	1	1	2	2	1	3	5	16	--
APR.												
10...	1400	0	5	0	--	10	20	0	--	18	18	--
25...	1445	--	2	--	--	--	--	--	--	--	--	--
JULY												
01...	1345	1	2	1	3	1	1	0	11	5	18	2500

## MUSKINGUM RIVER BASIN

03150000 MUSKINGUM RIVER AT McCONNELLSVILLE, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DATE	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	UNCOR- RECTED PERI- PHYTON CHLORO- PHYLL B MG/SQ M	UNCOR- RECTED PERI- PHYTON CHLORO- PHYLL A MG/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)
OCT.										
02...	460	360	--	--	--	--	--	1100	40	10
02...	440	340	--	--	--	--	--	--	--	--
10...	260	150	--	--	--	--	--	--	--	--
NOV.										
06...	--	--	--	--	--	--	--	--	--	--
07...	--	--	7.8	--	--	--	--	5400	350	28
15...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
DEC.										
05...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	2500	1600	1400
JAN.										
03...	--	--	--	--	--	--	--	--	3400	1000
10...	180	81	--	--	--	--	--	--	--	--
24...	110	45	--	--	--	--	--	--	--	--
FEB.										
05...	220	130	--	--	--	--	--	--	--	--
05...	220	140	5.8	--	--	--	--	--	3100	950
18...	270	170	--	--	--	--	--	--	--	--
MAR.										
03...	220	130	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	2000	2300
15...	180	100	--	--	--	--	--	--	--	--
APR.										
04...	150	100	--	--	--	--	--	--	--	--
10...	170	100	5.0	--	--	--	1300	--	1400	1000
16...	--	--	--	--	--	--	--	--	--	--
25...	--	--	5.4	--	--	--	--	--	--	--
27...	280	180	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	14000	--	130	12
04...	290	200	--	--	--	--	--	--	--	--
16...	180	100	--	--	--	--	--	--	--	--
JUNE										
03...	--	--	--	--	--	--	5400	--	1400	170
20...	300	180	--	--	--	--	--	--	--	--
25...	200	120	--	--	--	--	--	--	--	--
JULY										
01...	--	--	--	15	16	57	34000	--	--	--
01...	290	190	5.1	--	--	--	27000	--	520	140
31...	--	--	--	--	--	--	--	--	92	44
SEP.										
04...	--	--	--	--	--	--	8500	--	1500	260

DATE	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT.											
02...	10	0	31	1300	1200	70	90	1	1	<.5	<.5
NOV.											
06...	--	--	--	--	--	--	--	--	--	--	<.5
FEB.											
05...	60	0	0	--	340	0	40	0	8	.0	.0
APR.											
10...	10	1	--	--	200	4	--	0	3	.2	.2
25...	--	--	--	--	--	--	--	--	--	--	.0
JULY											
01...	20	0	32	500	330	3	60	4	7	.5	.5











## HOCKING RIVER BASIN

03159510 HOCKING RIVER BELOW ATHENS, OHIO

LOCATION.--Lat 39°19'39", long 82°00'18", Athens County, at Harmony Lane Bridge, 5.5 mi (8.8 km) downstream from gaging station at Athens.

DRAINAGE AREA.--957 mi<sup>2</sup> (2,479 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: May 1966 to September 1974.  
Water temperatures: May 1966 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,240 micromhos Oct. 3; minimum, 198 micromhos Aug. 1.

pH: Maximum, 8.3 July 10; minimum, 3.9 Aug. 27.

Dissolved oxygen: Maximum, 14.8 mg/l Jan. 12, 13; minimum, 4.8 mg/l Aug. 28.

Water temperatures: Maximum, 28.0°C July 8; minimum, freezing point on Dec. 23.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)
OCT.												
02...	0900	183	20.0	--	1210	8.0	--	99	42	--	--	0
29...	1100	272	12.0	--	730	8.1	--	--	--	--	--	0
NOV.												
12...	1000	192	.5	--	967	8.3	--	--	--	--	--	0
30...	1200	3620	8.0	--	385	7.0	--	--	--	--	--	0
DEC.												
03...	1500	1010	.5	--	565	7.9	--	--	--	--	--	0
17...	1600	475	.0	--	737	7.5	--	--	--	--	--	0
JAN.												
09...	1620	926	1.0	--	613	7.7	--	64	20	--	--	0
15...	1130	1540	.5	--	468	7.3	--	48	21	--	--	0
FEB.												
12...	1000	1120	.5	--	545	7.4	--	54	22	--	--	0
28...	1000	794	3.0	--	664	7.9	--	60	29	--	--	0
MAR.												
13...	1100	762	5.0	--	574	7.7	--	57	21	--	--	0
25...	1300	1160	.5	--	508	7.2	--	50	21	--	--	0
APR.												
11...	1000	2370	1.0	--	391	7.1	--	39	15	--	--	0
30...	0800	584	2.0	--	702	7.2	--	66	26	--	--	0
MAY												
20...	0800	1870	18.0	--	370	7.0	--	37	14	--	--	0
30...	0945	1620	18.0	8.2	660	7.4	--	60	24	--	--	0
JUNE												
13...	0820	339	21.0	8.8	700	7.6	--	70	23	--	--	0
22...	1100	3360	18.0	--	243	6.9	--	23	8.1	--	--	0
SEP.												
12...	1000	743	20.0	7.8	700	7.8	11	65	24	31	2.8	0

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.				
25...	1400	0	<.5	--
APR.				
25...	1330	0	.2	3.0



## HOCKING RIVER BASIN

87

## 03159510 HOCKING RIVER BELOW ATHENS, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 1,500 micromhos or higher July 12, 1966, Oct. 3, 1968; minimum, 140 micromhos July 13, 1966, Mar. 5, 1967.

pH (1966-74): Maximum, 8.3 Sept. 29, 1973, July 10, 1974; minimum, 3.9 Aug. 27, 1974.

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher Jan. 31, Feb. 1, 16-20, 1973; minimum, 0.4 mg/l June 9, 1966.

Water temperatures (1966-74): Maximum, 32.0°C Aug. 5, 30, 1969; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since May 1966. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Hocking River at Athens, Ohio, station 03159500, drainage area 943 mi<sup>2</sup> (2,442 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
02...	61	370	110	.3	--	.00	1.4	--	--	420	--	--
29...	102	180	59	.3	--	.00	1.1	--	--	--	--	--
NOV.												
12...	119	240	100	.3	--	.01	1.6	--	--	--	--	--
30...	68	82	28	.2	--	.00	1.5	--	--	--	--	--
DEC.												
03...	97	130	48	.2	--	.00	1.6	--	--	--	--	--
17...	106	190	62	.2	--	.00	1.5	--	--	--	--	--
JAN.												
09...	109	130	63	.2	--	.00	.77	--	--	240	--	--
15...	78	110	38	.5	--	.01	.00	--	--	210	--	--
FEB.												
12...	77	130	45	.4	--	.00	.93	--	--	230	--	--
28...	83	150	65	.4	--	.00	1.5	--	--	270	--	--
MAR.												
13...	78	160	48	.2	--	.00	.82	--	--	230	--	--
25...	61	130	43	.2	--	.00	.68	--	--	210	--	--
APR.												
11...	62	100	25	.2	--	.00	1.1	--	--	160	--	--
30...	85	200	62	.2	--	.00	.69	--	--	270	--	--
MAY												
20...	60	83	27	.2	--	.00	2.3	--	--	150	--	--
30...	94	180	47	.3	--	.00	1.0	--	--	250	--	--
JUNE												
13...	104	200	51	.2	--	.00	1.2	--	--	270	--	--
22...	30	64	15	.2	--	.01	.70	--	--	91	--	--
SEP.												
12...	109	180	51	.3	.34	.02	.61	.07	420	260	70	1000

## 03159510 HOCKING RIVER BELOW ATHENS, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1090	1000	749	608	477	420	546	513	672	471	655	606
2	1200	1030	740	633	545	485	657	516	680	516	637	494
3	1240	891	761	632	576	534	651	557	551	519	581	528
4	1080	675	701	660	620	570	561	467	581	530	582	502
5	779	601	726	678	647	600	608	536	611	567	575	547
6	864	717	786	717	681	638	608	569	687	579	581	557
7	865	739	819	761	687	659	669	576	639	534	563	509
8	898	723	845	779	704	669	650	572	522	266	550	523
9	886	791	870	797	720	690	687	582	302	260	563	514
10	939	838	875	813	767	702	599	360	414	308	535	509
11	920	848	905	851	788	717	366	333	498	410	544	512
12	944	877	926	869	768	728	387	366	501	486	583	539
13	972	899	953	846	792	749	417	389	---	---	600	560
14	994	934	933	875	828	750	474	417	576	547	622	585
15	1010	767	924	851	804	762	510	470	601	556	645	599
16	856	799	851	689	801	726	542	473	616	574	638	604
17	840	771	767	507	777	740	470	425	640	585	636	514
18	936	765	513	282	788	750	476	435	651	600	548	516
19	932	854	584	455	801	786	540	476	---	---	551	520
20	911	771	783	567	---	---	471	381	---	---	567	541
21	812	757	846	728	764	689	432	402	---	---	569	512
22	806	761	846	803	767	501	453	432	---	---	532	489
23	795	762	897	809	534	470	477	441	---	---	512	474
24	836	787	855	815	585	527	507	423	---	---	511	493
25	816	744	848	540	602	570	441	414	---	---	534	506
26	884	759	807	368	627	579	482	440	---	---	559	533
27	860	780	431	336	590	525	513	471	---	---	610	567
28	879	608	402	351	585	480	518	444	651	608	614	569
29	753	602	392	357	516	485	491	431	---	---	605	564
30	861	699	425	368	548	491	468	422	---	---	570	434
31	875	648	---	---	551	494	482	438	---	---	519	414
MONTH	1240	601	953	282	828	420	687	333	---	---	655	414
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	420	401	720	679	461	336	---	---	396	198	405	368
2	416	321	717	660	362	324	---	---	590	326	470	275
3	342	302	692	452	408	360	---	---	569	455	320	234
4	369	338	433	364	470	408	---	---	580	504	---	---
5	371	330	451	406	506	468	---	---	465	308	---	---
6	426	369	493	445	486	402	---	---	569	472	---	---
7	461	428	546	493	---	---	---	---	516	484	---	---
8	489	450	599	527	---	---	---	---	488	411	---	---
9	486	398	680	585	---	---	---	---	524	302	488	468
10	395	366	692	598	---	---	---	---	384	312	---	---
11	437	387	927	615	648	618	---	---	497	386	698	671
12	491	438	634	517	668	620	---	---	557	503	713	686
13	515	479	517	413	735	653	---	---	632	579	758	689
14	576	509	503	419	---	---	---	---	705	642	744	612
15	557	536	508	448	---	---	---	---	755	657	---	---
16	582	537	569	505	---	---	---	---	792	680	---	---
17	594	555	603	400	---	---	---	---	807	579	---	---
18	630	579	680	386	---	---	---	---	846	798	---	---
19	635	615	459	339	---	---	---	---	807	710	---	---
20	---	---	401	353	---	---	---	---	785	720	---	---
21	---	---	448	398	---	---	---	---	831	767	---	---
22	---	---	480	442	---	---	---	---	773	713	---	---
23	---	---	495	429	---	---	---	---	800	710	---	---
24	---	---	527	450	---	---	---	---	813	785	---	---
25	634	597	542	509	---	---	---	---	837	788	---	---
26	673	634	551	508	---	---	---	---	897	836	684	618
27	666	645	573	528	---	---	---	---	1160	888	722	656
28	693	659	631	442	---	---	---	---	858	689	705	576
29	704	671	641	618	---	---	972	800	---	---	780	593
30	709	671	643	626	---	---	875	507	665	303	794	716
31	---	---	599	453	---	---	566	393	378	302	---	---
MONTH	709	302	927	339	---	---	---	---	1160	198	---	---
YEAR	1240	198										



## 03159510 HOCKING RIVER BELOW ATHENS, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.9	6.1	9.4	9.1	10.7	10.6	14.0	13.0	11.0	10.6	11.1	10.9
2	7.3	6.0	9.5	9.3	10.7	10.5	14.0	13.4	11.3	11.0	10.8	10.5
3	7.2	6.4	9.6	9.1	10.9	10.5	14.2	13.1	11.7	11.1	10.5	10.0
4	7.1	6.0	9.6	9.2	10.8	10.4	14.1	13.3	11.7	11.4	9.9	9.3
5	7.2	5.7	9.7	9.1	10.4	10.2	13.6	13.3	11.0	10.0	9.5	9.3
6	7.5	6.2	10.2	9.4	10.7	10.4	13.3	13.0	11.2	8.9	9.7	9.4
7	7.5	6.0	10.4	9.7	11.2	10.7	13.0	12.8	11.0	9.7	9.8	9.7
8	7.1	6.0	10.5	9.8	11.4	11.1	13.9	12.8	10.9	10.1	9.7	9.4
9	7.4	6.3	10.5	9.8	11.5	11.2	13.2	12.2	10.3	8.6	9.5	9.2
10	7.8	6.9	10.9	10.3	11.7	11.2	13.9	12.4	---	---	9.6	9.1
11	8.0	7.0	11.0	10.3	12.1	11.6	14.7	13.7	---	---	9.8	9.3
12	8.4	7.3	11.0	10.3	12.0	11.8	14.8	14.4	---	---	10.2	9.7
13	8.3	6.9	10.7	9.9	12.0	11.4	14.8	14.5	---	---	10.7	10.1
14	8.2	7.4	10.3	9.5	11.9	11.5	14.5	13.9	11.4	11.2	10.9	10.5
15	8.8	7.5	9.7	8.5	12.2	11.9	13.9	13.3	11.3	11.1	10.8	10.5
16	8.2	7.8	8.9	7.5	12.2	12.1	13.3	13.1	11.1	10.7	10.9	10.4
17	8.5	7.5	10.0	8.7	12.6	12.2	13.2	13.0	10.9	9.3	11.1	10.7
18	8.3	7.5	9.8	9.1	12.9	12.4	12.9	12.3	12.0	9.7	11.0	10.8
19	8.7	7.7	10.1	9.0	---	---	12.2	12.0	---	---	10.7	10.5
20	8.2	7.7	10.6	9.1	---	---	12.0	11.7	---	---	10.6	10.4
21	8.6	8.1	11.5	9.0	13.5	12.9	11.7	11.4	---	---	10.7	10.0
22	8.7	8.0	10.8	8.9	13.8	13.4	11.5	11.2	---	---	11.2	10.6
23	9.3	8.3	10.8	8.8	13.7	13.5	11.1	10.9	---	---	11.1	10.9
24	9.4	8.5	9.6	8.5	13.6	13.3	11.2	10.3	---	---	12.2	10.8
25	9.5	8.5	9.3	8.1	13.3	13.0	11.4	10.7	---	---	12.2	11.3
26	9.5	8.3	8.6	7.5	13.0	12.3	11.6	10.7	---	---	11.5	11.2
27	9.5	8.3	9.8	8.5	12.5	12.3	11.5	10.7	---	---	11.7	10.8
28	8.8	7.7	9.9	9.7	12.7	12.6	11.5	10.8	11.7	11.1	11.4	10.3
29	9.0	7.7	10.5	9.7	12.7	12.5	11.9	11.1	---	---	10.2	9.8
30	9.0	8.6	10.8	10.5	13.1	12.9	12.0	11.3	---	---	10.7	9.6
31	9.2	8.7	---	---	13.4	13.1	11.5	10.2	---	---	11.6	10.2
MONTH	9.5	5.7	11.5	7.5	13.8	10.2	14.8	10.2	---	---	12.2	9.1
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.3	10.7	9.0	8.3	9.0	8.3	7.8	7.2	7.2	6.7	---	---
2	10.6	10.1	9.4	8.4	9.0	8.7	7.9	7.5	7.1	6.6	---	---
3	10.1	9.8	9.6	8.5	9.1	8.5	7.6</					

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.0	20.5	11.5	10.5	7.5	6.5	3.0	2.0	7.0	5.5	6.5	3.0
2	21.5	19.5	12.0	10.0	7.5	6.0	2.5	1.5	5.5	5.0	7.5	5.0
3	21.5	19.0	12.5	11.0	7.5	6.0	2.0	1.5	5.5	4.5	11.0	7.5
4	22.5	19.0	12.0	10.0	7.5	6.5	2.0	1.5	4.5	3.5	13.5	10.0
5	22.5	19.0	11.5	9.5	8.5	7.5	2.0	1.5	3.0	2.0	14.5	12.0
6	20.5	16.5	9.5	7.5	7.5	7.0	2.0	1.5	11.0	1.5	13.0	11.5
7	20.0	17.5	9.0	7.0	7.0	6.0	2.0	1.5	2.5	2.0	13.5	11.0
8	20.0	18.5	8.0	6.0	6.0	5.0	1.5	1.0	2.0	2.0	15.5	12.5
9	20.0	18.5	8.0	6.5	5.5	4.5	2.0	1.0	2.0	1.5	16.0	14.0
10	20.0	18.5	6.5	5.0	5.0	4.0	1.5	1.0	2.5	1.5	16.0	14.0
11	20.0	18.5	6.5	4.5	3.5	2.5	2.0	2.0	4.0	2.0	14.0	11.5
12	20.0	18.0	6.5	4.5	4.0	2.5	2.0	1.5	3.0	2.5	11.0	9.0
13	19.5	17.5	8.5	6.5	4.0	2.5	1.5	1.0	---	---	9.5	7.0
14	18.5	17.0	10.0	7.5	4.0	3.0	1.5	1.0	5.0	4.0	9.0	5.5
15	18.0	15.5	12.0	10.0	3.5	3.0	3.5	2.0	5.5	3.5	7.0	5.5
16	17.5	14.5	12.0	9.5	3.0	2.5	4.5	3.0	5.0	3.0	7.0	6.0
17	15.0	14.0	10.0	8.5	2.5	1.5	4.5	4.0	5.0	3.0	7.0	6.0
18	15.5	14.5	9.0	7.5	1.5	0.5	5.0	4.0	3.5	3.0	8.0	6.0
19	15.0	14.0	9.5	8.5	1.0	0.5	6.5	5.5	---	---	8.5	7.0
20	16.0	14.5	10.0	8.5	---	---	7.5	6.5	---	---	10.5	7.0
21	15.5	14.0	10.0	8.0	1.5	0.5	7.5	7.5	---	---	9.0	7.5
22	15.0	14.0	10.0	8.0	1.0	0.5	8.5	7.5	---	---	8.0	6.0
23	15.5	14.5	10.0	8.0	2.0	0.0	8.0	7.5	---	---	8.0	6.0
24	15.5	14.0	10.5	9.0	2.5	1.5	7.5	7.0	---	---	7.5	5.5
25	15.5	14.0	11.0	10.5	4.0	2.0	6.5	5.5	---	---	7.0	4.5
26	16.0	14.5	11.0	10.0	5.5	4.0	6.0	5.0	---	---	8.0	4.5
27	15.5	14.0	10.5	10.0	6.5	5.5	8.0	6.0	---	---	9.5	5.5
28	15.5	14.0	11.0	10.0	6.0	5.5	8.0	7.0	4.0	2.5	10.5	7.0
29	14.0	11.5	11.0	9.0	5.5	4.5	7.5	7.0	---	---	11.5	9.0
30	11.5	11.0	9.0	7.5	4.5	3.5	7.5	6.0	---	---	11.0	10.0
31	11.0	11.0	---	---	3.5	3.0	7.5	6.0	---	---	10.0	8.5
MONTH	22.5	11.0	12.5	4.5	8.5	0.0	8.5	1.0	---	---	16.0	3.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	7.5	20.5	19.0	19.5	18.5	22.0	18.5	24.0	22.0	23.0	22.0
2	12.5	9.5	20.5	17.5	19.0	17.5	23.5	20.0	24.5	23.0	22.0	20.5
3	13.5	12.5	17.5	13.5	20.0	17.5	25.0	22.0	24.5	23.0	20.5	



## RACCOON CREEK BASIN

03201600 SANDY RUN ABOVE BIG FOUR HOLLOW CREEK NEAR LAKE HOPE, OHIO

LOCATION.--Lat 39°21'45", long 82°18'47", in NW 1/4 SW 1/4 sec. 11, T.11 N., R.16 W., Vinton County, at gaging station on right bank, 250 ft (76 m) upstream from Big Four Hollow Creek, 150 ft (46 m) downstream from Morgan Hollow Creek, 2.5 mi (4.0 km) southwest of Carbondale, and 3.7 mi (6.0 km) northeast of Lake Hope.

DRAINAGE AREA.--0.98 mi<sup>2</sup> (2.54 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: April 1970 to September 1974.

Water temperatures: January 1971 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 2,580 micromhos Oct. 18; minimum, 116 micromhos May 12.

pH: Maximum, 5.9 May 18; minimum, 2.2 Oct. 4.

Water temperatures: Maximum, 29.5°C Aug. 27; minimum, freezing point on Dec. 21, 22, Jan. 28.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TOTAL ACIDITY AS H+ (MG/L)	TOTAL ACIDITY AS CACO3 (MG/L)	ALKA- LITY AS CACO3 (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.										
11...	1145	.05	11	546	0	0	--	--	.0	0
29...	1435	2.0	.6	30	0	0	--	--	.0	0
NOV.										
08...	1130	.08	8.4	417	0	0	--	--	.0	0
DEC.										
05...	1200	.25	1.7	84	0	0	--	--	.0	0
28...	1215	.81	--	--	0	0	36	16	.0	0
JAN.										
09...	0745	1.4	3.1	154	0	0	38	30	.0	0
23...	1500	1.5	--	--	0	0	29	15	.0	0
FEB.										
13...	1510	1.1	1.9	94	0	0	39	20	.0	0
27...	1420	.70	2.1	104	0	0	43	22	.0	0
MAR.										
05...	1045	1.6	.8	40	0	0	29	13	.0	0
27...	1530	.88	2.0	99	0	0	41	20	.0	0
APR.										
15...	1100	.86	1.0	50	0	0	32	16	.0	0
24...	1230	.50	1.0	50	0	0	21	18	.0	0
MAY										
08...	1045	.86	2.0	99	0	0	45	22	.0	0
29...	1620	.60	3.0	149	0	0	58	30	.0	0
JUNE										
05...	1015	.28	3.3	164	0	0	63	31	.0	0
27...	1000	1.1	1.7	84	0	0	37	17	.0	0
JULY										
11...	1130	.17	4.0	199	0	0	78	37	.0	0
24...	1545	.06	11	546	0	0	130	65	.0	0
31...	1045	.04	8.4	417	0	0	140	100	.0	0
AUG.										
14...	1450	.08	.7	35	0	0	120	54	.0	0
27...	1100	.06	8.3	412	0	0	140	67	.0	0
SEP.										
12...	1015	.13	4.5	223	0	0	80	44	--	0
23...	1130	.47	1.2	60	0	0	40	17	--	0

RACCOON CREEK BASIN

93

03201600 SANDY RUN ABOVE BIG FOUR HOLLOW CREEK NEAR LAKE HOPE, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1971-74): Maximum, 3,100 micromhos Oct. 21, 22, 1971; minimum, 123 micromhos Apr. 27, 1973.

pH (1971-74): Maximum, 7.5 Dec. 6, 1971; minimum, 1.9 Apr. 10, 1973.

Water temperatures (1971-74): Maximum, 33.5°C Aug. 2, 1973; minimum, freezing point on several days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since January 1971. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected on an approximate bi-weekly basis and partial analyses were made on these samples until June 30, 1974.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	PH (UNITS)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	TEMPERATURE (DEG C)
OCT.									
11...	2250	780	780	66000	10000	2.7	1800	680	14.5
29...	438	160	160	2300	1300	4.3	300	170	9.0
NOV.									
08...	1990	570	570	74000	7500	2.7	1480	950	4.5
DEC.									
05...	796	--	--	--	--	3.2	457	280	9.0
28...	492	160	160	4000	1100	3.7	290	190	4.0
JAN.									
09...	1400	220	220	33000	2000	3.0	676	370	2.0
23...	528	130	130	5500	960	3.5	297	190	7.0
FEB.									
13...	765	180	180	1500	1300	3.2	376	260	7.5
27...	800	200	200	15000	1400	3.2	435	300	4.8
MAR.									
05...	442	130	130	2400	650	3.8	255	160	8.5
27...	756	180	180	12000	1300	3.2	366	280	12.0
APR.									
15...	554	150	150	8600	1000	3.4	296	200	9.0
24...	620	130	130	8400	1500	3.6	388	230	10.5
MAY									
08...	838	200	200	12000	1500	3.1	546	300	10.5
29...	970	270	270	24000	2100	3.3	670	430	16.5
JUNE									
05...	1160	290	290	19000	2400	2.9	734	420	15.0
27...	540	160	160	7300	1200	3.6	388	220	14.0
JULY									
11...	1340	350	350	16000	3700	2.9	880	520	20.5
24...	1880	590	590	14000	7300	3.0	1590	960	19.5
31...	2050	760	760	10000	8400	2.7	1840	1100	17.5
AUG.									
14...	1750	520	520	19000	6000	2.9	1230	740	21.0
27...	2090	630	630	31000	5300	2.9	1590	1000	19.5
SEP.									
12...	1400	380	380	33000	3800	--	848	350	18.0
23...	568	170	170	4900	1500	--	345	220	9.0

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2130	2050	823	664	774	696	---	---	548	288	---	---
2	2260	2110	1340	823	900	679	---	---	514	364	---	---
3	2310	2260	1320	1230	852	785	---	---	404	372	---	---
4	2350	675	1680	1320	809	751	---	---	468	398	---	---
5	1840	852	1730	1480	783	743	---	---	524	400	---	---
6	2250	1840	1770	1590	---	---	---	---	591	344	---	---
7	2230	2130	1920	1770	---	---	---	---	324	163	---	---
8	2190	2150	2000	1870	---	---	---	---	323	211	---	---
9	2230	2170	1870	1680	---	---	---	---	332	308	---	---
10	2260	2210	1790	1770	---	---	---	---	428	320	---	---
11	2310	2260	2060	1780	---	---	---	---	425	341	---	---
12	2360	2280	2040	1970	---	---	---	---	683	356	---	---
13	2380	1980	2060	1970	---	---	---	---	444	403	---	---
14	2420	2060	2060	1970	---	---	---	---	405	333	---	---
15	2540	2330	2020	1070	---	---	---	---	436	363	---	---
16	2550	2350	1370	1240	---	---	---	---	553	440	---	---
17	2480	2370	1430	1350	---	---	---	---	544	452	---	---
18	2580	2380	1810	1430	---	---	---	---	520	451	---	---
19	2490	2340	1740	1600	---	---	---	---	573	502	---	---
20	2520	2390	1830	1600	---	---	---	---	524	370	---	---
21	2460	2350	1830	1610	---	---	---	---	458	293	---	---
22	2490	2390	1610	1500	---	---	---	---	476	378	---	---
23	2460	2350	1690	1470	---	---	312	282	382	316	---	---
24	2380	2270	1650	961	---	---	431	272	429	298	---	---
25	2350	2280	961	758	---	---	460	397	430	366	---	---
26	2350	2280	841	669	---	---	531	439	388	346	---	---
27	2320	2260	816	575	---	---	501	348	---	---	663	635
28	2360	1100	663	555	---	---	509	170	---	---	711	583
29	705	258	634	593	---	---	309	167	---	---	728	503
30	841	517	814	587	---	---	397	314	---	---	489	167
31	1030	678	---	---	---	---	428	324	---	---	233	169
MONTH	2580	258	2060	555	---	---	---	---	683	163	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	450	230	805	731	715	510	1110	759	2050	1810	832	143
2	230	138	1110	204	903	731	1010	861	2000	1520	754	187
3	420	253	752	196	1020	840	1190	1010	1420	119	1140	154
4	360	329	425	230	1120	933	1290	881	999	121	1120	250
5	400	335	575	424	1210	976	1090	956	1160	931	705	593
6	461	400	576	468	1170	322	1120	1080	1320	1110	712	538
7	617	458	597	451	932	665	---	---	1380	1260	1050	589

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2.6	2.4	3.5	3.3	3.8	3.5	3.2	3.0	3.7	3.3	3.7	3.4
2	2.5	2.4	3.3	3.2	4.0	3.5	3.1	2.8	3.5	3.2	5.0	3.4
3	2.5	2.4	3.2	3.1	3.8	3.6	3.6	2.9	3.4	3.2	4.0	3.2
4	3.9	2.2	3.1	3.0	3.9	3.7	3.6	3.1	3.2	3.0	3.7	3.2
5	---	---	3.0	2.9	3.8	3.5	3.2	2.9	3.2	3.1	4.0	3.1
6	---	---	3.0	2.9	4.1	3.7	2.9	2.8	3.2	3.0	3.7	3.5
7	---	---	2.9	2.8	4.1	3.8	3.0	2.8	4.0	3.2	4.0	3.6
8	---	---	2.8	2.6	3.8	3.6	3.1	2.8	3.8	3.4	---	---
9	---	---	2.9	2.7	3.6	3.4	4.9	2.9	3.5	3.4	---	---
10	---	---	2.8	2.7	3.8	3.5	4.9	3.9	3.5	3.3	---	---
11	---	---	2.9	2.7	3.6	3.4	4.6	3.8	3.3	3.2	---	---
12	---	---	2.9	2.6	3.5	3.3	3.8	3.6	3.4	3.1	---	---
13	---	---	2.8	2.7	3.5	3.2	3.6	3.4	3.4	3.2	---	---
14	---	---	2.7	2.5	3.6	3.4	3.5	3.4	3.5	3.2	---	---
15	---	---	3.3	2.5	3.5	3.3	3.7	3.4	3.2	3.1	---	---
16	3.3	2.8	3.0	2.8	3.4	3.2	3.8	3.3	3.1	2.8	---	---
17	3.3	3.0	3.2	3.0	3.2	3.0	3.6	3.4	3.0	2.9	---	---
18	3.4	3.2	3.1	2.9	3.0	2.8	3.5	3.2	3.1	2.9	---	---
19	3.6	3.4	3.0	2.9	3.0	2.8	4.2	3.2	2.9	2.7	---	---
20	3.6	3.4	3.1	2.9	4.4	2.7	4.0	3.3	2.9	2.7	---	---
21	3.6	3.0	3.1	2.7	4.0	3.5	3.7	3.3	3.4	2.8	---	---
22	3.5	3.0	3.0	2.8	4.1	3.6	3.6	3.1	2.9	2.8	---	---
23	3.5	3.0	3.0	2.9	3.8	3.5	4.3	3.2	3.0	2.9	---	---
24	3.5	3.0	3.6	2.8	3.7	3.3	3.7	3.3	3.2	3.0	---	---
25	3.5	2.8	4.3	3.3	3.3	3.1	3.5	3.4	3.3	3.0	---	---
26	3.3	2.8	3.9	3.5	3.8	3.0	3.5	3.3	3.4	3.3	---	---
27	3.3	2.6	4.2	3.2	4.2	3.1	3.5	3.3	3.5	3.2	3.7	3.4
28	4.3	2.5	4.2	3.7	3.7	2.9	4.5	3.2	3.5	3.4	3.7	3.4
29	4.8	3.3	4.1	3.8	3.7	2.9	4.6	3.5	---	---	4.0	3.4
30	3.4	3.1	4.0	3.5	4.2	3.1	3.6	3.4	---	---	5.2	3.7
31	3.4	3.2	---	---	3.4	3.0	3.6	3.3	---	---	5.2	4.6
MONTH	---	---	4.3	2.5	4.4	2.7	4.9	2.8	4.0	2.7	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.6	3.6	3.4	3.0	4.1	3.4	3.3	3.1	2.9	2.7	3.9	3.3
2	5.3	4.3	4.5	3.1	3.4	3.0	3.2	3.0	2.8	2.7	4.0	3.5
3	4.3	3.5	4.6	3.7	3.1	2.8	3.1	3.0	3.7	2.7	3.8	3.6
4	3.9	3.7	4.2	3.6	3.0	2.7	3.0	2.9	3.1	2.8	3.7	3.6
5	4.0	3.7	3.7	3.1	2.8	2.6	3.0	2.9	3.0	2.8	3.8	3.6
6	3.9	3.7	3.3	3.1	4.6							







## RACCOON CREEK BASIN

03201700 BIG FOUR HOLLOW CREEK NEAR LAKE HOPE, OHIO

LOCATION.--Lat 39°21'48", long 82°18'51", in SE 1/4 NE 1/4 sec.11 T.11 N., R.16 W., Vinton County, at gaging station on right bank, 200 ft (61 m) upstream from State Route 278 crossing, 300 ft (91 m) upstream from Sandy Run, 2.5 mi (4.0 km) southwest of Carbondale, and 3.7 mi (6.0 km) northeast of Lake Hope.

DRAINAGE AREA.--1.01 mi<sup>2</sup> (2.62 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: April 1970 to September 1974.  
Water temperatures: January 1971 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,620 micromhos Oct. 1, 2; minimum, 96 micromhos Aug. 30.

pH: Maximum, 5.9 Feb. 17; minimum, 2.1 Dec. 14.

Water temperatures: Maximum, 28.5°C July 10; minimum, freezing point on many days during November to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TOTAL ACIDITY AS H+ (MG/L)	TOTAL ACIDITY AS CACO3 (MG/L)	ALKA- LINITY AS CACO3 (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	CARBON DIOXIDE (CO2) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.										
11...	1450	.09	4.1	204	0	0	--	--	.0	0
29...	1330	.68	2.0	99	0	0	--	--	.0	0
NOV.										
08...	1330	.09	2.0	99	0	0	--	--	.0	0
DEC.										
05...	1400	.24	1.4	70	0	0	--	--	.0	0
28...	1115	.95	--	--	0	0	35	16	.0	0
JAN.										
08...	1300	.47	2.0	99	0	0	40	19	.0	0
23...	1330	1.6	--	--	0	0	28	13	.0	0
FEB.										
13...	1340	1.0	1.1	55	0	0	34	17	.0	0
27...	1345	.79	1.3	65	0	0	33	15	.0	0
MAR.										
05...	1300	1.6	1.2	60	0	0	30	14	.0	0
28...	1045	.75	1.2	60	0	0	31	15	.0	0
APR.										
15...	1215	.86	1.0	50	0	0	32	16	.0	0
24...	1800	.45	1.0	50	0	0	18	17	.0	0
MAY										
08...	1145	.72	1.6	79	0	0	37	18	.0	0
29...	1430	.47	2.4	119	0	0	40	20	.0	0
JUNE										
05...	1215	.28	2.6	129	0	0	44	22	.0	0
26...	1700	1.2	.9	45	0	0	33	14	.0	0
JULY										
11...	1345	.12	2.3	114	0	0	59	24	.0	0
25...	0830	.04	4.2	209	0	0	88	40	.0	0
31...	1230	.03	6.5	323	0	0	91	45	.0	0
AUG.										
14...	1335	.06	.6	30	0	0	56	30	.0	0
27...	1200	.04	3.7	184	0	0	97	30	.0	0
SEP.										
12...	1045	.12	2.2	109	0	0	50	21	--	0
23...	1330	.64	1.2	60	0	0	36	15	--	0

RACCOON CREEK BASIN

99

03201700 BIG FOUR HOLLOW CREEK NEAR LAKE HOPE, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1971-74): Maximum, 3,530 micromhos Sept. 13, 1973; minimum, 126 micromhos Apr. 27, 1973.  
pH (1971-74): Maximum, 6.2 Feb. 22, 1973; minimum, 2.1 on several days during October and December 1971, February and March 1972, December 1973.

Water temperatures(1971-74): Maximum, 34.5°C Aug. 12, 1973; minimum, freezing point on many days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since January 1971. In addition to the water-quality recorder, samples were collected on an approximate bi-weekly basis and partial analyses were made on these samples until June 30, 1974.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	PH (UNITS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	TEMPER- ATURE (DEG C)
OCT.									
11...	1250	420	420	130000	9200	3.0	820	540	19.0
29...	793	280	280	8800	7100	3.2	536	330	9.0
NOV.									
08...	838	320	320	4100	9100	3.5	590	360	6.0
DEC.									
05...	647	--	--	--	--	3.4	370	240	--
28...	487	150	150	8100	2300	3.5	312	200	4.0
JAN.									
08...	691	180	180	16000	3100	3.3	438	260	.5
23...	468	120	120	8800	1600	3.5	260	170	8.0
FEB.									
13...	527	160	160	890	1800	3.4	--	190	6.0
27...	539	140	140	11000	2000	3.5	293	200	1.9
MAR.									
05...	546	130	130	11000	1400	3.5	275	190	10.0
28...	549	140	140	9400	1800	3.4	276	200	5.0
APR.									
15...	595	150	150	9600	1600	3.3	309	200	9.5
24...	580	120	120	9900	2300	3.5	436	230	15.0
MAY									
08...	693	170	170	8000	1500	3.2	400	230	10.5
29...	700	180	180	19000	2400	3.4	545	300	17.5
JUNE									
05...	943	200	200	20000	2700	3.0	563	300	18.5
26...	440	140	140	6300	1700	3.7	338	180	16.0
JULY									
11...	917	250	250	1600	3700	3.1	652	350	22.0
25...	1350	380	380	17000	7000	3.0	--	600	18.4
31...	1650	410	410	11000	6600	2.7	1160	720	16.5
AUG.									
14...	940	260	260	7800	5400	3.2	700	370	24.5
27...	1200	370	370	5000	5500	3.0	838	490	20.5
SEP.									
12...	864	210	210	14000	3900	--	495	270	19.0
23...	529	150	150	6900	2600	--	319	190	13.0



## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2.6	2.5	3.8	3.2	3.5	2.8	3.5	2.7	3.2	2.4	4.2	2.5
2	2.7	2.5	4.2	3.1	3.5	2.7	3.6	3.0	3.1	2.7	4.3	2.6
3	2.7	2.5	3.5	2.9	3.2	2.6	3.7	2.9	3.1	2.4	4.1	3.1
4	3.2	2.5	4.0	3.0	3.2	2.6	3.8	3.2	3.5	2.7	3.4	3.0
5	3.0	2.7	3.7	3.1	3.0	2.6	3.6	2.8	4.1	2.9	3.3	3.0
6	3.0	2.7	3.9	3.0	3.2	2.9	3.3	2.9	3.5	2.8	3.7	3.2
7	2.9	2.6	3.8	3.2	3.3	2.9	3.6	2.7	---	---	3.5	2.9
8	2.7	2.5	3.6	3.0	3.4	2.8	3.7	2.9	---	---	3.4	2.7
9	2.7	2.5	3.3	2.8	3.3	2.8	4.1	3.0	---	---	3.2	2.6
10	2.8	2.5	3.3	2.9	3.4	2.9	4.1	3.0	---	---	3.2	2.7
11	2.9	2.6	3.3	2.8	3.5	3.1	3.7	3.3	---	---	3.2	2.9
12	2.8	2.6	3.3	2.9	3.5	2.9	3.8	3.3	---	---	3.4	3.1
13	2.8	2.6	3.1	2.7	3.3	2.9	5.0	3.3	3.7	3.0	3.8	3.0
14	2.8	2.6	2.8	2.5	3.3	2.1	3.9	3.3	3.9	2.7	4.4	3.0
15	3.0	2.6	2.9	2.4	3.3	3.0	3.8	3.2	4.7	3.2	4.3	3.5
16	3.0	2.6	3.1	2.8	3.5	3.1	3.8	3.1	5.4	2.7	4.5	3.9
17	3.3	2.7	3.4	2.7	3.7	3.0	3.7	3.2	5.9	3.1	4.0	3.3
18	3.2	2.7	3.3	2.8	3.6	3.0	3.7	3.1	4.8	2.6	4.0	3.2
19	3.4	2.6	3.0	2.6	3.3	2.9	4.1	3.1	3.5	2.7	3.8	3.1
20	3.1	2.6	3.1	2.5	4.0	2.7	3.9	3.3	4.0	3.0	3.9	2.9
21	3.2	2.5	3.0	2.5	4.0	3.5	3.7	3.5	5.0	2.4	4.5	3.5
22	3.3	2.5	3.1	2.5	4.2	3.5	3.6	3.2	3.6	2.6	4.4	3.2
23	3.5	3.1	3.0	2.5	3.9	3.2	3.7	3.3	4.0	2.6	3.9	3.1
24	3.1	2.5	2.9	2.5	3.5	2.9	3.5	3.0	4.2	3.3	4.1	3.0
25	3.3	2.5	3.6	2.8	3.8	2.9	3.5	2.6	4.8	3.7	4.6	3.2
26	3.1	2.5	4.6	3.1	3.5	2.7	2.9	2.3	4.8	2.5	4.3	3.0
27	3.4	2.5	4.3	3.0	3.4	2.9	2.5	2.2	4.4	3.7	4.0	2.9
28	3.0	2.6	4.2	3.2	3.2	2.7	3.7	2.4	4.5	3.3	3.7	3.4
29	4.0	3.0	3.5	3.1	3.4	2.9	2.9	2.6	---	---	3.6	3.2
30	3.9	3.3	3.6	2.9	3.4	3.0	3.2	2.4	---	---	4.4	3.4
31	3.3	3.1	---	---	3.3	2.8	3.1	2.2	---	---	3.7	3.1
MONTH	4.0	2.5	4.6	2.4	4.2	2.1	5.0	2.2	5.9	2.4	4.6	2.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	3.4	2.8	3.4	2.9	2.9	2.8	---	---	2.9	2.		







## RACCOON CREEK BASIN

03201800 SANDY RUN NEAR LAKE HOPE, OHIO

LOCATION.--Lat 39°20'01"N, long 82°19'56"W, in T.11 N., R.16 W., Vinton County, at gaging station on right bank at upstream side of bridge on King Hollow Trail, 1,200 ft (366 m) downstream from Harbargar Hollow, 2.6 mi (4.2 km) upstream from spillway of Lake Hope, and 5.0 mi (8.0 km) northeast of Zaleski.

DRAINAGE AREA.--4.99 mi<sup>2</sup> (12.9 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: December 1959 to September 1961, April 1970 to September 1974.  
Water temperatures: December 1970 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,040 micromhos Oct. 5; minimum, 53 micromhos Sept. 3.

pH: Maximum, 6.4 Jan. 10; minimum, 2.5 Jan. 25-27, 31, Feb. 28, May 17.

Dissolved oxygen: Maximum, 14.8 mg/l Feb. 5, 9; minimum, 3.4 mg/l July 9.

Water temperatures: Maximum, 24.0°C May 17; minimum, freezing point on many days during November to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TOTAL ACIDITY AS H+ (MG/L)	TOTAL ACIDITY AS CaCO <sub>3</sub> (MG/L)	ALKALINITY AS CaCO <sub>3</sub> (MG/L)	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	CARBON DIOXIDE (CO <sub>2</sub> ) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)
OCT.										
12...	1130	.10	1.8	89	0	0	--	--	.0	0
29...	1100	4.1	2.9	144	0	0	--	--	.0	0
NOV.										
09...	1315	.48	1.8	89	0	0	--	--	.0	0
DEC.										
06...	1400	1.6	1.0	50	0	0	--	--	.0	0
28...	1000	5.3	--	--	0	0	25	12	.0	0
JAN.										
09...	1040	11	1.2	60	0	0	26	13	.0	0
23...	1800	7.5	--	--	0	0	20	10	.0	0
FEB.										
13...	1925	5.2	.6	30	0	0	23	11	.0	0
27...	1635	5.0	.6	30	0	0	18	8.6	.0	0
MAR.										
05...	1330	8.8	.5	25	0	0	20	9.0	.0	0
27...	1630	4.4	.7	35	0	0	20	9.7	.0	0
APR.										
15...	1545	4.2	.5	25	0	0	21	9.3	.0	0
25...	0815	2.8	1.0	50	0	0	9.3	9.7	.0	0
MAY										
08...	1400	5.2	.6	30	0	0	22	9.9	.0	0
29...	1300	3.6	.7	35	0	0	24	11	.0	0
JUNE										
05...	1400	1.2	.7	35	0	0	25	12	.0	0
26...	1110	10	.2	10	0	0	19	7.7	.0	0
JULY										
11...	1430	.61	.7	35	0	0	34	13	.0	0
24...	1300	33	.4	20	0	0	28	12	.0	0
31...	1400	.02	.2	10	0	0	25	10	.0	0
AUG.										
14...	1125	.16	.3	15	0	0	35	20	.0	0
27...	1330	.16	.8	40	0	0	39	17	.0	0
27...	1400	.16	.6	30	0	0	41	17	.0	0
SEP.										
12...	1130	2.0	1.3	65	0	0	30	12	--	0
23...	1415	3.3	.5	25	0	0	24	10	--	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
APR.			
15...	1545	2.3	1.2

RACCOON CREEK BASIN

105

03201800 SANDY RUN NEAR LAKE HOPE, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1970-74): Maximum, 1,440 micromhos July 11, 12, 1973; minimum, 53 micromhos Sept. 3, 1974.

pH (1970-74): Maximum, 5.6 Apr. 28, 1973; minimum, 2.1 Mar. 25, 1971, Aug. 31, 1972.

Dissolved oxygen (1970-74): Maximum, 15.0 mg/l or higher on many days during January, November and December 1971, January and February 1973; minimum, 2.0 mg/l Aug. 29, 30, 1973.

Water temperatures (1970-74): Maximum, 28.0°C July 9, 1973; minimum, freezing point on many days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since December 1970. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected on an approximate bi-weekly basis and partial analyses were made on these samples until June 30, 1974. Special samples were also collected twice a year to further define the quality of water.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	PH (UNITS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	TEMPER- ATURE (DEG C)
OCT.									
12...	850	340	340	1100	7700	3.7	614	300	15.0
29...	946	380	380	2700	8000	3.5	734	440	9.5
NOV.									
09...	719	270	270	1400	6400	3.9	534	310	4.0
DEC.									
06...	496	--	--	--	--	3.7	296	190	5.0
28...	343	110	110	1000	1200	3.9	194	140	3.0
JAN.									
09...	549	120	120	5800	1500	3.4	253	160	.0
23...	326	91	91	1700	820	3.8	186	120	--
FEB.									
13...	372	100	100	3500	960	3.6	202	130	5.0
27...	280	80	80	1800	600	4.0	364	100	2.8
MAR.									
05...	322	87	87	1600	600	3.9	171	110	10.0
27...	332	90	90	1800	830	3.8	190	120	9.5
APR.									
15...	309	91	91	1500	700	3.4	161	110	9.0
25...	325	63	63	1200	880	3.8	182	110	6.0
MAY									
08...	346	96	96	1700	1000	3.7	222	120	11.0
29...	360	110	110	1300	1200	3.8	254	140	15.0
JUNE									
05...	381	110	110	1000	1200	3.7	237	140	17.5
26...	235	79	79	490	670	4.3	--	85	14.5
JULY									
11...	422	140	140	560	2200	3.9	264	160	22.5
24...	355	120	120	500	1300	4.1	286	140	19.5
31...	340	100	100	230	2000	4.1	249	130	18.0
AUG.									
14...	500	170	170	1000	3200	4.0	358	190	19.5
27...	520	170	170	720	3600	3.8	356	200	21.0
27...	520	170	170	1000	3000	3.8	356	200	21.0
SEP.									
12...	398	120	120	580	2100	--	265	160	18.5
23...	313	100	100	760	1400	--	199	130	10.5

## 03201800 SANDY RUN NEAR LAKE HOPE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	758	735	729	620	411	387	376	339	356	312	402	362
2	750	743	668	632	455	410	422	356	419	343	359	347
3	755	726	689	668	483	455	594	269	342	327	---	---
4	773	651	705	689	506	482	309	252	361	328	---	---
5	1040	716	708	696	567	480	405	309	390	339	---	---
6	827	798	720	705	480	458	445	405	430	244	---	---
7	828	798	728	713	465	462	461	435	241	175	---	---
8	821	810	725	713	488	462	471	429	293	198	---	---
9	816	800	753	710	544	493	549	220	320	268	---	---
10	803	795	762	746	561	543	251	115	392	288	---	---
11	809	791	764	756	551	522	173	130	386	322	---	---
12	847	786	761	755	522	512	226	173	406	300	---	---
13	849	771	762	758	612	510	304	223	364	350	---	---
14	860	807	770	749	629	558	340	304	351	321	---	---
15	866	832	770	714	554	512	334	281	354	318	---	---
16	868	831	963	726	512	504	322	265	451	331	---	---
17	872	833	777	750	531	512	320	299	427	376	---	---
18	854	830	750	723	556	528	366	303	411	350	---	---
19	843	829	737	725	555	540	372	164	457	390	---	---
20	851	840	738	734	550	266	261	185	375	288	---	---
21	859	848	734	720	335	269	267	231	299	283	---	---
22	882	851	740	722	400	335	327	239	425	309	---	---
23	886	875	738	725	488	396	332	291	303	278	---	---
24	894	883	725	690	457	423	334	291	375	265	---	---
25	899	890	783	333	490	424	357	339	376	301	---	---
26	895	862	438	159	494	290	397	356	389	302	---	---
27	873	859	335	243	308	272	420	345	419	315	337	328
28	866	776	249	158	346	308	343	190	393	375	388	346
29	977	654	308	249	415	277	244	201	---	---	409	388
30	666	606	387	308	282	255	318	252	---	---	---	---
31	705	666	---	---	381	282	364	327	---	---	---	---
MONTH	1040	606	963	158	629	255	594	115	457	175	---	---

[illegible]



## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## 03201800 SANDY RUN NEAR LAKE HOPE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.9	6.5	8.7	8.1	---	---	14.4	12.5	13.7	11.6	11.5	9.4
2	7.0	6.6	9.2	7.2	---	---	14.6	13.5	12.8	12.1	10.2	10.0
3	7.0	6.4	8.2	6.8	---	---	14.0	13.5	12.7	11.8	---	---
4	6.8	6.2	8.9	7.6	---	---	13.6	12.9	14.4	12.4	---	---
5	7.1	6.6	8.8	7.5	---	---	13.7	13.1	14.8	14.3	---	---
6	8.0	7.1	9.8	8.1	---	---	13.1	12.8	14.7	12.9	---	---
7	7.4	6.7	10.1	8.4	---	---	14.0	12.6	13.5	12.6	---	---
8	6.8	6.5	9.7	7.5	---	---	14.0	13.5	14.1	13.1	---	---
9	6.8	6.4	---	---	---	---	14.0	13.5	14.8	14.3	---	---
10	6.9	6.4	---	---	---	---	13.1	11.9	14.7	14.3	---	---
11	7.0	6.3	---	---	---	---	12.3	11.8	14.7	12.5	---	---
12	7.8	6.5	---	---	---	---	14.4	12.3	14.6	6.6	---	---
13	7.7	6.8	---	---	---	---	14.4	13.7	13.8	10.6	---	---
14	7.9	6.9	---	---	---	---	13.7	12.1	12.3	11.0	---	---
15	8.3	7.2	---	---	---	---	12.1	10.7	14.1	11.9	---	---
16	8.4	7.3	---	---	11.4	10.8	12.6	10.4	14.0	11.1	---	---
17	9.3	8.4	---	---	12.2	11.6	11.9	10.9	13.7	11.3	---	---
18	9.0	8.2	---	---	12.5	12.2	12.2	10.2	13.9	11.1	---	---
19	9.5	8.3	---	---	12.9	12.5	10.7	10.1	11.3	10.1	---	---
20	8.9	8.1	---	---	13.2	12.9	10.8	9.9	11.4	10.0	---	---
21	9.7	8.4	---	---	13.7	13.0	10.6	10.1	13.3	9.9	---	---
22	9.8	8.5	---	---	13.7	13.2	10.8	9.7	11.3	9.4	---	---
23	9.6	8.3	---	---	13.7	12.8	12.3	10.3	12.7	10.3	---	---
24	9.5	8.2	---	---	12.9	11.3	12.1	11.4	13.5	11.9	---	---
25	9.6	7.7	---	---	12.1	10.8	13.3	11.5	14.1	12.6	---	---
26	8.7	7.8	---	---	10.8	10.0	12.9	10.6	13.7	12.2	---	---
27	9.2	7.6	---	---	11.1	10.5	10.4	9.7	14.0	11.3	10.1	9.7
28	8.9	7.6	---	---	12.0	11.1	11.8	10.5	11.9	10.4	11.0	8.7
29	10.3	9.0	---	---	12.1	11.4	11.3	10.9	---	---	8.8	8.4
30	9.8	9.2	---	---	13.7	12.1	12.5	10.8	---	---	---	---
31	9.2	8.3	---	---	12.7	12.3	12.6	10.4	---	---	---	---
MONTH	10.3	6.2	---	---	---	---	14.6	9.7	14.8	6.6	---	---

[illegible]



## 03202000 RACCOON CREEK AT ADAMSVILLE, OHIO

LOCATION.--Lat 38°52'25", long 82°21'22", in SE 1/4 sec.26, T.6 N., R.16 W., Gallia County, at gaging station on left bank at downstream side of U.S. Highway 35 bridge at Adamsville, 1.3 mi (2.1 km) upstream from Ryan Run, and 1.4 mi (2.3 km) downstream from Indian Creek.

DRAINAGE AREA.--585 mi<sup>2</sup> (1,515 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1951 to September 1954, October 1964 to September 1974.

Water temperatures: October 1951 to September 1954, October 1964 to September 1974.

Sediment records: Water years 1970-74 (partial-record station).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,350 micromhos Oct. 28; minimum, 120 micromhos June 23.

pH: Maximum, 6.8 May 18, June 23; minimum, 3.3 Oct. 2, 3, 4.

Dissolved oxygen: Maximum, 12.2 mg/l Feb. 27; minimum, 4.3 mg/l Aug. 4.

Water temperatures: Maximum, 24.0°C July 10, 31; minimum, 0.5°C Dec. 18, 19, 22, 23.

## EXTREMES.--Period of record:

Specific conductance (1967-74): Maximum, 2,930 micromhos Nov. 20, 1964; minimum, 115 micromhos Mar. 23, 1952.

pH (1967-74): Maximum, 8.8 Feb. 16, 1972; minimum, 2.0 May 6, 1972.

Dissolved oxygen (1967-74): Maximum, 15.0 mg/l or higher on several days during 1968-69, 1971; minimum, 2.5 mg/l May 6, 1972.

Water temperatures (1967-74): Maximum, 29.0°C June 16, 1952; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since May 1967. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH  (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
02...	1030	169	20.0	--	728	3.8	--	54	20	--	--	0
31...	0950	480	--	--	394	5.4	--	35	11	--	--	0
NOV.												
09...	1100	120	5.5	--	568	4.5	--	--	--	--	--	0
28...	1600	3260	11.0	--	249	5.5	--	--	--	--	--	0
DEC.												
12...	1150	216	2.0	--	447	4.7	--	--	--	--	--	0
30...	1615	1040	4.0	--	296	5.6	--	--	--	--	--	0
JAN.												
11...	1100	4730	6.0	--	139	6.2	--	14	5.9	--	--	0
22...	1045	1190	8.0	--	365	4.5	--	28	13	--	--	0
FEB.												
22...	1210	720	6.0	--	332	5.1	--	28	12	--	--	0
27...	1750	508	3.5	--	386	4.7	--	27	11	--	--	0
MAR.												
18...	1200	1070	6.0	--	280	4.7	--	23	9.8	--	--	0
29...	1700	1040	8.5	--	222	5.9	--	20	8.1	--	--	0
APR.												
10...	1730	1540	8.0	--	251	5.6	--	26	8.4	--	--	0
30...	1055	274	18.0	--	387	4.7	--	30	12	--	--	0
MAY												
02...	0945	266	17.0	--	371	4.6	--	27	12	--	--	0
24...	2000	1680	18.5	--	254	6.6	--	21	7.9	--	--	0
JUNE												
12...	1550	246	--	6.0	365	5.4	--	33	12	--	--	0
21...	1000	1340	20.0	--	195	5.6	--	21	7.2	--	--	0
SEP.												
16...	1510	292	18.0	8.4	430	4.6	13	35	13	16	3.2	0

DATE	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.												
02...	0	240	40	.4	--	.01	.47	--	--	220	--	--
31...	4	140	17	.1	--	.01	.65	--	--	130	--	--
NOV.												
09...	0	210	38	.3	--	.00	.70	--	--	--	--	--
28...	8	86	14	.1	--	.00	.81	--	--	--	--	--
DEC.												
12...	3	160	29	.4	--	.00	.41	--	--	--	--	--
30...	2	110	12	.2	--	.00	.46	--	--	--	--	--
JAN.												
11...	8	41	5.7	.4	--	.01	.01	--	--	59	--	--
22...	1	120	22	.2	--	.00	.51	--	--	120	--	--
FEB.												
22...	6	110	53	.3	--	.01	.16	--	--	120	--	--
27...	1	120	43	.3	--	.00	.46	--	--	110	--	--
MAR.												
18...	2	110	12	.1	--	.00	.38	--	--	98	--	--
29...	4	77	9.8	.1	--	.00	.77	--	--	83	--	--
APR.												
10...	3	93	8.0	.2	--	.00	.35	--	--	100	--	--
30...	1	140	21	.3	--	.01	.35	--	--	120	--	--
MAY												
02...	1	140	18	.4	--	.00	.29	--	--	120	--	--
24...	5	92	8.0	.2	--	.00	.39	--	--	85	--	--
JUNE												
12...	3	130	18	.2	--	.00	.32	--	--	130	--	--
21...	5	65	8.0	.4	--	.01	.90	--	--	82	--	--
SEP.												
16...	2	150	19	.4	.50	.00	.28	.08	254	140	120	3400

RACCOON CREEK BASIN

111

03202000 RACCOON CREEK AT ADAMSVILLE, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV. 01...	1335	2.2	--
APR. 30...	1130	.1	1.2

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDIM- ENT (MG/L)	SUS- PENDE SEDIM- ENT DIS- CHARGE (T/DAY)
NOV., 1973					
28...	1145	3260	11.5	138	1220
JAN., 1974					
11...	1445	4890	2.5	127	1680
22...	1300	1190	--	27	87
MAR.					
18...	1405	1070	6.0	18	52
APR.					
02...	1420	3500	16.0	149	1410
MAY					
14...	1340	1670	16.0	44	198
JULY					
10...	1545	132	--	2	.71
SEP.					
05...	1530	2400	--	51	330
23...	1340	528	15.0	6	8.6

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDIM- ENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
28...	1145	138	47	64	76	87	94	96	97	98	100	--
JAN., 1974												
11...	1445	127	46	61	73	82	86	89	89	92	100	--
APR.												
02...	1420	149	52	69	78	87	93	95	96	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
23...	1	7	7	44	94	97	99	100	--	--	--	--











## SCIOTO RIVER BASIN

03229600 SCIOTO RIVER BELOW SHADEVILLE, OHIO

LOCATION.--Lat 39°47'37", long 83°00'40", Pickaway County, on left bank at Picway Plant of Columbus and Southern Ohio Electric Company, 0.4 mi (0.6 km) downstream from Big Walnut Creek, and 3.2 mi (5.1 km) downstream from Shaderville.

DRAINAGE AREA.--2,266 mi<sup>2</sup> (5,869 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1965 to September 1974.  
Water temperatures: March 1965 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,000 micromhos Jan. 11; minimum, 161 micromhos Nov. 28.

pH: Maximum, 8.1 Jan. 5, Feb. 1, 3, 4, Mar. 24; minimum, 6.2 May 30.

Dissolved oxygen: Maximum, 13.0 mg/l Jan. 18; minimum, 0.0 mg/l Sept. 14.

Water temperatures: Maximum, 28.0°C July 10, 11; minimum, 0.5°C Dec. 21, Jan. 12, 13.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
05...	1035	--	19.0	--	431	8.3	--	45	13	--	--	0
26...	0810	--	17.0	--	868	8.4	--	81	25	--	--	2
NOV.												
14...	0800	--	12.0	--	827	6.7	--	--	--	--	--	0
26...	0005	--	12.0	--	366	7.7	--	--	--	--	--	0
DEC.												
20...	0100	--	--	--	707	8.3	--	--	--	--	--	0
28...	0820	--	5.0	--	446	8.4	--	--	--	--	--	1
JAN.												
24...	0820	--	--	--	382	7.2	--	44	13	--	--	0
FEB.												
08...	0920	--	2.0	--	398	7.0	--	46	14	--	--	0
26...	0830	--	--	--	650	7.4	--	72	21	--	--	0
MAR.												
19...	0940	--	8.0	--	534	8.2	--	67	19	--	--	0
26...	0850	--	8.0	--	732	8.5	--	71	21	--	--	4
APR.												
05...	0745	--	11.0	--	352	7.0	--	42	13	--	--	0
30...	0815	--	18.0	--	661	7.1	--	77	23	--	--	0
MAY												
17...	0750	--	16.0	--	703	7.2	--	69	22	--	--	0
24...	1107	--	22.0	--	613	7.2	--	--	--	--	--	0
JUNE												
14...	1210	--	22.0	--	804	7.1	--	85	27	--	--	0
24...	0945	--	17.5	--	380	7.0	--	46	13	--	--	0
SEP.												
20...	1315	476	25.0	.7	790	8.0	7.0	66	28	49	6.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
19...	1010	<.5	--
APR.			
19...	0950	.1	7.2



SCIOTO RIVER BASIN

117

03229600 SCIOTO RIVER BELOW SHADEVILLE, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1965-74): Maximum, 1,270 micromhos Feb. 1, 1971; minimum, 190 micromhos May 27, 1968.

pH (1965-74): Maximum, 9.5 June 30, 1972; minimum, 5.1 Mar. 16, 1972.

Dissolved oxygen (1965-74): Maximum, 15.0 mg/l or higher Feb. 7-11, 1969; minimum, 0.0 mg/l on many days during 1965-68, 1971 and 1973-74.

Water temperatures (1965-74): Maximum, 33.0°C Aug. 16, 1965; minimum, freezing point on many days during 1967-69 and 1972.

REMARKS.--Water-quality recorder operated since March 1965. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, daily samples were collected by a local observer. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
05...	117	70	23	.6	--	.00	3.7	.63	--	170	--	--
26...	165	170	60	1.2	--	.01	11	3.5	--	310	--	--
NOV.												
14...	193	140	54	.9	--	.00	7.8	--	--	--	--	--
26...	120	54	13	.3	--	.00	2.1	--	--	--	--	--
DEC.												
20...	207	120	47	.6	--	.01	3.7	--	--	--	--	--
28...	146	67	23	.2	--	.01	2.5	--	--	--	--	--
JAN.												
24...	113	55	24	.2	--	.00	1.7	--	--	160	--	--
FEB.												
08...	120	50	26	.4	--	.00	1.4	--	--	170	--	--
26...	184	85	52	.6	--	.01	2.9	--	--	270	--	--
MAR.												
19...	168	83	30	.4	--	.00	3.6	--	--	250	--	--
26...	190	93	82	.4	--	.00	3.9	--	--	260	--	--
APR.												
05...	117	50	17	.4	--	.00	1.2	--	--	160	--	--
30...	186	110	39	.6	--	.01	4.3	--	--	290	--	--
MAY												
17...	200	110	44	.8	--	.00	4.9	--	--	260	--	--
24...	191	89	38	.6	--	.00	2.4	--	--	--	--	--
JUNE												
14...	222	140	56	1.6	--	.00	3.8	--	--	320	--	--
24...	127	51	21	1.7	--	.01	3.7	--	--	170	--	--
SEP.												
20...	194	140	56	1.1	6.0	.34	.09	2.7	449	280	40	90











## SCIOTO RIVER BASIN

## 03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO

LOCATION.--Lat 39°20'29", long 82°58'16", Ross County, at gaging station on right bank at north end of Chillicothe, 1,400 ft (427 m) downstream from Bridge Street Bridge, 7.4 mi (11.9 km) upstream from Faint Creek, and 15.4 mi (24.8 km) downstream from Deer Creek.

DRAINAGE AREA.--3,849 mi<sup>2</sup> (9,969 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1951, May 1965 to September 1974.  
Water temperatures: October 1950 to September 1951, May 1965 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 960 micromhos Mar. 24; minimum, 170 micromhos May 18, Aug. 30.

pH: Maximum, 9.2 Dec. 24, 26; minimum, 7.0 Dec. 7, June 22, Aug. 30.

Dissolved oxygen: Maximum, 14.2 mg/l May 7; minimum, 0.3 mg/l Aug. 30, 31.

Water temperatures: Maximum, 28.0°C Aug. 15; minimum, freezing point on Dec. 22, 23, Feb. 11.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
04...	1010	1940	20.0	--	510	8.6	--	57	19	--	--	6
30...	1430	1590	12.5	--	818	7.5	--	--	--	--	--	0
NOV.												
15...	0950	752	11.0	--	762	8.2	--	--	--	--	--	0
26...	1030	14800	11.0	--	387	7.8	--	--	--	--	--	0
DEC.												
19...	0930	2290	.5	--	679	8.3	--	--	--	--	--	0
28...	0930	19000	4.0	--	516	7.5	--	--	--	--	--	0
JAN.												
15...	1020	2340	2.0	--	743	7.7	--	83	30	--	--	0
22...	1430	25600	6.0	--	--	7.2	--	51	16	--	--	0
FEB.												
08...	1000	13700	1.5	--	449	7.7	--	51	18	--	--	0
14...	1430	3900	6.0	--	652	8.5	--	83	27	--	--	3
MAR.												
20...	1000	4280	6.5	--	558	8.0	--	69	24	--	--	0
28...	1040	3970	8.0	--	679	8.2	--	76	26	--	--	0
APR.												
04...	1035	22000	11.5	--	390	8.2	--	39	15	--	--	0
26...	1000	2380	13.5	--	624	7.6	--	72	25	--	--	0
MAY												
22...	1025	2030	21.0	--	582	7.6	--	72	26	--	--	0
30...	1205	1820	18.5	--	655	7.6	--	76	28	--	--	0
JUNE												
18...	1030	1510	19.0	--	695	8.5	--	82	28	--	--	8
24...	1000	12200	18.5	--	434	7.3	--	50	18	--	--	0
SEP.												
25...	1000	839	15.5	6.6	690	7.7	7.5	78	26	25	3.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
31...	1320	<.5	--
APR.			
30...	1645	.1	8.9

## SCIOTO RIVER BASIN

123

## 03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1965-74): Maximum, 1,100 micromhos Feb. 6, 1972; minimum, 150 micromhos June 29, 1972.

pH (1965-74): Maximum, 8.3 Aug. 10, 1973; minimum, 6.9 Sept. 9, 1973.

Dissolved oxygen (1965-74): Maximum, 15.0 mg/l or higher on several days during June 1966, June and July 1967; minimum, 0.0 mg/l Apr. 27, Aug. 12, Sept. 22, 1966.

Water temperatures (1965-74): Maximum, 32.0°C July 14, 1954, Aug. 2, 3, 1955; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since May 1965. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water. Prior to June 1971, sampling site was at center of Bridge Street Bridge on U.S. Highway 23, 1,400 ft (427 m) upstream from gaging station.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	173	66	24	.5	--	.01	2.6	--	--	220	--	--
30...	384	120	41	.9	--	.01	6.2	--	--	--	--	--
NOV.												
15...	272	120	39	.7	--	.00	4.6	--	--	--	--	--
26...	139	48	17	.3	--	.00	2.4	--	--	--	--	--
DEC.												
19...	247	85	35	.4	--	.00	4.4	--	--	--	--	--
28...	175	66	24	.3	--	.00	3.7	--	--	--	--	--
JAN.												
15...	257	81	52	.4	--	.00	4.1	--	--	330	--	--
22...	130	25	21	.5	--	.01	3.3	--	--	190	--	--
FEB.												
08...	142	50	33	.4	--	.01	3.1	--	--	200	--	--
14...	237	75	37	.6	--	.01	4.0	--	--	320	--	--
MAR.												
20...	203	82	27	.4	--	.01	4.0	--	--	270	--	--
28...	227	90	51	.5	--	.00	3.8	--	--	300	--	--
APR.												
04...	139	52	15	.4	--	.01	4.2	--	--	160	--	--
26...	245	82	28	.6	--	.00	3.6	--	--	280	--	--
MAY												
22...	240	72	26	.5	--	.00	3.4	--	--	290	--	--
30...	268	95	31	.5	--	.00	3.6	--	--	310	--	--
JUNE												
18...	244	98	40	1.5	--	.00	4.0	--	--	320	--	--
24...	159	45	19	.7	--	.01	5.8	--	--	200	--	--
SEP.												
25...	284	91	21	.6	1.0	.14	1.7	.84	392	300	50	60

## 03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	800	270	550	490	500	440	480	430	520	500	660	620
2	830	680	640	540	500	480	550	470	540	510	640	580
3	750	520	570	510	500	470	860	510	560	530	630	580
4	520	380	630	570	500	470	590	530	570	550	600	570
5	570	480	660	600	530	480	580	510	590	560	590	560
6	580	540	680	640	520	480	550	500	590	580	610	560
7	570	530	690	650	580	500	---	---	---	---	630	600
8	570	530	900	660	540	490	---	---	---	---	630	610
9	620	560	740	680	560	520	---	---	---	---	640	600
10	630	590	740	690	580	530	---	---	---	---	610	580
11	630	600	740	700	620	570	650	620	---	---	610	580
12	670	610	770	720	620	580	740	630	---	---	610	580
13	680	600	770	730	680	590	770	710	---	---	600	580
14	690	660	770	730	670	650	770	740	---	---	600	570
15	710	660	770	730	680	650	750	630	---	---	600	550
16	720	680	780	720	670	630	630	530	---	---	610	530
17	820	690	780	610	690	630	580	550	---	---	620	580
18	720	670	610	550	690	650	550	500	---	---	580	560
19	730	690	630	560	690	650	550	520	---	---	560	540
20	730	720	650	610	950	610	530	440	---	---	570	530
21	760	730	640	610	650	560	450	390	---	---	600	540
22	780	740	670	620	570	540	420	360	630	580	620	560
23	790	740	680	650	610	530	360	350	600	580	610	580
24	800	740	660	590	625	580	380	360	600	570	960	580
25	770	730	660	440	650	605	380	360	600	560	660	600
26	750	720	450	350	660	590	420	380	590	560	690	620
27	760	730	470	380	590	460	440	410	620	560	710	650
28	770	720	430	370	470	430	450	430	700	600	690	640
29	790	770	380	340	490	450	450	420	---	---	650	570
30	830	640	450	360	460	410	490	440	---	---	590	400
31	820	480	---	---	450	410	500	470	---	---	460	400
MONTH	830	270	900	340	950	410	860	350	---	---	960	400
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	540	460	650	620	600	510	660	480	770	700	410	240
2	520	430	680	430	630	600	660	630	710	540	500	400
3	460	380	610	560	640	620	670	620	710	600	440	330
4	390	380	660	570	680	630	680	300	730	480	510	370
5	380	310	650	600	690	650	640	610	800	720	510	450
6	410	320	630	600	690	510	690	610	830	740	550	460
7	420	400	630	600	700	670	660	470	790	690	610	540
8	---	---	670	610	740	610	480	450	750	480	650	610
9	---	---	680	630	740	670	590	470	700	650	670	640
10	460	430	690	640	700	670	620	190	710	680	680	640
11	470	450	680	640	730	680	610	580	730	580	690	660
12	470	440	650	550	710	680	630	590	720	680	700	530
13	510	470	670	620	710	680	660	620	710	680	710	410
14	540	500	660	620	720	690	680	630	710	660	620	430
15	560	530	600	570	740	310	690	650	710	690	710	620
16	560	540	620	580	740	560	730	600	710	670	660	640
17	590	540	620	240	750	710	770	710	690	410	670	640
18	590	560	590	170	720	650	780	750	750	680	690	650
19	600	570	460	410	670	580	760	710	810	710	700	680
20	610	590	520	410	640	620	720	620	820	630	710	630
21	630	610	560	480	670	650	730	680	630	530	670	360
22	630	570	590	420	720	500	770	720	560	510	690	630
23	620	590	590	540	570	240	780	740	620	550	690	640
24	620	600	640	540	450	430	790	770	630	600	670	640
25	620	590	620	580	500	440	790	780	650	520	690	630
26	630	600	590	560	540	490	790	770	680	630	710	660
27	630	610	610	560	510	480	790	700	700	650	730	690
28	640	620	620	580	570	500	740	720	730	420	750	720
29	670	630	630	310	610	560	770	320	750	520	780	700
30	670	570	650	620	630	590	750	720	730	170	820	750
31	---	---	660	510	---	---	820	760	730	410	---	---
MONTH	670	310	690	170	750	240	820	190	830	170	820	240
YEAR	960	170										

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## SCIOTO RIVER BASIN

03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	5.0	2.1	5.1	4.6	---	---	11.4	11.3	10.1	9.9	10.0	9.2
2	2.7	2.1	5.0	3.8	---	---	11.4	11.3	10.0	9.8	9.6	9.0
3	2.9	1.1	5.5	5.0	---	---	11.5	11.0	10.0	9.7	9.3	8.9
4	3.9	2.4	5.4	5.0	9.2	8.9	11.0	11.0	10.3	9.8	9.0	8.7
5	3.5	2.7	5.7	5.2	9.0	8.4	11.0	10.8	10.5	10.2	8.7	8.1
6	3.6	2.7	5.9	5.6	9.1	8.3	10.8	10.4	10.5	10.4	8.1	7.8
7	3.6	2.9	6.3	5.7	9.6	9.1	---	---	10.9	10.4	8.0	7.7
8	3.6	3.2	5.9	5.6	9.6	9.5	---	---	11.5	10.7	7.7	7.3
9	3.6	3.0	6.2	5.5	9.6	9.5	---	---	11.3	11.1	7.3	6.9
10	3.1	2.7	6.3	6.0	9.6	9.0	---	---	11.1	10.8	7.3	6.6
11	3.2	2.7	6.4	6.1	9.8	9.0	10.6	10.3	11.1	10.9	7.8	7.1
12	3.3	2.7	6.4	5.9	9.8	9.5	10.8	10.3	11.1	10.5	8.7	7.6
13	3.6	2.6	6.1	5.6	9.5	9.0	11.0	10.8	10.6	9.8	9.3	8.7
14	3.9	2.8	5.6	4.9	9.1	8.4	11.0	10.6	9.9	9.4	9.5	8.8
15	4.1	3.1	5.2	4.6	8.8	8.2	10.6	10.4	10.2	9.6	9.1	9.0
16	4.4	2.9	4.9	4.1	9.1	8.5	10.5	9.8	10.4	9.9	9.1	8.5
17	4.4	3.2	5.8	3.5	10.2	8.6	11.1	10.5	10.5	10.5	8.7	7.9
18	5.3	3.6	5.9	5.7	10.5	10.2	11.6	11.1	10.4	10.0	9.5	8.1
19	5.2	3.8	5.8	5.5	10.5	10.1	11.4	10.7	10.1	9.6	9.5	9.3
20	5.3	3.6	6.2	5.5	10.1	9.5	10.8	10.6	9.8	9.4	9.3	9.1
21	5.3	3.7	5.8	5.4	10.7	9.5	10.7	10.5	10.0	8.6	9.1	8.8
22	5.5	3.8	5.4	5.0	11.5	10.7	10.5	10.3	10.1	9.8	9.1	8.2
23	5.9	3.9	5.1	4.9	11.4	11.1	10.3	10.2	10.2	9.7	9.1	8.4
24	6.1	3.8	5.9	5.0	11.1	10.7	10.5	10.3	10.8	10.2	9.6	9.1
25	6.5	3.9	6.1	5.0	10.7	10.2	10.8	10.5	11.4	10.7	10.1	9.6
26	7.9	3.9	6.8	5.0	10.2	9.7	10.8	10.6	11.4	11.0	10.0	9.3
27	9.0	4.9	7.9	5.1	10.4	9.8	10.7	10.2	11.0	10.7	9.5	8.8
28	5.9	3.7	8.0	7.6	11.0	10.4	10.4	10.2	10.7	9.9	9.0	8.5
29	4.5	3.5	8.0	7.4	11.3	11.0	10.5	10.2	---	---	8.6	8.0
30	4.4	3.1	8.8	7.8	11.2	11.1	10.5	10.2	---	---	7.9	6.6
31	4.9	2.4	---	---	11.4	11.2	10.4	10.0	---	---	9.3	7.9
MONTH	9.0	1.1	8.8	3.5	11.5	8.2	11.6	9.8	11.5	8.6	10.1	6.6
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.7	9.3	8.5	6.0	4.9	4.1	4.5	4.0	11.9	3.8	4.2	1.8
2	9.4	8.1	6.5	3.8	4.7	4.6	5.1	3.5	7.5	3.5	2.5	1.7
3	8.4	8.1	5.9	4.9	4.9	4.3	8.6	3.7	4.8	1.9	4.	





## SCIOTO RIVER BASIN

03232300 RATTLESNAKE CREEK NEAR CENTERFIELD, OHIO

LOCATION.--Lat 39°19'44", long 83°28'32", Highland County, on right bank 600 ft (183 m) upstream from county road bridge at Centerfield, 0.6 mi (1.0 km) upstream from Walnut Creek, 1.5 mi (2.4 km) downstream from Lees Creek, and 2.4 mi (3.9 km) southeast of East Monroe. Water temperature recorder located at gaging station.

DRAINAGE AREA.--209 mi<sup>2</sup> (541 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: December 1973 to September 1974.  
Water temperatures: June 1974 to September 1974.

EXTREMES.--June to September 1974.

Water temperatures: Maximum, 27.0°C Aug. 13.

REMARKS.--Water temperature recorder operated since June 1974. Interruptions in the record are due to malfunctions of the instrument.

## CHEMICAL ANALYSES, DECEMBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	CAR-BONATE (CO3) (MG/L)
DEC., 1973												
18...	1000	93	.5	--	594	8.2	--	--	--	--	--	--
FEB., 1974												
13...	1450	196	5.0	--	--	8.2	--	80	29	--	--	--
APR.												
09...	1555	1400	5.0	--	--	7.2	--	43	18	--	--	0
SEP.												
27...	1100	35	15.0	10.0	590	8.1	2.1	63	38	9.2	1.2	0

DATE	BICARBONATE (MC03) (MG/L)	DIS-SOLVED SULFATE (S04) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
DEC., 1973												
18...	--	56	22	--	--	.01	3.2	--	--	--	--	--
FEB., 1974												
13...	--	51	20	--	--	.00	3.8	--	--	320	--	--
APR.												
09...	143	32	12	--	--	.00	3.1	--	--	180	--	--
SEP.												
27...	312	53	22	.3	.15	.00	.29	.04	343	310	30	0

## TEMPERATURE (°C) OF WATER, JUNE TO SEPTEMBER 1974

[illegible]



## SCIOTO RIVER BASIN

## 03234500 SCIOTO RIVER AT HIGBY, OHIO

LOCATION.--Lat 39°12'44", long 82°51'50", in sec. 6, T.7 N., R.20 W., Ross County, at gaging station on left bank at downstream side of highway bridge, 0.8 mi (1.3 km) downstream from Walnut Creek, 1.2 mi (1.9 km) north of Higby, 3.0 mi (4.8 km) west northwest of Richmondale, and 5.0 mi (8.0 km) upstream from Salt Creek.

DRAINAGE AREA.--5,131 mi<sup>2</sup> (13,289 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1967 to September 1974.

Water temperatures: October 1953 to September 1974.

Sediment records: October 1953 to September 1974 (discontinued).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 827 micromhos Aug. 1; minimum, 141 micromhos Aug. 30.

pH: Maximum, 8.8 July 29; minimum, 6.8 Nov. 26.

Dissolved oxygen: Maximum, 13.4 mg/l Feb. 9; minimum, 2.0 mg/l Oct. 1, 2.

Water temperatures: Maximum, 27.5°C Aug. 26, 27; minimum, 1.5°C Dec. 22, 23, Jan. 8, 13, 14, Feb. 9, 10.

Sediment concentrations: Maximum daily, 2,520 mg/l June 23; minimum daily, 4 mg/l May 6.

Sediment discharges: Maximum daily, 169,000 tons (153,000 tonnes) June 23; minimum daily, 35 tons (32 tonnes) May 6.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED SILICA (SI02) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)
OCT.												
04...	1020	3770	20.0	--	494	8.6	--	53	19	--	--	5
26...	1030	1060	14.5	--	838	7.2	--	91	30	--	--	0
NOV.												
02...	1105	3700	10.5	--	583	7.1	--	--	--	--	--	0
15...	1100	1300	11.5	--	771	8.3	--	--	--	--	--	0
DEC.												
20...	1110	2920	2.0	--	689	8.0	--	--	--	--	--	0
28...	1045	20800	4.5	--	494	8.2	--	--	--	--	--	0
JAN.												
15...	1130	5250	2.0	--	676	7.7	--	77	29	--	--	0
21...	1430	25400	6.8	--	454	7.1	--	57	21	--	--	0
FEB.												
08...	1140	15600	1.0	--	471	8.1	--	49	18	--	--	0
14...	1140	5050	4.5	--	624	8.4	--	77	27	--	--	1
MAR.												
20...	1130	5650	6.5	--	551	7.8	--	76	24	--	--	0
28...	1145	5190	8.0	--	639	7.6	--	73	27	--	--	0
APR.												
04...	1140	26000	12.0	--	368	7.5	--	47	17	--	--	0
30...	1435	2360	20.0	--	645	7.5	--	73	26	--	--	0
MAY												
22...	1140	3240	21.0	--	551	8.0	--	63	23	--	--	0
28...	1115	2530	18.5	--	643	7.7	--	72	28	--	--	0
JUNE												
18...	1145	2200	19.0	--	696	7.3	--	79	27	--	--	0
24...	1115	15600	19.0	--	400	7.5	--	47	18	--	--	0
AUG.												
28...	1015	843	25.0	3.0	740	7.7	6.9	75	26	42	9.5	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
31...	1530	<.5	--
APR.			
30...	1530	.2	11

## SCIOTO RIVER BASIN

131

## 03234500 SCIOTO RIVER AT HIGBY, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1967-74): Maximum, 1,050 micromhos Sept. 24, 1967; minimum, 141 micromhos Aug. 30, 1974.  
 pH (1967-74): Maximum, 8.8 Oct. 29, 1972; minimum, 6.7 Mar. 5, 1973.  
 Dissolved oxygen (1967-74): Maximum, 15.0 mg/l or higher Apr. 24-30, May 1, 1971, Mar. 27, 28, 1972; minimum, 0.0 mg/l Sept. 8-13, 15, Oct. 21, 22, 1968, Sept. 13, 1969.  
 Water temperatures (1967-74): Maximum, 34.0°C June 29, 1966; minimum, freezing point on many days during winter periods.  
 Sediment concentrations: Maximum daily, 2,520 mg/l June 23, 1974; minimum daily, 1 mg/l on several days during 1955-56.  
 Sediment discharges: Maximum daily, 550,000 tons (499,000 tonnes) Jan. 23, 1959; minimum daily, 0.82 ton (0.74 tonne) Sept. 8, 1955.

REMARKS.--Water-quality recorder operated since March 1967. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and minimum specific conductance for each month. Special samples were also collected twice during the year to further define the quality of water until June 30, 1974. Flow slightly regulated by 5 reservoirs 50 mi (80 km) to 105 mi (169 km) upstream from station, and since 1952 by Rocky Fork Lake 51 mi (82 km) upstream.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	176	61	25	.5	--	.00	2.5	--	--	250	--	--
26...	282	120	48	.7	--	.00	4.8	--	--	350	--	--
NOV.												
02...	179	86	32	.5	--	.00	3.7	--	--	--	--	--
15...	274	110	43	.7	--	.00	3.9	--	--	--	--	--
DEC.												
20...	264	87	33	.4	--	.00	3.8	--	--	--	--	--
28...	174	65	23	.3	--	.00	3.8	--	--	--	--	--
JAN.												
15...	249	74	42	.3	--	.00	3.2	--	--	310	--	--
21...	158	59	23	.3	--	.00	3.0	--	--	230	--	--
FEB.												
08...	156	50	32	.2	--	.02	3.2	--	--	200	--	--
14...	243	66	32	.5	--	.00	3.4	--	--	300	--	--
MAR.												
20...	209	78	26	.4	--	.00	3.4	--	--	290	--	--
28...	230	82	44	.4	--	.00	3.1	--	--	290	--	--
APR.												
04...	135	42	14	.3	--	.02	3.7	--	--	190	--	--
30...	254	83	33	.6	--	.01	2.8	--	--	290	--	--
MAY												
22...	230	65	25	.4	--	.00	2.8	--	--	250	--	--
28...	249	83	34	.6	--	.00	3.8	--	--	300	--	--
JUNE												
18...	243	100	41	2.1	--	.01	3.4	--	--	310	--	--
24...	160	43	13	.7	--	.03	4.6	--	--	190	--	--
AUG.												
28...	264	100	51	.8	1.3	.25	2.0	1.5	442	290	70	140



03234500 SCIOTO RIVER AT HIGBY, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	718	698	613	518	---	---	527	516	---	---	636	622
2	756	672	635	524	---	---	566	533	---	---	632	536
3	717	474	626	553	507	502	585	573	---	---	562	539
4	491	474	611	554	521	514	597	587	567	563	587	553
5	502	480	635	611	538	518	621	596	583	568	578	566
6	504	471	668	635	545	518	638	620	602	584	581	564
7	523	480	683	668	526	517	639	636	588	437	600	579
8	566	519	718	682	542	524	638	632	466	424	608	596
9	580	562	734	718	563	544	647	636	500	430	606	603
10	641	576	746	734	572	563	638	539	551	497	603	593
11	653	641	746	740	599	572	554	513	571	546	593	588
12	659	649	---	---	625	599	599	557	584	566	611	584
13	684	656	---	---	631	625	634	602	603	576	599	593
14	675	652	---	---	646	626	661	634	619	600	611	594
15	695	672	---	---	673	647	681	598	631	621	612	606
16	706	694	781	766	670	647	586	547	631	616	606	459
17	711	700	769	754	658	650	540	529	618	612	560	501
18	710	696	773	563	664	655	516	502	618	614	558	551
19	696	683	619	562	667	662	492	486	620	599	572	552
20	714	689	658	620	670	556	471	456	610	578	578	551
21	719	712	656	646	566	529	441	427	635	614	576	555
22	717	715	646	641	550	523	---	---	628	565	578	557
23	731	714	664	641	563	521	---	---	571	564	584	573
24	777	715	---	---	569	551	---	---	570	565	602	579
25	796	790	---	---	567	555	---	---	576	567	606	591
26	807	785	---	---	573	554	---	---	587	572	611	585
27	785	766	---	---	558	504	---	---	610	582	644	615
28	769	751	---	---	506	495	---	---	627	610	660	647
29	752	731	---	---	518	504	---	---	---	---	650	579
30	781	736	---	---	512	494	---	---	---	---	573	419
31	816	628	---	---	509	498	---	---	---	---	443	392
MONTH	816	471	---	---	673	494	---	---	635	424	660	392

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

03234500 SCIOTO RIVER AT HIGBY, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2.4	2.0	6.1	5.4	---	---	---	---	---	---	10.0	8.8
2	3.6	2.0	6.3	5.0	---	---	---	---	---	---	---	---
3	3.6	2.8	6.3	5.1	10.0	9.7	---	---	---	---	---	---
4	4.7	3.3	6.6	6.1	10.0	9.2	---	---	10.9	9.7	8.2	8.0
5	5.2	4.6	6.6	6.1	9.4	8.8	---	---	11.1	10.6	8.4	7.8
6	5.0	4.6	7.3	6.7	9.7	8.9	---	---	11.4	10.7	8.0	7.3
7	4.7	4.4	7.1	6.8	10.4	9.6	---	---	11.9	11.1	8.1	7.5
8	5.5	4.4	7.5	6.9	10.6	10.1	---	---	13.1	12.1	8.2	7.5
9	5.4	5.2	7.3	6.5	10.5	10.1	---	---	13.4	12.4	8.2	7.2
10	5.3	4.7	6.5	5.6	10.5	10.2	---	---	13.3	12.5	7.6	7.1
11	4.7	4.2	5.6	5.1	10.9	10.5	---	---	13.1	12.0	7.8	7.4
12	4.4	4.0	---	---	11.5	10.9	---	---	12.8	11.5	8.3	7.8
13	4.0	3.6	---	---	11.2	10.4	---	---	11.8	10.4	10.1	8.3
14	4.3	3.4	---	---	10.8	10.4	---	---	11.9	10.6	10.4	9.8
15	5.2	3.9	---	---	10.6	9.9	---	---	11.2	10.3	10.7	10.2
16	5.1	4.2	6.2	5.9	10.8	10.2	---	---	11.0	10.0	10.7	10.0
17	5.0	4.4	6.7	5.8	11.3	10.7	---	---	10.6	9.6	10.6	9.5
18	4.8	4.2	7.8	5.7	11.6	11.2	---	---	9.9	9.1	10.5	9.7
19	5.3	4.6	8.1	7.0	11.3	10.8	---	---	9.0	8.2	10.6	10.1
20	6.1	4.5	7.1	6.8	10.9	10.4	---	---	10.5	8.0	10.6	9.7
21	6.0	5.2	7.0	6.6	10.7	9.7	---	---	10.4	8.9	10.8	9.6
22	6.1	5.4	6.8	6.4	10.1	9.8	---	---	9.7	9.1	11.0	10.3
23	5.7	5.0	6.7	4.3	10.2	9.9	---	---	10.0	9.6	10.8	9.9
24	7.5	4.8	8.6	4.2	---	---	---	---	11.3	10.3	11.6	10.9
25	7.1	5.3	8.6	7.9	---	---	---	---	12.2	11.6	12.2	11.4
26	7.3	5.4	11.1	8.7	---	---	---	---	12.6	11.8	12.1	10.7
27	8.2	5.6	10.6	9.5	---	---	---	---	11.9	10.7	10.9	10.2
28	6.9	4.6	9.8	9.3	---	---	---	---	10.7	9.8	10.4	9.4
29	4.6	4.3	---	---	---	---	---	---	---	---	9.7	9.1
30	5.6	4.4	---	---	---	---	---	---	---	---	9.2	8.1
31	5.4	4.0	---	---	---	---	---	---	---	---	9.4	8.3
MONTH	8.2	2.0	11.1	4.2	---	---	---	---	13.4	8.0	12.2	7.0

[illegible]



## SCIOTO RIVER BASIN

03234500 SCIOTO RIVER AT HIGBY, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1250	73	246	2500	10	68	21200	165	9440
2	2180	84	553	3480	70	658	16500	120	5350
3	5400	235	3430	2880	30	233	13200	92	3280
4	3720	148	1490	2560	14	97	10600	78	2230
5	3870	140	1460	2240	24	145	9320	65	1640
6	4020	127	1380	2080	25	140	10400	109	3060
7	2760	108	805	1900	22	113	9450	88	2250
8	2340	85	537	1760	13	62	7850	53	1120
9	2080	65	365	1680	17	77	6580	57	1010
10	1900	55	282	1560	15	63	5730	63	975
11	1900	57	292	1480	15	60	4840	47	614
12	1860	48	241	1380	18	67	4370	44	519
13	1720	27	125	1340	23	83	4080	47	518
14	1600	40	173	1320	22	78	3990	17	183
15	1600	38	164	1300	22	77	4280	13	150
16	1540	32	133	1560	25	105	4150	17	190
17	1460	33	130	3460	58	542	4130	17	190
18	1480	29	116	2840	26	199	3720	13	131
19	1380	33	123	2480	17	114	3100	12	100
20	1340	27	98	2440	10	66	3320	57	594
21	1280	25	86	2420	12	78	8370	168	3960
22	1280	21	73	2460	8	53	9910	168	4500
23	1180	25	80	2600	6	42	7360	36	715
24	1160	20	63	2480	12	80	5560	15	225
25	1080	25	73	5140	182	4470	4940	18	240
26	1040	24	67	19600	529	25100	6370	49	937
27	1020	26	72	23300	370	23300	16200	676	31200
28	1120	22	67	30400	384	29800	21000	379	21500
29	1320	18	64	31600	124	10600	22700	140	8580
30	1720	15	79	29200	178	14000	20300	92	5040
31	3260	39	356	--	--	--	16000	60	2590
TOTAL	60860	--	13223	191440	--	110570	289520	--	113031

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11800	49	1560	11100	77	2310	4930	31	413
2	8520	56	1290	9210	79	1960	6910	132	2490
3	6620	35	626	7700	80	1660	7710	43	895
4	5910	27	431	6600	58	1030	7140	20	386
5	5400	29	423	5550	47	704	6380	104	1790
6	4860	36	472	4920	47	624	5820	67	1050
7	4460	31	373	9050	476	14000	5600	35	529
8	4090	40	442	15000	678	27500	5520	27	402
9	3840	44	456	10800	118	3440	5520	62	924
10	5330	102	1590	7600	52	1070	5400	86	1250
11	9200	106	2630	5920	50	799	4730	58	741
12	7890	77	1640	5250	40	567	5860	92	1460
13	5580	50	753	4970	42	564	6410	118	2040
14	4530	74	905	5090	43	591	5520	79	1180
15	5620	285	4600	5560	27	405	4650	63	791
16	11700	368	11600	6150	35	581	6090	171	2810
17	15500	99	4140	5640	35	533	7040	122	2320
18	17700	72	3440	4870	29	381	6950	58	1090
19	19600	79	4180	4540	33	405	6640	50	896
20	21500	146	8480	5200	35	491	5610	55	833
21	24800	229	15300	7690	81	1680	4860	47	617
22	28000	188	14200	8670	78	1830	5350	24	347
23	27000	170	12400	9980	60	1620	4960	17	228
24	26000	190	13300	10500	53	1500	4490	23	279
25	25000	123	8300	8700	35	822	4350	22	258
26	22800	99	6090	7190	30	582	4250	21	241
27	19400	183	9590	5450	32	471	4600	23	286
28	18600	173	8690	4790	32	414	5180	29	406
29	19700	192	10200	--	--	--	5260	47	667
30	16600	129	5780	--	--	--	12400	298	11400
31	13800	83	3090	--	--	--	20200	475	25300
TOTAL	421350	--	156971	203690	--	68534	196330	--	64319



## SCIOTO RIVER BASIN

137

03234500 SCIOTO RIVER AT HIGBY, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	21900	207	12200	2580	15	104	9570	823	23200
2	21400	602	35400	2980	6	48	5440	84	1230
3	22000	432	25700	4860	131	1780	3830	15	155
4	26000	409	28700	4430	44	526	2960	23	184
5	27100	402	29400	3550	6	58	2560	52	359
6	28600	478	36900	3230	4	35	2230	71	427
7	19600	315	16700	2940	5	40	2450	42	278
8	13700	297	11000	2660	13	93	2900	81	634
9	15600	348	14700	2550	39	269	2470	101	674
10	15000	227	9190	2760	48	358	2200	93	552
11	14500	108	4230	2560	18	124	1990	77	414
12	12500	92	3110	2630	5	36	1830	62	306
13	10700	90	2600	3060	13	107	1700	57	262
14	8650	92	2150	3120	20	168	1570	70	297
15	7320	94	1860	2970	35	281	1520	69	283
16	6200	101	1690	2980	52	418	1780	55	264
17	5160	70	975	2600	60	421	2220	60	360
18	4510	41	499	8070	878	24700	2180	52	306
19	4100	30	332	10900	835	24600	1730	69	322
20	3780	53	541	6290	92	1560	1540	81	337
21	3450	65	605	4010	19	206	1600	95	410
22	3290	32	284	3250	20	176	2700	111	817
23	3550	17	163	3590	40	388	24200	2520	169000
24	3450	18	168	3980	52	559	19200	580	30100
25	3230	12	105	4280	54	624	12800	625	21600
26	3000	13	105	3640	55	541	13200	400	14300
27	2840	17	130	3150	63	536	12600	230	7820
28	2680	14	101	2540	69	473	9830	178	4720
29	2490	25	168	2380	77	495	8380	99	2240
30	2380	39	251	2710	87	637	7050	69	1310
31	--	--	--	5870	1780	43200	--	--	--
TOTAL	318680	--	239957	117120	--	103561	166230	--	283161

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	5720	52	803	960	63	163	4960	181	2420
2	2960	61	488	847	65	149	8140	263	5880
3	2630	120	852	921	50	124	8010	123	2660
4	2310	118	736	1280	69	238	7520	110	2230
5	2120	117	670	1320	69	246	6590	118	2100
6	2820	134	1020	1120	71	215	4530	125	1530
7	2940	87	691	960	85	220	3060	139	1150
8	2110	34	194	940	82	208	2690	77	559
9	1920	29	150	1140	93	286	2350	58	368
10	2240	62	472	1260	58	197	2040	72	397
11	2420	117	830	1320	61	217	1770	39	186
12	1900	48	246	1220	75	247	1700	67	308
13	1700	85	390	1040	64	180	1740	63	318
14	1500	108	437	980	58	153	4920	401	5330
15	1380	91	339	940	73	185	4020	253	2750
16	1340	57	206	980	76	201	3450	188	1750
17	1280	78	270	903	61	149	2760	135	1010
18	1230	76	252	1260	37	126	2320	78	489
19	1190	58	186	1440	36	140	1910	35	180
20	1230	55	183	1680	97	440	1780	21	101
21	1150	64	199	1380	45	168	3690	166	2140
22	1040	62	174	1120	20	60	4190	185	2090
23	1010	57	155	903	22	54	2650	62	444
24	1020	46	127	828	22	49	2000	32	173
25	1030	38	106	810	38	83	1730	28	131
26	977	41	108	774	61	127	1580	27	115
27	932	39	98	702	80	152	1450	31	121
28	874	62	146	980	88	233	1410	34	129
29	936	98	248	1840	353	1860	1590	29	124
30	1090	90	265	8400	1020	25300	1840	25	124
31	1040	62	174	6970	369	6940	--	--	--
TOTAL	54039	--	11215	47218	--	39110	98390	--	37307

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)

2164867

1240959

## SCIOTO RIVER BASIN

03235995 SALT CREEK ABOVE DAMSITE NEAR LONDONDERRY, OHIO

LOCATION.--Lat 39°17'26", long 82°44'45", Vinton County, at gaging station at bridge on State Highway 671, 0.5 mi (0.8 km) east of Ross County line, 2.8 mi (4.5 km) northeast of Londonderry.

DRAINAGE AREA.--268 mi<sup>2</sup> (694 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1966-72 (partial-record station).  
Water temperatures: July 1973 to June 1974 (discontinued).

EXTREMES.--October 1973 to June 1974:  
Water temperatures: Maximum, 26.5°C June 14; minimum, freezing point on Dec. 22, 23.

EXTREMES.--Period of record:  
Water temperatures (July 1973 to June 1974): Maximum, 29.5°C Aug. 29, 1973; minimum, freezing point on Dec. 22, 23, 1973.

REMARKS.--Water temperature recorder operated from July 1973 to June 1974.

TEMPERATURE (°C) OF WATER, OCTOBER 1973 TO JUNE 1974  
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	8.0	6.5	3.0	1.0	---	---	---	---
2	---	---	---	---	6.5	5.5	1.0	0.5	---	---	---	---
3	---	---	---	---	7.0	5.5	1.0	0.5	---	---	---	---
4	21.0	19.5	11.0	9.0	8.5	7.0	1.0	1.0	---	---	---	---
5	21.0	19.0	10.0	9.0	9.5	8.5	1.0	1.0	---	---	---	---
6	19.5	16.5	9.0	6.5	9.0	6.5	1.0	1.0	---	---	---	---
7	18.5	16.5	6.5	5.5	6.5	5.0	1.0	1.0	---	---	---	---
8	19.5	18.0	6.0	5.5	5.0	4.5	1.0	0.5	---	---	---	---
9	20.0	18.5	6.0	5.5	5.0	4.0	0.5	0.5	---	---	---	---
10	20.0	18.5	5.5	4.5	5.0	3.5	1.0	0.5	---	---	---	---
11	20.0	18.0	4.5	3.5	3.5	2.0	2.0	1.0	---	---	---	---
12	19.5	18.0	4.5	3.5	3.5	1.5	2.0	1.0	---	---	---	---
13	19.0	17.0	7.0	4.5	4.5	3.0	1.0	0.5	---	---	---	---
14	18.5	16.5	10.0	7.0	4.5	4.0	1.5	0.5	---	---	---	---
15	18.0	15.5	12.0	10.0	4.0	3.5	4.0	1.5	---	---	---	---
16	17.0	15.0	12.0	9.5	3.5	3.0	4.5	3.0	---	---	---	---
17	15.0	13.5	9.5	8.0	3.0	1.5	4.5	4.5	---	---	---	---
18	15.5	13.0	8.0	6.5	1.5	1.0	6.0	4.0	---	---	6.0	5.0
19	---	---	9.0	8.0	0.5	0.5	6.5	6.0	---	---	7.0	6.0
20	---	---	9.0	8.0	1.0	0.5	8.0	6.5	---	---	9.0	6.0
21	---	---	10.0	9.0	1.0	0.5	8.0	7.0	---	---	9.0	5.5
22	---	---	10.0	9.0	0.5	0.0	7.0	6.5	---	---	6.0	4.0
23	---	---	9.5	8.5	0.5	0.0	7.0	5.5	---	---	6.0	5.0
24	---	---	10.0	9.0	3.0	0.5	5.5	5.0	---	---	5.5	4.0
25	---	---	11.0	10.0	4.5	3.0	5.0	4.0	---	---	5.0	2.0
26	---	---	11.0	10.0	6.5	4.5	6.0	4.0	---	---	6.5	4.0
27	---	---	12.0	10.0	6.5	6.0	8.5	6.0	---	---	8.0	6.0
28	---	---	12.0	10.5	6.0	4.5	---	---	---	---	9.0	6.5
29	---	---	10.5	8.0	4.5	4.0	---	---	---	---	9.5	9.0
30	---	---	8.0	6.0	4.0	3.0	---	---	---	---	9.5	8.0
31	---	---	---	---	3.0	3.0	---	---	---	---	8.0	6.0
MONTH	---	---	12.0	3.5	9.5	0.0	8.5	0.5	---	---	---	---

TEMPERATURE (°C) OF WATER OCTOBER 1973 TO JUNE 1974  
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

[illegible]

## SCIOTO RIVER BASIN

03237100 SCIOTO RIVER AT LUCASVILLE, OHIO

LOCATION.--Lat 38°52'52", long 83°01'03", Scioto County, at bridge on State Highway 348 at Lucasville, 0.4 mi (0.6 km) downstream from Miller Run, and 4.9 mi (7.9 km) upstream from Scioto Brush Creek.

DRAINAGE AREA.--6,178 mi<sup>2</sup> (16,001 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1956 to June 1974 (discontinued).  
Water temperatures: October 1956 to June 1974 (discontinued).

## EXTREMES.--1973-74:

Specific conductance: Maximum daily, 752 micromhos Oct. 27; minimum daily, 279 micromhos Jan. 11.  
Water temperatures: Maximum, 24.5°C June 29, 30; minimum, 1.0°C Feb. 11, 12.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
OCT.									
06...	1000	19.5	497	8.6	--	--	4	185	70
12...	1000	18.5	634	8.7	--	--	12	247	83
16...	1300	17.5	--	--	--	--	--	--	--
27...	1000	14.0	773	8.6	--	--	13	276	110
NOV.									
01...	1000	11.5	775	7.1	--	--	0	241	120
12...	1000	5.5	561	7.4	--	--	0	195	81
28...	1000	11.0	353	8.3	--	--	0	121	50
DEC.									
01...	1000	8.0	413	8.3	--	--	0	150	50
19...	1000	3.0	676	7.5	--	--	0	247	82
22...	1000	4.5	556	8.4	--	--	3	200	73
JAN.									
10...	1000	3.0	601	8.4	77	27	2	239	70
11...	1000	4.0	288	7.1	31	14	0	86	50
FEB.									
09...	1000	2.5	418	7.3	51	18	0	147	79
16...	1000	4.0	598	7.2	--	--	0	234	90
25...	1000	5.0	547	7.1	69	24	0	212	80
MAR.									
06...	1000	10.0	496	7.8	64	21	0	184	70
26...	1000	9.0	372	7.3	47	17	0	131	55
30...	1000	--	570	7.6	63	22	0	208	75
APR.									
07...	1000	12.0	332	7.3	48	16	0	131	46
15...	1000	12.0	504	7.3	68	23	0	216	62
30...	1000	19.0	601	7.6	77	26	0	241	78
MAY									
15...	1000	16.0	448	--	47	19	0	162	63
19...	1000	17.5	420	--	72	20	0	146	55
31...	1000	21.5	489	7.3	53	22	0	198	55
JUNE									
04...	1000	22.0	496	--	52	21	0	197	54
14...	1000	--	628	--	72	25	0	231	87
14...	1145	25.0	749	--	--	--	0	311	80
26...	1000	24.0	642	--	78	25	0	253	82

## SCIOTO RIVER BASIN

141

## 03237100 SCIOTO RIVER AT LUCASVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1956-74): Maximum daily, 1,100 micromhos Jan. 23, 1970; minimum daily, 207 micromhos May 8, 1961.

Water temperatures (1956-74): Maximum, 29.0°C July 22, 1957, July 20, 21, Aug. 7, 1969; minimum, freezing point on many days during winter periods.

REMARKS.--Samples for iron and manganese were filtered clear when collected. Daily samples were collected at this station and samples were selected for analysis on the following basis: (1) Maximum daily specific conductance for each month, (2) minimum daily specific conductance for each month, and (3) median daily specific conductance for each month. No discharge records available.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.								
06...	21	.4	.00	2.7	.47	--	--	--
12...	27	.5	.00	2.7	.53	--	--	--
16...	--	--	--	--	--	--	40	79
27...	40	.6	.00	3.6	.87	--	--	--
NOV.								
01...	46	1.0	.00	5.1	1.5	--	--	--
12...	27	.4	.01	2.0	.54	--	--	--
28...	15	.2	.01	2.8	.53	--	--	--
DEC.								
01...	17	.4	.00	3.0	.41	--	--	--
14...	35	.4	.00	3.5	.33	--	--	--
22...	25	.4	.00	3.6	.76	--	--	--
JAN.								
10...	29	.4	.01	--	.39	300	--	--
11...	15	.2	.01	.70	.35	140	--	--
FEB.								
04...	43	.4	.01	1.8	.57	200	--	--
16...	40	.4	.00	2.1	.25	--	--	--
25...	38	.4	.01	.00	.25	270	--	--
MAR.								
05...	23	.3	.01	2.4	.20	250	--	--
26...	20	.3	.01	2.0	.52	190	--	--
30...	36	.3	.00	2.3	.25	250	--	--
APR.								
07...	13	.3	.01	2.7	.59	190	--	--
15...	19	.3	.01	2.1	.20	260	--	--
30...	26	.5	.01	1.9	.22	300	--	--
MAY								
15...	20	.3	.01	1.1	.25	200	--	--
19...	12	.3	.01	3.3	.76	260	--	--
31...	17	.3	.00	2.5	.28	220	--	--
JUNE								
04...	19	1.0	.00	2.4	.23	220	--	--
14...	33	.3	.00	2.5	.52	280	--	--
14...	48	.01	.01	2.8	.54	--	--	--
26...	34	.4	.00	.07	.49	300	--	--



## SCIOTO RIVER BASIN

03237100 SCIOTO RIVER AT LUCASVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), OCTOBER 1973 TO JUNE 1974  
(ONCE-DAILY MEASUREMENT, BETWEEN 1000 AND 1430)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	647	746	395	522	467	516	570	607	473	---	---	---
2	651	589	443	523	490	511	377	606	473	---	---	---
3	677	522	488	525	508	515	377	491	471	---	---	---
4	610	541	498	524	504	486	361	490	471	---	---	---
5	485	540	500	536	508	496	360	479	471	---	---	---
6	482	618	506	537	539	496	332	479	588	---	---	---
7	494	617	521	583	537	433	332	527	588	---	---	---
8	490	641	516	582	408	433	396	527	588	---	---	---
9	524	646	542	594	408	534	397	529	590	---	---	---
10	564	661	544	596	504	534	396	545	590	---	---	---
11	584	664	550	279	507	534	402	545	589	---	---	---
12	615	534	573	329	507	413	402	479	604	---	---	---
13	637	675	593	482	535	413	433	479	599	---	---	---
14	637	689	594	483	534	508	486	431	603	---	---	---
15	665	700	594	552	558	528	504	431	599	---	---	---
16	651	699	593	548	584	528	486	431	602	---	---	---
17	683	692	625	469	559	391	505	431	602	---	---	---
18	686	712	627	506	567	392	507	430	601	---	---	---
19	702	641	642	473	584	461	557	401	606	---	---	---
20	712	561	634	474	524	511	581	404	613	---	---	---
21	708	566	635	445	519	472	580	401	613	---	---	---
22	705	622	539	411	577	472	579	401	614	---	---	---
23	717	623	539	372	529	508	557	401	608	---	---	---
24	729	627	527	343	576	508	559	429	608	---	---	---
25	751	571	527	376	530	569	594	429	612	---	---	---
26	751	565	573	378	539	372	594	432	616	---	---	---
27	752	344	486	376	537	372	596	433	611	---	---	---
28	744	339	488	415	458	373	594	433	608	---	---	---
29	744	351	468	410	---	372	600	433	610	---	---	---
30	731	350	442	468	---	570	601	437	611	---	---	---
31	739	---	440	468	---	570	---	471	---	---	---	---
MONTH	654	589	537	470	521	477	487	466	581	---	---	---
YEAR	MAX	752	MIN	279	MEAN	531						

TEMPERATURE (°C) OF WATER, OCTOBER 1973 TO JUNE 1974  
(ONCE-DAILY MEASUREMENT, BETWEEN 1000 AND 1430)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.5	11.5	8.0	4.5	5.5	8.5	11.0	19.0	22.0	---	---	---
2	22.0	11.0	8.0	4.0	5.5	9.0	11.0	19.0	22.0	---	---	---
3	20.5	11.0	8.0	4.5	5.0	9.0	11.0	18.5	22.0	---	---	---
4	20.5	10.5	9.0	4.0	4.0	9.0	11.5	18.0	22.0	---	---	---
5	20.5	10.5	9.0	3.5	4.0	10.0	11.5	17.0	22.5	---	---	---
6	19.5	7.5	8.0	3.5	3.5	10.0	12.0	17.0	22.5	---	---	---
7	19.5	7.5	7.0	3.5	3.5	11.0	12.0	16.0	22.5	---	---	---
8	19.0	7.0	7.0	3.0	2.5	11.0	11.0	16.5	22.5	---	---	---
9	19.5	7.0	6.0	3.0	2.5	11.0	10.5	16.5	23.0	---	---	---
10	19.5	6.5	5.5	3.0	1.5	10.5	10.5	16.5	23.0	---	---	---
11	18.5	6.0	5.0	4.0	1.0	10.5	9.5	16.0	23.0	---	---	---
12	18.5	5.5	5.0	4.0	1.0	10.0	10.0	16.0	23.0	---	---	---
13	18.5	7.0	5.0	3.5	3.5	11.5	12.0	16.0	24.0	---	---	---
14	18.0	7.5	4.5	3.5	4.0	11.0	12.0	16.0	24.0	---	---	---
15	17.5	7.5	4.5	3.5	4.0	10.0	12.0	16.0	23.5	---	---	---
16	16.5	7.5	4.5	3.5	4.0	10.0	12.0	16.5	23.0	---	---	---
17	14.5	7.0	4.0	4.0	4.0	8.5	12.5	17.0	21.0	---	---	---
18	14.0	7.5	4.0	4.5	4.0	8.5	12.5	17.0	21.0	---	---	---
19	14.5	8.5	3.0	5.0	5.0	8.5	13.5	17.5	21.0	---	---	---
20	14.5	8.5	4.0	5.0	6.0	9.0	14.0	18.0	21.5	---	---	---
21	12.5	9.5	4.0	5.0	6.0	8.5	14.0	18.0	21.5	---	---	---
22	12.0	9.0	4.5	6.0	6.0	8.5	14.0	18.5	22.0	---	---	---
23	14.0	9.0	3.5	6.0	5.0	8.0	14.5	18.5	23.0	---	---	---
24	14.0	10.0	4.0	6.0	6.0	7.5	14.5	19.0	23.0	---	---	---
25	14.5	10.0	4.0	5.5	5.0	8.5	16.0	20.0	23.0	---	---	---
26	14.5	10.0	5.0	5.5	4.5	9.0	16.5	20.5	24.0	---	---	---
27	14.0	10.0	5.0	5.0	4.0	9.5	17.0	22.0	24.0	---	---	---
28	15.0	11.0	5.0	5.5	8.5	9.5	18.5	22.0	24.0	---	---	---
29	12.5	9.5	5.0	6.0	---	10.0	18.5	22.0	24.5	---	---	---
30	12.0	9.5	5.0	5.5	---	10.0	19.0	21.5	24.5	---	---	---
31	12.0	---	4.5	5.5	---	11.0	---	21.5	---	---	---	---
MONTH	16.5	8.5	5.5	4.5	4.5	9.5	13.0	18.0	23.0	---	---	---
YEAR	MAX	24.5	MIN	1.0	MEAN	11.5						

## UPPER TWIN CREEK BASIN

143

03237280 UPPER TWIN CREEK AT McGAW, OHIO  
(Hydrologic bench-mark station)

LOCATION.--Lat 38°38'37", long 83°12'57", Scioto County, at gaging station on right bank, 0.3 mi (0.5 km) downstream from Brown Run, 0.3 mi (0.5 km) upstream from Tucker Run, 0.7 mi (1.1 km) upstream from bridge on U.S. Highway 52 at McGaw, 2.7 mi (4.3 km) northeast of Buena Vista and 3.2 mi (5.1 km) upstream from mouth.

DRAINAGE AREA.--12.2 mi<sup>2</sup> (31.6 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1964-67 (partial-record station), August 1967 to September 1974.  
Water temperatures: October 1963 to September 1966, October 1967 to September 1970, July 1972 to September 1974.  
Sediment records: Water years 1964-69 (partial-record station), October 1969 to September 1972, water years 1973, 1974 (partial-record station).

EXTREMES.--1973-74: Water temperatures: Maximum, 27.5°C July 27; minimum, 1.5 °C Dec. 12, 13.

EXTREMES.--Period of record:  
Water temperatures: Maximum, 30.0°C July 24, 1972; minimum, freezing point on several days during January 1973.

REMARKS.--Prior to July 21, 1972, at site 0.7 mi (1.1 km) downstream.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
OCT.											
31...	1045	5.1	11.5	9.7	7.0	6.5	3.5	2.4	18	0	3.0
NOV.											
27...	1000	22	11.0	--	--	--	--	--	--	--	--
27...	1100	36	10.0	8.7	--	--	--	--	16	0	.9
DEC.											
26...	1645	6.6	8.0	8.5	6.4	4.7	2.9	2.0	16	0	2.0
JAN.											
23...	1000	19	8.0	9.3	4.0	3.4	1.8	1.7	12	0	2.2
FEB.											
28...	1000	12	4.5	9.2	3.9	3.5	2.6	1.9	8	0	1.6
MAR.											
20...	1530	17	10.5	9.6	3.6	3.2	2.4	1.6	8	0	1.1
21...	0930	18	8.0	--	--	--	--	--	--	--	--
APR.											
16...	0930	11	10.5	--	--	--	--	--	--	--	--
17...	0930	9.5	10.5	10	5.3	3.5	2.5	1.9	10	0	1.3
MAY											
14...	0930	14	13.0	10	5.3	3.3	2.2	1.9	11	0	1.1
JUNE											
19...	0900	.55	19.0	10	9.0	4.5	2.5	2.3	16	0	2.0
JULY											
24...	1420	.20	23.5	12	7.2	5.5	3.3	2.6	22	0	2.0
AUG.											
20...	1345	.40	22.5	11	6.0	5.2	4.1	2.5	18	0	2.5
SEP.											
25...	1500	.55	16.0	10	6.0	9.7	2.5	1.5	16	0	23

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED OXYGEN (MG/L)
OCT.										
31...	35	.3	125	74	78	--	.00	44	30	10.0
NOV.										
27...	--	--	110	--	--	--	--	--	--	10.4
27...	50	.0	99	65	--	.33	.01	--	--	--
DEC.										
26...	24	.0	92	--	58	.01	.01	35	22	10.2
JAN.										
23...	20	.1	71	53	48	.17	.03	24	14	16.0
FEB.										
28...	22	.0	74	53	49	.13	.01	24	18	14.2
MAR.										
20...	21	.1	69	55	47	.13	.01	22	16	11.8
21...	--	--	60	--	--	--	--	--	--	12.2
APR.										
16...	--	--	80	--	--	--	--	--	--	13.0
17...	21	.1	80	--	51	.11	.02	28	19	--
MAY										
14...	21	.1	90	66	50	.09	.01	27	18	13.8
JUNE										
19...	27	.6	100	82	66	.19	.01	41	28	8.8
JULY										
24...	28	.0	125	93	71	.42	.01	41	23	7.8
AUG.										
20...	27	.1	130	65	67	.23	.00	36	22	10.6
SEP.										
25...	19	.2	130	67	80	.13	.01	55	42	--

## UPPER TWIN CREEK BASIN

03237280 UPPER TWIN CREEK AT McGAW, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	PER- CENT SATUR- ATION	PH (UNITS)	ALKA- LITY AS CAC03 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	COLOR (PLAT- INUM- COBALT UNITS)	BIO- CHEM- ICAL OXYGEN DEMAND 5 DAY (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)
OCT. 31...	91	6.8	15	4.6	5	.0	--	2200	1000	1600
NOV. 27...	94	6.5	--	--	--	--	--	15000	3900	8400
27...	--	6.4	13	10	--	--	--	--	--	--
DEC. 26...	86	6.7	13	5.1	--	--	--	4200	600	1400
JAN. 23...	130	7.2	10	1.2	--	--	--	140	32	50
FEB. 28...	110	6.8	7	2.0	--	--	--	62	5	12
MAR. 20...	100	7.2	7	.8	--	--	--	--	--	8
21...	100	--	--	--	--	--	--	1200	280	--
APR. 16...	120	6.5	--	--	--	--	--	1400	14	20
17...	--	6.5	8	5.1	--	--	1.1	--	--	--
MAY 14...	130	6.7	9	3.5	--	--	--	320	33	50
JUNE 19...	94	7.1	13	2.0	--	--	--	2900	100	54
JULY 24...	91	6.1	18	28	--	--	--	8000	75	74
AUG. 20...	120	6.6	15	7.2	--	--	--	44000	140	333
SEP. 25...	--	6.0	13	26	--	--	--	12	7	7

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)
OCT. 31...	1045	5.1	5	--	--	0	--	0	--	0	2	--
APR. 17...	0930	9.5	--	3	0	--	0	--	3	--	--	4

DATE	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED NICKEL (NI) (UG/L)	TOTAL SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT. 31...	10	3	--	--	59	2	--	20	--	--	<.5	--
APR. 17...	--	--	17	33	--	--	0	--	130	4	--	.2

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	TOTAL FILT- RABLE RESIDUE (MG/L)	SUS- PENDE GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDE GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDE GROSS BETA AS CS-137 (PC/L)	TOTAL NON- FILT- RABLE RESIDUE (MG/L)
OCT. 31...	1200	5.1	2.0	3.0	90	<.4	<.4	<.4	1
APR. 17...	0930	9.5	<.6	1.9	56	<.4	<.4	<.4	<1

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DDT IN BOTTOM DE- POSIT (UG/KG)	DI- ELDRIN IN BOTTOM DE- POSIT (UG/KG)	ENDRIN IN BOTTOM DE- POSIT (UG/KG)	HEPTA- CHLOR IN BOTTOM DE- POSIT (UG/KG)	HEPTA- CHLOR EPOXIDE IN BOT- TOM DE- POSIT (UG/KG)	PCB IN BOTTOM DE- POSIT (UG/KG)
OCT. 15...	.0	.0	.0	.0	.0	0

[illegible]





## UPPER TWIN CREEK BASIN

147

03237280 UPPER TWIN CREEK AT McGAW, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SED- MENT (MG/L)	SUS- PENDE SED- MENT DIS- CHARGE (T/DAY)
OCT.				
07...	1445	.02	1	.00
14...	1910	.02	2	.00
15...	1545	.02	1	.00
21...	1410	.02	0	.00
25...	1250	.02	1	.00
31...	1130	5.1	1	.01
NOV.				
04...	1645	1.9	0	.00
11...	1500	1.1	0	.00
18...	1705	1.2	0	.00
25...	1210	3.6	1	.01
26...	1730	19	61	3.1
27...	1155	42	144	16
27...	1200	42	144	16
DEC.				
02...	1810	2.3	0	.00
09...	1235	1.5	0	.00
16...	1435	2.1	0	.00
23...	1750	6.9	0	.00
26...	1645	6.6	10	.18
31...	1010	15	0	.00
JAN.				
06...	1750	13	1	.04
13...	1830	24	4	.26
20...	1810	16	2	.09
22...	1720	20	20	1.1
27...	1835	13	0	.00
FEB.				
03...	1000	12	0	.00
10...	1210	14	0	.00
17...	1415	11	0	.00
24...	1845	19	0	.00
28...	1000	12	1	.03
MAR.				
03...	0710	18	0	.00
06...	1710	171	48	22
10...	1840	17	3	.14
17...	1850	38	0	.00
20...	1850	16	0	.00
24...	1900	15	0	.00
APR.				
08...	1440	27	42	3.1
10...	1335	34	0	.00
14...	1800	15	0	.00
17...	0930	9.5	0	.00
21...	1815	6.3	0	.00
28...	1855	4.8	0	.00
MAY				
03...	0845	128	10	3.5
05...	1655	19	1	.05
13...	1745	18	20	.97
19...	1535	4.2	0	.00
23...	0925	117	130	41
27...	1340	6.3	0	.00
31...	0955	45	30	3.6
JUNE				
01...	0850	152	404	166
01...	1425	566	1240	1900
01...	1750	341	12	11
02...	1825	63	0	.00
05...	1245	85	3	.69
11...	1855	1.9	8	.04
17...	1740	.63	0	.00
19...	0900	.55	1	.00
24...	1840	7.8	5	.11
JULY				
01...	2025	2.6	26	.18
08...	2110	.81	0	.00
15...	2055	.40	0	.00
22...	2105	.20	0	.00
24...	1440	.15	0	.00
29...	1910	.15	0	.00
AUG.				
05...	2010	1.7	0	.00
12...	2055	4.4	0	.00

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM
NOV.									
27...	1155	54	66	70	76	84	92	95	100

## LITTLE MIAMI RIVER BASIN

03242050 LITTLE MIAMI RIVER NEAR SPRING VALLEY, OHIO

LOCATION.--Lat 39°35'00", long 84°01'49", Greene County, at gaging station on right bank at downstream side of bridge on New Burlington Road, 0.3 mi (0.5 km) upstream from unnamed right bank tributary, 2.2 mi (3.5 km) southwest of Spring Valley, and 2.8 mi (4.5 km) downstream from Gladly Run.

DRAINAGE AREA.--366 mi<sup>2</sup> (948 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: September 1968 to September 1974.  
Water temperatures: September 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,170 micromhos Mar. 25; minimum, 248 micromhos May 22.

pH: Maximum, 8.6 Sept. 25; minimum, 4.3 Nov. 11.

Dissolved oxygen: Maximum, 15.0 mg/l Mar. 24-27; minimum, 4.2 mg/l Aug. 17.

Water temperatures: Maximum, 25.5°C July 9; minimum, freezing point on several days during December and January.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
03...	1450	352	18.5	--	682	7.5	--	--	--	--	--	0
23...	1050	156	11.0	--	831	8.8	--	--	--	--	--	26
NOV.												
12...	0915	168	4.0	--	836	7.8	--	--	--	--	--	0
29...	1520	2750	7.5	--	543	8.3	--	--	--	--	--	0
DEC.												
03...	1245	666	8.0	--	688	8.5	--	--	--	--	--	9
17...	0957	343	.5	--	774	8.5	--	--	--	--	--	8
JAN.												
15...	1520	1130	5.5	--	834	7.0	--	84	37	--	--	0
22...	1312	1500	7.0	--	543	8.0	--	69	27	--	--	0
FEB.												
05...	1000	522	1.0	--	686	8.4	--	87	35	--	--	4
07...	1050	1580	1.5	--	526	8.2	--	44	28	--	--	0
MAR.												
04...	1045	555	12.0	--	711	8.3	--	84	33	--	--	0
25...	0900	409	2.0	--	1120	8.5	--	86	38	--	--	11
APR.												
08...	1520	2650	8.0	--	468	7.8	--	58	21	--	--	0
17...	1035	615	10.5	--	740	7.6	--	93	37	--	--	0
MAY												
28...	0850	318	15.0	--	770	7.8	--	84	31	--	--	0
30...	1425	401	18.0	--	680	7.7	--	69	27	--	--	0
JUNE												
18...	1645	162	19.0	--	768	7.7	--	94	36	--	--	0
23...	1800	1820	17.0	--	449	7.4	--	53	19	--	--	0
SEP.												
23...	1130	201	10.5	8.0	800	8.0	9.8	93	34	27	2.2	0

DATE	TIME	TOTAL MERCURY (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
29...	1330	1.0	--
APR.			
17...	1110	.0	3.0

## LITTLE MIAMI RIVER BASIN

149

03242050 LITTLE MIAMI RIVER NEAR SPRING VALLEY, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,570 micromhos Feb. 1, 1971; minimum, 207 micromhos Aug. 8, 1971.

pH (1968-74): Maximum, 9.2 Dec. 30, 1971; minimum, 4.7 Dec. 2, 1971.

Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher Jan. 8, 9, Feb. 11, 12, 1973; minimum, 1.1 mg/l Apr. 14, 1971.

Water temperatures (1968-74): Maximum, 34.5°C June 26, 1971; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since September 1968. Dissolved oxygen concentrations listed as 15.0 mg/l represents concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
03...	301	58	38	.2	--	.00	3.2	.73	--	--	--	--
23...	352	65	56	.2	--	.00	4.0	.76	--	--	--	--
NOV.												
12...	376	62	48	.3	--	.00	3.6	--	--	--	--	--
29...	234	48	24	.2	--	.00	4.7	--	--	--	--	--
DEC.												
03...	307	55	29	.2	--	.00	4.3	--	--	--	--	--
17...	299	59	57	.2	--	.00	4.1	--	--	--	--	--
JAN.												
15...	317	59	97	.2	--	.00	1.0	--	--	360	--	--
22...	237	50	25	.3	--	.00	3.9	--	--	280	--	--
FEB.												
05...	296	50	39	.4	--	.00	4.3	--	--	360	--	--
07...	216	41	32	.4	--	.00	3.3	--	--	230	--	--
MAR.												
04...	328	60	37	.2	--	.00	3.9	--	--	350	--	--
25...	329	57	170	.2	--	.00	3.1	--	--	370	--	--
APR.												
08...	208	36	22	.4	--	.00	2.1	--	--	230	--	--
17...	350	55	33	.4	--	.01	3.5	--	--	380	--	--
MAY												
28...	360	54	41	.3	--	.01	3.3	--	--	340	--	--
30...	308	49	37	.3	--	.00	3.0	--	--	280	--	--
JUNE												
18...	362	53	50	.3	--	.01	3.4	--	--	380	--	--
23...	171	35	25	1.0	--	.01	6.5	--	--	210	--	--
SEP.												
23...	390	52	44	.2	.29	.18	2.6	.59	455	370	30	60

## 03242050 LITTLE MIEMI RIVER NEAR SPRING VALLEY, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	702	474	773	587	696	667	786	672	716	701	720	698
2	528	360	731	650	706	679	759	726	731	707	716	702
3	684	537	773	734	710	692	773	720	734	713	716	680
4	738	489	788	764	721	703	791	767	737	722	732	668
5	655	466	815	767	734	677	809	791	752	728	761	680
6	703	610	815	746	681	624	815	773	809	632	708	681
7	743	701	793	776	681	636	797	773	911	491	726	699
8	743	716	803	785	708	681	821	785	687	609	728	546
9	779	734	806	788	729	702	803	758	719	680	690	624
10	782	767	804	780	732	708	1010	824	728	698	711	681
11	794	779	814	781	744	717	1100	911	742	703	714	682
12	791	779	809	785	747	720	908	797	805	748	756	707
13	791	782	824	797	747	708	824	779	778	721	728	706
14	830	623	816	798	738	708	782	755	745	712	735	699
15	761	683	811	457	732	714	890	545	751	703	734	701
16	809	761	655	427	897	723	536	488	757	718	729	654
17	806	791	680	655	825	756	572	539	745	688	698	666
18	818	794	723	677	789	759	644	575	730	694	727	668
19	815	797	763	718	801	777	605	500	739	679	746	692
20	818	797	790	748	867	633	572	509	691	652	728	604
21	839	806	791	758	696	636	563	494	687	649	707	593
22	848	785	782	725	738	696	590	476	694	592	669	615
23	863	806	---	---	753	732	608	521	646	627	696	654
24	836	797	---	---	756	711	602	524	669	649	714	663
25	830	794	---	---	792	651	668	608	716	665	1170	751
26	830	797	---	---	651	495	671	659	915	723	822	717
27	830	800	---	---	516	474	608	431	851	770	754	703
28	842	809	---	---	600	504	638	530	779	717	738	689
29	842	809	600	528	636	600	656	617	---	---	728	683
30	869	776	667	600	621	600	683	659	---	---	686	509
31	779	704	---	---	672	621	701	683	---	---	555	466
MONTH	869	360	824	427	897	474	1100	431	915	491	1170	466

[illegible]

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	18.0	11.5	9.5	7.0	5.5	2.5	0.5	6.0	4.5	6.5	5.0
2	19.5	18.5	11.5	9.5	8.5	5.5	1.0	0.0	5.0	4.5	9.5	6.5
3	18.5	17.0	12.5	10.0	9.0	7.0	2.0	0.5	4.5	3.5	12.5	9.5
4	20.0	17.5	11.0	8.5	11.0	9.0	1.5	0.0	3.5	2.0	13.5	12.5
5	18.5	16.5	10.0	8.5	11.0	9.5	0.5	0.0	2.0	1.0	13.0	11.5
6	17.0	14.0	8.0	6.0	9.5	7.0	1.0	0.0	2.5	1.0	11.5	9.5
7	17.5	14.5	7.5	5.5	7.0	6.5	2.0	0.0	2.0	0.5	13.5	11.0
8	19.5	16.5	7.5	5.5	7.5	5.5	0.0	0.0	1.0	0.5	13.5	13.0
9	20.0	16.5	7.0	5.5	6.5	5.0	3.0	0.0	1.5	0.5	15.0	13.5
10	20.0	16.5	6.0	4.0	6.0	4.0	4.0	3.0	1.0	0.5	14.5	12.0
11	19.5	16.0	8.0	4.0	4.0	2.5	4.5	3.5	2.5	0.5	11.5	8.0
12	19.5	16.0	7.5	5.0	6.0	3.0	3.5	1.0	5.5	1.5	8.0	6.5
13	17.5	16.5	10.0	6.5	7.0	5.0	2.0	0.5	7.5	4.0	6.5	4.5
14	18.0	15.0	12.5	9.5	6.5	5.5	3.5	2.0	---	---	7.0	4.5
15	18.0	14.0	13.5	12.5	5.5	4.5	5.0	3.5	---	---	7.0	6.0
16	16.5	13.5	13.0	7.5	4.5	3.0	4.5	3.0	---	---	7.0	6.0
17	14.0	11.0	8.0	6.0	3.0	1.5	5.0	4.0	6.5	3.5	6.0	5.0
18	14.5	11.0	7.5	6.0	2.5	0.0	7.0	4.5	6.5	3.5	7.0	5.0
19	14.5	10.5	10.0	7.5	2.0	0.0	8.0	7.0	7.0	6.0	8.0	7.0
20	15.0	11.5	10.5	8.5	2.5	1.0	8.0	7.0	6.0	5.0	9.5	7.0
21	14.5	10.5	10.5	9.5	1.0	0.0	8.5	7.5	7.0	5.0	9.0	6.5
22	15.5	10.5	10.5	8.0	0.5	0.0	7.5	6.5	8.0	6.0	7.0	4.5
23	16.0	11.0	9.5	8.0	2.0	0.0	8.0	6.0	6.0	4.0	7.0	5.5
24	17.0	11.5	12.5	9.5	6.5	2.0	6.0	4.0	4.0	1.5	5.5	3.0
25	16.5	12.0	12.5	12.0	8.5	6.5	5.0	3.5	2.0	0.5	5.0	2.5
26	16.5	12.5	---	---	9.0	8.5	6.5	4.0	2.5	0.5	8.0	4.0
27	14.5	11.5	---	---	8.5	6.5	8.5	7.0	4.5	1.5	9.0	6.5
28	14.0	11.5	---	---	6.5	5.5	7.5	6.5	6.0	4.5	11.0	8.0
29	11.5	9.5	7.0	6.0	6.0	5.0	6.5	6.0	---	---	12.0	10.5
30	10.5	10.0	7.5	5.0	5.0	3.0	7.0	5.0	---	---	11.5	7.5
31	11.0	10.0	---	---	3.5	2.5	7.5	5.5	---	---	7.5	6.0
MONTH	20.0	9.5	13.5	4.0	11.0	0.0	8.5	0.0	8.0	0.5	15.0	2.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	5.0	17.0	15.0	19.5	17.5	22.0	19.0	22.5	19.5	21.0	19.0
2	13.0	11.5	16.5	14.0	---	---	23.0	20.0	23.0	20.0	19.5	18.5
3	13.0	12.0	14.5	13.5	---	---	24.0	21.5	22.5	20.5	1	

## LITTLE MIAMI RIVER BASIN

03242300 CAESAR CREEK AT HARVEYSBURG, OHIO

LOCATION.--Lat 39°30'27", long 84°00'42", Warren County, at gaging station on right bank at downstream side of bridge on State Highway 73, 0.2 mi (0.3 km) north of Harveysburg, 2.3 mi (3.7 km) downstream from Turkey Run, and 3.1 mi (5.0 km) upstream from Jonahs Run.

DRAINAGE AREA.--209 mi<sup>2</sup> (541 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1966-67, 1969, July to September 1970 (partial-record station), November 1970 to September 1974.  
Water temperatures: December 1970 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 655 micromhos Oct. 31; minimum, 227 micromhos June 23.

Water temperatures: Maximum, 27.5°C Aug. 26; minimum, freezing point on many days during December to February.

## EXTREMES.--Period of record:

Specific conductance (1970-74): Maximum, 801 micromhos Jan. 17, 1972; minimum, 171 micromhos June 26, 1971.

Water temperatures (1970-74): Maximum, 30.5°C June 6, 1971; minimum, freezing point on many days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since December 1970. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected on an approximate monthly basis to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)
OCT. 02...	1200	573	9.6	80	1500	0	260	49	17	6.0
NOV. 07...	1145	64	10	60	100	28	28	100	28	9.1
DEC. 27...	1600	938	6.0	50	17000	0	22	--	--	6.7
JAN. 22...	1300	803	8.0	50	3800	13	120	52	21	6.6
MAR. 07...	1830	210	2.3	40	200	0	30	51	28	8.6
MAY 24...	1100	270	4.5	0	21000	0	530	61	33	6.2
JULY 02...	0835	124	8.3	0	730	17	33	80	31	7.5
AUG. 13...	0900	13	3.4	10	550	30	70	76	22	8.9
SEP. 16...	1450	192	8.9	20	500	10	40	--	--	7.8

DATE	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRATE (N) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)
OCT. 02...	5.6	172	0	31	15	.3	9.2	--	242
NOV. 07...	2.0	354	0	49	20	.4	7.2	--	394
DEC. 27...	2.7	196	0	43	20	.2	--	4.5	293
JAN. 22...	1.9	229	0	40	19	.2	--	4.2	299
MAR. 07...	1.8	267	0	49	21	.2	--	3.1	392
MAY 24...	2.6	235	0	40	15	2.7	--	3.3	340
JULY 02...	1.7	325	0	46	18	.6	--	4.8	462
AUG. 13...	2.5	285	0	41	17	.2	--	.60	--
SEP. 16...	1.5	316	0	27	18	.2	--	2.0	370

## LITTLE MIAMI RIVER BASIN

155

03242300 CAESAR CREEK AT HARVEYSBURG, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TOTAL RESI- DUE (MG/L)	HARD- NESS (CA.MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	PH (UNITS)	COLOR (PLAT- INUM- COBALT UNITS)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)
OCT. 02...	--	190	52	380	20.0	7.2	100	.70	2.2
NOV. 07...	--	360	74	642	--	7.9	5	.02	.05
DEC. 27...	840	--	--	470	6.0	7.7	20	.45	--
JAN. 22...	426	220	29	508	--	7.8	20	.09	--
MAR. 07...	417	240	23	579	13.5	8.0	8	.00	--
MAY 24...	1660	290	95	499	--	7.4	100	.11	--
JULY 02...	498	330	61	649	20.5	8.1	5	.06	--
AUG. 13...	--	280	46	535	23.0	8.1	--	.07	--
SEP. 16...	409	300	39	600	16.5	8.3	2	.11	--

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	608	397	629	588	541	519	590	581	581	572	580	572
2	436	360	624	596	562	542	609	589	586	580	575	569
3	471	429	640	624	583	560	613	595	591	583	589	567
4	510	321	641	630	583	578	608	594	592	586	576	564
5	521	338	644	631	582	519	614	595	601	587	578	555
6	527	496	645	636	561	540	616	605	616	398	587	566
7	560	505	646	639	586	561	618	601	450	311	592	578
8	595	560	654	638	596	585	636	603	541	457	581	567
9	613	595	648	639	603	595	639	607	566	541	567	539
10	626	613	651	638	606	600	623	597	583	566	569	556
11	629	620	652	641	607	596	634	605	586	573	576	564
12	633	620	653	640	613	606	639	627	595	580	581	567
13	633	622	650	639	617	603	645	632	595	570	580	570
14	635	620	647	633	610	604	632	618	584	573	583	552
15	637	622	646	480	627	610	618	369	581	569	583	566
16	633	620	528	445	620	614	477	379	586	578	573	553
17	635	613	542	526	631	615	527	477	587	580	608	562
18	632	598	557	543	641	627	547	503	587	580	583	572
19	633	622	569	558	639	632	518	468	595	569	580	559
20	633	618	571	566	645	408	521	461	573	558	576	566
21	634	621	576	570	524	431	461	383	578	569	566	534
22	635	615	585	574	587	524	517	449	570	511	573	539
23	632	610	590	572	613	582	528	403	556	522	578	555
24	635	615	600	408	620	607	517	440	566	555	573	558
25	634	620	419	292	618	583	552	517	576	561	566	558
26	639	630	415	329	583	478	566	464	592	559	---	---
27	645	634	446	364	478	449	495	394	584	572	---	---
28	646	634	389	332	535	477	521	495	580	567	---	---
29	646	638	432	375	562	520	521	496	---	---	---	---
30	652	639	518	436	588	515	562	521	---	---	---	---
31	655	629	---	---	582	568	576	562	---	---	---	---
MONTH	655	321	654	292	645	408	645	369	616	311	608	534
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	547	358	569	543	578	497	638	619	569	545	443	259
2	383	273	575	555	567	494	639	614	570	558	420	294
3	451	317	561	538	593	567	634	614	562	539	442	398
4	361	295	585	563	604	584	625	605	562	477	464	410



03242300 CAESAR CREEK AT HARVEYSBURG, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	22.0	20.0	10.5	9.0	7.5	7.0	1.5	0.0	6.0	4.0	7.5	5.0
2	20.5	19.0	10.5	9.0	7.5	6.0	0.0	0.0	5.0	4.0	11.0	7.5
3	19.5	18.5	11.0	10.0	8.5	7.0	0.0	0.0	5.0	3.0	14.5	10.5
4	20.5	19.0	10.0	8.0	10.5	8.5	0.5	0.0	3.5	0.5	15.5	13.5
5	19.5	18.0	9.0	8.0	10.5	7.5	0.0	0.0	0.5	0.0	15.0	12.5
6	18.0	15.5	8.0	5.5	7.5	5.0	0.5	0.0	2.0	0.0	12.5	10.0
7	18.0	16.0	5.5	4.5	5.0	4.5	1.0	0.0	1.5	1.0	15.5	12.0
8	19.0	17.5	5.5	4.5	5.0	4.0	0.0	0.0	1.5	0.5	17.0	14.0
9	19.5	18.0	5.5	4.0	4.5	3.0	0.0	0.0	1.0	0.0	17.0	14.0
10	19.5	17.5	4.0	2.5	4.5	2.5	0.5	0.0	0.5	0.0	17.0	13.0
11	19.0	17.0	4.0	2.5	2.5	0.5	1.0	0.0	1.5	0.0	12.5	8.5
12	19.5	17.0	5.5	3.0	2.5	0.5	1.0	0.0	3.5	0.0	8.5	7.0
13	18.5	17.5	8.0	5.0	5.0	2.5	0.0	0.0	6.0	3.0	7.0	4.5
14	17.5	16.0	11.0	8.0	5.0	3.5	0.5	0.0	6.0	4.5	7.5	4.5
15	17.5	15.5	12.5	11.0	3.5	2.5	3.5	0.5	4.5	2.0	7.5	6.0
16	17.0	14.5	11.0	7.0	2.5	1.0	5.5	3.0	4.0	2.0	7.0	6.0
17	14.5	12.5	7.0	5.5	1.0	0.0	5.5	5.0	4.5	2.5	6.0	5.0
18	14.0	12.0	7.5	5.5	0.0	0.0	7.5	5.0	5.0	2.5	6.5	4.5
19	13.5	11.0	9.0	7.5	1.0	0.0	8.5	7.0	6.5	5.0	8.5	7.0
20	14.5	12.5	9.0	8.0	1.5	0.5	9.0	7.0	6.5	4.5	10.0	6.5
21	14.0	11.5	10.5	9.0	1.0	0.0	9.0	7.0	7.5	4.0	9.5	6.5
22	13.5	11.0	9.5	8.0	0.5	0.0	8.0	6.5	7.5	5.5	7.5	3.5
23	14.0	11.0	9.0	8.0	2.0	0.0	8.0	6.0	6.0	2.5	6.5	5.0
24	14.5	11.5	12.0	9.0	4.0	2.0	5.5	4.5	4.0	1.0	5.0	2.5
25	15.0	12.5	12.0	11.0	6.5	4.0	5.0	3.5	1.5	0.0	3.5	1.5
26	15.0	13.0	11.0	9.0	7.5	6.5	8.0	4.5	2.0	0.5	---	---
27	13.5	12.0	12.5	10.0	7.5	5.5	8.5	7.5	4.5	1.0	---	---
28	13.5	11.5	12.5	9.0	5.5	4.0	7.5	6.5	6.0	4.5	---	---
29	11.5	9.5	9.0	6.0	5.5	3.5	6.5	6.0	---	---	---	---
30	10.5	10.0	8.0	6.0	3.5	1.5	6.5	5.0	---	---	---	---
31	10.5	10.0	---	---	2.0	1.0	7.0	5.5	---	---	---	---
MONTH	22.0	9.5	12.5	2.5	10.5	0.0	9.0	0.0	7.5	0.0	17.0	1.5

[illegible]

## LITTLE MIAMI RIVER BASIN

03245300 LITTLE MIAMI RIVER AT MIAMIVILLE, OHIO

LOCATION.--Lat 39°12'38", long 84°17'33", Hamilton County, on right bank at upstream side of bridge on State Highway 126, 0.4 mi (0.6 km) southeast of Miamiville, 4.2 mi (6.8 km) upstream from gaging station at Milford, 5.6 mi (9.0 km) upstream from East Fork Little Miami River, and 1.0 mi (1.6 km) north of Camp Dennison.

DRAINAGE AREA.--1,189 mi<sup>2</sup> (3,080 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1970 to September 1974.  
Water temperatures: November 1970 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 933 micromhos Jan. 1; minimum, 150 micromhos June 23.

pH: Maximum, 8.7 Nov. 12-15, Aug. 9, 21, 24; minimum, 7.2 June 22-24, Sept. 13.

Dissolved oxygen: Maximum, 15.0 mg/l Mar. 25, 26; minimum, 5.7 mg/l Aug. 15.

Water temperatures: Maximum, 29.0°C July 9, Aug. 14; minimum, freezing point on several days during December and January.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DIS-SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
05...	1040	5320	19.0	--	347	7.3	--	--	--	--	--	0
29...	0815	255	12.5	--	692	8.8	--	--	--	--	--	23
NOV.												
14...	1105	348	9.0	--	739	8.6	--	--	--	--	--	12
28...	1105	20900	13.0	--	338	7.3	--	--	--	--	--	0
DEC.												
19...	1315	864	2.0	--	692	8.1	--	--	--	--	--	0
21...	1115	3980	1.0	--	413	8.4	--	--	--	--	--	0
JAN.												
14...	0815	966	1.0	--	776	7.8	--	88	32	--	--	0
21...	0820	9850	9.5	--	436	7.5	--	62	21	--	--	0
FEB.												
08...	1100	3830	2.0	--	439	8.3	--	56	20	--	--	0
27...	1055	1200	2.0	--	677	8.5	--	83	33	--	--	14
MAR.												
22...	1015	1930	6.5	--	543	8.3	--	68	27	--	--	0
27...	1115	1160	7.0	--	733	8.6	--	76	29	--	--	14
APR.												
02...	1140	17500	11.5	--	328	7.7	--	--	--	--	--	0
19...	1115	1120	14.0	--	675	7.6	--	86	31	--	--	0
MAY												
29...	1055	559	18.5	--	688	7.8	--	80	28	--	--	0
31...	1330	4430	19.5	--	418	7.3	--	66	19	--	--	0
JUNE												
17...	0810	393	20.5	--	687	7.7	--	86	32	--	--	0
24...	0815	9490	18.5	--	334	7.2	--	46	12	--	--	0
SEP.												
19...	0850	559	18.0	8.2	650	8.0	9.3	74	40	16	2.0	0

DATE	TIME	TOTAL MERCURY (UG/L)	TOTAL ORGANIC CARBON (MG/L)
OCT.			
18...	1755	<.5	--
APR.			
17...	1900	.0	3.0

## LITTLE MIAMI RIVER BASIN

159

03245300LITTLE MIAMI RIVER AT MIAMIVILLE, OHIO--Continued

## EXTREMES.--Period of Record:

Specific conductance (1970-74): Maximum, 974 micromhos Feb. 13, 1972; minimum, 150 micromhos June 23, 1974.

pH (1970-74): Maximum, 9.3 June 26, 1971; minimum, 3.8 Dec. 18, 1972.

Dissolved oxygen (1970-74): Maximum, 15.0 mg/l or higher on many days during 1971 to 1974; minimum, 0.8 mg/l May 17, 1971.

Water temperatures (1970-74): Maximum, 32.5°C July 23, 1972; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since November 1970. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher due to instrument limitation. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month. Special samples were also collected twice during the year to further define the quality of water until June 30, 1974. Records of discharge are given for Little Miami River at Milford, Ohio, station 03245500, drainage area 1,203 mi<sup>2</sup> (3,116 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
05...	144	50	13	.2	--	.00	1.7	.38	--	--	--	--
29...	338	62	46	.2	--	.00	2.4	.71	--	--	--	--
NOV.												
14...	340	60	40	.2	--	.00	2.3	--	--	--	--	--
28...	141	30	12	.2	--	.00	2.5	--	--	--	--	--
DEC.												
19...	307	51	40	.3	--	.00	3.1	--	--	--	--	--
21...	164	39	23	.2	--	.01	2.4	--	--	--	--	--
JAN.												
14...	299	59	69	.3	--	.00	3.1	--	--	350	--	--
21...	169	49	24	.2	--	.01	2.2	--	--	240	--	--
FEB.												
08...	175	38	25	.2	--	.01	2.8	--	--	220	--	--
27...	292	57	38	.2	--	.00	3.2	--	--	340	--	--
MAR.												
22...	238	56	28	.2	--	.00	1.9	--	--	280	--	--
27...	266	59	70	.2	--	.00	1.8	--	--	310	--	--
APR.												
02...	144	27	11	.4	--	.01	1.5	--	--	--	--	--
19...	326	51	28	.4	--	.00	2.2	--	--	340	--	--
MAY												
29...	324	51	33	.3	--	.00	2.7	--	--	320	--	--
31...	179	34	19	.3	--	.01	1.8	--	--	240	--	--
JUNE												
17...	334	52	38	.5	--	.00	2.3	--	--	350	--	--
24...	140	27	11	.7	--	.01	5.0	--	--	160	--	--
SEP.												
19...	380	49	29	.2	.16	.05	2.1	.42	407	350	120	20

## 03245300 LITTLE MIAMI RIVER AT MIAMIVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	575	497	605	569	591	573	687	606
2	---	---	---	---	603	575	644	598	612	590	663	513
3	---	---	---	---	626	600	677	644	624	609	571	516
4	464	345	---	---	630	621	705	671	639	617	603	574
5	---	---	---	---	621	548	699	666	647	623	614	599
6	462	365	687	675	566	545	668	660	663	626	617	600
7	---	---	702	690	595	559	662	656	648	396	620	605
8	575	534	710	699	608	589	659	647	495	406	623	612
9	615	575	---	---	625	608	774	647	573	498	645	623
10	632	615	---	---	632	625	933	738	615	573	647	567
11	677	630	---	---	641	628	870	702	642	603	618	432
12	---	---	---	---	631	620	782	752	652	637	546	413
13	705	692	---	---	632	620	813	750	675	640	596	521
14	702	689	---	---	632	602	759	735	690	676	626	600
15	713	701	---	---	605	595	765	443	681	643	641	626
16	731	713	---	---	610	604	429	408	654	640	638	434
17	743	720	---	---	623	610	476	413	654	643	542	477
18	725	681	---	---	673	619	518	477	658	643	584	546
19	725	687	---	---	674	650	482	428	696	642	606	585
20	743	725	647	608	670	356	483	444	637	571	615	605
21	752	735	660	645	469	358	491	393	595	580	618	533
22	758	740	675	660	557	466	465	417	603	481	555	533
23	759	738	695	675	599	557	485	402	531	487	575	551
24	758	747	696	618	625	599	474	422	577	535	657	576
25	759	747	618	266	628	560	537	479	627	577	662	623
26	765	755	336	288	560	470	569	539	655	625	635	603
27	758	740	347	308	470	430	522	378	678	634	747	624
28	---	---	336	302	491	439	473	419	718	681	671	618
29	792	765	431	336	527	460	504	452	---	---	630	585
30	---	---	497	431	500	443	552	509	---	---	---	---
31	---	---	---	---	569	500	576	552	---	---	---	---
MONTH	---	---	---	---	674	356	933	378	718	396	747	413

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.2	7.5	8.2	8.1	8.3	8.1	7.8	7.7	7.7	7.5	8.1	8.0
2	7.6	7.4	8.1	8.0	8.4	8.1	7.9	7.6	7.6	7.5	8.0	7.9
3	7.6	7.5	8.2	8.1	8.4	8.2	7.6	7.6	7.6	7.5	8.0	7.9
4	7.8	7.5	8.2	8.1	8.3	8.3	7.7	7.6	7.6	7.5	8.2	8.0
5	7.7	7.5	8.3	8.2	8.3	8.2	7.7	7.6	7.7	7.5	8.2	8.0
6	7.9	7.8	8.4	8.3	8.2	7.9	7.7	7.6	7.9	7.6	8.1	7.9
7	8.0	7.8	8.4	8.1	8.0	7.9	7.7	7.6	7.8	7.6	8.1	7.9
8	7.9	7.8	8.5	8.1	8.1	7.9	7.7	7.6	7.7	7.6	8.2	7.9
9	8.1	7.6	8.5	8.3	8.1	7.5	7.7	7.6	7.8	7.7	8.1	8.0
10	8.1	7.6	8.6	8.3	8.1	7.9	7.7	7.6	7.9	7.8	7.9	7.8
11	8.1	7.7	8.6	8.3	8.2	8.0	7.7	7.6	8.0	7.8	7.8	7.6
12	8.1	7.7	8.7	8.4	8.2	7.8	7.7	7.6	8.1	7.9	7.7	7.6
13	8.1	8.0	8.7	8.5	8.2	8.0	7.8	7.6	8.1	7.9	8.0	7.6
14	8.1	7.8	8.7	8.6	8.0	8.0	7.7	7.7	8.0	7.9	8.1	7.8
15	8.1	7.8	8.7	8.5	8.0	8.0	7.7	7.5	8.1	7.9	8.0	7.9
16	8.1	8.1	8.5	8.1	8.1	8.0	7.5	7.5	8.1	7.9	7.9	7.6
17	8.2	8.1	8.2	8.0	8.2	8.0	7.6	7.4	8.1	7.9	7.7	7.6
18	8.2	8.1	8.3	8.0	8.2	8.0	7.6	7.5	8.1	7.9	8.0	7.7
19	8.3	7.9	8.4	8.2	8.2	8.1	7.6	7.5	8.1	8.0	8.1	7.9
20	8.2	7.9	8.5	8.3	8.1	7.6	7.6	7.5	8.0	7.9	8.3	8.0
21	8.3	8.0	8.4	8.3	7.6	7.5	7.5	7.4	8.2	7.8	8.2	7.8
22	8.4	8.0	8.6	8.3	8.0	7.5	7.6	7.4	8.1	8.0	8.0	7.7
23	8.4	7.8	8.5	8.3	7.9	7.7	7.5	7.4	8.1	7.9	8.0	7.8
24	8.4	7.8	8.4	8.3	7.9	7.8	7.5	7.4	8.0	7.9	8.1	7.8
25	8.4	8.0	8.3	7.8	7.9	7.8	7.6	7.4	8.1	7.9	8.3	8.0
26	8.5	8.1	8.0	7.8	7.8	7.7	7.6	7.5	8.2	8.0	8.3	8.0
27	8.6	8.4	8.0	8.0	7.7	7.6	7.6	7.4	8.2	8.0	8.4	8.0
28	8.4	8.4	8.0	7.9	7.7	7.6	7.5	7.4	8.1	8.1	8.3	8.1
29	8.4	8.3	8.0	7.9	7.8	7.7	7.5	7.5	---	---	8.2	8.0
30	8.3	8.2	8.3	8.0	7.8	7.6	7.6	7.4	---	---	---	---
31	8.3	8.1	---	---	7.8	7.7	7.6	7.5	---	---	---	---
MONTH	8.6	7.4	8.7	7.8	8.4	7.5	7.9	7.4	8.2	7.5	8.4	7.6
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	8.0	7.9	7.5	7.3	7.9	7.8	8.6	8.3	7.8	7.5
2	---	---	8.0	7.7	7.7	7.5	7.9	7.8	8.5	8.2	7.7	7.6
3	---	---	7.7	7.6	7.8	7.6	8.0	7.8	8.4	8.0	7.8	7.7
4	---	---	7.9	7.7	7.8	7.6	8.1	7.9	8.4	8.3	7.8	7.7



## LITTLE MIAMI RIVER BASIN

03245300 LITTLE MIAMI RIVER AT MIAMIVILLE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.3	5.8	9.1	8.3	10.7	10.6	13.0	12.5	11.7	11.5	---	---
2	7.1	6.7	8.4	8.2	10.7	10.5	13.5	13.0	11.7	11.5	---	---
3	7.6	6.9	8.9	8.3	10.7	10.2	13.4	13.2	12.0	11.6	---	---
4	7.2	6.7	9.9	8.3	10.2	9.6	13.4	13.2	12.6	11.9	---	---
5	7.2	7.0	9.9	9.2	9.8	9.5	13.3	13.1	12.5	12.2	11.3	9.8
6	7.4	7.1	10.5	9.5	10.2	9.8	13.2	13.0	12.3	11.8	11.5	10.1
7	7.5	7.4	10.7	10.1	10.8	10.2	13.1	12.9	13.0	12.1	11.8	10.1
8	7.5	7.3	10.7	10.0	11.1	10.8	13.3	13.1	12.8	12.3	12.1	10.0
9	7.4	7.3	11.3	10.4	11.1	11.0	13.3	13.0	12.4	12.2	11.7	9.6
10	7.6	7.2	11.7	11.2	11.3	10.9	13.1	12.8	12.4	12.1	10.8	9.9
11	7.6	6.7	11.9	11.5	11.6	11.3	13.0	12.8	12.5	12.1	10.8	9.5
12	8.3	7.4	11.9	11.5	11.9	11.5	13.4	12.9	12.2	11.4	11.0	10.7
13	7.4	6.9	11.9	11.1	11.5	11.0	13.6	8.9	11.3	11.0	13.2	11.1
14	7.5	7.0	11.2	10.5	11.1	11.0	13.4	13.1	11.0	10.8	13.7	12.3
15	8.1	7.3	10.6	8.9	11.3	11.1	13.3	13.1	11.1	10.9	13.1	12.0
16	7.8	7.4	9.2	8.8	11.8	11.3	13.0	12.4	11.2	10.8	12.0	11.0
17	8.4	7.8	9.2	8.9	12.1	11.7	12.4	12.1	11.3	11.0	11.5	11.1
18	8.7	7.7	9.9	9.2	12.3	12.1	12.1	11.6	11.3	10.9	13.1	11.5
19	8.6	8.0	10.3	9.8	12.3	12.0	11.6	11.0	11.0	10.3	13.6	12.0
20	8.7	8.4	10.4	10.0	12.6	11.8	11.0	9.9	10.7	10.5	14.0	11.7
21	8.9	8.6	10.1	9.5	12.5	12.3	10.9	10.1	12.2	10.5	13.0	11.1
22	9.7	8.8	10.2	9.3	12.5	12.0	10.4	10.3	11.8	10.9	12.4	11.0
23	9.2	8.6	10.0	9.5	12.8	12.3	11.4	10.3	11.1	10.9	12.6	11.6
24	9.1	7.7	9.6	8.6	12.6	12.4	11.9	11.4	---	---	14.8	12.0
25	9.0	8.2	9.0	8.4	12.4	11.5	12.2	11.9	---	---	15.0	13.3
26	9.3	7.8	10.1	9.0	11.5	10.9	12.1	11.3	---	---	15.0	13.2
27	9.0	7.9	10.0	9.7	11.0	10.9	11.3	10.6	---	---	14.5	12.5
28	8.7	8.0	9.7	9.3	11.5	11.0	10.6	10.3	---	---	14.5	12.0
29	8.9	8.1	10.4	9.7	11.7	11.5	11.4	10.6	---	---	12.3	10.4
30	8.9	8.5	10.7	10.4	12.2	11.7	11.6	10.7	---	---	---	---
31	9.7	8.5	---	---	12.5	12.1	11.5	11.4	---	---	---	---
MONTH	9.7	5.8	11.9	8.2	12.8	9.5	13.6	8.9	13.0	10.3	15.0	9.1
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	9.3	8.4	7.3	7.1	7.8	7.5	10.9	7.3	7.3	6.7
2	---	---	8.6	8.2	7.5	7.2	7.6	7.5	10.8	7.3	8.0	7.5
3	---	---	8.6	8.3	7.3	7.1	7.9	7.5	9.5	6.7	8.4	7.6
4	---	---	9.2	8.6	7.1	6.9	8.6	7.5	9.3	7.0	8.9	8.5
5	---	---	9.5	8.6	7.7	6.6	9.2	7.6	9.2	7.3	8.6	8.2
6	---	---	9.9	8.6	7.8	7.2	9.6	7.5	10.1	7.7	8.2	7.9
7	---	---	10.2	9.0	8.1	7.1	10.3	7.5	10.6	8.1	8.0	7.8
8	---	---	9.7	8.9	8.1	7.1	10.8	7.5	10.0	7.7	8.0	7.8
9	---	---	9.2	8.7	8.4	7.1	10.7	7.7	11.3	7.6	8.0	7.6
10	11.6	11.2	10.2	8.8	8.2	7.0	10.2	7.5	10.0	7.8	7.9	7.5
11	11.3	10.2	10.1	9.0	8.4	7.2	9.1	6.8	8.9	6.8	8.1	7.4
12	10.4	9.6	10.0	8.2	8.1	7.3	9.4	6.8	10.4	6.5	7.7	6.9
13	9.7	9.2	10.1	8.6	8.6	7.5	8.0	6.6	8.8	6.7	7.2	6.9
14	9.3	9.1	9.8	8.5	8.5	7.4	7.0	6.1	9.1	6.2	7.8	7.4
15	9.4	9.2	9.4	7.9	8.4	7.4	6.5	5.7	9.8	7.1	7.9	7.7
16	10.0	9.3	9.3	7.8	8.6	7.5	7.3	6.2	8.8	7.2	8.0	7.8
17	10.2	9.6	8.5	7.2	8.0	7.3	8.0	6.5	8.9	7.1	8.0	7.8
18	10.1	9.6	7.4	6.7	8.0	7.3	8.3	6.7	9.7	7.5	8.0	7.8
19	10.1	9.2	7.5	6.7	7.9	7.3	8.7	6.7	9.1	7.8	7.9	7.6
20	10.2	9.3	7.7	7.1	7.6	7.1	9.3	7.0	10.5	7.1	7.7	7.2
21	10.1	9.3	7.3	7.0	8.9	6.8	10.0	7.2	11.2	8.0	---	---
22	9.5	8.9	7.0	6.7	7.7	6.2	9.0	7.5	10.7	7.8	8.2	7.6
23	9.7	9.1	7.1	6.7	7.8	7.5	8.2	7.1	10.5	7.4	8.6	8.1
24	10.7	9.7	7.2	6.7	8.0	7.9	9.3	7.7	11.3	7.4	8.6	8.4
25	11.1	10.2	7.5	6.9	8.2	7.9	9.3	7.3	9.4	7.3	8.5	8.1
26	11.0	10.2	7.8	7.2	8.3	8.0	9.3	7.2	10.3	7.0	8.5	8.2
27	10.9	10.0	7.9	7.5	8.2	7.8	9.2	7.1	10.5	7.5	8.3	8.0
28	10.8	9.5	7.9	7.6	8.0	7.9	8.9	7.1	7.7	6.4	8.2	7.8
29	11.0	8.9	7.7	7.1	8.1	7.9	8.3	6.5	6.8	6.3	8.0	7.1
30	10.2	8.6	7.5	7.0	8.0	7.7	8.9	6.4	7.0	5.8	8.0	7.7
31	---	---	7.8	7.1	---	---	10.6	7.3	7.0	6.6	---	---
MONTH	---	---	10.2	6.7	8.9	6.2	10.8	5.7	11.3	5.8	8.9	6.7
YEAR	15.0	5.7										

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## LITTLE MIAMI RIVER BASIN

03246400 EAST FORK LITTLE MIAMI RIVER NEAR WILLIAMSBURG, OHIO

LOCATION.--Lat 39°03'32", long 84°03'05", Clermont County, at downstream end of center pier of bridge on McKeevers Road near Williamsburg, 0.5 mi (0.8 km) upstream from sewage disposal plant, 1.0 mi (1.6 km) upstream from gaging station, and 2.1 mi (3.4 km) upstream from Todd Run.

DRAINAGE AREA.--234 mi<sup>2</sup> (606 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1966-70 (partial-record station), November 1970 to September 1974.

Water temperatures: December 1970 to September 1974.

Prior to October 1970, published as station 03246500 East Fork Little Miami River at Williamsburg, Ohio.

EXTREMES.--1973-74:

Specific conductance: Maximum, 573 micromhos Jan. 9; minimum, 100 micromhos Aug. 30.

Water temperatures: Maximum, 29.0°C Aug. 26; minimum, freezing point on several days during December and January.

EXTREMES.--Period of record:

Specific conductance (1970-74): Maximum, 901 micromhos May 14, 1971; minimum, 100 micromhos Aug. 30, 1974.

Water temperatures (1970-74): Maximum, 31.5°C July 22, 24, 1972; minimum, freezing point on many days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since December 1970. Interruptions in the record were due to malfunctions of the instrument.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	DIS- SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)
OCT.										
03...	1215	543	5.0	120	1100	27	150	25	6.0	3.0
NOV.										
12...	1650	52	5.8	210	230	47	47	67	8.9	8.4
DEC.										
26...	1615	1600	.5	100	4200	14	14	--	--	6.7
JAN.										
23...	1605	1630	5.9	0	5200	13	--	30	8.8	5.5
MAR.										
07...	1730	1270	5.3	30	2000	0	80	36	14	8.8
APR.										
16...	1530	101	2.8	20	1100	25	60	61	17	7.8
MAY										
23...	1300	92	7.4	10	1700	17	110	48	15	6.7
JULY										
03...	0850	50	8.4	10	890	17	50	65	21	8.3
AUG.										
14...	0815	13	1.0	10	710	50	130	47	17	9.1
SEP.										
19...	1500	50	7.2	120	750	20	80	--	--	6.1

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRATE (N) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)
OCT.									
03...	6.0	71	0	22	7.5	.4	3.2	--	128
NOV.									
12...	3.8	188	0	45	16	.2	2.0	--	260
DEC.									
26...	4.1	85	0	46	18	.2	--	2.3	209
JAN.									
23...	2.8	105	0	33	11	.2	--	1.2	157
MAR.									
07...	3.6	168	0	48	16	.2	--	1.7	255
APR.									
16...	1.9	221	0	44	13	.2	--	1.5	328
MAY									
23...	3.2	156	0	38	16	.4	--	3.0	282
JULY									
03...	2.7	240	0	44	17	.6	--	3.5	372
AUG.									
14...	2.8	209	0	35	14	.3	--	.15	--
SEP.									
19...	3.8	175	0	21	12	.1	--	2.7	240

## LITTLE MIAMI RIVER BASIN

165

03246400 EAST FORK LITTLE MIAMI RIVER NEAR WILLIAMSBURG, OHIO--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TOTAL RESI- DUE (MG/L)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	PH (UNITS)	COLOR (PLAT- INUM- COBALT UNITS)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)
OCT.									
03...	--	88	30	192	20.0	6.9	100	.55	.17
NOV.									
12...	--	200	50	410	--	7.7	15	.17	.55
DEC.									
26...	410	--	--	312	7.0	7.3	30	.14	--
JAN.									
23...	462	110	25	278	--	7.5	60	.09	--
MAR.									
07...	361	150	10	417	12.0	7.7	50	.09	--
APR.									
16...	377	220	41	462	14.0	8.0	7	.09	--
MAY									
23...	374	180	54	394	--	7.6	30	.11	--
JULY									
03...	378	250	52	522	23.5	8.0	10	.14	--
AUG.									
14...	--	190	19	445	22.5	7.8	--	.21	--
SEP.									
19...	256	170	28	390	21.5	7.8	20	.20	--

03246400 EAST FORK LITTLE MIAMI RIVER NEAR WILLIAMSBURG, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	435	112	479	401	---	---	355	304	---	---	469	304
2	195	115	461	400	---	---	401	317	---	---	422	296
3	223	181	456	429	---	---	444	403	---	---	355	315
4	245	223	438	432	---	---	463	430	---	---	---	---
5	278	245	439	435	---	---	480	461	---	---	---	---
6	312	245	465	435	320	287	524	480	---	---	424	405
7	311	286	461	450	301	282	532	524	---	---	406	218
8	306	289	450	441	339	301	558	532	---	---	337	248
9	329	306	442	431	380	339	573	511	---	---	420	343
10	344	329	431	422	405	380	521	314	---	---	425	399
11	356	344	422	417	425	405	324	254	---	---	411	204
12	371	356	419	417	446	425	263	240	---	---	331	203
13	384	366	417	413	453	446	298	211	---	---	328	300
14	397	384	419	407	449	403	339	299	---	---	345	317
15	409	397	418	310	416	384	337	244	470	451	372	336
16	417	408	407	305	384	356	226	168	507	472	287	206
17	423	416	430	359	360	337	281	207	512	506	271	233
18	436	423	466	430	380	311	311	283	514	509	326	273
19	449	436	464	462	394	380	312	248	511	475	380	328
20	460	449	482	456	415	201	279	261	469	432	406	381
21	467	453	459	454	259	203	---	---	452	444	407	313
22	474	453	455	445	253	208	---	---	442	314	371	329
23	480	455	454	445	321	238	---	---	351	328	343	322
24	485	456	460	392	377	321	---	---	387	313	354	322
25	492	470	---	---	396	354	---	---	---	---	381	353
26	496	477	---	---	385	248	---	---	---	---	396	381
27	499	491	---	---	262	228	---	---	---	---	406	392
28	501	494	---	---	303	239	---	---	427	357	412	403
29	503	484	---	---	329	249	---	---	---	---	414	342
30	502	482	---	---	292	252	---	---	---	---	327	232
31	507	478	---	---	304	261	---	---	---	---	266	232
MONTH	507	112	482	305	453	201	---	---	---	---	469	203

[illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.5	19.0	9.5	8.5	7.5	6.5	2.5	0.5	---	---	5.5	2.5
2	19.5	19.5	10.0	8.0	7.0	5.5	1.0	0.0	---	---	7.5	5.5
3	20.0	19.0	10.0	9.0	7.5	6.0	0.0	0.0	---	---	10.0	7.5
4	20.5	19.0	9.0	8.0	9.5	7.5	0.5	0.0	---	---	---	---
5	20.0	18.0	9.0	7.0	9.5	8.5	0.5	0.0	---	---	---	---
6	18.0	16.5	7.0	5.5	8.5	6.5	0.5	0.0	---	---	14.0	12.5
7	18.0	16.5	5.5	5.0	6.5	5.0	0.5	0.0	---	---	15.5	13.0
8	18.5	17.5	5.0	4.5	5.0	4.0	0.5	0.0	---	---	17.0	15.0
9	19.0	17.5	5.5	4.5	4.0	3.0	0.5	0.0	---	---	17.0	15.5
10	19.5	17.5	4.5	3.0	4.0	2.0	0.5	0.5	---	---	17.0	14.0
11	19.5	18.0	4.0	3.0	2.0	0.5	0.5	0.0	---	---	14.0	8.0
12	19.5	18.0	5.0	3.5	2.0	0.5	0.5	0.0	---	---	8.5	7.5
13	18.5	17.5	7.0	5.0	4.0	2.0	0.5	0.0	---	---	7.5	6.0
14	18.5	17.0	9.5	7.0	4.0	3.0	0.5	0.5	---	---	7.5	5.0
15	18.0	16.0	12.5	9.5	3.0	2.0	2.0	0.5	3.0	2.5	8.0	6.5
16	17.5	14.5	11.5	8.0	2.0	0.5	4.0	2.0	4.0	2.0	8.5	7.5
17	15.0	12.5	8.0	6.5	0.5	0.0	5.0	4.0	4.0	2.0	7.5	6.5
18	14.5	12.5	7.5	6.0	0.0	0.0	7.0	5.0	4.5	2.5	7.5	5.5
19	14.5	11.5	8.5	7.5	0.0	0.0	10.0	7.5	5.5	4.5	9.0	7.0
20	15.0	12.0	9.0	7.5	0.5	0.0	10.0	9.5	5.5	4.5	10.5	7.5
21	15.0	11.5	10.0	9.0	0.5	0.5	---	---	6.5	4.0	10.0	7.0
22	14.5	11.0	9.5	8.5	0.5	0.5	---	---	6.5	5.5	8.0	6.0
23	15.0	11.5	9.5	8.5	0.5	0.5	---	---	5.5	4.5	7.5	6.0
24	15.0	11.5	12.0	9.5	2.5	0.5	---	---	4.5	2.5	6.5	4.0
25	15.5	12.0	12.0	12.0	5.0	2.5	---	---	---	---	6.0	2.5
26	15.5	12.0	---	---	8.5	5.0	---	---	---	---	8.5	4.5
27	14.5	11.0	---	---	8.0	7.0	---	---	---	---	9.5	6.5
28	13.5	11.0	---	---	7.0	5.5	---	---	4.0	3.5	10.5	8.0
29	11.0	10.0	9.5	8.0	6.0	5.0	---	---	---	---	11.0	10.0
30	10.5	9.5	8.0	7.0	5.0	3.5	---	---	---	---	11.0	9.0
31	10.0	9.5	---	---	3.5	2.5	---	---	---	---	9.0	7.5
MONTH	23.5	9.5	12.5	3.0	9.5	0.0	---	---	---	---	17.0	2.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	7.5	21.0	19.0	19.5	18.5	24.0	21.0	28.0	22.5	23.0	21.0
2	13.5	11.5	20.0	17.0	20.0	17.0	25.0	23.0	28.5	23.5	22.0	21.0
3	15.0	13.0	17.0	15.0	21.0	17.0	26.5	24.0	26.5	23.5	20.5	17.5
4	16.0	13.5	17.5	14.0	21.5	18.5	27.5	25.0	27.0	23.0	17.5	16.0
5	15.0	11.5	16.5	14.5	22.0	20.5	26.0	25.0	26.5	22.0	18.0	16.0
6	12.5	10.0	17.5	15.0	23.5	21.0	26.0	24.5	27.0	21.5	19.0	16.5
7	11.5	10.0	16.5	14.0	24.0	22.5	27.0	21.5	26.0	22.5	19.5	17.5
8	11.0	7.5	16.0	14.5	23.5	22.5	26.0	22.0	25.5	22.5	20.0	18.5
9	8.0	6.0	15.0	14.0	24.0	22.0	28.0	25.0	26.0	23.0	20.5	19.5
10	10.5	7.0	15.5	13.5	24.0	23.0	28.0	25.5	24.5	23.5	20.5	20.0
11	13.5	9.5	18.0	15.0	23.0	21.5	28.0	25.0	24.5	23.5	22.5	20.5
12	14.0	11.5	19.5	17.5	22.5	20.5	27.5	24.0	26.5	23.5	23.5	22.0
13	17.0	13.0	19.0	16.5	22.5	20.0	27.5	23.5	27.5	24.0	23.0	20.0
14	19.0	15.5	21.0	17.5	23.0	20.0	27.0	24.0	28.0	24.0	20.0	18.5
15	17.0	13.0	22.0	20.0	23.5	21.5	27.0	25.0	28.0	24.0	19.5	18.0
16	14.5	11.5	23.0	20.0	23.0	20.5	28.0	24.0	28.5	24.5	18.5	17.5
17	15.5	12.5	25.0	23.0	21.0	19.0	28.0	24.0	28.0	24.5	19.5	17.5
18	16.5	13.5	24.0	20.0	21.0	18.0	28.0	24.0	26.0	24.5	19.5	18.0
19	17.5	15.5	20.0	19.5	21.5	19.5	27.0	24.0	26.0	24.0	20.5	18.5
20	17.5	14.5	21.5	18.5	25.0	21.0	24.5	21.0	26.5	24.0	21.5	20.0
21	18.5	16.5	23.5	20.0	26.0	23.5	25.5	23.0	27.0	23.5	20.5	19.0
22	18.5	16.5	23.0	21.5	25.0	21.0	24.5	23.0	27.0	23.5	19.0	16.5
23	16.5	13.5	23.5	21.0	21.0	17.5	25.0	23.5	27.5	23.5	16.0	14.5
24	15.5	12.0	23.0	21.5	18.0	16.5	26.0	23.5	28.0	24.0	15.0	13.5
25	15.0	12.5	21.5	20.0	18.5	16.5	26.0	23.0	28.0	24.0	16.5	14.5
26	17.5	13.5	19.5	18.0	18.0	16.5	27.5	23.5	29.0	24.0	17.5	15.5
27	19.0	16.0	19.5	17.5	18.5	16.0	28.0	24.0	27.5	24.0	16.5	16.0
28	21.0	18.5	18.5	17.5	18.0	17.0	28.0	25.0	25.0	22.5	18.5	16.0
29	22.5	20.0	19.0	18.0	20.0	17.0	28.0	24.5	22.5	22.0	18.0	16.0
30	22.0	21.0	20.5	18.0	22.0	19.0	28.0	23.5	22.5	21.5	17.0	14.5
31	---	---	20.5	18.5	---	---	28.0	22.5	23.0	22.0	---	---
MONTH	22.5	6.0	25.0	13.5	26.0	16.0	28.0	21.0	29.0	21.5	23.5	13.5
YEAR	29.0	0.0										

## 03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO

LOCATION.--Lat 40°17'13", long 84°09'00", Shelby County, at gaging station on right bank 50 ft (15 m) upstream from North Street Bridge in Sidney, and 0.5 mi (0.8 km) downstream from Tawawa Creek. Sampling site at North Street Bridge.

DRAINAGE AREA.--541 mi<sup>2</sup> (1,401 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1967 to November 1973 (discontinued).

Water temperatures: October 1967 to September 1971, October 1972 to September 1974.

Sediment records: October 1967 to September 1974.

EXTREMES.--1973-74:

Sediment concentrations: Maximum daily, 566 mg/l Apr. 4; minimum, 7 mg/l Jan. 11.

Sediment discharges: Maximum daily, 7,920 tons (7,180 tonnes) Jan. 19; minimum daily, 3.3 tons (3.0 tonnes) Nov. 10.

EXTREMES.--Period of record:

Sediment concentrations: Maximum daily, 1,710 mg/l July 3, 1973; minimum daily, 0 mg/l Mar. 23-25, 1970.

Sediment discharges: Maximum daily, 13,400 tons (12,200 tonnes) July 4, 1973; minimum daily, 0 ton (0.00 tonne) Mar. 23-25, 1970.

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples were collected weekly October, July to September and monthly November to June. Flow affected by ice Dec. 19-24, Jan. 2-15, Feb. 9-13. Some regulation by Indian Lake, capacity, 45,900 acre-ft (56.6 hm<sup>3</sup>), 28 mi (45 km) upstream.

## CHEMICAL ANALYSES, OCTOBER TO NOVEMBER 1973

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	BICAR- BONATE (MC03) (MG/L)	CAR- BONATE (C03) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SULFATE (S04) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	PH  (UNITS)	CARBON DIOXIDE (C02) (MG/L)
OCT.												
04...	1010	204	18.5	310	0	24	54	--	590	396	7.5	16
10...	0800	116	17.0	366	0	26	89	.5	690	434	7.8	9.3
17...	0835	130	11.0	374	0	22	100	--	710	434	7.6	15
24...	0840	94	10.5	382	0	28	62	--	740	438	7.7	12
31...	0815	184	10.0	340	0	24	80	--	725	472	7.7	11
NOV.												
14...	0815	102	9.0	392	0	24	73	--	730	468	8.1	5.0

DATE	ALKALINITY AS CaCO <sub>3</sub> (MG/L)	TURBIDITY (JTU)	ODOR (THRESHOLD NUMBER)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL AMMONIA (NH <sub>4</sub> ) (MG/L)	TOTAL NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRITE (NO <sub>2</sub> ) (MG/L)	TOTAL PHOSPHORUS (PO <sub>4</sub> ) (MG/L)	HARDNESS (CA, MG) (MG/L)
OCT.												
04...	254	50	32	.36	.04	.80	.21	.46	3.4	.13	.65	320
10...	300	20	8	.14	.02	1.0	.14	.18	4.3	.08	.45	380
17...	307	15	16	.26	.01	.80	.12	.34	3.5	.05	.38	410
24...	313	10	4	.12	.01	.50	.17	.15	2.2	.02	.52	410
31...	279	10	8	.03	.01	1.2	.19	.04	5.4	.02	.58	410
NOV.												
14...	322	10	8	.06	.02	1.2	.12	.08	5.1	.05	.36	400

[illegible]

## GREAT MIAMI RIVER BASIN

169

03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974  
(ONCE-DAILY MEASUREMENT BETWEEN 1300 AND 1800)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	10.5	---	---	5.0	5.0	9.0	17.0	---	22.0	25.5	---
2	21.0	10.0	7.0	---	5.0	---	11.0	16.0	---	---	26.0	---
3	20.5	10.5	---	0.0	---	---	---	16.0	23.0	27.0	25.0	17.0
4	---	---	---	0.0	2.0	12.0	14.0	---	23.0	27.0	24.0	16.0
5	20.0	---	---	---	---	11.0	10.0	---	24.0	27.0	25.0	16.0
6	16.0	---	5.0	---	6.0	---	---	15.0	---	26.0	---	17.0
7	18.0	5.0	5.0	2.0	2.0	12.0	---	14.0	---	---	26.0	---
8	---	6.0	4.0	---	2.0	14.0	---	---	---	---	---	---
9	19.0	4.0	---	---	1.0	---	6.0	11.0	---	---	26.0	20.0
10	19.5	---	2.0	---	---	---	8.0	---	25.0	---	25.0	20.0
11	19.0	4.5	1.5	0.0	0.0	8.0	10.0	18.0	---	26.0	---	---
12	20.0	5.0	3.0	---	2.0	---	---	---	---	---	27.0	21.0
13	18.0	9.0	3.0	---	4.0	5.0	15.0	---	---	26.0	27.0	---
14	17.0	10.5	---	1.0	2.0	5.0	14.0	17.5	---	---	---	20.0
15	18.0	13.0	3.0	1.0	3.0	5.0	11.0	19.0	---	---	24.5	---
16	---	9.0	---	1.0	2.5	---	13.0	18.0	---	27.0	25.0	18.0
17	---	---	1.0	---	---	---	---	---	---	---	25.0	18.0
18	14.0	---	---	4.0	3.0	6.0	14.0	19.0	---	---	---	---
19	14.0	10.0	1.0	---	4.0	7.0	16.0	20.0	20.0	---	25.0	---
20	15.0	9.5	---	---	5.0	8.0	15.0	21.0	---	28.0	26.0	---
21	13.5	10.0	---	6.0	5.0	---	---	22.0	---	---	26.0	19.5
22	14.0	10.0	---	6.0	6.0	5.0	15.0	21.5	---	25.0	25.0	---
23	15.0	9.5	3.0	5.0	4.0	---	---	21.0	---	---	---	15.5
24	15.0	---	---	---	---	---	11.0	20.0	18.0	25.0	---	15.0
25	---	12.0	3.0	3.0	---	2.0	13.0	---	19.0	25.0	---	15.0
26	16.0	9.0	6.0	5.5	1.0	---	---	---	---	---	26.0	---
27	14.0	11.0	---	---	4.0	8.0	---	---	---	26.0	---	---
28	13.0	11.0	---	6.0	5.0	10.0	---	---	21.0	---	---	---
29	12.0	---	5.0	5.0	---	9.0	20.0	17.0	21.0	26.0	20.0	---
30	11.0	8.0	---	5.0	---	8.0	---	---	---	26.0	---	---
31	---	---	1.0	---	---	---	---	20.0	---	25.0	---	---
MONTH	---	---	---	---	3.5	---	---	---	---	---	---	---
YEAR	MAX	28.0	MIN	0.0	MEAN	13.0						

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
						.002	.004	.008	.016	.031	.062	.125	.250	.500	
Jan.															
21...	1200	6.0	5380	188	2730	85	88	92	94	96	97	97	100	--	
Mar.															
05...	1820	12.0	1090	160	471	75	83	89	93	96	98	98	98	100	
Apr.															
04...	1515	14.0	2850	634	4880	81	89	93	95	97	98	98	99	100	

## GREAT MIAMI RIVER BASIN

03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	109	73	21	279	47	35	1030	41	114
2	169	80	37	260	42	29	755	20	41
3	159	55	24	199	36	19	643	16	28
4	165	72	32	170	29	13	601	18	29
5	219	58	34	147	23	9.1	728	23	45
6	196	54	29	143	20	7.7	652	33	58
7	150	56	23	140	16	6.0	528	18	26
8	130	59	21	118	18	5.7	479	12	16
9	121	58	19	109	15	4.4	463	24	30
10	114	64	20	111	11	3.3	450	30	36
11	108	68	20	113	14	4.3	416	25	28
12	103	65	18	102	23	6.3	399	17	18
13	110	72	21	101	14	3.8	457	20	25
14	183	89	44	101	34	9.3	663	26	47
15	162	68	30	113	47	14	569	22	34
16	134	47	17	220	35	21	477	11	14
17	133	45	16	211	18	10	408	15	17
18	122	75	25	163	11	4.8	324	24	21
19	109	59	17	142	20	7.7	230	17	11
20	107	49	14	145	20	7.8	220	12	7.1
21	100	61	16	153	39	16	210	19	11
22	100	69	19	182	25	12	210	22	12
23	95	62	16	301	47	38	210	24	14
24	94	50	13	334	88	79	230	18	11
25	92	37	9.2	1230	209	790	1230	123	743
26	89	42	10	1860	233	1170	3180	234	2010
27	92	42	10	1670	123	555	3190	142	1220
28	94	29	7.4	1950	121	637	2400	90	583
29	102	22	6.1	2260	147	897	1850	62	310
30	135	27	9.8	1600	82	354	1550	49	205
31	185	43	21	--	--	--	1100	38	113
TOTAL	3981	--	619.5	14627	--	4769.2	25852	--	5877.1

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	824	24	53	943	48	122	1220	50	165
2	600	28	45	853	38	88	896	50	121
3	540	23	34	825	28	62	671	34	62
4	480	16	21	663	25	45	563	27	41
5	400	14	15	574	23	36	874	127	336
6	430	9	10	567	18	28	1030	315	876
7	360	12	12	910	20	49	673	90	164
8	320	23	20	785	19	40	637	51	88
9	290	13	10	600	12	19	562	39	59
10	260	11	7.7	520	8	11	581	34	53
11	240	7	4.5	480	8	10	586	49	78
12	230	13	8.1	460	15	19	500	37	50
13	230	18	11	660	15	27	645	28	49
14	250	9	6.1	918	24	59	455	13	16
15	270	15	11	738	22	44	363	17	17
16	817	70	208	522	10	14	554	39	64
17	1960	148	783	407	17	19	767	78	162
18	2580	213	1920	361	13	13	621	40	67
19	6060	484	7920	585	108	225	462	24	30
20	5690	234	3590	1360	229	841	466	17	21
21	5240	187	2650	1090	70	206	414	15	17
22	4400	137	1630	1760	148	703	469	14	18
23	3770	112	1140	1810	193	943	407	14	15
24	3210	102	884	1190	83	267	496	12	16
25	2430	142	932	831	35	79	398	16	17
26	1900	88	451	677	71	130	356	17	16
27	2100	148	839	623	41	69	520	13	18
28	1890	165	842	856	21	49	467	15	19
29	1880	107	543	--	--	--	1390	294	1370
30	1520	89	365	--	--	--	2610	378	2660
31	1160	68	213	--	--	--	2210	178	1060
TOTAL	52331	--	25178.4	22568	--	4217	22863	--	7745

## GREAT MIAMI RIVER BASIN

171

03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1680	113	513	267	23	17	195	72	38
2	1830	182	899	256	43	30	191	72	37
3	1510	176	718	233	52	33	166	83	37
4	2540	566	3960	264	57	41	147	105	42
5	2440	516	3400	219	52	31	136	105	39
6	2070	307	1720	203	70	38	131	103	36
7	1650	119	530	254	66	45	127	70	24
8	1250	87	294	206	74	41	121	99	32
9	1230	83	276	243	65	43	116	121	38
10	1360	99	364	241	54	35	110	103	31
11	1140	69	212	230	49	30	101	88	24
12	858	48	111	488	90	129	103	97	27
13	651	39	69	637	91	157	101	103	28
14	586	51	81	379	35	36	94	102	26
15	553	59	88	288	33	26	107	101	29
16	470	44	56	294	31	25	116	69	22
17	397	40	43	264	39	28	103	80	22
18	362	48	47	621	144	241	97	79	21
19	345	37	34	401	52	56	90	98	24
20	342	28	26	317	78	67	98	87	23
21	283	29	22	245	41	27	109	85	25
22	285	65	50	218	39	23	199	104	69
23	329	68	60	500	63	85	929	128	321
24	357	62	60	651	104	183	586	67	106
25	325	58	51	431	82	95	320	53	46
26	237	45	29	314	55	47	252	55	37
27	224	38	23	251	58	39	193	62	32
28	217	27	16	216	59	34	159	83	36
29	218	23	14	206	59	33	144	69	27
30	234	25	16	263	104	74	132	50	18
31	--	--	--	223	72	43	--	--	--
TOTAL	25973	--	13782	9823	--	1832	5473	--	1317

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	134	57	21	44	87	10	499	87	117
2	117	78	25	45	97	12	400	72	78
3	105	83	24	62	92	15	532	89	139
4	101	91	25	73	79	16	759	142	291
5	106	80	23	67	69	12	416	82	92
6	99	72	19	57	57	8.8	236	98	62
7	92	81	20	53	51	7.3	168	60	27
8	85	68	16	54	41	6.0	133	48	17
9	80	58	13	84	54	12	112	54	16
10	77	53	11	102	84	23	101	58	16
11	75	49	9.9	93	53	13	100	57	15
12	72	91	18	80	45	9.7	426	127	184
13	70	57	11	86	42	9.8	895	153	370
14	65	29	5.1	182	68	37	610	106	175
15	63	68	12	303	76	62	341	88	81
16	61	84	14	197	84	45	220	78	46
17	59	84	13	139	101	38	166	68	30
18	57	58	8.9	134	72	26	137	62	23
19	55	59	8.8	135	58	21	117	58	18
20	55	53	7.9	102	54	15	105	62	18
21	53	43	6.2	81	41	9.0	98	52	14
22	51	67	9.2	69	34	6.3	96	50	13
23	52	72	10	60	36	5.8	93	56	14
24	55	78	12	58	39	6.1	87	58	14
25	54	96	14	56	49	7.4	79	52	11
26	52	67	9.4	51	50	6.9	76	45	9.2
27	50	90	12	52	44	6.2	79	41	8.7
28	50	52	7.0	100	46	14	86	37	8.6
29	48	75	9.7	1060	243	759	103	37	10
30	45	123	15	1390	219	822	117	42	13
31	45	115	14	803	113	245	--	--	--
TOTAL	2183	--	424.1	5872	--	2286.3	7387	--	1930.5

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)

198933  
69978.1



## GREAT MIAMI RIVER BASIN

03261950 LORAMIE CREEK NEAR NEWPORT, OHIO

LOCATION.--Lat 40°18'25", long 84°23'02", in SE 1/4 sec.24, T.11 N., R.4 E., Shelby County, at gaging station on right bank at downstream side of bridge on Cardo Roman Road, 1.1 mi (1.8 km) northwest of Newport, 3 mi (5 km) south of Fort Loramie, and 3 mi (5 km) downstream from Hile Creek.

DRAINAGE AREA.--152 mi<sup>2</sup> (394 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1966-67, 1969-73 (partial-record station).

Water temperatures: Water years 1968-70, 1973-74.

Sediment records: October 1967 to September 1974.

EXTREMES.--1973-74:

Sediment concentrations: Maximum daily, 1,350 mg/l Apr. 4; minimum daily, 8 mg/l Nov. 8-13.

Sediment discharges: Maximum daily, 5,440 tons (4,930 tonnes) Apr. 4; minimum daily, 0.03 ton (0.027 tonne) Nov. 6.

EXTREMES.--Period of record:

Sediment concentrations: Maximum daily, 1,350 mg/l Apr. 4, 1974; minimum daily, 3 mg/l Jan. 12, 1971.

Sediment discharges: Maximum daily, 5,440 tons (4,930 tonnes) Apr. 4, 1974; minimum daily, 0.02 ton (0.018 tonne) Feb. 1-3, 1971.

REMARKS.--Flow affected by ice Dec. 15-23, Jan. 1, 5-13, Feb. 8-12, 25-28. Some regulation by Lake Loramie 5 mi (8 km) upstream, capacity 13,000 acre-ft (16.0 hm<sup>3</sup>).

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974  
(ONCE-DAILY MEASUREMENT BETWEEN 0800 AND 1000)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	6.0	0.0	4.0	4.0	8.0	---	---	20.0	---	20.0
2	20.0	---	5.0	0.0	4.0	9.0	8.0	---	---	21.0	---	21.0
3	---	---	6.0	---	3.0	9.0	11.0	16.0	---	24.0	21.0	18.0
4	---	---	8.0	0.5	1.0	11.0	13.0	---	---	25.0	---	16.0
5	17.0	---	8.0	---	0.0	9.0	9.0	---	---	24.0	---	16.0
6	---	4.0	5.0	---	0.0	8.0	7.0	---	---	22.0	---	19.0
7	---	---	4.0	---	0.0	12.0	9.0	---	22.0	---	---	18.0
8	---	---	3.0	---	1.0	12.0	8.0	---	---	---	---	19.0
9	17.0	3.0	---	2.0	0.0	14.0	4.0	---	---	---	---	19.0
10	---	4.0	---	---	0.0	10.0	6.0	11.0	---	---	23.0	20.0
11	---	0.0	---	---	0.0	9.0	12.0	---	---	---	---	21.0
12	---	2.0	---	---	1.0	8.0	11.0	---	---	---	---	22.0
13	---	4.0	---	---	6.0	---	13.0	---	---	20.0	23.0	22.0
14	---	3.0	---	---	4.0	---	15.0	14.0	23.0	---	---	18.0
15	---	2.0	---	---	4.0	---	10.0	---	---	---	---	17.0
16	14.0	---	---	4.0	3.0	---	8.0	---	---	---	---	17.0
17	---	---	---	4.0	3.0	---	9.0	22.0	---	---	24.0	17.0
18	---	---	---	4.0	3.0	---	9.0	---	---	---	23.0	19.0
19	---	---	---	4.0	5.0	7.0	11.0	---	---	---	22.0	18.0
20	---	8.0	---	6.0	3.0	---	---	---	---	---	24.0	20.0
21	---	---	---	5.0	4.0	---	---	---	22.0	---	24.0	21.0
22	---	---	2.0	5.0	6.0	---	---	---	---	---	23.0	---
23	8.0	---	---	5.0	2.0	---	---	---	17.0	23.0	23.0	---
24	---	---	---	4.0	3.0	---	---	20.0	16.0	---	21.0	---
25	---	10.0	---	4.0	1.0	---	---	---	17.0	---	---	---
26	---	8.0	5.0	5.0	1.0	5.0	15.0	---	19.0	---	---	---
27	---	14.0	4.0	7.0	3.0	---	---	---	19.0	23.0	---	---
28	---	12.0	2.0	5.0	4.0	---	---	---	19.0	---	23.0	---
29	---	7.0	4.0	4.0	---	8.0	---	---	19.0	---	22.0	---
30	10.0	7.0	1.0	4.0	---	8.0	---	---	21.0	---	22.0	---
31	---	---	0.0	6.0	---	6.0	---	19.0	---	---	22.0	---
MONTH	---	---	---	---	2.5	---	---	---	---	---	---	---
YEAR	MAX	25.0	MIN	0.0	MEAN	11.0						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	PARTICLE SIZE								
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED								
						.002	.004	.008	.016	.031	.062	.125	.250	.500
Dec. 25...	1730	8.0	849	313	717	63	64	78	89	94	98	100	--	--
Jan. 19...	1715	4.0	2620	187	1320	75	82	87	87	88	90	90	100	--
Mar. 05...	1645	12.0	572	459	709	82	86	92	95	98	99	99	100	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.00 MM
June 07...	1	12	27	58	71	81	95	98	100	--	--	--
07...	1	14	18	31	69	86	97	99	100	--	--	--
07...	1	2	4	7	10	13	16	19	22	28	48	100

## GREAT MIAMI RIVER BASIN

173

03261950 LORAMIE CREEK NEAR NEWPORT, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2.7	13	.09	18	18	.87	184	33	16
2	2.3	14	.09	13	18	.63	105	22	6.2
3	2.5	13	.09	5.7	16	.25	72	17	3.3
4	3.9	28	.29	2.7	13	.09	70	28	5.3
5	5.4	48	.70	1.8	11	.05	81	49	11
6	2.9	49	.38	1.2	9	.03	63	29	4.9
7	1.8	48	.23	3.0	9	.07	54	18	2.6
8	1.3	49	.17	2.5	8	.05	41	18	2.0
9	1.2	52	.17	3.2	8	.07	35	13	1.2
10	.99	54	.14	4.1	8	.09	27	10	.73
11	1.2	54	.17	4.8	8	.10	22	12	.71
12	.99	53	.14	4.5	8	.10	22	12	.71
13	1.5	49	.20	7.5	8	.16	32	18	1.6
14	4.3	44	.51	8.3	14	.31	56	20	3.0
15	2.1	38	.22	5.5	18	.27	48	17	2.2
16	1.6	34	.15	9.8	19	.50	33	15	1.3
17	1.1	32	.10	6.3	19	.32	28	14	1.1
18	1.2	28	.09	3.9	17	.18	24	13	.84
19	1.7	25	.11	2.9	15	.12	22	13	.77
20	1.9	23	.12	2.2	12	.07	23	12	.75
21	1.9	22	.11	2.2	13	.08	27	12	.87
22	1.9	21	.11	2.9	14	.11	21	11	.62
23	2.1	20	.11	2.5	13	.09	19	10	.51
24	2.2	23	.14	6.4	20	.35	20	10	.54
25	2.2	23	.14	189	211	133	480	154	322
26	2.7	23	.17	348	124	117	1610	130	565
27	3.6	23	.22	310	78	65	1960	120	635
28	4.8	22	.29	346	96	101	1520	72	295
29	8.1	21	.46	636	106	182	771	78	162
30	12	20	.65	360	45	44	403	69	75
31	9.1	19	.47	--	--	--	247	55	37
TOTAL	93.18	--	7.03	2313.9	--	646.96	8120	--	2159.75

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	150	48	19	234	150	95	325	98	86
2	178	66	32	222	152	91	233	85	53
3	181	50	24	200	146	79	176	93	44
4	167	55	25	146	117	50	151	113	46
5	110	52	15	29	30	2.3	413	331	417
6	58	52	8.1	33	18	1.6	387	174	182
7	35	39	3.7	93	38	9.5	231	124	77
8	20	12	.65	57	26	4.0	171	107	49
9	18	9	.44	35	12	1.1	129	92	32
10	16	10	.43	21	10	.57	111	91	27
11	14	10	.38	16	12	.52	92	68	17
12	12	10	.32	24	11	.71	92	46	11
13	11	10	.30	143	76	43	79	40	8.5
14	14	10	.38	432	92	107	66	35	6.2
15	27	12	.87	315	48	41	25	18	1.2
16	239	100	102	66	18	3.2	87	45	11
17	827	151	337	44	12	1.4	118	54	17
18	1060	109	312	37	17	1.7	97	48	13
19	2360	219	1400	191	184	176	92	48	12
20	2590	189	1320	516	178	248	73	46	9.1
21	1910	171	882	356	72	69	70	42	7.9
22	1230	148	492	834	364	847	64	35	6.0
23	1000	142	383	931	154	387	76	28	5.7
24	904	132	322	412	95	106	70	24	4.5
25	482	118	154	190	95	49	58	21	3.3
26	305	117	96	130	85	30	59	20	3.2
27	929	746	1790	100	66	18	106	42	12
28	880	212	504	210	93	53	98	39	10
29	638	153	264	--	--	--	807	601	1470
30	419	144	163	--	--	--	1340	158	572
31	295	154	123	--	--	--	840	88	200
TOTAL	17079	--	8774.57	6017	--	2515.60	6736	--	3413.6



LOCATION.--Lat 39°52'00", long 84°10'02", Montgomery County, at Interstate Highway 70 Bridge, 0.2 mi (0.3 km) north of Taylorsville, 0.5 mi (0.8 km) downstream from gaging station, and 0.7 mi (1.1 km) downstream from Taylorsville Dam.

PERIOD OF RECORD.--Chemical analyses: November 1961 to July 1963, July 1966 to November 1973 (discontinued).

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples were collected weekly October, July to September, and monthly November to June. Records of discharge are given for Great Miami River at Taylorsville, Ohio (station 03263000).

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	TEMPERATURE (DEG C)	BICARBONATE (HC03) (MG/L)	CARBONATE (C03) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SULFATE (S04) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	PH (UNITS)	CARBON DIOXIDE (C02) (MG/L)
OCT.												
04...	0825	334	20.0	330	0	28	64	--	690	420	7.8	8.4
10...	0850	250	18.0	340	0	30	64	.4	720	450	7.7	11
17...	0935	264	17.5	340	0	28	66	--	710	418	7.5	17
24...	1005	207	12.0	356	0	32	71	--	790	456	7.7	11
31...	0950	270	10.0	350	0	34	67	--	750	454	7.6	14
NOV.												
14...	1000	213	10.0	360	0	36	74	--	753	474	7.8	9.1

	ALKALINITY AS CACO3 (MG/L)	TURBIDITY (JTU)	ODOR (THRESHOLD NUMBER)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL AMMONIA (NH4) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL NITRITE (NO2) (MG/L)	TOTAL PHOSPHORUS (PO4) (MG/L)	HARDNESS (CA+MG) (MG/L)
OCT.												
04...	271	15	4	.28	.03	1.8	.52	.36	8.1	.12	1.6	350
10...	279	15	8	.38	.04	2.0	.60	.49	8.6	.14	1.8	360
17...	274	10	4	.76	.05	2.6	.66	.98	12	.19	2.0	370
24...	292	10	8	.72	.12	2.3	.75	.92	10	.40	2.3	380
31...	287	10	8	.53	.08	2.2	.76	.69	9.7	.26	2.3	370
NOV.												
14...	295	5	4	.23	.15	2.8	.72	.29	12	.49	2.2	380

[illegible]

## GREAT MIAMI RIVER BASIN

## 03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO

LOCATION.--Lat 40°03'28", long 84°21'22", in SW 1/4 sec.18, T.7 N., R.5 E., Miami County, at gaging station on left bank at downstream side of bridge on Laurer Road, 0.8 mi (1.3 km) northwest of Pleasant Hill, 2 mi (3 km) downstream from Painter Creek, and 2 mi (3 km) upstream from Canyon Run.

DRAINAGE AREA.--503 mi<sup>2</sup> (1,303 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1965-68, 1970-73 (partial-record station).

Water temperatures: October 1964 to September 1966.

Sediment records: October 1963 to September 1974.

## EXTREMES.--1973-74:

Sediment concentrations: Maximum daily, 1,710 mg/l Apr. 4; minimum daily, 3 mg/l Dec. 11.

Sediment discharges: Maximum daily, 21,300 tons (19,300 tonnes) Apr. 4; minimum daily, 0.65 ton (0.59 tonne) Sept. 26.

## EXTREMES.--Period of record:

Sediment concentrations: Maximum daily, 1,970 mg/l June 26, 1971; minimum daily, 1 mg/l on several days during January 1966.

Sediment discharges: Maximum daily, 21,400 tons (19,400 tonnes) Apr. 21, 1964; minimum daily, 0.07 ton (0.064 tonne) Aug. 21, 1965.

REMARKS.--Flow affected by ice Dec. 9-13, 16-20, Jan. 2-15.

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	60	15	2.4	95	8	2.1	383	28	29
2	68	15	2.8	118	8	2.5	301	24	20
3	64	15	2.6	95	8	2.1	264	19	14
4	68	15	2.8	79	7	1.5	248	15	10
5	93	15	3.8	70	7	1.3	273	10	7.4
6	102	15	4.1	64	7	1.2	236	9	5.7
7	81	15	3.3	69	7	1.3	189	7	3.6
8	70	15	2.8	65	7	1.2	168	5	2.3
9	65	15	2.6	62	6	1.0	160	5	2.2
10	62	15	2.5	58	6	.94	150	4	1.6
11	64	15	2.6	60	6	.97	140	3	1.1
12	60	15	2.4	57	6	.92	130	4	1.4
13	65	15	2.6	55	6	.89	150	4	1.6
14	86	10	2.3	55	6	.89	188	5	2.5
15	79	10	2.1	66	7	1.2	180	5	2.4
16	70	10	1.9	80	8	1.7	140	5	1.9
17	68	10	1.8	87	8	1.9	120	5	1.6
18	65	10	1.8	78	9	1.9	110	5	1.5
19	59	10	1.6	72	10	1.9	120	5	1.6
20	57	10	1.5	66	10	1.8	130	5	1.8
21	55	10	1.5	64	10	1.7	130	5	1.8
22	53	10	1.4	66	10	1.8	127	5	1.7
23	53	10	1.4	64	10	1.7	131	5	1.8
24	55	10	1.5	68	10	1.8	133	5	1.8
25	59	10	1.6	592	172	500	1340	609	3820
26	61	9	1.5	1110	221	662	4800	528	6840
27	56	9	1.4	1200	160	518	4940	240	3200
28	60	9	1.5	1130	88	268	2640	115	820
29	63	9	1.5	1130	34	104	1430	59	228
30	73	9	1.8	597	31	50	1170	43	136
31	90	8	1.9	--	--	--	794	40	86
TOTAL	2084	--	67.3	7472	--	2138.21	21415	--	15250.3



## GREAT MIAMI RIVER BASIN

177

03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	577	37	58	689	43	80	1060	26	74
2	430	33	38	598	33	53	759	25	51
3	360	31	30	505	30	41	633	25	43
4	310	29	24	421	28	32	584	25	39
5	260	28	20	366	28	28	1260	168	782
6	210	25	14	376	28	28	1370	301	1170
7	170	25	11	661	27	48	808	116	253
8	160	25	11	591	27	43	822	95	211
9	160	25	11	450	26	32	668	76	137
10	170	25	11	320	25	22	518	52	73
11	180	25	12	250	25	17	427	35	40
12	160	25	11	260	25	18	404	27	29
13	150	25	10	360	35	34	345	24	22
14	170	25	11	829	64	143	300	23	19
15	230	25	16	551	38	57	296	21	17
16	864	65	218	421	20	23	387	20	21
17	3550	301	2840	376	20	20	433	20	23
18	3700	154	1630	334	20	18	355	20	19
19	6870	424	7860	766	81	291	329	20	18
20	5690	203	3120	1710	258	1190	296	19	15
21	3900	148	1560	913	76	187	291	18	14
22	2470	118	787	2750	472	4240	286	17	13
23	2050	91	504	2330	341	2480	269	16	12
24	1770	78	373	1030	90	250	265	15	11
25	1120	48	145	703	48	91	233	15	9.4
26	934	34	86	531	32	46	244	15	9.9
27	3160	754	7120	468	28	35	320	15	13
28	2450	410	2710	745	27	54	339	15	14
29	1900	222	1140	--	--	--	1930	615	4470
30	1240	98	328	--	--	--	2800	409	3090
31	913	65	160	--	--	--	1890	158	806
TOTAL	46278	--	30869	20304	--	9601	20921	--	11518.3
DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1200	72	233	226	20	12	142	14	5.4
2	1040	74	208	214	20	12	125	15	5.1
3	878	62	147	218	20	12	113	16	4.9
4	4040	1710	21300	207	20	11	107	17	4.9
5	3870	935	11200	191	20	10	109	18	5.3
6	1500	282	1140	185	20	10	115	20	6.2
7	1010	151	412	175	20	9.5	111	20	6.0
8	871	83	195	178	18	8.7	107	20	5.8
9	1310	71	278	207	17	9.5	107	20	5.8
10	2490	204	1370	188	17	8.6	104	20	5.6
11	2090	103	581	178	15	7.2	96	20	5.2
12	1300	74	260	291	15	12	91	20	4.9
13	906	48	117	278	14	11	87	20	4.7
14	717	35	68	214	14	8.1	81	20	4.4
15	577	31	48	197	13	6.9	85	20	4.6
16	475	28	36	185	13	6.5	91	20	4.9
17	416	25	28	181	13	6.4	85	20	4.6
18	371	23	23	291	12	9.4	78	20	4.2
19	334	22	20	269	12	8.7	75	20	4.1
20	310	21	18	197	11	5.9	76	20	4.1
21	296	20	16	169	10	4.6	98	20	5.3
22	315	20	17	161	10	4.3	376	87	164
23	355	20	19	164	10	4.4	1320	379	1350
24	291	20	16	164	10	4.4	773	174	363
25	252	20	14	147	10	4.0	361	114	111
26	240	20	13	135	10	3.6	310	131	110
27	233	20	13	127	10	3.4	226	64	39
28	229	20	12	125	10	3.4	175	30	14
29	222	20	12	135	10	3.6	155	24	10
30	222	20	12	178	12	5.8	140	23	8.7
31	--	--	--	169	13	5.9	--	--	--
TOTAL	28360	--	37826	5944	--	232.8	5919	--	2275.7

## GREAT MIAMI RIVER BASIN

03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	167	23	10	37	34	3.4	66	20	3.6
2	201	23	12	37	33	3.3	68	20	3.7
3	137	23	8.5	52	32	4.5	98	20	5.3
4	109	22	6.5	61	31	5.1	165	35	16
5	150	22	8.9	52	31	4.4	105	35	9.9
6	169	21	9.6	44	31	3.7	68	30	5.5
7	115	20	6.2	40	31	3.3	53	30	4.3
8	98	20	5.3	39	30	3.2	48	25	3.2
9	91	20	4.9	37	30	3.0	45	25	3.0
10	83	20	4.5	38	30	3.1	44	25	3.0
11	188	78	51	51	30	4.1	43	20	2.3
12	161	74	32	48	30	3.9	51	20	2.8
13	100	56	15	41	29	3.2	59	20	3.2
14	85	58	13	87	43	10	56	20	3.0
15	85	56	13	134	45	16	49	20	2.6
16	75	53	11	71	40	7.7	43	20	2.3
17	65	49	8.6	64	35	6.0	41	15	1.7
18	60	46	7.5	65	30	5.3	40	15	1.6
19	53	43	6.2	52	30	4.2	36	15	1.5
20	51	41	5.6	51	25	3.4	37	15	1.5
21	50	41	5.5	45	25	3.0	35	15	1.4
22	47	40	5.1	39	25	2.6	35	15	1.4
23	47	40	5.1	37	25	2.5	34	10	.92
24	48	40	5.2	36	20	1.9	37	10	1.0
25	47	39	4.9	34	20	1.8	36	10	.97
26	48	39	5.1	32	20	1.7	24	10	.65
27	45	38	4.6	32	20	1.7	32	10	.86
28	41	38	4.2	36	20	1.9	38	10	1.0
29	38	37	3.8	54	20	2.9	53	10	1.4
30	38	35	3.6	97	20	5.2	59	10	1.6
31	37	34	3.4	85	20	4.6	--	--	--
TOTAL	2729	--	289.8	1628	--	130.6	1598	--	91.20
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)									164652
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)									110290.21

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE								
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED								
						.002	.004	.008	.016	.031	.062	.125	.250	.500
Jan. 27...	1555	9.5	3720	1090	10900	76	87	92	96	99	100	--	--	--
Apr. 04...	1500	--	4880	2420	31900	73	87	95	98	100	--	--	--	--

## 179

LOCATION.--Lat 39°52'10", long 84°16'57", in NW 1/4 sec.23, T.5 N., R.5 E., Montgomery County, at gaging station on right bank, 1,000 ft (305 m) downstream from Englewood Dam, 1 mi (2 km) southeast of Englewood, and 8.5 mi (13.7 km) upstream from mouth. Sampling site about 0.8 mi (1.3 km) downstream at bridge on Interstate Highway 70.

PERIOD OF RECORD.--Chemical analyses: Water years 1962-63 (partial-record station), July 1966 to November 1973 (discontinued).

CHEMICAL ANALYSES, OCTOBER TO NOVEMBER 1973

DATE	TIME	INSTAN- TANEOUS	TEMPE- RATURE (DEG C)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	DIS- SOLVED	DIS- SOLVED	DIS- SOLVED	SPE- CIFIC	DIS- SOLVED	PH	CARBON DIOXIDE (CO2)
		DIS- CHARGE (CFS)				CHLO- RIDE (CL)	SULFATE (SO4)	FLUO- RIDE (F)	DUCT- ANCE (MICRO- MHOS)	(RESI- DUE AT 180 C)		
OCT.												
04...	0930	89	20.0	322	0	30	65	--	675	406	7.8	8.2
10...	0945	84	18.0	338	0	34	63	.2	720	436	7.8	8.6
17...	1015	84	13.0	350	0	30	68	--	640	432	7.6	14
24...	0950	70	12.0	350	0	34	67	--	740	434	7.8	8.9
31...	0935	84	19.0	350	0	36	67	--	750	458	7.7	11
NOV.												
14...	0940	74	8.5	348	0	32	71	--	718	446	7.9	7.

DATE	ALKA- LITY AS CACO <sub>3</sub> (MG/L)	TUR- BID- ITY (JTU)	ODOR (THRES- HOLD NUMBER)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL AMMONIA (NH <sub>4</sub> ) (MG/L)	TOTAL NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRITE (NO <sub>2</sub> ) (MG/L)	TOTAL PHOS- PHORUS (PO <sub>4</sub> ) (MG/L)	HARD- NESS (CA+MG) (MG/L)
OCT.												
04...	264	30	8	.50	.04	1.3	.41	.64	5.7	.16	1.3	330
10...	277	30	8	.65	.05	1.1	.42	.84	4.9	.18	1.3	360
17...	287	20	8	.80	.03	1.3	.41	1.0	5.7	.11	1.3	370
24...	287	20	4	.68	.04	1.2	.50	.88	5.4	.14	1.5	370
31...	287	15	4	.35	.03	1.3	.47	.45	6.0	.11	1.4	380
NOV.												
14...	285	10	4	.21	.08	2.0	.50	.27	8.9	.28	1.5	360

[illegible]

## GREAT MIAMI RIVER BASIN

## 03268000 BUCK CREEK AT NEW MOOREFIELD, OHIO

LOCATION.--Lat 39°59'31"N, long 83°42'53"W, in NE 1/4 sec.9, R.10, T.5, Clark County, on downstream side of bridge on Moorefield-Catawba Road, at New Moorefield, 1.7 mi (2.7 km) downstream from gaging station on Buck Creek near New Moorefield, and 1.3 mi (2.1 km) downstream from East Fork Buck Creek.

DRAINAGE AREA.--65.3 mi<sup>2</sup> (169 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: July to September 1970 (partial-record station), November 1970 to September 1974.

Water temperatures: December 1970 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 740 micromhos Oct. 7; minimum, 282 micromhos Apr. 2.

Water temperatures: Maximum, 25.5°C July 3, 4; minimum, freezing point on Jan. 8.

## EXTREMES.--Period of record:

Specific conductance (1970-74): Maximum, 769 micromhos Mar. 3, 1971; minimum, 206 micromhos Feb. 17, 1971.

Water temperatures (1970-74): Maximum, 27.0°C June 27, 1971; minimum, freezing point on several days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since December 1970. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected on an approximate monthly basis. Discharges are computed from the combined discharges of Buck Creek near New Moorefield, Ohio, station 03267950, drainage area 30.5 mi<sup>2</sup> (79.0 km<sup>2</sup>), and East Fork Buck Creek near New Moorefield, Ohio, station 03267960, drainage area 28.7 mi<sup>2</sup> (74.3 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)
OCT.										
01...	1500	85	14	60	300	55	55	84	28	4.6
NOV.										
08...	1400	37	13	80	160	47	47	100	36	5.7
DEC.										
19...	1615	54	8.3	0	1300	0	11	--	--	--
JAN.										
21...	1015	325	7.9	50	--	25	190	59	22	4.6
MAR.										
08...	1500	75	7.2	80	350	25	60	71	33	5.2
APR.										
17...	1930	100	7.6	60	690	50	60	92	35	5.5
MAY										
29...	1245	58	9.4	180	200	29	67	90	41	5.0
JULY										
01...	1500	55	9.5	130	190	33	33	91	37	5.7
AUG.										
12...	0910	31	9.5	10	120	30	30	96	38	5.3
SEP.										
16...	1020	40	9.1	20	230	20	40	--	--	5.1

DATE	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO <sub>3</sub> ) (MG/L)	CAR-BONATE (CO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRATE (N) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT.									
01...	5.6	284	0	62	14	.3	12	--	382
NOV.									
08...	1.8	352	0	80	16	.3	15	--	449
DEC.									
19...	1.7	356	0	80	16	.1	--	3.7	419
JAN.									
21...	2.8	233	0	48	12	.2	--	2.9	291
MAR.									
08...	2.7	341	0	73	14	.2	--	3.2	435
APR.									
17...	1.6	350	0	77	15	.3	--	3.3	--
MAY									
29...	1.5	358	0	72	14	.3	--	3.2	444
JULY									
01...	1.6	333	0	68	14	.6	--	3.0	426
AUG.									
12...	1.9	382	0	70	15	.2	--	2.6	--
SEP.									
16...	1.6	340	0	70	14	.2	--	--	423

## GREAT MIAMI RIVER BASIN

181

03268000 BUCK CREEK AT NEW MOOREFIELD, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TOTAL RESI- DUE (MG/L)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	PH (UNITS)	COLOR (PLAT- INUM- COBALT UNITS)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)
OCT. 01...	--	320	91	577	16.0	8.1	20	.13	.41
NOV. 08...	--	400	110	693	--	7.6	5	.00	.00
DEC. 19...	479	--	--	740	5.5	7.8	8	.02	--
JAN. 21...	647	240	47	504	7.0	7.7	30	.10	--
MAR. 08...	494	310	33	698	16.0	7.9	8	.00	.00
APR. 17...	443	370	86	705	16.0	7.9	2	.01	.03
MAY 29...	530	390	100	710	16.0	7.8	2	.00	--
JULY 01...	442	380	110	677	21.5	7.8	4	.01	--
AUG. 12...	--	400	87	705	19.0	8.0	--	.02	--
SEP. 16...	442	380	100	690	13.0	8.2	1	.04	--



## GREAT MIAMI RIVER BASIN

03268000 BUCK CREEK AT NEW MOOREFIELD, OHIO--Continued

SPECIFIC CONDUCTANCE (MICRONHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	712	563	684	655	732	727	721	712	714	703	---	---
2	674	629	698	681	733	726	731	719	721	710	---	---
3	739	674	697	677	736	730	729	727	722	717	---	---
4	739	727	692	674	737	724	733	722	721	714	709	698
5	731	716	685	667	733	727	730	721	719	712	708	672
6	735	722	682	664	730	725	727	721	718	559	692	683
7	740	718	683	668	731	724	727	717	645	477	696	676
8	731	717	690	674	728	721	721	704	---	---	700	682
9	737	705	689	668	728	718	716	703	---	---	697	686
10	727	702	689	669	723	710	715	676	---	---	695	674
11	728	693	692	668	717	708	730	719	---	---	683	678
12	727	688	692	673	720	712	723	703	---	---	682	669
13	722	698	700	673	715	690	716	704	---	---	678	673
14	719	693	711	681	703	687	724	710	---	---	679	673
15	720	691	710	665	706	699	723	474	---	---	679	659
16	720	688	706	675	703	700	603	391	---	---	663	653
17	710	686	711	695	704	697	633	449	---	---	665	658
18	711	684	714	700	702	698	654	578	---	---	666	664
19	704	681	717	699	708	700	575	353	---	---	715	700
20	709	681	722	697	712	610	633	582	695	657	709	693
21	702	678	724	704	692	635	631	414	700	693	702	680
22	701	681	726	699	707	692	688	632	693	590	697	688
23	702	678	729	645	713	707	688	464	698	632	702	682
24	704	677	734	694	718	711	683	600	---	---	693	680
25	703	676	694	308	719	521	706	683	---	---	693	689
26	702	671	666	488	630	443	711	654	---	---	---	---
27	693	675	642	441	661	468	652	430	---	---	---	---
28	700	683	619	466	709	661	682	658	---	---	---	---
29	693	668	708	619	717	653	700	682	---	---	---	---
30	692	679	729	708	710	656	707	697	---	---	---	---
31	693	664	---	---	717	695	710	706	---	---	---	---
MONTH	740	563	734	308	737	443	733	353	---	---	---	---

[illegible]

03268000 BUCK CREEK AT NEW MOOREFIELD, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.0	16.0	11.5	9.0	9.0	6.5	3.5	1.5	8.0	4.5	---	---
2	19.5	16.5	12.5	9.0	9.0	6.0	3.0	0.5	6.5	5.0	---	---
3	19.5	15.0	12.5	9.5	10.5	7.5	4.5	3.0	5.5	4.5	---	---
4	18.0	16.0	11.0	7.5	10.5	9.5	5.5	2.0	5.0	3.0	14.0	11.5
5	18.0	14.5	10.5	7.5	10.5	6.0	5.0	1.5	4.0	2.0	13.0	9.5
6	16.0	11.5	8.5	5.5	6.0	5.0	5.0	3.0	5.5	2.0	13.5	7.5
7	18.0	13.5	8.0	6.0	6.5	5.0	4.0	1.0	3.5	2.0	16.0	11.5
8	18.5	16.0	8.5	6.0	7.0	5.0	2.0	0.0	---	---	17.0	12.5
9	19.0	15.0	7.5	4.5	7.0	4.5	5.5	2.0	---	---	15.0	11.0
10	19.0	14.5	6.5	3.5	6.0	2.5	4.5	1.5	---	---	11.5	7.0
11	18.5	14.0	7.5	4.5	4.0	1.5	5.5	4.0	---	---	7.5	6.5
12	19.0	14.5	8.5	6.0	6.5	3.5	4.0	0.5	---	---	7.5	3.0
13	16.5	15.0	10.5	7.5	8.0	6.0	4.0	0.5	---	---	9.5	2.5
14	17.0	13.0	13.0	10.5	6.0	4.5	6.0	3.0	---	---	11.0	4.0
15	18.0	13.0	14.0	11.0	5.0	3.5	7.0	2.5	---	---	8.0	6.5
16	15.5	12.5	11.0	6.5	4.0	2.0	5.5	2.5	---	---	7.5	5.5
17	14.0	9.5	8.5	5.5	3.0	0.5	6.0	3.0	---	---	9.5	5.0
18	14.0	11.0	9.5	6.5	4.0	1.5	9.0	5.5	---	---	6.0	6.0
19	14.0	9.5	11.5	9.5	5.0	3.0	9.5	6.5	---	---	9.0	7.0
20	15.0	11.0	10.5	8.5	5.5	2.5	10.0	6.5	10.0	5.0	12.5	5.5
21	14.0	9.5	11.5	9.0	3.0	1.0	9.5	7.0	10.5	5.5	9.5	5.5
22	14.5	9.5	11.0	8.0	3.0	0.5	9.0	7.0	9.0	4.0	10.5	3.0
23	15.0	10.0	10.5	9.0	5.5	2.0	9.0	5.5	8.0	2.0	7.5	6.0
24	15.5	10.5	13.5	10.5	6.5	5.0	7.0	4.5	---	---	---	---
25	16.0	11.5	10.5	9.0	6.0	4.5	8.0	4.5	---	---	---	---
26	15.0	11.5	10.5	8.5	7.0	6.0	9.0	5.5	---	---	---	---
27	13.5	10.0	12.5	10.5	6.5	5.0	9.5	7.5	---	---	---	---
28	13.0	10.0	12.0	7.0	6.0	4.0	8.0	6.5	---	---	---	---
29	10.0	9.5	7.5	6.0	6.5	3.5	8.5	6.5	---	---	---	---
30	11.0	10.0	9.5	6.0	5.5	2.0	9.5	5.5	---	---	---	---
31	11.5	10.0	---	---	5.0	2.5	9.5	6.0	---	---	---	---
MONTH	19.5	9.5	14.0	3.5	10.5	0.5	10.0	0.0	---	---	---	---

[illegible]

## GREAT MIAMI RIVER BASIN

03270000 MAD RIVER NEAR DAYTON, OHIO

LOCATION.--Lat 39°47'50", long 84°05'19", in SW 1/4 sec.7, R.8, T.2, Greene County, at gaging station on left bank in retarding basin 300 ft (91 m) upstream from Huffman Dam, 2.3 mi (3.7 km) downstream from Mud Run, and 6.2 mi (10.0 km) northeast of Dayton. Water-quality recorder located 900 ft (274 m) downstream from gaging station.

DRAINAGE AREA.--635 mi<sup>2</sup> (1,645 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1947 to September 1948, water years 1962-63 (partial-record station), July 1966 to September 1974.  
Water temperatures: October 1947 to September 1948, June 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 3,000 micromhos Sept. 13, 14; minimum, 327 micromhos Apr. 2.  
pH: Maximum, 8.6 Oct. 7; minimum, 7.0 Oct. 5, 7.  
Dissolved oxygen: Maximum, 15.0 mg/l Nov. 6, 10-13, Feb. 18, 20, 22, 24-28; minimum, 3.5 July 20, 30.  
Water temperatures: Maximum, 28.0°C July 9, 20; minimum, 1.0°C Jan. 12, 13.

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 3,000 micromhos Sept. 13, 14, 1974; minimum, 165 micromhos June 26, 1971.  
pH (1968-74): Maximum, 10.1 July 21, 1973; minimum, 4.4 Apr. 8, 1971.  
Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher on many days during 1970-74. 3.5 mg/l July 20, 30, 1974.  
Water temperatures (1968-74): Maximum, 29.5°C Aug. 18, 1972; minimum, freezing point on several days during winter periods.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-quality recorder operated since June 1968. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

REVISIONS.--Revised figures for pH and dissolved oxygen for the indicated water years superseding those previously published are given herewith: Change maximum pH extremes period of record, water year 1973, to 10.1 July 21, 1973. Change minimum dissolved oxygen extremes period of record, water years 1971, 1972 and 1973, to 4.4 mg/l Aug. 23, 1971.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)
OCT.												
04...	1015	583	19.0	7.1	710	7.8	--	--	--	--	--	0
10...	1025	390	17.0	8.1	760	7.6	--	--	--	--	--	0
17...	0950	374	18.0	8.4	700	7.3	--	--	--	--	--	0
24...	1045	390	12.5	8.6	750	7.8	--	--	--	--	--	0
31...	1035	434	11.0	8.9	730	7.8	--	--	--	--	--	0
NOV.												
14...	1050	390	10.0	9.5	735	7.8	--	--	--	--	--	0
SEP.												
17...	0815	402	15.5	7.2	700	7.8	8.1	77	35	15	3.2	0

DATE	BICARBONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	346	71	26	--	.59	.10	2.9	.37	--	390	--	--
10...	362	74	26	.2	.29	.08	2.6	.45	--	400	--	--
17...	361	74	26	--	.34	.09	2.6	.41	--	410	--	--
24...	364	72	30	--	.43	.09	2.5	.44	--	410	--	--
31...	336	67	26	--	.14	.10	2.6	.56	--	400	--	--
NOV.												
14...	362	74	22	--	.20	.13	2.6	.52	--	390	--	--
SEP.												
17...	358	51	28	.3	.18	.10	2.3	.46	394	340	50	50

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.								
10...	1025	2	20	12	8	50	--	--
29...	1200	--	--	--	--	--	.9	--
APR.								
15...	1600	--	--	--	--	--	.0	3.1

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	686	554	715	649	---	---	760	727	693	669	---	---
2	599	449	727	667	---	---	736	724	732	672	---	---
3	685	581	748	721	---	---	745	730	741	672	---	---
4	727	592	751	730	---	---	751	724	---	---	693	681
5	706	670	745	724	706	697	754	736	---	---	714	672
6	724	700	745	712	736	700	742	730	---	---	669	639
7	736	715	793	748	739	727	742	727	612	588	690	660
8	736	715	766	736	748	733	748	733	672	615	699	600
9	745	730	757	742	763	736	820	739	693	663	696	687
10	748	727	760	739	745	733	970	793	693	684	696	687
11	745	718	754	736	751	730	880	811	729	687	702	684
12	742	721	754	745	754	736	826	757	777	720	702	693
13	739	697	763	745	790	742	760	739	---	---	696	684
14	712	679	763	757	742	715	820	733	---	---	699	687
15	721	688	763	613	796	712	883	724	---	---	714	684
16	736	715	727	622	850	742	721	562	---	---	690	669
17	778	721	730	700	787	742	562	454	---	---	681	666
18	775	751	751	724	790	742	625	535	---	---	693	675
19	769	754	763	748	817	742	613	361	---	---	705	690
20	769	745	760	751	991	706	553	403	---	---	699	690
21	745	727	763	748	787	700	556	493	---	---	732	645
22	748	733	748	715	727	694	628	514	---	---	684	645
23	757	736	751	739	736	724	640	517	---	---	696	675
24	754	742	751	496	793	727	631	526	---	---	864	669
25	754	745	682	367	808	664	688	634	---	---	825	735
26	757	748	526	385	664	532	---	---	---	---	768	693
27	754	742	---	---	556	505	---	---	---	---	708	681
28	754	742	---	---	658	556	---	---	---	---	708	672
29	763	736	---	---	703	658	---	---	---	---	744	438
30	751	706	---	---	679	652	675	633	---	---	942	657
31	745	631	---	---	727	661	702	657	---	---	861	624
MONTH	778	449	793	367	991	505	970	361	---	---	942	438
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	654	459	678	651	717	693	678	597	708	687	678	489
2	468	327	693	663	717	708	699	648	714	663	675	639
3	588	453	684	669	723	702	708	693	675	528	645	498
4	567	432	705	681	738	711	708	699	627	561	678	585
5	618	546	702	678	735	714	717	687	669	570	708	675
6	657	597	696	666	732	714	693	675	711	672	734	702
7	660	639	690	663	738	684	675	666	705	678	740	722
8	666	510	687	645	729	714	672	663	702	669	731	719
9	588	513	675	630	723	705	672	666	714	672	734	716
10	585	543	711	672	726	708	678	594	720	687	737	716
11	564	519	711	693	735	714	660	618	705	456	767	521
12	609	567	711	663	735	711	690	660	669	600	623	461
13	639	606	681	651	735	714	705	687	705	642	3000	509
14	654	561	714	684	735	726	696	687	702	645	3000	683
15	681	609	705	687	738	627	693	672	669	612	713	692
16	690	672	708	669	696	621	690	678	705	672	740	707
17	684	678	690	432	717	699	696	684	690	339	749	713
18	684	678	555	408	726	693	699	684	639	405	740	713
19	687	678	657	555	711	681	702	690	666	534	731	719
20	687	678	702	660	687	669	705	690	669	624	731	656
21	693	678	723	702	696	678	693	681	690	621	710	671
22	696	621	723	705	678	348	696	678	699	678	701	668
23	678	636	708	552	522	384	705	681	720	684	743	704
24	684	672	648	561	618	528	705	684	705	675	740	716
25	684	666	684	657	648	594	711	693	696	672	728	719
26	687	669	708	684	648	621	717	690	705	684	737	710
27	693	672	714	699	708	648	714	684	732	687	749	713
28	699	669	714	702	708	693	714	684	708	390	713	647
29	696	672	723	636	714	690	723	624	534	357	653	497
30	696	663	696	618	687	669	711	681	561	510	686	575
31	---	---	696	675	---	---	708	681	684	570	---	---
MONTH	699	327	723	408	738	348	723	594	732	339	3000	461
YEAR	3000	327										

## 03270000 MAD RIVER NEAR DAYTON, OHIO--Continued

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.8	7.5	8.0	7.9	---	---	8.0	7.9	7.9	7.8	7.9	7.5
2	7.6	7.4	8.1	7.9	---	---	8.0	7.9	7.9	7.8	8.1	7.7
3	8.0	7.5	8.2	7.9	---	---	7.9	7.8	8.0	7.9	8.2	7.8
4	8.2	7.5	8.2	7.9	---	---	8.0	7.8	8.0	7.9	8.1	7.8
5	8.4	7.0	8.3	7.8	7.9	7.8	8.0	7.8	8.0	8.0	8.1	7.8
6	8.0	7.5	8.3	7.8	7.9	7.8	8.0	7.8	8.0	7.9	8.0	7.8
7	8.6	7.5	8.4	7.8	8.0	7.9	8.0	7.8	7.9	7.9	8.1	7.8
8	8.5	7.2	8.3	7.9	8.0	7.9	8.0	7.8	8.0	7.9	8.0	7.8
9	7.3	7.0	8.3	7.9	8.0	7.9	7.9	7.8	8.0	7.9	8.1	7.8
10	---	---	8.3	7.8	8.0	7.9	7.9	7.8	8.0	7.9	8.2	7.8
11	---	---	8.2	7.6	8.0	7.9	7.9	7.7	8.0	7.8	8.0	7.8
12	---	---	8.2	7.3	8.0	7.8	8.1	7.8	8.0	7.8	8.1	7.8
13	---	---	8.3	7.6	7.9	7.8	8.0	7.8	8.0	7.8	8.2	7.8
14	---	---	8.1	7.6	7.9	7.8	8.0	7.8	8.0	7.8	8.2	7.8
15	---	---	7.8	7.6	8.0	7.9	7.9	7.7	8.2	7.9	8.0	7.7
16	---	---	7.7	7.5	8.0	7.9	7.8	7.7	8.1	7.9	7.9	7.7
17	---	---	8.0	7.6	8.1	7.9	7.8	7.7	8.1	7.8	8.2	7.8
18	---	---	7.9	7.6	8.0	7.8	7.7	7.7	8.1	7.8	8.2	7.8
19	---	---	8.0	7.6	7.9	7.8	7.7	7.6	7.9	7.8	8.1	7.7
20	---	---	8.1	7.7	7.8	7.7	7.7	7.6	8.0	7.8	8.3	7.7
21	---	---	8.0	7.6	7.9	7.8	7.7	7.6	8.0	7.8	8.1	7.7
22	---	---	8.1	7.7	7.9	7.7	7.7	7.6	7.9	7.8	8.3	7.8
23	---	---	8.2	7.8	7.8	7.6	7.7	7.6	8.0	7.8	8.2	7.8
24	---	---	7.9	7.8	8.0	7.7	7.7	7.7	8.0	7.8	8.3	7.8
25	---	---	7.8	7.5	7.9	7.8	7.7	7.7	8.0	7.9	8.4	7.8
26	---	---	7.8	7.6	7.8	7.7	7.7	7.7	8.1	7.8	8.3	7.7
27	---	---	---	---	7.8	7.7	7.7	7.5	8.0	7.6	8.4	7.7
28	---	---	---	---	7.8	7.7	7.7	7.6	8.0	7.8	8.4	7.7
29	8.0	7.9	---	---	7.9	7.8	7.7	7.7	---	---	7.9	7.6
30	8.0	7.8	---	---	7.9	7.9	7.8	7.7	---	---	7.8	7.7
31	8.1	7.8	---	---	8.0	7.9	7.8	7.7	---	---	7.9	7.8
MONTH	---	---	8.4	7.3	8.1	7.6	8.1	7.5	8.2	7.6	8.4	7.5

[illegible]



DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.4	6.4	9.8	8.2	---	---	12.7	11.9	11.1	10.3	12.7	9.8
2	7.8	7.1	10.6	8.5	---	---	13.2	12.2	11.0	10.4	12.1	9.2
3	8.3	7.2	12.0	8.4	---	---	12.2	11.6	11.3	10.8	11.9	8.4
4	8.0	7.0	12.8	8.9	---	---	12.8	11.5	11.9	11.0	11.2	8.2
5	8.7	6.8	12.9	8.9	9.8	9.1	12.7	11.8	12.4	11.7	11.8	8.2
6	9.4	7.8	15.0	9.0	10.7	9.8	12.5	11.3	11.8	11.3	12.0	9.2
7	9.3	7.7	14.2	9.5	10.9	10.5	12.7	11.3	12.0	11.2	12.2	8.5
8	8.9	7.4	13.8	9.3	11.0	10.4	13.0	11.6	12.2	11.5	11.2	8.1
9	9.3	7.1	14.1	9.1	11.0	10.5	12.6	11.3	12.1	11.5	11.0	8.0
10	9.8	6.9	15.0	9.4	11.2	10.5	11.8	10.9	12.1	11.5	12.9	8.0
11	8.9	6.9	15.0	9.5	11.9	11.0	12.2	10.7	12.5	11.4	12.2	9.4
12	10.0	7.2	15.0	8.9	11.5	10.7	13.3	11.0	12.0	10.6	13.5	9.8
13	8.4	7.2	15.0	7.8	10.7	9.6	13.7	11.7	11.2	9.9	14.8	10.7
14	9.6	7.2	12.9	6.9	10.7	9.8	12.3	10.7	11.4	9.9	14.8	10.7
15	10.3	7.6	8.7	6.6	11.6	10.7	11.6	10.2	12.5	10.6	12.2	9.8
16	10.6	7.3	8.4	5.9	12.1	11.1	11.2	10.6	12.4	10.8	12.3	9.5
17	11.1	8.0	11.9	8.4	12.6	11.5	11.5	11.1	12.4	10.6	14.7	10.3
18	11.6	8.3	11.7	8.5	12.7	11.7	11.4	10.3	12.4	10.3	15.0	10.6
19	12.1	8.3	11.3	8.1	12.5	11.5	11.1	10.6	10.5	9.7	14.0	9.7
20	11.8	8.1	11.7	7.6	11.6	11.2	11.3	10.3	11.8	10.1	15.0	9.5
21	12.2	8.6	9.3	7.2	12.7	11.4	10.9	10.4	12.5	10.4	12.9	9.1
22	13.2	8.8	12.0	7.4	13.0	12.2	11.1	10.5	10.7	9.7	15.0	10.3
23	13.4	8.4	12.0	8.1	12.7	11.6	11.2	10.6	12.5	10.7	14.3	9.9
24	13.4	8.1	8.6	7.8	12.3	10.9	11.6	11.1	12.9	11.5	15.0	10.4
25	13.2	7.8	9.4	7.5	11.0	10.5	11.4	10.8	14.0	12.1	15.0	11.7
26	13.4	7.5	10.0	9.2	11.1	10.8	10.8	9.9	13.9	11.7	15.0	10.5
27	13.0	7.6	---	---	11.3	10.8	10.2	10.0	13.4	10.7	15.0	9.2
28	11.8	7.5	---	---	11.7	11.2	10.2	10.1	12.0	10.1	15.0	8.4
29	9.6	7.9	---	---	11.2	10.9	10.5	10.2	---	---	9.3	7.1
30	9.3	7.1	---	---	12.2	11.2	10.7	10.3	---	---	10.7	9.6
31	10.2	7.5	---	---	12.4	11.9	10.4	10.0	---	---	11.8	10.6
MONTH	13.4	6.4	15.0	5.9	13.0	9.1	13.7	9.9	14.0	9.7	15.0	7.1
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.1	9.2	12.3	6.8	9.5	7.4	7.8	6.2	8.7	3.7	8.0	6.6
2	9.5	8.0	9.5	7.3	10.0	7.7	8.3	5.9	8.3	3.		

03270000 MAD RIVER NEAR DAYTON, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	18.5	12.5	10.5	---	---	3.0	2.0	7.5	6.5	8.5	6.0
2	19.5	18.5	12.0	10.5	---	---	2.0	1.0	6.5	6.0	11.0	7.5
3	20.0	18.0	13.0	10.5	---	---	3.5	2.0	5.5	5.0	14.0	10.5
4	20.0	18.0	11.5	9.0	---	---	4.5	2.5	5.0	3.5	14.5	13.0
5	19.5	17.0	11.0	9.0	11.0	8.5	4.0	2.5	3.5	2.5	14.0	12.5
6	18.0	15.0	9.5	7.5	8.5	6.0	4.0	2.5	4.0	3.0	12.5	10.5
7	18.0	15.0	9.0	7.0	7.0	6.0	4.0	2.5	4.0	2.5	15.0	11.5
8	19.0	16.5	9.0	6.5	7.5	6.5	3.0	2.0	3.5	2.5	17.0	13.5
9	21.0	17.5	8.0	7.0	7.0	5.5	4.5	2.0	3.5	2.5	16.5	14.5
10	21.0	17.5	8.0	5.5	6.0	4.0	4.5	3.5	2.5	2.5	15.5	11.5
11	20.5	17.5	8.5	5.5	4.5	3.0	4.5	3.5	3.5	1.5	11.0	8.5
12	20.5	17.0	9.0	7.0	6.0	3.0	3.5	1.5	6.0	3.0	8.5	6.5
13	18.5	17.0	11.5	8.0	8.0	5.0	3.0	1.0	8.5	5.5	8.5	5.0
14	18.5	16.0	13.5	11.5	7.0	5.5	4.0	2.0	8.0	6.0	9.5	5.0
15	18.0	14.5	14.5	13.5	5.5	4.5	6.0	4.0	6.0	4.0	8.5	7.0
16	17.0	14.5	13.5	9.5	5.0	3.5	5.5	4.0	6.5	4.5	8.0	7.0
17	15.0	12.5	9.5	7.5	3.5	2.0	5.5	4.0	7.0	4.5	7.5	5.5
18	15.5	12.0	9.0	7.5	4.0	2.0	8.0	5.0	7.0	4.5	8.5	6.0
19	15.0	11.5	11.5	9.0	4.5	2.5	8.5	7.0	7.5	6.5	9.0	8.0
20	16.0	12.5	12.5	10.0	4.5	4.0	9.5	7.0	7.0	5.5	11.5	7.5
21	15.5	12.0	13.0	11.0	4.0	2.0	10.0	8.5	8.0	6.0	10.0	7.0
22	14.5	11.0	12.5	10.5	2.5	1.5	9.0	7.5	9.0	6.5	9.5	5.5
23	15.0	11.5	11.0	10.0	3.5	1.5	9.5	7.5	6.0	4.5	9.0	6.0
24	16.0	12.0	13.0	11.0	5.5	3.5	7.0	6.0	4.5	2.5	7.5	4.0
25	17.0	13.5	13.0	10.5	7.5	5.5	6.5	5.5	3.5	1.5	7.0	2.0
26	17.0	14.0	10.5	9.5	7.5	6.5	9.0	6.5	4.5	1.5	10.0	5.0
27	15.0	13.5	---	---	7.0	6.0	9.5	8.5	6.5	3.0	12.0	7.0
28	14.5	12.5	---	---	6.0	5.0	8.5	8.0	7.5	6.0	13.5	9.5
29	12.5	10.5	---	---	6.0	5.0	8.0	7.0	---	---	13.0	10.5
30	12.0	10.5	---	---	5.0	3.0	8.0	6.5	---	---	11.0	8.0
31	12.5	11.0	---	---	3.5	2.5	9.0	7.5	---	---	8.5	6.5
MONTH	21.0	10.5	14.5	5.5	11.0	1.5	10.0	1.0	9.0	1.5	17.0	2.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.5	8.0	18.5	15.0	20.5	18.5	24.0	19.0	25.5	20.5	23.0	19.0
2	13.5	11.5	16.5	14.5	21.5	16.5	25.5	20.5	25.0	21.5	21.0	19.0
3	14.0	12.0	16.0	14.5	22.5	17.0	27.0	22.0				

LOCATION.--Lat 39°40'28", long 84°15'42", Montgomery County, at bridge on Farmersville-West Carrollton Road, at West Carrollton.

PERIOD OF RECORD.--Chemical analyses: April 1965 to November 1973 (discontinued).

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples collected weekly October, July to September, and monthly November to June. No discharge records available.

DATE	TIME	TEMPER- ATURE (DEG C)	BICAR- BONATE (HC03) (MG/L)	CAR- BONATE (C03) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SULFATE (S04) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	PH (UNITS)	CARBON DIOXIDE (C02) (MG/L)	ALKA- LITY AS CAC03 (MG/L)
OCT.												
04...	1050	21.5	296	0	22	73	--	750	428	7.7	9.4	243
10...	1055	23.0	334	0	48	81	.5	810	494	7.7	11	274
17...	1115	17.0	330	0	46	86	--	800	486	7.6	13	271
24...	1130	18.0	350	0	52	85	1.0	850	508	7.7	11	287
31...	1105	15.0	324	0	48	79	--	800	498	7.7	10	266
NOV.												
14...	1145	12.0	344	0	50	83	--	806	472	7.8	8.7	282

DATE	TUR-BID-ITY (JTU)	ODOR (THRES-HOLD NUMBER)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL AMMONIA (NH4) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL NITRITE (NO2) (MG/L)	TOTAL PHOS-PHORUS (PO4) (MG/L)	HARD-NESS (CA+MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)
OCT.												
04...	30	4	.74	.08	2.1	.85	.95	9.5	.30	2.6	330	87
10...	30	16	.91	.10	2.2	1.2	1.2	9.7	.34	3.6	352	78
17...	35	2	.91	.08	1.9	1.0	1.2	8.4	.26	3.1	380	110
24...	30	8	1.1	.11	2.2	1.2	1.4	9.7	.37	3.6	390	100
31...	15	2	.91	.10	2.2	.67	1.2	9.7	.33	2.1	370	100
NOV.												
14...	20	4	1.4	.14	2.5	1.7	1.8	11	.45	5.2	380	98

[illegible]

## GREAT MIAMI RIVER EASIN

03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO

LOCATION.--Lat 39°36'39", long 84°17'28", Montgomery County, on Chautauqua Road bridge, about 2.0 mi (3.2 km) south of Miamisburg and 2.5 mi (4.0 km) downstream from gaging station at Miamisburg.

DRAINAGE AREA.--2,715 mi<sup>2</sup> (7,032 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1962-64 (partial-record station), March 1964 to September 1974. Water temperatures: March 1964 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 947 micromhos Jan. 10; minimum, 219 micromhos June 22.

pH: Maximum, 8.4 Mar. 28, Apr. 9, June 5; minimum, 6.9 Oct. 4.

Dissolved oxygen: Maximum, 12.6 mg/l Jan. 4; minimum, 0.0 mg/l Aug. 27.

Water temperatures: Maximum, 33.0°C July 9; minimum, 0.5°C Feb. 25, 26.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
04...	0840	1210	22.0	--	701	8.6	--	--	--	--	--	10
23...	1300	882	17.0	--	829	8.6	--	--	--	--	--	18
NOV.												
13...	1030	805	10.0	--	861	8.3	--	--	--	--	--	0
27...	0850	10000	11.0	--	490	8.5	--	--	--	--	--	2
DEC.												
19...	1230	1440	4.5	--	781	8.5	--	--	--	--	--	7
26...	0930	10300	5.5	--	685	7.7	--	--	--	--	--	0
JAN.												
15...	1335	2330	5.0	--	884	7.3	--	67	35	--	--	0
22...	1335	19000	8.0	--	406	6.9	--	55	19	--	--	0
FEB.												
11...	1340	2630	3.0	--	727	8.6	--	92	32	--	--	2
22...	1315	5530	7.0	--	572	7.9	--	72	26	--	--	0
MAR.												
08...	1320	3660	14.0	--	582	7.4	--	83	25	--	--	0
27...	1240	1830	9.0	--	735	8.0	--	84	35	--	--	0
APR.												
05...	1245	13700	12.0	--	432	7.5	--	64	24	--	--	0
25...	1250	2280	14.0	--	720	7.7	--	76	32	--	--	0
MAY												
07...	1240	1600	15.0	--	770	7.5	--	66	34	--	--	0
20...	1320	2320	20.0	6.6	625	7.6	--	64	30	--	--	0
JUNE												
28...	1245	1960	20.0	--	685	7.7	--	85	32	--	--	0
SEP.												
17...	1200	915	19.5	5.9	690	7.6	8.9	76	30	30	3.2	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
18...	0950	<.5	--
APR.			
16...	1800	.1	6.4

## GREAT MIAMI RIVER BASIN

191

## 03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1964-74): Maximum, 1,170 micromhos Feb. 9, 1972; minimum, 219 micromhos June 22, 1974.

pH (1964-74): Maximum, 9.3 May 19, 20, 1971; minimum, 5.7 Feb. 9, 1972.

Dissolved oxygen (1964-74): Maximum, 15.0 mg/l or higher on several days during 1964, 1966, 1968, 1972 and 1973; minimum, 0.0 mg/l on many days during 1964-66, 1970-71, 1974.

Water temperatures (1964-74): Maximum, 37.0°C Aug. 16-18, 1965; minimum, freezing point on Dec. 16, 17, 1972.

REMARKS.--Water-quality recorder operated since March 1964. Prior to November 1971, at site 400 ft (122 m) downstream, in O. H. Hutchings power plant. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Great Miami River at Miamisburg, Ohio, station 03271500, drainage area 2,711 mi<sup>2</sup> (7,021 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	248	16	42	.6	--	.00	3.1	--	--	--	--	--
23...	303	17	56	1.0	--	.00	3.0	--	--	--	--	--
NOV.												
13...	337	97	58	.4	--	.01	2.3	--	--	--	--	--
27...	195	53	22	.3	--	.03	4.6	--	--	--	--	--
DEC.												
19...	313	84	45	.4	--	.01	4.2	--	--	--	--	--
26...	280	64	39	.3	--	.01	4.8	--	--	--	--	--
JAN.												
15...	332	77	79	.3	--	.00	.01	--	--	310	--	--
22...	177	41	20	.2	--	.00	.01	--	--	220	--	--
FEB.												
11...	292	60	45	.5	--	.01	4.0	--	--	360	--	--
22...	226	52	31	.4	--	.00	4.4	--	--	290	--	--
MAR.												
08...	252	61	27	.3	--	.01	4.2	--	--	310	--	--
27...	309	80	47	.4	--	.00	3.6	--	--	350	--	--
APR.												
05...	183	44	16	.5	--	.01	3.4	--	--	260	--	--
25...	311	63	36	.7	--	.00	3.0	--	--	320	--	--
MAY												
07...	326	73	40	.6	--	.00	2.5	--	--	300	--	--
20...	280	59	30	.4	--	.00	3.4	--	--	280	--	--
JUNE												
28...	282	62	35	1.0	--	.00	8.0	--	--	340	--	--
SEP.												
17...	282	72	42	.5	.57	.12	2.0	.79	402	310	40	40



03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	784	666	---	---	666	627	628	553	---	---
2	---	---	722	685	---	---	676	640	643	610	---	---
3	---	---	746	722	---	---	689	673	655	616	---	---
4	708	656	759	746	---	---	701	684	672	636	678	636
5	716	627	785	758	698	689	725	701	678	621	708	678
6	746	701	788	753	704	693	715	704	844	661	711	603
7	771	746	809	786	714	699	713	701	823	626	609	588
8	774	740	816	807	717	705	730	710	656	597	621	603
9	791	761	837	816	720	710	889	730	672	623	684	618
10	789	773	842	828	735	717	947	811	689	633	693	573
11	797	781	839	834	737	726	914	859	735	657	675	552
12	802	792	837	830	746	725	860	793	741	644	726	588
13	818	786	846	833	767	734	800	763	740	681	723	648
14	791	716	855	822	764	741	772	752	725	665	681	585
15	754	713	828	710	747	722	856	706	699	609	753	573
16	777	751	711	621	825	743	744	664	641	590	756	684
17	798	777	756	711	768	741	659	501	641	581	726	636
18	803	782	741	713	768	747	508	483	665	594	699	657
19	809	795	---	---	771	749	498	373	708	614	702	681
20	816	805	---	---	828	746	369	333	699	639	693	684
21	817	793	821	804	821	759	388	357	---	---	708	684
22	809	789	809	783	780	750	426	382	---	---	723	693
23	813	787	807	788	756	746	480	427	---	---	---	---
24	821	806	803	647	785	755	498	474	---	---	867	744
25	827	815	636	414	798	734	525	493	---	---	939	828
26	828	811	495	411	734	453	562	519	---	---	828	735
27	821	812	501	419	451	429	555	493	---	---	789	750
28	825	816	479	426	461	422	514	451	---	---	786	693
29	832	810	---	---	522	461	529	477	---	---	756	726
30	835	763	---	---	556	520	553	430	---	---	---	---
31	783	759	---	---	631	556	598	516	---	---	---	---
MONTH	835	627	855	411	828	422	947	333	---	---	939	552
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	558	501	---	---	732	705	702	675	789	741	---	---
2	---	---	---	---	---	---	699	654	---	---	---	---
3	---	---	---	---	741	690	684	660	---	---	507	423
4	---	---	---	---	756	723	693	666	---	---	550	472
5	---	---	---	---	771	717	693	651	---	---	578	560
6	---	---	---	---	729	696	699	666	---	---	645	594
7	---	---	---	---	729	696	702	666	753	744	666	645
8	---	---	---	---	729	696	693	648	804	753	684	663
9	---	---	717	684	714	684	702	654	762	696	723	681
10	---	---	738	714	723	693	708	666	---	---	753	726
11	---	---	765	708	729	708	690	624	---	---	768	738
12	---	---	768	675	738	696	690	666	---	---	747	501
13	---	---	690	654	735	687	705	678	---	---	633	519
14	---	---	699	684	747	681	708	678	---	---	669	552
15	---	---	723	696	---	---	702	687	---	---	681	654
16	680	608	723	687	---	---	717	687	---	---	681	657
17	689	653	---	---	---	---	741	708	---	---	696	678
18	692	674	---	---	---	---	738	711	---	---	729	696
19	692	677	---	---	759	711	---	---	636	570	756	726
20	698	650	669	633	735	705	---	---	684	642	753	696
21	686	653	714	672	753	690	---	---	735	648	753	726
22	677	542	744	711	693	219	---	---	741	720	747	732
23	---	---	711	678	465	243	---	---	735	705	744	711
24	---	---	699	609	555	468	759	738	762	738	798	705
25	710	692	672	645	579	543	771	738	759	726	819	792
26	713	677	699	672	582	507	786	768	756	741	825	801
27	722	647	726	702	645	588	798	774	---	---	837	816
28	716	641	750	723	675	648	801	786	---	---	879	768
29	---	---	759	714	690	675	789	747	---	---	777	648
30	---	---	726	606	699	687	771	750	---	---	732	648
31	---	---	741	687	---	---	783	750	---	---	---	---
MONTH	---	---	---	---	771	219	801	624	---	---	879	423
YEAR	947	219										

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## 03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	6.3	5.1	7.9	7.4	---	---	10.4	9.2	11.5	10.7
2	---	---	6.7	6.0	8.0	7.5	---	---	9.7	8.9	11.4	10.6
3	---	---	6.5	5.7	8.2	7.2	---	---	9.2	8.8	10.6	9.7
4	5.6	5.2	6.3	5.7	9.5	7.3	12.6	12.2	9.6	8.9	9.6	9.1
5	6.1	5.7	6.7	6.3	9.9	9.4	12.2	11.9	10.7	9.6	9.3	9.0
6	7.8	6.3	7.6	6.4	10.1	9.5	12.1	11.7	10.7	10.2	9.7	9.4
7	7.7	6.6	7.3	6.1	10.5	10.1	12.1	11.7	11.8	10.2	9.7	9.2
8	7.0	5.6	7.2	6.4	10.8	10.4	12.0	11.5	11.6	11.3	9.6	9.1
9	6.2	4.7	7.5	6.7	10.8	10.6	11.5	11.1	11.7	11.4	9.4	8.8
10	6.4	3.7	7.1	6.2	10.9	10.6	11.6	11.0	11.6	11.4	9.5	9.2
11	6.1	3.6	7.6	6.7	11.1	10.6	11.4	11.0	11.7	11.3	9.9	9.5
12	6.2	3.8	7.6	7.4	11.5	10.9	12.0	11.3	11.4	10.7	10.7	10.0
13	5.3	3.7	7.8	5.6	11.7	10.6	12.1	11.8	10.7	9.9	11.1	10.4
14	5.7	4.1	5.6	3.3	11.2	10.7	12.1	11.3	10.0	9.7	11.2	10.7
15	6.3	4.8	4.4	3.8	11.4	11.1	11.2	10.8	10.8	10.0	10.8	10.3
16	6.1	4.6	5.3	4.4	11.8	11.3	11.6	10.3	10.6	10.4	11.2	10.4
17	5.9	5.0	6.9	5.3	12.4	12.2	10.6	8.8	10.7	10.5	11.6	11.0
18	5.7	5.2	7.3	6.9	12.3	11.4	11.3	9.2	10.7	10.2	12.0	11.3
19	5.6	5.2	7.2	6.3	11.8	11.3	9.2	8.8	10.1	9.2	11.5	10.6
20	5.2	4.8	6.7	5.8	11.3	10.9	---	---	10.1	9.5	10.9	10.6
21	5.6	4.7	6.2	5.0	11.7	11.2	---	---	11.1	10.4	11.2	10.5
22	5.7	5.2	5.6	5.0	12.1	11.5	---	---	10.8	10.1	10.8	10.4
23	5.6	4.2	5.8	5.4	12.0	11.9	---	---	11.6	10.7	---	---
24	4.7	4.0	6.1	5.3	11.9	11.5	---	---	12.0	11.6	12.2	11.2
25	4.6	4.1	7.3	5.3	11.5	10.9	10.9	10.1	11.9	11.6	12.5	11.9
26	4.3	3.8	7.7	6.5	11.5	10.4	10.8	9.5	12.0	11.5	12.4	11.2
27	4.4	3.8	7.2	4.9	---	---	10.4	9.1	11.6	11.0	11.4	10.6
28	4.3	3.9	7.2	6.5	---	---	10.4	10.0	11.1	10.6	11.2	10.3
29	4.6	4.2	7.6	6.9	---	---	10.6	10.3	---	---	10.3	9.9
30	4.9	4.4	7.5	6.8	---	---	10.7	10.2	---	---	10.9	10.0
31	5.4	4.8	---	---	---	---	10.4	10.1	---	---	11.4	10.7
MONTH	7.8	3.6	7.8	3.3	12.4	7.2	---	---	12.0	8.8	12.5	8.8
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.3	10.4	---	---	5.3	4.2	5.8	4.8	10.2	4.5	6.6	5.8
2	---	---	---	---	5.1	4.7	6.8	4.6	5.9	1.7	6.2	5.7
3	10.6	9.9	---	---	4.9	4.4	7.7	4.7	2.8	0.4	6.8	6.3
4	10.0	8.9	---	---	6.9	4.0	7.1	5.3	3.4	1.0	7.2	6.5
5	9.6	9.2	---	---	7.6	3.7	7.0	5.3	3.5	2.0	7.3	6.5
6	---	---	---	---	8.7	5.7	10.3	5.4	3.9	1.5	7.4	6.5
7	---	---	---	---	8.5	3.7	9.0	6.0	5.2	1.9	6.7	6.1
8	---	---	---	---	6.6	3.7	7.9	5.9	4.8	1.4	6.2	5.6
9	12.4	10.5	7.1	6.4	7.8	3.8	7.7	4.4	3.6	1.6	5.7	5.0
10	11.5	10.9	7.8	6.3	5.8	3.2	6.1	3.1	4.6	2.7	5.7	4.9
11	11.6	10.9	7.8	6.6	5.1	3.7	7.2	2.7	4.5	1.3	6.0	4.6
12	11.5	10.7	6.8	6.3	8.4	3.5	6.0	3.0	3.9	3.0	6.6	5.7
13	---	---	7.3	6.5	8.5	4.1	7.4	3.8	4.3	2.3	6.5	5.4
14	---	---	7.9	6.7	8.2	4.7	7.6	2.2	4.2	2.8	7.2	6.4
15	---	---	7.9	6.4	6.6	3.8	5.2	1.9	3.6	1.7	7.4	6.6
16	10.0	9.5	7.4	6.1	7.2	3.8	8.7	2.9	3.2	1.4	7.3	5.6
17	9.9	9.4	6.7	5.3	8.5	5.0	9.8	3.8	5.8	3.2	6.9	5.7
18	9.7	9.1	6.6	5.9	9.0	4.4	9.0	4.1	4.8	3.9	7.8	4.9
19	9.6	8.7	6.9	6.6	8.4	4.8	8.6	2.1	5.2	3.6	8.2	4.5
20	9.8	8.9	6.8	5.7	8.8	4.8	3.5	0.6	6.9	4.0	7.4	4.2
21	9.1	8.3	6.0	5.2	7.9	3.6	4.3	0.6	6.9	3.6	7.9	4.6
22	8.9	8.1	5.6	4.8	7.1	4.7	5.1	1.1	5.3	1.3	8.3	5.4
23	9.6	8.1	5.9	4.8	7.5	7.1	4.0	1.1	3.4	0.8	9.7	6.3
24	10.0	9.3	6.1	5.1	8.1	7.7	5.1	1.4	4.5	1.0	10.0	7.3
25	9.7	8.6	6.1	5.4	8.0	7.2	6.4	1.9	5.6	1.3	9.9	6.6
26	9.2	7.8	5.6	5.2	7.5	6.4	6.3	1.8	6.4	1.1	9.7	6.4
27	8.4	7.3	5.2	4.9	6.6	6.0	7.6	2.2	2.5	0.0	8.6	5.4
28	7.5	6.6	5.1	4.5	6.7	5.8	5.9	1.5	4.4	0.9	6.2	5.0
29	7.2	5.9	4.9	4.5	6.4	6.0	7.2	1.8	5.8	4.9	7.1	5.8
30	---	---	5.1	4.4	6.2	5.3	8.2	2.0	5.9	5.4	7.5	6.7
31	---	---	4.8	4.1	---	---	6.4	2.0	6.4	6.1	---	---
MONTH	---	---	---	---	9.0	3.2	10.3	0.6	10.2	0.0	10.0	4.2
YEAR	12.6	0.0										

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## 03272010 TWIN CREEK AT GERMANTOWN, OHIO

LOCATION.--Lat 39°37'22", long 84°23'33", in NE 1/4 sec.14, T.3 N., R.4 E., Montgomery County, at bridge on State Highway 725, 1 mi (2 km) downstream from gaging station, and approximately 0.1 mi (0.2 km) west of Germantown.

DRAINAGE AREA.--275 mi<sup>2</sup> (712 km<sup>2</sup>) (at gaging station).

PERIOD OF RECORD.--Chemical analyses: August 1967 to November 1973 (discontinued).

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples were collected weekly October, July to September, and monthly November to June. Records of discharge are given for Twin Creek near Germantown, Ohio (station 03272000).

## CHEMICAL ANALYSES, OCTOBER TO NOVEMBER 1973

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	BICAR- BONATE (HC03) (MG/L)	CAR- BONATE (C03) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SULFATE (S04) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	PH  (UNITS)	CARBON DIOXIDE (C02) (MG/L)
OCT.												
04...	1125	33	17.5	324	0	22	49	--	650	376	7.8	8.2
10...	1130	25	18.0	338	0	22	51	.2	650	398	7.8	8.6
17...	1145	25	12.0	338	0	20	53	--	640	364	7.6	14
24...	1200	21	13.0	340	0	22	50	--	580	392	7.7	11
31...	1140	29	10.0	338	0	22	51	--	660	406	7.6	14
NOV.												
14...	1220	26	8.0	340	0	24	53	--	639	388	7.9	6.8

DATE	ALKA- LINITY AS CACO <sub>3</sub> (MG/L)	TUR- BID- ITY (JTU)	ODOR (THRES- HOLD NUMBER)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL AMMONIA (NH <sub>4</sub> ) (MG/L)	TOTAL NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRITE (NO <sub>2</sub> ) (MG/L)	TOTAL PHOS- PHORUS (PO <sub>4</sub> ) (MG/L)	HARD- NESS (CA, MG) (MG/L)
OCT.												
04...	266	20	8	.11	.02	1.9	.07	.14	8.4	.07	.24	340
10...	277	15	4	.13	.02	1.3	.06	.17	6.0	.09	.19	370
17...	277	10	2	.08	.01	2.0	.03	.10	8.6	.04	.10	360
24...	279	5	8	.11	.02	2.0	.03	.14	8.9	.05	.09	350
31...	277	5	4	.05	.00	1.6	.03	.07	7.0	.01	.10	370
NOV.												
14...	279	5	8	.08	.01	2.4	.03	.10	10	.04	.09	350

[illegible]



LOCATION.--Lat 39°32'31", long 84°21'27", in sec. 18, R.4, T.2, Butler County, on left bank at County Park dock at Middletown, about 0.6 mi (1.0 km) downstream from New York Central Railroad bridge, and 0.3 mi (0.5 km) downstream from Twin Creek.

PERIOD OF RECORD.--Chemical analyses: July 1963 to November 1973 (discontinued).

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples were collected weekly October, July to September, and monthly November to June. No discharge records available.

DATE	TIME	TEMPERATURE (DEG C)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	PH (UNITS)	CARBON DIOXIDE (CO2) (MG/L)	ALKALINITY AS CaCO3 (MG/L)
OCT.												
10...	1250	25.0	336	0	52	84	.5	800	522	7.6	14	276
17...	1235	18.0	328	0	52	84	--	820	480	7.6	13	269
24...	1300	20.0	346	0	58	86	.8	850	512	7.5	18	284
31...	1255	17.0	332	0	56	85	--	840	512	7.5	17	272
NOV.												
14...	1315	12.0	348	0	60	87	--	840	520	7.7	11	285

DATE	TUR- BID- ITY (JTU)	ODOR (THRES- HOLD NUMBER)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL AMMONIA (NH4) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL NITRITE (NO2) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT.												
10...	20	16	.87	.15	1.9	.96	1.1	8.4	.49	3.0	390	110
17...	20	2	.52	.09	2.3	.87	.67	10	.33	2.7	370	100
24...	40	4	.75	.12	2.3	1.2	.97	10	.40	3.6	390	110
31...	15	4	.42	.14	2.0	1.3	.55	8.6	.45	4.0	380	110
NOV.												
14...	15	4	.58	.19	2.2	1.2	.74	9.7	.63	3.5	390	74

[illegible]

LOCATION.--Lat 39°25'46", long 84°28'35", Butler County, at bridge on Liberty-Fairfield Road, southwest of Middletown, 0.7 mi (1.1 km) upstream from Baltimore and Ohio Railroad bridge.

PERIOD OF RECORD.--Chemical analyses: July 1963 to November 1973 (discontinued).

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples were collected weekly October, July to September, and monthly November to June. No discharge records available. Prior to May 1965, sampling site was 0.7 mi (1.1 km) downstream.

DATE	TIME	TEMPER- ATURE (DEG C)	BICAR- BONATE (HC03) (MG/L)	CAR- BONATE (C03) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SULFATE (S04) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	PH (UNITS)	CARBON DIOXIDE (C02) (MG/L)	ALKA- LITY AS CAC03 (MG/L)
OCT.												
04...	1305	20.0	244	0	22	69	--	675	392	7.5	12	200
10...	1320	23.0	326	0	48	85	.5	800	512	7.6	13	267
17...	1305	17.0	324	0	50	86	--	810	476	7.7	10	266
24...	1325	18.0	334	0	60	95	.8	850	530	7.6	13	274
31...	1325	14.5	330	0	58	95	--	860	526	7.5	17	271
NOV.												
14...	1345	11.0	336	0	62	94	--	846	536	7.7	11	276

DATE	TUR- BIO- IDITY (JTU)	ODOR (THRES- HOLD NUMBER)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL AMMONIA (NH4) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL NITRITE (NO2) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT.												
04...	35	8	.63	.04	1.6	.58	.81	7.3	.14	1.8	290	90
10...	20	16	1.0	.08	1.8	.82	1.3	7.8	.28	2.5	380	110
17...	25	4	.52	.06	2.3	.80	.67	10	.21	2.5	400	130
24...	25	8	.66	.09	2.4	.75	.85	10	.28	2.3	410	140
31...	15	4	.26	.08	2.2	1.0	.34	9.7	.28	3.1	410	140
NOV.												
14...	15	4	.73	.16	2.4	.90	.94	11	.52	2.8	390	110

[illegible]

## GREAT MIAMI RIVER BASIN

199

## 03274000 GREAT MIAMI RIVER AT HAMILTON, OHIO

LOCATION.--Lat 39°23'28", long 84°34'20", in NE 1/4 sec.6, T.1 N., R.3 E., Butler County, at gaging station on right bank, 1,000 ft (305 m) downstream from Columbia Bridge at Hamilton, 3 mi (5 km) downstream from Four Mile Creek, and 4.3 mi (6.9 km) upstream from Pleasant Run.

DRAINAGE AREA.--3,630 mi<sup>2</sup> (9,402 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1951, water year 1973 (partial-record station).  
Water temperatures: October 1950 to September 1951, October 1957 to September 1974.

## EXTREMES.--1973-74:

Water temperatures: Maximum, 28.5°C July 10-12, 20; minimum, 2.0°C Jan. 2-5.

## EXTREMES.--Period of record:

Water temperatures: Maximum, 34.0°C Aug. 16, 1965; minimum, freezing point on several days during 1950 and 1951.

REMARKS.--Some regulation at low flow by industrial plants upstream from station.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974  
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	24.5	21.5	14.5	14.0	8.0	8.0	3.0	3.0	7.0	7.0	5.5	5.0
2	21.5	21.5	14.0	14.0	8.0	7.0	3.0	2.0	7.0	7.0	7.0	5.5
3	21.5	21.5	14.0	14.0	7.5	7.0	2.0	2.0	7.0	6.5	9.5	7.0
4	21.5	20.0	14.0	14.0	8.0	7.5	2.0	2.0	6.5	5.5	11.0	9.5
5	20.5	20.0	14.0	13.0	8.0	8.0	2.5	2.0	5.5	5.0	12.0	11.0
6	20.5	20.0	13.0	11.5	8.0	7.5	3.0	2.5	5.0	5.0	12.0	12.0
7	20.0	20.0	11.5	11.0	8.0	7.5	3.0	3.0	5.0	4.0	12.5	12.0
8	20.5	20.0	11.0	11.0	7.5	7.0	3.0	3.0	4.0	4.0	13.5	12.5
9	20.5	20.5	11.0	11.0	7.0	7.0	3.5	3.0	4.0	4.0	14.0	13.5
10	21.0	20.5	11.0	10.0	7.0	6.0	3.5	3.5	4.0	3.5	14.0	14.0
11	21.5	21.0	10.0	10.0	6.0	5.5	3.5	3.5	3.5	3.5	14.5	11.5
12	21.5	21.5	10.0	10.0	5.5	5.5	3.5	3.5	4.5	3.5	11.5	10.5
13	21.5	21.5	10.5	10.0	6.0	5.5	3.5	3.5	5.5	4.5	10.5	9.5
14	21.5	21.0	12.5	10.5	6.0	6.0	3.5	3.5	6.0	5.5	9.5	9.5
15	21.0	20.5	13.5	12.5	6.0	6.0	3.5	3.5	6.5	6.0	9.5	9.5
16	21.0	19.5	13.5	12.0	6.0	5.5	4.0	3.0	6.0	6.0	9.5	9.5
17	19.5	18.0	12.0	11.0	5.5	4.0	4.0	4.0	6.0	6.0	9.5	8.5
18	18.0	17.0	11.0	11.0	4.0	4.0	4.0	4.0	6.0	6.0	8.5	8.0
19	17.0	17.0	11.0	11.0	4.0	4.0	5.5	4.0	6.5	6.0	9.0	8.5
20	17.5	17.0	11.5	11.0	4.0	4.0	6.0	5.5	6.5	6.0	10.5	9.0
21	17.5	17.0	12.0	11.5	4.0	3.5	6.0	6.0	6.5	6.0	10.5	9.5
22	17.5	17.0	12.0	11.5	3.5	3.0	6.0	6.0	6.5	6.5	9.5	9.0
23	17.5	17.0	12.0	12.0	3.5	3.5	6.5	6.0	6.5	5.5	9.5	9.0
24	17.5	17.0	12.0	12.0	3.5	3.5	6.5	6.5	5.5	4.0	9.0	8.5
25	18.0	17.5	12.0	11.5	3.5	3.5	6.5	6.0	4.0	3.5	8.5	8.0
26	18.5	18.0	11.5	9.0	4.5	3.5	6.0	6.0	3.5	3.5	9.0	8.0
27	18.5	17.5	9.5	9.0	4.5	4.5	7.0	6.0	4.0	3.5	10.5	9.0
28	18.0	17.0	10.0	9.5	4.5	4.0	7.0	7.0	5.0	4.0	11.5	10.5
29	17.0	15.5	9.5	8.5	4.0	4.0	7.0	7.0	---	---	13.0	11.5
30	15.5	15.0	8.5	8.0	4.0	3.5	7.0	7.0	---	---	13.0	10.0
31	15.0	14.5	---	---	3.5	3.0	7.0	7.0	---	---	10.0	9.0
MONTH	24.5	14.5	14.5	8.0	8.0	3.0	7.0	2.0	7.0	3.5	14.5	5.0

GREAT MIAMI RIVER BASIN

03274000 GREAT MIAMI RIVER AT HAMILTON, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued  
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

[illegible]

LOCATION.--Lat 39°20'00", long 84°36'42", Butler County, at American Materials Company private bridge near Hamilton, 5.5 mi (8.8 km) downstream from gaging station, and 2.4 mi (3.9 km) upstream from Indian Creek.

PERIOD OF RECORD.--Chemical analyses: July 1963 to November 1973 (discontinued).

REMARKS.--Samples for iron and manganese filtered clear when collected. Samples were collected weekly October, July to September, and monthly November to June. Records of discharge are given for Great Miami River at Hamilton, Ohio, station 03274000, drainage area, 3,630 mi<sup>2</sup> (9,402 km<sup>2</sup>).

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	BICAH- RONATE (MG/L)	CAR- BONATE (MG/L)	DIS- SOLVED CHLOR- IDE (MG/L)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED FLUOR- IDE (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	PH (UNITS)	CARBON DIOXIDE (CO2) (MG/L)
OCT.												
04...	1350	1590	14.0	220	0	40	64	--	650	364	7.4	14
10...	1405	1150	24.0	320	0	50	88	.4	800	494	7.6	13
17...	1340	1100	18.0	318	0	52	84	--	800	482	7.4	20
24...	1405	926	19.5	330	0	58	95	1.1	825	514	7.6	13
31...	1400	1050	14.0	330	0	62	96	--	900	516	7.5	17
NOV.												
14...	1430	953	13.0	332	0	62	100	--	851	542	7.5	17

DATE	ALKALINITY AS CaCO <sub>3</sub> (MG/L)	TURBIDITY (JTU)	ODOR (THRESHOLD NUMBER)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL AMMONIA (NH <sub>4</sub> ) (MG/L)	TOTAL NITRATE (NO <sub>3</sub> ) (MG/L)	TOTAL NITRITE (NO <sub>2</sub> ) (MG/L)	TOTAL PHOSPHORUS (PO <sub>4</sub> ) (MG/L)	HARDNESS (CA, MG) (MG/L)
OCT.												
04...	180	40	16	.70	.06	1.4	.55	.90	6.2	.21	1.7	350
10...	262	30	8	.66	.12	2.1	.62	.85	9.2	.39	1.9	390
17...	261	25	4	.59	.09	1.4	.69	.76	6.2	.28	2.1	380
24...	271	20	4	.98	.13	2.5	.83	1.3	11	.43	2.5	390
31...	271	20	8	.48	.11	1.8	.96	.62	7.8	.36	3.0	400
NOV.												
14...	272	30	4	.81	.18	2.4	.92	1.0	10	.60	2.8	370

[illegible]



## GREAT MIAMI RIVER BASIN

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO

LOCATION.--Lat 39°15'47", long 84°40'04", in N 1/2 sec.34, R.1, T.2, Hamilton County, at Blue Rock Road bridge at New Baltimore, 6.4 mi (10.3 km) downstream from Indian Creek, and 14.3 mi (23.0 km) downstream from gaging station at Hamilton.

DRAINAGE AREA.--3,814 mi<sup>2</sup> (9,878 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: July 1966 to September 1974.  
Water temperatures: July 1966 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 920 micromhos Oct. 29; minimum, 280 micromhos June 22.  
Dissolved oxygen: Maximum, 12.9 mg/l Apr. 29; minimum, 1.0 mg/l June 22.  
Water temperatures: Maximum, 30.0°C Aug. 16; minimum, 2.0°C Dec. 22, Feb. 11, 26.

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 1,160 micromhos Mar. 18, 1970; minimum, 230 micromhos May 24, 1968.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
05...	0820	3270	25.0	--	519	8.5	--	--	--	--	--	4
29...	0830	818	17.0	--	888	8.6	--	--	--	--	--	15
NOV.												
12...	0900	908	10.0	--	864	8.6	--	--	--	--	--	12
26...	0845	10600	13.0	--	464	7.2	--	--	--	--	--	0
DEC.												
28...	1330	19200	6.0	--	459	8.4	--	--	--	--	--	0
JAN.												
11...	0930	3220	4.5	--	907	7.6	--	85	33	--	--	0
21...	0900	29300	7.0	--	404	7.5	--	49	30	--	--	0
FEB.												
15...	0830	4640	7.0	--	722	8.6	--	93	32	--	--	6
25...	0900	6020	3.0	--	536	8.0	--	67	27	--	--	0
MAR.												
04...	0900	4180	13.0	--	506	7.2	--	71	25	--	--	0
25...	0845	2710	5.5	--	742	8.3	--	80	36	--	--	0
APR.												
02...	1010	23300	11.5	--	441	7.4	--	130	45	--	--	0
29...	0825	2250	20.0	--	732	8.1	--	84	35	--	--	0
MAY												
13...	0830	2570	18.5	--	741	7.5	--	82	30	--	--	0
20...	1600	4000	22.0	7.5	540	7.3	--	60	27	--	--	0
JUNE												
14...	0830	1180	23.5	--	771	7.5	--	88	35	--	--	0
26...	0820	7830	19.0	--	567	8.0	--	70	26	--	--	0
SEP.												
18...	1030	1760	20.0	6.6	660	7.9	7.7	65	29	25	3.6	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
18...	1605	.6	--
APR.			
17...	1535	.0	7.1

## GREAT MIAMI RIVER BASIN

203

## 03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO--Continued

## EXTREMES.--Period of record--Continued

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher Feb. 26, Mar. 8, June 9, 10, 1971, Feb. 6, 1972, Nov. 15, 1972; minimum, 0.0 mg/l June 27, 1971.

Water temperatures (1966-74): Maximum, 33.0°C July 18, 1969; minimum, freezing point on several days during winter months of 1970 and 1971.

REMARKS.--Water-quality recorder operated since July 1966. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Great Miami River at Hamilton, Ohio, station 03274000, drainage area 3,630 mi<sup>2</sup> (9,402 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
05...	188	29	32	.8	--	.00	2.3	--	--	--	--	--
29...	291	21	66	1.7	--	.00	6.0	--	--	--	--	--
NOV.												
12...	307	110	58	.6	--	.00	5.5	--	--	--	--	--
26...	192	48	18	.2	--	.00	3.5	--	--	--	--	--
DEC.												
28...	170	--	--	--	--	--	--	--	--	--	--	--
JAN.												
11...	310	81	94	.4	--	.00	2.7	--	--	350	--	--
21...	160	46	18	.3	--	--	--	--	--	250	--	--
FEB.												
15...	292	69	40	.5	--	.01	4.4	--	--	360	--	--
25...	210	64	24	.4	--	.01	5.4	--	--	280	--	--
MAR.												
04...	180	69	32	.3	--	.00	4.2	--	--	280	--	--
25...	302	80	46	.5	--	.00	3.7	--	--	350	--	--
APR.												
02...	192	38	16	.5	--	.00	2.4	--	--	510	--	--
29...	307	69	38	.6	--	.00	3.1	--	--	350	--	--
MAY												
13...	302	75	42	.5	--	.01	3.1	--	--	330	--	--
20...	244	52	26	.4	--	.00	4.0	--	--	260	--	--
JUNE												
14...	306	88	51	1.4	--	.00	3.2	--	--	360	--	--
26...	224	51	25	.9	--	.00	10	--	--	280	--	--
SEP.												
18...	298	73	36	.6	.44	.12	2.3	.49	387	280	40	50

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	820	485	865	800	575	505	---	---	---	---	690	650
2	715	470	860	785	630	615	---	---	660	630	670	635
3	640	550	825	730	630	610	---	---	665	645	640	600
4	580	390	760	725	640	600	---	---	675	660	660	610
5	520	355	790	740	655	610	---	---	690	660	680	640
6	680	510	810	740	670	630	---	---	690	650	690	655
7	700	665	820	800	680	650	---	---	650	560	675	615
8	755	700	840	815	670	650	---	---	660	620	635	600
9	770	745	840	820	670	660	770	750	650	630	640	610
10	785	745	865	800	680	665	850	765	660	640	695	620
11	800	750	835	800	695	675	915	830	675	660	700	650
12	810	760	840	815	735	685	---	---	700	660	710	660
13	795	770	840	810	790	720	870	830	720	685	730	690
14	800	760	830	810	750	730	830	780	725	680	730	685
15	805	760	830	670	755	750	780	625	710	660	720	695
16	805	760	750	630	755	740	640	585	685	645	710	690
17	800	710	740	700	800	740	---	---	670	620	720	690
18	810	725	720	660	800	750	515	470	660	630	690	670
19	830	775	770	670	760	750	470	420	660	640	715	660
20	830	785	780	750	775	675	---	---	680	630	730	710
21	870	815	790	770	750	680	---	---	690	605	720	680
22	860	805	810	775	780	750	---	---	605	560	685	670
23	840	800	830	800	790	760	---	---	565	510	705	670
24	830	790	840	465	765	735	---	---	510	470	770	700
25	840	790	595	410	750	660	---	---	560	490	745	710
26	850	800	450	390	680	640	---	---	615	560	830	745
27	880	845	---	---	645	430	---	---	680	615	800	750
28	900	870	420	390	440	430	---	---	690	640	770	720
29	920	880	510	420	490	440	---	---	---	---	760	705
30	890	870	520	490	510	490	---	---	---	---	715	440
31	885	840	---	---	555	525	---	---	---	---	490	420
MONTH	920	355	865	390	800	430	---	---	725	470	830	420

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	26.0	23.0	15.0	14.5	10.0	9.0	---	---	8.0	7.0	7.5	6.0
2	25.0	23.0	16.0	15.0	10.0	9.0	---	---	7.5	7.0	9.5	7.5
3	24.0	23.0	16.0	15.0	10.0	10.0	---	---	7.0	6.0	12.0	9.5
4	24.0	23.0	15.5	14.0	12.0	10.0	---	---	6.0	4.5	14.0	12.0
5	23.0	22.5	15.0	13.5	12.0	11.0	---	---	5.0	4.5	14.5	13.5
6	22.5	21.5	13.5	12.0	11.0	9.0	---	---	5.0	4.0	14.5	13.0
7	23.0	21.0	12.0	11.5	9.5	8.5	---	---	5.0	3.5	15.0	13.5
8	23.0	22.5	12.0	12.0	9.0	8.0	---	---	4.0	3.0	16.0	14.5
9	23.5	23.0	13.0	11.0	9.0	8.0	4.0	3.5	3.0	3.0	17.0	16.0
10	24.0	22.5	11.0	10.0	8.5	6.0	4.5	4.0	3.0	2.5	16.5	15.0
11	24.0	23.0	11.0	10.0	6.0	5.0	5.0	4.0	3.0	2.0	15.0	12.0
12	24.0	23.0	11.5	10.5	7.0	5.5	4.0	3.0	5.0	3.0	12.0	10.0
13	24.0	23.0	13.0	11.0	8.0	7.0	3.5	2.5	7.0	5.0	10.0	8.5
14	23.0	22.0	15.0	13.0	8.5	8.0	4.0	3.0	8.0	7.0	10.0	8.5
15	23.0	22.0	16.0	15.0	8.0	7.5	5.0	4.0	7.0	6.0	10.0	9.0
16	23.0	20.5	15.0	13.0	7.5	6.0	5.0	4.0	7.0	6.0	10.0	9.0
17	20.5	19.0	13.0	12.0	6.0	4.0	6.0	5.0	7.0	6.0	9.0	8.0
18	19.0	18.0	13.0	12.0	4.5	4.0	5.0	4.0	7.0	6.0	9.0	7.5
19	19.0	18.0	14.0	13.0	6.0	4.5	7.0	5.0	8.0	7.0	10.0	9.0
20	19.5	18.0	14.5	13.5	6.0	4.0	8.0	7.0	8.0	7.0	11.5	9.0
21	19.0	18.0	15.0	14.5	4.0	3.0	---	---	7.5	7.0	11.0	9.0
22	19.0	18.0	15.0	14.0	3.0	2.0	---	---	8.0	7.0	10.0	8.0
23	19.0	18.0	15.0	14.0	4.5	2.5	---	---	7.0	5.5	10.0	8.0
24	19.0	18.0	16.0	15.0	5.0	4.5	---	---	5.5	3.5	8.5	7.0
25	20.0	18.0	16.0	14.5	6.5	5.0	---	---	3.5	2.5	8.0	6.0
26	19.5	18.5	14.5	12.0	6.5	6.0	---	---	4.0	2.0	10.0	7.0
27	19.0	18.0	---	---	6.5	6.0	---	---	5.0	3.5	11.0	9.0
28	19.0	17.0	13.5	12.0	6.0	5.0	---	---	6.5	5.0	12.5	10.5
29	17.0	16.0	12.0	10.0	5.0	5.0	---	---	---	---	14.0	12.5
30	16.0	15.5	10.0	10.0	5.0	3.5	---	---	---	---	13.5	9.0
31	16.0	15.0	---	---	3.5	3.0	---	---	---	---	11.0	9.0
MONTH	26.0	15.0	16.0	10.0	12.0	2.0	---	---	8.0	2.0	17.0	6.0

[illegible]





## GREAT MIAMI RIVER BASIN

## 03276600 GREAT MIAMI RIVER AT ELIZABETHTOWN, OHIO

LOCATION.--Lat 39°09'11", long 84°47'38", Hamilton County, at Lost Bridge on Lawrenceburg Road, 0.6 mi (1.0 km) southeast of Elizabethtown, 0.9 mi (1.4 km) downstream from Whitewater River, and 5.4 mi (8.7 km) upstream from mouth.

DRAINAGE AREA.--5,356 mi<sup>2</sup> (13,872 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1956 to June 1974 (discontinued).

Water temperatures: October 1956 to June 1974 (discontinued).

EXTREMES.--1973-74:

Specific conductance: Maximum daily, 891 micromhos Jan. 12; minimum daily, 393 micromhos Jan. 21.

Water temperatures: Maximum, 27.0°C June 11, 12, 22; minimum, 1.0°C Dec. 25.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
OCT.									
06...	1230	21.0	421	8.1	45	13	0	158	50
16...	1245	21.0	831	7.6	--	--	0	314	95
25...	1145	17.0	--	--	--	--	--	--	--
28...	1245	16.0	878	8.3	91	35	0	319	100
NOV.									
04...	1130	14.5	799	8.7	--	--	16	285	94
16...	1500	19.0	860	7.8	--	--	0	319	110
22...	1615	16.0	485	8.3	--	--	0	190	56
DEC.									
13...	1530	7.0	729	8.6	--	--	11	301	76
21...	1545	3.0	779	8.4	--	--	4	267	73
25...	1600	1.0	476	8.1	--	--	0	172	49
JAN.									
03...	1645	--	607	8.0	81	25	0	248	57
12...	1545	4.0	905	7.1	94	34	0	316	74
21...	1615	8.0	460	7.2	75	25	0	179	39
FEB.									
17...	1630	--	688	7.4	87	33	0	286	69
21...	1615	8.0	697	7.1	89	32	0	278	70
24...	1600	6.0	568	7.3	76	27	0	225	58
MAR.									
10...	1500	15.0	653	8.1	92	--	0	283	68
19...	0955	8.5	--	--	--	--	--	--	--
29...	1545	12.0	785	7.5	84	30	0	305	75
31...	1530	9.0	502	7.5	72	25	0	208	52
APR.									
08...	1500	6.0	416	7.6	69	24	0	180	42
29...	1530	22.0	701	7.7	85	35	0	307	75
MAY									
06...	1530	18.0	708	--	--	--	0	313	71
11...	1445	18.0	669	7.5	84	31	0	294	66
30...	1430	21.0	590	7.6	77	27	0	250	58
JUNE									
08...	1200	24.0	685	7.9	86	31	0	313	66
14...	1145	25.0	749	--	--	--	0	311	80
24...	1500	22.0	466	7.4	71	23	0	182	44

## GREAT MIAMI RIVER BASIN

209

## 03276600 GREAT MIAMI RIVER AT ELIZABETHTOWN, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance: Maximum daily, 1,090 micromhos Jan. 6, 1964; minimum daily, 296 micromhos Jan. 28, 1962.  
 Water temperatures: Maximum, 32.5°C July 24, 1972; minimum, freezing point on several days during winter periods of most years.

REMARKS.--Samples for iron and manganese filtered clear when collected. Daily samples were collected at this station and samples were selected for analysis on the following basis: (1) Maximum daily specific conductance for each month, (2) minimum daily specific conductance for each month, (3) median daily specific conductance for each month, and (4) special sample each month to further define the quality of water. No discharge records available.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED FLUOR- IDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.								
06...	21	.4	.01	2.6	.49	170	--	--
16...	53	.6	.01	3.7	.61	--	--	--
25...	--	--	--	--	--	--	300	79
28...	64	.7	.01	5.3	.72	370	--	--
NOV.								
04...	54	.6	.00	4.4	.87	--	--	--
16...	56	.6	.01	4.5	.71	--	--	--
22...	24	.4	.01	2.3	1.3	--	--	--
DEC.								
13...	33	.4	.00	4.2	.40	--	--	--
21...	68	.4	.00	3.6	.57	--	--	--
25...	24	.3	.00	4.9	.87	--	--	--
JAN.								
03...	32	.3	.01	3.8	.18	310	--	--
12...	93	.4	.01	.00	.11	370	--	--
21...	20	.5	.02	3.4	1.1	290	--	--
FEB.								
17...	35	.4	.01	3.5	.39	350	--	--
21...	39	.3	.00	2.7	.21	350	--	--
24...	29	.3	.01	3.4	.45	300	--	--
MAR.								
10...	32	.5	.00	4.1	.42	--	--	--
19...	--	--	--	--	--	--	10	50
29...	65	.4	.00	2.9	.26	330	--	--
31...	23	.7	.01	4.7	.18	280	--	--
APR.								
08...	17	.3	.01	3.4	.68	270	--	--
29...	37	.5	.00	2.9	.36	360	--	--
MAY								
05...	39	.7	.00	2.9	.40	--	--	--
11...	21	.7	.00	2.5	.45	340	--	--
30...	31	.6	.01	3.4	.80	300	--	--
JUNE								
08...	33	.6	.00	3.2	.39	340	--	--
14...	48	.8	.01	2.8	.54	--	--	--
24...	18	.6	.00	8.8	.74	270	--	--

## GREAT MIAMI RIVER BASIN

03276600 GREAT MIAMI RIVER AT ELIZABETHTOWN, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), OCTOBER 1973 TO June 1974  
(ONCE-DAILY MEASUREMENT BETWEEN 0955 AND 1645)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	801	776	641	547	585	685	497	698	590	---	---	---
2	625	788	639	581	584	684	497	701	637	---	---	---
3	627	776	638	583	585	684	497	642	635	---	---	---
4	627	774	644	588	656	613	537	641	635	---	---	---
5	408	788	646	883	659	626	537	641	653	---	---	---
6	408	785	690	717	659	626	537	708	654	---	---	---
7	739	799	689	724	659	588	537	708	685	---	---	---
8	734	785	683	714	573	594	416	708	685	---	---	---
9	740	796	682	713	625	594	417	669	685	---	---	---
10	740	813	702	874	623	653	416	669	746	---	---	---
11	739	814	695	885	621	652	526	669	748	---	---	---
12	734	814	681	891	673	647	527	672	729	---	---	---
13	800	814	684	754	673	673	528	685	744	---	---	---
14	794	822	695	754	673	673	530	683	749	---	---	---
15	800	824	729	747	718	673	641	683	748	---	---	---
16	800	824	708	737	720	673	641	678	744	---	---	---
17	804	726	701	590	721	688	638	---	733	---	---	---
18	804	736	705	583	661	688	637	---	744	---	---	---
19	781	730	717	400	660	689	679	---	741	---	---	---
20	771	474	722	395	660	697	680	---	735	---	---	---
21	785	472	731	393	655	697	680	636	736	---	---	---
22	790	472	727	395	655	697	680	638	731	---	---	---
23	816	473	720	464	655	697	679	639	470	---	---	---
24	822	478	717	467	548	740	669	639	466	---	---	---
25	824	475	440	467	548	740	669	646	470	---	---	---
26	820	477	443	467	548	740	674	648	467	---	---	---
27	853	477	446	468	597	783	671	648	645	---	---	---
28	853	486	543	490	597	780	672	648	648	---	---	---
29	844	486	447	490	---	785	701	592	645	---	---	---
30	844	486	539	490	---	785	698	590	645	---	---	---
31	848	---	542	490	---	502	---	591	---	---	---	---
MONTH	754	675	645	605	635	679	590	658	665	---	---	---
YEAR	MAX	891	MIN	393	MEAN	657						

TEMPERATURE (°C) OF WATER, OCTOBER 1973 TO June 1974  
(ONCE-DAILY MEASUREMENT BETWEEN 0955 AND 1645)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	14.5	11.0	3.5	8.0	10.0	10.0	22.0	21.0	---	---	---
2	23.5	14.5	11.0	3.0	8.0	7.0	10.0	22.0	21.0	---	---	---
3	23.5	14.5	10.0	3.0	6.0	15.0	11.0	19.0	22.0	---	---	---
4	23.5	14.5	11.0	3.0	5.0	15.5	9.0	19.0	24.0	---	---	---
5	21.0	12.0	11.0	3.0	5.0	14.5	10.0	20.0	24.0	---	---	---
6	21.0	10.0	9.0	4.0	5.0	14.0	9.5	18.0	24.0	---	---	---
7	21.0	10.0	9.0	4.0	4.0	16.0	9.0	18.0	23.0	---	---	---
8	23.0	10.0	8.0	4.0	4.0	16.0	6.0	18.0	24.0	---	---	---
9	23.0	10.0	8.0	4.0	4.0	16.0	7.0	18.0	24.0	---	---	---
10	23.0	10.0	7.0	4.0	4.0	13.0	8.0	18.0	24.0	---	---	---
11	23.0	10.0	7.0	5.0	4.0	14.0	12.0	18.0	27.0	---	---	---
12	24.0	10.0	7.0	4.0	4.0	7.0	13.0	18.0	27.0	---	---	---
13	23.0	10.0	7.0	4.0	8.0	9.5	13.0	20.0	25.0	---	---	---
14	21.0	12.0	6.0	4.0	8.0	9.5	12.0	21.0	25.0	---	---	---
15	21.0	15.0	15.0	4.0	5.0	9.5	14.0	21.0	26.0	---	---	---
16	21.0	19.0	4.5	5.0	6.0	9.0	15.0	23.0	26.0	---	---	---
17	19.0	10.0	4.5	5.0	7.0	9.0	15.0	---	23.0	---	---	---
18	19.0	11.0	4.5	5.0	7.0	9.0	16.0	---	23.0	---	---	---
19	19.0	14.0	3.5	6.0	7.0	9.0	17.0	---	25.0	---	---	---
20	18.5	15.0	3.0	8.0	7.0	11.0	17.0	---	26.0	---	---	---
21	19.0	16.0	3.5	8.0	8.0	11.0	17.0	24.0	26.0	---	---	---
22	19.0	16.0	3.5	8.0	8.0	9.5	16.0	22.0	27.0	---	---	---
23	19.0	15.0	4.0	8.0	8.0	8.0	15.0	24.0	22.0	---	---	---
24	19.0	15.0	4.0	7.0	6.0	8.0	16.0	24.0	22.0	---	---	---
25	19.0	15.0	1.0	7.5	5.0	8.0	16.0	22.0	22.0	---	---	---
26	19.0	15.0	7.5	7.5	4.0	8.0	20.0	22.0	22.0	---	---	---
27	16.0	10.0	7.0	7.0	5.0	11.0	20.0	22.0	20.0	---	---	---
28	16.0	9.0	5.0	8.0	6.0	12.0	21.0	22.0	21.0	---	---	---
29	14.5	9.0	5.0	8.0	---	12.0	22.0	21.0	22.0	---	---	---
30	14.5	9.0	5.0	7.5	---	8.0	22.0	21.0	23.0	---	---	---
31	15.0	---	4.0	8.0	---	9.0	---	21.0	---	---	---	---
MONTH	20.0	12.5	6.5	5.5	6.0	11.0	14.0	20.5	23.5	---	---	---
YEAR	MAX	27.0	MIN	1.0	MEAN	13.5						





ST. LAWRENCE RIVER BASIN  
STREAMS TRIBUTARY TO LAKE ERIE

04184100 MAUMEE RIVER AT DEFIANCE, OHIO

LOCATION.--Lat 41°16'43", long 84°23'07", Defiance County, at waterworks on right bank at Defiance, about 300 ft (91 m) upstream from Tiffin River, and 1.8 mi (2.9 km) upstream from Auglaize River.

DRAINAGE AREA.--2,316 mi<sup>2</sup> (5,998 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: January 1966 to September 1974.  
Water temperatures: January 1966 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 880 micromhos Nov. 20, 21; minimum, 290 micromhos Jan. 22, 25.

pH: Maximum, 9.0 Sept. 18; minimum, 6.7 Nov. 29, Dec. 24, Jan. 21-23.

Dissolved oxygen: Maximum, 15.0 mg/l on many days during July and August; minimum, 2.0 mg/l Aug. 2, 29.

Water temperatures: Maximum, 30.0°C July 9, 10; minimum, freezing point Dec. 17, 21.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
03...	0800	--	19.5	--	897	8.4	--	--	--	--	--	4
12...	0800	--	19.0	--	715	8.4	--	--	--	--	--	2
NOV.												
07...	1545	--	5.5	--	875	7.7	--	--	--	--	--	0
30...	0800	--	9.0	--	532	7.2	--	--	--	--	--	0
DEC.												
24...	0800	--	.5	--	717	7.3	--	--	--	--	--	0
28...	0800	--	.5	--	445	7.7	--	--	--	--	--	0
JAN.												
25...	0800	--	2.0	--	313	7.1	--	38	10	--	--	0
28...	0800	--	3.0	--	358	6.7	--	49	14	--	--	0
FEB.												
15...	0800	--	1.5	--	664	7.5	--	90	25	--	--	0
25...	0800	--	3.0	--	332	7.5	--	45	14	--	--	0
MAR.												
08...	0800	--	14.0	--	312	7.4	--	51	13	--	--	0
29...	0800	--	5.0	--	630	7.4	--	80	21	--	--	0
APR.												
08...	0800	--	11.0	--	369	7.9	--	52	15	--	--	0
25...	1500	--	13.0	--	651	--	--	--	--	--	--	--
29...	0800	--	12.0	--	679	7.7	--	77	25	--	--	0
MAY												
03...	0800	--	24.5	--	649	7.4	--	79	22	--	--	0
20...	0800	--	16.0	--	395	7.5	--	56	14	--	--	0
JUNE												
05...	0800	--	22.0	--	654	7.7	--	92	25	--	--	0
26...	0800	--	20.0	--	562	7.4	--	75	20	--	--	0
AUG.												
28...	0915	211	24.0	4.7	720	8.4	.3	61	26	52	5.0	5

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.				
11...	0915	11	1.2	--
APR.				
25...	1500	4	.3	8.9

## STREAMS TRIBUTARY TO LAKE ERIE

213

## 04184100 MAUMEE RIVER AT DEFIANCE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 1,350 micromhos Jan. 24, 1970; minimum, 210 micromhos Jan. 30, 1969, Feb. 8, 9, 1971.

pH (1973-74): Maximum, 9.0 Sept. 18, 1974; minimum, 6.7 Nov. 29, Dec. 24, 1973, Jan. 21-23, 1974.

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher on many days during water years 1966 to 1968, 1973, and 1974; minimum, 0.2 mg/l Aug. 23, 1966.

Water temperatures (1966-74): Maximum, 32.0°C July 3, 1966; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since January 1966. The pH parameter was added November 7, 1973. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher due to instrument limitation. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.												
03...	269	140	65	.9	--	.00	2.2	--	--	--	--	--
12...	206	110	51	.8	--	.00	1.3	--	--	--	--	--
NOV.												
07...	257	130	69	.8	--	.00	2.8	--	--	--	--	--
30...	162	65	31	.4	--	.00	5.9	--	--	--	--	--
DEC.												
24...	265	130	51	.3	--	.00	5.1	--	--	--	--	--
28...	127	51	30	.2	--	.00	6.1	--	--	--	--	--
JAN.												
25...	87	37	16	.2	--	.01	4.9	--	--	140	--	--
28...	124	55	20	.3	--	.00	3.3	--	--	180	--	--
FEB.												
15...	236	90	33	.5	--	.00	3.3	--	--	330	--	--
25...	97	43	15	.4	--	.02	5.7	--	--	170	--	--
MAR.												
08...	105	43	13	.2	--	.02	4.7	--	--	180	--	--
29...	230	86	30	.3	--	.00	3.5	--	--	290	--	--
APR.												
08...	124	48	14	.5	--	.01	4.3	--	--	190	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
29...	261	75	30	.5	--	.00	2.2	--	--	300	--	--
MAY												
03...	257	89	32	.4	--	.01	2.1	--	--	290	--	--
20...	140	48	15	.4	--	.01	6.7	--	--	200	--	--
JUNE												
05...	281	84	30	.0	--	.01	2.6	--	--	330	--	--
26...	219	67	28	.9	--	.00	4.2	--	--	270	--	--
AUG.												
28...	198	120	63	.9	.66	.02	.51	.35	431	260	30	20

## 04184100 MAUMEE RIVER AT DEFIANCE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	840	790	---	---	490	470	440	420	390	355	460	450
2	---	---	---	---	520	480	465	440	405	390	490	460
3	---	---	---	---	550	510	570	460	420	400	520	490
4	---	---	---	---	600	550	560	510	450	410	550	470
5	---	---	---	---	610	590	575	560	500	440	470	410
6	---	---	---	---	610	560	600	575	520	480	420	360
7	---	---	830	410	610	595	650	600	530	510	360	310
8	---	---	810	430	630	610	660	650	550	510	360	320
9	---	---	830	790	650	630	680	660	580	550	360	350
10	---	---	830	800	680	650	685	670	600	580	380	360
11	---	---	810	790	690	680	700	680	610	590	370	330
12	---	---	810	790	690	660	715	700	650	610	380	330
13	---	---	820	810	700	665	740	705	670	640	420	380
14	---	---	830	820	700	680	750	735	660	650	430	420
15	---	---	840	820	730	700	800	750	710	640	450	430
16	---	---	845	790	770	720	820	800	730	710	460	450
17	---	---	810	780	790	750	820	810	740	720	500	460
18	---	---	810	775	790	760	825	790	740	710	480	430
19	---	---	830	810	790	770	830	770	750	705	490	440
20	---	---	880	830	790	770	770	480	705	600	530	490
21	---	---	880	855	790	770	480	310	605	500	540	530
22	---	---	855	810	790	770	310	290	500	380	550	520
23	---	---	820	800	800	780	305	295	390	360	580	520
24	---	---	830	810	800	700	305	295	370	320	580	560
25	---	---	830	780	700	660	300	290	360	330	580	550
26	---	---	790	720	660	580	340	300	400	360	610	580
27	---	---	810	720	580	460	360	340	420	400	630	610
28	---	---	800	560	460	420	375	360	450	420	650	630
29	---	---	620	460	460	420	360	340	---	---	660	630
30	---	---	510	480	440	400	365	340	---	---	670	570
31	---	---	---	---	480	420	370	360	---	---	630	570
MONTH	---	---	880	410	800	400	830	290	750	320	670	310

[illegible]

PH (UNITS), NOVEMBER 1973 TO SEPTEMBER 1974

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04185300 TIFFIN RIVER AT EVANSFORT, OHIO

LOCATION.--Lat 41°25'38", long 84°23'22", in SE 1/4 sec.33, T.6 N., R.4 E., Defiance County, on left bank at upstream side of bridge on State Highway 191, 0.4 mi (0.6 km) east of center of Evansport, 1,300 ft (396 m) downstream from Brush Creek, and 6.5 mi (10.5 km) downstream from Beaver Creek.

DRAINAGE AREA.--541 mi<sup>2</sup> (1,401 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1968 to September 1974.

Water temperatures: June 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 894 micromhos Mar. 27; minimum, 310 micromhos Feb. 23.

pH: Maximum, 8.8 Nov. 13, Dec. 2; minimum, 6.4 Jan. 30.

Dissolved oxygen: Maximum, 10.6 mg/l Nov. 9; minimum, 4.7 mg/l July 17.

Water temperatures: Maximum, 27.5°C July 7-9, 13, 17; minimum, freezing point on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
08...	1550	--	17.0	--	678	8.5	--	--	--	--	--	9
20...	0800	--	11.0	--	774	7.8	--	--	--	--	--	0
NOV.												
15...	1415	--	11.0	--	786	7.7	--	--	--	--	--	0
27...	0755	--	9.0	--	639	8.6	--	--	--	--	--	19
DEC.												
22...	1350	--	.0	--	804	8.6	--	--	--	--	--	12
29...	1120	--	.0	--	501	7.2	--	--	--	--	--	0
JAN.												
17...	1635	--	.0	--	772	7.9	--	120	28	--	--	0
22...	1700	--	1.5	--	382	7.3	--	26	14	--	--	0
FEB.												
16...	1500	--	.0	--	706	7.5	--	96	23	--	--	0
23...	1245	--	.0	--	353	7.0	--	44	13	--	--	0
MAR.												
07...	1600	--	8.5	--	327	6.9	--	42	10	--	--	0
26...	1650	--	3.0	--	602	8.3	--	85	20	--	--	0
APR.												
08...	1605	--	6.0	--	499	8.1	--	68	18	--	--	0
25...	1115	--	11.0	--	622	8.2	--	90	23	--	--	0
MAY												
15...	1605	--	15.0	--	450	7.6	--	66	15	--	--	0
28...	1605	--	15.0	--	640	7.8	--	100	23	--	--	0
JUNE												
18...	1555	--	18.0	--	658	7.9	--	94	24	--	--	0
21...	1605	--	20.5	--	508	7.1	--	53	17	--	--	0
AUG.												
29...	0900	26	20.0	6.2	650	7.8	5.4	85	22	25	9.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
11...	1415	<.5	--
APR.			
25...	1115	.0	7.6

## STREAMS TRIBUTARY TO LAKE ERIE

219

04185300 TIFFIN RIVER AT EVANSPORT, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,120 micromhos Oct. 11, 1970; minimum, 170 micromhos Feb. 23, 1971.  
 pH (1968-74): Maximum, 9.1 Mar. 16-18, 1969; minimum, 6.4 Jan. 30, 1974.  
 Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher Jan. 8-10, 1972; minimum, 2.2 mg/l Nov. 28-30, 1969.  
 Water temperatures (1968-74): Maximum, 31.0°C Sept. 3, 4, 1973; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since June 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
08...	277	69	39	.4	--	--	--	--	--	--	--	--
20...	330	68	51	1.0	--	--	--	--	--	--	--	--
NOV.												
15...	326	73	47	.7	--	.00	2.0	--	--	--	--	--
27...	244	71	39	.4	--	.00	2.0	--	--	--	--	--
DEC.												
22...	294	110	43	.3	--	.00	3.9	--	--	--	--	--
29...	114	60	34	.2	--	.01	9.5	--	--	--	--	--
JAN.												
17...	291	100	47	.3	--	.00	2.9	--	--	420	--	--
22...	89	49	26	.4	--	.00	8.3	--	--	120	--	--
FEB.												
16...	261	79	42	.5	--	.01	3.0	--	--	330	--	--
23...	98	41	19	.2	--	.02	6.2	--	--	160	--	--
MAR.												
07...	100	41	17	.4	--	.06	6.0	--	--	150	--	--
26...	243	75	29	.3	--	.00	4.0	--	--	290	--	--
APR.												
08...	172	59	22	.4	--	.01	5.8	--	--	240	--	--
25...	260	71	30	.5	--	.01	2.9	--	--	320	--	--
MAY												
15...	151	53	20	.4	--	.00	7.5	--	--	230	--	--
28...	281	70	30	.5	--	.00	4.1	--	--	340	--	--
JUNE												
18...	283	68	34	1.7	--	.01	4.3	--	--	330	--	--
21...	197	52	21	1.7	--	.00	7.5	--	--	200	--	--
AUG.												
29...	288	65	36	.5	.17	.00	.38	.37	390	300	10	70

## 04185300 TIFFIN RIVER AT EVANSPOET, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	811	724	762	723	668	548	585	501	556	478	565	481
2	796	706	798	720	744	612	626	515	565	490	628	511
3	781	682	771	708	775	658	670	571	583	505	631	571
4	742	583	753	699	794	761	708	609	622	544	643	517
5	700	541	720	678	795	681	764	632	601	526	565	379
6	760	616	702	666	720	684	791	677	649	550	460	322
7	754	658	693	663	741	702	754	685	694	589	469	349
8	742	643	795	678	726	687	795	696	706	601	415	361
9	757	682	837	750	711	672	821	751	709	610	499	376
10	766	685	856	769	711	675	805	778	715	601	493	373
11	763	661	844	775	738	708	817	742	721	655	409	370
12	768	702	803	782	831	735	799	694	715	649	415	355
13	779	680	792	771	777	717	793	691	685	610	388	337
14	785	662	771	747	834	714	796	769	733	664	612	462
15	787	703	805	673	738	690	790	697	733	649	---	---
16	790	682	716	671	744	672	799	727	742	676	---	---
17	828	702	747	708	714	657	817	733	757	676	---	---
18	798	720	718	703	741	687	829	757	748	685	---	---
19	852	693	719	689	771	726	802	757	697	652	---	---
20	861	729	699	675	777	741	796	628	715	532	---	---
21	855	705	721	679	816	750	610	394	643	427	---	---
22	855	720	755	653	807	753	454	373	433	331	---	---
23	861	723	723	663	839	767	463	427	349	310	---	---
24	861	720	718	667	794	755	472	412	349	331	---	---
25	858	759	695	641	790	616	448	415	364	319	---	---
26	867	759	702	642	616	505	463	433	403	331	849	642
27	816	732	718	620	513	441	493	439	475	382	894	669
28	777	747	677	512	495	411	463	436	550	442	---	---
29	747	735	567	504	485	407	469	427	---	---	---	---
30	765	744	640	571	481	406	451	418	---	---	---	---
31	777	744	---	---	546	432	529	445	---	---	732	591
MONTH	867	541	856	504	839	406	829	373	757	310	---	---

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



## 04185300 TIFFIN RIVER AT EVANSPOET, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.4	6.2	8.2	7.2	8.6	8.1	8.9	8.8	9.3	9.1	9.8	9.6
2	6.6	6.3	8.3	7.7	8.7	8.6	8.9	8.6	9.5	9.2	9.6	9.4
3	6.5	6.1	8.8	7.6	8.8	8.4	8.6	8.3	9.5	9.4	9.6	9.2
4	6.5	6.0	9.5	7.9	8.4	8.2	8.5	8.1	9.4	8.8	9.3	8.9
5	6.3	5.7	9.2	8.6	8.3	7.9	8.7	8.4	9.4	9.1	8.9	8.5
6	6.9	6.3	10.2	8.7	8.6	8.3	8.7	8.4	9.2	9.1	8.6	8.5
7	7.0	6.8	10.3	9.6	8.7	8.4	8.6	8.4	9.1	8.9	8.6	8.5
8	6.9	6.6	10.2	8.9	8.8	8.5	8.5	8.4	9.0	8.8	8.8	8.6
9	6.8	6.5	10.6	9.6	9.1	8.8	8.4	8.2	8.9	8.7	8.9	8.8
10	6.8	6.5	10.5	9.7	9.3	9.1	8.3	8.1	9.0	8.8	9.0	8.9
11	7.1	6.4	10.1	9.4	9.5	9.3	8.1	7.9	8.9	8.6	9.3	9.0
12	7.2	6.8	9.9	9.2	9.5	9.3	7.9	7.8	8.8	8.7	9.5	9.2
13	6.8	6.4	10.0	8.8	9.5	9.3	7.9	7.8	8.8	8.6	9.7	9.5
14	6.8	6.4	9.6	8.0	9.4	9.0	7.9	7.8	8.9	8.7	9.7	9.5
15	7.0	6.7	9.1	7.4	9.4	9.0	7.9	7.8	8.9	8.8	9.6	9.5
16	7.2	6.8	7.4	5.8	9.3	9.1	7.9	7.8	8.9	8.7	9.5	9.4
17	7.8	6.9	8.1	6.2	9.7	9.3	9.7	7.9	8.9	8.8	9.5	9.4
18	7.9	7.5	8.0	6.9	9.6	9.4	8.3	8.2	9.0	8.9	9.5	9.4
19	8.0	7.7	7.9	6.8	9.5	9.2	8.6	8.3	9.0	8.9	9.4	9.3
20	8.2	7.6	8.5	6.9	9.2	9.1	9.0	8.6	9.5	9.0	9.4	9.2
21	8.3	7.9	7.9	6.8	9.1	8.8	9.3	9.0	10.4	9.4	9.3	9.2
22	8.5	8.1	8.0	6.4	8.8	8.4	9.4	9.2	10.1	9.5	9.5	9.3
23	8.5	8.2	8.3	6.8	8.4	8.0	9.4	9.2	9.7	9.5	9.6	9.4
24	8.5	8.2	8.3	7.0	8.1	7.9	9.4	9.2	9.8	9.0	9.8	9.6
25	8.4	8.0	8.1	7.3	8.6	7.8	9.4	9.3	9.8	9.6	10.1	9.8
26	8.0	7.4	8.2	7.6	9.1	8.6	9.4	9.4	9.9	9.7	10.2	10.1
27	7.7	7.3	7.9	7.6	9.3	9.1	9.4	9.1	10.0	9.8	10.3	10.1
28	7.7	7.3	7.9	7.6	9.3	9.0	9.2	9.1	9.9	9.8	10.1	9.6
29	7.6	7.2	8.2	7.6	9.3	9.2	9.2	9.1	---	---	9.7	9.6
30	7.5	7.0	8.3	7.8	9.2	9.1	9.3	9.1	---	---	9.6	9.5
31	7.5	7.1	---	---	9.1	8.9	9.3	9.2	---	---	9.5	9.3
MONTH	8.5	5.7	10.6	5.8	9.7	7.8	9.7	7.8	10.4	8.6	10.3	8.5

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.5	17.0	10.0	9.0	6.5	5.0	1.0	0.0	3.0	2.0	3.0	1.5
2	19.0	18.0	10.0	8.5	6.0	4.5	1.0	0.5	2.0	0.5	5.0	2.5
3	19.5	17.5	9.5	8.0	7.0	5.0	1.0	0.5	1.5	0.5	7.5	4.5
4	19.5	18.0	8.5	7.0	7.5	6.5	1.0	0.0	1.0	0.5	8.0	6.5
5	19.0	16.5	7.5	5.5	8.0	5.0	1.0	0.0	0.5	0.0	9.0	8.0
6	17.0	14.5	5.5	4.5	5.0	3.5	1.0	0.5	0.5	0.0	8.5	7.5
7	17.0	15.0	5.0	3.5	4.5	4.0	0.5	0.0	1.0	0.0	9.5	8.0
8	18.0	15.5	6.5	4.5	4.5	3.5	0.5	0.0	1.5	0.0	9.0	7.0
9	18.5	16.0	6.0	4.5	3.5	2.0	1.5	0.5	1.5	0.0	7.5	6.5
10	19.5	17.0	5.0	4.0	2.5	1.0	1.5	1.0	1.0	0.5	8.0	6.0
11	19.0	17.0	5.0	4.0	1.0	0.5	2.0	1.0	1.0	0.0	7.0	5.0
12	19.0	17.5	6.5	5.0	2.0	0.5	1.5	0.5	1.5	0.0	5.0	4.5
13	18.5	17.5	9.0	6.0	1.5	0.5	1.5	0.5	1.5	0.5	4.5	3.0
14	17.5	16.0	11.0	8.5	1.5	0.5	1.5	1.0	1.0	0.0	5.5	4.0
15	17.0	15.5	12.0	10.0	1.0	0.5	2.0	1.0	1.0	0.0	5.0	4.5
16	16.0	13.0	10.0	7.0	1.0	0.5	1.5	1.0	1.0	0.0	5.0	4.5
17	13.0	11.5	7.5	6.0	1.0	0.0	1.5	1.0	1.5	0.5	5.5	4.0
18	12.5	11.0	7.0	5.5	1.0	0.0	1.5	1.0	1.0	0.5	5.5	4.0
19	12.5	9.5	7.5	6.0	0.5	0.5	1.5	1.0	1.0	0.5	6.5	5.5
20	12.5	10.5	8.0	6.5	0.5	0.0	2.0	1.0	1.0	0.0	6.5	5.0
21	12.0	9.5	9.5	8.0	1.0	0.0	2.0	1.0	1.0	0.0	6.0	5.0
22	12.5	9.5	9.5	7.0	1.0	0.0	1.5	1.0	1.0	0.5	6.5	4.5
23	12.5	9.5	9.0	7.5	1.5	0.5	2.0	1.0	1.0	0.0	5.5	4.0
24	13.0	9.5	10.0	7.5	1.0	0.5	2.0	1.0	0.5	0.0	4.0	3.0
25	14.0	11.5	9.5	8.5	1.5	0.5	2.0	1.0	0.5	0.0	4.0	1.5
26	14.0	12.0	8.5	7.5	1.0	0.5	2.0	1.0	0.5	0.0	4.0	2.0
27	12.5	11.0	9.5	8.0	1.0	0.5	3.0	2.0	1.0	0.0	4.5	3.0
28	12.5	11.0	9.5	7.5	1.0	0.5	3.0	2.5	2.0	0.5	4.5	3.5
29	11.0	10.0	7.5	6.0	1.0	0.5	3.0	2.5	---	---	4.5	4.0
30	11.0	10.0	7.0	5.5	0.5	0.0	3.5	2.0	---	---	5.0	4.5
31	10.5	10.0	---	---	1.0	0.0	3.5	3.0	---	---	6.0	4.5
MONTH	19.5	9.5	12.0	3.5	8.0	0.0	3.5	0.0	3.0	0.0	9.5	1.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	5.0	18.0	15.0	---	---	23.0	19.5	22.5	20.5	23.0	21.0
2	8.5	7.0	16.5	14.5	---	---	24.0	20.0	23.5	20.5	23.0	19.5
3	9.0	8.0	16.0	15.0	---	---	26.0	22.0	23.5	21.5	21.0	19.0

## STREAMS TRIBUTARY TO LAKE ERIE

## 04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OHIO

LOCATION.--Lat 40°56'55", long 84°15'58", in SE 1/4 sec.15, T.1 S., R.5 E., Putnam County, at gaging station on left bank 200 ft (61 m) upstream from bridge on U.S. Highway 224, 3.5 mi (5.6 km) northeast of Fort Jennings, 6.0 mi (9.7 km) upstream from Ottawa River, and 7.3 mi (11.7 km) downstream from Jennings Creek.

DRAINAGE AREA.--332 mi<sup>2</sup> (860 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1974.

Water temperatures: October 1968 to September 1974.

Sediment records: Water years 1970-74 (partial-record station).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,360 micromhos Sept. 6; minimum, 182 micromhos Jan. 25.

pH: Maximum, 9.1 Sept. 5, 25; minimum, 6.9 Sept. 6.

Dissolved oxygen: Maximum, 15.0 mg/l June 20, 26, 27, July 3; minimum, 1.6 mg/l July 10.

Water temperatures: Maximum, 30.5°C July 9, Sept. 12; minimum, freezing point on many days during December and January.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
10...	1310	24	18.5	--	829	8.6	--	75	30	--	--	12
29...	0915	31	10.5	--	1050	7.6	--	--	--	--	--	0
NOV.												
13...	1200	30	7.0	--	1080	7.4	--	--	--	--	--	0
26...	1010	508	--	--	664	7.2	--	--	--	--	--	0
DEC.												
04...	0915	92	8.5	--	671	7.6	--	--	--	--	--	0
18...	0900	60	.5	--	919	8.6	--	--	--	--	--	15
JAN.												
14...	1015	100	.5	--	869	7.9	--	--	--	--	--	0
23...	1030	1940	5.5	--	408	7.2	--	55	16	--	--	0
FEB.												
19...	1055	244	1.0	--	633	7.8	--	78	27	--	--	0
20...	1530	1360	1.5	--	402	7.4	--	48	17	--	--	0
MAR.												
18...	0840	678	4.5	--	420	7.5	--	58	18	--	--	0
25...	0945	229	1.5	--	649	8.3	--	76	27	--	--	0
APR.												
01...	1300	574	7.0	--	451	8.2	--	56	19	--	--	0
28...	1515	80	19.0	--	717	7.8	--	80	30	--	--	0
MAY												
06...	0910	71	13.0	--	773	7.6	--	88	33	--	--	0
13...	1600	159	14.0	--	669	7.5	--	83	25	--	--	0
JUNE												
18...	1230	33	18.5	--	773	7.4	--	85	33	--	--	0
30...	0925	32	20.0	--	927	7.5	--	91	36	--	--	0
AUG.												
27...	1215	11	25.5	7.5	1200	8.4	.4	100	37	100	6.2	12

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
10...	1250	1.5	12
APR.			
26...	1130	.1	6.2

## 04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,360 micromhos Sept. 6, 1974; minimum, 150 micromhos Feb. 20, 1971.  
 pH (1968-74): Maximum, 9.8 July 22, 1970; minimum, 5.9 July 18, 1972.  
 Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher on many days during 1969-74; minimum, 1.6 mg/l July 10, 1974.  
 Water temperatures (1968-74): Maximum, 30.5°C July 9, 1974; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since October 1968. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitation. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (MG/L)	DISSOLVED SULFATE (MG/L)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED FLUORIDE (MG/L)	AMMONIA NITROGEN (MG/L)	TOTAL NITRITE (MG/L)	TOTAL NITRATE (MG/L)	TOTAL PHOSPHORUS (MG/L)	DISSOLVED SILICIC ACID (MG/L)	HARDNESS (MG/L)	DISSOLVED IRON (MG/L)	DISSOLVED MANGANESE (MG/L)
OCT. 10...	225	160	51	.8	--	.00	2.0	--	--	310	--	--
29...	318	170	74	.8	--	.00	.96	--	--	--	--	--
NOV. 13...	308	160	99	.9	--	.00	2.6	--	--	--	--	--
26...	175	110	45	--	--	.01	6.9	--	--	--	--	--
DEC. 04...	208	110	35	.4	--	.00	.00	--	--	--	--	--
18...	297	150	58	.5	--	.00	4.0	--	--	--	--	--
JAN. 14...	315	130	49	.4	--	.01	2.1	--	--	--	--	--
23...	120	56	19	.1	--	.01	5.9	--	--	200	--	--
FEB. 19...	224	84	33	.5	--	.00	3.0	--	--	310	--	--
20...	116	70	20	.4	--	.01	5.4	--	--	190	--	--
MAR. 18...	145	39	17	.2	--	.01	5.3	--	--	220	--	--
25...	244	95	31	.3	--	.00	3.3	--	--	300	--	--
APR. 01...	160	59	18	.5	--	.00	5.1	--	--	220	--	--
28...	255	110	44	.5	--	.00	1.1	--	--	320	--	--
MAY 06...	280	130	50	.7	--	.00	1.0	--	--	360	--	--
13...	216	93	40	.6	--	.00	8.4	--	--	310	--	--
JUNE 18...	261	120	53	1.6	--	.00	2.3	--	--	350	--	--
30...	291	130	92	1.7	--	.01	1.4	--	--	380	--	--
AUG. 27...	276	170	140	1.1	.42	.00	.01	.96	704	400	1300	130

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
NOV. 28...	1650	242	--	80	52
JAN. 21...	1530	5230	4.5	182	2570
MAR. 12...	1230	529	--	133	190
AUG. 22...	1210	25	24.5	89	6.0

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
JAN. 21...	1530	182	79	90	94	96	98	99	99	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG. 22...	1	1	1	5	10	14	18	25	36	62	100	--

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	902	892	969	948	562	527	---	---	---	---	---	---
2	925	889	1040	944	590	550	---	---	---	---	---	---
3	918	909	997	929	632	589	---	---	---	---	---	---
4	911	892	953	929	650	624	---	---	---	---	---	---
5	912	894	945	910	666	647	---	---	---	---	---	---
6	911	891	966	905	678	641	---	---	---	---	---	---
7	932	902	959	950	698	642	---	---	---	---	---	---
8	949	915	974	958	721	676	782	771	---	---	---	---
9	917	815	997	969	763	721	826	782	---	---	---	---
10	857	751	1040	998	756	742	831	771	---	---	---	---
11	822	770	1050	1030	787	750	832	803	---	---	---	---
12	871	837	1050	1030	848	787	831	798	---	---	501	482
13	903	876	1040	1000	847	805	866	821	---	---	537	501
14	928	897	1030	1010	832	800	882	828	---	---	585	540
15	928	886	1000	947	818	787	863	831	---	---	599	576
16	913	890	979	940	849	812	866	841	---	---	548	404
17	926	900	971	944	872	845	854	717	---	---	473	413
18	912	897	950	904	898	857	717	502	---	---	495	443
19	933	903	944	913	922	897	502	424	---	---	548	501
20	973	937	935	880	912	897	424	250	466	419	578	551
21	994	977	880	824	906	894	301	247	480	439	617	581
22	1020	990	840	821	---	---	398	305	439	408	641	618
23	1030	988	900	840	---	---	442	375	---	---	641	602
24	1020	973	923	900	927	920	446	390	---	---	642	633
25	1020	980	920	702	925	658	522	182	---	---	672	642
26	1060	980	702	541	658	359	573	514	---	---	669	657
27	1040	988	640	555	469	413	621	411	---	---	671	659
28	1020	981	681	601	456	417	471	415	---	---	677	632
29	1020	977	604	478	510	355	455	379	---	---	662	567
30	997	974	551	475	---	---	511	410	---	---	537	362
31	1010	946	---	---	---	---	---	---	---	---	438	372
MONTH	1060	751	1050	475	927	355	---	---	---	---	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	488	440	---	---	---	---	890	824	1080	998	1100	993
2	536	492	---	---	---	---	859	778	1020	968	1000	893
3	566	537	---	---	---	---	851	737	1010	936	902	758
4	543	306	---	---	---	---	774	721	1070	938	951	798
5	302	287	---	---	---	---	747	684	1130	1030	1060	530
6	377	272	---	---	---	---	733	693	1160	1050	1360	705
7	453	383	---	---	---	---	749	698	1150	944	872	672



04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OHIO--Continued

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.2	8.0	7.4	7.4	7.7	7.5	---	---	---	---	---	---
2	8.1	8.0	7.5	7.4	7.7	7.5	---	---	---	---	---	---
3	8.0	7.8	7.5	7.4	7.7	7.5	---	---	---	---	---	---
4	7.8	7.7	7.5	7.4	7.7	7.6	---	---	---	---	---	---
5	7.7	7.6	7.5	7.4	7.7	7.5	---	---	---	---	---	---
6	7.8	7.6	8.1	7.5	7.7	7.5	---	---	---	---	---	---
7	7.9	7.6	8.0	7.9	7.8	7.7	---	---	---	---	---	---
8	7.9	7.6	8.1	7.8	7.8	7.7	7.7	7.7	---	---	---	---
9	7.8	7.5	8.1	8.0	7.8	7.5	7.7	7.7	---	---	---	---
10	7.7	7.5	8.1	8.0	7.8	7.7	7.7	7.7	---	---	---	---
11	8.0	7.6	8.1	7.9	7.8	7.7	7.7	7.7	---	---	---	---
12	8.2	7.7	8.0	7.8	7.9	7.5	7.7	7.7	---	---	7.5	7.3
13	8.2	7.8	8.0	7.8	7.8	7.5	7.7	7.7	---	---	7.5	7.4
14	8.2	7.9	8.1	7.8	7.8	7.5	7.7	7.7	---	---	7.5	7.4
15	8.2	7.8	8.1	7.8	7.8	7.7	7.8	7.7	---	---	7.6	7.4
16	8.1	7.8	8.0	7.8	7.8	7.5	7.8	7.7	---	---	7.4	7.1
17	8.0	7.8	8.2	7.8	7.8	7.7	7.7	7.5	---	---	7.3	7.1
18	8.0	7.5	8.1	7.8	7.9	7.5	7.6	7.5	---	---	7.4	7.3
19	7.9	7.7	8.0	7.8	7.8	7.8	7.5	7.3	---	---	7.5	7.4
20	7.9	7.8	8.2	7.8	7.8	7.8	7.4	7.3	7.5	7.4	7.6	7.5
21	8.0	7.7	8.0	7.8	7.8	7.5	7.4	7.3	7.6	7.5	7.6	7.5
22	8.0	7.9	8.3	7.8	---	---	7.5	7.4	7.6	7.4	7.7	7.5
23	8.0	7.8	8.2	7.9	---	---	7.5	7.4	---	---	7.7	7.6
24	8.0	7.8	8.1	7.8	8.5	7.8	7.4	7.4	---	---	7.6	7.5
25	7.9	7.8	7.9	7.5	7.8	7.5	7.5	7.4	---	---	7.9	7.5
26	7.9	7.7	7.5	7.4	7.5	7.4	7.7	7.5	---	---	7.9	7.7
27	7.9	7.8	7.5	7.4	7.4	7.4	7.7	7.4	---	---	7.9	7.8
28	7.8	7.7	7.6	7.5	7.5	7.4	7.6	7.4	---	---	7.9	7.7
29	7.7	7.5	7.5	7.4	7.5	7.5	7.5	7.4	---	---	7.9	7.5
30	7.6	7.5	7.6	7.4	---	---	7.6	7.4	---	---	7.5	7.1
31	7.5	7.4	---	---	---	---	---	---	---	---	7.3	7.2
MONTH	8.2	7.4	8.3	7.4	8.5	7.4	---	---	---	---	---	---

[illegible]

## 04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.6	5.7	7.9	6.2	9.0	7.5	---	---	---	---	---	---
2	9.0	5.5	7.7	6.8	9.4	9.0	---	---	---	---	---	---
3	8.6	5.1	8.1	6.8	9.1	8.4	---	---	---	---	---	---
4	7.2	4.8	9.2	6.0	8.4	7.2	---	---	---	---	---	---
5	7.4	4.6	10.1	8.1	7.5	6.9	---	---	---	---	---	---
6	8.1	4.8	10.7	8.9	8.6	7.0	---	---	---	---	---	---
7	9.2	5.4	10.6	9.6	9.8	7.1	---	---	---	---	---	---
8	8.8	5.5	10.8	7.8	9.7	9.4	11.6	11.4	---	---	---	---
9	7.1	5.2	11.1	9.7	9.7	9.4	11.5	11.0	---	---	---	---
10	6.3	4.3	11.6	10.3	10.1	9.5	11.0	10.7	---	---	---	---
11	8.8	4.8	11.5	10.4	10.4	10.0	10.8	10.4	---	---	---	---
12	10.0	5.1	10.8	9.9	10.4	10.1	11.1	10.5	---	---	9.8	9.6
13	8.6	5.6	10.6	9.0	10.1	9.5	11.3	10.5	---	---	10.3	9.8
14	10.9	5.3	9.4	8.0	9.6	9.4	11.4	10.6	---	---	10.4	10.1
15	10.4	6.2	9.1	6.7	10.0	9.5	11.0	10.5	---	---	10.3	9.8
16	8.9	5.9	10.3	6.7	10.3	9.9	11.2	10.5	---	---	9.9	9.4
17	9.2	6.6	12.7	8.1	10.4	10.1	10.8	10.6	---	---	10.1	9.9
18	9.2	6.9	11.6	8.8	11.1	10.2	10.7	10.4	---	---	10.2	9.9
19	9.2	7.3	11.6	8.4	11.1	10.5	10.5	10.0	---	---	9.9	9.7
20	9.3	6.9	13.6	8.3	10.7	10.3	10.5	9.7	10.7	10.4	10.1	9.7
21	9.9	7.1	10.1	8.3	10.4	10.2	9.7	9.3	10.3	10.0	10.2	9.9
22	10.9	6.0	12.7	7.5	---	---	9.5	9.3	10.0	9.4	10.6	10.2
23	10.9	7.6	12.4	8.5	---	---	11.0	9.3	---	---	10.5	10.0
24	10.4	7.2	9.5	7.5	10.5	9.0	11.6	11.1	---	---	11.5	10.6
25	9.6	6.8	8.0	6.2	10.3	9.3	11.9	11.7	---	---	11.8	11.5
26	10.4	6.4	7.4	6.1	9.9	9.5	12.1	11.9	---	---	11.6	10.8
27	10.5	7.4	7.3	7.1	9.8	9.6	11.9	11.1	---	---	11.0	10.7
28	9.1	6.6	7.1	6.8	9.8	9.6	11.5	11.2	---	---	10.8	10.2
29	8.1	6.9	8.4	7.2	9.8	9.7	12.0	11.5	---	---	10.4	9.2
30	8.1	6.5	8.6	8.3	---	---	12.1	12.0	---	---	9.2	9.0
31	7.1	6.1	---	---	---	---	---	---	---	---	9.5	9.1
MONTH	10.9	4.3	13.6	6.0	11.1	6.9	---	---	---	---	---	---

[illegible]

## TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04187500 OTTAWA RIVER AT ALLENTOWN, OHIO

LOCATION.--Lat 40°45'18", long 84°11'41", NW 1/4 sec. 29, T.3 S., R.6 E., Allen County, at gaging station on left bank at upstream side of bridge on State Highway 81 at Allentown, 0.3 mi (0.5 km) downstream from Kessler Run, and 1.5 mi (2.4 km) upstream from McBride Ditch. Continuous water-quality recorder on right bank at downstream side of State Highway 81 bridge.

DRAINAGE AREA.--160 mi<sup>2</sup> (414 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1969 to September 1974.

Water temperatures: March 1969 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 2,260 micromhos Sept. 24; minimum, 821 micromhos Nov. 25.

Water temperatures: Maximum, 30.0°C July 8, 9, 14; minimum, freezing point Jan. 2, 4, 5, 7-9, 12-14, Feb. 9.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
11...	1910	35	21.0	--	1410	7.8	--	62	32	--	--	0
28...	1245	35	14.0	--	1850	6.3	--	89	47	--	--	0
NOV.												
18...	1515	40	10.0	--	1860	5.1	--	--	--	--	--	0
25...	1655	210	12.0	--	908	7.5	--	--	--	--	--	--
DEC.												
02...	1715	36	9.0	--	1353	7.5	--	--	--	--	--	0
05...	1715	42	9.0	--	1350	7.5	--	--	--	--	--	0
09...	1130	44	5.0	--	1660	6.0	--	--	--	--	--	0
JAN.												
13...	1200	42	.0	--	1350	7.1	--	110	35	--	--	0
19...	1115	3990	2.0	--	258	6.8	--	36	14	--	--	0
FEB.												
11...	1740	58	2.0	--	1200	7.2	--	120	39	--	--	0
23...	1805	720	4.0	--	462	7.9	--	54	17	--	--	0
MAR.												
12...	1500	322	6.0	--	615	8.0	--	68	21	--	--	0
30...	1735	378	8.0	--	590	6.6	--	56	21	--	--	0
APR.												
10...	1245	392	8.5	--	584	7.7	--	64	21	--	--	0
26...	2216	54	17.5	--	1430	6.7	--	100	44	--	--	0
MAY												
13...	1215	119	15.0	--	932	8.3	--	84	30	--	--	0
29...	1000	35	18.5	--	1520	6.6	--	110	45	--	--	0
JUNE												
01...	1553	28	22.0	--	1720	6.7	--	110	43	--	--	0
18...	1610	24	24.0	--	2000	6.0	--	140	56	--	--	0
AUG.												
26...	1225	27	26.5	4.5	2200	7.9	9.3	120	45	230	11	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
10...	1100	.9	--
APR.			
26...	1230	.0	11

## STREAMS TRIBUTARY TO LAKE ERIE

231

## 04187500 OTTAWA RIVER AT ALLENTOWN, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 2,590 micromhos Jan. 23, 1971; minimum, 119 micromhos Mar. 18, 1973.  
 Water temperatures (1969-74): Maximum, 31.5°C June 29, 1970; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since March 1969. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
11...	46	370	170	1.2	--	.00	25	--	--	290	--	--
28...	10	490	200	1.7	--	.00	40	--	--	420	--	--
NOV.												
18...	3	450	190	1.1	--	.01	57	--	--	--	--	--
25...	--	190	88	--	--	.01	26	--	--	--	--	--
DEC.												
02...	91	300	140	.8	--	.00	25	--	--	--	--	--
05...	91	300	140	.8	--	.00	25	--	--	--	--	--
09...	22	390	190	.7	--	.00	41	--	--	--	--	--
JAN.												
13...	176	250	140	.7	--	.00	22	--	--	420	--	--
19...	73	61	17	.3	--	.01	5.0	--	--	150	--	--
FEB.												
11...	158	250	100	.8	--	.01	18	--	--	460	--	--
23...	90	73	25	.3	--	.01	10	--	--	200	--	--
MAR.												
12...	135	100	36	.3	--	.01	11	--	--	260	--	--
30...	129	100	43	.3	--	.00	6.6	--	--	230	--	--
APR.												
10...	136	88	35	.5	--	.01	8.4	--	--	250	--	--
26...	161	330	140	1.1	--	.01	24	--	--	430	--	--
MAY												
13...	173	180	78	.6	--	.00	9.4	--	--	330	--	--
29...	136	--	--	1.0	--	.00	14	--	--	460	--	--
JUNE												
01...	183	340	210	2.4	--	.19	28	--	--	450	--	--
18...	52	510	240	2.2	--	.01	35	--	--	580	--	--
AUG.												
26...	280	430	230	1.6	32	3.4	3.7	2.6	1220	490	110	80



## 04187500 OTTAWA RIVER AT ALLENTOWN, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	2130	1870	1500	1330	1280	1020	---	---	---	---	---	---
2	1980	1600	1880	1460	1390	1280	---	---	---	---	---	---
3	1850	1560	1610	1470	1500	1390	---	---	---	---	---	---
4	1790	1540	1610	1480	1570	1420	---	---	---	---	---	---
5	1650	1340	1650	1560	1440	1280	---	---	---	---	---	---
6	1940	1570	1660	1570	1530	1420	---	---	---	---	---	---
7	1830	1560	1690	1560	1700	1500	---	---	---	---	---	---
8	1570	983	2130	1660	1880	1560	---	---	---	---	---	---
9	1410	1180	1980	1850	1750	1660	---	---	---	---	---	---
10	1650	1310	1920	1830	1660	1520	---	---	---	---	---	---
11	1670	1360	1910	1820	1520	1500	---	---	---	---	---	---
12	1700	1440	1940	1830	1630	1510	---	---	---	---	---	---
13	1790	1480	1950	1740	1720	1610	---	---	---	---	---	---
14	1640	1250	1990	1690	1620	1510	---	---	---	---	---	---
15	1660	1310	1950	1660	1590	1530	---	---	---	---	---	---
16	1780	1510	1770	1420	1560	1450	---	---	---	---	---	---
17	1800	1540	1840	1630	1500	1460	---	---	---	---	---	---
18	1820	1590	1980	1770	1490	1470	---	---	---	---	---	---
19	1840	1570	1910	1710	1580	1480	---	---	---	---	---	---
20	1890	1610	1810	1620	1580	1540	---	---	---	---	---	---
21	1920	1660	1810	1620	1620	1550	---	---	---	---	---	---
22	1950	1730	1840	1610	1620	1600	---	---	---	---	---	---
23	1950	1740	1990	1670	1620	1600	---	---	---	---	---	---
24	1950	1720	1860	1650	1640	1600	---	---	---	---	---	---
25	1870	1670	1690	821	1600	1170	---	---	---	---	---	---
26	1890	1630	904	840	---	---	---	---	---	---	---	---
27	1930	1590	1120	904	---	---	---	---	---	---	---	---
28	2010	1690	1240	1020	---	---	---	---	---	---	---	---
29	1930	1700	1020	873	---	---	---	---	---	---	---	---
30	1880	1330	1020	912	---	---	---	---	---	---	---	---
31	1370	1270	---	---	---	---	---	---	---	---	---	---
MONTH	2130	983	2130	821	1880	1020	---	---	---	---	---	---

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	21.0	19.5	13.5	13.0	8.0	7.5	1.0	0.5	5.0	4.0	6.0	3.5
2	21.0	19.5	13.0	12.5	7.5	6.5	0.5	0.0	4.0	2.5	8.0	4.5
3	21.0	19.0	13.0	12.5	8.0	7.0	1.5	0.5	3.0	2.0	11.5	7.5
4	21.0	19.5	12.5	12.0	8.5	8.0	2.0	0.0	2.5	1.5	12.0	10.5
5	21.0	19.0	12.0	11.0	8.5	7.5	2.5	0.0	1.5	0.5	12.0	9.5
6	19.0	17.0	11.0	10.0	7.5	5.5	2.5	1.5	1.0	0.5	10.0	8.5
7	19.5	17.5	10.0	9.5	5.5	5.0	1.5	0.0	2.5	0.5	12.0	9.5
8	19.5	18.0	10.0	9.5	5.5	5.0	0.0	0.0	2.5	1.0	12.0	10.0
9	20.0	18.5	10.0	9.0	5.0	4.5	2.0	0.0	2.0	0.0	12.0	10.0
10	21.5	19.0	9.0	8.0	5.0	4.0	2.5	0.5	1.0	0.5	11.5	9.0
11	21.0	19.5	8.5	8.0	4.0	2.5	3.0	1.5	2.0	0.5	9.0	7.0
12	21.0	19.5	9.0	8.5	3.5	2.5	2.0	0.0	5.0	1.5	7.0	5.5
13	21.0	19.5	10.0	8.5	4.5	3.5	0.0	0.0	6.5	4.0	6.5	4.0
14	19.5	18.5	12.5	10.0	4.5	4.0	2.5	0.0	5.0	1.5	7.5	4.0
15	19.0	17.5	13.5	12.5	4.0	3.0	5.0	2.5	2.5	0.5	7.0	6.0
16	18.5	16.5	13.0	10.0	3.0	2.0	4.5	3.5	3.0	1.5	6.5	4.0
17	16.5	15.5	10.0	9.5	2.0	1.0	3.5	1.0	4.0	2.0	5.5	3.5
18	15.5	15.0	10.5	9.5	1.0	1.0	2.0	1.0	4.0	2.0	7.0	4.5
19	15.5	14.5	11.0	10.5	2.0	1.5	2.0	1.0	4.5	3.0	8.0	6.5
20	15.5	15.0	11.0	10.5	2.5	2.0	5.5	2.0	3.0	1.5	8.0	6.0
21	15.0	14.0	12.0	11.0	2.5	2.0	6.5	5.5	5.0	2.5	7.5	6.0
22	15.0	14.0	11.5	10.5	3.0	2.5	5.5	5.0	6.0	4.5	8.0	4.5
23	15.5	14.5	11.0	10.5	4.0	3.0	6.0	5.0	4.5	2.5	7.0	4.0
24	16.0	14.5	12.5	11.0	5.0	4.0	4.5	3.5	2.5	1.0	5.5	2.5
25	16.5	15.5	12.5	11.0	5.5	2.5	4.0	3.0	2.5	0.5	6.0	1.5
26	16.0	15.5	11.0	10.5	3.5	2.0	6.5	3.5	3.0	1.0	8.5	4.0
27	16.0	15.0	11.5	10.5	4.0	3.5	7.5	6.5	4.0	2.0	8.5	6.0
28	15.0	14.5	11.5	10.5	3.5	3.0	6.5	5.0	5.0	4.0	9.5	7.5
29	14.5	13.0	10.5	9.0	3.5	2.5	5.0	4.0	---	---	9.0	7.0
30	13.5	13.5	9.0	8.0	2.5	1.0	6.0	4.0	---	---	8.0	7.0
31	13.5	13.5	---	---	1.5	0.5	6.0	5.0	---	---	8.0	6.5
MONTH	21.5	13.0	13.5	8.0	8.5	0.5	7.5	0.0	6.5	0.0	12.0	1.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	7.0	20.5	15.5	22.5	19.5	26.0	20.0	25.5	21.5	22.5	20.5
2	13.5	10.5	19.0	16.0	23.0	18.0	27.0	22.0	26.0	22.5	21.5	18.0
3	13.5	11.5	17.									

## STREAMS TRIBUTARY TO LAKE ERIE

## 04188200 AUGLAIZE RIVER AT CLOVERDALE, OHIO

LOCATION.--Lat 41°01'08", long 84°17'20", in NE 1/4 sec.28, T.1 N., R.5 E., Putnam County, on left bank at old bridge abutment, 0.2 mi (0.3 km) upstream from bridge on State Route 114, 2.5 mi (4.0 km) upstream from Blanchard River, 4.5 mi (7.2 km) downstream from Ottawa River, and 0.8 mi (1.3 km) east of Cloverdale.

DRAINAGE AREA.--713 mi<sup>2</sup> (1,847 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1967 to September 1974.  
Water temperatures: June 1967 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,740 micromhos Aug. 13; minimum, 204 micromhos Apr. 5.

pH: Maximum, 8.9 July 20-22; minimum, 6.0 Nov. 9.

Dissolved oxygen: Maximum, 15.0 mg/l Dec. 18; minimum, 0.0 mg/l Aug. 27.

Water temperatures: Maximum, 30.5°C July 19; minimum, freezing point on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DIS-SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
11...	1420	--	20.0	--	847	8.2	--	82	29	--	--	0
25...	2000	--	13.0	--	1350	6.8	--	93	46	--	--	0
NOV.												
15...	1810	--	13.0	--	1330	6.6	--	--	--	--	--	0
26...	2115	--	21.0	--	692	6.8	--	--	--	--	--	0
DEC.												
24...	1845	--	1.0	--	989	6.8	--	--	--	--	--	0
27...	1645	--	3.0	--	402	7.4	--	--	--	--	--	0
JAN.												
14...	1320	--	1.0	--	983	8.2	--	110	36	--	--	0
21...	1630	--	.5	--	279	6.9	--	34	10	--	--	0
FEB.												
21...	1835	--	2.0	--	458	7.3	--	30	17	--	--	0
28...	1555	--	.5	--	699	8.2	--	54	31	--	--	0
MAR.												
11...	1915	--	6.0	--	449	7.2	--	59	19	--	--	0
28...	1910	--	7.0	--	739	8.4	--	81	29	--	--	4
APR.												
04...	1815	--	12.0	--	449	7.4	--	61	21	--	--	0
26...	0830	--	13.0	--	885	7.5	--	86	33	--	--	0
MAY												
09...	2345	--	12.0	--	966	7.7	--	92	33	--	--	0
13...	2230	--	17.0	--	679	7.3	--	81	24	--	--	0
JUNE												
18...	1330	--	--	--	932	7.2	--	87	32	--	--	0
24...	2215	--	27.0	--	1230	7.2	--	110	43	--	--	0
AUG.												
27...	1400	35	27.0	7.2	1600	7.8	5.4	100	42	160	8.6	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
10...	1440	<.5	--
APR.			
26...	0930	.1	8.4

## STREAMS TRIBUTARY TO LAKE ERIE

235

## 04188200 AUGLAIZE RIVER AT CLOVERDALE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1967-74): Maximum, 1,870 micromhos Jan. 13, 1970; minimum, 204 micromhos Apr. 5, 1974.

pH (1967-74): Maximum, 10.5 Dec. 4-6, 18-26, 1969, Jan. 2, 6, 1970; minimum, 4.5 Oct. 3, 1969.

Dissolved oxygen (1967-74): Maximum, 15.0 mg/l or higher Jan. 23, 24, Feb. 25, 1973; minimum, 0.0 mg/l Aug. 27, 1974.

Water temperatures (1967-74): Maximum, 31.0°C Aug. 23, 24, 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since June 1967. Dissolved oxygen concentrations listed as 15.0 mg/l represents concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.												
11...	125	180	68	.6	--	.00	12	--	--	320	--	--
25...	190	280	130	1.0	--	.00	12	--	--	420	--	--
NOV.												
15...	145	340	130	1.0	--	.00	12	--	--	--	--	--
26...	140	120	55	.5	--	.00	8.5	--	--	--	--	--
DEC.												
24...	233	210	100	.6	--	.00	16	--	--	--	--	--
27...	74	50	29	.2	--	.00	8.7	--	--	--	--	--
JAN.												
14...	261	170	72	.4	--	.00	8.5	--	--	420	--	--
21...	69	36	13	.2	--	.01	5.0	--	--	130	--	--
FEB.												
21...	122	60	26	.3	--	.01	6.6	--	--	150	--	--
28...	207	110	42	.4	--	.00	7.6	--	--	260	--	--
MAR.												
11...	143	65	21	.4	--	.01	4.5	--	--	230	--	--
28...	210	120	53	.4	--	.00	5.8	--	--	320	--	--
APR.												
04...	127	64	22	.5	--	.00	5.9	--	--	240	--	--
26...	232	180	64	.5	--	.00	5.7	--	--	350	--	--
MAY												
09...	210	200	80	.7	--	.00	7.6	--	--	370	--	--
13...	179	110	45	.6	--	.00	9.9	--	--	300	--	--
JUNE												
18...	190	180	90	1.6	--	.00	7.8	--	--	350	--	--
24...	229	270	130	1.1	--	.01	4.4	--	--	450	--	--
AUG.												
27...	208	330	190	1.3	.92	.40	4.8	1.2	941	420	590	150

## 04188200 AUGLAIZE RIVER AT CLOVERDALE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1220	1190	1370	1210	636	594	669	597	540	492	747	687
2	1290	1220	1260	1060	645	636	720	669	591	540	723	564
3	1310	1280	1070	1010	684	642	753	720	633	591	561	528
4	1370	1310	1080	1040	750	684	789	753	666	633	549	483
5	1330	1280	1040	999	828	750	837	783	714	669	483	453
6	1360	1300	1040	990	903	828	858	804	741	705	462	429
7	1350	1240	1180	1040	894	831	879	834	774	741	483	449
8	1240	1150	1170	1130	837	810	903	876	813	783	519	483
9	1460	1050	1160	1130	855	837	900	861	834	789	561	402
10	1000	915	1210	1150	936	855	909	900	858	813	492	375
11	918	840	1250	1200	1010	936	927	903	882	837	429	375
12	840	801	1270	1230	1110	984	954	912	891	867	492	429
13	846	807	1320	1260	1090	1040	969	954	891	867	522	492
14	969	843	1430	1310	1050	960	1010	972	960	846	567	525
15	1150	969	1450	1310	1010	972	1040	1010	987	726	621	540
16	1240	1150	1340	1320	1020	1000	1020	936	726	666	531	405
17	1240	1210	1440	1310	---	---	930	843	666	642	414	369
18	1250	1220	1440	1320	1130	615	825	516	669	645	453	414
19	1230	1210	1320	1190	1170	1110	507	324	666	567	519	453
20	1230	1220	1210	1190	1180	1120	321	252	582	405	579	522
21	1220	1160	1220	1200	1170	1100	300	258	423	399	645	579
22	1270	1180	1230	1190	1190	1120	387	300	393	378	684	627
23	1300	1270	1290	1230	1220	1190	420	387	378	357	696	654
24	1330	1280	1310	1250	1220	1180	405	384	432	381	696	645
25	1340	1310	1270	930	1220	621	453	387	507	435	693	663
26	1340	1320	1180	675	624	405	522	456	579	507	705	669
27	1350	1320	675	627	405	378	519	414	654	582	792	693
28	1350	1340	663	600	405	372	411	381	684	645	750	687
29	1340	1260	705	642	480	405	387	357	---	---	705	663
30	1370	1310	642	576	552	480	435	363	---	---	693	378
31	1400	1320	---	---	597	552	486	441	---	---	420	378
MONTH	1460	801	1450	576	1220	372	1040	252	987	357	792	369
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	486	423	921	852	1100	852	1210	1110	1610	1580	---	---
2	552	483	918	891	960	846	1210	1100	1580	1550	918	870
3	609	471	912	900	1040							



## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	19.0	11.0	10.0	7.0	6.0	2.5	0.5	4.0	3.0	3.5	3.0
2	20.5	19.0	10.5	10.0	6.5	4.5	1.0	0.5	3.0	2.0	5.5	3.5
3	20.5	18.5	11.0	10.0	6.5	5.0	1.0	0.5	2.0	0.5	10.5	5.5
4	21.0	19.5	10.0	9.0	8.5	6.5	1.5	0.0	0.5	0.0	10.5	10.0
5	20.5	18.0	9.5	7.5	9.0	7.5	1.0	0.0	3.5	0.0	10.5	8.5
6	19.0	17.5	7.5	6.0	7.5	4.5	0.0	0.0	1.0	0.0	8.5	7.5
7	18.5	17.0	6.5	5.5	4.5	3.0	1.0	0.0	0.0	0.0	11.0	8.0
8	19.0	17.5	7.5	5.5	3.0	2.5	1.0	0.0	0.0	0.0	11.0	9.0
9	19.0	18.5	5.5	4.0	2.5	2.0	0.0	0.0	0.0	0.0	8.5	7.0
10	19.5	19.0	5.0	3.5	2.5	1.5	0.5	0.0	1.0	0.0	10.0	8.5
11	19.5	18.0	5.0	3.0	1.5	0.5	0.0	0.0	0.5	0.0	9.5	7.0
12	20.5	18.5	6.5	4.5	0.5	0.0	0.5	0.0	0.0	0.0	7.0	5.5
13	19.5	18.5	9.0	5.5	1.0	0.5	0.5	0.0	0.0	0.0	5.5	4.0
14	18.5	16.5	11.0	8.5	1.0	0.5	0.0	0.0	1.0	0.0	4.5	3.5
15	18.0	16.0	13.0	11.0	1.0	0.5	0.0	0.0	1.0	0.0	5.0	4.5
16	16.5	14.0	11.0	9.0	1.0	0.5	0.0	0.0	0.5	0.0	5.0	4.0
17	15.0	13.0	9.0	7.0	---	---	0.0	0.0	0.0	0.0	4.5	3.5
18	14.0	12.5	8.0	7.0	2.5	0.0	0.0	0.0	0.0	0.0	4.5	4.0
19	14.0	11.5	8.5	7.5	2.5	2.0	0.0	0.0	0.5	0.0	6.0	4.5
20	14.5	12.0	9.0	7.5	2.0	1.5	2.0	0.0	1.5	0.0	6.0	5.0
21	14.0	11.0	10.0	9.0	2.0	1.5	5.0	2.5	3.0	1.5	6.5	4.5
22	14.5	11.0	10.0	8.0	2.0	1.5	4.5	4.0	5.0	3.0	5.5	3.5
23	14.5	11.0	9.5	8.0	2.0	1.5	5.5	4.0	4.5	1.5	5.5	4.0
24	15.0	11.5	11.0	9.0	2.0	1.5	4.0	2.5	2.5	1.0	4.0	2.0
25	15.5	12.5	10.5	9.5	1.5	1.0	3.0	2.0	0.5	0.0	2.0	1.0
26	15.5	13.0	10.0	9.0	2.5	1.0	3.5	2.0	0.5	0.0	4.0	1.5
27	14.0	12.0	10.5	8.5	4.0	2.5	5.5	3.5	1.5	0.0	5.5	3.0
28	13.5	11.5	11.0	10.0	4.0	3.0	5.5	4.0	3.5	1.5	6.5	5.5
29	12.0	11.0	10.0	7.5	3.5	3.0	4.0	3.0	---	---	6.5	6.0
30	12.0	11.5	7.5	6.5	3.0	1.0	3.5	3.0	---	---	6.5	5.5
31	11.5	11.0	---	---	1.0	0.5	4.5	3.5	---	---	6.5	5.5
MONTH	21.0	11.0	13.0	3.0	9.0	0.0	5.5	0.0	5.0	0.0	11.0	1.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	6.0	19.5	18.0	22.0	20.5	24.5	20.5	25.0	19.0	---	---
2	11.0	7.5	19.0	17.0	22.0	20.5	25.5	22.5	24.0	20.0	20.5	19.5
3	13.0	10.5	17.5	16.5	23.0	21.0	27.5	24.				

## STREAMS TRIBUTARY TO LAKE ERIE

04189000 BLANCHARD RIVER NEAR FINDLAY, OHIO

LOCATION.--Lat 41°03'21", long 83°41'17", on east line of sec.10, T.1 N., R.10 E., Hancock County, at gaging station on left bank at upstream side of county road bridge, 2.0 mi (3.2 km) west of Findlay, 3.0 mi (4.8 km) downstream from Eagle Creek, and 3.0 mi (4.8 km) upstream from Aurand Run.

DRAINAGE AREA.--346 mi<sup>2</sup> (896 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: July 1968 to September 1974.

Water temperatures: July 1968 to September 1974.

Sediment records: Water years 1970-74 (partial-record station).

EXTREMES.--1973-74:

Specific conductance: Maximum, 1,120 micromhos July 22; minimum, 161 micromhos Apr. 4.

pH: Maximum, 7.9 July 1; minimum, 6.0 July 1.

Dissolved oxygen: Maximum, 11.0 mg/l May 6; minimum, 0.3 mg/l July 4-6.

Water temperatures: Maximum, 29.0°C July 8, Aug. 10; minimum, freezing point on Jan. 12.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
04...	0810	25	20.0	--	873	8.5	--	75	29	--	--	4
12...	1005	21	19.0	--	934	8.3	--	79	30	--	--	0
NOV.												
15...	1045	25	14.0	--	1070	8.0	--	--	--	--	--	0
29...	0835	338	9.0	--	640	8.3	--	--	--	--	--	0
DEC.												
19...	0830	46	2.0	--	907	7.8	--	--	--	--	--	0
27...	0850	3080	4.0	--	421	8.1	--	--	--	--	--	0
JAN.												
10...	1155	104	1.0	--	944	7.5	--	100	34	--	--	0
20...	1025	7410	2.0	--	246	7.2	--	31	9.9	--	--	0
FEB.												
14...	1016	175	2.0	--	811	8.2	--	92	30	--	--	0
21...	1005	1260	3.0	--	417	7.8	--	49	15	--	--	0
MAR.												
10...	0830	2710	9.0	--	351	7.6	--	49	16	--	--	0
28...	1630	235	9.0	--	711	8.3	--	80	29	--	--	0
APR.												
07...	0840	972	9.0	--	445	8.0	--	56	19	--	--	0
25...	0915	94	11.0	--	804	7.3	--	85	31	--	--	0
MAY												
08...	0800	63	14.0	--	811	7.9	--	88	30	--	--	0
19...	0800	607	15.0	--	481	7.6	--	63	19	--	--	0
JUNE												
19...	1400	41	19.5	--	843	7.1	--	79	32	--	--	0
23...	0900	52	18.0	--	721	7.3	--	72	28	--	--	0
AUG.												
20...	1300	23	25.0	1.8	720	7.4	6.1	52	22	49	7.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
12...	1140	<.5	--
APR.			
24...	1230	.0	6.4

## 04189000 BLANCHARD RIVER NEAR FINDLAY, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,500 micromhos or higher Jan. 26, 1970; minimum, 161 micromhos Apr. 4, 1974.

pH (1968-74): Maximum, 9.3 Sept. 17, 1968; minimum, 3.1 May 13, 1970.

Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher on several days during November 1972; minimum, 0.0 mg/l June 18, July 2, 3, 1970.

Water temperatures (1968-74): Maximum, 33.0°C Aug. 27, 28, Sept. 5, 1969; minimum, freezing point on several days during winter periods.

REMARKS.--Water-quality recorder operated since July 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	133	210	45	1.7	--	.00	12	--	--	310	--	--
12...	113	220	50	1.7	--	.00	18	--	--	320	--	--
NOV.												
15...	264	220	58	1.5	--	.01	11	--	--	--	--	--
29...	156	130	32	--	--	.00	7.9	--	--	--	--	--
DEC.												
19...	215	180	47	1.1	--	.00	10	--	--	--	--	--
27...	93	56	23	.3	--	.00	9.7	--	--	--	--	--
JAN.												
10...	214	170	66	.8	--	.00	16	--	--	390	--	--
20...	59	30	11	.2	--	.02	5.0	--	--	120	--	--
FEB.												
14...	227	130	55	.6	--	.01	6.4	--	--	350	--	--
21...	115	61	19	.5	--	.01	6.7	--	--	180	--	--
MAR.												
10...	103	66	14	.3	--	.01	5.4	--	--	190	--	--
28...	205	140	31	.7	--	.00	7.5	--	--	320	--	--
APR.												
07...	136	68	15	.5	--	.01	5.4	--	--	220	--	--
25...	192	150	44	1.4	--	.00	8.5	--	--	340	--	--
MAY												
08...	189	180	45	1.6	--	.00	8.2	--	--	340	--	--
19...	129	64	21	.5	--	.00	13	--	--	240	--	--
JUNE												
19...	182	190	47	1.8	--	.01	9.7	--	--	330	--	--
23...	178	150	37	.6	--	.00	6.7	--	--	300	--	--
AUG.												
20...	160	140	43	2.0	5.7	.24	3.7	4.1	400	220	80	160

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
JAN., 1974					
21...	1615	5500	6.0	143	2120
MAR.					
06...	1700	831	--	153	343
AUG.					
23...	0850	20	24.0	25	1.3

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
JAN., 1974												
21...	1615	143	83	92	94	96	97	98	99	99	100	--
MAR.												
06...	1700	153	80	89	94	96	98	99	100	--	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAMPLING POINTS	HED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	HED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
23...	1	0	0	0	1	1	1	2	2	5	27	100



## 04189000 BLANCHARD RIVER NEAR FINDLAY, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	791	650	779	642	650	614	---	---	598	546	631	432
2	841	775	752	676	693	638	---	---	675	591	480	432
3	785	740	824	752	731	685	799	398	657	630	541	465
4	899	792	921	824	825	731	---	---	723	658	525	516
5	800	642	988	906	786	734	898	424	739	696	---	---
6	1040	742	951	874	788	760	891	844	744	711	---	---
7	977	826	903	876	771	750	925	835	757	730	---	---
8	826	765	930	885	827	749	958	888	763	742	---	---
9	858	794	916	761	842	803	956	929	781	756	---	---
10	883	814	919	901	840	751	969	829	777	759	---	---
11	921	753	927	880	857	761	875	824	793	756	---	---
12	936	830	888	867	877	821	891	844	925	792	450	427
13	891	807	946	888	915	795	848	814	946	843	486	450
14	866	736	1000	942	821	795	850	814	887	762	561	486
15	753	738	1070	731	814	791	1000	855	750	687	592	315
16	770	753	820	688	849	808	1020	874	675	630	324	285
17	819	760	866	820	851	828	864	558	642	609	434	324
18	832	778	916	833	884	828	550	496	698	630	528	436
19	903	807	828	752	920	884	430	220	720	567	588	528
20	917	851	856	761	928	882	250	219	540	366	609	579
21	904	805	892	794	882	836	287	250	397	372	628	595
22	841	778	794	752	879	856	343	291	406	327	624	592
23	817	783	814	779	858	827	347	332	352	330	789	585
24	847	796	814	767	861	837	365	336	442	356	682	646
25	882	822	775	473	923	744	445	373	585	447	672	639
26	857	802	846	512	744	456	514	452	630	570	715	639
27	861	801	687	594	470	398	509	441	726	615	722	681
28	860	818	674	570	481	407	456	435	711	645	710	654
29	842	491	630	603	---	---	450	414	---	---	702	660
30	652	496	644	621	---	---	469	420	---	---	680	620
31	720	652	---	---	---	---	539	478	---	---	611	470
MONTH	1040	491	1070	473	928	398	1020	219	946	327	---	---

[illegible]



04189000 BLANCHARD RIVER NEAR FINDLAY, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	5.3	3.8	7.3	6.1	---	---	9.4	9.0	9.1	8.6
2	---	---	5.0	3.8	7.2	5.8	---	---	9.9	9.3	9.0	8.2
3	---	---	5.9	4.0	6.4	4.5	8.9	8.6	10.1	9.5	8.3	7.5
4	---	---	6.0	2.9	4.8	3.3	8.9	8.5	9.9	9.4	7.6	7.4
5	---	---	3.3	2.9	4.5	3.4	9.0	8.5	10.0	9.5	---	---
6	---	---	3.4	3.0	6.4	4.5	8.9	7.1	10.1	9.7	---	---
7	---	---	3.5	2.8	7.0	5.3	8.9	7.1	10.2	9.7	---	---
8	---	---	2.9	2.6	5.4	3.6	8.8	7.0	10.0	9.4	---	---
9	---	---	3.5	2.9	4.9	3.8	8.8	7.0	10.0	9.4	---	---
10	---	---	3.4	3.0	6.7	3.8	9.2	6.0	10.0	9.7	---	---
11	---	---	3.4	3.0	6.8	4.5	9.2	6.1	10.0	9.3	---	---
12	4.4	2.9	3.5	3.0	5.3	4.1	9.4	6.3	9.8	8.0	9.9	8.8
13	4.4	3.4	3.4	2.5	7.7	3.0	9.5	7.5	9.7	8.0	9.8	9.2
14	4.6	3.3	2.6	2.4	8.8	6.9	9.3	7.4	9.5	7.7	9.6	8.7
15	4.7	3.4	6.1	2.4	9.5	8.2	9.1	8.1	9.9	8.0	9.2	8.2
16	5.8	4.6	5.8	4.2	10.0	8.2	9.5	8.0	10.0	8.2	9.5	9.2
17	5.6	4.4	6.2	5.3	10.0	8.7	10.1	8.5	9.6	8.9	9.9	9.1
18	5.0	3.7	5.4	3.5	10.0	8.0	10.3	8.7	9.5	8.7	9.3	8.6
19	5.4	3.7	6.1	5.2	8.7	8.1	10.0	9.4	9.0	8.3	9.0	8.4
20	4.6	3.7	5.6	4.0	8.8	8.2	9.9	9.1	9.4	8.9	9.1	8.5
21	5.2	3.9	4.5	2.0	9.0	7.3	9.5	9.0	9.4	9.0	9.2	8.6
22	5.4	3.8	4.1	2.2	9.4	6.1	9.4	9.0	8.9	8.1	9.5	8.8
23	5.6	3.4	4.2	3.2	9.4	6.2	9.5	9.2	9.4	8.4	10.0	9.2
24	5.2	3.5	4.4	2.4	9.0	6.1	9.9	9.4	10.0	9.2	9.6	9.2
25	4.4	3.3	5.6	2.2	9.2	6.4	10.2	9.8	10.1	9.5	9.5	8.7
26	3.5	2.9	6.5	5.6	9.0	7.9	10.0	9.4	9.8	9.3	10.2	8.8
27	4.3	2.5	6.9	5.0	8.0	7.6	9.6	9.0	9.8	9.2	10.9	8.6
28	2.6	2.3	5.6	3.8	8.6	7.9	9.4	9.1	9.5	8.4	10.5	9.0
29	2.8	1.9	6.9	4.8	---	---	9.4	9.2	---	---	9.8	9.0
30	3.9	2.3	7.5	6.7	---	---	9.6	9.0	---	---	9.4	7.5
31	5.0	3.4	---	---	---	---	9.2	8.9	---	---	9.7	9.3
MONTH	---	---	7.5	2.0	10.0	3.0	10.3	6.0	10.2	7.7	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.7	9.0	9.8	6.9	---	---	7.6	3.5	6.0	4.0	4.1	2.1
2	9.1	8.0	9.8	7.8	---	---	4.3	1.2	6.0	3.9	5.4	3.0
3	8.5	7.5	8.2	7.4	---	---	1.8	0.4	6.3	3.4	5.3	3.2
4	8.0	6.8	8.8	7.0	---	---	0.6	0.3	5.1	1.6	3.6	2.9
5	8.1	6.9	10.1	7.1	---	---	0.5	0.3	7.9	0.9	---	---
6	8.7	8.2	11.0	8.2	---	---	1.2	0.3	6.0	3.3	---	---
7	9.0	8.6	9.8	7.5	---	---	5.9	0.5	6.6	3.3	---	---
8	9.5	7.6	8.2	6.8	---	---	7.8	1.5	5.9	2.8	---	---
9	9.9	9.2	8.8	6.5	---	---	3.3	1.2	7.5	1.4	---	---
10	9.4	8.9	9.4	7.4	---	---	3.2	0.8	8.0	7.1	---	---
11	9.0	8.3	8.6	6.1	---	---	3.7	2.1	7.6	2.2	---	---
12	8.5	7.8	10.4	6.3	---	---	3.8	2.4	7.3	2.6	5.4	3.6
13	7.9	6.9	7.8	7.1	4.3	3.5	4.1	2.3	6.1	3.3	4.3	3.0
14	7.2	6.9	7.8	6.5	4.1	3.2	3.8	2.1	4.0	2.1	4.1	2.9
15	---	---	7.4	6.2	4.7	2.7	4.5	2.1	4.1	2.4	4.6	3.2
16	---	---	7.1	5.8	5.0	2.2	4.2	2.6	5.9	2.6	4.6	3.5
17	---	---	7.0	5.1	4.7	2.6	4.1	2.5	5.6	3.2	5.3	3.5
18	---	---	7.9	6.7	4.8	3.0	3.6	2.6	3.2	1.9	5.2	3.2
19	---	---	8.0	7.4	4.3	3.0	3.7	2.5	2.6	1.6	5.1	3.3
20	---	---	7.5	6.1	6.2	3.8	3.4	2.4	2.4	1.2	4.3	2.4
21	---	---	6.0	5.0	5.5	2.9	3.4	2.5	3.0	1.8	2.2	1.2
22	---	---	5.0	4.8	3.8	2.8	3.0	2.5	3.4	2.0	3.4	2.3
23	---	---	5.0	4.3	4.4	2.8	2.8	2.3	3.4	1.7	3.8	2.7
24	10.9	9.9	5.2	4.2	6.7	3.5	5.2	2.8	3.1	1.4	3.9	2.7
25	10.5	9.3	5.5	4.7	5.9	4.2	5.4	3.2	3.0	1.3	3.5	2.5
26	9.9	8.9	7.5	5.2	5.0	3.8	6.3	3.2	3.5	1.1	4.0	2.3
27	10.0	8.1	10.3	7.1	4.9	3.6	7.5	3.2	2.2	0.9	3.6	3.1
28	9.7	7.6	8.8	5.2	3.9	2.8	7.8	3.1	2.0	0.7	3.1	2.6
29	8.8	6.8	5.2	4.5	3.0	2.3	7.7	3.6	2.7	1.6	3.0	2.3
30	8.1	6.8	---	---	4.0	1.5	7.1	3.9	1.8	1.3	3.4	2.6
31	---	---	---	---	---	---	6.2	3.6	2.9	1.3	---	---
MONTH	---	---	11.0	4.2	---	---	7.8	0.3	8.0	0.7	---	---
YEAR	11.0	0.3										

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.5	19.5	13.5	11.5	8.0	6.5	---	---	5.0	4.0	4.0	3.0
2	21.0	20.0	13.5	11.5	7.5	5.5	---	---	4.0	3.0	6.0	3.5
3	21.5	19.0	12.5	11.0	10.0	7.0	2.0	1.0	3.0	2.0	10.0	6.0
4	22.0	20.5	12.0	10.5	11.0	9.0	2.5	1.0	3.0	2.0	10.0	10.0
5	21.0	18.0	12.0	10.0	10.5	8.0	2.5	1.0	2.5	1.5	---	---
6	19.5	17.0	10.0	7.5	8.0	6.0	2.0	1.5	1.5	1.0	---	---
7	20.0	17.5	9.0	7.0	6.5	5.5	2.0	1.0	3.0	1.0	---	---
8	21.0	18.5	9.5	8.5	7.0	6.0	2.5	1.0	3.0	1.0	---	---
9	21.5	19.0	8.5	6.0	7.0	5.5	2.5	1.0	3.0	0.5	---	---
10	21.5	19.5	7.0	5.5	6.5	4.0	2.0	1.0	2.0	0.5	---	---
11	21.0	19.5	7.5	6.0	4.5	2.5	2.0	1.0	2.5	0.5	---	---
12	21.0	19.5	9.0	7.0	5.5	4.0	1.0	0.0	4.0	1.5	5.5	5.0
13	21.0	18.5	11.5	9.0	7.5	4.5	1.5	0.5	4.5	2.0	5.0	3.5
14	18.5	16.5	14.0	11.5	5.0	4.0	2.5	0.5	3.0	1.0	5.5	4.0
15	18.0	17.0	15.0	13.5	4.0	3.0	3.5	2.0	2.5	0.5	6.0	4.5
16	17.5	14.5	13.5	9.0	3.0	2.0	3.5	2.0	2.5	0.5	4.5	3.5
17	15.0	13.5	10.0	8.5	3.0	1.5	2.0	0.5	3.0	1.0	5.0	4.0
18	15.0	13.5	10.5	9.5	4.0	2.0	1.5	1.0	3.5	1.5	6.5	5.0
19	14.5	12.5	11.0	10.0	3.0	2.0	1.5	0.5	3.5	2.5	6.5	5.5
20	15.5	14.0	11.5	10.0	2.5	1.5	4.0	1.0	2.5	1.0	6.5	4.0
21	15.0	13.5	13.0	11.5	2.0	1.0	5.5	4.5	4.0	2.0	6.5	4.0
22	15.5	14.0	11.5	10.0	2.0	1.0	5.0	4.5	4.5	3.5	5.5	3.0
23	16.0	14.5	12.0	11.0	2.5	1.5	5.5	5.0	3.5	2.0	4.0	1.5
24	17.0	15.0	13.5	11.0	2.5	2.0	4.5	3.5	2.0	0.5	4.5	3.5
25	17.5	16.0	13.5	10.5	4.5	1.5	4.0	3.0	1.5	0.5	5.5	2.5
26	17.0	16.0	10.5	10.0	3.0	1.0	5.0	3.5	2.5	0.5	5.0	4.5
27	16.0	14.5	11.5	10.0	3.5	3.0	6.5	5.5	4.0	1.0	6.5	5.0
28	15.5	13.5	12.0	10.0	3.5	3.0	6.0	5.0	4.5	3.0	7.5	5.5
29	14.0	12.5	10.0	7.5	---	---	4.5	4.0	---	---	7.0	6.0
30	13.5	12.5	8.0	6.5	---	---	5.5	4.0	---	---	7.5	6.5
31	13.5	12.5	---	---	---	---	5.5	5.0	---	---	7.0	6.0
MONTH	22.0	12.5	15.0	5.5	11.0	1.0	6.5	0.0	5.0	0.5	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	6.0	19.5	15.0	---	---	24.0	18.5	23.5	20.5	22.5	19.0
2	11.5	8.5	16.5	14.5	---	---	24.0	20.0	24.0	21.5	21.5	18.5
3	12.0	10.5	16.0	14.5	---	---	26.5	22.0	23.5	22.0	18.0	17.0
4	12.5	10.5	17.5	12.5	---	---	25.5	24.0	22.5	20.5	18.5	16.5
5	12.0	8.5	16.5	13.0	---	---	25.5	22.5	22.5	19.0	---	---
6	8.5	7.5	13.0	11.5	---	---	25.5	22.0	23.5	20.0	---	---
7	8.0	7.5	15.5	10.0	---	---	27.5	23.0	25.0	21.0	---	---
8	7.0	5.0	13.0	11.5	---	---	29.0	24.5	26.0	22.5	---	---
9	6.5	4.0	12.0	10.5	---	---	28.0	25.5	28.0	22.0	---	---
10	8.5	6.0	15.0	10.0	---	---	26.5	24.5	29.0	21.5	---	---
11	9.5	8.0	16.0	11.5	---	---	25.0	22.5	25.5	23.0	---	---
12	11.0	9.5	16.0	14.0	---	---	26.0	21.5	27.0	22.5	22.5	21.5
13	13.5	11.0	14.5	13.0	21.5	19.5	27.0	22.5	27.0	22.5	22.0	19.5
14	15.0	13.0	17.5	13.0	22.5	19.0	28.5	24.0	25.0	21.5	19.5	18.0
15	---	---	18.5	16.0	22.0	20.0	26.5	24.5	25.5	21.5	19.5	16.5
16	---	---	19.5	16.0	20.5	18.0	26.0	23.0	25.0	23.0	20.0	17.5
17	---	---	19.0	17.0	19.0	17.0	25.5	22.0	24.0	21.5	21.0	19.0
18	---	---	17.0	15.5	21.5	17.0	25.0	23.0	25.0	20.5	20.5	19.5
19	---	---	16.5	14.5	21.0	18.5	26.5	23.0	25.5	21.5	21.5	18.5
20	---	---	18.0	15.0	24.5	19.5	25.5	23.5	26.5	23.0	21.0	18.5
21	---	---	19.5	16.5	23.5	21.0	25.0	21.0	26.0	23.5	18.5	16.5
22	---	---	19.5	18.0	22.5	19.5	23.5	21.5	25.5	23.0	17.5	15.0
23	---	---	21.0	17.5	19.5	17.5	22.5	21.0	25.0	23.5	15.5	13.0
24	14.0	11.5	20.0	17.5	20.5	16.5	23.5	20.0	25.0	22.5	16.0	14.5
25	14.0	10.5	18.0	16.0	21.5	17.0	25.0	21.5	25.5	22.0	17.0	15.5
26	17.0	11.0	19.0	15.0	21.5	18.5	25.0	22.0	26.5	22.0	18.0	15.5
27	17.5	13.0	19.5	15.0	22.5	19.5	26.5	22.5	26.0	24.0	18.0	16.5
28	17.5	15.0	16.5	15.0	21.5	19.5	25.5	23.0	24.5	21.0	19.0	18.0
29	19.5	15.5	17.5	15.5	23.0	19.0	25.0	23.0	21.5	20.0	19.0	15.0
30	18.0	16.5	---	---	22.0	20.0	23.5	21.5	23.0	19.5	14.5	13.0
31	---	---	---	---	---	---	23.5	20.5	22.5	20.5	---	---
MONTH	---	---	21.0	10.0	---	---	29.0	18.5	29.0	19.0	---	---
YEAR	29.0	0.0										

## STREAMS TRIBUTARY TO LAKE ERIE

04191500 AUGLAIZE RIVER NEAR DEFIANCE, OHIO

LOCATION.--Lat 41°14'15", long 84°23'57", in NE 1/4 sec.9, T.3 N., R.4 E., Defiance County, at gaging station on right bank, 125 ft (38 m) downstream from dam of Toledo Edison Co., 0.2 mi (0.3 km) upstream from Jackson ditch, and 3.0 mi (4.8 km) south of Defiance. Water-quality recorder located at powerplant 125 ft (38 m) upstream from gaging station.

DRAINAGE AREA.--2,318 mi<sup>2</sup> (6,004 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: January 1966 to September 1974.

Water temperatures: January 1966 to September 1974.

Sediment records: Water years 1952, 1963, 1970-74 (partial-record station).

EXTREMES.--1973-74:

Specific conductance: Maximum, 1,220 micromhos Aug. 23, 24, 26; minimum, 249 micromhos Jan. 21, 22.

pH: Maximum, 8.9 May 3, 4; minimum, 6.9 Dec. 27.

Dissolved oxygen: Maximum, 15.0 mg/l Aug. 8; minimum, 1.4 mg/l Aug. 9.

Water temperatures: Maximum, 30.0°C July 9; minimum, 0.5°C Jan. 18-20.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
03...	1650	102	19.5	--	860	8.4	--	68	28	--	--	4
20...	1335	60	14.5	--	1120	8.3	--	59	33	--	--	0
NOV.												
14...	1010	87	7.5	--	1120	8.5	--	--	--	--	--	6
29...	1245	3620	9.0	--	622	7.1	--	--	--	--	--	0
DEC.												
06...	1130	649	5.0	--	634	7.2	--	--	--	--	--	0
29...	1730	22000	2.0	--	395	7.3	--	--	--	--	--	0
JAN.												
15...	1235	500	1.0	--	833	8.1	--	100	32	--	--	0
22...	1400	30000	3.5	--	275	6.9	--	35	10	--	--	0
FEB.												
12...	1030	900	1.0	--	735	7.2	--	60	35	--	--	0
25...	1510	7000	1.0	--	376	7.7	--	47	16	--	--	0
MAR.												
10...	1855	11000	9.0	--	375	8.0	--	51	16	--	--	0
26...	1430	1230	4.0	--	577	7.6	--	84	25	--	--	0
APR.												
06...	1205	16400	9.0	--	273	7.2	--	41	14	--	--	0
19...	1125	588	12.5	--	624	7.6	--	79	23	--	--	0
MAY												
09...	1600	665	13.5	--	756	8.5	--	85	28	--	--	5
18...	1720	8060	18.0	--	475	7.5	--	65	17	--	--	0
JUNE												
08...	1435	294	24.0	--	732	7.6	--	88	29	--	--	0
16...	1725	307	22.0	--	703	7.2	--	82	26	--	--	0
AUG.												
27...	0845	72	25.0	4.6	1190	8.5	.7	110	36	110	7.5	8

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.				
11...	1040	6	<.5	--
APR.				
25...	1630	3	.0	6.4



## 04191500 AUGLAIZE RIVER NEAR DEFIANCE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 1,260 micromhos Jan. 29, 1970; minimum, 122 micromhos Aug. 17, 1973.  
 pH (1966-74): Maximum, 9.6 Aug. 10, 1971; minimum, 5.1 Nov. 2, 1972.  
 Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher on many days during 1971 and 1972; minimum, 0.2 mg/l July 1, 1966.  
 Water temperatures (1966-74): Maximum, 32.0°C Aug. 27, 1972; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since January 1966. Dissolved oxygen concentrations listed as 15.0 mg/l represents concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water.

REVISIONS.--Revised figures for suspended-sediment instantaneous discharge measurements for water year 1973 superseding those previously published are given herewith: Change instantaneous discharge value from N.19 to 1850 on Dec. 20, 1972, time 1405.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
03...	228	160	56	.7	--	.00	2.8	--	--	280	--	--
20...	209	260	98	1.0	--	.00	5.2	--	--	280	--	--
NOV.												
14...	199	250	100	1.0	--	.00	6.8	--	--	--	--	--
29...	127	100	41	.5	--	.00	10	--	--	--	--	--
DEC.												
06...	153	100	37	.4	--	.00	8.6	--	--	--	--	--
29...	83	53	21	.4	--	.00	9.3	--	--	--	--	--
JAN.												
15...	251	150	42	.4	--	.00	7.3	--	--	380	--	--
22...	68	32	11	.2	--	.02	6.0	--	--	130	--	--
FEB.												
12...	239	120	35	.5	--	.00	4.7	--	--	290	--	--
25...	97	64	16	.4	--	.01	7.5	--	--	180	--	--
MAR.												
10...	112	57	15	.3	--	.01	5.8	--	--	190	--	--
26...	211	110	32	.4	--	.00	6.0	--	--	310	--	--
APR.												
06...	81	35	9.3	.5	--	.01	5.0	--	--	160	--	--
19...	213	100	28	.3	--	.00	5.5	--	--	290	--	--
MAY												
09...	221	150	46	.7	--	.00	3.5	--	--	330	--	--
18...	135	63	21	.4	--	.00	9.4	--	--	230	--	--
JUNE												
08...	233	120	44	1.3	--	.01	4.4	--	--	340	--	--
16...	204	110	44	1.3	--	.00	7.0	--	--	310	--	--
AUG.												
27...	214	260	120	1.5	.85	.07	.81	.53	759	420	30	30

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
JAN., 1974					
22...	--	31900	--	338	29100
25...	1050	19700	3.5	161	8560
AUG.					
22...	1330	137	27.0	28	10

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
JAN., 1974												
22...	--	338	77	81	87	91	94	96	97	98	100	--
25...	1050	161	83	89	93	95	97	98	98	99	100	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
22...	1	0	0	0	1	3	6	10	14	24	39	100

## 04191500 AUGLAIZE RIVER NEAR DEFIANCE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	813	804	996	972	585	570	482	449	435	392	554	491
2	822	812	984	980	570	539	513	480	491	437	593	555
3	834	818	981	975	549	539	537	510	539	492	620	593
4	836	825	977	974	566	546	575	537	564	542	590	470
5	846	834	974	948	590	566	594	575	569	560	467	353
6	861	846	975	931	617	590	---	---	578	567	393	356
7	884	863	963	959	617	602	---	---	590	578	389	360
8	890	876	987	962	627	617	---	---	618	590	392	371
9	909	884	1010	986	641	626	723	714	638	618	444	384
10	947	903	1010	1000	674	641	735	719	675	638	446	375
11	981	920	1020	1000	675	660	743	737	716	677	390	365
12	1040	923	1060	1020	674	663	765	741	737	717	380	366
13	1040	1030	1100	1060	686	674	785	764	758	738	410	375
14	1060	1040	1090	1070	684	683	804	786	777	761	449	413
15	1070	1050	1090	1080	---	---	812	803	807	777	483	452
16	1080	1070	1090	1080	---	---	819	810	830	809	539	483
17	1090	1080	1090	1080	---	---	834	819	875	828	477	405
18	1100	1090	1080	1080	---	---	870	801	885	789	410	396
19	1100	1090	1080	1070	---	---	792	497	783	719	425	396
20	1100	1100	1080	1070	---	---	485	290	717	560	473	425
21	1100	1100	1070	1040	---	---	285	249	548	402	536	479
22	1110	1070	1050	1040	---	---	255	249	401	311	564	537
23	1070	1020	1040	1030	---	---	284	257	330	314	569	563
24	1040	1020	1050	1040	---	---	320	287	339	326	611	572
25	1030	1020	1040	1020	---	---	345	320	375	336	642	611
26	1020	1010	1030	987	---	---	389	345	425	375	680	644
27	1020	1010	1120	987	369	363	380	359	461	428	678	672
28	1020	1010	987	686	365	357	398	353	486	447	680	674
29	1010	1010	686	593	386	362	351	333	---	---	699	678
30	1010	1010	593	561	417	386	335	324	---	---	716	647
31	1010	996	---	---	452	414	390	333	---	---	651	453
MONTH	1110	804	1120	561	---	---	870	249	885	311	716	353

[illegible]



OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.1	5.6	10.6	9.2	7.9	7.7	10.2	10.0	9.1	8.9	10.6	10.3
2	7.1	5.4	10.6	9.7	8.0	7.8	10.1	9.9	9.5	9.1	10.4	9.4
3	9.2	6.2	10.6	9.8	8.2	7.9	10.3	9.9	9.6	9.3	9.7	9.2
4	8.9	7.4	9.8	9.5	8.2	7.9	9.9	9.6	9.8	9.2	9.2	8.4
5	7.9	6.9	10.2	9.6	8.6	8.1	9.7	9.6	10.4	9.5	8.8	8.2
6	7.6	6.5	10.1	9.9	9.3	8.6	---	---	9.8	9.4	8.8	8.4
7	7.4	6.5	10.4	9.8	9.2	9.1	---	---	9.9	9.4	8.7	8.5
8	10.3	6.4	10.6	10.0	9.2	9.0	---	---	10.0	9.5	8.8	8.6
9	8.9	6.7	11.1	10.4	9.7	9.1	10.1	9.4	10.3	9.5	9.2	8.8
10	8.8	5.9	11.6	10.8	9.8	9.3	9.5	9.4	10.0	9.4	9.4	8.8
11	14.4	7.3	11.8	11.0	10.0	9.7	9.5	9.2	9.7	9.0	9.1	8.8
12	11.1	9.5	12.0	11.4	10.1	9.7	9.4	9.1	9.4	8.8	9.7	9.2
13	9.8	8.2	12.1	11.5	10.1	9.7	9.5	9.0	9.1	8.3	10.3	9.9
14	9.6	7.2	11.5	10.4	10.0	9.8	9.3	9.0	8.5	7.8	10.3	10.0
15	11.1	7.5	10.8	10.0	---	---	9.2	8.9	8.1	7.9	10.3	10.1
16	11.2	8.1	10.1	9.0	---	---	9.2	8.9	8.1	7.8	10.3	10.2
17	11.7	8.5	9.6	8.9	---	---	8.9	8.6	8.6	7.9	10.3	10.1
18	12.0	9.0	9.5	9.1	---	---	9.2	8.2	9.1	8.6	10.3	10.1
19	10.8	9.7	10.1	9.0	---	---	10.1	9.2	9.2	8.9	10.2	10.0
20	10.2	9.2	9.3	8.9	---	---	9.8	9.3	9.5	8.9	10.3	9.8
21	10.4	8.4	9.2	8.6	---	---	9.5	9.1	9.9	9.4	10.1	9.8
22	14.5	7.8	9.3	8.5	---	---	9.7	9.0	9.5	9.1	10.6	10.1
23	13.7	11.9	9.1	8.4	---	---	9.4	8.9	9.6	9.3	10.4	10.1
24	12.6	11.3	8.7	8.2	---	---	9.4	9.1	9.8	9.5	10.6	10.4
25	11.7	10.5	8.3	7.9	---	---	9.6	9.2	10.8	9.7	10.6	10.3
26	11.7	9.8	8.0	7.1	---	---	9.5	9.2	10.7	10.0	10.7	10.4
27	10.8	9.4	7.1	6.3	11.1	10.1	9.5	9.0	10.6	10.1	10.6	10.3
28	9.8	9.2	6.8	6.3	10.1	9.6	9.5	8.8	10.6	10.4	10.4	10.2
29	9.2	8.6	7.4	6.8	9.9	9.6	9.2	8.8	---	---	10.3	9.9
30	9.4	8.4	7.8	7.4	10.0	9.8	9.2	8.8	---	---	9.9	9.5
31	9.5	8.3	---	---	10.2	10.0	9.2	9.1	---	---	9.6	9.3
MONTH	14.5	5.4	12.1	6.3	---	---	10.3	8.2	10.8	7.8	10.7	8.2
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.4	9.2	10.9	10.2	---	---	8.2	6.3	5.1	2.9	5.3	3.3
2	9.4	9.2	10.9	10.3	---	---	7.6	6.4	3.7	2.2	3.7	3.3
3	9.6	9.0	10.8	10.4	---	---	8.6	5.7	4.6	2.4	5.1	4.0
4	9.3	8.3	11.5	9.9	---	---	7.6	6.6	5			



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



## STREAMS TRIBUTARY TO LAKE ERIE

04193500 MAUMEE RIVER AT WATERVILLE, OHIO  
(National stream-quality accounting network station)

LOCATION.--Lat 41°30'00", long 83°42'46", Lucas County, at gaging station on downstream side of second pier from left end of bridge on State Highway 64 at Waterville, 3.0 mi (4.8 km) downstream from Tontogany Creek, and 21.1 mi (33.9 km) upstream from mouth. Water-quality recorder in Bowling Green water treatment plant 2.0 mi (3.2 km) upstream from gaging station. Prior to June 1974 water-quality recorder was located in Waterville water treatment plant 2,500 ft (762 m) upstream from gaging station.

DRAINAGE AREA.--6,330 mi<sup>2</sup> (16,395 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1950 to February 1952, May 1963 to September 1974.  
Water temperatures: March 1950 to September 1974.  
Sediment records: April 1950 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,060 micromhos Nov. 14; minimum, 297 micromhos Mar. 8.  
pH: Maximum, 9.2 Nov. 10; minimum, 6.1 Oct. 3, May 23.  
Dissolved oxygen: Maximum, 15.0 mg/l July 17, 27, 28, Sept. 23, 25; minimum, 2.5 mg/l Aug. 9.  
Water temperatures: Maximum, 29.0°C July 9; minimum, freezing point on Feb. 6-12.  
Sediment concentrations: Maximum daily, 1,940 mg/l Apr. 6; minimum daily, 10 mg/l Feb. 18, 19.  
Sediment discharges: Maximum daily, 179,000 tons (162,000 tonnes) Apr. 6; minimum daily, 17 tons (15 tonnes) Sept. 25.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)
OCT.											
01...	1730	395	19.0	--	53	18	--	--	186	10	30
11...	1510	674	--	--	--	--	--	--	--	--	--
30...	2010	425	12.0	--	63	28	--	--	232	0	60
NOV.											
23...	0745	500	8.0	--	--	--	--	--	226	0	76
30...	0915	11300	7.0	--	--	--	--	--	186	0	57
DEC.											
03...	2345	3680	7.0	--	--	--	--	--	145	0	34
05...	1400	2920	7.5	--	--	--	--	--	147	0	33
JAN.											
08...	1530	3000	.0	8.1	77	21	13	5.3	176	0	30
23...	1045	65200	--	--	--	--	--	--	--	--	--
28...	1515	35500	4.0	--	62	24	--	--	114	0	19
FEB.											
12...	1430	3100	.5	--	78	21	--	--	199	0	36
12...	1530	3100	.5	--	--	--	--	--	--	--	--
MAR.											
06...	2200	33100	--	--	--	--	--	--	--	--	--
13...	1200	20800	5.0	--	--	--	--	--	--	--	--
13...	1300	20600	5.0	--	--	--	--	--	--	--	--
14...	1000	16700	5.0	--	59	13	--	--	132	0	16
APR.											
02...	0930	7520	7.0	--	75	20	--	--	183	0	28
02...	1030	7480	7.5	6.0	70	19	17	2.8	188	0	28
25...	0920	2310	12.5	--	80	21	--	--	225	0	26
25...	0945	2310	13.0	--	--	--	--	--	--	--	--
MAY											
06...	1415	1970	12.0	--	73	23	--	--	194	0	33
06...	1730	1790	14.0	--	--	--	--	--	--	--	--
21...	1215	11700	18.0	--	68	20	--	--	139	0	20
JUNE											
05...	1030	1760	24.0	--	--	--	--	--	--	--	--
05...	1300	1760	25.0	--	79	21	--	--	209	0	26
19...	1400	1570	20.0	--	84	24	--	--	238	0	37
JULY											
10...	1100	662	27.5	3.2	84	23	22	4.1	227	0	35
AUG.											
05...	1305	280	26.0	--	--	--	--	--	--	--	--
SEP.											
11...	0900	509	20.5	--	--	--	--	--	--	--	--

## STREAMS TRIBUTARY TO LAKE ERIE

253

## 04193500 MAUMEE RIVER AT WATERVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1963-74): Maximum, 1,150 micromhos Dec. 19, 1964; minimum, 213 micromhos Jan. 30, 1952.  
 pH (1963-74): Maximum, 11.4 Jan. 16, 1965; minimum, 5.0 Nov. 24, 1968.  
 Dissolved oxygen (1963-74): Maximum, 15.0 or higher Oct. 4, 1966, Jan. 2, 6, 1967, Apr. 28, 1968; minimum, 0.3 mg/l Nov. 10, 1965.  
 Water temperatures (1950-74): Maximum, 34.0°C July 1, 1963; minimum, freezing point on many days during winter periods.  
 Sediment concentrations: Maximum daily, 2,240 mg/l Mar. 26, 1954; minimum daily, 1 mg/l on many days during 1953, 1955 and 1963.  
 Sediment discharges: Maximum daily, 208,000 tons (189,000 tonnes) Feb. 12, 1959; minimum daily, 0.26 ton (0.24 tonne) Sept. 18, 1955.

REMARKS.--Water-quality recorder operated since May 1963. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Samples were collected each month to further define the quality of water as part of the National Stream Quality Accounting Network.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	TOTAL NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITROGEN (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)
OCT.										
01...	81	.3	--	--	546	--	.00	1.0	--	1.0
11...	--	--	--	--	--	--	--	--	--	--
30...	150	.7	--	--	814	--	.00	1.1	--	1.1
NOV.										
23...	170	.8	--	--	936	--	.00	2.0	--	2.0
30...	130	.6	--	--	796	--	.00	6.7	--	6.7
DEC.										
03...	83	.4	--	--	552	--	.00	7.6	--	7.6
05...	79	.3	--	--	563	--	.00	8.1	--	8.1
JAN.										
08...	86	.1	393	327	605	9.8	.00	8.4	1.4	8.4
23...	--	--	--	--	--	--	--	--	--	--
28...	53	.4	--	--	376	--	.02	4.8	--	4.8
FEB.										
12...	91	.3	--	--	622	--	.00	4.6	--	4.6
12...	--	--	--	--	580	6.2	.00	5.0	1.2	5.0
MAR.										
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	345	--	--	--	--	--
13...	--	--	--	--	345	5.4	.00	4.4	.95	4.4
14...	60	.2	--	--	388	--	.01	4.7	--	4.7
APR.										
02...	82	.5	--	--	568	--	.01	4.8	--	4.8
02...	89	.3	354	325	559	5.4	.00	4.8	.55	4.8
25...	72	.5	--	--	598	--	.00	3.6	--	3.6
25...	--	--	--	--	--	--	--	--	--	--
MAY										
06...	110	.5	--	--	600	--	.00	2.4	--	2.4
06...	--	--	--	--	555	2.7	.00	1.4	1.3	1.4
21...	51	.4	--	--	445	--	.01	8.7	--	8.7
JUNE										
05...	--	--	--	--	560	5.2	.00	4.3	.93	4.3
05...	75	1.8	--	--	557	--	.01	4.7	--	4.7
19...	100	1.2	--	--	663	--	.01	4.7	--	4.7
JULY										
10...	84	.4	454	368	620	6.1	.00	3.7	2.4	3.7
AUG.										
05...	--	--	--	--	523	1.5	--	--	1.3	.21
SEP.										
11...	--	--	--	--	770	1.3	--	--	1.3	.01

## STREAMS TRIBUTARY TO LAKE ERIE

04193500 MAUMEE RIVER AT WATERVILLE, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	HARD- NESS (CA+MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	UNCOR- RECTED PERI- PHYTON CHLORO- PHYLL B MG/SQ M	UNCOR- RECTED PERI- PHYTON CHLORO- PHYLL A MG/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)
OCT.										
01...	210	35	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
30...	270	82	--	--	--	--	--	--	--	--
NOV.										
23...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
DEC.										
03...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
JAN.										
08...	280	130	12	--	--	--	--	--	68	160
23...	--	--	--	--	--	--	--	--	--	--
28...	250	160	--	--	--	--	--	--	--	--
FEB.										
12...	280	120	--	--	--	--	--	--	--	--
12...	--	--	7.3	--	--	--	--	--	44	64
MAR.										
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	1000	110
13...	--	--	--	--	--	--	--	--	--	--
14...	200	93	--	--	--	--	--	--	--	--
APR.										
02...	270	120	--	--	--	--	--	--	--	--
02...	250	99	12	--	--	--	580	--	400	1650
25...	290	100	--	--	--	--	--	--	--	--
25...	--	--	7.5	--	--	--	--	--	--	--
MAY										
06...	280	120	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	16	190
21...	250	140	--	--	--	--	--	--	--	--
JUNE										
05...	--	--	--	--	--	--	--	--	100	95
05...	280	110	--	--	--	--	--	--	--	--
19...	310	110	--	--	--	--	--	--	--	--
JULY										
10...	300	110	9.5	--	--	--	23000	--	28	620
AUG.										
05...	--	--	--	--	--	--	50000	--	30	30
SEP.										
11...	--	--	--	14	2.3	12	30000	--	80	120

DATE	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT.											
11...	--	--	--	--	--	--	--	--	--	--	<.5
JAN.											
08...	70	1	2	130	17	20	20	5	10	.0	.0
APR.											
02...	10	10	--	--	25	4	--	3	6	.3	.3
25...	--	--	--	--	--	--	--	--	--	--	.0
JULY											
10...	30	0	44	88	0	3	20	3	3	.5	.5

04193500 MAUMEE RIVER AT WATERVILLE, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)	TOTAL NITRO- GEN (NO3) (MG/L)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	PH (UNITS)	CARBON DIOXIDE (CO2) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	TOTAL RESI- DUE (MG/L)
OCT.										
01...	.18	--	--	--	--	--	8.6	.8	169	405
11...	--	--	--	--	--	--	--	--	--	--
30...	.16	--	--	--	--	--	8.0	3.7	190	569
NOV.										
23...	.28	--	--	--	--	--	7.4	14	185	606
30...	.57	--	--	--	--	--	7.2	19	153	556
DEC.										
03...	.39	--	--	--	--	--	8.0	2.3	119	530
05...	.38	--	--	--	--	--	8.2	1.5	121	1460
JAN.										
08...	.06	--	--	43	14.2	97	7.7	5.6	144	--
23...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	7.2	12	94	1410
FEB.										
12...	.63	--	--	--	--	--	7.4	13	163	488
12...	.16	--	--	27	13.0	100	7.4	--	--	--
MAR.										
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	11.6	91	7.4	--	--	--
13...	.56	--	--	24	--	--	--	--	--	--
14...	.67	--	--	--	--	--	7.3	11	108	795
APR.										
02...	.38	--	--	--	--	--	7.6	7.4	150	632
02...	.31	--	--	24	10.0	83	7.3	15	154	--
25...	.25	--	--	--	--	--	8.1	2.9	185	550
25...	--	--	--	--	--	--	--	--	--	--
MAY										
06...	.18	--	--	--	12.6	--	8.3	1.6	159	544
06...	.12	--	--	12	14.0	140	8.5	--	--	--
21...	.53	--	--	--	--	--	7.5	7.0	114	564
JUNE										
05...	.08	--	--	23	11.7	140	8.6	--	--	--
05...	.10	--	--	--	--	--	8.3	1.7	171	474
19...	.33	--	--	--	--	--	8.0	3.8	195	632
JULY										
10...	.19	--	--	27	8.2	102	8.2	2.3	186	--
AUG.										
05...	.22	--	--	6.7	11.4	139	8.6	--	--	--
SEP.										
11...	.31	--	--	5.8	8.1	89	8.5	--	--	--

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT.												
11...	1510	--	--	--	--	--	--	--	--	--	--	--
JAN.												
08...	1530	1	8	2	2	1	1	0	0	9	15	1200
APR.												
02...	1030	1	5	0	--	10	20	0	--	30	30	--
25...	0945	--	--	--	--	--	--	--	--	--	--	--
JULY												
10...	1100	3	6	1	2	1	1	2	9	17	25	2200

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE								
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED								
						.002	.004	.008	.016	.031	.062	.125	.250	.500
Jan.														
23...	1045	--	65200	316	55600	68	73	86	90	93	95	95	97	100
Mar.														
06...	2200	--	33100	1230	110000	82	93	96	98	99	99	100	--	--

## 04193500 MAUMEE RIVER AT WATERVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	534	510	800	754	584	538	---	---	392	381	434	416
2	542	509	800	770	548	542	---	---	408	390	452	312
3	552	510	821	662	542	524	---	---	432	411	455	312
4	557	516	841	662	527	500	---	---	462	434	465	450
5	608	535	845	818	524	510	---	---	477	461	458	353
6	604	571	865	824	528	505	---	---	500	477	348	312
7	594	573	854	833	570	528	---	---	513	501	314	306
8	601	548	845	811	578	556	---	---	528	510	306	297
9	612	555	827	799	596	570	---	---	543	522	324	306
10	618	572	811	662	612	578	---	---	561	539	329	321
11	629	577	820	662	621	603	---	---	579	558	342	327
12	661	617	1050	811	638	619	---	---	603	578	342	330
13	682	659	1050	811	621	600	---	---	612	590	390	335
14	683	665	1060	952	616	593	---	---	635	608	416	387
15	670	650	1050	941	628	614	---	---	650	627	437	416
16	671	653	1050	805	---	---	---	---	675	645	464	434
17	673	653	832	803	---	---	---	---	692	668	489	466
18	679	656	850	830	---	---	---	---	705	683	494	465
19	689	665	859	841	---	---	---	---	699	689	470	312
20	692	674	877	850	---	---	---	---	740	696	459	438
21	701	664	875	850	---	---	---	---	723	575	489	455
22	700	674	862	829	---	---	---	---	563	393	528	486
23	710	689	851	823	---	---	---	---	390	345	543	525
24	731	710	839	797	---	---	---	---	356	350	567	537
25	740	716	806	662	---	---	---	---	354	347	567	554
26	752	725	790	767	---	---	---	---	372	354	578	558
27	755	725	803	769	---	---	---	---	407	372	600	579
28	751	730	784	757	---	---	386	374	420	402	623	590
29	784	716	826	767	---	---	396	383	---	---	636	617
30	802	662	823	584	---	---	380	368	---	---	624	618
31	787	763	---	---	---	---	383	371	---	---	641	608
MONTH	802	509	1060	584	---	---	---	---	740	345	641	297
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	639	566	641	600	567	543	636	623	530	524	747	734
2	558	536	611	530	591	558	636	630	531	518	759	612
3	551	477	606	560	600	579	644	636	528	518	758	612
4	476	393	603	536	614	591	648	642	539	527	750	738
5	389	327	572	545	615	588	647	641	558	536	755	738
6	354	327	611	564	629	624	648	638	569	552	752	612
7	327	314	615	587	641	630	650	638	572	566	759	747
8	372	327	629	605	642	633	651	642	578	554	762	752
9	408	380	648	615	641	633	653	647	585	566	768	755
10	435	408	666	642	651	638	662	653	584	566	771	761
11	459	312	672	647	665	648	666	659	588	576	789	767
12	474	459	660	626	666	662	666	662	600	585	797	785
13	491	465	618	602	672	666	665	639	602	591	797	791
14	489	479	578	518	678	672	647	636	611	602	809	797
15	528	489	531	516	683	669	638	624	612	602	824	806
16	551	528	533	519	672	662	623	611	617	606	836	816
17	566	548	---	---	680	666	581	543	621	609	839	828
18	572	560	---	---	696	677	579	567	630	617	854	836
19	579	566	---	---	698	687	585	569	636	627	879	852
20	582	569	---	---	705	686	597	578	674	636	899	878
21	593	575	465	459	716	702	599	579	696	674	914	762
22	597	578	482	464	710	695	596	573	701	693	924	908
23	600	578	503	479	696	657	579	569	708	698	932	915
24	617	582	516	498	696	662	582	569	---	---	938	920
25	603	588	528	507	695	672	584	558	---	---	950	927
26	623	605	522	506	674	650	573	564	719	710	951	938
27	623	602	536	512	651	617	566	536	726	716	948	935
28	633	611	543	530	617	591	558	534	732	719	942	927
29	629	602	552	507	612	591	542	522	740	725	941	912
30	636	605	546	528	624	612	536	519	738	722	926	909
31	---	---	566	537	---	---	536	527	740	728	---	---
MONTH	639	312	672	459	716	543	666	519	740	518	951	612
YEAR	1060	297										



## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04193500 MAUMEE RIVER AT WATERVILLE, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	410	73	81	741	23	46	8850	143	3420
2	395	66	70	236	26	17	6170	100	1670
3	355	73	70	318	24	21	4450	86	1030
4	546	74	109	455	23	28	3220	82	713
5	562	73	111	610	23	38	3130	76	642
6	410	69	76	674	23	42	2670	38	274
7	470	114	145	395	23	25	2180	36	212
8	546	86	127	530	23	33	2050	34	188
9	455	44	54	470	23	29	1910	33	170
10	440	46	55	380	23	24	1750	31	146
11	610	53	87	515	23	32	1290	27	94
12	690	67	125	455	23	28	1170	26	82
13	658	76	135	395	23	25	1190	26	84
14	562	71	108	380	23	24	1510	29	118
15	410	67	74	440	23	27	1660	31	139
16	343	51	47	578	23	36	2100	36	204
17	280	41	31	410	23	25	2000	34	184
18	280	38	29	500	23	31	1710	31	143
19	217	30	18	626	23	39	1490	29	117
20	268	29	21	485	22	29	1000	26	70
21	227	32	20	610	23	38	860	26	60
22	227	31	19	594	23	37	920	25	62
23	878	52	123	485	23	30	1200	28	91
24	896	51	123	546	23	34	1200	27	87
25	330	42	37	658	23	41	1290	27	94
26	227	35	21	1000	25	68	7040	89	1690
27	170	36	17	2860	51	394	29000	335	26200
28	208	40	22	5360	59	854	40000	473	51100
29	305	40	33	9800	172	4550	36800	433	43000
30	343	37	34	11100	199	5960	27900	328	24700
31	368	24	24	--	--	--	20800	246	13800
TOTAL	13086	--	2046	42606	--	12605	218510	--	170584

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	14700	174	6910	22400	299	18100	8820	151	3600
2	11100	131	3930	18200	218	10700	9300	112	2810
3	7760	100	2100	13600	160	5880	10200	103	2840
4	6300	87	1480	10300	140	3890	11000	93	2760
5	5100	73	1010	6200	129	2160	25100	--	--
6	4200	62	703	4500	107	1300	32700	1240	109000
7	3500	52	491	3500	85	803	33300	1020	91700
8	3000	51	413	3700	65	649	30700	457	33700
9	2400	41	266	3800	47	482	26300	855	60700
10	2200	37	220	3500	36	340	29300	638	50500
11	2000	36	194	3300	33	294	29700	558	44700
12	2100	36	204	3100	37	310	25200	545	37100
13	2100	37	210	3000	34	275	20700	453	25300
14	1900	37	190	3400	23	211	16200	304	13300
15	1700	32	147	3800	17	174	12700	171	5860
16	1800	33	160	4000	15	162	10700	134	3870
17	2080	35	197	3700	12	120	16500	122	5440
18	3130	46	389	3600	10	97	17000	219	10100
19	7720	100	2080	3470	10	94	14500	192	7520
20	21900	255	15100	7130	16	308	9850	157	4180
21	58600	695	110000	16200	51	2230	7840	127	2690
22	69600	645	121000	28100	284	24000	6480	109	1910
23	65500	348	61700	36700	660	65400	4270	89	1030
24	55700	233	35000	32200	542	47100	4850	79	1030
25	46000	180	22400	23400	370	23400	4920	65	863
26	36100	154	15000	16700	274	12400	5830	51	803
27	36000	306	29700	11700	218	6890	4050	39	426
28	35900	588	57000	8130	183	4020	2630	37	263
29	36000	560	54400	--	--	--	3380	26	237
30	34400	487	45200	--	--	--	6900	24	447
31	29200	406	32000	--	--	--	8600	26	604
TOTAL	609690	--	619794	301330	--	231789	449520	--	525283

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	9530	136	3560	2210	53	316	2650	84	601
2	7970	183	3940	2160	43	251	2410	70	455
3	9040	143	3490	2340	38	240	1900	46	236
4	21300	626	40900	1900	37	190	1900	29	149
5	32900	1790	159000	2090	29	164	1760	21	100
6	34100	1940	179000	1850	19	95	1670	18	81
7	31400	1350	114000	1650	13	58	1530	18	74
8	23600	818	52100	1670	12	54	1810	20	98
9	18200	545	26800	2930	16	127	2020	23	125
10	14400	424	16500	5580	27	407	2630	30	213
11	12100	286	9340	6120	48	793	2710	43	315
12	10200	218	6000	8690	84	2140	2410	45	293
13	9130	167	4120	15100	194	7910	1990	40	215
14	8130	144	3160	13600	159	5840	1830	35	173
15	6330	132	2260	12400	113	3780	1700	35	161
16	6930	95	1780	15900	144	6180	1650	35	156
17	5090	57	783	15000	248	10000	1550	35	146
18	3410	48	442	16600	273	12200	1500	35	142
19	2740	42	311	19900	332	17800	1430	37	143
20	2740	32	237	16100	433	18800	1670	40	180
21	2930	38	301	11800	308	9810	1850	43	215
22	2630	35	249	8860	167	3990	2060	56	311
23	2550	27	186	7400	128	2560	3080	80	665
24	2340	25	158	6900	121	2250	3780	96	980
25	2340	25	158	6120	115	1900	3410	99	911
26	2190	25	148	4980	114	1530	2850	98	754
27	1990	21	113	3810	101	1040	2240	98	593
28	1990	22	118	3140	84	712	1830	95	469
29	2020	23	125	2880	75	583	1600	90	389
30	2040	37	204	3440	82	762	1410	85	324
31	--	--	--	3140	85	721	--	--	--
TOTAL	292260	--	629483	226260	--	113203	62830	--	9667
DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1220	83	273	196	67	35	432	46	54
2	1140	83	255	187	60	30	478	49	63
3	1120	83	251	326	64	56	560	53	80
4	1020	85	234	376	85	86	526	49	70
5	809	88	192	314	64	54	462	46	57
6	758	89	182	187	69	35	617	61	102
7	742	88	176	363	46	45	693	73	137
8	693	85	159	462	46	57	647	57	100
9	678	80	146	404	41	45	574	50	77
10	603	73	119	363	35	34	509	48	66
11	509	70	96	363	30	29	560	56	85
12	588	69	110	478	42	54	574	62	96



## STREAMS TRIBUTARY TO LAKE ERIE

04194022 MAUMEE RIVER AT TOLEDO OVERSEAS TERMINAL DOCK, AT TOLEDO, OHIO

LOCATION.--Lat 41°41'06", long 83°28'35", Lucas County, at Toledo Overseas Terminal dock at Toledo, about 1 mi (2 km) upstream from the mouth.

PERIOD OF RECORD.--Chemical analyses: October 1962 to June 1974 (discontinued).

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.								
31...	0900	14.5	523	7.2	--	--	--	0
NOV.								
07...	0830	10.5	497	8.0	--	--	--	0
14...	0900	10.0	539	7.3	--	--	--	0
21...	0845	10.0	660	8.3	--	--	--	0
28...	0845	11.0	787	7.4	--	--	--	0
DEC.								
05...	0900	8.0	578	7.2	--	--	--	0
12...	0845	4.5	586	7.5	--	--	--	0
19...	0830	1.5	632	7.2	--	--	--	0
26...	0830	1.5	676	7.3	--	--	--	0
JAN.								
16...	0930	1.5	616	7.4	--	--	--	0
23...	0830	1.0	318	7.2	50	14	--	0
30...	0900	1.0	381	7.3	58	17	--	0
FEB.								
20...	0900	1.0	659	7.3	93	20	20	0
27...	0845	.5	364	7.2	48	12	7.1	0
MAR.								
06...	0900	8.0	478	8.3	73	18	--	0
13...	0845	6.0	370	8.2	58	15	--	0
20...	0900	5.5	449	8.3	67	18	--	0
27...	0845	4.0	519	8.1	74	19	--	0
APR.								
03...	0900	7.0	633	--	89	24	21	7
10...	0900	7.0	368	--	58	14	--	0
17...	0830	11.5	--	--	73	18	--	0
24...	0900	13.0	560	--	55	21	--	0
MAY								
01...	0845	15.5	592	8.4	67	19	19	5
08...	0830	15.0	--	--	68	20	--	0
15...	0900	15.0	587	8.3	70	19	--	0
22...	0900	19.0	440	7.9	53	14	--	0
29...	0800	19.0	505	7.9	63	16	--	0
JUNE								
05...	0900	12.0	531	8.0	72	17	16	0

## STREAMS TRIBUTARY TO LAKE ERIE

263

04194022 MAUMEE RIVER AT TOLEDO OVERSEAS TERMINAL DOCK, AT TOLEDO, OHIO--Continued

REMARKS.--Determinations of suspended solids and dissolved oxygen (DO) furnished by the city of Toledo, Division of Sewage Disposal. No discharge records available.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLORIDE (CL) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	HARD- NESS (CA, MG) (MG/L)
OCT.							
31...	147	61	44	.00	2.7	.04	--
NOV.							
07...	138	60	42	.00	2.6	--	--
14...	150	63	46	.00	2.4	--	--
21...	172	85	62	.00	2.8	--	--
28...	201	120	73	.00	2.4	.09	--
DEC.							
05...	132	89	38	.03	8.3	--	--
12...	147	84	40	.03	8.1	--	--
19...	151	90	47	.04	9.1	--	--
26...	174	100	49	--	--	--	--
JAN.							
16...	180	86	38	.01	--	.07	--
23...	94	39	14	--	--	--	180
30...	115	64	18	--	--	--	210
FEB.							
20...	220	89	35	.00	4.5	.09	310
27...	144	47	17	.07	6.1	.50	170
MAR.							
06...	147	70	24	.01	6.6	--	260
13...	122	51	16	.01	6.3	--	210
20...	150	66	20	.01	5.4	--	240
27...	179	74	25	.00	5.2	.30	260
APR.							
03...	210	95	34	.01	4.9	.26	320
10...	120	51	15	.01	5.2	--	200
17...	171	67	22	.00	5.0	--	260
24...	194	76	28	.00	4.7	--	220
MAY							
01...	210	81	32	.01	4.1	.24	250
08...	196	84	36	.00	3.3	--	250
15...	179	81	31	.01	8.1	--	250
22...	135	51	19	.04	8.3	--	190
29...	170	61	23	.01	6.9	--	220
JUNE							
05...	193	66	27	.00	5.5	.23	250

## STREAMS TRIBUTARY TO LAKE ERIE

04194023 MAUMEE RIVER AT MOUTH, AT U.S. COAST GUARD STATION AT TOLEDO, OHIO

LOCATION.--Lat 41°41'36", long 83°18'20", on left bank at U.S. Coast Guard Station, 200 ft (61 m) downstream from entrance of channel to Bay View Park Yacht Club, across the river from C. and O. docks, and 2,500 ft (762 m) downstream from Toledo Sewage Disposal plant.

DRAINAGE AREA.--6,608 mi<sup>2</sup> (17,115 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: February 1967 to September 1974.  
Water temperatures: February 1967 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 832 micromhos Nov. 30; minimum, 245 micromhos Nov. 2.

pH: Maximum, 8.3 Sept. 25, 30; minimum, 6.2 Nov. 15.

Dissolved oxygen: Maximum, 13.1 mg/l Nov. 12; minimum, 0.1 mg/l Oct. 10.

Water temperatures: Maximum, 27.0°C July 10, 17-19, Aug. 23; minimum, 1.0°C Dec. 16.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)
OCT.												
18...	1000	17.0	--	548	8.1	--	--	--	--	--	0	138
29...	1100	14.0	--	395	7.5	--	--	--	--	--	0	126
NOV.												
07...	1550	10.0	--	480	8.0	--	--	--	--	--	0	126
12...	1100	10.0	--	609	6.9	--	--	--	--	--	0	141
DEC.												
03...	0930	7.0	--	718	8.0	--	--	--	--	--	0	140
31...	1400	3.0	--	425	8.0	--	--	--	--	--	0	99
JAN.												
15...	1430	1.5	--	626	7.2	--	81	20	--	--	0	173
25...	0900	4.0	--	412	7.0	--	51	14	--	--	0	121
FEB.												
19...	1030	1.5	--	645	7.7	--	80	24	--	--	0	195
25...	0930	.5	--	426	7.4	--	55	15	--	--	0	115
MAR.												
04...	0900	5.0	--	499	7.5	--	68	17	--	--	0	147
11...	0930	7.0	--	415	7.1	--	55	16	--	--	0	125
APR.												
09...	0930	5.5	--	358	7.6	--	49	14	--	--	0	111
29...	0915	15.5	--	655	7.4	--	70	20	--	--	0	194
MAY												
13...	0930	13.5	--	643	7.5	--	72	22	--	--	0	207
22...	1700	17.5	5.8	490	7.1	--	59	15	--	--	0	139
JUNE												
10...	0915	22.0	--	478	7.3	--	60	16	--	--	0	172
21...	1130	21.5	--	596	7.6	--	69	19	--	--	0	197
SEP.												
19...	1100	21.0	2.6	540	7.4	2.0	47	18	29	3.4	0	164

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
18...	1030	<.5	--
APR.			
17...	1800	.2	7.3

STREAMS TRIBUTARY TO LAKE ERIE

265

04194023 MAUMEE RIVER AT MOUTH, AT U.S. COAST GUARD STATION AT TOLEDO, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1967-74): Maximum, 1,070 micromhos Feb. 4, 1972; minimum, 210 micromhos Dec. 23, 1967.

pH (1967-74): Maximum, 9.1 Apr. 13, 1971; minimum, 6.2 Nov. 15, 1973.

Dissolved oxygen (1967-74): Maximum, 15.0 mg/l or higher on several days during November and December 1972; minimum, 0.0 mg/l on many days during June to September 1967.

Water temperatures (1967-74): Maximum, 36.0°C July 25, 1973; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since February 1967. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water. No discharge records available.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
18...	71	43	.7	--	.00	5.0	--	--	--	--	--
29...	46	27	.4	--	.00	1.9	--	--	--	--	--
NOV.											
07...	57	41	.4	--	.00	3.4	--	--	--	--	--
12...	74	59	.6	--	.00	5.3	--	--	--	--	--
DEC.											
03...	120	61	.6	--	.00	9.7	--	--	--	--	--
31...	54	27	.2	--	.00	8.8	--	--	--	--	--
JAN.											
15...	92	43	.3	--	.01	7.4	--	--	280	--	--
25...	58	27	.3	--	.00	5.4	--	--	190	--	--
FEB.											
19...	67	38	.6	--	.01	6.4	--	--	300	--	--
25...	57	26	.3	--	.00	7.1	--	--	200	--	--
MAR.											
04...	66	31	.3	--	.01	6.4	--	--	240	--	--
11...	53	24	.2	--	.02	6.0	--	--	200	--	--
APR.											
09...	50	16	.4	--	.01	5.1	--	--	180	--	--
25...	75	45	.6	--	.01	6.3	--	--	260	--	--
MAY											
13...	97	43	.5	--	.00	3.8	--	--	270	--	--
22...	54	23	.4	--	.01	8.6	--	--	210	--	--
JUNE											
10...	53	26	.8	--	.01	4.6	--	--	220	--	--
21...	69	41	1.1	--	.01	4.5	--	--	250	--	--
SEP.											
19...	64	40	.5	1.4	.22	.68	.25	285	190	40	60

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

## STREAMS TRIBUTARY TO LAKE ERIE

04194030 MAUMEE RIVER AT CENTER C. AND O. RAILROAD DOCK, AT TOLEDO, OHIO

LOCATION.--Lat 41°41'46", long 83°21'39", Lucas County, at mouth at end of center dock of Chesapeake and Ohio Railroad coal-loading dock, at Toledo.

PERIOD OF RECORD.--Chemical analyses: June 1962 to June 1974 (discontinued).

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.								
31...	0830	14.0	482	7.2	--	--	--	0
NOV.								
07...	0845	--	387	8.4	--	--	--	1
14...	0915	8.0	322	7.5	--	--	--	0
21...	0900	9.0	471	7.3	--	--	--	0
28...	0900	--	685	8.4	--	--	--	2
DEC.								
05...	0915	7.0	584	8.4	--	--	--	0
12...	0900	4.0	494	8.4	--	--	--	1
18...	0845	1.0	592	7.2	--	--	--	0
26...	0900	--	679	8.3	--	--	--	0
JAN.								
16...	0900	1.0	607	7.5	75	19	22	0
23...	0845	.5	316	7.2	--	--	--	0
30...	0915	1.0	380	7.1	57	--	--	0
FEB.								
20...	0915	1.0	639	7.2	--	--	--	0
27...	0900	.5	360	7.1	49	14	--	0
MAR.								
06...	0915	7.0	492	7.9	70	19	--	0
13...	0900	6.0	371	8.2	50	15	--	0
20...	0915	5.0	458	8.0	71	17	--	0
27...	0900	4.0	515	7.7	74	18	--	0
APR.								
03...	0915	7.0	627	--	79	23	19	0
10...	0915	7.0	357	--	55	13	--	0
17...	0845	11.0	497	--	74	18	--	0
24...	0915	12.0	517	--	80	19	--	0
MAY								
01...	0830	15.5	544	8.2	63	18	--	0
08...	0900	15.0	--	--	61	17	--	0
15...	0915	15.0	--	8.3	69	20	--	0
22...	0845	18.5	446	8.1	56	15	--	0
29...	0815	19.0	495	7.6	59	16	--	0
JUNE								
05...	0915	21.5	495	7.5	65	16	15	0
12...	0915	22.0	465	7.3	62	15	--	0

## STREAMS TRIBUTARY TO LAKE ERIE

271

04194030 MAUMEE RIVER AT CENTER C. AND O. RAILROAD DOCK, AT TOLEDO, OHIO--Continued

REMARKS.--Determinations of suspended solids and dissolved oxygen (DO) furnished by the city of Toledo, Division of Sewage Disposal. No discharge records available.

## CHEMICAL ANALYSES, OCTOBER 1973 TO JUNE 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	HARD- NESS (CA+MG) (MG/L)
OCT.							
31...	141	56	38	.00	2.1	--	--
NOV.							
07...	126	44	29	.01	1.5	--	--
14...	115	30	21	.01	1.1	--	--
21...	132	50	40	.00	2.3	--	--
28...	165	94	66	.00	3.0	.04	--
DEC.							
05...	135	94	40	.00	6.5	--	--
12...	136	69	36	.01	3.6	--	--
18...	145	82	44	.01	7.6	--	--
26...	160	95	57	--	--	--	--
JAN.							
16...	159	86	41	.00	8.0	--	270
23...	100	39	16	--	--	--	--
30...	118	55	18	--	--	--	--
FEB.							
20...	205	87	37	.01	5.2	.11	--
27...	104	50	17	--	--	--	180
MAR.							
06...	156	70	25	.01	6.5	--	250
13...	122	52	16	.01	5.0	--	190
20...	153	64	21	.00	5.6	--	250
27...	168	72	28	.01	5.3	.34	260
APR.							
03...	216	92	33	.01	4.8	.26	290
10...	116	50	15	.01	5.1	--	190
17...	168	67	24	.01	5.0	--	260
24...	183	70	26	.00	4.4	--	280
MAY							
01...	186	71	30	.01	3.6	--	230
08...	181	70	31	.00	2.9	--	220
15...	183	81	32	.01	8.2	.37	250
22...	137	52	20	.01	8.3	--	200
29...	161	59	24	.01	7.0	--	210
JUNE							
05...	177	60	26	.00	4.8	.27	230
12...	167	53	24	.00	4.1	--	220



## STREAMS TRIBUTARY TO LAKE ERIE

## 04194310 MIDDLE BRANCH PORTAGE RIVER NEAR PORTAGE, OHIO

LOCATION.--Lat 41°20'19", long 83°33'10", in NW 1/4 sec.1, T.4 N., R.11 E., Wood County, on downstream side of center pier of bridge on Bloomdale Road, 3.4 mi (5.5 km) upstream from South Branch Portage River, 5.0 mi (8.0 km) downstream from Rocky Ford Creek, and 6.0 mi (9.7 km) east northeast of Portage.

DRAINAGE AREA.--217 mi<sup>2</sup> (562 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: April 1969 to September 1974.  
Water temperatures: April 1969 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,760 micromhos Aug. 12, 13; minimum, 325 micromhos Jan. 30.  
Water temperatures: Maximum, 34.0°C July 27; minimum, freezing point Dec. 28-31, Jan. 1-20.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
27...	1845	--	--	--	1330	7.9	--	88	44	--	--	0
31...	1435	--	11.0	--	913	8.5	--	78	24	--	--	3
NOV.												
14...	1130	--	12.0	--	1080	8.4	--	--	--	--	--	2
29...	0840	--	--	--	658	8.4	--	--	--	--	--	0
DEC.												
22...	1045	--	.5	--	974	8.0	--	--	--	--	--	0
26...	1125	--	3.0	--	491	7.4	--	--	--	--	--	0
JAN.												
09...	1340	--	.0	--	869	7.6	--	85	21	--	--	0
21...	1120	--	4.5	--	331	7.1	--	--	--	--	--	--
FEB.												
14...	1025	--	.0	--	844	8.2	--	90	27	--	--	0
MAR.												
11...	1120	--	5.0	--	331	7.4	--	52	12	--	--	0
25...	0950	--	.0	--	641	8.2	--	90	22	--	--	0
APR.												
04...	0835	--	10.5	--	276	7.5	--	36	17	--	--	0
18...	1315	--	13.5	--	661	8.3	--	81	24	--	--	0
MAY												
06...	1100	--	10.0	--	706	8.0	--	79	24	--	--	0
30...	1635	--	20.0	--	549	8.0	--	77	19	--	--	0
JUNE												
06...	2005	--	25.0	--	574	--	--	79	19	--	--	0
28...	0720	--	--	--	656	--	--	79	26	--	--	0
AUG.												
21...	1100	3.9	27.5	5.9	750	8.0	2.5	78	27	33	6.7	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
12...	0920	<.5	--
APR.			
24...	1645	.1	5.8

STREAMS TRIBUTARY TO LAKE ERIE

273

04194310 MIDDLE BRANCH PORTAGE RIVER NEAR PORTAGE, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 2,130 micromhos Sept. 4, 1973; minimum, 169 micromhos July 16, 1972.  
Water temperatures (1969-74): Maximum, 36.5°C June 28, 1971; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since April 1969. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
27...	241	380	110	.7	--	.00	.22	--	--	400	--	--
31...	154	210	76	.3	--	.00	4.0	--	--	290	--	--
NOV.												
14...	240	240	78	.5	--	.00	2.9	--	--	--	--	--
29...	152	100	35	.3	--	.00	12	--	--	--	--	--
DEC.												
22...	258	170	72	.3	--	.00	5.9	--	--	--	--	--
26...	111	71	24	.3	--	.00	11	--	--	--	--	--
JAN.												
09...	259	140	42	.5	--	.00	6.8	--	--	300	--	--
21...	--	49	15	.5	--	.01	7.7	--	--	--	--	--
FEB.												
14...	189	110	96	.2	--	.00	6.0	--	--	340	--	--
MAR.												
11...	103	49	12	.3	--	.02	6.1	--	--	180	--	--
25...	208	120	29	.2	--	.00	6.3	--	--	320	--	--
APR.												
04...	112	30	9.9	.4	--	.00	4.9	--	--	160	--	--
18...	217	120	31	.3	--	.00	4.3	--	--	300	--	--
MAY												
06...	212	140	45	.4	--	.01	2.4	--	--	300	--	--
30...	145	65	23	.3	--	.01	18	--	--	270	--	--
JUNE												
06...	161	73	25	.2	--	.01	16	--	--	280	--	--
28...	195	140	41	.3	--	.00	3.0	--	--	300	--	--
AUG.												
21...	236	130	42	.5	.52	.00	.02	.40	437	310	440	430

## STREAMS TRIBUTARY TO LAKE ERIE

04194310 MIDDLE BRANCH PORTAGE RIVER NEAR PORTAGE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1350	1260	913	833	---	---	---	---	425	366	---	---
2	1250	1200	931	900	---	---	---	---	378	366	---	---
3	---	---	926	905	---	---	---	---	---	---	---	---
4	---	---	910	895	---	---	---	---	---	---	---	---
5	---	---	937	903	817	800	---	---	---	---	---	---
6	---	---	963	937	810	783	---	---	---	---	---	---
7	---	---	969	947	793	778	---	---	---	---	---	---
8	---	---	1000	963	807	793	---	---	---	---	---	---
9	---	---	1010	995	828	793	---	---	---	---	---	---
10	---	---	1000	988	833	817	---	---	---	---	---	---
11	---	---	1010	985	905	833	---	---	---	---	---	---
12	1130	1100	998	976	941	908	---	---	730	632	---	---
13	1130	1080	1030	991	937	833	---	---	749	685	---	---
14	1110	1080	1060	1030	892	802	---	---	833	807	---	---
15	1110	1080	1080	1000	793	735	---	---	823	800	---	---
16	1110	1090	1020	905	820	744	---	---	815	795	---	---
17	1120	1100	982	944	841	798	---	---	816	791	---	---
18	1140	1110	966	916	---	---	---	---	---	---	---	---
19	1150	1110	918	879	879	869	---	---	---	---	---	---
20	1160	1140	926	905	897	879	---	---	---	---	---	---
21	1190	1150	918	890	897	872	774	380	---	---	---	---
22	1200	1170	916	895	941	879	785	372	---	---	---	---
23	1220	1190	941	910	944	926	843	368	---	---	---	---
24	1220	1190	934	900	956	931	731	377	---	---	---	---
25	1230	1200	921	787	953	687	490	411	---	---	---	---
26	1250	1220	787	643	632	395	479	412	---	---	---	---
27	1260	1230	718	654	445	415	495	385	---	---	---	---
28	1240	1230	750	709	---	---	465	383	---	---	---	---
29	1250	1130	713	629	---	---	415	332	---	---	---	---
30	1140	921	700	650	---	---	381	325	---	---	---	---
31	995	843	---	---	---	---	406	346	---	---	---	---
MONTH	---	---	1080	629	---	---	---	---	---	---	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	663	638	623	601	685	652	1660	1630	627	619
2	---	---	678	652	632	621	683	659	1690	1660	624	620
3	---	---	709	672	632	614	690	672	1680	1650	632	620
4	---	---	709	687	630	612	707	570	1670	1640	670	629
5	---	---	694	678	610	400	---	---	1720	1670	726	675
6	---	---	696	678	583	403	---	---	1710	1690	816	733
7	---	---	694	678	616	583	---	---	1710	1690	785	761
8	---	---	681	650	614	595	---	---	1700	1680	786	776
9	---	---	705	658	625	605	---	---	1720	1690	785	768
10	---	---	681	663	619	603	---	---	1740	1710	776	763
11	---	---	670	645	616	603	---	---	1740	1690	773	762
12	---	---	634	597	619	601	---	---	1760	1700	790	773
13	---	---	621	584	618	595	---	---	1760	1410	792	784
14	---	---	645	614	634	600	---	---	1430	1200	797	788
15	---	---	687	649	628	610	---	---	1200	1160	823	799
16	---	---	757	685	614	594	---	---	1210	944	845	826
17	---	---	724	598	612	600	---	---	905	589	886	848
18	---	---	616	487	614	607	---	---	1020	692	906	888
19	---	---	548	499	632	586	---	---	846	669	939	913
20	---	---	595	548	668	616	---	---	724	676	951	944
21	---	---	625	595	668	658	---	---	748	726	964	956
22	---	---	628	612	667	637	---	---	784	753	981	963
23	---	---	628	607	640	609	1250	1240	819	789	1000	978
24	594	583	621	594	647	618	1290	1250	864	822	1030	1000
25	605	581	603	578	672	645	1330	1290	903	870	991	953
26	621	603	616	601	668	658	1400	1330	960	904	1040	991
27	627	610	603	587	672	658	1490	1410	967	946	1050	1040
28	638	618	595	583	687	663	1530	1500	958	910	1060	1040
29	649	632	601	583	681	663	1590	1530	924	883	1060	1040
30	659	634	610	537	699	658	1610	1570	909	722	1150	1060
31	---	---	601	561	---	---	1650	1600	720	621	---	---
MONTH	---	---	757	487	699	400	---	---	1760	589	1150	619
YEAR	1760	325										

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	17.5	11.0	9.0	---	---	1.0	0.0	---	---	---	---
2	20.0	18.5	11.5	9.5	---	---	0.5	0.0	---	---	---	---
3	---	---	11.5	9.0	---	---	0.0	0.0	---	---	---	---
4	---	---	10.5	8.0	---	---	0.0	0.0	---	---	---	---
5	---	---	9.5	7.0	9.0	6.0	0.0	0.0	---	---	---	---
6	---	---	7.5	5.0	6.0	3.0	0.0	0.0	---	---	---	---
7	---	---	7.0	5.0	4.0	3.0	0.0	0.0	---	---	---	---
8	---	---	7.5	5.5	5.5	3.5	0.0	0.0	---	---	---	---
9	---	---	6.5	4.5	4.0	2.0	0.0	0.0	---	---	---	---
10	---	---	7.0	3.5	3.5	1.5	0.0	0.0	---	---	---	---
11	---	---	6.5	4.0	2.5	2.0	0.0	0.0	---	---	---	---
12	23.0	17.5	7.5	5.5	3.0	2.0	0.0	0.0	---	---	---	---
13	19.0	16.5	10.5	7.0	2.5	1.5	0.0	0.0	---	---	---	---
14	19.5	14.0	13.5	10.0	2.0	1.5	0.0	0.0	---	---	---	---
15	18.5	14.0	14.5	12.0	2.0	1.5	0.0	0.0	---	---	---	---
16	16.5	12.5	12.0	7.5	2.0	1.5	0.0	0.0	---	---	---	---
17	17.0	11.5	8.0	6.0	2.0	2.0	0.0	0.0	---	---	---	---
18	15.5	11.5	8.0	6.0	---	---	0.0	0.0	---	---	---	---
19	14.5	9.5	9.0	7.5	1.5	1.5	0.0	0.0	---	---	---	---
20	15.0	11.0	9.5	8.0	1.5	1.5	3.0	0.0	---	---	---	---
21	16.5	10.0	11.0	9.0	2.0	1.5	4.5	1.0	---	---	---	---
22	16.5	10.0	10.0	8.0	2.0	1.5	4.5	1.0	---	---	---	---
23	16.0	10.5	10.0	8.0	2.0	1.5	4.5	2.0	---	---	---	---
24	16.5	11.5	11.5	9.0	2.0	1.5	---	---	---	---	---	---
25	17.0	12.5	11.0	9.0	2.0	1.5	---	---	---	---	---	---
26	17.5	13.0	9.0	8.5	5.5	1.0	---	---	---	---	---	---
27	14.5	11.5	10.5	8.0	4.0	1.5	---	---	---	---	---	---
28	13.5	12.0	11.0	8.5	3.0	0.0	---	---	---	---	---	---
29	12.0	11.0	8.5	6.5	3.0	0.0	---	---	---	---	---	---
30	11.0	10.5	7.0	5.5	3.0	0.0	---	---	---	---	---	---
31	11.5	11.0	---	---	1.5	0.0	---	---	---	---	---	---
MONTH	---	---	14.5	3.5	9.0	0.0	---	---	---	---	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	22.0	14.5	23.5	19.5	30.0	20.5	28.0	21.0	26.5	21.0
2	---	---	17.0	14.0	25.0	18.0	28.0	23.5	28.5	22.5	23.0	19.0
3	---	---	18.5	15.5	27.5	20.5	33.0	24.0	28.5	22.0	22.0	17.0
4	---	---	19.0	13.0	28.0	21.5	31.5	25.5	25.0	21.5	23.5	16.5
5	---	---	18.0	12.5	25.5	22.0	---	---	29.5	19.5	23.0	17.5
6	---	---	14.5	11.0	26.0	21.5	---	---	29.0	19.0	24.0	17.0
7	---	---	18.0	8.0	27.0	22.0	---	---	29.5	20.5	25.0	18.0
8	---	---	15.5	10.5	26.5	23.0	---	---	31.5	23.0	25.0	19.0
9	---	---	11.0	10.0	30.0	24.0	---	---	31.5	23.0	26.0	19.5
10	---	---	17.5	9.5	26.5	21.0	---	---	29.0	22.5	26.5	20.5
11	---	---	19.0	13.0	24.0	17.5	---	---	27.0	23.0	29.5	21.5
12	---	---	18.0	13.5	26.0	18.0	---	---	33.0	24.0	28.5	23.0
13	---	---	14.5	11.5	23.0	18.5	---	---	31.0	25.0	24.5	20.0
14	---	---	20.5	12.5	26.5	19.0	---	---	29.0	23.0	24.0	17.5
15	---	---	21.5	17.5	25.5	22.0	---	---	31.0	22.0	25.5	15.0
16	---	---	20.5	16.0	23.0	19.0	---	---	30.5	23.0	24.5	17.0
17	---	---	21.5	19.5	19.0	16.5	---	---	28.5	23.0	27.5	17.0
18	---	---	19.5	17.0	23.0	16.5	---	---	29.0	23.0	26.0	18.5
19	---	---	19.0	16.0	23.5	19.5	---	---	31.0	23.5	26.5	16.0
20	---	---	22.0	14.5	30.5	21.0	---	---	33.0	25.0	22.0	19.0
21	---	---	25.0	17.0	29.0	24.5	---	---	33.0	24.5	22.5	16.5
22	---	---	24.0	21.5	26.5	20.0	---	---	33.0	24.0	20.0	14.0
23	---	---	26.0	19.5	20.5	17.5	23.5	22.0	31.5	24.5	21.0	11.0
24	16.0	13.5	23.5	19.5	22.0	16.5	30.5	19.0	30.5	24.0	21.0	12.0
25	16.0	10.5	20.5	17.0	25.0	17.0	31.5	20.5	33.0	22.5	22.5	14.0
26	21.5	12.5	20.5	15.0	26.5	20.0	32.5	23.0	32.0	22.5	24.5	13.0
27	22.0	16.0	22.0	15.5	27.5	20.5	34.0	22.5	32.0	25.0	21.0	14.5
28	21.5	17.5	19.0	16.5	27.0	21.0	33.0	22.5	26.0	22.5	22.5	18.5
29	24.0	18.0	22.0	17.0	27.0	21.5	30.5	23.5	24.5	21.0	19.5	15.0
30	21.5	18.5	21.5	19.0	26.5	22.0	28.5	21.5	28.0	22.0	16.5	12.5
31	---	---	24.0	19.0	---	---	30.5	21.0	26.5	23.0	---	---
MONTH	---	---	26.0	8.0	30.5	16.5	---	---	33.0	19.0	29.5	11.0
YEAR	34.0	0.0										

## STREAMS TRIBUTARY TO LAKE ERIE

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OHIO

LOCATION.--Lat 41°26'58", long 83°21'29", in E 1/2 sec.28, T.6 N., R.13 E., Sandusky County, on right bank at old interurban line bridge abutment, just downstream from railroad bridge, and 800 ft (244 m) downstream from gaging station at Woodville.

DRAINAGE AREA.--428 mi<sup>2</sup> (1,109 km<sup>2</sup>) (at gaging station).

PERIOD OF RECORD.--Chemical analyses: June 1968 to September 1974.

Water temperatures: June 1968 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 1,900 micromhos Sept. 3; minimum, 264 micromhos Mar. 6.

pH: Maximum, 11.4 Nov. 6; minimum, 6.4 Nov. 29, 30.

Dissolved oxygen: Maximum, 15.0 mg/l Dec. 23, Jan. 2; minimum, 0.3 mg/l July 8.

Water temperatures: Maximum, 36.5°C July 8; minimum, freezing point on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
04...	1145	40	19.5	--	832	8.2	--	--	--	--	--	0
17...	0725	15	13.0	--	1050	8.3	--	--	--	--	--	0
NOV.												
21...	1021	31	12.0	--	1290	8.4	--	--	--	--	--	3
30...	1833	264	6.0	--	739	7.8	--	--	--	--	--	0
DEC.												
22...	1351	50	1.0	--	1190	8.3	--	--	--	--	--	0
29...	1452	1340	1.0	--	573	8.1	--	--	--	--	--	0
JAN.												
09...	1055	80	1.0	--	974	7.8	--	140	34	--	--	0
23...	2017	2930	5.0	--	463	7.3	--	64	17	--	--	0
FEB.												
13...	1445	120	2.0	--	1030	8.4	--	130	28	--	--	7
23...	1800	2520	8.0	--	447	7.6	--	--	--	--	--	0
MAR.												
11...	2000	3470	11.0	--	385	7.7	--	59	14	--	--	0
26...	1712	210	5.0	--	757	8.1	--	93	26	--	--	0
APR.												
09...	1829	605	17.0	--	493	8.1	--	75	19	--	--	0
23...	1510	110	11.5	--	862	8.5	--	110	25	--	--	4
MAY												
09...	1200	132	9.0	8.1	900	8.3	--	92	23	--	--	0
30...	2040	625	19.0	--	638	7.8	--	77	20	--	--	0
JUNE												
10...	1911	64	23.0	--	754	7.6	--	89	28	--	--	0
17...	1917	71	18.0	--	883	8.3	--	86	34	--	--	0
AUG.												
21...	1330	31	29.0	2.4	710	7.6	6.0	70	20	38	7.5	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
17...	1530	<.5	--
APR.			
17...	1700	.1	4.2



## STREAMS TRIBUTARY TO LAKE ERIE

277

## 04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 2,350 micromhos Feb. 4, 1971; minimum, 251 micromhos Feb. 21, 1971.  
 pH (1968-74): Maximum, 12.0 Aug. 5, 9, 1971, Aug. 14, 15, 1972; minimum, 6.4 Nov. 29, 30, 1973.  
 Dissolved oxygen (1968-74): Maximum, 15.0 mg/l on many days during March, April, November 1971, Apr. 2, 3, 1972, Dec. 23, 1973, Jan. 2, 1974; minimum, 0.1 mg/l Aug. 14-16, 1973.  
 Water temperatures (1968-74): Maximum, 36.5°C July 8, 1974; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since June 1968. Dissolved oxygen concentrations of 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Portage River at Woodville, Ohio (station 04195500).

REVISIONS: Water year 1972 REMARKS. Delete: Maximum recorded water temperature of 35.0°C occurred Aug. 4, 1969.  
 Water year 1973. Delete: Maximum water temperatures under period of record, 43.0°C June 10, 1973.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
04...	118	150	110	.3	--	.00	2.0	--	--	--	--	--
17...	204	180	120	.5	--	.00	1.9	--	--	--	--	--
NOV.												
21...	164	290	160	.4	--	.00	3.4	--	--	--	--	--
30...	160	130	50	.3	--	.00	11	--	--	--	--	--
DEC.												
22...	171	260	130	.3	--	.00	4.3	--	--	--	--	--
29...	130	93	32	.2	--	.00	12	--	--	--	--	--
JAN.												
09...	213	190	87	.5	--	.00	5.8	--	--	490	--	--
23...	119	61	24	.4	--	.01	8.8	--	--	230	--	--
FEB.												
13...	195	140	120	.5	--	.01	6.0	--	--	440	--	--
23...	118	53	22	.5	--	.01	9.5	--	--	--	--	--
MAR.												
11...	113	52	15	.3	--	.01	6.5	--	--	210	--	--
26...	213	120	60	.2	--	.00	6.1	--	--	340	--	--
APR.												
09...	154	72	21	.3	--	.00	7.6	--	--	270	--	--
23...	180	160	74	.5	--	.01	3.7	--	--	380	--	--
MAY												
09...	171	180	93	.5	--	.00	3.1	--	--	320	--	--
30...	141	76	35	.4	--	.01	18	--	--	270	--	--
JUNE												
10...	210	120	55	.7	--	.01	6.7	--	--	340	--	--
17...	222	170	76	.3	--	.00	2.5	--	--	350	--	--
AUG.												
21...	214	110	54	.4	1.3	.00	.02	1.1	413	260	130	970

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.8	3.9	6.5	5.7	11.6	11.1	13.7	12.7	10.7	10.4	10.8	9.9
2	4.6	3.6	6.4	5.9	11.7	10.7	15.0	14.0	11.3	10.8	10.0	9.5
3	6.2	4.0	6.4	5.6	11.6	10.6	14.4	13.5	11.6	11.4	9.7	8.1
4	7.7	5.0	6.7	6.0	11.2	10.3	14.6	13.3	11.7	11.5	8.7	7.5
5	4.8	4.4	6.8	5.7	10.6	7.9	14.9	13.3	11.9	11.6	---	---
6	5.3	4.8	6.6	4.0	9.9	7.7	13.7	12.8	11.8	11.6	10.4	8.6
7	5.6	5.3	13.1	7.1	8.7	7.9	14.7	12.9	11.7	11.3	9.7	8.0
8	7.1	5.4	9.5	8.1	8.8	8.2	15.0	13.7	11.5	11.2	10.5	8.7
9	7.9	6.0	8.6	7.6	8.6	8.2	14.9	13.5	11.5	11.4	10.8	7.7
10	8.7	7.2	---	---	8.8	8.2	14.1	12.9	11.7	11.4	10.2	8.7
11	9.3	7.7	---	---	9.0	8.5	12.7	12.2	11.6	11.3	10.5	8.3
12	9.4	8.1	---	---	9.5	8.9	12.4	12.0	11.7	11.3	10.9	9.6
13	9.1	7.9	---	---	9.7	8.7	12.4	12.0	12.2	11.4	11.2	9.9
14	8.8	8.7	---	---	10.5	8.7	12.4	11.7	12.0	11.7	10.1	9.1
15	9.9	8.9	7.3	6.9	10.9	9.2	12.6	11.6	12.0	11.8	9.1	7.8
16	10.3	9.4	7.4	6.2	11.8	10.3	12.7	11.9	12.0	11.8	8.0	7.2
17	12.4	8.5	7.3	6.8	12.1	10.8	12.6	12.2	12.3	12.0	8.3	6.0
18	9.8	7.5	---	---	12.7	11.4	12.8	12.5	12.1	11.7	8.6	6.5
19	9.6	7.8	---	---	13.5	13.0	12.6	12.3	12.0	11.4	8.5	6.6
20	9.7	6.6	---	---	12.6	9.8	12.6	12.3	11.9	11.4	8.3	6.5
21	8.8	5.8	---	---	13.7	11.7	12.2	11.6	12.0	11.7	8.3	6.5
22	7.9	5.8	7.7	6.5	14.7	11.6	13.1	11.1	11.6	10.3	8.8	6.7
23	8.5	5.5	7.0	6.4	15.0	11.9	11.3	9.4	12.5	12.4	8.5	6.8
24	8.4	5.4	8.1	7.1	14.4	11.6	11.0	10.4	12.5	11.4	9.0	6.9
25	7.1	5.3	7.6	5.2	13.6	11.3	11.1	10.8	11.7	11.3	9.0	6.6
26	8.5	4.4	6.5	5.7	11.5	9.6	11.1	10.7	11.6	11.4	8.6	6.9
27	7.5	5.4	8.2	6.2	11.6	11.1	10.6	10.1	11.9	11.3	8.2	6.4
28	5.9	4.7	9.5	8.2	12.1	11.7	10.7	10.2	11.9	10.7	8.1	6.3
29	6.0	4.1	10.1	9.4	12.1	11.5	10.9	10.0	---	---	11.2	6.2
30	6.3	5.2	11.1	10.3	12.3	11.8	10.6	10.4	---	---	10.8	6.8
31	5.9	5.0	---	---	12.8	12.3	10.4	10.2	---	---	8.2	6.5
MONTH	12.4	3.6	---	---	15.0	7.7	15.0	9.4	12.5	10.3	11.2	6.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	6.1	13.2	7.4	7.2	6.4	7.0	3.8	9.4	4.9	7.5	4.2
2	8.1	6.2	12.5	8.1	8.3	6.7	5.4	2.3	9.2	4.7	7.8	4.6
3	8.0	6.2	13.2	7.5	9.4	6.9	4.4	1.2	9.9	4.8	8.0	4.4
4	6.9	5.0	14.4	8.6	10.6	6.7	2.3	0.8	10.1	6.1	8.9	5.7
5	7.7	5.8	13.4	8.7	11.5	6.8	4.2	1.1	10.8	6.3	9.5	5.6
6	7.6	5.8	11.7	7.7	8.0	5.9	4.2	2.0	10.6	6.3	9.2	6.5
7	8.0	5.9	13.5	8.5	7.5	6.7	3.9	2.2	10.1	6.5	9.4	6.1
8	9.1	7.8	11.0	8.0	8.9	7.3	3.2	0.3	8.6	5.3	9.0	6.0
9	8.9	7.2	8.7	7.7	9.2	7.9	4.6	2.3	8.2	3.5	9.0	6.0
10	7.6	6.5	11.3	7.4	10.9	8.3	5.8	3.5	7.8	4.6	8.2	5.9
11	7.5	6.7	11.0	7.7	13.8	9.1	6.0	2.4	5.8	4.3	7.3	5.4
12	7.4	6.6	7.8	7.1	13.8	9.6	5.4	2.9	6.2	3.4	7.1	5.0
13	7.1	6.2	8.1	7.4	14.2	9.7	5.3	3.0	7.5	4.1	7.6	5.1
14	7.4	6.0	9.0	8.0	13.7	8.6	3.6	2.1	7.5	4.7	9.0	6.4
15	7.8	6.9	9.9	7.5	11.5	6.4	---	---	7.4	4.2	9.3	7.3
16	8.0	7.2	9.1	7.4	10.5	6.9	---	---	7.8	3.9	10.6	7.5
17	9.5	7.4	9.4	7.3	10.9	8.1	---	---	5.2	4.1	9.8	7.6
18	8.9	7.6	10.6	7.5	11.1	8.0	---	---	4.9	4.1	9.3	5.5
19	9.8	7.6	7.7	7.1	9.0	5.4	---	---	4.9	3.8	7.4	4.9
20	10.2	8.0	7.9	6.9	6.4	4.3	---	---	4.5	0.7	7.4	4.9
21	9.4	7.4	8.6	7.3	5.6	3.9	---	---	4.6	2.3	6.9	4.9
22	8.9	5.9	8.7	7.4	4.3	3.4	---	---	9.5	4.4	8.8	5.8
23	9.4	6.0	9.5	6.4	4.3	3.4	---	---	9.1	5.6	9.4	6.9
24	10.4	7.3	8.5	5.6	4.7	3.5	---	---	8.4	5.4	8.7	7.2
25	10.4	7.6	8.6	6.1	4.5	3.7	---	---	7.2	4.6	8.4	6.8
26	10.2	6.7	8.9	6.8	4.6	3.6	---	---	5.9	3.9	8.6	6.8
27	10.0	6.4	8.2	6.6	5.1	3.2	---	---	5.1	2.0	8.8	6.9
28	8.9	5.9	8.1	6.4	6.7	2.8	---	---	4.8	3.4	8.9	6.5
29	12.8	7.4	8.1	6.6	8.0	3.3	---	---	7.2	4.2	8.6	6.6
30	11.6	7.4	7.0	5.9	5.6	3.3	---	---	6.3	4.7	10.4	7.6
31	---	---	6.4	6.2	---	---	9.4	6.1	6.5	4.5	---	---
MONTH	12.8	5.0	14.4	5.6	14.2	2.8	---	---	10.8	0.7	10.6	4.2
YEAR	15.0	0.3										

## TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.5	17.5	9.5	8.5	6.0	4.5	0.5	0.0	4.0	1.0	3.5	3.0
2	22.0	19.0	11.5	9.0	6.0	3.0	0.5	0.0	0.5	0.0	3.5	3.0
3	24.0	18.0	10.0	7.5	9.0	5.0	0.5	0.0	0.5	0.0	4.0	3.5
4	22.5	19.0	10.0	7.5	11.5	8.5	1.5	0.0	0.0	0.0	4.5	4.0
5	20.5	17.0	7.5	4.0	11.5	7.5	1.5	0.0	0.0	0.0	---	---
6	17.5	14.0	6.5	2.5	7.0	5.0	1.5	0.5	0.0	0.0	7.5	7.0
7	19.5	16.0	6.5	6.0	8.0	5.5	1.0	0.0	0.5	0.0	9.5	7.5
8	22.5	16.5	---	---	9.0	6.5	0.5	0.0	0.5	0.0	8.5	7.0
9	22.5	17.5	---	---	8.0	5.0	2.0	0.5	0.5	0.0	9.0	7.0
10	24.0	17.0	---	---	6.0	1.5	1.5	0.5	0.0	0.0	9.0	8.0
11	23.5	16.5	---	---	3.0	1.0	2.5	0.5	0.0	0.0	8.0	7.0
12	22.5	16.5	---	---	5.0	2.5	1.5	0.0	1.5	0.0	8.0	7.5
13	20.0	16.5	---	---	5.0	3.0	1.0	0.0	2.5	0.5	8.0	7.5
14	16.5	16.0	---	---	4.5	1.5	1.0	0.0	2.0	2.0	---	---
15	18.0	14.5	---	---	2.0	0.5	2.5	0.0	2.0	2.0	---	---
16	13.5	10.0	---	---	1.0	0.5	2.0	0.0	2.5	2.0	---	---
17	14.0	10.5	---	---	1.0	0.0	2.5	0.0	2.5	2.0	---	---
18	13.5	10.0	---	---	2.0	0.5	1.5	0.5	2.0	2.0	---	---
19	14.0	7.5	---	---	2.0	0.5	2.0	0.5	2.5	2.0	---	---
20	14.0	10.0	---	---	2.5	1.0	4.5	1.5	2.5	2.0	---	---
21	15.0	8.5	---	---	2.0	0.5	5.5	4.0	2.5	2.5	---	---
22	15.5	8.5	---	---	1.0	0.5	5.5	5.0	2.5	2.5	---	---
23	16.5	9.0	---	---	3.0	0.0	6.5	5.5	2.5	2.5	---	---
24	17.5	10.0	---	---	3.5	1.5	5.5	4.5	2.5	2.0	---	---
25	17.5	11.5	---	---	4.5	3.0	5.0	3.5	2.5	2.0	---	---
26	16.5	12.5	14.0	10.0	4.5	2.0	6.0	3.5	2.5	2.0	---	---
27	14.5	10.0	13.0	10.0	5.0	2.0	7.5	5.0	2.5	2.0	---	---
28	13.0	10.0	12.5	9.0	4.0	2.5	7.5	5.0	3.5	2.5	---	---
29	11.5	9.5	8.5	5.5	4.5	3.0	6.0	4.5	---	---	---	---
30	11.0	10.0	7.0	4.5	2.0	0.5	6.0	3.0	---	---	---	---
31	11.5	10.0	---	---	1.0	0.5	5.0	3.5	---	---	---	---
MONTH	24.0	7.5	---	---	11.5	0.0	7.5	0.0	4.0	0.0	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	20.0	16.5	29.5	19.0	26.0	19.5	24.0	20.0
2	---	---	---	---	21.5	15.5	28.0	21.5	26.5	20.5	21.0	16.5
3	---	---	---	---	23.5	16.5	32.5	23.0	26.0	20.5	19.0	14.5
4	---	---	---	---	25.0	17.5	31.0	25.0	22.5	19.5	20.5	14.0
5	---	---	---	---	25.5	18.5	31.5	23.0	26.0	16.5	21.0	15.5
6	---	---	---	---	24.5	21.0	30.5	20.5	27.0	17.0	24.0	15.5
7	---	---	---	---	25.0	20.5	32.5	21.0	27.5	19.0	24.5	16.5
8	---	---	---	---	25.5	21.5	36.5	24.5	27.0	21.5	24.5	18.5
9	---	---	---	---	28.0	22.0	33.5	25.5	28.5	20.5	25.0	19.5
10	---	---	---	---	25.0	19.0	30.0	25.0	27.5	20.5	26.0	20.5
11	---	---	---	---	22.5	16.5	29.0	21.0	24.5	21.5	27.5	21.0
12	---	---	---	---	22.5	15.5	31.0	19.5	30.0	21.5	27.0	22.5
13	---	---	---	---	21.5	15.5	32.5	21.0	30.0	23.0	24.0	19.0
14	---	---	---	---	24.5	16.0	33.0	24.0	29.0	21.0	20.0	15.5
15	---	---	---	---	22.5	18.5	31.0	25.0	28.5	21.0	21.0	12.5
16	---	---	---	---	19.5	16.0	30.0	21.0	29.5	21.5	22.5	14.5
17	---	---	---	---	17.5	14.0	29.5	20.0	27.5	21.5	23.0	15.5
18	---	---	---	---	20.0	14.0	29.5	23.0	28.0	21.5	22.0	17.0
19	---	---	---	---	20.0	14.5	31.5	24.0	28.0	22.5	24.0	14.0
20	---	---	---	---	25.0	17.5	29.5	22.5	31.0	23.0	21.5	18.0
21	---	---	---	---	26.0	21.0	29.0	19.5	31.0	24.5	19.5	15.0
22	---	---	---	---	23.5	18.0	24.0	20.0	31.0	23.0	17.0	12.5
23	---	---	23.5	20.5	18.0	16.0	21.5	20.0	30.0	24.5	17.0	11.0
24	---	---	20.5	18.0	19.5	14.0	---	---	28.0	23.5	18.0	11.0
25	---	---	17.5	15.5	22.0	14.0	---	---	30.0	22.0	18.5	13.0
26	---	---	18.5	15.0	24.5	17.5	28.5	21.0	30.5	21.5	21.0	12.5
27	---	---	18.0	16.0	25.5	17.5	30.0	21.0	28.0	23.5	21.0	14.5
28	---	---	---	---	26.0	18.0	30.0	22.0	23.5	20.5	22.0	19.0
29	---	---	18.5	15.5	26.0	19.5	28.5	22.5	24.5	19.5	20.0	14.5
30	---	---	19.5	15.5	26.5	20.0	26.0	19.5	26.0	20.5	15.0	13.0
31	---	---	20.0	16.5	---	---	27.0	19.0	25.0	22.0	---	---
MONTH	---	---	---	---	28.0	14.0	36.5	19.0	31.0	16.5	27.5	11.0
YEAR	36.5	0.0										



## STREAMS TRIBUTARY TO LAKE ERIE

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OHIO

LOCATION.--Lat 40°51'02", long 83°15'23", in sec. 21, T.2 S., R.14 E., Wyandot County, at gaging station on left bank at downstream side of county road bridge, 0.7 mi (1.1 km) downstream from unnamed right bank tributary, 0.8 mi (1.3 km) upstream from Rock Run, and 2.0 mi (3.2 km) northeast of Upper Sandusky.

DRAINAGE AREA.--298 mi<sup>2</sup> (772 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1969 to September 1974.

Water temperatures: June 1969 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,050 micromhos July 27, 28; minimum, 225 micromhos Jan. 20.

Dissolved oxygen: Maximum, 15.0 mg/l on many days during November, January, May to September; minimum, 1.9 mg/l July 20.

Water temperatures: Maximum, 31.0°C July 19; minimum, freezing point on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
07...	2113	68	18.0	--	813	7.5	--	--	--	--	--	0
28...	1754	20	12.5	--	973	8.3	--	--	--	--	--	0
NOV.												
15...	0747	30	11.5	--	911	8.5	--	--	--	--	--	9
28...	1739	436	10.5	--	561	8.4	--	--	--	--	--	1
DEC.												
12...	1754	100	2.0	--	742	8.6	--	--	--	--	--	12
27...	1714	1600	5.5	--	412	8.2	--	--	--	--	--	0
JAN.												
13...	1555	95	1.0	--	815	7.6	--	110	29	--	--	0
20...	1712	7030	5.0	--	239	6.7	--	--	--	--	--	0
FEB.												
14...	1430	200	1.5	--	657	8.4	--	77	25	--	--	4
24...	1758	460	2.0	--	462	8.0	--	61	19	--	--	0
MAR.												
10...	1700	2700	8.0	--	283	7.5	--	45	10	--	--	0
24...	1900	204	13.0	--	636	7.8	--	88	25	--	--	0
APR.												
04...	1500	2000	12.5	--	318	7.6	--	51	14	--	--	0
28...	1750	85	20.0	--	669	8.1	--	85	26	--	--	0
MAY												
02...	1755	124	17.0	--	690	8.3	--	79	23	--	--	0
26...	2010	107	17.5	--	568	8.0	--	69	19	--	--	0
JUNE												
02...	2030	105	20.0	--	534	8.3	--	72	18	--	--	0
27...	2124	36	21.0	--	832	8.1	--	100	32	--	--	0
JULY												
24...	1445	6.5	25.0	11.4	900	8.0	5.3	120	37	41	8.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
19...	1100	<.5	--
APR.			
18...	1345	.2	4.2

## STREAMS TRIBUTARY TO LAKE ERIE

283

## 04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 1,300 micromhos Nov. 22, 1971; minimum, 200 micromhos June 18, 1970.  
 Dissolved oxygen (1969-74): Maximum, 15.0 mg/l or higher on many days during February, September, November 1973, January, May to September 1974; minimum, 1.9 mg/l July 20, 1974.  
 Water temperatures (1969-74): Maximum, 33.0°C Aug. 9, 1969; minimum, freezing point on many days during winter period.

REMARKS.--Water-quality recorder operated since June 1969. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
07...	254	170	42	.5	--	.01	1.9	--	--	--	--	--
28...	265	270	38	.5	--	.00	2.5	--	--	--	--	--
NOV.												
15...	276	220	39	.4	--	.00	2.1	--	--	--	--	--
28...	155	110	27	.3	--	.00	6.2	--	--	--	--	--
DEC.												
12...	242	150	29	.3	--	.00	3.5	--	--	--	--	--
27...	92	63	24	.2	--	.00	6.8	--	--	--	--	--
JAN.												
13...	271	140	40	.5	--	.00	2.8	--	--	390	--	--
20...	70	33	12	.4	--	.01	1.4	--	--	--	--	--
FEB.												
14...	188	96	48	.6	--	.01	3.8	--	--	300	--	--
24...	129	72	24	.4	--	.01	5.3	--	--	230	--	--
MAR.												
10...	98	39	13	.3	--	.01	3.8	--	--	150	--	--
24...	215	110	33	.3	--	.00	3.3	--	--	320	--	--
APR.												
04...	98	46	14	.3	--	.01	4.0	--	--	190	--	--
28...	232	130	29	.4	--	.00	2.0	--	--	320	--	--
MAY												
02...	237	120	32	.4	--	.00	1.6	--	--	290	--	--
26...	190	94	25	.5	--	.00	4.2	--	--	250	--	--
JUNE												
02...	163	77	20	.7	--	.00	9.8	--	--	250	--	--
27...	251	170	47	1.4	--	.00	1.9	--	--	380	--	--
JULY												
24...	178	310	46	.9	1.0	.46	1.4	1.8	656	450	260	210

## 04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	909	740	739	661	537	477	579	539	560	521	622	493
2	836	779	738	674	584	540	647	579	579	560	491	452
3	792	765	730	661	620	584	659	647	614	579	---	---
4	811	737	685	665	637	618	677	653	633	611	---	---
5	782	659	722	688	641	624	702	675	668	633	---	---
6	806	747	744	723	641	620	710	693	683	668	---	---
7	777	750	766	745	648	618	719	696	686	672	---	---
8	783	772	782	767	618	592	749	719	686	672	---	---
9	---	---	788	775	648	612	762	749	810	672	---	---
10	---	---	796	786	667	648	755	728	753	734	---	---
11	---	---	798	779	688	666	744	734	749	723	---	---
12	---	---	816	792	720	687	773	728	780	728	---	---
13	---	---	858	819	735	700	786	770	774	725	---	---
14	---	---	890	857	721	685	809	762	723	605	---	---
15	850	838	899	804	694	618	852	795	695	610	569	497
16	853	839	860	835	621	559	812	674	608	553	---	---
17	853	830	861	836	615	562	710	581	569	548	---	---
18	879	845	842	821	700	615	579	390	601	563	---	---
19	910	880	838	816	699	675	372	239	632	548	---	---
20	925	910	863	839	700	677	240	225	533	455	---	---
21	936	892	888	853	736	622	336	240	448	425	---	---
22	900	864	863	846	840	619	363	336	446	409	---	---
23	885	849	853	808	646	622	374	363	434	404	---	---
24	894	861	822	753	630	613	365	351	478	433	670	607
25	919	879	784	615	663	456	435	369	550	481	639	618
26	925	880	651	435	456	384	480	435	583	550	724	633
27	943	913	509	431	398	372	---	---	628	572	741	639
28	939	904	547	510	419	398	---	---	643	610	639	619
29	901	660	533	416	498	419	428	419	---	---	640	624
30	829	754	476	412	509	498	456	428	---	---	622	592
31	796	769	---	---	539	509	521	461	---	---	591	442
MONTH	943	659	899	412	840	372	852	225	810	404	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	490	450	657	635	447	378	768	741	1020	930	399	344
2	504	382	647	630	539	452	798	768	980	944	470	402
3	390	303	659	611	575	539	826	798	965	831	501	461
4	347	313	648	633	626	573	853	822	891	806	507	383
5	338	320	647	606	669	612	868	819	866	797	417	371
6	449	342	641	612	719	671	868	835	771	612	485	419
7	512	450	656	629	742	718	867	801	783	686	537	492
8	560	516	669	635	764	740	850	786	833	779	575	537
9	585	560	666	639	760	730	808	777	809	768	618	573
10	582	557	659	653	747	708	826	796	818	576	654	620
11	575	563	654	626	739	696	902	802	635	591	668	638
12	596	575	648	576	709	679	907	830	588	531	696	653
13	621	597	575	441	735	670	824	761	542	509	681	384
14	639	575	485	435	727	699	784	722	591	503	419	363
15	617	552	524	488	729	687	782	751	576	515	485	422
16	636	579	575	530	691	652	797	734	576	530	545	485
17	654	636	603	573	724	681	824	763	591	515	594	543
18	674	612	612	582	726	697	851	809	528	462	632	593
19	615	603	600	579	774	721	880	830	528	464	672	627
20	630	600	596	570	780	739	925	860	560	515	696	666
21	641	612	624	593	796	766	946	856	545	501	725	706
22	651	618	654	617	801	768	965	874	588	534	769	727
23	653	633	666	633	792	753	902	865	627	591	772	745
24	635	597	668	612	787	738	1010	910	671	632	800	762
25	632	596	620	564	762	736	1000	949	675	656	815	778
26	636	621	563	545	801	766	1030	988	678	653	823	794
27	656	615	600	561	808	765	1050	1010	726	650	845	812
28	660	633	641	603	801	760	1050	976	734	332	886	836
29	672	648	657	636	769	720	1030	922	639	428	841	698
30	675	633	687	656	747	706	1000	952	486	273	826	710
31	---	---	689	420	---	---	1030	974	342	273	---	---
MONTH	675	303	689	420	808	378	1050	722	1020	273	886	344
YEAR	1050	225										

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.9	5.1	10.3	9.3	12.4	11.2	15.0	14.6	---	---	10.6	7.6
2	5.4	3.9	11.4	10.1	11.5	10.8	15.0	15.0	---	---	8.5	7.5
3	7.0	4.4	11.5	10.8	11.8	11.0	15.0	13.8	10.3	10.0	---	---
4	8.0	5.3	12.7	11.1	11.4	10.8	15.0	15.0	10.7	10.4	---	---
5	7.0	5.2	13.5	11.9	10.9	10.4	15.0	14.8	10.8	10.5	---	---
6	7.9	5.7	14.0	11.7	13.7	10.4	15.0	14.8	11.0	10.7	---	---
7	8.9	6.8	14.4	12.0	11.9	11.2	15.0	14.7	11.1	10.9	---	---
8	10.6	7.3	15.0	12.6	11.5	10.9	15.0	14.6	11.3	11.1	---	---
9	10.0	6.2	14.5	12.2	11.3	10.4	14.9	14.5	11.5	11.3	---	---
10	9.9	5.9	15.0	12.5	10.8	10.1	14.9	13.8	11.9	11.6	---	---
11	10.5	6.0	15.0	13.2	10.3	9.6	14.2	13.8	12.4	11.9	---	---
12	11.3	5.0	15.0	13.9	10.8	9.6	14.5	13.7	12.6	12.3	---	---
13	8.5	5.2	15.0	13.4	11.5	9.4	14.7	14.1	12.9	12.5	---	---
14	10.3	4.7	15.0	11.9	11.4	9.4	14.5	13.3	13.7	12.7	---	---
15	9.6	6.0	13.6	8.2	10.6	8.4	14.2	13.3	12.7	12.4	12.2	12.1
16	10.6	7.0	11.7	8.4	11.5	8.8	14.3	13.6	11.9	11.4	---	---
17	10.4	7.5	15.0	10.5	11.5	9.6	14.0	13.2	12.1	11.1	---	---
18	12.3	8.6	15.0	12.4	10.7	9.1	13.5	13.0	11.7	11.0	---	---
19	11.9	7.4	15.0	12.9	11.9	9.0	13.7	13.1	11.3	10.6	---	---
20	12.7	6.5	15.0	12.5	9.8	9.0	13.5	12.5	10.9	10.3	---	---
21	13.1	6.7	15.0	11.2	9.5	8.7	12.5	11.5	10.7	10.5	---	---
22	13.4	6.9	15.0	11.2	10.3	8.1	12.6	11.6	10.2	9.1	---	---
23	14.5	7.4	15.0	12.1	11.2	9.1	12.5	11.7	12.9	9.6	---	---
24	14.9	7.6	14.0	9.3	12.9	10.9	12.6	12.1	10.6	10.5	10.8	9.5
25	14.0	6.7	10.4	8.7	12.1	10.9	13.1	12.5	10.3	9.9	11.5	9.7
26	13.5	5.4	10.6	9.5	12.6	11.0	13.5	12.4	10.6	8.6	11.0	9.9
27	12.9	5.5	10.1	9.0	11.5	10.8	---	---	11.5	8.7	11.2	9.7
28	6.9	5.2	12.5	8.7	11.5	9.7	---	---	12.0	10.5	10.5	8.4
29	8.5	5.4	13.0	12.5	13.4	12.7	11.3	10.9	---	---	10.8	9.3
30	9.6	8.0	12.9	12.1	14.4	13.4	11.3	11.0	---	---	9.1	6.9
31	10.0	9.4	---	---	14.8	14.0	11.4	11.1	---	---	8.2	7.3
MONTH	14.9	3.9	15.0	8.2	14.8	8.1	15.0	10.9	13.7	8.6	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.4	9.0	13.2	7.7	7.4	7.2	11.9	6.8	9.3	6.0	6.4	6.1
2	9.8	6.1	11.2	8.8	7.8	7.3	15.0	6.5	9.7	4.1	6.9	6.1
3	7.7	6.4	12.0	8.6	7.7	6.9	13.3	6.3	7.4	4		

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.0	17.5	10.5	8.5	6.0	3.5	0.0	0.0	4.5	3.5	4.0	3.0
2	19.0	18.0	10.5	7.0	5.5	3.0	0.5	0.0	4.5	3.5	6.5	4.0
3	19.0	17.0	9.5	7.0	6.5	2.0	0.0	0.0	3.5	2.5	---	---
4	19.0	17.5	9.5	7.5	8.5	6.5	0.0	0.0	2.5	1.5	---	---
5	18.5	16.0	9.0	6.5	8.0	5.0	0.5	0.0	1.5	1.0	---	---
6	16.0	14.5	8.0	6.5	7.0	4.0	0.0	0.0	1.5	1.0	---	---
7	16.5	14.0	7.0	6.5	5.0	4.0	0.5	0.0	1.5	1.0	---	---
8	17.5	15.5	7.5	6.0	5.0	3.0	1.0	0.0	2.0	1.0	---	---
9	18.5	16.0	6.5	5.0	3.5	2.0	0.5	0.0	1.5	1.0	---	---
10	18.5	15.5	6.0	3.0	3.5	3.0	1.5	0.0	2.0	0.5	---	---
11	18.5	15.0	5.5	4.0	3.0	1.5	1.0	0.5	1.0	0.5	---	---
12	19.0	16.0	6.0	4.0	1.5	0.0	1.0	0.5	1.5	0.0	---	---
13	17.5	15.5	8.5	5.5	3.0	0.0	1.5	1.0	1.5	0.5	---	---
14	17.5	14.0	11.5	8.0	3.0	0.5	2.0	1.0	3.0	1.0	---	---
15	16.0	14.0	12.5	11.5	1.5	0.0	1.5	0.5	1.5	0.5	5.0	5.0
16	15.5	12.0	11.0	8.0	2.0	0.0	1.0	0.5	0.5	0.0	---	---
17	14.0	11.5	8.5	7.0	0.5	0.0	1.0	0.5	---	---	---	---
18	13.0	10.5	7.5	6.5	0.0	0.0	0.5	0.0	2.0	0.0	---	---
19	13.0	10.0	8.0	7.0	0.0	0.0	2.5	0.0	2.5	1.0	---	---
20	14.0	10.0	8.5	7.0	0.0	0.0	6.0	2.0	2.5	1.5	---	---
21	14.0	9.5	10.5	8.5	0.0	0.0	7.0	6.0	3.0	2.0	---	---
22	13.0	8.5	10.0	7.0	1.5	0.0	6.0	6.0	5.5	3.5	---	---
23	13.5	8.5	9.0	7.5	0.5	0.5	6.0	5.5	5.5	3.5	---	---
24	13.5	9.0	11.0	8.0	0.5	0.0	5.5	4.5	---	---	9.0	7.5
25	13.5	10.5	10.5	9.0	1.5	0.0	5.0	4.0	1.5	1.0	8.0	6.0
26	15.0	10.5	9.0	8.5	3.5	0.0	5.5	4.5	2.0	0.5	8.0	7.5
27	13.5	9.5	10.5	8.5	4.0	3.0	---	---	3.0	1.5	8.0	7.5
28	12.5	11.0	11.0	8.5	4.5	2.0	---	---	3.5	1.5	10.0	7.5
29	11.0	10.0	8.5	5.0	2.0	0.5	5.5	3.5	---	---	---	---
30	11.0	10.0	7.0	4.5	1.5	0.0	4.5	3.0	---	---	---	---
31	10.5	10.0	---	---	0.0	0.0	4.5	3.5	---	---	---	---
MONTH	19.0	8.5	12.5	3.0	8.5	0.0	7.0	0.0	5.5	0.0	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	8.5	19.0	16.5	19.5	18.5	25.0	19.5	24.5	20.5	22.0	21.0
2	---	---	17.0	15.5	19.5	18.0	25.0	21.0	27.5	22.0	21.5	20.0
3	---	---	15.5	14.5	21.5	18.5	28.5	22.5	26.5	22.0	20.0	18.0
4	---	---	16.0	13.5	22.5	18.5	28.5	23.5	25.0	21.5	17.5	17.0
5	---	---	17.5	14.5								





## STREAMS TRIBUTARY TO LAKE ERIE

## 04196800 TYMOCHTEE CREEK AT CRAWFORD, OHIO

LOCATION.--Lat 40°55'22", long 83°20'56", in SE 1/4 sec.27, T.1 S., R.13 E., Wyandot County, at gaging station on right bank at downstream side of bridge on State Highway 199 (formerly U.S. Highway 23), 0.4 mi (0.6 km) northwest of Crawford, 1.5 mi (2.4 km) downstream from Lick Run, 2.7 mi (4.3 km) upstream from Little Tymochtee Creek, and 3.0 mi (4.8 km) southeast of Carey.

DRAINAGE AREA.--229 mi<sup>2</sup> (593 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: January 1968 to September 1974.

Water temperatures: January 1968 to September 1974.

Sediment records: Water years 1970-74 (partial-record station).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,430 micromhos July 29, 30; minimum, 160 micromhos Jan. 21.

pH: Maximum, 9.5 Sept. 24; minimum, 5.6 Jan. 3.

Dissolved oxygen: Maximum, 13.7 mg/l Sept. 8; minimum, 3.2 mg/l Mar. 7.

Water temperatures: Maximum, 32.5°C July 8; minimum, 0.5°C on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
11...	1700	67	20.0	--	542	7.2	--	--	--	--	--	0
12...	1230	53	18.5	--	807	8.5	--	67	37	--	--	6
NOV.												
02...	1700	46	10.0	--	930	7.4	--	--	--	--	--	0
07...	1000	18	14.0	--	631	8.4	--	--	--	--	--	3
DEC.												
17...	0800	70	.0	--	810	8.0	--	--	--	--	--	0
28...	0900	2090	3.0	--	344	7.8	--	--	--	--	--	0
JAN.												
14...	1400	38	.0	--	742	7.8	--	110	25	--	--	0
21...	1200	3650	5.0	--	212	6.9	--	22	9.1	--	--	0
FEB.												
14...	1400	110	--	--	743	7.5	--	100	28	--	--	0
22...	1400	930	4.0	--	357	6.9	--	43	15	--	--	0
MAR.												
11...	1500	1090	8.0	--	296	7.7	--	42	15	--	--	0
28...	1300	134	10.0	--	618	8.5	--	85	27	--	--	4
APR.												
07...	1300	665	12.0	--	273	7.2	--	38	15	--	--	0
30...	2100	24	18.0	--	749	7.4	--	97	31	--	--	0
MAY												
03...	1400	38	15.0	--	774	7.9	--	110	33	--	--	0
16...	1300	58	19.0	--	555	7.7	--	72	22	--	--	0
JUNE												
06...	0900	6.4	22.0	--	828	--	--	120	39	--	--	--
27...	1400	5.8	24.0	--	1000	7.4	--	150	45	--	--	0
JULY												
26...	1515	.08	28.0	8.0	1350	7.8	2.3	180	64	35	5.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
12...	1300	<.5	--
APR.			
24...	1030	.0	5.2

## 04196800 TYMCOTEE CREEK AT CRAWFORD, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,500 micromhos or higher on several days during 1970 and 1971; minimum, 136 micromhos July 26, 1973.  
 pH (1968-74): Maximum, 9.5 Sept. 26, 1974; minimum, 4.6 Mar. 17, 19, 1973.  
 Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher on several days during 1969, 1970, 1972, and 1973; minimum, 1.5 mg/l Aug. 25, 1968, Aug. 20, 1969.  
 Water temperatures (1968-74): Maximum, 32.5°C July 8, 1974; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since January 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT. 11...	156	110	18	.3	--	.00	1.6	--	--	--	--	--
OCT. 12...	219	210	21	.5	--	.00	1.2	--	--	320	--	--
NOV. 02...	224	260	28	.4	--	.00	1.4	--	--	--	--	--
NOV. 07...	149	120	33	.3	--	.00	6.7	--	--	--	--	--
DEC. 17...	222	180	28	.2	--	.00	4.1	--	--	--	--	--
DEC. 28...	63	53	17	.3	--	.01	8.7	--	--	--	--	--
JAN. 14...	188	190	26	.3	--	.00	3.0	--	--	380	--	--
JAN. 21...	52	36	11	.3	--	.01	3.7	--	--	92	--	--
FEB. 14...	210	150	40	.4	--	.01	2.7	--	--	370	--	--
FEB. 22...	82	60	14	.4	--	.01	1.9	--	--	170	--	--
MAR. 11...	84	50	10	.4	--	.04	4.8	--	--	170	--	--
MAR. 28...	178	140	20	.3	--	.00	3.7	--	--	320	--	--
APR. 07...	72	49	7.8	.3	--	.03	4.7	--	--	160	--	--
APR. 30...	221	200	24	.4	--	.00	.98	--	--	370	--	--
MAY 03...	226	210	24	.6	--	.00	.94	--	--	410	--	--
MAY 16...	171	110	22	.4	--	.00	4.8	--	--	270	--	--
JUNE 06...	247	240	26	1.7	--	.00	.32	--	--	460	--	--
JUNE 27...	271	320	28	1.8	--	.01	.37	--	--	560	--	--
JULY 26...	252	490	37	.8	.21	.01	.00	.09	938	710	40	90

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
NOV., 1973					
27...	0945	406	10.0	118	129
JAN., 1974					
07...	1630	79	2.0	12	2.6
21...	1500	3410	5.0	182	1680
MAR. 04...	1845	232	--	92	58
APR. 22...	1715	52	15.5	95	13
AUG. 23...	1130	1.1	24.5	32	.10

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
27...	0945	118	67	79	88	95	98	99	100	--	--	--
JAN., 1974												
21...	1500	182	88	94	97	98	98	99	99	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
23...	1	0	0	1	1	2	5	12	18	21	21	100

## 04196800 TYMOCHTEE CREEK AT CRAWFORD, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	522	480	801	742	436	364	528	452	534	455	519	444
2	521	511	920	765	467	409	629	516	550	513	478	429
3	535	518	918	780	504	438	623	575	597	543	511	444
4	534	470	874	610	537	498	680	623	616	580	538	501
5	567	512	647	620	550	517	696	648	670	600	537	690
6	526	514	635	603	573	532	713	677	687	668	512	466
7	544	521	613	606	593	546	732	704	675	660	478	432
8	556	537	633	615	612	579	750	720	729	687	486	451
9	566	542	662	633	600	575	747	737	741	723	526	280
10	551	528	678	662	603	576	783	740	---	---	358	277
11	532	504	697	677	613	577	780	754	---	---	324	295
12	781	513	699	663	618	589	826	780	---	---	425	324
13	588	433	736	691	624	570	839	819	---	---	482	425
14	473	442	756	723	616	586	835	795	---	---	505	473
15	501	477	776	739	630	579	830	786	---	---	555	505
16	525	500	787	773	636	537	826	646	---	---	483	355
17	552	525	838	784	784	636	642	479	---	---	456	360
18	553	541	854	819	783	664	466	291	---	---	475	388
19	581	548	845	820	754	705	273	171	618	447	531	459
20	591	581	858	829	720	712	195	165	462	378	582	530
21	631	591	858	834	747	720	248	160	448	379	627	582
22	646	628	874	843	768	673	296	252	384	355	635	618
23	658	643	888	868	808	658	314	294	400	367	651	624
24	666	542	879	831	658	621	330	315	406	376	648	622
25	691	663	859	636	708	437	370	324	490	409	665	630
26	715	690	706	561	444	345	433	370	556	488	654	645
27	730	713	683	427	363	317	433	357	591	549	832	650
28	737	699	476	422	333	323	380	324	590	498	835	646
29	741	635	489	459	374	332	369	324	---	---	654	646
30	702	663	478	359	453	374	393	373	---	---	651	368
31	745	700	---	---	461	447	455	393	---	---	394	360
MONTH	781	433	920	359	808	317	839	160	---	---	835	277

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

YEAR



## 04196800 TYNOCHTEE CREEK AT CRAWFORD, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.3	6.5	9.2	7.7	10.7	9.1	11.7	6.6	9.8	9.4	10.7	10.5
2	7.3	6.6	8.7	7.7	10.9	10.7	11.7	5.0	10.3	9.6	10.5	9.9
3	7.3	6.5	8.5	7.7	11.0	10.7	10.6	3.4	10.4	9.0	9.9	9.0
4	7.2	6.6	8.8	8.2	10.7	9.9	10.8	4.3	10.6	9.4	9.0	8.6
5	7.1	6.4	9.4	8.5	10.1	9.8	10.7	9.4	11.6	9.8	8.6	4.2
6	7.5	6.7	10.2	9.0	11.0	10.1	10.7	9.9	11.3	10.8	4.3	3.8
7	7.7	7.0	10.4	9.5	11.6	11.0	10.6	9.9	11.1	10.9	8.6	3.2
8	7.6	6.9	10.5	9.5	12.0	11.4	10.9	10.0	11.1	10.2	8.7	8.4
9	7.6	6.8	11.1	9.7	12.2	11.5	10.6	9.8	10.9	10.7	9.0	7.8
10	7.3	6.8	11.5	10.3	12.5	11.6	10.9	9.5	---	---	8.5	7.8
11	7.3	6.9	11.6	9.1	13.1	12.1	11.8	10.5	---	---	8.8	8.4
12	7.7	6.6	11.3	10.3	13.3	12.4	11.9	10.8	---	---	9.6	8.8
13	6.6	6.3	11.3	9.8	12.8	12.1	12.0	10.9	---	---	10.1	9.6
14	7.8	6.4	11.0	8.9	12.6	12.0	12.7	10.9	---	---	10.2	10.0
15	8.2	6.8	10.0	8.1	12.9	12.1	12.9	10.9	---	---	10.1	9.9
16	8.8	6.6	11.2	8.6	13.2	11.0	12.1	11.0	---	---	10.0	9.8
17	9.6	7.7	12.6	9.7	13.4	12.8	11.4	11.2	---	---	10.1	9.9
18	10.1	7.8	12.2	10.0	13.4	12.4	11.5	11.3	---	---	10.1	9.8
19	10.5	8.3	12.0	9.2	12.9	12.0	11.4	11.3	11.1	10.7	9.9	9.7
20	11.3	8.0	13.1	9.2	12.6	11.8	11.3	10.6	10.8	10.2	9.8	9.6
21	11.6	8.6	10.7	9.1	13.0	11.7	10.8	10.1	10.7	10.3	10.1	9.7
22	12.4	8.6	13.1	9.2	12.8	11.8	10.1	9.8	10.3	9.8	10.3	9.9
23	12.6	8.7	13.3	9.3	12.6	11.8	10.0	9.8	10.4	10.0	10.7	10.1
24	12.2	8.6	10.4	8.6	12.2	11.6	10.4	10.0	10.8	10.4	11.1	10.7
25	11.1	8.4	9.1	8.4	12.2	11.3	10.6	10.4	11.5	10.1	11.1	10.9
26	11.4	8.7	8.6	8.1	11.4	10.7	10.7	10.4	11.8	10.9	10.8	10.4
27	10.6	8.2	9.0	8.6	10.7	10.4	10.5	9.6	11.7	11.2	10.5	10.0
28	9.1	6.6	9.0	8.6	10.9	7.4	9.8	9.6	11.2	10.6	10.2	9.7
29	8.8	6.5	9.7	9.0	10.9	10.8	10.0	9.7	---	---	10.2	9.4
30	8.6	7.4	10.2	9.6	11.2	10.9	10.1	9.8	---	---	9.3	9.0
31	9.3	7.0	---	---	11.5	11.2	10.0	9.3	---	---	9.2	9.0
MONTH	12.6	6.3	13.3	7.7	13.4	7.4	12.9	4.3	---	---	11.1	3.2

[illegible]

TEMPERATURE (°C OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04196990 SANDUSKY RIVER AT ST. JOHNS BRIDGE, NEAR MEXICO, OHIO

LOCATION.--Lat 41°01'49", long 83°12'56", in sec.23, T.1 N., R.14 E., Seneca County, at right upstream abutment of St. Johns Bridge, on Seneca County Highway 6, 100 ft (30 m) downstream from dam, 2.5 mi (4.0 km) upstream from gaging station, 6.5 mi (10.5 km) upstream from Honey Creek, and 4.5 mi (7.2 km) northwest of Mexico.

DRAINAGE AREA.--771 mi<sup>2</sup> (1,997 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1969 to September 1974.  
Water temperatures: June 1969 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,100 micromhos Aug. 7; minimum, 210 micromhos Jan. 20, 21.

Dissolved oxygen: Maximum, 15.0 mg/l Feb. 14, 16; minimum, 0.6 mg/l Aug. 27, 29.

Water temperatures: Maximum, 29.0°C July 11; minimum, 1.0°C Jan. 14, 15, 17-19, Feb. 6-13.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
07...	0830	141	17.0	--	687	8.6	--	89	28	--	--	10
30...	1600	94	12.0	--	924	8.3	--	110	41	--	--	0
NOV.												
25...	1615	193	9.5	--	937	8.4	--	--	--	--	--	4
29...	1200	1590	9.0	--	535	7.7	--	--	--	--	--	0
DEC.												
22...	0830	570	1.0	--	773	8.4	--	--	--	--	--	3
27...	1600	4890	5.0	--	399	7.2	--	--	--	--	--	0
JAN.												
15...	1645	230	3.0	--	822	8.1	--	62	35	--	--	0
22...	1545	11300	6.0	--	279	7.2	--	36	9.9	--	--	0
FEB.												
15...	1600	596	2.0	--	749	8.4	--	50	30	--	--	4
25...	1600	600	2.0	--	449	8.1	--	58	18	--	--	0
MAR.												
13...	1600	1750	6.0	--	430	7.8	--	60	17	--	--	0
28...	1600	600	7.0	--	654	8.4	--	94	28	--	--	7
APR.												
04...	1310	5260	12.0	--	262	7.2	--	39	14	--	--	0
29...	1300	178	17.5	--	709	8.3	--	97	30	--	--	0
MAY												
07...	1500	168	14.0	--	732	8.3	--	87	27	--	--	0
10...	1220	188	10.5	10.6	750	7.9	--	88	29	--	--	0
JUNE												
10...	1700	87	22.5	--	647	8.5	--	92	27	--	--	7
25...	1335	81	20.5	--	800	7.4	--	100	38	--	--	0
JULY												
25...	1530	30	24.5	7.5	980	7.8	2.2	120	43	26	4.9	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
18...	1400	<.5	12
APR.			
18...	1230	.1	7.1

## STREAMS TRIBUTARY TO LAKE ERIE

295

## 04196990 SANDUSKY RIVER AT ST. JOHNS BRIDGE, NEAR MEXICO, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 1,240 micromhos Nov. 23, 1971; minimum, 130 micromhos Feb. 19, 20, 1971.

Dissolved oxygen (1969-74): Maximum, 15.0 mg/l or higher on many days during 1972-74; minimum, 0.6 mg/l Aug. 27, 29, 1974.

Water temperatures (1969-74): Maximum, 29.0°C July 11, 1974; minimum, freezing point on many days during December 1972 to February 1973.

REMARKS.--Water-quality recorder operated since June 1969. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water. Records of discharge are given for Sandusky River near Mexico, station 04197000, drainage area 774 mi<sup>2</sup> (2,005 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
07...	202	150	26	.6	--	.00	2.2	--	--	340	--	--
30...	292	220	54	.8	--	.00	1.0	--	--	440	--	--
NOV.												
25...	285	240	35	.4	--	.00	1.4	--	--	--	--	--
29...	133	99	29	.2	--	.00	6.7	--	--	--	--	--
DEC.												
22...	234	160	34	.2	--	.00	3.8	--	--	--	--	--
27...	86	61	23	.3	--	.00	8.0	--	--	--	--	--
JAN.												
15...	274	150	29	.5	--	.00	3.2	--	--	300	--	--
22...	69	43	14	.4	--	.02	4.9	--	--	130	--	--
FEB.												
15...	224	140	42	.3	--	.00	3.6	--	--	250	--	--
25...	119	79	18	.3	--	.01	6.2	--	--	220	--	--
MAR.												
13...	138	72	15	.3	--	.00	4.6	--	--	220	--	--
28...	219	130	27	.3	--	.00	3.4	--	--	350	--	--
APR.												
04...	88	40	8.9	.5	--	.01	1.8	--	--	160	--	--
29...	235	140	26	.5	--	.01	2.0	--	--	370	--	--
MAY												
07...	244	150	29	.5	--	.00	1.2	--	--	330	--	--
10...	245	160	27	.5	--	.00	1.3	--	--	340	--	--
JUNE												
10...	209	130	22	1.1	--	.00	5.4	--	--	340	--	--
25...	237	210	30	1.5	--	.00	1.1	--	--	410	--	--
JULY												
25...	260	240	36	.6	.52	.04	.08	.21	601	480	50	200

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C). WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.9	7.8	10.4	10.2	10.9	10.4	13.1	12.7	12.5	4.8	12.6	12.6
2	8.4	7.5	10.5	10.0	11.7	11.0	13.1	12.2	13.1	12.5	12.6	10.9
3	8.5	7.5	11.2	10.8	11.5	10.0	12.2	11.9	13.1	12.9	11.4	8.8
4	8.6	5.9	11.3	10.9	10.1	9.0	12.4	11.9	13.5	13.0	9.7	7.2
5	9.7	8.2	12.2	11.3	10.5	8.9	12.3	11.9	13.6	13.0	8.9	7.1
6	10.0	9.2	12.5	12.2	11.4	9.3	12.1	12.0	13.3	12.9	9.2	7.8
7	9.3	8.7	12.7	12.1	11.5	10.5	12.4	11.9	13.0	12.7	8.8	8.1
8	8.9	8.1	12.1	11.0	11.0	10.6	12.4	11.9	12.9	12.5	11.6	8.8
9	9.4	8.7	11.0	10.8	11.2	10.8	12.0	11.6	13.1	12.5	9.7	8.7
10	9.7	8.8	11.1	10.7	11.6	11.2	14.5	11.5	13.0	12.4	10.3	9.3
11	9.8	8.8	11.0	10.4	11.9	11.7	13.4	13.1	12.5	12.3	10.5	10.0
12	9.4	8.4	10.5	10.2	11.7	11.3	13.8	13.4	12.4	11.8	12.6	10.5
13	9.5	8.5	10.4	10.2	11.6	11.2	13.9	13.4	12.2	12.0	12.6	12.6
14	8.9	8.3	---	---	10.9	9.7	13.7	13.4	15.0	12.2	12.6	12.6
15	9.0	8.2	---	---	12.1	9.9	13.7	11.2	14.5	12.6	---	---
16	9.1	8.6	---	---	12.5	12.1	12.5	9.8	15.0	12.0	---	---
17	9.4	9.1	---	---	12.6	11.9	10.7	9.1	12.0	11.3	---	---
18	10.3	9.4	---	---	12.0	11.6	9.4	8.6	11.7	10.3	---	---
19	10.9	10.0	9.5	9.0	12.0	11.9	9.6	8.7	10.3	9.7	---	---
20	11.3	10.8	9.1	8.8	12.5	12.0	10.1	9.3	10.7	9.9	---	---
21	12.3	11.3	9.2	8.9	12.5	12.2	10.0	9.3	10.6	9.3	---	---
22	12.3	11.6	9.4	8.9	12.8	12.5	12.6	9.5	9.3	7.7	---	---
23	12.5	11.7	9.7	9.3	12.9	12.7	10.1	9.1	11.1	9.0	---	---
24	13.3	12.1	9.8	9.2	12.9	12.7	11.7	8.5	11.6	11.1	---	---
25	13.4	11.8	9.7	9.2	12.9	11.2	12.3	8.3	12.7	11.6	---	---
26	13.4	11.3	9.8	9.5	11.6	10.6	12.8	9.8	13.1	12.4	---	---
27	14.2	12.6	9.6	9.0	10.6	10.4	9.9	8.1	12.6	11.4	---	---
28	13.8	12.2	10.1	7.6	11.9	10.6	8.2	7.6	12.6	11.0	---	---
29	12.5	11.3	10.8	8.7	12.5	11.7	12.6	7.4	---	---	---	---
30	11.4	10.9	10.9	10.4	12.5	12.4	13.0	8.3	---	---	---	---
31	11.0	10.1	---	---	12.7	12.5	8.3	4.7	---	---	---	---
MONTH	14.2	5.9	12.7	7.6	12.9	8.9	14.5	4.7	15.0	4.8	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	6.5	5.9	9.8	5.6	5.0	3.7	4.1	3.3
2	---	---	---	---	6.6	5.9	10.4	6.7	5.0	4.0	4.1	3.1
3	---	---	---	---	6.2	5.8	9.2	5.6	5.1	3.8	4.6	3.3
4	9.1	8.8	---	---	6.3	5.5	8.2	3.7	4.9	3.4	5.1	3.7
5	9.7	9.1	---	---	6.4	5.6	8.2	5.7	5.1	4.5	5.8	3.9
6	10.3	8.5	---	---	8.1	5.9	6.7	4.6	7.0	4.4	6.7	4.6
7	9.6	9.1	---	---	8.7	6.9	6.7	5.0	6.6	3.8	6.1	4.6
8	10.5	9.6	---	---	8.6	6.7	6.2	5.0	6.0	4.9	5.3	4.4
9	10.7	10.2	---	---	10.6	7.1	6.1	4.4	6.1	4.5	7.9	4.3
10	10.9	9.8	10.6	10.2	9.6	4.2	5.3	3.6	6.7	4.1	---	---
11	10.5	9.4	10.2	9.5	8.6	4.9	4.6	4.1	6.3	4.9	8.0	6.1
12	9.9	9.0	10.0	9.5	8.2	5.3	4.3	2.9	5.2	4.4	8.7	4.4
13	9.4	8.7	9.8	8.0	8.9	5.9	4.2	2.6	5.1	3.7	6.2	3.4
14	9.2	8.4	8.0	6.9	9.3	7.0	4.7	4.2	5.6	4.6	6.9	3.4
15	9.3	9.0	7.3	7.1	9.0	5.1	4.4	2.9	4.5	3.4	7.9	3.5
16	9.7	8.8	7.3	6.6	8.1	6.1	6.5	3.1	6.3	3.0	8.0	3.9
17	10.2	8.9	6.7	6.1	9.5	7.7	6.7	4.0	5.5	3.0	7.3	3.0
18	---	---	6.3	5.6	10.4	7.7	6.6	2.9	4.3	3.2	7.3	3.7
19	---	---	6.4	5.9	11.5	8.9	4.8	3.1	4.7	3.1	8.0	3.3
20	---	---	6.5	5.9	10.3	8.3	4.5	3.1	5.5	3.7	9.9	6.9
21	---	---	6.4	5.6	10.4	4.7	5.3	3.9	7.2	3.3	7.4	6.2
22	---	---	6.9	5.5	10.1	7.1	5.6	4.0	6.0	3.1	7.9	6.4
23	---	---	6.4	5.2	7.3	5.6	5.0	3.7	7.1	1.3	10.1	7.8
24	---	---	6.4	6.1	7.3	6.0	4.5	3.8	4.5	3.1	11.0	8.5
25	---	---	6.6	6.0	9.1	6.2	5.1	4.0	3.7	2.0	12.7	8.7
26	---	---	6.6	6.0	10.0	6.9	5.3	3.9	2.7	0.9	11.9	8.8
27	---	---	7.6	6.1	9.5	6.1	5.2	3.1	3.1	0.6	12.0	10.0
28	---	---	6.8	6.4	11.1	5.7	6.2	3.6	3.2	1.7	14.2	11.0
29	---	---	7.2	6.5	9.5	6.2	5.7	3.4	2.6	0.6	12.0	7.5
30	---	---	7.2	5.9	10.2	6.1	4.6	3.1	5.0	1.3	10.4	7.4
31	---	---	6.5	5.9	---	---	4.6	4.0	4.6	2.4	---	---
MONTH	---	---	---	---	11.5	4.2	10.4	2.6	7.2	0.6	14.2	3.0
YEAR	15.0	0.6										

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



## STREAMS TRIBUTARY TO LAKE ERIE

04198005 SANDUSKY RIVER BELCW FREMONT, OHIO

LOCATION.--Lat 41°22'12", long 83°06'10", in NW 1/4 sec.26, T.5 N., R.15 E., Sandusky County, on left bank 0.3 mi (0.5 km) downstream from U.S. Highway 20 bridge, 0.7 mi (1.1 km) downstream from Fremont Sewage plant, 7.0 mi (11.3 km) downstream from gaging station near Fremont, and 4.0 mi (6.4 km) upstream from Muskegon Creek.

DRAINAGE AREA.--1,264 mi<sup>2</sup> (3,274 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: September 1966 to September 1974.  
Water temperatures: September 1966 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,500 micromhos Aug. 29, 30; minimum, 275 micromhos Apr. 5.

pH: Maximum, 8.9 Oct. 10, Apr. 26, Sept. 5; minimum, 6.9 Jan. 20.

Dissolved oxygen: Maximum, 15.0 mg/l Nov. 8; minimum, 0.1 mg/l Oct. 1, 2.

Water temperatures: Maximum, 28.5°C July 10; minimum, 0.5°C Dec. 26, Feb. 15-17.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
05...	2200	241	19.5	--	879	8.7	--	--	--	--	--	10
16...	2100	80	16.5	--	699	8.5	--	--	--	--	--	5
NOV.												
01...	2100	260	11.0	--	784	8.5	--	--	--	--	--	5
08...	1100	129	7.0	--	929	7.9	--	--	--	--	--	0
DEC.												
25...	1700	320	.5	--	768	8.5	--	--	--	--	--	10
29...	1100	5790	4.5	--	423	7.2	--	--	--	--	--	0
JAN.												
15...	1800	400	.5	--	824	7.6	--	62	35	--	--	0
22...	1800	16800	5.0	--	284	7.1	--	38	11	--	--	0
FEB.												
14...	1900	750	.0	--	761	8.3	--	100	35	--	--	0
24...	1800	3530	2.0	--	421	8.0	--	56	16	--	--	0
MAR.												
11...	1400	9320	8.5	--	312	7.8	--	47	15	--	--	0
26...	1800	661	4.5	--	663	8.1	--	83	25	--	--	0
APR.												
04...	1800	12000	13.0	--	323	7.5	--	57	17	--	--	0
24...	1700	457	12.5	--	719	7.6	--	93	28	--	--	0
MAY												
11...	1200	425	14.5	--	766	8.3	--	84	25	--	--	0
31...	1100	1520	20.0	--	508	7.5	--	61	16	--	--	0
JUNE												
02...	2000	672	20.0	--	510	7.7	--	64	18	--	--	0
14...	2000	112	21.5	--	656	7.5	--	79	23	--	--	0
JULY												
25...	1030	34	24.5	12.0	750	7.9	1.8	74	34	36	6.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
18...	1220	<.5	--
APR.			
18...	1130	.1	4.5

## STREAMS TRIBUTARY TO LAKE ERIE

301

## 04198005 SANDUSKY RIVER BELOW FREMONT, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 1,500 micromhos Aug. 29, 30, 1974; minimum, 156 micromhos Apr. 26, 1972.

pH (1966-74): Maximum, 11.5 June 28, 1972; minimum, 4.8 Apr. 26, 1970.

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher on many days during 1970-74; minimum, 0.0 mg/l Oct. 14, 1970.

Water temperatures (1966-74): Maximum, 32.5°C Aug. 17, 1970; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since September 1966. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Sandusky River near Fremont, Ohio, station 04198000, drainage area 1,251 mi<sup>2</sup> (3,240 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
05...	237	220	40	.6	--	.00	1.6	.02	--	--	--	--
16...	180	160	37	.5	--	.00	2.1	.15	--	--	--	--
NOV.												
01...	228	170	43	.5	--	.00	1.6	.00	--	--	--	--
08...	288	210	39	.4	--	.00	1.8	.01	--	--	--	--
DEC.												
25...	229	150	40	.2	--	.00	3.8	.01	--	--	--	--
29...	92	67	23	.2	--	.00	--	.11	--	--	--	--
JAN.												
15...	268	160	37	.4	--	.00	4.0	.32	--	300	--	--
22...	80	44	15	.4	--	.01	4.2	.72	--	140	--	--
FEB.												
14...	252	130	34	.5	--	.00	4.2	--	--	390	--	--
24...	107	59	20	.5	--	.07	6.5	.65	--	210	--	--
MAR.												
11...	98	50	13	.3	--	.01	4.4	--	--	180	--	--
26...	219	120	37	.3	--	.00	4.1	.25	--	310	--	--
APR.												
04...	102	48	12	.5	--	.01	3.9	1.4	--	210	--	--
24...	233	120	33	.5	--	.01	3.6	.51	--	350	--	--
MAY												
11...	240	150	39	.5	--	.00	2.0	.37	--	310	--	--
31...	150	74	22	.5	--	.00	7.3	.68	--	220	--	--
JUNE												
02...	145	75	24	--	--	.01	9.0	.46	--	230	--	--
14...	215	110	34	.5	--	.01	4.8	.42	--	290	--	--
JULY												
25...	202	170	45	.5	.39	.11	.61	.52	467	320	30	50



## 04198005 SANDUSKY RIVER BELOW FREMONT, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	828	815	787	743	533	500	518	473	489	468	623	585
2	825	813	794	746	499	490	557	518	519	488	578	510
3	831	815	793	779	509	491	579	549	554	519	507	495
4	864	833	835	791	541	511	606	579	587	557	516	494
5	863	842	878	830	572	536	632	602	609	588	536	518
6	860	842	886	871	618	571	657	632	639	609	521	504
7	858	828	875	863	641	617	696	657	662	632	540	537
8	828	758	881	851	660	638	725	696	680	653	539	465
9	770	723	859	806	678	660	735	720	692	675	450	381
10	734	713	815	805	692	677	759	734	704	681	380	306
11	726	698	809	806	704	690	776	759	741	695	330	300
12	728	698	820	809	717	699	791	774	752	722	362	332
13	716	689	821	812	714	696	792	780	758	735	425	363
14	690	686	832	820	735	696	807	786	753	735	473	426
15	686	672	851	821	726	701	825	803	759	738	512	476
16	681	666	845	827	729	716	839	815	759	743	540	443
17	695	680	817	788	726	716	828	777	743	735	447	398
18	705	685	821	796	737	711	770	681	734	684	446	410
19	710	697	835	821	711	686	671	321	683	645	473	446
20	727	707	832	829	725	701	312	287	641	521	504	474
21	737	715	871	829	731	720	300	297	533	447	552	507
22	736	725	872	847	722	702	311	294	453	446	594	552
23	737	721	848	842	731	722	362	314	---	---	603	588
24	742	733	847	823	734	720	381	362	---	---	633	605
25	746	739	832	818	744	722	402	384	---	---	645	630
26	752	745	820	751	722	500	431	404	495	480	680	645
27	748	743	841	794	471	411	480	434	539	480	678	668
28	752	740	779	592	411	395	452	438	585	533	680	675
29	755	746	589	550	416	404	446	428	---	---	687	680
30	778	749	572	527	435	416	428	414	---	---	684	678
31	778	772	---	---	473	435	471	429	---	---	683	564
MONTH	864	666	886	527	744	395	839	287	759	446	687	300

[illegible]

## 303

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.6	7.4	7.8	7.5	7.5	7.5	7.7	7.6	7.8	7.7	8.2	8.1
2	7.8	7.4	8.0	7.7	7.5	7.4	7.7	7.5	7.8	7.7	8.1	7.9
3	7.8	7.5	8.2	8.0	7.5	7.4	7.7	7.6	7.8	7.7	8.1	8.0
4	8.2	7.8	8.4	8.1	7.5	7.4	7.8	7.7	7.8	7.8	8.2	8.1
5	8.2	7.8	8.5	8.1	7.6	7.5	7.8	7.7	7.8	7.8	8.2	8.1
6	8.2	7.9	8.2	8.1	8.0	7.5	7.8	7.7	7.8	7.7	8.4	7.3
7	8.5	8.1	8.1	8.0	8.0	8.0	7.9	7.8	7.8	7.7	7.9	7.4
8	8.7	8.2	8.0	7.9	8.1	8.0	7.9	7.8	7.9	7.8	8.1	7.9
9	8.8	8.2	8.1	8.0	8.1	8.0	7.9	7.8	7.9	7.8	7.9	7.8
10	8.9	8.2	8.0	7.9	8.1	8.0	7.9	7.8	7.9	7.8	7.9	7.8
11	8.8	8.1	8.0	7.9	8.1	7.9	7.8	7.7	7.9	7.9	7.8	7.8
12	8.5	7.6	7.9	7.9	8.0	7.8	7.9	7.8	7.9	7.6	7.9	7.8
13	8.2	7.8	7.9	7.8	8.0	7.8	7.9	7.7	7.8	7.6	8.0	7.9
14	8.0	7.6	8.0	7.8	8.1	8.0	7.8	7.8	7.9	7.8	7.8	7.7
15	7.9	7.6	8.0	7.9	8.1	8.0	7.8	7.5	7.9	7.8	7.9	7.8
16	7.9	7.6	8.0	7.6	8.0	7.9	7.9	7.7	7.9	7.8	7.9	7.8
17	8.1	7.8	7.6	7.4	8.0	8.0	7.8	7.7	7.9	7.6	7.8	7.6
18	8.4	7.9	7.5	7.4	8.0	7.8	7.7	7.5	7.8	7.7	7.8	7.7
19	8.5	8.1	7.7	7.5	8.0	7.9	7.5	7.0	7.8	7.6	7.8	7.7
20	8.4	8.2	7.7	7.6	7.9	7.8	7.2	6.9	7.8	7.6	7.9	7.8
21	8.2	8.0	7.9	7.7	8.0	7.8	7.4	7.1	7.7	7.3	7.9	7.8
22	8.3	8.0	7.9	7.9	8.0	7.8	7.4	7.3	7.7	7.5	8.0	7.8
23	8.2	7.9	7.9	7.8	7.9	7.9	7.5	7.4	---	---	8.0	8.0
24	8.4	7.9	7.9	7.8	7.9	7.9	7.5	7.4	---	---	8.0	7.9
25	8.2	7.9	7.9	7.8	7.9	7.7	7.5	7.5	---	---	8.0	7.9
26	7.9	7.7	8.0	7.9	7.8	7.6	7.6	7.5	7.9	7.8	8.0	7.9
27	7.8	7.6	8.1	7.9	7.6	7.5	7.8	7.6	7.9	7.9	8.2	8.0
28	7.8	7.5	7.9	7.6	7.6	7.5	7.7	7.6	8.1	7.9	8.1	8.0
29	7.6	7.5	7.6	7.5	7.6	7.4	7.8	7.7	---	---	8.3	8.1
30	7.5	7.4	7.6	7.5	7.6	7.6	7.6	7.5	---	---	8.2	8.0
31	7.5	7.5	---	---	7.6	7.5	7.8	7.6	---	---	8.1	7.9
MONTH	8.9	7.4	8.5	7.4	8.1	7.4	7.9	6.9	8.1	7.3	8.4	7.3
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.9	7.8	8.1	7.8	7.6	7.3	8.1	7.6	8.3	7.6	8.1	7.6
2	7.8	7.8	8.4	7.9	7.5	7.4	8.3	7.6	8.4	7.9	7.9	7.6
3	7.9	7.8	8.3	8.0	7.6	7.4	8.4	7.6	8.2	7.7	8.3	7.8
4	7.8	7.3	8.3	7.9	7.6	7.4	8.2	7.7	7.9	7.5	8.7	8.0
5	7.2	7.2	8.4	8.0	7.5	7.4	8.2	7.4	7.8	7.3	8.9	8.5
6	7.4	7.2	8.3	8.2	7.6	7.3	7.9	7.4	8.1	7.4	8.7	8.2
7	7.5	7.4	8.8	8.1	7.7	7.5	7.7	7.3	8.1	7.6	8.6	7.4
8	7.5	7.4	8.7	8.3	7.8	7.5	7.5	7.3	8.4	7.9	8.2	7.5
9	7.7	7.5	8.3	7.9	7.8	7.6	7.5	7.3	8.4	7.8	8.1	7.5
10	7.8	7.6	8.6	8.0	7.8	7.5	7.7	7.3	8.4	7.9	8.1	7.5
11	7.8	7.7	8.7	8.5	7.6	7.4	7.6	7.1	8.5	8.0	8.6	7.7
12	7.9	7.8	8.6	8.4	7.5	7.3	7.3	7.0	8.0	7.6	8.6	8.0
13	7.9	7.8	8.6	8.2	8.0	7.3	7.3	7.0	7.9	7.5	8.3	7.7
14	7.9	7.7	8.7	8.3	8.0	7.6	7.6	7.2	8.2	7.6	7.9	7.2
15	7.8	7.8	8.5	8.4	8.3	7.6	7.6	7.2	8.2	7.6	8.0	7.2
16	8.0	7.8	8.4	8.1	8.0	7.7	7.7	7.2	8.2	7.5	8.0	7.4
17	8.0	7.8	8.1	7.8	8.4	7.7	7.6	7.2	7.8	7.4	8.5	7.7
18	8.2	8.0	8.0	7.6	8.4	8.0	7.4	7.1	7.9	7.4	8.4	7.7
19	8.2	7.9	7.9	7.6	8.3	8.0	7.2	7.0	8.2	7.4	8.3	7.9
20	8.2	7.9	7.9	7.6	8.1	7.3	7.4	7.0	7.8	7.4	8.2	7.8
21	8.2	8.1	7.7	7.5	7.4	7.2	7.6	7.0	7.8	7.5	7.9	7.3
22	8.2	8.1	7.5	7.4	7.9	7.2	7.9	7.3	8.1	7.5	7.4	7.2
23	8.1	8.0	7.6	7.4	8.3	7.5	7.4	7.2	8.1	7.5	7.2	7.0
24	8.5	8.0	7.6	7.4	7.5	7.3	7.3	7.2	8.3	7.6	7.2	7.0
25	8.7	8.5	7.6	7.5	7.7	7.4	7.6	7.2	8.1	7.6	7.3	7.1
26	8.9	8.5	7.8	7.5	7.9	7.6	7.7	7.2	8.1	7.6	7.3	7.1
27	8.8	8.6	7.9	7.7	7.9	7.6	8.2	7.2	7.9	7.5	7.3	7.1
28	8.7	8.4	8.0	7.8	7.9	7.6	8.4	7.8	7.7	7.4	7.4	7.2
29	8.5	8.4	8.1	7.8	8.2	7.8	8.5	7.7	7.4	7.3	7.2	7.1
30	8.4	8.1	8.0	7.8	8.2	7.7	8.3	7.6	7.6	7.3	7.2	7.1
31	---	---	7.8	7.4	---	---	8.0	7.5	8.2	7.5	---	---
MONTH	8.9	7.2	8.8	7.4	8.4	7.2	8.5	7.0	8.5	7.3	8.9	7.0
YEAR	8.9	6.9										

04198005 SANDUSKY RIVER BELOW FREMCNT, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	0.5	0.1	10.0	6.1	11.8	11.6	14.2	13.9	14.1	13.5	13.7	13.4
2	4.3	0.1	9.9	8.7	12.0	11.7	14.3	13.9	14.3	13.8	13.6	13.0
3	5.1	2.9	11.6	10.0	11.8	11.6	14.2	13.9	14.3	13.9	13.1	12.1
4	7.4	5.1	12.9	10.9	11.6	11.0	14.2	13.9	14.5	13.9	12.1	11.6
5	6.8	4.4	12.9	10.9	11.1	10.8	14.4	14.1	14.7	13.9	11.7	11.3
6	7.7	5.9	11.6	10.9	11.4	11.0	14.3	14.1	14.5	13.8	12.3	11.4
7	9.0	6.7	12.1	11.3	11.7	11.4	14.4	14.1	14.5	13.3	12.9	10.9
8	9.7	6.1	15.0	11.7	12.1	11.7	14.5	14.2	14.0	13.5	12.6	12.3
9	11.8	6.1	12.4	11.6	12.2	11.7	14.5	14.1	14.0	13.5	12.8	12.6
10	12.1	7.2	11.8	11.4	12.2	11.9	14.4	14.1	14.0	13.0	13.1	12.6
11	12.2	8.3	12.3	11.4	12.6	12.2	14.2	13.9	13.8	13.3	13.2	12.9
12	11.0	5.0	12.4	11.9	13.0	12.3	14.1	13.8	13.8	12.6	13.1	12.8
13	9.9	6.7	12.4	11.9	13.1	12.8	14.3	13.8	13.4	12.9	13.3	13.0
14	7.8	5.6	12.3	11.8	13.1	12.7	14.4	13.9	13.7	13.0	13.0	11.8
15	8.1	6.1	11.8	10.3	13.3	13.1	14.1	13.5	13.6	13.2	12.5	12.2
16	8.0	6.5	10.3	6.7	13.7	13.3	13.7	13.5	13.7	13.1	12.3	12.1
17	8.7	6.9	5.6	4.8	14.0	13.7	13.7	13.2	13.5	13.1	12.5	12.1
18	8.6	6.9	6.0	4.2	14.1	13.7	13.9	13.4	13.5	13.1	12.3	11.9
19	8.4	6.7	9.5	5.8	14.2	13.8	14.0	13.0	13.3	12.9	11.9	11.7
20	8.2	6.3	9.2	7.5	13.9	13.7	14.0	13.0	13.4	13.0	11.9	11.7
21	7.1	4.9	10.5	8.9	13.8	13.5	13.5	13.1	13.5	13.0	11.8	11.4
22	7.1	4.9	10.8	10.1	13.8	13.4	13.1	12.6	13.3	12.7	11.9	11.5
23	7.5	4.9	10.3	9.5	13.9	13.5	13.2	12.7	---	---	11.7	11.4
24	9.4	5.0	10.3	9.3	13.8	13.6	13.3	12.9	---	---	12.3	11.4
25	7.6	5.8	9.5	8.9	13.9	13.3	13.4	13.1	---	---	12.6	12.1
26	6.3	3.9	10.9	8.4	14.1	13.4	13.4	12.9	14.1	13.6	12.7	12.0
27	6.8	4.7	11.2	10.9	13.7	13.2	12.9	12.5	13.9	13.6	12.5	11.6
28	7.4	4.6	10.9	10.5	13.4	13.1	12.7	12.3	14.5	13.4	12.2	11.4
29	5.8	4.1	11.7	10.8	13.6	13.1	13.5	12.2	---	---	11.8	11.2
30	5.9	4.0	11.7	11.5	13.9	13.5	14.0	13.4	---	---	11.4	10.9
31	6.2	5.4	---	---	14.0	13.8	13.8	12.6	---	---	11.2	10.8
MONTH	12.2	0.1	15.0	4.2	14.2	10.8	14.5	12.2	14.7	12.6	13.7	10.8
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.2	10.8	7.4	5.4	8.6	6.9	8.7	6.0	7.7	3.9	9.0	7.5
2	10.8	10.4	9.5	6.7	8.8	6.4	8.9	3.7	8.6	4.5	8.6	7.8
3	10.4	10.1	8.4	6.4	6.7	5.2	8.9	4.7	7.4	4.2	8.9	7.6
4	10.1	9.8	7.0	5.6	6.1	4.9	7.9	4.9	5.1	3.5	11.4	8.3
5	10.4	10.0	7.8	5.9	6.1	5.1	7.5	5.6	5.0	3.0	13.3	11.0
6	10.7	10.3	10.8	6.8	6.0	5.0	6.4	2.8	6.5	3.5	13.4	10.1
7	10.7	10.4	11.1	9.5	6.2	5.3	5.2	0.6	7.3	4.4	12.5	6.8
8	10.9	10.6	14.8	11.1	5.7	5.0	2.6	0.3	7.9	5.3	8.9	7.2
9	11.1	10.7	11.2	8.7	6.3	4.6	2.0	0.6	7.5	3.9	9.6	7.2
10	11.1	10.5	13.7	9.0	6.6	4.5	2.9	1.2	7.7	3.5	9.0	6.3
11	10.8	10.3	13.6	11.1	6.4	4.2	4.3	2.3	7.7	3.7	9.8	7.2
12	10.5	9.9	11.6	10.2	5.3	3.1	3.1	1.2	3.8	2.1	10.7	8.0
13	9.9	9.4	13.4	11.5	6.8	3.4	3.4	0.9	3.2	1.6	9.6	6.0
14	9.4	8.9	12.1	8.8	8.1	6.0	4.6	1.7	4.9	2.0	7.0	3.7
15	9.7	9.1	12.4	8.6	7.7	6.1	4.2	1.7	5.0	1.9	6.9	4.9
16	10.0	9.3	10.8	7.8	7.9	6.2	4.4	2.3	5.3	1.6	7.3	3.6
17	10.1	9.3	9.4	7.4	7.6	5.4	3.9	1.5	3.6	0.9	7.8	5.8
18	9.8	9.1	10.0	6.5	8.6	7.4	2.7	1.4	4.9	1.1	9.8	5.4
19	10.0	9.4	10.2	8.3	8.2	6.1	2.1	0.6	5.9	1.3	8.9	6.1
20	10.0	9.6	9.2	8.3	6.5	2.3	4.1	1.7	3.9	1.4	7.8	5.9
21	10.1	9.2	8.3	5.4	4.5	2.3	4.2	2.6	3.0	1.6	6.2	2.7
22	9.4	9.2	6.9	5.3	6.4	2.3	5.2	2.8	5.5	1.8	3.1	1.4
23	9.6	9.2	6.1	4.4	7.6	6.4	3.2	1.8	6.3	2.2	2.4	0.4
24	11.6	9.4	6.6	5.1	7.0	5.2	2.2	0.9	7.4	4.1	2.4	0.3
25	12.6	10.7	7.0	5.7	8.7	5.9	4.5	1.0	6.5	4.6	3.5	2.2
26	12.9	10.2	8.6	6.8	9.3	6.6	4.3	1.2	7.2	4.7	3.9	2.6
27	12.1	10.6	9.0	8.0	8.8	6.3	6.0	1.3	6.8	4.5	3.6	2.3
28	11.1	10.2	9.8	8.7	8.7	6.7	8.2	4.5	6.1	4.9	4.6	2.2
29	10.2	8.6	9.9	7.9	9.1	7.2	8.6	3.1	5.0	3.2	3.6	2.2
30	9.3	7.4	9.8	8.3	9.7	7.2	7.8	3.9	6.2	3.3	3.5	2.1
31	---	---	9.5	8.2	---	---	5.7	3.6	8.3	5.7	---	---
MONTH	12.9	7.4	14.8	4.4	9.7	2.3	8.9	0.3	8.6	0.9	13.4	0.3
YEAR	15.0	0.1										

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04198018 WEST BRANCH HURON RIVER NEAR WILLARD, OHIO

LOCATION.--Lat 41°05'28", long 82°39'04", in T.2 N., R.23 W., Huron County, on left bank at downstream abutment of bridge on Maple Ridge Road, 4.5 mi (7.2 km) northeast of Willard, and 2.0 mi (3.2 km) downstream from Walnut Creek.

DRAINAGE AREA.--86 mi<sup>2</sup> (223 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: December 1968 to September 1974.

Water temperatures: December 1968 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 949 micromhos Oct. 27; minimum, 209 micromhos Mar. 10.

Water temperatures: Maximum, 31.0°C July 4; minimum, 1.0°C on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT.												
03...	1200	18.0	--	667	8.4	--	--	--	--	--	3	192
22...	1837	13.0	--	834	8.1	--	170	--	--	--	0	263
NOV.												
10...	1645	4.0	--	803	8.4	--	--	--	--	--	5	267
29...	1647	6.0	--	447	8.2	--	--	--	--	--	0	89
DEC.												
12...	1635	3.0	--	787	8.5	--	--	--	--	--	6	246
27...	1631	5.0	--	413	7.1	--	--	--	--	--	0	79
JAN.												
08...	1300	1.0	--	802	7.7	--	--	--	--	--	0	265
23...	1240	6.0	--	387	6.9	--	52	13	--	--	0	96
FEB.												
12...	1330	2.5	--	771	7.6	--	120	29	--	--	0	251
23...	1316	1.0	--	499	7.1	--	31	17	--	--	0	117
MAR.												
11...	1628	1.0	--	422	8.2	--	63	13	--	--	0	115
26...	1242	6.0	--	689	8.1	--	100	24	--	--	0	229
APR.												
02...	1220	10.5	--	346	7.8	--	49	12	--	--	0	91
22...	1630	15.0	--	748	8.3	--	110	27	--	--	0	250
MAY												
13...	1642	14.0	--	483	8.1	--	66	14	--	--	0	141
28...	1644	16.0	--	800	8.1	--	100	24	--	--	0	280
JUNE												
01...	1750	20.0	--	540	8.2	--	84	17	--	--	0	164
12...	1801	22.0	--	862	8.3	--	150	32	--	--	0	292
AUG.												
21...	1115	21.0	8.3	750	8.0	8.3	99	25	17	3.4	0	272

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
16...	1315	<.5	--
APR.			
16...	1145	.1	5.8



STREAMS TRIBUTARY TO LAKE ERIE

307

04198018 WEST BRANCH HURON RIVER NEAR WILLARD, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,660 micromhos June 8, 1972; minimum, 109 micromhos Aug. 17, 1972.  
Water temperatures (1968-74): Maximum, 31.5°C June 28, 1971; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since December 1968. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. No discharge records available.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
03...	130	26	.2	--	.00	4.5	--	--	--	--	--
22...	200	27	.2	--	.00	.10	--	--	--	--	--
NOV.											
10...	170	27	.2	--	.00	.63	--	--	--	--	--
29...	89	18	.2	--	.00	5.9	--	--	--	--	--
DEC.											
12...	170	26	.2	--	.01	1.2	--	--	--	--	--
27...	82	18	.2	--	.01	5.7	--	--	--	--	--
JAN.											
08...	180	30	.3	--	.00	1.5	--	--	--	--	--
23...	74	17	.2	--	.00	2.7	--	--	180	--	--
FEB.											
12...	160	28	.4	--	.00	1.3	--	--	420	--	--
23...	98	25	.4	--	.01	3.9	--	--	150	--	--
MAR.											
11...	84	14	.3	--	.01	3.9	--	--	210	--	--
26...	150	29	.3	--	.00	1.8	--	--	350	--	--
APR.											
02...	63	12	.4	--	.01	3.1	--	--	170	--	--
22...	160	25	.4	--	.01	.58	--	--	390	--	--
MAY											
13...	92	17	.2	--	.01	3.2	--	--	220	--	--
28...	160	25	.3	--	.00	.61	--	--	350	--	--
JUNE											
01...	110	17	.8	--	.01	5.3	--	--	280	--	--
12...	220	26	1.7	--	.00	.76	--	--	510	--	--
AUG.											
21...	150	22	.3	.14	.00	.29	.12	459	350	10	40

04198018 WEST BRANCH HURON RIVER NEAR WILLARD, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	861	762	660	587	665	583	667	618	647	607	485	405
2	784	601	617	565	672	632	769	658	659	649	527	489
3	679	594	679	617	701	672	770	705	690	661	576	524
4	721	659	702	679	713	701	758	711	703	643	597	568
5	668	487	739	703	713	554	802	733	805	658	560	449
6	596	483	754	736	589	510	781	747	754	700	586	469
7	675	596	762	749	658	595	782	743	744	694	597	466
8	710	675	783	761	697	662	823	748	726	674	488	211
9	734	702	780	763	716	697	820	752	746	669	311	212
10	752	728	773	762	730	716	761	703	789	707	322	209
11	747	726	762	747	795	686	739	718	789	716	456	330
12	743	717	747	734	803	744	770	694	782	731	513	458
13	736	708	733	684	760	730	798	733	766	713	578	516
14	788	717	750	696	711	519	787	729	698	479	615	571
15	817	788	752	709	615	520	750	690	627	416	640	549
16	815	773	787	741	663	613	731	430	683	541	496	299
17	815	798	775	736	765	638	420	352	692	645	534	401
18	802	739	759	729	766	714	471	231	706	676	599	540
19	749	708	754	720	741	730	308	214	692	391	630	599
20	815	698	749	697	744	653	406	317	437	366	644	605
21	835	815	767	700	667	468	412	398	507	436	672	642
22	837	827	779	599	596	486	494	412	519	421	677	651
23	836	826	634	599	676	562	487	352	534	422	689	670
24	843	830	681	634	675	651	520	374	600	540	728	664
25	832	750	695	415	677	352	548	509	668	544	700	679
26	831	787	495	391	440	363	572	548	700	589	709	694
27	949	755	582	495	458	393	509	355	717	616	692	616
28	928	777	586	437	535	458	518	429	676	460	659	632
29	839	722	472	419	583	540	480	386	---	---	676	610
30	820	698	580	472	588	527	569	471	---	---	597	357
31	701	611	---	---	651	589	607	570	---	---	495	363
MONTH	949	483	787	391	803	352	823	214	805	366	728	209

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.5	16.5	11.0	10.0	7.0	6.0	1.0	1.0	5.5	3.0	4.0	3.0
2	19.5	18.0	11.5	9.5	6.0	4.5	1.0	1.0	4.0	2.5	6.5	3.0
3	19.5	17.0	11.0	8.5	9.0	6.5	1.0	1.0	2.5	1.5	12.5	7.0
4	20.0	17.5	9.5	7.5	10.5	9.0	1.0	1.0	2.0	1.0	12.5	10.5
5	18.5	16.5	8.0	6.5	11.0	8.0	1.0	1.0	1.0	1.0	11.5	8.0
6	16.5	13.5	6.5	4.5	8.0	4.5	1.0	1.0	1.0	1.0	9.0	6.5
7	17.0	14.0	6.0	3.0	4.5	4.0	1.0	1.0	1.5	1.0	11.5	9.5
8	20.0	16.5	7.0	4.5	5.5	4.0	1.0	1.0	2.0	1.0	10.5	6.5
9	20.0	16.0	6.0	4.0	5.0	3.5	1.0	1.0	1.5	1.0	11.5	6.5
10	19.5	15.5	4.5	2.0	4.5	2.0	1.0	1.0	1.0	1.0	11.0	7.5
11	20.0	15.5	4.0	1.5	1.5	1.0	1.0	1.0	1.0	1.0	7.0	5.5
12	20.0	16.0	6.5	4.0	3.0	1.0	1.0	1.0	3.0	1.0	5.5	4.5
13	18.0	16.5	9.5	6.5	4.5	1.5	1.0	1.0	4.5	2.0	4.5	1.5
14	17.0	13.5	13.0	9.5	4.0	3.0	1.0	1.0	3.0	1.5	6.0	2.0
15	17.0	14.0	14.5	13.0	3.0	1.5	1.0	1.0	2.0	1.5	6.0	5.0
16	15.0	12.0	13.0	7.0	1.5	1.0	1.0	1.0	3.5	1.5	5.5	4.0
17	12.5	10.5	7.5	5.0	1.0	1.0	1.5	1.0	5.0	2.0	6.0	3.5
18	13.0	10.0	7.5	5.0	1.0	1.0	3.0	1.5	4.0	2.0	6.0	3.0
19	13.0	7.5	9.5	7.5	1.0	1.0	4.0	2.5	4.5	3.5	6.5	5.5
20	12.5	10.0	9.5	7.5	1.5	1.0	8.0	4.0	5.5	2.5	7.0	4.5
21	13.0	10.0	11.0	9.0	1.0	1.0	8.5	6.5	7.5	3.5	6.5	4.0
22	13.0	9.0	10.0	8.5	1.0	1.0	7.0	6.0	7.5	5.5	6.0	2.0
23	13.5	9.0	10.5	8.5	1.5	1.0	7.5	5.5	5.0	2.5	6.0	3.0
24	14.5	10.0	11.5	9.0	2.0	1.0	5.5	4.0	3.5	1.5	4.5	1.5
25	15.5	11.0	11.5	9.5	5.0	1.5	5.0	2.5	2.5	1.5	---	---
26	16.0	12.5	9.5	8.5	6.5	5.0	7.0	3.5	3.0	1.5	6.0	5.5
27	13.0	10.0	12.5	9.5	6.5	5.5	8.5	7.0	4.0	1.5	6.5	4.0
28	12.5	11.0	12.5	9.5	5.5	4.0	7.5	6.0	5.0	3.0	8.0	5.5
29	11.5	10.0	9.0	6.5	5.0	3.5	6.0	5.0	---	---	7.5	6.5
30	11.5	11.0	7.5	5.5	3.5	1.0	7.0	4.5	---	---	8.0	7.0
31	12.0	11.0	---	---	1.5	1.0	7.0	5.5	---	---	7.0	5.5
MONTH	20.0	7.5	14.5	1.5	11.0	1.0	8.5	1.0	7.5	1.0	12.5	1.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	5.5	19.0	14.0	20.0	18.0	26.0	18.5	25.0	19.0	23.0	18.0
2	13.0	9.5	15.5	13.0	20.5	15.5	26.0	21.0	26.5	20.5	20.5	18.0
3	13.0	9.5	15.0	13.0	23.0	18.0	30.0					

## STREAMS TRIBUTARY TO LAKE ERIE

04199100 HURON RIVER BELOW MILAN, OHIO

LOCATION.--Lat 41°20'06", long 82°34'38", in SW 1/4 sec. 2, T.5 N., R.22 W., Erie County, on right bank at downstream side of bridge on Mason Road, 3.5 mi (5.6 km) northeast of Milan, and 4.2 mi (6.8 km) downstream from the gaging station at Milan.

DRAINAGE AREA.--385 mi<sup>2</sup> (997 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1968 to September 1974.

Water temperatures: June 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 868 micromhos Dec. 21; minimum, 234 micromhos Apr. 4.

pH: Maximum, 8.8 July 27-29; minimum, 6.5 Jan. 27.

Dissolved oxygen: Maximum, 15.0 mg/l Dec. 1, 2; minimum, 4.1 mg/l Aug. 21.

Water temperatures: Maximum, 28.5°C July 10, 15; minimum, freezing point Feb. 13.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
13...	1900	24	18.9	--	706	7.3	--	86	23	--	--	0
31...	1200	100	12.0	--	802	8.5	--	110	29	--	--	14
NOV.												
22...	1200	39	8.5	--	829	8.6	--	--	--	--	--	8
29...	1500	1270	--	--	630	7.4	--	--	--	--	--	0
DEC.												
21...	1400	300	.0	--	867	7.7	--	--	--	--	--	0
26...	1100	3880	3.0	--	422	7.0	--	--	--	--	--	0
JAN.												
16...	1600	500	.5	--	852	7.7	--	110	28	--	--	0
21...	1540	3060	5.5	--	376	7.0	--	24	15	--	--	0
FEB.												
13...	0800	200	.5	--	761	8.4	--	110	31	--	--	4
23...	1700	906	3.5	--	426	7.8	--	53	16	--	--	0
MAR.												
19...	1600	429	7.0	--	326	7.7	--	45	12	--	--	0
26...	0900	213	3.0	--	659	8.1	--	88	21	--	--	0
APR.												
06...	1800	1080	9.0	--	422	7.7	--	54	15	--	--	0
30...	2000	159	20.0	--	655	7.9	--	81	25	--	--	0
MAY												
10...	1600	186	11.5	--	692	8.2	--	98	22	--	--	0
30...	2130	2690	18.5	--	373	7.1	--	56	17	--	--	0
JUNE												
16...	1400	148	21.0	--	703	7.9	--	87	25	--	--	0
20...	1000	546	18.5	--	448	7.6	--	57	14	--	--	0
AUG.												
22...	1000	29	24.0	4.5	540	7.5	6.0	61	18	17	5.0	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
16...	1445	<.5	--
APR.			
16...	1500	.0	5.4

## STREAMS TRIBUTARY TO LAKE ERIE

311

## 04199100 HURON RIVER BELOW MILAN, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 1,170 micromhos Feb. 14, 1972; minimum, 189 micromhos Aug. 18, 1972.  
pH (1968-74): Maximum, 9.2 Sept. 16, 1973; minimum, 4.3 Dec. 10, 1971.

Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher on several days during 1971-74; minimum, 3.1 mg/l Aug. 13, 1973.

Water temperatures (1968-74): Maximum, 30.0°C July 23, 1972; minimum, freezing point on many days during winter period.

REMARKS.--Water-quality recorder operated since June 1968. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Huron River at Milan, Ohio, station 04199000, drainage area 371 mi<sup>2</sup> (961 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.												
13...	211	140	37	.4	--	.00	2.1	.38	--	310	--	--
31...	252	170	36	.5	--	.00	1.5	.81	--	390	--	--
NOV.												
22...	255	190	36	.2	--	.00	1.2	.01	--	--	--	--
29...	142	140	29	.2	--	.00	5.7	.04	--	--	--	--
DEC.												
21...	197	160	85	.2	--	.00	2.9	.00	--	--	--	--
26...	76	82	25	.2	--	.00	6.5	.15	--	--	--	--
JAN.												
16...	207	150	71	.3	--	.00	2.7	--	--	390	--	--
21...	80	71	19	.3	--	.00	4.7	--	--	120	--	--
FEB.												
13...	222	160	37	.4	--	.01	2.9	--	--	400	--	--
23...	92	81	22	.4	--	.01	5.3	--	--	200	--	--
MAR.												
19...	80	63	14	.2	--	.11	3.4	.67	--	160	--	--
26...	186	130	40	.2	--	.01	2.9	.21	--	310	--	--
APR.												
06...	113	71	17	.6	--	.01	3.5	.37	--	200	--	--
30...	177	130	28	.4	--	.00	1.0	.26	--	310	--	--
MAY												
10...	216	140	33	.9	--	.00	1.0	.19	--	340	--	--
30...	101	56	15	.4	--	.01	5.8	1.1	--	210	--	--
JUNE												
16...	196	140	37	.5	--	.01	1.9	--	--	320	--	--
20...	84	62	21	.7	--	.06	14	.65	--	200	--	--
AUG.												
22...	144	110	22	.4	.47	.07	1.2	.48	310	230	20	70



04199100 HURON RIVER BELOW MILAN, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	864	744	---	---	---	---	628	589	570	534	---	---
2	744	675	---	---	---	---	682	628	594	573	---	---
3	756	699	---	---	---	---	706	685	642	597	---	---
4	816	750	---	---	---	---	724	700	642	636	---	---
5	816	750	---	---	---	---	751	727	684	642	---	---
6	753	735	---	---	---	---	769	754	714	693	483	465
7	747	723	---	---	---	---	775	760	714	708	525	486
8	741	711	---	---	---	---	810	775	732	702	480	453
9	711	696	762	756	---	---	834	813	753	732	426	324
10	696	669	774	759	---	---	834	813	756	747	333	267
11	675	666	774	771	---	---	828	813	762	747	402	285
12	684	672	783	771	747	717	843	816	756	733	447	405
13	705	684	789	777	753	741	840	831	772	739	---	---
14	705	696	795	786	754	706	834	813	---	---	---	---
15	711	702	798	792	722	689	825	804	720	645	---	---
16	723	708	799	790	696	651	861	759	684	615	---	---
17	723	720	796	793	648	624	741	501	621	591	---	---
18	735	720	793	790	697	625	492	462	618	600	---	---
19	744	732	790	781	712	658	471	285	651	618	---	---
20	747	735	796	787	760	715	366	288	644	461	---	---
21	765	747	796	790	868	739	396	360	480	402	---	---
22	804	765	793	790	733	685	453	396	456	405	---	---
23	834	804	793	751	682	634	471	423	444	414	---	---
24	831	819	790	745	646	634	453	411	471	420	---	---
25	819	816	793	769	727	490	519	456	522	471	---	---
26	825	816	757	574	490	400	552	519	573	522	684	663
27	---	---	561	528	439	424	567	471	609	573	---	---
28	---	---	597	543	499	439	462	417	618	585	---	---
29	---	---	615	522	550	502	474	423	---	---	---	---
30	---	---	519	513	580	553	471	417	---	---	---	---
31	---	---	---	---	592	583	534	477	---	---	---	---
MONTH	864	666	---	---	---	---	861	285	772	402	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	666	591	---	---	---	---	813	777	636	573
2	438	417	678	654	---	---	---	---	810	795	585	570
3	435	381	678	660	---	---	---	---	816	795	594	573
4	420	234	675	663	---	---	---	---	816	807	612	576
5	366	258	660	639	---	---	---	---	825	804	612	579
6	435	372	657	642	---	---	---	---	828	807	651	615
7	465	435	666	648	---	---	---	---	822	789	711	651
8	495	450	666	657	---	---	---	---	807	777	720	693
9	537	495	666	648	---	---	584	566	792	765	708	684
10	564	468	687	660	---	---	596	560	786	765	693	669
11	486	471	687	675	---	---	632	596	783	771	678	654
12	531	486	684	591	---	---	662	635	789	777	663	648
13	567	534	591	486	---	---	674	659	798	762	657	648
14	---	---	513	486	---	---	686	668	786	777	663	648
15	---	---	543	513	---	---	704	683	795	774	684	663
16	594	576	567	540	---	---	722	701	786	744	684	663
17	604	586	594	570	---	---	734	716	774	744	697	676
18	586	548	603	597	---	---	740	725	768	567	698	680
19	548	527	669	606	---	---	746	728	570	495	711	693
20	535	511	645	501	---	---	749	737	510	492	712	694
21	526	511	546	519	---	---	758	746	510	495	734	707
22	533	515	576	546	---	---	758	746	519	507	762	726
23	536	527	609	576	---	---	761	749	525	510	778	754
24	561	537	630	606	---	---	782	761	534	522	788	761
25	571	544	642	618	---	---	788	767	543	534	783	732
26	572	539	654	633	---	---	797	773	558	546	790	772
27	567	537	666	654	---	---	812	773	570	552	794	770
28	568	554	675	660	---	---	809	782	606	567	795	777
29	594	564	681	654	---	---	812	782	639	606	838	793
30	630	591	678	600	---	---	821	780	741	597	860	818
31	---	---	---	---	---	---	807	780	762	639	---	---
MONTH	630	234	687	486	---	---	---	---	828	492	860	570
YEAR	868	234										

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

04199100 HURON RIVER BELOW MILAN, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.4	6.4	---	---	15.0	11.1	14.0	13.6	12.1	11.6	---	---
2	8.0	5.5	---	---	15.0	11.4	14.0	13.4	12.0	11.8	---	---
3	7.5	6.3	---	---	14.9	10.5	13.7	13.1	11.9	11.8	---	---
4	7.0	5.7	---	---	14.8	10.6	14.2	13.1	11.9	11.5	---	---
5	6.8	5.6	---	---	---	---	14.1	13.9	12.8	11.7	---	---
6	6.8	5.1	---	---	---	---	14.2	14.0	13.1	12.7	11.9	11.6
7	7.9	6.9	---	---	---	---	14.3	13.8	13.3	13.0	11.6	11.3
8	7.8	6.7	---	---	---	---	14.2	13.7	13.4	13.0	11.5	11.4
9	7.8	6.2	14.2	14.0	---	---	14.0	13.8	13.4	13.2	11.8	11.2
10	7.6	6.1	14.1	13.6	---	---	13.7	13.4	13.4	13.3	11.2	11.1
11	7.1	5.5	13.8	13.4	---	---	13.7	13.4	13.3	13.0	11.6	11.3
12	7.0	5.4	14.6	13.5	13.1	12.4	13.5	13.3	13.3	12.9	11.9	11.7
13	6.9	5.3	14.9	14.3	13.5	13.0	13.7	13.3	13.0	12.6	---	---
14	7.1	6.4	14.6	14.0	13.3	11.9	13.7	13.1	---	---	---	---
15	7.3	6.4	14.1	12.9	13.2	13.1	13.5	13.0	13.6	13.0	---	---
16	7.3	6.3	12.8	10.0	13.6	13.1	13.7	13.0	13.5	13.3	---	---
17	7.6	7.2	9.8	7.4	13.9	13.4	14.1	13.6	13.5	13.2	---	---
18	8.4	7.6	7.1	5.2	13.5	13.3	14.0	13.6	13.4	13.2	---	---
19	8.4	8.1	10.7	6.5	13.4	12.9	13.7	12.7	13.4	12.6	---	---
20	8.5	8.0	12.7	10.8	13.3	12.7	13.3	11.9	13.5	12.4	---	---
21	8.4	7.9	12.8	12.2	13.2	12.6	11.9	11.1	13.8	13.4	---	---
22	8.5	7.3	12.1	11.1	13.4	13.1	11.8	11.3	13.6	12.6	---	---
23	8.0	7.0	11.0	8.1	13.6	13.0	12.6	11.4	13.2	12.4	---	---
24	7.2	6.1	11.3	9.0	13.6	13.2	13.1	12.6	13.5	13.2	---	---
25	6.7	6.2	10.9	9.0	13.7	12.5	13.3	12.8	13.8	13.5	---	---
26	6.5	5.8	11.3	8.6	13.2	12.5	13.2	12.7	13.7	13.6	10.7	10.1
27	---	---	11.1	10.2	12.7	12.3	12.6	11.6	13.7	13.5	---	---
28	---	---	10.2	9.6	13.1	12.6	12.0	11.6	13.7	13.5	---	---
29	---	---	11.9	9.4	13.2	12.9	13.7	12.1	---	---	---	---
30	---	---	12.2	11.9	13.9	13.1	12.2	12.0	---	---	---	---
31	---	---	---	---	14.0	13.7	11.9	11.6	---	---	---	---
MONTH	8.5	5.1	---	---	---	---	14.3	11.1	13.8	11.5	---	---

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04199500 VERMILION RIVER NEAR VERMILION, OHIO

LOCATION.--Lat 41°22'55", long 82°19'01", in T.6 N., R.19 W., Lorain County, at gaging station on right bank 40 ft (12 m) downstream from bridge on North Ridge Road, 3.5 mi (5.6 km) southeast of Vermilion, and 4.5 mi (7.2 km) upstream from mouth. Water-quality recorder located at bridge on North Ridge Road.

DRAINAGE AREA.--262 sq mi.

PERIOD OF RECORD.--Chemical analyses: March 1950 to February 1952, February 1969 to September 1974.

Water temperatures: March to August 1950, February 1969 to September 1974.

Sediment records: Water years 1970-74 (partial-record station).

EXTREMES.--1973-74:

Specific conductance: Maximum, 998 micromhos Dec. 20; minimum, 168 micromhos Jan. 19.

Water temperatures: Maximum, 34.0°C July 8; minimum, freezing point Dec. 11, 13, Jan. 2, 4, 5, 7, 8.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

		INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH  (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
05...	0735	56	17.0	--	647	7.8	--	--	--	--	--	0
16...	1540	10	14.5	--	623	8.5	--	--	--	--	--	3
NOV.												
23...	0758	113	3.0	--	683	8.4	--	--	--	--	--	6
26...	0747	488	3.0	--	571	8.2	--	--	--	--	--	0
DEC.												
15...	0820	658	2.0	--	626	8.3	--	--	--	--	--	0
28...	1245	1240	3.5	--	325	7.5	--	--	--	--	--	0
JAN.												
14...	0956	100	.5	--	688	7.7	--	86	27	--	--	0
21...	0956	2050	6.0	--	284	7.1	--	17	11	--	--	0
FEB.												
12...	0845	110	.0	--	596	7.2	--	79	25	--	--	0
22...	0935	890	4.5	--	377	7.2	--	43	14	--	--	0
MAR.												
11...	0830	3680	7.0	--	216	7.7	--	28	7.7	--	--	0
29...	0815	209	5.0	--	485	7.8	--	66	18	--	--	0
APR.												
05...	0955	2680	12.0	--	234	7.1	--	32	9.7	--	--	0
29...	0840	75	18.0	--	537	8.0	--	59	17	--	--	0
MAY												
06...	0835	83	12.0	--	559	7.9	--	67	19	--	--	0
13...	0830	1480	13.0	--	373	7.8	--	44	13	--	--	0
JUNE												
08...	0830	40	23.0	--	499	8.0	--	68	19	--	--	0
17...	0735	40	16.0	--	554	8.4	--	70	20	--	--	2
AUG.												
22...	1300	27	24.0	8.3	390	8.1	5.9	43	13	11	4.5	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
16...	1600	<.5	--
APR.			
16...	1630	.1	5.8

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDEU SEDI- MENT (MG/L)	SUS- PENDEU SEDI- MENT DIS- CHARGE (T/DAY)
JAN.. 1974					
22...	0920	1490	4.5	160	644
FEB.					
21...	1515	728	3.5	89	175
MAR.					
11...	1510	2240	7.0	390	2360
APR.					
04...	1430	4250	14.0	1440	16500
05...	1030	2520	11.5	760	5170
23...	0815	126	15.0	6	2.0
JUNE					
24...	1425	114	19.0	31	9.5
SEP.					
27...	0845	9.4	13.5	3	.08



## 04199500 VERMILION RIVER NEAR VERMILION, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 998 micromhos Dec. 20, 1973; minimum, 168 micromhos Jan. 19, 1974.

Water temperatures (1969-74): Maximum, 34.0°C Aug. 5, 1973, July 8, 1974; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since February 1969. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special were also collected twice during the year to further define the quality of water.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
05...	224	100	30	.3	--	.00	.39	--	--	--	--	--
16...	164	120	37	.2	--	.00	.84	--	--	--	--	--
NOV.												
23...	214	130	33	.2	--	.00	.02	--	--	--	--	--
26...	141	110	32	.2	--	.00	3.4	--	--	--	--	--
DEC.												
15...	169	120	34	.2	--	.00	2.7	--	--	--	--	--
28...	73	67	18	.2	--	.01	3.8	--	--	--	--	--
JAN.												
14...	214	140	31	.2	--	.00	1.1	--	--	330	--	--
21...	66	55	15	.2	--	.00	2.4	--	--	88	--	--
FEB.												
12...	188	110	28	.4	--	.01	.85	--	--	300	--	--
22...	86	68	21	.4	--	.01	2.6	--	--	170	--	--
MAR.												
11...	61	40	7.5	.3	--	.02	1.6	--	--	100	--	--
29...	155	92	22	.3	--	.01	1.2	--	--	240	--	--
APR.												
05...	70	46	8.5	.3	--	.01	1.7	--	--	120	--	--
29...	169	110	26	.4	--	.00	.19	--	--	220	--	--
MAY												
06...	189	100	28	.3	--	.00	.22	--	--	250	--	--
13...	107	61	15	.3	--	.00	3.8	--	--	160	--	--
JUNE												
08...	178	85	21	.7	--	.00	1.3	--	--	250	--	--
17...	187	90	27	.5	--	.00	2.5	--	--	260	--	--
AUG.												
22...	117	67	17	.4	.26	.01	1.5	.18	220	160	50	10

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUSPENDED SEDIMENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
JAN., 1974												
22...	0920	160	61	72	80	88	93	96	96	98	100	--
MAR.												
11...	1510	390	56	69	78	86	95	97	97	99	100	--
APR.												
04...	1430	1440	53	70	78	86	92	96	96	98	100	--
05...	1030	760	64	78	84	90	96	98	98	99	100	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
27...	1	1	1	4	6	9	16	28	40	54	100	--

## 04199500 VERMILION RIVER NEAR VERMILION, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	602	577	660	646	539	479	555	465	441	399	---	---
2	626	569	686	647	545	513	531	497	491	434	---	---
3	628	600	694	633	545	516	534	524	487	457	---	---
4	619	586	634	592	534	515	574	534	591	475	---	---
5	619	606	598	591	553	534	596	574	575	499	---	---
6	614	599	607	596	560	552	601	586	536	486	---	---
7	639	594	598	591	557	539	632	601	579	523	---	---
8	596	574	601	592	544	532	652	632	569	544	---	---
9	587	577	658	600	565	544	678	636	568	535	---	---
10	580	565	610	591	602	565	636	623	672	520	---	---
11	577	560	622	607	589	573	655	618	585	513	---	---
12	586	571	637	617	612	583	641	632	---	---	---	---
13	595	578	641	621	678	596	659	647	---	---	---	---
14	586	569	683	633	620	569	674	641	---	---	---	---
15	590	569	673	646	563	480	797	642	---	---	---	---
16	653	574	673	653	467	404	793	532	---	---	---	---
17	649	634	677	655	496	458	512	345	---	---	---	---
18	658	647	664	647	600	496	345	291	---	---	---	---
19	652	632	676	653	655	537	282	168	---	---	---	---
20	635	622	678	652	998	604	207	173	---	---	---	---
21	629	614	669	641	620	545	---	---	---	---	---	---
22	628	610	672	661	545	502	314	298	---	---	---	---
23	622	608	672	657	522	497	343	314	---	---	---	---
24	620	606	695	665	515	495	332	299	---	---	---	---
25	620	605	685	511	626	376	348	306	---	---	---	---
26	621	608	550	430	395	320	393	352	---	---	---	---
27	641	608	446	430	336	310	401	348	---	---	---	---
28	640	600	508	461	358	334	369	349	---	---	---	---
29	636	610	514	466	410	358	358	337	---	---	---	---
30	665	633	478	449	447	409	378	341	---	---	---	---
31	679	643	---	---	496	441	401	378	---	---	---	---
MONTH	679	560	695	430	998	310	797	168	---	---	---	---

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18.0	15.5	12.0	10.0	6.5	5.0	0.5	0.5	4.0	3.0	3.5	3.0
2	19.5	16.5	12.0	9.5	5.5	3.5	0.5	0.0	3.0	1.0	5.0	3.0
3	20.0	16.0	11.5	10.0	7.5	5.0	0.5	0.5	1.5	0.5	10.0	5.5
4	20.0	17.0	10.0	8.5	8.5	7.5	0.5	0.0	1.0	0.5	11.0	9.5
5	19.0	15.5	9.0	7.0	8.0	6.5	0.5	0.0	1.0	0.5	11.0	9.5
6	16.5	13.0	7.0	5.0	6.5	5.0	0.5	0.5	1.0	1.0	10.0	8.5
7	17.0	15.0	6.0	4.0	5.0	4.5	0.5	0.0	1.0	1.0	10.5	9.5
8	18.5	15.5	7.5	5.0	4.5	3.0	1.0	0.0	1.0	0.5	9.5	7.5
9	20.0	16.0	6.0	3.5	3.0	2.0	1.0	0.5	1.0	0.5	9.0	7.5
10	20.5	16.0	3.5	2.0	3.5	1.0	1.0	0.5	1.0	0.5	10.0	9.0
11	20.5	16.0	3.0	1.0	1.0	0.0	1.0	0.5	1.0	0.5	9.0	7.5
12	21.0	16.0	6.0	2.5	1.0	0.5	1.0	0.5	1.0	0.5	7.5	6.0
13	18.5	17.0	9.5	6.0	2.5	0.0	1.0	0.5	1.0	0.5	6.0	3.5
14	18.0	14.5	12.5	9.5	2.5	1.0	1.0	0.5	1.0	0.5	6.5	2.5
15	18.0	14.0	14.5	12.5	1.0	0.5	0.5	0.5	1.0	0.5	5.5	4.0
16	15.0	12.0	12.5	6.5	0.5	0.5	0.5	0.5	1.0	0.5	5.5	5.0
17	13.5	10.5	7.5	5.0	0.5	0.5	1.0	0.5	1.0	0.5	6.5	4.5
18	13.0	10.5	7.0	4.5	0.5	0.5	1.0	1.0	1.0	0.5	6.5	4.0
19	13.5	9.0	9.0	7.0	0.5	0.5	2.0	1.0	1.0	0.5	7.0	5.5
20	13.5	11.0	9.5	7.5	0.5	0.5	5.0	2.5	1.0	0.5	8.0	4.5
21	15.0	11.0	10.5	8.5	0.5	0.5	6.5	5.5	3.0	0.5	6.5	5.0
22	14.5	9.5	10.0	8.5	0.5	0.5	6.0	6.0	5.5	3.0	7.5	3.5
23	14.5	9.5	9.5	8.5	0.5	0.5	6.5	5.5	4.5	3.0	6.5	3.5
24	15.5	10.0	11.0	8.5	0.5	0.5	5.5	4.0	3.0	0.5	5.0	2.0
25	16.5	11.0	11.0	9.5	2.0	0.5	4.0	3.0	1.5	0.5	4.5	1.0
26	16.0	12.0	9.5	9.0	4.0	2.0	5.5	2.0	1.5	0.5	6.0	1.5
27	14.5	10.5	10.5	9.5	4.5	4.0	7.0	5.5	3.0	0.5	6.0	3.5
28	13.0	12.0	11.0	9.0	4.5	4.0	6.5	5.5	3.5	1.5	6.0	5.0
29	12.5	11.5	9.0	7.5	3.5	2.5	5.5	5.0	---	---	7.5	6.0
30	12.5	12.0	7.5	6.5	2.5	0.5	5.5	4.0	---	---	9.0	7.5
31	13.0	11.5	---	---	0.5	0.5	6.0	4.5	---	---	8.0	7.5
MONTH	21.0	9.0	14.5	1.0	8.5	0.0	7.0	0.0	5.5	0.5	11.0	1.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.5	6.5	21.0	15.5	21.0	18.5	24.0	19.0	28.5	20.5	23.0	20.0
2	11.5	9.5	18.0	14.0	23.0	17.0	24.0	20.5	29.5	22.0	21.0	19.0
3	---	---	17.0	15.0	24.5	18.5	29.0	23.0				

## STREAMS TRIBUTARY TO LAKE ERIE

04199900 EAST BRANCH BLACK RIVER AT GRAFTON, OHIO

LOCATION.--Lat 41°15'51", long 82°03'39", in T.4 N., R.16 W., Lorain County, on right downstream abutment of bridge on Crook Street at south edge of Grafton, and 14.0 mi (22.5 km) upstream from West Branch Black River.

DRAINAGE AREA.--170 mi<sup>2</sup> (440 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: April 1969 to September 1974.  
Water temperatures: April 1969 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,050 micromhos Nov. 11; minimum, 212 micromhos July 1.

Water temperatures: Maximum, 29.0°C July 10; minimum, freezing point on many days during December to February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT.												
03...	1145	18.0	--	767	8.6	--	--	--	--	--	6	214
NOV.												
06...	1145	5.0	--	916	8.5	--	--	--	--	--	4	195
29...	1120	8.0	--	523	7.5	--	--	--	--	--	0	91
DEC.												
10...	1710	4.0	--	685	8.1	--	--	--	--	--	0	138
27...	1040	4.0	--	388	7.6	--	--	--	--	--	0	58
JAN.												
14...	1430	.0	--	802	7.9	--	91	32	--	--	0	204
22...	1135	5.0	--	383	6.9	--	46	14	--	--	0	82
FEB.												
13...	1130	1.5	--	718	8.4	--	90	26	--	--	1	186
20...	1300	.0	--	434	7.7	--	49	17	--	--	0	91
MAR.												
07...	1815	9.0	--	464	7.6	--	50	16	--	--	0	99
26...	1918	3.0	--	549	8.3	--	64	21	--	--	0	143
APR.												
05...	1640	11.0	--	332	7.2	--	39	11	--	--	0	80
29...	1645	20.0	--	638	7.9	--	77	24	--	--	0	176
MAY												
13...	1620	22.0	--	320	7.2	--	29	11	--	--	0	78
27...	1720	18.0	--	659	7.9	--	92	26	--	--	0	216
JUNE												
03...	1730	22.0	--	508	7.4	--	59	17	--	--	0	143
18...	1530	19.0	--	639	8.4	--	81	24	--	--	3	211
AUG.												
20...	1300	22.5	7.9	735	8.1	4.1	78	28	35	5.7	0	213

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
17...	1140	<.5	--
APR.			
17...	1250	.1	8.7

## STREAMS TRIBUTARY TO LAKE ERIE

04199900 EAST BRANCH BLACK RIVER AT GRAFTON, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 1,630 micromhos Sept. 9, 12, 1971; minimum, 170 micromhos July 13, 1969.

Water temperatures (1969-74): Maximum, 33.0°C July 24, 1972; minimum, freezing point on several days during winter period.

REMARKS.--Water-quality recorder operated since April 1969. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. No discharge records available.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
03...	150	54	.3	--	.00	.33	--	--	--	--	--
NOV.											
06...	220	71	.3	--	.00	1.5	--	--	--	--	--
29...	130	31	.3	--	.00	3.4	--	--	--	--	--
DEC.											
10...	170	38	.2	--	.00	2.0	--	--	--	--	--
27...	82	26	.1	--	.01	3.7	--	--	--	--	--
JAN.											
14...	180	53	.2	--	.00	1.4	--	--	360	--	--
22...	87	22	.2	--	.00	2.0	--	--	170	--	--
FEB.											
13...	160	42	.2	--	.00	1.4	--	--	330	--	--
20...	100	27	.2	--	.00	1.6	--	--	190	--	--
MAR.											
07...	100	27	.2	--	.00	1.3	--	--	190	--	--
26...	120	28	.2	--	.00	.84	--	--	250	--	--
APR.											
05...	59	14	.4	--	.01	1.3	--	--	140	--	--
29...	140	37	.4	--	.01	.13	--	--	290	--	--
MAY											
13...	110	26	.3	--	.00	1.9	--	--	120	--	--
27...	130	33	.3	--	.00	.50	--	--	340	--	--
JUNE											
03...	98	30	.2	--	.01	1.8	--	--	220	--	--
18...	130	33	.5	--	.00	.54	--	--	300	--	--
AUG.											
20...	150	43	.4	.35	.02	.10	.12	449	310	40	40



04199900 EAST BRANCH BLACK RIVER AT GRAFTON, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM at 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	808	784	851	809	528	494	553	511	463	422	471	408
2	792	768	888	843	638	528	565	539	558	439	444	363
3	783	750	870	800	638	592	589	551	559	533	413	366
4	768	738	903	851	652	629	626	491	556	534	410	396
5	784	746	928	892	650	630	670	626	587	557	444	402
6	797	763	913	853	643	626	694	668	609	586	462	446
7	814	783	990	835	633	614	720	692	626	611	459	444
8	852	814	847	812	730	588	750	720	647	598	482	320
9	873	826	842	833	681	562	765	746	701	645	345	278
10	912	871	1030	842	658	539	771	743	714	694	276	236
11	918	890	1050	877	689	554	763	759	729	701	265	235
12	920	885	889	863	718	576	780	715	785	638	359	270
13	915	891	876	858	743	558	820	785	706	689	385	361
14	908	878	896	859	607	513	806	641	---	---	458	420
15	903	875	892	874	551	451	418	682	---	---	479	449
16	918	901	920	892	519	431	785	509	---	---	431	328
17	922	903	1010	868	550	438	492	292	---	---	373	304
18	910	891	900	862	576	509	391	292	---	---	360	321
19	918	870	880	867	598	565	318	243	---	---	407	366
20	910	893	889	854	669	500	267	241	474	435	431	410
21	939	900	880	851	611	435	363	273	476	431	455	416
22	955	905	879	830	611	543	391	366	432	403	527	453
23	965	915	869	840	614	562	402	388	440	410	571	478
24	974	922	860	829	626	473	407	582	426	414	613	573
25	979	927	853	722	497	439	416	386	529	427	617	589
26	991	954	725	648	450	401	451	418	568	529	615	511
27	987	946	664	583	419	375	457	376	570	516	617	504
28	957	936	583	529	382	332	425	375	532	481	505	483
29	930	917	529	488	396	370	399	377	---	---	483	455
30	924	890	494	473	439	372	410	398	---	---	454	427
31	900	851	---	---	524	427	448	406	---	---	449	402
MONTH	991	738	1050	473	743	332	820	241	785	403	617	236

[illegible]

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.0	17.5	11.5	10.0	6.0	5.0	0.0	0.0	3.5	2.5	2.0	1.5
2	19.5	18.0	11.0	9.5	5.0	4.0	0.0	0.0	2.5	1.5	3.5	2.0
3	20.0	17.5	11.0	9.5	6.0	4.5	0.0	0.0	1.5	0.5	7.0	3.5
4	19.5	18.0	9.5	8.5	7.0	6.0	0.0	0.0	0.5	0.0	9.5	7.5
5	19.5	17.0	8.5	7.0	8.0	7.0	0.0	0.0	0.0	0.0	10.5	9.5
6	17.5	14.5	7.0	5.5	7.0	5.5	0.0	0.0	0.0	0.0	10.0	9.0
7	17.0	15.5	6.0	4.5	5.5	4.5	0.0	0.0	0.0	0.0	9.5	9.0
8	19.0	16.0	6.0	5.0	4.5	3.5	0.0	0.0	0.0	0.0	9.0	7.0
9	19.0	16.0	5.0	3.5	3.5	3.0	0.0	0.0	0.0	0.0	8.0	7.0
10	19.0	16.5	4.5	3.0	3.0	1.5	0.0	0.0	0.0	0.0	9.5	8.0
11	19.0	16.5	3.5	2.5	1.5	0.0	0.0	0.0	0.0	0.0	8.5	7.0
12	19.5	17.0	4.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0	6.5	5.5
13	18.5	17.5	7.0	4.5	2.5	0.5	0.0	0.0	0.0	0.0	5.5	4.0
14	17.5	15.5	9.0	7.0	2.0	1.5	0.0	0.0	---	---	4.5	3.0
15	17.0	15.5	11.5	9.0	2.0	1.0	0.0	0.0	---	---	4.5	3.5
16	15.5	13.5	11.0	7.0	1.0	0.0	0.0	0.0	---	---	4.5	4.0
17	13.0	11.5	7.5	6.0	0.0	0.0	0.0	0.0	---	---	4.5	4.0
18	12.5	11.5	7.0	6.0	0.0	0.0	0.0	0.0	---	---	4.5	4.0
19	13.0	10.0	7.5	7.0	0.0	0.0	1.0	0.0	---	---	5.5	4.5
20	12.5	11.5	8.0	6.5	0.0	0.0	4.0	1.0	0.5	0.0	6.0	4.5
21	14.0	11.0	9.0	7.5	0.0	0.0	6.0	4.0	2.0	0.0	5.5	4.5
22	13.5	10.0	9.0	7.5	0.0	0.0	6.0	5.5	4.0	2.0	5.5	3.0
23	12.5	10.0	8.5	7.5	0.0	0.0	5.5	5.0	3.5	3.0	5.0	3.5
24	13.0	10.5	9.5	8.0	0.0	0.0	5.0	3.5	2.5	0.5	4.0	2.0
25	13.5	11.0	9.5	9.0	0.5	0.0	3.5	2.5	0.5	0.0	3.0	0.5
26	13.5	12.0	9.0	8.5	3.5	1.0	3.5	1.5	0.5	0.0	3.5	1.5
27	12.5	11.0	9.5	8.5	5.0	3.5	6.5	3.5	1.0	0.0	4.0	2.0
28	12.5	11.5	10.0	9.5	5.0	4.0	6.0	5.5	1.5	0.5	5.0	4.0
29	12.0	11.5	9.0	8.0	4.0	2.5	5.5	4.5	---	---	6.5	5.0
30	11.5	11.5	7.5	6.0	2.5	1.0	4.5	3.5	---	---	7.5	6.5
31	12.0	11.5	---	---	1.0	0.0	---	---	---	---	7.5	6.5
MONTH	20.0	10.0	11.5	2.5	8.0	0.0	6.5	0.0	4.0	0.0	10.5	0.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	6.0	19.0	16.5	20.5	18.5	22.0	19.0	24.0	20.5	23.0	20.5
2	10.5	7.0	19.5	15.5	22.0	18.0	23.0	20.0	24.5	21.5	21.5	20.0
3	12.5	10.5	17.0	15.5	23.0	19.5	25.5	21.5	24.5	22.5	20.5	17.5

## STREAMS TRIBUTARY TO LAKE ERIE

## 04200400 WEST BRANCH BLACK RIVER NEAR ELYRIA, OHIO

LOCATION.--Lat 41°20'10", long 82°07'15", in T.5 N., R.16 W., Lorain County, on right abutment of private dam, 200 ft (61 m) upstream from bridge on U.S. Highway 20, 4.0 mi (6.4 km) upstream from confluence with East Branch, and 1.8 mi (2.9 km) south from center of Elyria.

DRAINAGE AREA.--170 mi<sup>2</sup> (440 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1969 to September 1974.  
Water temperatures: March 1969 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 765 micromhos Oct. 26; minimum, 180 micromhos Aug. 14.

Water temperatures: Maximum, 26.5°C July 14; minimum, 1.0°C Feb. 27, 28.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPE-CIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT.												
05...	1803	18.0	--	497	8.3	--	--	--	--	--	0	135
26...	1701	13.0	--	789	7.1	--	--	--	--	--	0	200
NOV.												
12...	1732	6.0	--	853	8.0	--	--	--	--	--	0	216
30...	1735	7.0	--	525	8.2	--	--	--	--	--	0	101
DEC.												
12...	1330	2.5	--	694	8.1	--	--	--	--	--	0	164
27...	0957	5.0	--	382	7.8	--	--	--	--	--	0	63
JAN.												
14...	1752	1.0	--	809	7.6	--	55	31	--	--	0	218
21...	1739	6.0	--	362	7.4	--	23	14	--	--	0	78
FEB.												
11...	1333	1.0	--	706	7.4	--	90	30	--	--	0	197
22...	1632	5.0	--	410	7.7	--	48	14	--	--	0	84
MAR.												
13...	0930	3.0	--	408	8.3	--	55	15	--	--	0	117
29...	1948	7.0	--	644	7.5	--	70	20	--	--	0	147
APR.												
05...	1750	11.0	--	298	7.1	--	42	11	--	--	0	83
30...	1810	18.0	--	660	7.8	--	82	23	--	--	0	195
MAY												
12...	1820	14.0	--	381	7.1	--	43	12	--	--	0	104
28...	1850	16.0	--	659	7.7	--	76	19	--	--	0	223
JUNE												
08...	1758	19.5	--	669	8.2	--	82	24	--	--	0	224
24...	1740	19.0	--	536	7.7	--	67	18	--	--	0	120
AUG.												
20...	1430	23.0	6.7	365	7.4	7.6	40	10	9.6	5.0	0	99

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
17...	1000	<.5	--
APR.			
17...	1145	.1	8.4

## STREAMS TRIBUTARY TO LAKE ERIE

325

## 04200400 WEST BRANCH BLACK RIVER NEAR ELYRIA, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1969-74): Maximum, 1,030 micromhos Feb. 15, 1972; minimum, 168 micromhos Feb. 23, 1971.  
 Water temperatures (1969-74): Maximum, 32.0°C July 23, 1972; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since March 1969. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. No discharge records available.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
05...	86	25	.3	--	.00	2.5	--	--	--	--	--
26...	160	43	.5	--	.00	3.9	--	--	--	--	--
NOV.											
12...	200	56	.3	--	.00	1.5	--	--	--	--	--
30...	120	26	.2	--	.00	4.3	--	--	--	--	--
DEC.											
12...	160	30	.2	--	.01	2.4	--	--	--	--	--
27...	77	21	.2	--	.01	4.1	--	--	--	--	--
JAN.											
14...	190	38	.4	--	.00	1.9	--	--	270	--	--
21...	75	18	.2	--	.00	2.6	--	--	120	--	--
FEB.											
11...	150	34	.4	--	.01	1.2	--	--	350	--	--
22...	86	21	.4	--	.01	2.4	--	--	180	--	--
MAR.											
13...	84	14	.3	--	.01	1.6	--	--	200	--	--
29...	120	24	.3	--	.01	1.1	--	--	260	--	--
APR.											
05...	55	8.4	.4	--	.02	1.8	--	--	150	--	--
30...	140	27	.5	--	.01	1.2	--	--	300	--	--
MAY											
12...	72	19	.3	--	.01	2.0	--	--	160	--	--
28...	130	28	.5	--	.00	.05	--	--	270	--	--
JUNE											
08...	120	34	1.1	--	.01	2.3	--	--	300	--	--
24...	93	31	.9	--	.00	9.9	--	--	240	--	--
AUG.											
20...	69	16	.3	.69	.05	1.2	.35	206	140	80	80

04200400 WEST BRANCH BLACK RIVER NEAR ELYRIA, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible][illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04200550 BLACK RIVER BELOW ELYRIA, OHIO

LOCATION.--Lat 41°24'42", long 82°05'45", in T.6 N., R.17 W., Lorain County, at Ford Road bridge on north edge of Elyria, 0.7 mi (1.1 km) downstream from Elyria sewage disposal plant, and 5.2 mi (8.4 km) downstream from gaging station at Elyria.

DRAINAGE AREA.--412 mi<sup>2</sup> (1,067 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: January 1966 to September 1974.

Water temperatures: January 1966 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 1,810 micromhos Oct. 17; minimum, 209 micromhos Aug. 14.

Dissolved oxygen: Maximum, 15.0 mg/l Dec. 25-31, Jan. 1-3, 6, 7; minimum, 0.0 mg/l Oct. 10-16, July 31, Aug. 1, 2, 22, 23, Sept. 20.

Water temperatures: Maximum, 28.0°C July 9; minimum, freezing point Dec. 31, Jan. 1, 3, 4, Feb. 6-9, 12, 13.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
OCT.												
16...	1700	13	16.5	--	1160	8.0	--	--	--	--	--	0
30...	1300	64	15.0	--	915	7.0	--	--	--	--	--	0
NOV.												
18...	1430	19	9.5	--	1190	6.3	--	--	--	--	--	0
25...	1040	281	11.0	--	716	6.7	--	--	--	--	--	0
DEC.												
09...	1050	140	4.0	--	742	6.8	--	--	--	--	--	0
29...	1230	8.7	4.0	--	444	7.2	--	--	--	--	--	0
JAN.												
16...	1740	572	1.5	--	973	7.4	--	89	24	--	--	0
19...	1530	6230	1.0	--	283	7.0	--	36	8.9	--	--	0
FEB.												
13...	1000	124	2.0	--	992	7.7	--	70	26	--	--	0
24...	1515	688	5.0	--	470	7.3	--	54	20	--	--	0
MAR.												
10...	1830	5360	10.0	--	278	7.5	--	32	9.7	--	--	0
27...	1755	372	5.0	--	653	7.0	--	66	20	--	--	0
APR.												
03...	1745	1480	12.0	--	410	7.1	--	--	--	--	--	0
24...	1705	169	14.0	--	713	7.2	--	68	19	--	--	0
MAY												
08...	1030	108	11.5	--	805	6.9	--	78	19	--	--	0
14...	1755	748	16.5	--	397	7.2	--	44	13	--	--	0
JUNE												
12...	1950	22	23.0	--	896	7.3	--	67	16	--	--	0
30...	1520	552	20.0	--	404	7.2	--	53	12	--	--	0
AUG.												
20...	1045	100	22.0	6.4	495	7.7	7.1	45	12	34	8.5	0

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)
OCT.							
16...	1730	2	250	27	0	120	15
APR.							
17...	1350	3	--	--	--	--	--

## STREAMS TRIBUTARY TO LAKE ERIE

329

04200550 BLACK RIVER BELOW ELYRIA, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 1,500 micromhos or higher on many days during 1966, 1970, and 1971; minimum, 167 micromhos Sept. 18, 1972.

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher on many days during 1966, 1972 and 1973; minimum, 0.0 mg/l June 3, 5, 6, July 3, 4, 1966, July 31, Aug. 1, 2, 22, 23, 1974.

Water temperatures (1966-74): Maximum, 33.0°C June 7, 1973; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since January 1966. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water. Records of discharge are given for Black River at Elyria, Ohio, station 04200500, drainage area 396 mi<sup>2</sup> (1,026 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
16...	99	160	150	.9	--	.00	22	3.2	--	--	--	--
30...	207	150	90	1.0	--	.00	12	1.8	--	--	--	--
NOV.												
18...	93	280	130	.7	--	.01	14	3.1	--	--	--	--
25...	144	140	64	.4	--	.00	2.8	.69	--	--	--	--
DEC.												
09...	119	160	54	.1	--	.00	6.6	.42	--	--	--	--
29...	79	95	27	.2	--	.00	3.3	.02	--	--	--	--
JAN.												
16...	158	160	120	.3	--	.00	3.5	.71	--	320	--	--
19...	54	56	17	.0	--	.00	2.2	.39	--	130	--	--
FEB.												
13...	142	160	120	.5	--	.01	8.8	.67	--	280	--	--
24...	90	95	29	.3	--	.01	3.4	.63	--	220	--	--
MAR.												
10...	66	56	13	.2	--	.10	1.7	.82	--	120	--	--
27...	156	130	50	.3	--	.00	.37	.28	--	250	--	--
APR.												
03...	92	75	23	.4	--	.01	1.9	.59	--	--	--	--
24...	156	130	61	.4	--	.00	3.4	.51	--	250	--	--
MAY												
08...	167	150	70	.6	--	.00	3.4	1.3	--	270	--	--
14...	90	75	20	.3	--	.00	3.9	.32	--	160	--	--
JUNE												
12...	151	150	100	2.0	--	.00	5.9	1.8	--	230	--	--
30...	95	69	24	.3	--	.01	4.6	.49	--	180	--	--
AUG.												
20...	116	83	40	.5	2.2	.17	1.5	.93	287	160	60	110

DATE	TOTAL NICKEL (NI) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.						
16...	560	0	210	4	.5	20
APR.						
17...	--	--	--	--	.1	9.4

04200550 BLACK RIVER BELOW ELYRIA, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1070	829	977	764	---	---	578	497	---	---	621	423
2	1280	1020	875	776	---	---	666	570	---	---	450	354
3	1020	947	851	770	---	---	682	616	---	---	396	354
4	1060	764	965	779	---	---	675	615	---	---	447	393
5	1010	748	871	835	652	613	697	652	---	---	426	402
6	1040	808	1050	851	664	604	731	677	747	726	468	408
7	1250	1030	1070	975	665	614	786	705	771	708	504	450
8	1190	1060	1140	1030	692	656	871	763	768	726	504	474
9	1140	946	1270	1100	728	653	863	734	777	738	474	306
10	1190	986	1380	1220	780	678	886	778	750	726	321	255
11	1270	1070	1230	1100	816	750	981	822	792	708	267	240
12	1380	1120	1180	1040	832	769	930	867	1070	792	357	267
13	1330	1210	1260	1160	925	772	920	857	1060	912	408	354
14	1240	1060	1330	1240	797	629	---	---	903	702	471	414
15	1240	1150	1340	1130	641	578	---	---	699	615	504	465
16	1340	1210	1260	1100	627	564	---	---	645	612	480	468
17	1810	1270	1250	1120	606	549	---	---	624	588	---	---
18	1410	1260	1240	1150	682	597	---	---	684	567	---	---
19	1250	1190	1150	1010	940	655	---	---	705	621	---	---
20	1180	1080	1170	1010	1270	858	---	---	612	468	---	---
21	1100	948	1190	791	824	539	---	---	486	447	---	---
22	948	855	1060	929	556	493	---	---	498	447	---	---
23	---	---	953	833	498	468	---	---	---	---	---	---
24	---	---	878	671	562	484	---	---	462	441	---	---
25	---	---	813	612	650	470	---	---	648	444	---	---
26	---	---	698	599	463	358	---	---	633	585	---	---
27	---	---	1000	617	383	338	---	---	654	594	---	---
28	---	---	---	---	375	339	---	---	633	609	---	---
29	---	---	837	678	478	355	---	---	---	---	---	---
30	1170	869	---	---	443	410	---	---	---	---	---	---
31	1130	977	---	---	520	433	---	---	---	---	---	---
MONTH	---	---	1380	599	1270	338	---	---	1070	441	---	---

[illegible]

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	4.3	9.1	6.1	---	---	15.0	13.3	---	---	10.8	10.6
2	5.8	2.3	---	---	---	---	15.0	13.2	---	---	10.7	9.5
3	5.2	3.1	---	---	---	---	15.0	12.9	---	---	12.7	8.7
4	3.5	0.9	---	---	---	---	14.1	12.6	---	---	12.3	9.0
5	5.4	0.5	---	---	10.3	9.4	14.7	12.8	---	---	11.9	8.1
6	5.6	3.7	9.8	7.3	12.1	10.4	15.0	11.3	13.3	12.4	11.8	9.1
7	5.3	2.2	9.0	6.4	12.7	12.2	15.0	13.7	13.3	12.2	11.9	9.0
8	4.1	1.8	---	---	12.7	12.4	14.5	12.5	13.2	12.2	12.1	11.1
9	3.0	0.2	---	---	12.6	12.1	---	---	13.5	12.7	12.7	11.7
10	0.3	0.0	---	---	12.6	12.2	---	---	13.8	12.6	12.8	12.2
11	0.0	0.0	---	---	12.9	12.0	---	---	13.7	12.7	12.8	12.2
12	0.0	0.0	---	---	12.2	11.5	---	---	13.4	12.6	12.5	12.0
13	0.0	0.0	---	---	11.6	10.1	---	---	13.7	12.1	13.6	12.4
14	0.0	0.0	---	---	13.2	10.9	---	---	13.2	12.2	12.8	12.3
15	0.0	0.0	---	---	13.8	13.3	---	---	13.6	12.4	12.4	11.9
16	5.2	0.0	---	---	13.8	13.6	---	---	13.1	12.1	11.8	11.8
17	4.6	1.4	---	---	13.8	11.1	---	---	13.2	12.7	13.7	13.0
18	2.1	0.6	---	---	13.3	13.1	---	---	---	---	13.1	12.4
19	2.9	0.6	---	---	13.8	13.3	---	---	11.8	10.0	12.4	12.1
20	2.9	0.1	---	---	13.6	12.4	---	---	13.4	9.9	12.5	11.9
21	3.6	1.8	---	---	14.6	13.9	---	---	13.7	12.8	12.1	11.9
22	2.2	1.7	---	---	14.9	14.5	---	---	12.8	12.0	12.4	12.0
23	---	---	---	---	14.8	14.3	---	---	---	---	12.1	11.9
24	---	---	---	---	14.8	14.6	---	---	13.7	12.1	12.7	12.2
25	---	---	---	---	15.0	14.4	---	---	14.2	13.7	12.9	12.3
26	---	---	---	---	15.0	15.0	---	---	14.0	13.4	12.5	12.0
27	---	---	---	---	15.0	15.0	---	---	14.2	13.0	12.4	12.0
28	---	---	---	---	15.0	15.0	---	---	12.9	10.8	12.3	11.9
29	---	---	---	---	15.0	12.4	---	---	---	---	12.0	11.3
30	5.9	5.2	---	---	15.0	14.8	---	---	---	---	11.3	11.1
31	7.9	6.8	---	---	15.0	14.1	---	---	---	---	11.8	11.1
MONTH	---	---	---	---	15.0	9.4	---	---	---	---	13.7	8.1
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.8	11.0	10.4	6.9	5.9	4.9	---	---	0.0	0.0	6.2	3.7
2	11.1	10.4	9.4	5.1	7.7	5.9	---	---	0.6	0.0	6.0	3.7
3	12.0	10.4	6.8	5.5	6.5	5.4	---	---	5.2	0.8	5.3	2.4
4	11.3	10.8	7.1	5.3	5.5	3.5	---	---	5.3	1.3	5.3	4.5
5	11.5	11.3	8.2	5.4	6.2	2.5	---	---	3.4	1.6	5.9	3.5
6	11.9	11.4	8.2	6.1	5.9	1.5	---	---	3.8	1.4	6.5	3.6
7	11.8	10.5	7.9	6.4	1.5	0.1	---	---	5.0	1.9	6.2	4.5
8	11.6	10.5	8.7	6.7	4.7	0.2	---	---	4.2	1.8	8.0	5.1
9	11.2	10.7	7.8	6.7	8.7	1.3	---	---	3.3	0.8	8.4	5.3
10	11.3	10.8	8.8	7.3	5.8	0.9	---	---	3.1	0.2	6.5	4.4
11	11.3	10.5	7.5	5.9	5.2	0.2	---	---	3.9	0.3	5.5	3.7
12	10.5	9.8	9.8	6.0	3.1	0.1	---	---	3.3	0.3	4.9	3.1
13	9.9	8.9	9.9	9.5	---	---	---	---	6.3	0.3	3.0	1.0
14	8.9	8.3	9.5	8.5	---	---	---	---	6.5	4.9	6.1	1.9
15	9.5	8.8	8.5	7.2	---	---	---	---	6.1	4.8	5.8	4.0
16	9.9	9.4	7.8	7.1	2.7	1.8	---	---	4.8	2.0	4.9	3.6
17	9.5	9.0	7.3	6.9	8.2	1.9	---	---	5.1	1.8	3.6	1.7
18	9.3	8.6	6.9	6.6	6.5	4.4	---	---	5.7	4.9	3.2	0.9
19	9.3	8.4	8.5	6.5	5.9	3.2	---	---	5.4	4.6	1.7	0.1
20	9.2	8.2	8.0	6.8	5.2	4.4	---	---	4.6	2.2	4.3	0.0
21	8.7	7.8	6.7	4.6	4.7	3.7	---	---	3.0	0.2	4.5	1.4
22	8.1	7.5	4.8	2.1	4.7	3.7	---	---	0.6	0.0	5.9	1.1
23	8.8	7.5	5.6	2.7	6.4	3.6	---	---	0.3	0.0	6.3	5.0
24	9.5	8.3	---	---	6.4	5.9	---	---	5.0	0.2	5.1	3.4
25	9.6	8.1	---	---	6.2	5.4	---	---	5.5	2.4	4.5	3.4
26	9.3	7.4	---	---	5.7	4.3	---	---	5.2	2.4	3.8	2.6
27	9.9	7.0	---	---	5.3	4.4	---	---	3.7	2.0	3.9	1.0
28	10.2	6.3	---	---	4.6	2.8	---	---	5.4	3.5	6.3	2.7
29	9.6	5.7	7.8	6.7	3.8	3.4	---	---	5.1	1.7	9.8	5.6
30	7.2	4.2	7.0	6.0	---	---	---	---	5.0	1.4	7.6	6.7
31	---	---	6.2	4.7	---	---	2.2	0.0	5.6	2.2	---	---
MONTH	12.0	4.2	10.4	2.1	8.7	0.1	---	---	6.5	0.0	9.8	0.0
YEAR	15.0	0.0										



04200550 BLACK RIVER BELOW ELYRIA, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19.5	17.5	13.5	11.5	6.5	5.5	1.0	0.0	---	---	2.5	2.0
2	19.5	18.5	12.0	11.0	5.5	4.5	1.5	0.5	---	---	3.0	2.0
3	20.5	18.0	12.0	11.0	6.5	4.0	0.5	0.0	---	---	6.5	3.0
4	21.0	19.0	11.5	10.5	8.5	6.0	1.0	0.0	---	---	8.5	6.5
5	20.5	18.5	10.5	9.5	9.0	7.5	1.0	0.5	---	---	9.5	8.5
6	19.0	17.0	10.5	8.5	7.5	5.5	1.0	0.5	1.5	0.0	8.5	8.0
7	19.0	17.5	8.5	6.5	5.5	4.5	1.5	0.5	1.0	0.0	9.0	8.0
8	20.0	18.0	9.5	7.0	5.0	4.0	1.5	1.0	1.0	0.0	8.5	7.5
9	20.5	18.5	9.0	6.0	5.0	3.5	---	---	1.0	0.0	7.5	6.5
10	21.0	18.5	8.0	6.0	5.0	3.5	---	---	1.0	0.5	8.5	7.0
11	21.0	18.5	7.5	5.0	4.0	3.0	---	---	1.5	0.5	8.0	6.5
12	22.0	19.5	9.0	6.0	3.5	2.0	---	---	1.0	0.0	6.5	5.5
13	21.5	20.5	10.5	7.5	5.5	2.0	---	---	4.0	0.0	5.5	4.0
14	21.0	19.0	12.5	10.0	4.5	2.0	---	---	3.0	2.0	4.5	3.0
15	21.0	19.5	15.0	12.0	2.0	1.5	---	---	2.5	2.0	4.5	3.5
16	20.0	16.0	13.0	10.5	1.5	1.0	---	---	3.0	2.0	4.0	4.0
17	16.5	14.5	10.0	8.0	1.0	0.5	---	---	3.0	1.5	4.5	4.0
18	16.5	14.0	9.5	7.5	1.5	1.0	---	---	2.0	1.0	4.5	3.5
19	16.0	13.5	10.0	7.5	2.0	1.0	---	---	3.0	1.5	5.0	4.0
20	16.0	14.5	10.0	8.0	3.5	1.5	---	---	2.0	1.5	5.5	4.0
21	17.0	14.0	11.0	8.5	1.5	1.0	---	---	2.0	1.0	5.5	4.0
22	15.5	13.5	9.5	8.0	1.5	1.0	---	---	4.0	2.5	6.0	3.5
23	---	---	9.5	7.5	1.5	1.0	---	---	---	---	5.0	3.5
24	---	---	10.0	8.0	1.5	1.0	---	---	7.0	2.5	5.5	3.0
25	---	---	10.0	8.5	2.5	1.0	---	---	3.0	2.0	4.5	2.0
26	---	---	9.0	8.5	3.5	1.5	---	---	3.0	1.5	4.5	1.5
27	---	---	10.0	8.5	6.0	3.5	---	---	3.5	1.5	4.0	2.5
28	---	---	11.5	10.0	6.0	6.0	---	---	2.0	1.0	4.0	3.5
29	---	---	10.5	7.5	5.5	3.0	---	---	---	---	5.0	3.5
30	15.0	14.0	7.5	6.5	3.0	1.0	---	---	---	---	6.5	5.0
31	14.0	13.0	---	---	1.0	0.0	---	---	---	---	6.5	6.0
MONTH	---	---	15.0	5.0	9.0	0.0	---	---	7.0	0.0	9.5	1.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.5	5.0	18.5	15.0	19.5	18.0	20.0	19.0	25.5	23.0	24.0	22.0
2	9.0	6.5	15.5	14.0	20.5	17.5	20.5	19.5	26.0	23.5	22.5	21.5
3	11.0	8.5	15.0	14.0	21.5	18.0	24.0	20.5	25.0	24.0	21.5	20.0
4	12.5	11.0	16.0	13.0	22.0	18.5	26.0	23.0	24.5	23.0	21.0	19.0
5	12.5	10.0	15.5	12.5	23.0	19.5	25.5	23.5	24.5	21.5	20.5	18.5
6	10.0	8.5	14.0	12.0	22.5	20.5	25.5	21.5	25.0	21.5	21.0	18.0
7	8.0	7.0	15.0	11.0	24.0	21.0	26.0	22.0	24.5	22.0	21.5	18.5
8	7.0	5.0	12.5	11.0	23.0	21.5	26.0	23.0	24.5	23.0	21.5	19.5
9	6.0	4.5	11.5	11.0	24.5	21.5	28.0	24.5	25.0	22.5	22.0	20.0
10	6.0	4.0	13.0	10.5	24.0	22.0	27.5	25.5	25.5	23.0	22.0	20.5
11	7.0	5.5	14.0	11.0	22.0	20.0	27.0	24.5	25.0	23.5	24.0	21.0
12	8.5	7.0	14.0	13.0	22.5	19.0	26.0	23.0	26.0	23.0	23.0	22.0
13	12.0	9.0	13.5	13.0	21.0	19.5	26.0	23.0	26.0	22.5	23.0	22.0
14	14.5	10.5	16.0	13.0	22.5	19.5	27.5	24.0	22.5	20.5	22.5	20.5
15	14.0	12.0	16.5	15.0	21.5	19.5	27.0	24.5	22.5	20.5	21.5	18.5
16	13.5	11.5	17.0	15.5	20.0	18.5	26.0	23.5	23.5	21.0	22.0	19.5
17	13.5	11.0	18.0	17.0	19.5	17.5	25.0	22.5	23.0	21.5	22.0	19.5
18	13.5	11.0	19.5	17.0	19.5	17.5	25.0	23.5	23.0	22.0	22.0	19.0
19	14.0	11.0	19.5	17.5	19.0	18.0	26.0	24.5	24.0	22.0	21.0	17.5
20	14.0	10.5	20.0	17.0	21.0	18.0	26.5	24.5	25.5	22.5	20.0	19.0
21	14.5	11.5	21.0	17.5	22.0	20.0	25.5	22.0	26.5	23.0	19.5	17.5
22	13.5	13.0	20.0	19.0	21.0	20.0	23.5	22.0	26.5	23.5	18.5	16.5
23	13.0	11.5	23.0	19.0	20.5	19.0	23.0	22.0	26.5	24.0	17.5	14.5
24	13.5	10.5	22.0	19.5	20.0	18.5	25.0	22.0	26.5	24.0	17.5	14.0
25	12.5	10.0	20.0	18.0	20.0	17.5	24.5	22.5	26.0	23.5	18.0	15.0
26	14.5	11.0	20.5	17.0	20.5	18.5	25.5	23.0	26.0	23.0	18.5	15.0
27	15.5	12.0	20.5	16.5	21.5	18.5	26.0	23.5	25.5	24.5	19.5	16.5
28	16.5	14.0	18.5	17.0	20.0	19.0	26.0	24.0	25.0	22.5	19.0	17.0
29	17.5	15.0	17.5	16.5	20.0	18.5	25.5	23.0	23.0	22.0	17.5	16.0
30	16.5	15.5	18.5	16.5	19.5	18.5	25.5	22.0	24.5	22.0	16.0	15.0
31	---	---	19.5	18.0	---	---	25.5	22.5	24.0	22.5	---	---
MONTH	17.5	4.0	23.0	10.5	24.5	17.5	28.0	19.0	26.5	20.5	24.0	14.0
YEAR	28.0	0.0										

## STREAMS TRIBUTARY TO LAKE ERIE

333

## 04201500 ROCKY RIVER NEAR BEREHA, OHIO

LOCATION.--Lat 41°24'24", long 81°53'14", in T.6 N., R.15 W., Cuyahoga County, at gaging station on right bank at downstream side of Cedar Point Road Bridge in Rocky River Reservation just downstream from confluence of East and West Branches, and 3.0 mi (4.8 km) northwest of Berea. Sediment samples taken at bridge 2,400 ft (732 m) downstream.

DRAINAGE AREA.--267 mi<sup>2</sup> (692 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1965-74 (partial-record station).

Sediment records: July 1969 to September 1971 (partial-record station), October 1971 to September 1972, water years 1973, 1974 (partial-record station).

REMARKS.--Flow affected by ice Dec. 11, 12, Jan. 1, 3-15, Feb. 6-14, 27. Some regulation at low flow by small reservoirs on East Branch.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
DEC., 1973												
13...	1415	110	3.5	--	739	8.4	--	--	--	--	--	--
FEB., 1974												
22...	1325	876	3.5	--	--	7.8	--	44	13	--	--	--
APR.												
23...	1525	330	15.5	--	--	7.4	--	62	16	--	--	0
AUG.												
22...	1515	30	28.5	9.8	650	8.4	5.6	50	16	49	6.7	4

DATE	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
DEC., 1973												
13...	--	130	68	--	--	.00	4.0	--	--	--	--	--
FEB., 1974												
22...	--	86	66	--	--	.00	1.6	--	--	140	--	--
APR.												
23...	120	96	100	--	--	.00	1.8	--	--	220	--	--
AUG.												
22...	136	96	66	.5	1.2	.35	1.8	1.4	361	190	20	30

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PEN- DED SED- IMENT (MG/L)	SUS- PEN- DED SED- IMENT DIS- CHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00
Nov. 26...	1205	8.0	1060	291	833	64	76	83	91	96	98	99	100	--	--
Apr. 04...	0700	8.0	3720	1480	14900	35	45	56	65	76	82	82	88	94	100
May 30...	1200	18.0	1140	233	717	50	64	77	86	92	95	95	96	98	100

## STREAMS TRIBUTARY TO LAKE ERIE

04201500 ROCKY RIVER NEAR BERE, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	76	--	--	816	95	209	330	--	--
2	122	54	18	432	60	70	207	--	--
3	161	41	18	199	30	16	161	--	--
4	81	33	7.2	128	16	5.5	147	--	--
5	99	25	6.7	89	10	2.4	252	35	24
6	131	--	--	74	10	2.0	270	31	23
7	65	--	--	63	10	1.7	164	22	9.7
8	43	--	--	48	9	1.2	122	14	4.6
9	30	--	--	50	10	1.4	108	13	3.8
10	35	5	.47	54	10	1.5	97	13	3.4
11	31	4	.33	56	10	1.5	85	13	3.0
12	28	3	.23	58	10	1.6	80	15	3.2
13	30	2	.16	72	10	1.9	119	15	4.8
14	45	2	.24	72	17	3.3	712	--	--
15	58	2	.31	81	18	3.9	444	--	--
16	41	2	.22	94	--	--	234	--	--
17	33	2	.18	105	--	--	164	--	--
18	22	2	.12	84	--	--	125	--	--
19	21	3	.17	74	--	--	116	10	3.1
20	17	3	.14	67	--	--	697	--	--
21	18	3	.15	134	34	12	1660	--	--
22	16	3	.13	256	41	28	607	--	--
23	16	3	.13	164	33	15	385	--	--
24	16	2	.09	147	25	9.9	266	--	--
25	15	2	.08	767	257	764	659	--	--
26	17	2	.09	1140	272	931	1690	160	730
27	21	3	.17	408	62	68	1840	--	--
28	89	--	--	1050	149	476	792	--	--
29	164	63	28	1770	302	1440	502	--	--
30	299	121	121	651	--	--	475	--	--
31	767	114	236	--	--	--	325	--	--
TOTAL	2607	--	--	9203	--	--	13835	--	--
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	250	--	--	280	--	--	1390	--	--
2	212	--	--	229	--	--	1470	--	--
3	180	--	--	195	--	--	1050	128	363
4	150	--	--	161	--	--	975	--	--
5	130	10	3.5	128	--	--	1130	--	--
6	120	9	2.9	110	--	--	656	--	--
7	110	8	2.4	100	--	--	595	--	--
8	100	8	2.2	95	--	--	1030	--	--
9	90	9	2.2	95	--	--	2020	--	--
10	85	--	--	95	7	1.8	3450	591	5810
11	85	--	--	100	5	1.4	1080	--	--
12	85	--	--	110	5	1.5	575	--	--
13	90	--	--	150	--	--	382	--	--
14	100	--	--	350	--	--	279	--	--
15	110	--	--	396	--	--	273	--	--
16	542	161	236	247	18	12	1690	--	--
17	1190	--	--	207	17	9.5	927	--	--
18	959	--	--	161	17	7.4	483	--	--
19	6200	939	16000	299	--	--	420	--	--
20	2360	385	2450	759	--	--	397	--	--
21	1400	130	491	502	--	--	307	--	--
22	1000	91	246	1050	60	170	295	--	--
23	1160	--	--	883	--	--	293	--	--
24	1070	--	--	420	--	--	292	--	--
25	536	--	--	271	--	--	264	--	--
26	385	--	--	224	--	--	288	8	6.2
27	884	261	645	200	--	--	542	--	--
28	674	117	213	482	--	--	392	16	14
29	1050	102	289	--	--	--	320	55	115
30	614	--	--	--	--	--	777	83	201
31	396	--	--	--	--	--	898	--	--
TOTAL	22317	--	--	8299	--	--	24940	--	--

## STREAMS TRIBUTARY TO LAKE ERIE

335

04201500 ROCKY RIVER NEAR BEREA, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	506	29	40	316	29	25	266	39	28
2	1510	537	2790	227	12	7.4	189	30	15
3	929	291	730	164	10	4.4	129	18	6.3
4	2790	866	7110	151	9	3.7	101	15	4.1
5	1100	201	597	114	9	2.8	80	15	3.2
6	749	64	129	154	25	10	65	15	2.6
7	613	--	--	257	52	36	57	15	2.3
8	492	--	--	236	--	--	49	15	2.0
9	537	--	--	447	--	--	54	15	2.2
10	814	--	--	396	--	--	39	15	1.6
11	595	--	--	278	--	--	37	--	--
12	394	--	--	2790	--	--	51	--	--
13	295	--	--	1800	248	1210	40	--	--
14	239	--	--	568	55	84	40	--	--
15	314	13	11	313	28	24	97	--	--
16	266	12	8.6	216	16	9.3	302	132	108
17	199	10	5.4	162	15	6.6	225	63	38
18	165	9	4.0	149	14	5.6	141	24	9.1
19	148	9	3.6	127	12	4.1	193	84	72
20	127	9	3.1	102	13	3.6	379	158	162
21	100	9	2.4	85	12	2.8	189	66	34
22	162	20	8.7	81	11	2.4	98	33	8.7
23	314	33	28	93	10	2.5	131	38	13
24	236	13	8.3	122	10	3.3	184	47	23
25	179	6	2.9	112	9	2.7	97	19	5.0
26	140	5	1.9	72	8	1.6	288	--	--
27	120	4	1.3	55	8	1.2	608	--	--
28	90	4	.97	46	9	1.1	224	--	--
29	81	5	1.1	1250	221	1170	235	44	28
30	163	23	10	1410	235	1080	447	--	--
31	--	--	--	383	63	65	--	--	--
TOTAL	14367	--	--	12676	--	--	5035	--	--
DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1640	--	--	21	9	.51	58	--	--
2	508	105	144	18	12	.58	41	10	1.1
3	220	35	21	36	23	2.2	134	45	19
4	138	23	8.6	50	27	3.6	119	32	10
5	122	23	7.6	41	22	2.4	76	16	3.3
6	91	19	4.7	36	--	--	47	10	1.3
7	69	10	1.9	27	--	--	33	10	.89
8	50	7	.95	36	--	--	27	10	.73
9	41	8	.89	69	--	--	24	12	.78
10	84	19	4.3	43	--	--	41	--	--
11	89	16	3.8	45	--	--	36	--	--
12	58	16	2.5	43	25	2.9	33	--	--
13	43	11	1.3	67	--	--	38	--	--
14	38	11	1.1	450	--	--	36	--	--
15	72	12	2.3	154	--	--	31	--	--
16	52	9	1.3	67	--	--	24	6	.39
17	38	6	.62	290	--	--	20	6	.32
18	31	5	.42	238	--	--	89	--	--
19	28	5	.38	91	71	17	56	--	--
20	25	5	.34	48	--	--	81	--	--
21	21	8	.45	38	--	--	97	--	--
22	20	10	.54	30	--	--	125	--	--
23	28	14	1.1	27	--	--	79	27	5.8
24	27	13	.95	33	8	.71	47	14	1.8
25	27	10	.73	25	6	.41	35	10	.95
26	24	9	.58	21	6	.34	28	10	.76
27	20	8	.43	47	--	--	25	10	.68
28	18	8	.39	89	--	--	116	62	22
29	52	45	13	141	--	--	67	29	5.2
30	41	76	8.4	216	--	--	52	14	2.0
31	27	23	1.7	89	--	--	--	--	--
TOTAL	3742	--	--	2626	--	--	1715	--	--

## STREAMS TRIBUTARY TO LAKE ERIE

## 04206000 CUYAHOGA RIVER AT OLD PORTAGE, OHIO

LOCATION.--Lat 41°08'08", long 81°32'50", Summit County, at gaging station on right bank 230 ft (70 m) upstream from North Portage Path Bridge at Old Portage, 1.2 mi (1.9 km) downstream from Little Cuyahoga River, and 4.0 mi (6.4 km) northwest of Akron City Hall. Sampling site at North Portage Path Bridge.

DRAINAGE AREA.--404 mi<sup>2</sup> (1,046 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1966-67, 1969-70 (partial-record station), October 1970 to September 1974.

Water temperatures: October 1970 to September 1974.

Sediment records: March 1972 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,220 micromhos Feb. 6; minimum, 251 micromhos Apr. 2.

pH: Maximum, 8.6 Dec. 20; minimum, 6.7 Aug. 28.

Dissolved oxygen: Maximum, 13.3 mg/l Dec. 24; minimum, 1.2 mg/l Aug. 3.

Water temperatures: Maximum, 30.5°C July 10; minimum, 1.5°C Dec. 22, 23, Jan. 2, Feb. 26.

Sediment concentrations: Maximum daily, 798 mg/l Apr. 2; minimum daily, 2 mg/l July 29, 30, Aug. 1.

Sediment discharges: Maximum daily, 6,310 tons (5,720 tonnes) Apr. 2; minimum daily, 0.50 ton (0.45 tonne) July 29, 30.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
03...	1320	252	23.0	--	899	8.5	--	--	--	--	--	3
28...	2045	446	19.0	--	620	8.3	--	--	--	--	--	0
NOV.												
18...	2050	248	11.0	--	598	8.1	--	--	--	--	--	0
29...	1945	784	10.0	--	466	7.9	--	--	--	--	--	0
DEC.												
03...	1040	672	7.5	--	428	8.2	--	--	--	--	--	0
19...	0900	268	--	--	571	8.1	--	--	--	--	--	0
JAN.												
16...	1030	280	5.0	--	761	7.3	--	51	11	--	--	0
27...	1600	1030	1.0	--	346	6.9	--	38	8.4	--	--	0
FEB.												
04...	1210	440	4.0	--	478	7.7	--	45	11	--	--	0
12...	1800	280	5.0	--	1040	8.0	--	58	14	--	--	0
MAR.												
01...	1115	739	4.5	--	505	7.3	--	48	27	--	--	0
11...	1700	1980	5.0	--	347	7.6	--	36	7.3	--	--	0
APR.												
06...	1530	1840	--	--	301	7.2	--	32	6.8	--	--	0
29...	1500	326	--	--	529	7.2	--	51	11	--	--	0
MAY												
07...	1330	410	--	--	483	7.3	--	49	10	--	--	0
16...	1800	1490	--	--	306	7.0	--	36	7.0	--	--	0
JUNE												
18...	1800	206	--	--	719	7.2	--	74	16	--	--	0
30...	0630	240	--	--	417	7.2	--	44	10	--	--	0
SEP.												
10...	0945	187	20.0	7.5	592	8.0	7.3	56	13	41	4.6	0

DATE	TIME	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.			
24...	1045	<.5	--
APR.			
17...	0830	.0	6.4



## 04206000 CUYAHOGA RIVER AT OLD FORTAGE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1970-74): Maximum, 2,710 micromhos Feb. 5, 1971; minimum, 120 micromhos July 20, 1973.  
 pH (1970-74): Maximum, 8.7 July 4, 1973; minimum, 6.2 July 3, 1973.  
 Dissolved oxygen (1970-74): Maximum, 15.0 mg/l or higher Jan. 6-10, Feb. 11, 1973; minimum, 0.2 mg/l Aug. 19, 1972.  
 Water temperatures (1970-74): Maximum, 34.0°C Aug. 28, 29, 1973; minimum, freezing point Jan. 16, 31, Dec. 17, 18, 1972, Jan. 8, 1973.  
 Sediment concentrations: Maximum daily, 798 mg/l Apr. 2, 1974; minimum daily, 1 mg/l Sept. 10, 1973.  
 Sediment discharges: Maximum daily, 6,310 tons (5,720 tonnes) Apr. 2, 1974; minimum daily, 0.15 ton (0.14 tonne) Sept. 10, 1973.

REMARKS.--Water-quality recorder operated since October 1970. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected four times during the year to further define the quality of water. Natural flow of stream affected by diversions, storage reservoirs and power plants.

REVISIONS.--Revised figures for pH in water year 1972 superseding those previously published are given herewith: Change pH minimum value from 4.4 to 7.6 on Jan. 27, 1972. Change minimum pH extremes, period of record, from 4.4 Jan. 27, 1972 to 6.6 Mar. 3, 1971. Revised figures for pH in water year 1973 superseding those previously published are given herewith: Change minimum pH extremes, period of record, from 4.4 Jan. 27, 1972 to 6.2 July 3, 1973.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
03...	157	100	140	.3	--	.00	2.1	--	--	--	--	--
28...	133	74	76	.2	--	.00	1.8	--	--	--	--	--
NOV.												
18...	137	77	68	--	--	--	--	--	--	--	--	--
29...	109	68	45	--	--	.00	1.4	--	--	--	--	--
DEC.												
03...	108	64	37	.1	--	.01	1.2	--	--	--	--	--
19...	119	69	71	.2	--	.01	1.4	--	--	--	--	--
JAN.												
16...	124	76	120	.2	--	.00	.98	--	--	170	--	--
27...	76	53	32	.1	--	.00	.22	--	--	130	--	--
FEB.												
04...	95	58	59	.4	--	.00	1.5	--	--	160	--	--
12...	122	74	210	.4	--	.01	1.9	--	--	200	--	--
MAR.												
01...	105	60	67	.2	--	.00	1.1	--	--	230	--	--
11...	71	48	37	.2	--	.00	.84	--	--	120	--	--
APR.												
06...	68	46	27	.3	--	.01	.63	--	--	110	--	--
29...	119	64	61	.4	--	.00	1.0	--	--	170	--	--
MAY												
07...	121	57	54	.2	--	.00	1.0	--	--	160	--	--
16...	84	44	27	.2	--	.00	.50	--	--	120	--	--
JUNE												
18...	159	85	96	.8	--	.00	2.0	--	--	250	--	--
30...	110	51	44	.9	--	.00	1.1	--	--	150	--	--
SEP.												
10...	156	59	73	.3	.41	.06	.65	.17	331	190	20	100

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00
Oct.															
02...	1800	--	1080	1620	4720	19	28	38	55	74	92	94	99	100	--
Nov.															
26...	1200	9.0	616	43	72	42	52	61	67	74	80	81	90	97	100
Jan.															
20...	1030	3.0	1760	130	618	34	41	49	57	65	71	73	80	92	100
Mar.															
10...	1640	9.0	18	126	6.3	32	45	54	64	73	81	81	87	94	100
Apr.															
02...	1130	9.0	1950	370	1950	49	63	73	80	83	87	88	92	97	100

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAMPLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.00 MM
Mar.												
06...	--	1	1	2	17	38	51	68	84	100	--	--
06...	--	0	0	2	10	17	22	29	36	44	100	--
Sept.												
10...	--	1	1	8	11	12	12	14	16	23	44	100
10...	--	2	2	12	15	16	17	19	21	26	36	100

## 04206000 CUYAHOGA RIVER AT CLD PORTAGE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	760	380	518	485	476	461	476	458	421	322	524	476
2	850	620	498	468	475	442	470	449	437	326	488	428
3	900	770	495	477	453	408	467	455	444	414	438	333
4	790	700	493	481	476	449	489	455	479	439	387	342
5	720	500	493	460	481	434	575	458	484	439	394	355
6	640	600	511	481	455	440	487	469	1220	461	445	367
7	640	610	511	481	461	440	546	486	1050	652	381	366
8	650	590	532	487	461	452	587	554	662	629	426	357
9	660	620	598	532	467	449	733	586	667	640	393	339
10	680	640	586	553	---	---	696	648	668	584	387	324
11	680	660	580	553	506	482	756	666	892	631	381	321
12	750	660	601	550	518	500	713	665	995	716	337	313
13	740	360	595	577	656	512	690	606	844	706	358	316
14	690	520	580	529	557	530	666	612	716	665	365	299
15	740	680	571	490	542	530	882	679	691	607	420	306
16	740	700	580	550	554	542	801	675	653	539	---	---
17	760	720	577	538	554	536	678	651	565	538	---	---
18	780	740	574	541	575	536	660	543	575	539	---	---
19	790	760	577	553	551	524	534	405	685	550	---	---
20	780	670	577	472	713	539	393	309	656	578	363	360
21	780	710	562	511	662	563	379	295	619	574	454	364
22	760	720	553	523	593	536	374	299	634	553	434	404
23	740	710	610	529	539	506	363	294	609	555	420	399
24	762	696	562	535	506	485	380	296	566	509	720	405
25	795	744	547	472	578	488	306	294	677	533	547	451
26	816	783	499	472	527	473	337	295	589	496	470	449
27	801	789	487	454	494	461	359	293	496	460	462	432
28	804	480	475	421	461	443	399	309	611	458	455	431
29	718	655	472	460	443	428	415	325	---	---	457	424
30	691	535	462	453	431	419	437	392	---	---	444	426
31	554	512	---	---	494	416	417	327	---	---	437	392
MONTH	900	360	610	421	713	408	882	293	1220	322	720	299

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## 04206000 CUYAHOGA RIVER AT OLD PORTAGE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.3	4.5	10.7	10.1	11.4	11.1	12.4	12.1	10.7	10.2	11.8	11.1
2	8.4	6.4	10.9	10.4	11.5	11.1	12.4	11.8	10.9	10.3	11.8	11.5
3	8.0	6.0	11.1	10.4	11.5	10.5	11.8	10.7	11.1	10.6	11.9	11.3
4	7.4	6.5	11.5	10.9	10.7	10.0	13.1	10.6	12.4	11.0	11.2	10.4
5	7.7	6.0	12.2	11.5	10.5	10.0	13.2	12.7	12.2	11.7	11.0	10.0
6	8.3	7.0	12.8	11.7	10.8	10.3	13.0	12.6	11.9	11.2	12.0	10.8
7	8.5	7.1	13.1	11.9	11.0	10.6	12.9	12.6	12.1	11.2	11.7	10.8
8	8.6	7.1	13.1	11.6	11.0	10.6	12.8	11.6	12.0	11.5	11.5	10.7
9	8.4	6.4	12.7	11.8	11.0	10.6	12.4	11.0	12.1	11.6	11.5	10.0
10	8.4	6.1	13.0	12.0	12.3	10.6	12.4	10.7	12.0	11.6	11.7	10.6
11	8.8	6.1	13.0	11.6	12.1	10.6	11.5	10.7	12.4	11.4	11.9	11.7
12	8.7	6.0	12.7	10.5	12.0	10.6	12.7	10.8	11.7	10.6	12.1	11.9
13	8.0	4.3	11.5	10.6	11.2	10.1	12.8	11.3	11.6	10.7	12.7	11.8
14	7.7	5.7	11.4	10.0	12.1	10.2	12.4	10.6	11.9	10.8	12.0	11.5
15	8.6	7.1	10.2	8.5	12.1	10.5	11.4	10.4	11.9	11.0	11.7	11.1
16	9.1	7.7	10.5	9.2	12.2	10.9	12.0	10.8	11.9	11.1	11.6	11.1
17	9.3	8.0	11.1	10.1	12.4	12.1	12.2	10.8	12.2	11.3	12.1	11.6
18	9.6	8.6	12.4	10.1	12.3	11.7	12.1	11.0	12.4	10.8	11.9	11.2
19	9.9	8.1	10.3	10.1	12.6	11.7	12.8	11.5	10.9	10.2	11.6	11.2
20	8.9	8.1	10.2	9.5	12.1	11.5	13.2	12.7	11.6	10.4	11.8	11.3
21	9.8	8.2	9.9	8.9	12.8	12.1	12.7	11.4	11.3	10.2	11.3	11.0
22	10.7	7.8	10.4	9.6	13.2	12.6	12.3	11.8	10.6	9.8	11.6	10.9
23	10.8	7.9	10.7	10.2	13.2	12.9	11.9	11.6	11.5	10.7	11.3	10.7
24	10.4	7.8	10.4	9.8	13.3	12.9	12.4	11.4	12.2	11.0	12.0	11.2
25	10.7	7.5	10.9	9.7	13.0	12.4	11.6	11.3	12.4	11.6	12.2	11.3
26	10.5	7.6	11.1	10.6	12.4	11.0	11.3	10.6	12.6	11.8	11.7	10.9
27	9.2	7.6	10.7	9.7	12.0	11.6	10.3	10.1	12.3	11.6	11.5	10.6
28	8.9	7.4	10.7	10.2	12.3	11.8	11.0	9.7	11.7	10.8	11.2	10.4
29	8.9	8.3	11.4	10.6	12.2	11.9	10.4	9.9	---	---	10.9	10.0
30	9.7	8.9	11.2	10.6	12.6	12.1	10.4	9.8	---	---	10.6	10.1
31	10.2	9.7	---	---	12.5	12.1	10.4	9.8	---	---	11.1	10.4
MONTH	10.8	4.3	13.1	8.5	13.3	10.0	13.2	9.7	12.6	9.8	12.7	10.0

[illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.0	18.0	14.0	12.5	8.0	7.5	3.0	2.0	6.0	5.5	4.5	3.0
2	23.0	19.0	13.0	12.0	7.5	6.0	3.0	1.5	6.0	5.0	3.0	3.0
3	---	---	13.0	11.0	8.0	6.5	2.5	2.0	5.0	4.0	4.5	3.0
4	---	---	11.5	10.5	9.5	8.0	3.0	2.0	4.0	3.0	7.5	4.5
5	---	---	11.0	10.5	10.0	9.0	3.0	2.0	3.5	3.0	8.5	7.5
6	---	---	11.0	10.0	10.0	9.0	3.0	2.5	4.5	3.0	8.0	7.0
7	---	---	10.5	10.0	9.0	8.0	3.5	2.0	4.5	3.0	9.5	7.5
8	---	---	10.0	9.5	8.5	8.0	4.0	2.5	4.0	3.5	10.5	9.0
9	---	---	10.0	9.0	8.0	7.0	5.5	3.5	4.0	3.0	11.0	9.0
10	---	---	9.5	9.5	7.5	6.5	6.0	3.5	3.5	2.5	10.0	9.0
11	---	---	9.5	8.5	8.0	6.5	6.0	5.0	2.5	2.5	9.5	8.0
12	---	---	8.5	8.0	7.5	6.5	5.5	4.0	6.0	4.0	8.5	8.0
13	---	---	10.0	9.0	8.0	7.0	5.0	4.0	7.0	5.0	8.0	6.5
14	---	---	11.0	9.5	7.5	6.0	6.0	4.0	7.0	5.0	7.0	5.5
15	---	---	14.5	11.0	7.5	6.0	7.0	6.0	7.0	5.0	7.5	6.5
16	---	---	12.5	11.5	6.0	4.5	6.5	5.5	5.5	4.5	7.5	5.5
17	---	---	11.5	10.5	4.5	3.5	6.0	5.0	4.5	3.5	6.5	5.0
18	---	---	11.0	10.5	5.0	3.5	6.5	5.0	5.5	3.0	6.5	5.5
19	---	---	11.0	10.5	5.0	4.5	6.0	3.0	7.5	5.0	7.0	6.5
20	---	---	11.0	10.5	5.5	4.0	3.0	2.0	8.0	5.5	7.5	6.0
21	---	---	12.5	10.5	4.0	3.0	5.0	3.0	8.5	6.0	7.5	6.5
22	---	---	11.5	9.5	3.5	1.5	4.5	3.5	8.5	6.5	7.5	6.0
23	---	---	10.0	9.5	2.0	1.5	5.0	4.0	6.5	5.5	7.5	5.5
24	18.0	16.5	10.5	9.5	2.5	2.0	5.0	3.0	5.5	4.0	6.5	5.0
25	18.5	16.0	10.0	9.5	3.0	2.0	3.5	2.5	3.5	2.0	7.0	5.0
26	18.5	17.0	10.0	9.0	6.5	3.0	4.0	3.0	2.5	1.5	7.0	5.5
27	19.5	17.5	12.0	9.5	5.5	4.5	5.5	4.0	3.5	2.5	8.5	6.5
28	18.5	15.5	11.5	9.5	5.0	4.0	6.0	5.5	4.5	2.5	9.0	7.0
29	19.0	17.0	10.5	9.5	4.5	3.5	6.5	5.5	---	---	9.0	7.5
30	17.0	15.5	9.5	8.0	4.0	2.5	6.5	6.0	---	---	8.5	8.0
31	15.5	14.0	---	---	3.0	2.0	6.5	5.5	---	---	8.0	6.5
MONTH	---	---	14.5	8.0	10.0	1.5	7.0	1.5	8.5	1.5	11.0	3.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.5	6.5	19.5	18.0	21.0	20.0	23.5	21.0	28.5	24.0	22.5	21.0
2	11.0	8.5	19.0	18.0	---	---	24.5	23.0	29.0	25.5	21.0	20.5
3	10.5	9.0	18.0	17.5	---	---	26.5	23.5	27.0	24.5	20.5	19.5
4	13.0	10.5	19.0	16.5	---	---	26.5	24.5	27.0	25.0	20.0	18.5
5	13.0	11.5	18.0	16.5	26.0	23.5	26.5	25.0	26.5	24.0	19.0	17.5
6	11.5	10.0	17.5	16.0	25.5	23.5	27.0	25.0	28.5	24.5	19.5	17.5
7	11.0	9.5	17.5	15.5	28.5	25.0	28.0	25.0	28.0	25.5	20.5	19.0
8	10.5	9.0	16.0	15.5	27.5	25.5	---	---	28.0	24.0	19.5	18.5
9	9.0	7.5	15.0	14.0	29.0	26.0	---	---	28.0	19.0	21.5	18.5
10	8.5	7.5	15.5	14.0	28.5	26.0	30.5	28.5	25.5	24.0	22.0	20.5
11	9.5	8.5	17.5	14.5	27.0	24.5	30.0	26.0	23.5	23.0	23.0	21.0
12	10.0	8.5	16.0	14.5	27.5	24.5	28.5	24.5	25.0	22.5	23.5	22.0
13	12.5	9.5	15.0	13.5	27.5	24.0	29.0	24.0	25.0	24.0	23.0	22.5
14	13.5	10.5	15.5	14.0	28.0	24.5	29.5	23.5	25.5	24.0	22.5	20.5
15	12.0	11.0	16.5	15.5	26.0	24.5	28.0	24.5	27.0	24.0	21.5	20.0
16	11.5	10.5	17.0	16.0	---	---	29.0	26.0	28.0	24.5	21.5	20.0
17	13.5	11.5	19.0	17.0	---	---	28.0	25.0	28.0	23.5	22.5	20.5
18	14.5	13.0	19.5	19.0	---	---	28.0	26.5	26.5	24.5	22.5	19.5
19	15.5	13.5	21.0	19.5	24.0	22.0	29.0	26.5	26.5	24.5	23.0	21.5
20	15.5	13.0	22.5	20.0	26.5	23.5	29.5	25.5	27.5	25.0	22.5	22.0
21	15.5	13.0	22.5	20.5	26.0	25.0	28.0	24.0	27.5	25.5	22.0	20.5
22	16.5	14.0	23.0	21.5	25.5	23.5	28.5	23.0	28.5	26.0	20.5	18.5
23	16.0	14.5	23.0	21.0	24.5	23.0	26.5	25.5	28.5	26.0	18.5	18.0
24	15.5	14.0	22.5	21.0	24.0	22.0	28.0	25.0	28.0	25.0	18.5	17.0
25	16.0	14.0	21.5	20.5	24.0	22.5	28.5	24.5	28.0	24.0	19.5	18.0
26	17.5	14.5	20.5	18.0	23.5	21.5	29.0	25.5	29.0	25.0	20.0	18.5
27	19.0	16.0	20.0	18.0	25.0	22.5	29.0	25.5	29.0	27.0	20.5	19.0
28	19.0	17.0	19.5	18.5	24.5	23.0	28.5	25.0	28.0	22.5	21.0	20.0
29	20.0	18.0	19.5	16.5	24.5	23.0	27.0	25.0	26.0	22.0	20.5	18.5
30	20.0	18.5	20.0	18.0	24.5	20.0	28.0	24.0	24.5	23.0	18.5	17.0
31	---	---	21.5	19.0	---	---	27.5	24.0	23.5	22.5	---	---
MONTH	20.0	6.5	23.0	13.5	29.0	20.0	30.5	21.0	29.0	19.0	23.5	17.0
YEAR	30.5	1.5										



## STREAMS TRIBUTARY TO LAKE ERIE

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	175	30	19	648	38	66	697	18	34
2	371	301	531	546	24	35	694	17	32
3	265	28	20	470	17	22	666	18	32
4	248	33	22	449	20	24	613	22	36
5	392	70	79	434	15	18	574	19	29
6	335	25	23	389	10	11	491	14	19
7	273	20	15	347	10	9.4	431	11	13
8	255	18	12	303	10	8.2	398	7	7.5
9	228	14	8.6	285	8	6.2	365	7	6.9
10	209	14	7.9	280	5	3.8	338	10	9.1
11	194	13	6.8	253	5	3.4	302	10	8.2
12	180	13	6.3	235	5	3.2	282	17	13
13	240	11	7.1	240	5	3.2	326	21	18
14	240	22	14	231	6	3.7	365	17	17
15	221	17	10	280	48	45	362	12	12
16	199	11	5.9	275	10	7.4	350	10	9.5
17	177	12	5.7	250	8	5.4	314	10	8.5
18	159	11	4.7	240	9	5.8	272	9	6.6
19	148	15	6.0	253	10	6.8	260	9	6.3
20	118	23	7.3	231	10	6.2	464	90	149
21	120	12	3.9	280	21	16	563	35	53
22	113	10	3.1	258	23	16	503	18	24
23	107	10	2.9	248	15	10	473	17	22
24	92	7	1.7	260	15	11	461	17	21
25	90	5	1.2	507	423	736	516	18	25
26	97	9	2.4	568	78	120	679	80	174
27	124	24	8.0	512	29	49	823	42	93
28	365	174	276	704	109	219	791	23	49
29	320	56	48	784	20	42	791	20	43
30	488	94	149	725	27	53	811	17	37
31	584	46	73	--	--	--	757	13	27
TOTAL	7127	--	1380.5	11485	--	1565.7	15732	--	1034.6
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	659	21	37	584	12	19	764	48	99
2	503	20	27	560	12	18	835	23	52
3	449	15	18	503	12	16	932	24	60
4	422	32	36	449	12	15	1010	34	93
5	326	43	38	353	13	12	1110	31	93
6	287	29	22	320	13	11	1060	28	80
7	285	13	10	398	11	12	1120	34	103
8	233	11	6.9	329	14	12	1390	501	1930
9	233	13	8.2	287	15	12	1660	440	2250
10	228	23	14	248	15	10	1890	173	883
11	235	16	10	243	15	9.8	1960	88	466
12	235	11	7.0	258	20	14	2040	76	419
13	201	12	6.5	282	24	18	1800	57	277
14	204	15	8.3	332	14	13	1410	35	133
15	258	25	17	309	5	4.2	1100	40	119
16	314	24	20	290	6	4.7	1280	88	304
17	407	24	26	275	5	3.7	1130	22	67
18	570	217	507	250	9	6.1	928	17	43
19	1750	435	2170	265	36	26	914	17	42
20	1710	123	568	306	15	12	885	16	38
21	1500	58	235	300	8	6.5	805	16	35
22	1500	57	231	446	26	31	708	13	25
23	1590	71	305	567	25	38	658	11	20
24	1510	43	175	563	20	30	674	11	20
25	1270	23	79	648	10	17	608	11	18
26	1060	18	52	690	13	24	563	10	15
27	1060	29	83	690	7	13	589	11	17
28	948	22	56	669	29	53	578	11	17
29	863	17	40	--	--	--	554	13	19
30	757	16	33	--	--	--	720	20	39
31	659	12	21	--	--	--	896	34	82
TOTAL	22226	--	4866.9	11414	--	461.0	32571	--	7858

## 04206000 CUYAHOGA RIVER AT OLD PORTAGE, OHIO--Continued

## SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	930	60	151	551	48	71	430	17	20
2	2500	798	6310	464	18	23	360	13	13
3	2370	268	1710	471	15	19	309	22	18
4	2120	104	595	416	16	18	268	17	12
5	2040	96	529	372	14	14	225	12	7.3
6	1870	74	374	403	11	12	219	13	7.7
7	1680	46	209	415	14	16	197	10	5.3
8	1450	37	145	423	22	25	173	6	2.8
9	1240	31	104	713	117	253	160	5	2.2
10	1060	29	83	722	46	90	169	6	2.7
11	920	20	50	745	137	532	150	5	2.0
12	800	13	28	1770	265	1240	148	8	3.2
13	718	17	33	2010	96	521	134	7	2.5
14	835	18	41	1650	92	410	135	3	1.1
15	918	18	45	1590	90	386	150	3	1.2
16	839	24	54	1530	60	248	193	7	3.6
17	699	17	32	1270	36	123	191	11	5.7
18	580	10	16	988	32	85	193	21	11
19	509	7	9.6	736	16	32	263	80	68
20	452	7	8.5	581	29	45	247	33	22
21	401	10	11	467	39	49	230	14	8.7
22	427	30	38	428	42	52	265	30	26
23	435	12	14	572	57	82	335	23	21
24	385	6	6.2	497	27	36	315	52	50
25	382	9	9.3	426	25	29	244	17	11
26	362	9	8.8	393	20	21	373	75	86
27	344	7	6.5	359	18	17	293	22	17
28	319	5	4.3	335	20	18	228	14	8.6
29	327	6	5.3	1040	619	2600	233	32	20
30	582	140	259	703	39	74	532	396	1460
31	--	--	--	496	26	35	--	--	--
TOTAL	28494	--	10889.5	23536	--	7176	7362	--	1919.6

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	636	329	714	92	2	.50	461	64	80
2	422	49	56	89	3	.72	464	32	40
3	418	32	36	142	59	39	568	87	133
4	454	30	37	159	90	41	481	40	52
5	469	24	30	125	5	1.7	383	48	50
6	372	21	21	130	4	1.4	318	54	46
7	264	25	18	139	4	1.5	267	23	17
8	191	25	13	317	116	124	233	24	15
9	146	24	9.5	515	405	1150	209	32	18
10	160	14	6.0	334	58	52	196	45	24
11	126	9	3.1	291	81	80	179	57	28
12	112	10	3.0	322	90	89	186	47	24
13	109	10	2.9	337	42	38	220	88	66
14	180	90	139	290	18	14	223	41	25
15	359	175	268	235	14	8.9	182	23	11
16	211	14	8.0	181	14	6.8	168	22	10
17	189	3	1.5	406	391	577	146	12	4.7
18	176	3	1.4	359	59	57	287	315	339
19	150	4	1.6	298	28	23	209	29	16
20	124	4	1.3	231	35	22	223	16	9.6
21	111	5	1.5	211	33	19	263	33	23
22	108	6	1.7	185	21	10	267	37	27
23	134	15	5.4	156	12	5.1	256	29	20
24	115	5	1.6	117	11	3.5	232	20	13
25	108	5	1.5	113	8	2.4	210	13	7.4
26	106	3	.86	120	7	2.3	199	10	5.4
27	101	4	1.1	146	7	2.8	195	17	9.0
28	92	3	.75	332	123	127	423	99	115
29	92	2	.50	624	223	471	382	26	27
30	100	2	.54	493	49	65	378	18	18
31	98	4	1.1	442	39	47	--	--	--
TOTAL	6433	--	1386.85	7931	--	3082.62	8408	--	1273.1

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)

182719  
42894.37

STREAMS TRIBUTARY TO LAKE ERIE  
04207200 TINKERS CREEK AT BEDFORD, OHIO

LOCATION.--Lat 41°23'04", long 81°31'39", in T.6 N., R.11 W., Cuyahoga County, at gaging station on left bank at downstream side of bridge on State Highway 14 in Bedford, 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--83.9 mi<sup>2</sup> (217 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1965-74 (partial-record station).  
Sediment records: March to June 1972, January to September 1974.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)
NOV., 1973												
05...	1125	89	8.5	--	490	8.1	--	--	--	--	--	--
MAR., 1974												
09...	1710	1260	10.5	--	--	7.5	--	78	13	--	--	--
APR.												
16...	1300	147	10.5	--	--	8.0	--	53	12	--	--	0
AUG.												
14...	1115	243	19.5	8.0	430	8.0	7.9	40	9.4	24	4.4	0

DATE	BICARBONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
NOV., 1973												
05...	--	78	41	--	--	.00	1.7	--	--	--	--	--
MAR., 1974												
09...	--	53	52	--	--	.00	.51	--	--	250	--	--
APR.												
16...	118	58	56	--	--	.00	1.7	--	--	180	--	--
AUG.												
14...	106	58	36	.3	.48	.02	.59	.46	232	140	90	80

SUSPENDED-SEDIMENT DISCHARGE, JANUARY TO SEPTEMBER 1974

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	109	57	17	104	46	13	352	140	144
2	70	55	10	88	45	11	560	241	408
3	60	54	8.7	75	47	9.5	419	146	165
4	55	54	8.0	65	40	7.0	590	275	498
5	50	55	7.4	55	57	8.5	428	146	174
6	48	57	7.4	50	51	6.9	257	60	42
7	46	56	7.0	48	41	5.3	254	146	106
8	44	57	6.8	48	48	6.2	460	534	1280
9	44	58	6.9	46	43	5.3	718	614	1450
10	46	60	7.5	46	39	4.8	690	250	466
11	53	60	8.6	48	32	4.1	602	151	245
12	51	58	8.0	56	34	5.1	320	87	75
13	45	53	6.4	132	156	96	155	50	21
14	50	51	6.9	154	165	72	107	40	12
15	76	69	14	107	65	19	122	73	42
16	197	138	101	76	39	8.0	490	284	453
17	243	115	75	60	32	5.2	365	65	64
18	490	377	1120	53	49	7.0	233	45	28
19	1260	528	2070	142	168	105	163	31	14
20	1120	158	478	152	128	54	135	21	7.7
21	865	78	182	130	61	21	116	17	5.3
22	441	53	63	320	68	59	112	18	5.4
23	419	46	52	285	61	47	118	20	6.4
24	332	40	36	179	58	28	120	24	7.8
25	275	36	27	116	59	18	114	30	9.2
26	157	34	14	88	60	14	132	57	20
27	219	35	21	109	59	17	140	47	18
28	236	45	29	194	90	61	126	24	8.2
29	264	44	31	--	--	--	124	47	18
30	197	43	23	--	--	--	261	73	51
31	135	46	17	--	--	--	278	32	24
TOTAL	7697	--	4469.6	3026	--	717.9	9061	--	5868.0

## STREAMS TRIBUTARY TO LAKE ERIE

345

04207200 TINKERS CREEK AT BEDFORD, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, JANUARY TO SEPTEMBER 1974

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	209	28	16	105	26	7.4	77	26	5.4
2	774	309	711	85	25	5.7	51	19	2.6
3	1080	86	251	72	25	4.9	43	14	1.6
4	1200	63	204	63	27	4.6	37	11	1.1
5	634	32	55	56	26	3.9	33	10	.89
6	428	22	25	142	39	15	30	10	.81
7	254	20	14	157	16	6.8	29	10	.78
8	203	20	11	142	20	7.7	40	10	1.1
9	200	22	12	292	72	59	31	10	.84
10	206	25	14	271	36	26	42	10	1.1
11	179	29	14	226	72	67	30	10	.81
12	140	31	12	1240	393	1330	26	10	.70
13	109	30	8.8	924	89	222	24	10	.65
14	102	31	8.5	627	82	139	26	10	.70
15	126	34	12	243	72	47	282	651	1230
16	145	53	21	114	45	14	317	593	589
17	97	38	10	86	18	4.2	120	170	55
18	77	26	5.4	71	15	2.9	62	90	15
19	67	27	4.9	59	15	2.4	212	282	310
20	59	29	4.6	50	15	2.0	102	88	24
21	51	27	3.7	42	15	1.7	70	38	7.2
22	105	102	45	41	15	1.7	71	14	2.7
23	102	58	16	60	15	2.4	70	12	2.3
24	88	27	6.4	79	15	3.2	61	12	2.0
25	67	25	4.5	56	15	2.3	46	10	1.2
26	57	30	4.6	41	15	1.7	233	155	122
27	51	33	4.5	35	15	1.4	209	105	67
28	45	31	3.8	33	15	1.3	109	43	13
29	47	26	3.3	215	477	398	71	28	5.4
30	83	24	5.4	177	63	30	105	60	30
31	--	--	--	142	35	13	--	--	--
TOTAL	6985	--	1511.4	5946	--	2428.2	2659	--	2494.88

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	105	74	24	18	9	.44	61	31	5.1
2	70	35	6.6	17	8	.37	57	26	4.0
3	45	24	2.9	21	11	.62	98	83	26
4	37	20	2.0	75	152	31	80	41	8.9
5	38	15	1.5	28	24	1.8	61	20	3.3
6	29	17	1.3	22	7	.42	40	13	1.4
7	25	16	1.1	18	11	.53	33	13	1.2
8	24	12	.78	191	796	912	27	7	.51
9	22	14	.83	310	451	434	28	9	.68
10	34	14	1.3	171	175	81	29	12	.94
11	55	13	1.9	74	60	12	28	9	.68
12	33	14	1.2	200	469	421	33	8	.71
13	23	10	.62	240	343	242	32	10	.86
14	29	39	9.0	264	159	128	33	10	.89
15	65	76	16	222	95	57	33	9	.80
16	71	61	12	107	57	16	26	8	.56
17	40	44	4.8	536	721	1680	26	16	1.1
18	25	10	.68	254	149	102	91	218	95
19	23	9	.56	257	87	60	48	27	3.5
20	21	10	.57	94	53	13	83	130	50
21	17	8	.37	57	33	5.1	89	106	25
22	17	6	.28	45	24	2.9	85	62	14
23	28	7	.53	38	17	1.7	56	23	3.5
24	21	7	.40	47	14	1.8	42	15	1.7
25	20	9	.45	29	16	1.3	35	10	.95
26	19	5	.26	27	17	1.2	30	9	.73
27	17	5	.23	33	18	1.6	29	13	1.0
28	16	8	.35	68	45	12	54	64	9.3
29	120	806	795	98	86	22	51	62	8.5
30	31	163	16	88	33	7.8	43	98	11
31	21	23	1.3	72	23	4.5	--	--	--
TOTAL	1141	--	904.85	3721	--	4255.08	1461	--	281.81

TOTAL DISCHARGE FOR PERIOD (CFS-DAYS)

55041

TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR PERIOD (TONS)

22931.72

## STREAMS TRIBUTARY TO LAKE ERIE

04207200 TINKERS CREEK AT BEDFORD, OHIO--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, JANUARY TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00
Jan. 19...	1815	1.5	916	265	655	39	48	57	68	75	83	84	91	96	100
Mar. 09...	1630	10.5	980	1280	3390	35	48	55	65	76	84	85	93	98	100
Apr. 02...	0955	15.0	718	362	702	50	61	70	79	85	90	91	94	100	--
Aug. 08...	1800	21.0	360	2290	2230	47	61	75	87	94	99	99	100	--	--





## STREAMS TRIBUTARY TO LAKE ERIE

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO  
(National stream-quality accounting network station)

LOCATION.--Lat 41°23'43", long 81°37'48", in T.6 N., R.12 W., Cuyahoga County, at gaging station on left bank 240 ft (73 m) downstream from bridge on Old Rockside Road, 0.8 mi (1.3 km) northeast of Independence, and 3.0 mi (4.8 km) downstream from Tinkers Creek.

DRAINAGE AREA.--707 mi<sup>2</sup> (1,831 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1948 to September 1949, July 1965 to September 1974.

Water temperatures: October 1948 to September 1949, October 1952 to September 1974.

Sediment records: October 1950 to September 1974 (discontinued).

## EXTREMES.--1973-74:

Specific conductance: Maximum, 2,040 micromhos Aug. 1; minimum, 225 micromhos Mar. 12.

pH: Maximum, 8.2 Oct. 24; minimum, 6.7 May 23.

Dissolved oxygen: Maximum, 12.7 mg/l Feb. 15; minimum, 1.5 mg/l Oct. 14.

Water temperatures: Maximum, 27.5°C July 4, 9, 14; minimum, 0.5°C Jan. 2, 8.

Sediment concentrations: Maximum daily, 1,490 mg/l Apr. 2; minimum daily, 5 mg/l Sept. 16.

Sediment discharges: Maximum daily, 20,900 tons (19,000 tonnes) Jan. 19; minimum daily, 4.1 ton (3.7 tonne) Sept. 16.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
OCT.											
24...	0740	226	13.0	--	--	--	--	--	182	3	300
24...	1415	222	--	--	--	--	--	--	--	--	--
31...	0735	2500	13.0	--	--	--	--	--	114	0	45
NOV.											
18...	1035	458	8.5	--	--	--	--	--	157	2	130
26...	1430	1310	9.0	--	--	--	--	--	--	--	--
28...	0741	2490	12.0	--	--	--	--	--	112	0	51
DEC.											
01...	0842	1200	7.5	--	--	--	--	--	118	0	47
20...	1410	1680	3.0	--	--	--	--	--	125	0	240
JAN.											
10...	1100	458	2.0	9.0	72	18	78	7.1	158	0	130
13...	0950	408	1.0	--	67	16	--	--	137	0	190
20...	1415	4360	4.5	--	--	--	--	--	--	--	--
20...	1500	4340	4.5	--	45	11	--	--	89	0	48
27...	1600	2050	--	--	--	--	--	--	--	--	--
FEB.											
06...	0730	496	3.0	--	61	17	--	--	131	0	89
06...	1130	469	4.0	15	60	24	110	4.8	284	0	150
13...	0739	536	4.5	--	72	18	--	--	140	0	280
13...	1330	482	5.0	--	--	--	--	--	--	--	--
22...	1145	1820	6.0	--	--	--	--	--	--	--	--
MAR.											
01...	1255	2080	4.5	--	55	13	--	--	111	0	100
10...	1035	5950	9.0	--	42	9.8	--	--	89	0	42
10...	1330	5540	7.5	--	--	--	--	--	--	--	--
12...	1300	3000	7.0	--	--	--	--	--	--	--	--
APR.											
02...	1300	5870	10.0	--	--	--	--	--	--	--	--
02...	1325	5940	10.0	--	44	11	--	--	98	0	33
03...	1100	4630	11.0	4.4	35	12	25	3.0	84	0	40
16...	1530	1400	12.0	--	--	--	--	--	--	--	--
24...	0740	890	11.0	--	61	14	--	--	130	0	160
27...	1600	658	--	--	--	--	--	--	--	--	--
MAY											
08...	0830	986	9.5	--	--	--	--	--	--	--	--
12...	1155	5090	14.0	--	39	9.1	--	--	89	0	32
29...	0735	835	17.0	--	63	14	--	--	145	0	140
JUNE											
04...	1300	541	20.5	--	--	--	--	--	--	--	--
05...	1230	482	21.0	--	75	16	--	--	150	0	250
19...	1930	1750	19.0	--	64	11	--	--	132	0	87
JULY											
09...	1430	321	26.5	9.4	62	16	50	6.0	157	0	78
AUG.											
06...	1230	252	22.5	--	--	--	--	--	--	--	--
SEP.											
11...	1445	351	21.0	--	--	--	--	--	--	--	--

## STREAMS TRIBUTARY TO LAKE ERIE

349

## 04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1965-74): Maximum, 2,040 micromhos Aug. 1, 1974; minimum, 225 micromhos Mar. 12, 1974.

pH (1973-74): Maximum, 8.2 Oct. 24, 1973; minimum, 6.7 Mar. 10, 14, 1973, May 23, 1974.

Dissolved oxygen (1965-74): Maximum, 14.5 mg/l Feb. 16, 1973; minimum, 0.0 mg/l Oct. 23, 1965, Feb. 10-12, June 23, July 26, 1966.

Water temperatures (1965-74): Maximum, 31.0°C Aug. 18, 1949; minimum, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 4,800 mg/l Aug. 21, 1960; minimum daily, 1 mg/l Sept. 4, 10, 1955.

Sediment discharges: Maximum, 51,400 tons (46,600 tonnes) Mar. 5, 1964; minimum daily, 0.25 ton (0.23 tonne) Sept. 4, 1955.

REMARKS.--Water-quality recorder operated since July 1965. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected each month to further define the quality of water as part of the National Stream Quality Accounting Network. Natural flow of stream affected by diversions, storage reservoirs and power plants. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes. Water diverted into Ohio Canal at Brecksville, 6.0 mi (9.7 km) upstream from station, bypasses station. These records do not include flow in canal except above about 15,000 ft<sup>3</sup>/s (425 m<sup>3</sup>/s), when channels merge.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TOTAL NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)
OCT.										
24...	140	.5	--	--	1490	--	.00	4.6	--	4.6
24...	--	--	--	--	--	--	--	--	--	--
31...	87	.4	--	--	512	--	.00	2.1	--	2.1
NOV.										
18...	110	--	--	--	891	--	.00	4.5	--	4.5
26...	--	--	--	--	--	--	--	--	--	--
28...	88	.4	--	--	529	--	.00	2.3	--	2.3
DEC.										
01...	85	.2	--	--	532	--	.01	2.2	--	2.2
20...	82	.4	--	--	1190	--	.01	2.4	--	2.4
JAN.										
10...	100	.3	544	493	903	6.0	.00	5.0	1.0	5.0
13...	120	.3	--	--	1080	--	.01	3.0	--	3.0
20...	--	--	--	--	--	--	--	--	--	--
20...	62	.2	--	--	439	--	.01	1.4	--	1.4
27...	--	--	--	--	--	--	--	--	--	--
FEB.										
06...	96	.4	--	--	719	--	.00	3.9	--	3.9
06...	32	--	--	535	966	--	.00	.37	--	.37
13...	110	.6	--	--	1330	--	.00	4.7	--	4.7
13...	--	--	--	--	1340	3.0	.00	2.0	1.0	2.0
22...	--	--	--	--	--	--	--	--	--	--
MAR.										
01...	75	.3	--	--	686	--	.00	1.5	--	1.5
10...	59	.3	--	--	408	--	.00	1.0	--	1.0
10...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	403	1.9	.00	1.4	.50	1.4
APR.										
02...	--	--	--	--	--	--	--	--	--	--
02...	53	.4	--	--	385	--	.00	.26	--	.26
03...	57	.2	221	218	397	1.9	.00	1.4	.48	1.4
16...	--	--	--	--	--	--	--	--	--	--
24...	83	.5	--	--	949	--	.00	2.4	--	2.4
27...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	--	--	--	--	653	3.1	.00	2.1	1.0	2.1
12...	52	.3	--	--	358	--	.01	1.4	--	1.4
29...	83	.4	--	--	818	--	.01	2.8	--	2.8
JUNE										
04...	--	--	--	--	725	3.6	.00	2.9	.69	2.9
05...	110	1.2	--	--	1220	--	.01	3.4	--	3.4
19...	77	1.1	--	--	631	--	.01	2.2	--	2.2
JULY										
09...	92	.5	474	391	680	4.4	.00	3.5	.93	3.5
AUG.										
06...	--	--	--	--	1070	5.5	.00	3.5	2.0	3.5
SEP.										
11...	--	--	--	--	750	3.5	.00	1.7	1.8	1.7

## STREAMS TRIBUTARY TO LAKE ERIE

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DATE	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL NITRATE (NO3) (MG/L)	TOTAL PHOS- PHORUS (PO4) (MG/L)	TOTAL NITRO- GEN (NO3) (MG/L)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	PH (UNITS)	CARBON DIOXIDE (CO2) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	TOTAL RESI- DUE (MG/L)
OCT.										
24...	--	--	--	--	--	--	8.4	1.2	154	943
24...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	8.1	1.4	94	347
NOV.										
18...	--	--	--	--	--	--	8.5	.8	132	633
26...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	7.7	3.6	92	136
DEC.										
01...	--	--	--	--	--	--	7.7	3.8	97	427
20...	--	--	--	--	--	--	7.2	13	103	1480
JAN.										
10...	.34	--	--	27	11.8	86	7.3	13	130	--
13...	--	--	--	--	--	--	7.3	11	112	1200
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	7.2	9.0	73	652
27...	--	--	--	--	--	--	--	--	--	--
FEB.										
06...	--	--	--	--	--	--	8.2	1.3	107	546
06...	.30	--	--	--	7.4	87	6.6	114	233	--
13...	--	--	--	--	--	--	7.3	11	115	872
13...	.42	--	--	13	10.6	83	7.7	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
MAR.										
01...	--	--	--	--	--	--	7.7	3.5	91	949
10...	--	--	--	--	--	--	6.9	18	73	--
10...	--	--	--	--	--	--	--	--	--	--
12...	.28	--	--	8.4	10.8	90	7.3	--	--	--
APR.										
02...	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	7.0	16	80	--
03...	.47	--	--	8.3	9.9	89	6.9	17	69	--
16...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	7.7	4.2	107	662
27...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	.26	--	--	14	8.6	75	7.2	--	--	--
12...	--	--	--	--	--	--	6.9	18	73	739
29...	--	--	--	--	--	--	7.2	15	119	989
JUNE										
04...	.27	--	--	16	5.9	65	7.2	--	--	--
05...	--	--	--	--	--	--	7.4	9.6	123	806
19...	--	--	--	--	--	--	7.0	21	108	1120
JULY										
09...	.37	--	--	20	4.4	54	7.6	6.3	129	--
AUG.										
06...	.81	--	--	24	5.6	64	7.6	--	--	--
SEP.										
11...	.52	--	--	16	6.6	73	7.9	--	--	--

DATE	TIME	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT.												
24...	1415	--	--	--	--	--	--	--	--	--	--	--
JAN.												
10...	1100	4	5	1	1	1	1	0	0	9	36	1100
APR.												
03...	1100	2	12	0	--	10	40	0	--	26	26	--
16...	1530	--	--	--	--	--	--	--	--	--	--	--
JULY												
09...	1430	2	4	1	2	1	1	0	6	23	23	660

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00
Nov.															
26...	1430	9.0	1310	132	467	35	44	56	67	78	86	87	92	98	100
Jan.															
20...	1415	4.5	4360	545	6420	23	29	37	48	63	74	76	84	94	100
Feb.															
22...	1145	6.0	1820	561	2760	33	44	54	67	77	86	87	92	96	100
Mar.															
10...	1330	7.5	5540	568	8500	26	36	45	57	70	79	80	88	95	100
Apr.															
02...	1300	10.0	5870	1800	28500	37	49	64	77	86	91	92	96	98	100

STREAMS TRIBUTARY TO LAKE ERIE

351

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DATE	HARD- NESS (CA,MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	UNCOR- RECTED PERI- PHYTON CHLORO- PHYLL B MG/SQ M	UNCOR- RECTED PERI- PHYTON CHLORO- PHYLL A MG/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	FECAL COLI- FORM (COL. PER 100 ML)	STREP- TOCOCCI (COL- ONIES PER 100 ML)
OCT.										
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
NOV.										
18...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
DEC.										
01...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
JAN.										
10...	250	120	8.8	--	--	--	--	--	4300	1400
13...	230	120	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	160	87	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
FEB.										
06...	220	110	--	--	--	--	--	--	--	--
06...	250	16	--	--	--	--	--	--	--	--
13...	250	140	--	--	--	--	--	--	--	--
13...	--	--	7.7	--	--	--	--	--	2100	910
22...	--	--	--	--	--	--	--	--	--	--
MAR.										
01...	190	100	--	--	--	--	--	--	--	--
10...	150	72	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	1200	800
APR.										
02...	--	--	--	--	--	--	--	--	--	--
02...	160	75	--	--	--	--	--	--	--	--
03...	140	68	26	--	--	--	950	--	6200	6600
16...	--	--	7.5	--	--	--	--	--	--	--
24...	210	100	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	--	--	--	--	--	--	--	--	16000	2600
12...	130	62	--	--	--	--	--	--	--	--
29...	220	96	--	--	--	--	--	--	--	--
JUNE										
04...	--	--	--	--	--	--	--	--	4100	280
05...	250	130	--	--	--	--	--	--	--	--
19...	210	97	--	--	--	--	--	--	--	--
JULY										
09...	220	91	8.8	--	--	--	1600	--	5200	360
AUG.										
06...	--	--	--	--	--	--	770	--	6600	150
SEP.										
11...	--	--	--	6.2	.2	1.3	3500	--	22000	480

DATE	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY (HG) (UG/L)
OCT.											
24...	--	--	--	--	--	--	--	--	--	--	.9
JAN.											
10...	70	2	15	250	130	90	90	6	10	.0	.0
APR.											
03...	10	9	--	--	50	9	--	1	3	.3	.3
16...	--	--	--	--	--	--	--	--	--	--	.0
JULY											
09...	20	0	20	100	100	10	30	4	4	.6	.6



## 04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	765	684	528	483	534	504	798	582	558	516	729	585
2	777	585	576	492	573	528	756	699	609	525	613	490
3	828	600	567	540	573	534	894	657	630	603	540	291
4	804	717	594	555	600	549	840	648	771	591	583	492
5	819	720	615	579	792	588	975	738	729	670	519	486
6	798	693	648	606	615	585	765	678	747	675	564	486
7	726	696	663	642	627	582	684	648	1580	714	645	489
8	717	690	675	648	741	603	747	651	1280	1070	513	450
9	738	696	738	645	711	657	789	708	1100	876	465	378
10	789	732	852	702	699	633	1160	747	903	834	399	375
11	804	771	864	822	903	624	1160	1060	882	819	447	402
12	819	777	846	771	903	741	1330	1100	1580	894	447	225
13	831	786	792	732	945	690	1250	1060	1600	1320	405	369
14	852	624	792	747	927	759	1070	921	1340	834	429	384
15	783	639	765	726	861	738	1240	924	840	801	480	432
16	846	777	780	723	849	720	1410	1060	798	777	519	402
17	885	831	828	720	723	687	1020	801	771	732	510	426
18	900	852	975	828	741	699	897	534	726	696	504	447
19	903	861	924	774	855	714	507	396	858	690	540	477
20	894	867	774	714	1300	597	423	399	771	717	504	471
21	903	864	756	684	717	585	447	408	726	693	618	498
22	903	822	735	636	840	717	450	429	744	630	861	603
23	915	855	675	639	795	735	480	444	684	633	618	555
24	1480	897	714	645	786	720	441	414	792	690	756	567
25	1300	924	693	453	873	669	450	426	777	693	1180	747
26	1130	972	591	441	702	594	465	441	1020	792	807	675
27	1050	900	681	513	603	498	504	438	852	714	720	591
28	918	711	555	423	570	510	489	456	789	711	615	579
29	771	546	480	429	606	516	522	462	---	---	618	591
30	669	570	495	480	564	504	528	492	---	---	684	564
31	585	474	---	---	567	525	540	525	---	---	570	516
MONTH	1480	474	975	423	1300	498	1410	396	1600	516	1180	225

[illegible]



## 04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.1	6.3	8.9	8.0	10.9	10.7	12.2	11.5	11.2	10.9	11.0	10.6
2	6.9	4.8	9.4	8.7	11.0	10.8	12.4	12.2	11.2	11.0	10.9	10.5
3	6.6	4.9	9.3	8.9	10.8	10.6	12.3	11.5	11.6	11.0	10.5	9.1
4	6.9	6.1	9.6	9.3	10.4	9.9	11.6	11.4	11.7	11.5	9.8	9.1
5	6.5	4.5	9.6	9.4	10.0	9.0	11.7	11.4	11.8	11.5	9.7	9.2
6	7.7	6.2	9.9	9.6	10.5	9.9	11.6	11.2	12.0	11.3	10.1	9.7
7	7.4	6.9	9.7	8.1	10.6	10.3	11.4	11.1	11.3	10.2	9.8	9.6
8	6.9	6.3	8.9	8.0	10.5	10.3	11.6	11.3	12.0	11.0	10.0	9.3
9	6.6	6.1	9.2	8.9	10.5	9.8	11.4	10.9	11.6	11.4	10.0	9.6
10	6.4	5.6	9.5	9.2	10.0	9.7	11.0	10.6	11.6	11.3	9.9	9.0
11	6.9	5.4	9.9	9.5	10.1	9.9	10.7	10.1	11.4	10.6	10.0	9.9
12	6.8	5.9	9.9	9.3	10.1	9.7	10.6	10.2	11.1	10.5	10.0	9.8
13	6.1	3.2	9.4	8.4	9.7	9.3	11.2	10.6	11.3	10.0	10.1	9.9
14	5.3	1.5	8.5	7.8	9.9	8.1	11.4	10.6	12.4	11.0	10.6	10.0
15	7.1	5.3	7.9	7.1	10.0	9.8	11.2	10.9	12.7	11.4	10.4	10.1
16	7.4	6.3	8.6	7.3	10.0	9.7	11.4	10.1	11.5	10.8	10.5	10.2
17	7.5	6.8	9.2	8.7	10.3	9.9	11.5	11.1	11.0	10.6	10.6	10.4
18	7.5	6.9	9.1	8.6	10.3	10.0	11.5	10.7	11.2	10.9	10.7	10.2
19	7.5	6.7	8.8	8.4	10.0	9.5	11.7	11.4	11.0	10.3	10.4	10.3
20	---	---	8.9	8.4	10.3	9.4	11.7	11.4	11.7	10.6	10.6	10.2
21	7.8	7.2	8.5	8.3	10.5	10.0	11.5	11.2	11.7	10.3	10.5	10.2
22	8.0	6.9	8.9	7.4	10.7	10.5	11.3	11.2	10.9	10.1	10.5	10.2
23	8.1	6.9	9.1	8.9	10.7	10.2	11.4	11.0	11.7	11.2	10.3	10.1
24	9.0	6.8	9.1	8.4	10.5	10.3	11.7	11.4	11.4	11.3	10.6	10.3
25	7.0	5.3	9.0	8.3	10.5	10.2	11.6	11.3	11.5	11.3	10.8	10.3
26	7.6	5.6	9.8	9.0	10.6	9.8	11.6	11.0	11.7	11.5	10.5	10.0
27	8.2	5.8	9.7	9.0	11.0	9.8	11.2	10.4	11.6	10.9	10.1	9.7
28	6.9	5.3	10.1	7.1	11.5	10.6	10.9	10.7	11.2	10.8	10.0	9.5
29	7.0	3.9	10.6	10.1	11.9	11.0	11.0	10.6	---	---	9.8	9.3
30	7.2	6.3	10.7	10.5	12.1	11.4	11.0	10.8	---	---	9.6	9.0
31	8.5	5.8	---	---	12.0	11.5	11.0	10.7	---	---	10.2	9.2
MONTH	9.0	1.5	10.7	7.1	12.1	8.1	12.4	10.1	12.7	10.0	11.0	9.5

[illegible]

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	17.5	12.5	11.0	7.5	7.0	2.5	1.5	5.5	4.5	4.5	4.0
2	19.5	17.5	12.5	11.0	7.0	6.0	1.5	0.5	4.5	4.0	5.5	3.5
3	20.0	19.0	12.5	11.5	8.0	6.5	2.0	1.5	4.0	3.5	9.0	5.5
4	20.5	18.5	11.5	10.5	10.0	8.0	2.5	1.5	3.5	2.0	10.0	8.5
5	20.0	17.5	10.5	9.0	11.0	10.0	2.0	1.0	2.5	2.0	10.5	9.5
6	18.0	15.0	9.0	8.0	9.5	7.5	2.5	1.5	3.0	2.5	9.5	8.0
7	18.0	15.0	8.5	7.5	7.5	7.0	2.5	1.5	5.0	2.5	10.0	9.0
8	19.5	16.5	9.5	8.5	7.0	6.5	1.5	0.5	3.0	2.0	10.0	8.5
9	20.5	18.5	8.5	7.0	7.0	6.0	2.5	1.0	3.5	2.0	10.5	8.5
10	20.0	19.0	7.0	6.5	7.0	5.0	3.0	2.0	2.5	2.0	10.5	9.0
11	20.5	18.5	7.0	6.5	5.0	4.0	3.5	3.0	3.0	1.5	9.0	7.5
12	20.5	18.5	8.0	7.0	5.0	4.0	3.5	2.0	4.5	3.0	8.0	7.5
13	20.0	18.5	10.5	8.0	6.0	5.0	1.5	1.0	6.5	4.0	7.5	6.5
14	19.0	17.0	12.5	10.5	6.0	4.5	3.0	1.5	4.5	3.5	7.5	5.5
15	17.0	15.5	14.5	12.5	4.5	4.0	4.5	3.5	4.0	3.0	7.0	6.0
16	16.0	14.5	14.0	10.0	4.5	3.5	5.0	3.5	5.0	3.0	7.0	6.0
17	14.5	13.0	10.0	8.0	3.0	1.5	3.5	3.0	5.0	4.0	7.0	5.5
18	13.5	13.0	9.0	8.0	2.5	1.5	4.5	3.0	4.0	2.5	7.0	5.0
19	14.0	12.0	10.5	9.0	3.5	2.5	4.5	2.5	5.0	4.0	7.5	7.0
20	14.0	13.5	12.0	10.0	3.5	2.0	4.5	3.0	6.0	4.0	8.0	6.0
21	14.5	12.0	11.5	10.5	2.5	1.5	5.5	4.5	6.5	4.5	8.0	6.0
22	14.5	12.0	11.5	10.5	2.0	1.5	5.5	5.0	7.0	6.0	8.0	5.5
23	14.5	12.0	10.5	9.5	2.5	1.5	5.5	5.0	5.5	4.0	7.5	5.5
24	15.0	13.0	11.0	9.5	3.0	2.0	5.0	4.0	4.5	4.0	6.0	4.5
25	15.5	13.0	11.5	10.0	4.0	3.0	4.0	3.0	3.5	2.5	5.0	3.5
26	16.0	14.0	10.0	9.0	5.5	4.0	4.5	3.0	3.5	2.0	6.5	4.5
27	15.0	13.5	12.5	10.0	6.0	5.5	7.0	5.0	4.5	2.5	7.5	5.5
28	14.5	13.5	13.0	10.0	5.5	4.5	6.5	5.5	4.5	4.0	7.5	7.0
29	15.0	13.5	10.0	8.0	4.5	4.0	6.0	5.5	---	---	8.5	7.0
30	14.0	12.5	8.0	7.5	4.0	2.5	6.0	5.0	---	---	9.0	7.5
31	13.0	12.5	---	---	2.5	2.0	6.5	5.5	---	---	8.5	7.0
MONTH	20.5	12.0	14.5	6.5	11.0	1.5	7.0	0.5	7.0	1.5	10.5	3.5

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	398	71	76	2040	334	1890	1200	107	347
2	800	225	488	1300	128	449	1100	82	244
3	808	274	648	1090	103	303	1000	84	227
4	514	189	262	836	58	131	981	87	230
5	789	313	714	753	35	71	1010	81	221
6	660	181	323	669	27	49	850	54	124
7	532	127	182	592	33	53	750	50	101
8	443	100	120	530	23	33	650	57	100
9	446	74	89	498	18	24	580	55	86
10	368	54	54	494	21	28	520	47	66
11	343	43	40	480	28	36	482	34	44
12	324	34	30	433	22	26	444	18	22
13	313	36	31	448	29	35	558	84	168
14	561	130	215	449	27	33	798	132	284
15	403	29	32	450	38	46	650	38	67
16	378	14	14	618	82	137	550	39	58
17	335	25	23	507	30	41	500	35	47
18	295	38	30	450	26	32	449	25	30
19	271	19	14	449	27	33	425	31	36
20	252	13	8.8	456	23	28	1620	409	3930
21	217	15	8.8	598	88	174	2130	500	3120
22	219	12	7.1	689	134	249	1340	145	525
23	230	15	9.3	548	49	73	1090	82	241
24	217	14	8.2	558	42	63	902	105	256
25	198	13	6.9	1720	452	3040	1150	182	779
26	199	12	6.4	1640	249	1230	2090	261	1580
27	202	11	6.0	1580	230	1180	2640	388	2860
28	460	76	176	2800	413	3120	1900	134	687
29	1040	236	758	2000	342	1850	1560	76	320
30	1360	454	1980	1500	168	680	1480	69	276
31	2050	373	2230	--	--	--	1300	77	270
TOTAL	15625	--	8590.5	27175	--	15137	32699	--	17346

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1170	107	338	991	87	233	2120	529	3230
2	924	160	399	895	53	128	2620	569	4320
3	830	94	211	805	39	85	2070	198	1110
4	757	71	145	721	38	74	2570	308	2370
5	625	86	145	564	57	87	2450	272	1800
6	561	58	88	487	47	62	1880	150	761
7	527	78	111	676	123	224	2090	188	1060
8	455	70	86	595	60	96	2470	396	2890
9	439	41	49	492	33	44	3690	744	7870
10	453	29	35	403	33	36	5310	765	11400
11	481	30	39	387	22	23	3520	255	2420
12	464	42	53	399	28	30	3060	217	1790
13	410	33	37	618	74	151	2610	153	1080
14	431	50	58	955	155	444	2100	157	890
15	541	84	132	645	69	120	1680	127	576
16	1020	189	547	519	38	53	3430	441	3830
17	1480	211	843	478	19	25	2360	154	981
18	1760	311	2450	411	19	21	1770	88	421
19	7640	1030	20900	600	121	281	1600	77	333
20	4570	465	5740	890	124	316	1480	59	236
21	3690	365	3640	690	40	75	1350	54	197
22	2740	307	2270	1450	339	1450	1240	62	208
23	3130	472	3990	1340	154	557	1190	42	135
24	2800	333	2520	1050	79	224	1150	29	90
25	2200	382	2270	955	50	129	1120	45	136
26	1700	205	941	955	42	108	1080	47	137
27	1990	292	1570	980	84	222	1230	53	176
28	1750	173	817	1210	88	287	1120	27	82
29	1980	148	791	--	--	--	1040	17	48
30	1510	93	379	--	--	--	1750	124	610
31	1230	85	282	--	--	--	1820	99	486
TOTAL	50258	--	51876	21161	--	5585	64970	--	51673



## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974--Continued

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2080	828	5460	207	10	5.6	721	76	148
2	920	165	410	207	14	7.8	685	98	181
3	726	64	125	258	80	65	1150	138	363
4	703	55	104	391	85	94	875	77	186
5	717	42	81	282	31	24	667	30	54
6	649	41	72	246	15	10	541	17	25
7	519	26	36	249	14	9.4	460	22	27
8	424	25	29	532	240	594	395	25	27
9	367	10	9.9	986	301	826	359	27	26
10	514	23	33	965	385	1240	347	20	19
11	379	22	23	501	68	92	351	22	21
12	294	12	9.5	775	185	464	363	22	22
13	279	8	6.0	935	230	638	379	21	21
14	252	10	6.8	986	217	646	487	64	89
15	740	193	502	672	64	116	371	26	26
16	492	54	72	483	39	51	314	10	8.5
17	379	29	30	1710	835	4710	304	5	4.1
18	321	20	17	895	110	266	676	228	441
19	300	21	17	755	42	86	438	74	88
20	276	13	9.7	528	42	60	501	71	114
21	249	8	5.4	399	39	42	613	64	106
22	228	10	6.2	347	39	37	618	48	80
23	294	17	13	307	37	31	496	23	31
24	282	13	9.9	335	75	68	433	24	28
25	255	7	4.8	234	20	13	387	40	42
26	252	9	6.1	231	18	11	351	15	14
27	243	9	5.9	249	15	10	335	23	21
28	228	9	5.5	519	90	159	595	66	115
29	399	67	105	1120	380	1190	613	34	56
30	279	25	19	991	143	383	586	25	40
31	228	14	8.6	726	67	131	--	--	--
TOTAL	14268	--	7242.3	18021	--	12079.8	15411	--	2423.6

298009.5

## STREAMS TRIBUTARY TO LAKE ERIE

## 04208505 CUYAHOGA RIVER AT DUPONT INTAKE IN CLEVELAND, OHIO

LOCATION.--Lat 40°28'39", long 81°40'13", in T.7 N., R.12 W., Cuyahoga County, at Dupont Products Division water intake on east side of turning basin at Station 722, and 5.1 mi (8.2 km) upstream from mouth, in Cleveland.

DRAINAGE AREA.--794 mi<sup>2</sup> (2,056 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 1,780 micromhos Feb. 13; minimum, 320 micromhos May 30.

## EXTREMES.--Period of record:

Specific conductance: Maximum, 3,020 micromhos Feb. 5, 1971; minimum, 290 micromhos July 20, 21, 1969.

REMARKS.--Water-quality recorder operated since October 1964 and is located in brick building at edge of turning basin. Interruptions in the record were due to malfunctions of the instrument.

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	870	700	670	500	550	500	760	630	730	650	1030	820
2	980	530	600	540	630	530	974	740	850	700	835	665
3	790	560	---	---	710	570	936	896	970	810	740	650
4	840	740	---	---	720	500	949	789	940	760	775	665
5	840	630	---	---	760	520	902	812	930	760	730	640
6	810	720	690	630	770	600	995	875	870	810	705	605
7	820	760	760	670	700	600	888	828	1000	840	740	580
8	820	780	800	660	740	640	850	770	1500	1000	650	560
9	1020	780	800	700	810	660	887	770	1380	1200	620	520
10	930	810	860	730	800	660	1100	887	1230	1050	650	490
11	990	820	930	810	740	660	1400	1080	1100	1020	560	470
12	930	860	880	790	800	660	1550	1370	1410	1020	550	510
13	940	880	920	810	860	770	1370	1180	1780	1380	550	480
14	990	830	960	860	900	820	1310	1210	1730	1150	575	515
15	910	780	1040	840	980	820	1460	1110	1130	1030	600	540
16	810	750	980	790	960	870	1650	1460	1040	980	645	515
17	910	800	920	760	890	760	1500	1080	1020	950	570	500
18	960	880	940	760	780	760	1200	1000	970	870	615	545
19	990	870	1030	860	790	740	1000	530	970	860	660	570
20	960	920	1010	860	1340	790	620	540	970	800	700	580
21	1020	930	910	800	790	680	670	560	890	840	760	580
22	1010	930	830	730	880	790	640	570	880	810	860	700
23	970	920	800	720	900	800	630	550	880	820	860	690
24	990	930	860	720	880	800	590	520	930	880	930	670
25	1140	970	860	500	1030	800	590	520	970	890	1180	900
26	1220	1030	610	470	1000	700	650	580	1160	950	1190	900
27	1160	1080	770	570	740	550	720	570	1190	1080	930	790
28	---	---	700	520	600	530	740	590	1080	975	800	710
29	820	640	560	440	620	550	730	580	---	---	830	710
30	750	570	600	490	590	530	690	620	---	---	880	710
31	670	500	---	---	640	520	690	650	---	---	740	660
MONTH	1220	500	1040	440	1340	500	1650	520	1780	650	1190	470

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]

## STREAMS TRIBUTARY TO LAKE ERIE

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OHIO

LOCATION.--Lat 41°29'17", long 81°41'07", in T.7 N., R.12 W., Cuyahoga County, at bridge on West Third Street in Cleveland, 3.0 mi (4.8 km) upstream from mouth, and 1.2 mi (1.9 km) downstream from turning basin. Water-quality recorder located on left bank just upstream from bridge.

DRAINAGE AREA.--798 mi<sup>2</sup> (2,067 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: November 1966 to September 1974.

Water temperatures: November 1966 to September 1974.

EXTREMES.--1973-74:

Specific conductance: Maximum, 1,890 micromhos Feb. 13; minimum, 374 micromhos May 12, 13.

pH: Maximum, 7.8 Oct. 24, Dec. 9, Jan. 21-25, Feb. 24, Mar. 4, Apr. 2; minimum, 6.7 Apr. 10-12, 20.

Dissolved oxygen: Maximum, 11.3 mg/l Jan. 17; minimum, 0.0 mg/l July 10, 11, 21.

Water temperatures: Maximum, 33.0°C July 28; minimum, 3.5°C Dec. 21, Jan. 19.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HC03) (MG/L)
OCT.												
26...	1115	24.5	--	1090	8.0	--	91	17	--	--	0	113
31...	1007	15.0	--	556	8.2	--	57	11	--	--	0	94
NOV.												
20...	1450	17.0	--	959	8.2	--	--	--	--	--	0	118
26...	1345	12.5	--	541	8.2	--	--	--	--	--	0	94
DEC.												
17...	1140	10.0	--	981	7.2	--	--	--	--	--	0	109
31...	1000	7.0	--	627	7.3	--	--	--	--	--	0	101
JAN.												
16...	1110	9.5	--	1710	7.4	--	80	17	--	--	0	106
25...	1000	6.0	--	540	7.0	--	46	11	--	--	0	84
FEB.												
06...	0815	7.0	--	842	7.9	--	40	17	--	--	0	121
13...	0610	9.0	--	1350	7.8	--	75	16	--	--	0	121
MAR.												
13...	1905	8.0	--	468	6.8	--	44	9.5	--	--	0	82
25...	1910	8.0	--	1070	6.7	--	58	13	--	--	0	103
APR.												
03...	1920	12.0	--	469	7.0	--	47	10	--	--	0	91
26...	1715	18.0	--	946	6.9	--	66	14	--	--	0	113
MAY												
06...	0715	19.0	--	771	7.0	--	60	14	--	--	0	120
13...	1855	15.0	--	424	7.0	--	44	9.1	--	--	0	93
JUNE												
14...	1900	27.0	--	1020	7.4	--	76	15	--	--	0	121
27...	1905	20.5	--	550	6.9	--	47	10	--	--	0	102
AUG.												
22...	1345	30.0	1.4	800	7.2	9.3	66	13	59	9.3	0	168

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)
OCT.							
24...	1630	8	150	0	0	0	6
APR.							
16...	1430	4	--	--	--	--	--

STREAMS TRIBUTARY TO LAKE ERIE

361

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OHIO--Continued

EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 2,840 micromhos Feb. 5, 1971; minimum, 366 micromhos June 29, 1972.

pH (1966-74): Maximum, 9.3 Sept. 14, 1969; minimum, 4.3 May 16, 1969.

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher on several days during 1968, 1970; minimum, 0.0 mg/l on many days during 1967, 1968, 1971 to 1974.

Water temperatures (1966-74): Maximum, 35.0°C July 24, 1967; minimum, 1.0°C Jan. 1, 1969.

REMARKS.--Water-quality recorder operated since November 1966. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. No discharge records available.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA,MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT.											
26...	120	170	1.9	--	.00	12	.34	--	300	--	--
31...	93	51	1.2	--	.01	3.9	.17	--	190	--	--
NOV.											
20...	130	140	1.2	--	.00	9.4	.37	--	--	--	--
26...	87	57	.8	--	.00	3.8	.26	--	--	--	--
DEC.											
17...	120	160	1.7	--	.01	6.7	.97	--	--	--	--
31...	89	77	.5	--	.01	4.6	.71	--	--	--	--
JAN.											
16...	25	380	1.3	--	.00	8.0	.47	--	270	--	--
25...	79	62	.3	--	.00	2.9	.28	--	160	--	--
FEB.											
06...	110	130	1.0	--	.01	6.0	.28	--	170	--	--
13...	120	280	1.4	--	.00	8.0	.72	--	250	--	--
MAR.											
13...	74	54	.5	--	.00	2.8	.21	--	150	--	--
25...	98	230	.5	--	.00	3.8	.07	--	200	--	--
APR.											
03...	59	52	.7	--	.00	2.0	.68	--	160	--	--
26...	110	150	1.4	--	.00	7.1	.37	--	220	--	--
MAY											
06...	100	100	1.2	--	.00	6.3	.29	--	210	--	--
13...	61	41	.5	--	.00	2.1	.60	--	150	--	--
JUNE											
14...	120	150	1.9	--	.00	9.6	.23	--	250	--	--
27...	65	71	1.5	--	.00	3.3	--	--	160	--	--
AUG.											
22...	97	100	1.3	5.9	.47	1.9	.33	438	220	30	290

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.							
24...	12	560	1	190	4	<.5	11
APR.							
16...	--	--	--	--	--	.2	9.4



## 04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	758	668	608	542	602	581	858	660	678	663	1010	790
2	816	597	617	587	627	603	1010	858	735	681	798	630
3	709	598	664	616	645	624	946	895	956	761	658	619
4	804	709	663	624	681	630	956	857	932	827	708	627
5	792	675	689	656	708	666	924	840	875	806	674	614
6	815	701	722	686	759	681	994	889	875	839	631	610
7	835	790	733	709	702	678	957	888	994	862	738	615
8	840	807	750	717	729	687	892	832	1520	999	632	551
9	816	801	761	737	777	714	848	821	1520	1320	580	523
10	830	812	800	749	780	744	1010	855	1320	1100	516	456
11	850	823	886	800	768	741	1250	1020	1100	1020	506	470
12	882	849	913	892	786	762	1530	1260	1240	1080	511	499
13	891	879	901	868	873	786	1530	1410	1890	1250	504	474
14	890	848	889	859	894	843	1440	1290	1850	1310	485	473
15	844	832	895	880	897	837	1320	1170	1270	1040	541	469
16	837	798	892	865	927	873	1760	1420	1020	993	594	471
17	858	810	880	865	945	897	1490	1100	973	943	533	476
18	884	851	871	835	891	834	1090	986	934	904	586	502
19	916	883	922	865	852	828	1040	523	892	862	630	459
20	935	917	952	925	1280	849	545	515	1010	868	639	612
21	951	930	873	810	825	738	565	508	897	864	654	612
22	958	946	813	724	921	825	550	541	906	837	834	660
23	967	955	745	727	939	852	589	544	861	816	882	723
24	984	966	761	716	876	846	541	529	918	864	828	699
25	1040	969	758	527	1020	852	547	529	933	873	1140	852
26	1120	1020	552	519	984	744	565	547	1060	902	1180	912
27	1110	1070	709	552	747	633	670	559	1210	1080	903	798
28	1090	896	722	545	651	633	583	553	1060	971	798	732
29	896	626	555	498	684	633	642	570	---	---	747	732
30	719	581	580	555	672	633	626	596	---	---	822	750
31	590	530	---	---	660	618	661	643	---	---	744	663
MONTH	1120	530	952	498	1280	581	1760	508	1890	663	1180	455

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.3	7.1	7.6	7.4	7.7	7.5	7.3	7.3	7.6	7.4	7.7	7.2
2	7.3	7.0	7.7	7.5	7.7	7.5	7.5	7.2	7.5	7.4	7.2	7.1
3	7.2	7.0	7.6	7.4	7.6	7.2	7.3	7.2	7.4	7.2	7.4	7.1
4	7.4	7.1	7.6	7.5	7.3	7.2	7.2	7.2	7.3	7.2	7.8	7.3
5	7.3	7.0	7.6	7.5	7.5	7.3	7.3	7.2	7.3	7.1	7.7	7.5
6	7.3	7.0	7.6	7.5	7.4	7.2	7.3	7.2	7.3	7.1	7.6	7.2
7	7.3	7.0	7.6	7.4	7.4	7.3	7.3	7.2	7.4	7.2	7.3	7.0
8	7.3	7.1	7.5	7.5	7.5	7.4	7.3	7.2	7.4	7.2	7.6	7.3
9	7.3	7.2	7.6	7.5	7.8	7.4	7.3	6.9	7.3	7.2	7.5	7.3
10	7.5	7.2	7.6	7.5	7.4	7.2	7.1	6.9	7.2	7.1	7.6	7.5
11	7.4	7.1	7.6	7.5	7.4	7.2	7.2	7.1	7.2	7.0	7.6	7.0
12	7.4	7.1	7.6	7.5	7.5	7.3	7.2	7.1	7.2	7.0	7.5	7.1
13	7.4	7.2	7.5	7.4	7.4	7.2	7.1	7.1	7.2	6.8	7.4	7.1
14	7.5	7.1	7.5	7.4	---	---	7.1	6.9	7.3	7.2	7.2	6.9
15	7.6	7.1	7.4	7.4	---	---	7.4	7.0	7.2	7.0	7.2	7.0
16	7.2	7.1	7.5	7.4	---	---	7.4	7.2	7.1	7.0	7.6	7.3
17	7.3	7.0	7.5	7.4	---	---	7.4	7.2	7.1	7.0	7.6	7.5
18	7.3	7.1	7.5	7.4	---	---	7.4	7.2	7.2	7.1	7.6	7.1
19	7.5	7.1	7.5	7.4	---	---	7.6	7.4	7.6	7.1	7.6	7.2
20	7.3	7.1	7.5	7.4	7.5	7.3	7.5	7.4	7.7	7.5	7.4	7.2
21	7.3	7.1	7.5	7.4	7.1	7.0	7.8	7.4	7.6	7.4	7.2	7.0
22	7.5	7.1	7.5	7.3	7.2	7.0	7.8	7.7	7.5	7.2	7.2	7.0
23	7.6	7.1	7.5	7.4	7.4	7.1	7.8	7.7	7.6	7.4	7.5	7.2
24	7.8	7.1	7.4	7.3	7.3	7.1	7.8	7.6	7.8	7.5	7.5	7.3
25	7.3	7.2	7.5	7.3	7.5	7.2	7.8	7.4	7.5	7.2	7.5	7.2
26	7.2	7.1	7.5	7.3	7.5	7.1	7.5	7.4	7.2	7.1	7.4	7.2
27	7.3	7.2	7.6	7.4	7.3	7.0	7.7	7.5	7.5	7.1	7.5	7.2
28	7.2	7.2	7.6	7.4	7.3	7.1	7.7	7.4	7.6	7.4	7.5	7.3
29	7.3	7.1	7.7	7.5	7.2	7.2	7.7	7.6	---	---	7.4	7.3
30	7.5	7.2	7.5	7.4	7.3	7.2	7.7	7.4	---	---	7.6	7.4
31	7.7	7.3	---	---	7.4	7.3	7.7	7.5	---	---	7.6	7.4
MONTH	7.8	7.0	7.7	7.3	7.8	7.0	7.8	6.9	7.8	6.8	7.8	6.9
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	7.1	7.1	6.8	7.2	7.0	7.3	7.0	7.2	6.9	7.3	7.2
2	7.8	7.3	7.2	7.0	7.0	6.8	7.2	7.1	7.1	6.9	7.4	7.2
3	7.4	7.0	7.1	7.0	7.2	7.0	7.2	7.1	7.1	7.0	7.4	7.2
4	7.5	7.0	7.1	7.0	7.2	7.0	7.3	7.0	7.1	7.0	7.3	7.2
5	7.2	7.0	7.2	7.0	7.2	7.0	7.2	7.0	7.1	7.0	7.4	7.2
6	7.3	6.9	7.2	7.0	7.1	6.9	7.1	6.9	7.1	7.0	7.3	7.1
7	7.4	7.2	7.1	6.9	7.1	7.0	7.0	6.9	7.1	7.0	7.2	6.8
8	7.4	6.9	7.1	7.0	7.1	7.0	7.1	7.0	7.1	7.0	7.2	6.8
9	7.0	6.8	7.1	6.9	7.1	7.0	7.1	7.0	7.2	7.0	7.2	7.1
10	7.0	6.7	7.1	7.0	7.2	7.1	7.1	6.9	7.1	7.0	7.2	7.1
11	6.9	6.7	7.2	6.9	7.1	7.0	6.9	6.8	7.1	7.0	7.2	7.0
12	6.9	6.7	7.2	7.1	7.0	7.0	7.0	6.9	7.1	7.0	7.2	7.1
13	7.0	6.8	7.3	7.1	7.1	6.9	7.0	6.9	7.1	7.0	7.2	7.2
14	7.2	6.9	7.2	7.0	7.0	6.9	7.1	7.0	7.2	7.0	7.2	7.2
15	7.1	6.8	7.2	6.9	7.2	7.0	7.1	7.0	7.1	7.0	7.2	7.1
16	7.2	6.9	7.3	7.1	7.2	7.0	7.1	7.0	7.1	7.0	7.4	7.2
17	7.3	7.1	7.4	7.2	7.2	7.1	7.0	6.9	7.2	7.0	7.3	7.2
18	7.2	7.0	7.2	7.0	7.2	7.1	6.9	6.8	7.2	7.0	7.3	7.1
19	7.0	6.8	7.1	7.0	7.2	7.0	7.0	6.9	7.1	7.0	7.3	7.0
20	7.0	6.7	7.0	6.9	7.2	7.0	7.0	6.9	7.2	7.0	7.5	7.1
21	7.1	7.0	7.0	6.8	7.1	6.9	7.0	6.9	7.2	7.0	7.4	7.2
22	7.1	6.9	6.9	6.8	7.1	7.0	7.1	6.9	7.2	7.0	7.3	7.3
23	7.1	6.9	7.0	6.8	7.1	7.0	7.1	7.0	7.2	7.0	7.3	7.2
24	6.9	6.8	7.0	6.8	7.2	7.0	7.1	7.1	7.2	6.9	7.3	7.2
25	7.1	6.8	6.9	6.9	7.0	6.9	7.2	7.0	7.1	7.0	7.3	7.2
26	7.1	7.0	7.0	6.9	7.0	6.9	7.0	7.0	7.1	6.9	7.3	7.2
27	7.0	6.9	7.1	6.9	7.1	7.0	7.1	6.9	7.1	7.0	7.4	7.1
28	7.0	6.9	7.0	6.9	7.2	6.9	7.1	7.0	7.1	7.0	7.3	7.2
29	7.2	6.9	7.3	6.9	7.2	7.0	7.1	7.0	7.1	7.0	7.4	7.2
30	6.9	6.8	7.3	7.1	7.1	7.0	7.1	6.9	7.2	7.1	7.4	7.3
31	---	---	7.3	7.1	---	---	7.0	6.8	7.2	7.1	---	---
MONTH	7.8	6.7	7.4	6.8	7.2	6.8	7.3	6.8	7.2	6.9	7.5	6.8
YEAR	7.8	6.7										

DISSOLVED OXYGEN (DO), IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	3.6	3.1	6.7	4.9	9.2	8.3	10.9	10.6	9.7	9.4	10.4	9.4
2	4.6	1.6	6.9	5.8	9.4	8.8	10.9	10.6	9.7	9.4	10.6	9.9
3	4.3	2.0	7.3	5.8	8.9	8.3	10.9	10.3	9.7	9.3	10.4	9.6
4	3.7	0.5	7.1	5.9	8.7	6.9	10.3	9.5	10.0	9.5	9.6	9.0
5	3.8	0.7	6.2	5.2	7.7	6.1	9.9	9.3	10.0	9.7	9.2	8.4
6	3.5	2.5	6.6	5.8	7.1	6.3	9.9	8.9	10.1	9.5	9.2	8.6
7	4.6	1.9	6.2	5.8	7.1	6.5	9.6	9.1	10.1	9.4	9.1	8.5
8	2.8	1.6	7.0	6.1	8.2	6.3	9.7	9.3	9.9	9.0	9.1	8.2
9	3.4	1.6	7.1	5.6	9.1	5.9	9.8	9.4	10.3	9.3	9.2	8.3
10	1.4	0.2	6.1	5.5	6.9	6.0	9.5	9.2	10.0	9.2	9.3	8.6
11	0.5	0.2	6.6	5.6	6.8	5.5	9.3	8.8	9.8	9.3	9.6	9.2
12	0.5	0.2	6.2	5.6	7.7	5.9	8.9	8.7	9.8	9.0	9.9	9.4
13	0.6	0.2	5.9	5.1	6.9	6.0	9.3	8.8	9.2	8.2	10.1	9.5
14	0.4	0.1	5.4	4.5	7.7	6.6	9.6	8.8	10.0	8.8	9.9	9.5
15	1.2	0.1	4.6	3.4	8.0	6.5	9.5	8.5	10.1	9.6	9.7	9.2
16	2.1	1.1	3.9	2.7	8.4	7.1	9.5	8.7	9.9	9.3	10.0	9.0
17	2.3	1.4	4.3	3.3	8.4	7.6	11.3	10.3	9.5	8.9	10.1	9.7
18	1.7	1.4	5.3	3.8	8.5	8.1	10.4	9.8	9.0	8.7	9.9	9.5
19	3.0	1.5	4.9	4.2	9.1	6.9	10.9	9.8	9.1	8.5	9.5	8.7
20	2.3	1.2	4.7	2.9	10.4	6.6	11.0	10.9	9.7	8.6	9.3	9.0
21	1.2	0.5	3.9	2.8	10.4	5.3	10.8	10.2	9.5	9.0	9.1	8.7
22	1.2	0.5	5.0	3.4	10.8	10.0	10.6	10.2	9.4	8.9	9.1	8.9
23	1.2	0.4	5.5	4.5	10.9	10.0	10.5	10.1	10.2	9.1	8.9	8.6
24	0.5	0.3	6.0	4.2	10.8	9.5	10.7	10.2	10.4	9.8	9.2	8.6
25	0.4	0.3	7.5	4.8	10.3	9.4	10.9	10.4	10.2	9.6	9.5	8.7
26	0.7	0.3	7.1	6.0	11.1	10.0	10.6	10.3	10.2	9.8	9.5	9.1
27	0.4	0.3	7.7	7.1	10.6	9.3	10.3	9.5	10.3	9.9	9.6	8.9
28	0.9	0.3	7.2	6.5	10.7	9.6	10.1	9.4	10.1	9.5	9.8	9.0
29	3.7	0.6	8.6	7.6	10.4	10.3	10.6	9.8	---	---	9.3	8.8
30	5.6	2.6	9.1	8.0	10.5	9.5	10.0	9.7	---	---	8.8	7.7
31	6.4	4.2	---	---	10.9	10.2	9.7	9.3	---	---	8.9	8.5
MONTH	6.4	0.1	9.1	2.7	11.1	5.3	11.3	8.5	10.4	8.2	10.6	7.7
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.3	8.9	1.8	0.3	3.8	2.9	3.4	1.8	0.3	0.1	1.5	0.3
2	9.0	7.5	1.8	0.2	3.6	2.9	2.9	2.0	0.2	0.1	1.5	0.4
3	8.1	7.6	2.2	0.2	4.0	2.9	2.1	0.7	0.3	0.2	2.0	1.2

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

## STREAMS TRIBUTARY TO LAKE ERIE

## 04209000 CHAGRIN RIVER AT WILLCUGHBY, OHIO

LOCATION.--Lat 41°37'51", long 81°24'13", in T.9 N., R.10 W., Lake County, at gaging station on left bank 150 ft (46 m) downstream from city waterworks dam, 800 ft (244 m) downstream from East Branch, 1 mi (2 km) southeast of Willoughby, and 5.0 mi (8.0 km) upstream from mouth. Sediment samples taken 450 ft (137 m) upstream from waterworks dam.

DRAINAGE AREA.--246 mi<sup>2</sup> (637 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: Water years 1964-74 (partial-record station).  
Sediment records: July 1969 to September 1974 (partial-record station).

REMARKS.--Flow affected by ice Dec. 12, 18, 19, Jan. 1, 3-17, Feb. 3, 5-12, 17.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SiO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
NOV., 1973												
05...	1500	215	7.5	--	455	8.4	--	--	--	--	--	--
MAR., 1974												
09...	1430	2430	8.0	--	--	7.6	--	35	7.5	--	--	0
APR.												
16...	1530	400	12.0	--	--	7.8	--	40	9.2	--	--	0
AUG.												
22...	0930	68	21.5	8.1	470	8.2	4.0	45	12	25	3.3	0

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA, MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
NOV., 1973												
05...	--	67	36	--	--	.00	.66	--	--	--	--	--
MAR., 1974												
09...	61	38	19	--	--	.01	.96	--	--	120	--	--
APR.												
16...	100	48	41	--	--	.00	.85	--	--	140	--	--
AUG.												
22...	164	51	32	.2	.20	.00	.01	.10	253	160	10	20

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	PARTICLE SIZE									
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED									
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00
Nov.															
28...	1000	11.0	1270	303	1040	31	39	52	69	85	94	95	99	100	--
Jan.															
19...	1545	1.5	3280	973	8620	25	35	47	63	76	86	88	93	98	100
Mar.															
09...	1400	8.0	2460	618	4110	33	44	56	69	84	91	92	96	99	100
Apr.															
05...	1050	8.0	1240	202	676	38	50	61	76	89	96	97	99	100	--



## STREAMS TRIBUTARY TO LAKE ERIE

367

04209000 CHAGRIN RIVER AT WILLOUGHBY, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	172	38	18	1490	--	--	459	--	--
2	235	183	142	630	--	--	327	--	--
3	374	132	152	500	--	--	267	--	--
4	187	32	16	310	--	--	214	--	--
5	653	143	338	207	12	6.7	264	--	--
6	344	113	105	172	13	6.0	225	--	--
7	191	90	46	146	15	5.9	215	--	--
8	151	77	31	132	17	6.1	193	--	--
9	138	68	25	122	18	5.9	157	--	--
10	122	60	20	123	18	6.0	148	--	--
11	113	56	17	120	19	6.2	136	--	--
12	97	55	14	114	20	6.2	130	--	--
13	77	--	--	120	20	6.5	151	4	1.6
14	100	--	--	125	20	6.8	419	--	--
15	100	--	--	129	20	7.0	297	--	--
16	82	--	--	160	18	7.8	214	--	--
17	74	--	--	182	17	8.4	165	--	--
18	67	--	--	155	14	5.9	150	--	--
19	67	--	--	144	10	3.9	170	--	--
20	65	--	--	135	6	2.2	1030	--	--
21	67	--	--	167	5	2.3	1520	190	780
22	67	--	--	268	5	3.6	605	--	--
23	70	--	--	187	5	2.5	388	--	--
24	63	--	--	170	5	2.3	239	--	--
25	63	--	--	920	--	--	467	--	--
26	63	--	--	1010	204	592	1480	--	--
27	65	--	--	553	82	122	1680	289	1310
28	89	--	--	1550	361	1750	863	--	--
29	301	56	46	2150	428	2820	516	--	--
30	525	231	463	784	--	--	444	--	--
31	1460	410	1670	--	--	--	305	--	--
TOTAL	6242	--	--	12975	--	--	13838	--	--
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	230	--	--	320	--	--	1210	357	1210
2	185	--	--	270	--	--	1210	--	--
3	170	--	--	230	--	--	1030	--	--
4	160	--	--	206	--	--	1610	555	3570
5	160	--	--	190	--	--	1800	--	--
6	150	--	--	180	--	--	896	--	--
7	150	--	--	170	--	--	626	--	--
8	140	--	--	160	--	--	1570	1250	13100
9	140	--	--	150	--	--	3070	1480	13000
10	140	--	--	140	--	--	2230	500	3010
11	140	--	--	140	--	--	998	155	418
12	140	--	--	140	--	--	638	--	--
13	140	--	--	280	6	4.5	410	--	--
14	150	7	2.8	548	--	--	310	--	--
15	180	8	3.9	385	--	--	285	--	--
16	380	122	181	280	--	--	1350	309	1220
17	700	250	473	230	--	--	854	115	265
18	626	144	373	198	--	--	512	--	--
19	3180	1250	11100	350	--	--	494	--	--
20	1460	337	1330	836	--	--	375	--	--
21	1540	244	1010	656	--	--	305	--	--
22	962	--	--	1950	--	--	295	--	--
23	992	--	--	1120	--	--	365	--	--
24	938	--	--	596	--	--	360	--	--
25	494	--	--	415	--	--	360	--	--
26	375	--	--	330	--	--	400	--	--
27	584	--	--	285	--	--	524	--	--
28	542	59	86	482	29	41	410	10	11
29	944	140	357	--	--	--	554	10	15
30	650	--	--	--	--	--	932	9	23
31	430	--	--	--	--	--	1000	9	24
TOTAL	17172	--	--	11237	--	--	26983	--	--

## STREAMS TRIBUTARY TO LAKE ERIE

04209000 CHAGRIN RIVER AT WILLOUGHBY, OHIO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	668	10	18	536	--	--	430	--	--
2	2120	1260	8310	345	--	--	202	--	--
3	1210	360	1180	261	--	--	147	--	--
4	3250	2370	26300	239	--	--	127	--	--
5	1380	220	820	206	--	--	137	--	--
6	1060	--	--	320	--	--	105	--	--
7	902	--	--	360	--	--	91	--	--
8	866	--	--	290	--	--	86	--	--
9	680	--	--	752	--	--	100	--	--
10	668	--	--	638	--	--	94	62	16
11	680	--	--	465	--	--	105	34	9.6
12	460	--	--	3900	--	--	86	23	5.3
13	385	--	--	2040	--	--	76	20	4.1
14	345	--	--	860	--	--	78	22	4.6
15	476	--	--	512	--	--	270	--	--
16	425	32	37	375	--	--	854	--	--
17	275	--	--	261	--	--	370	177	177
18	235	--	--	226	--	--	186	118	59
19	214	--	--	190	--	--	425	--	--
20	194	--	--	164	--	--	584	--	--
21	179	--	--	154	--	--	248	--	--
22	425	--	--	275	50	50	235	--	--
23	680	--	--	425	88	109	202	--	--
24	395	12	13	360	77	75	161	--	--
25	295	--	--	222	--	--	120	--	--
26	222	--	--	164	--	--	310	--	--
27	202	--	--	143	--	--	330	--	--
28	186	--	--	130	--	--	154	--	--
29	190	--	--	425	--	--	140	--	--
30	248	--	--	375	--	--	488	--	--
31	--	--	--	248	--	--	--	--	--
TOTAL	19515	--	--	15861	--	--	6941	--	--

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	740	--	--	78	--	--	130	--	--
2	252	--	--	63	--	--	117	--	--
3	157	--	--	63	--	--	194	--	--
4	127	--	--	117	--	--	214	--	--
5	120	--	--	114	--	--	120	--	--
6	111	--	--	76	--	--	88	--	--
7	94	--	--	61	--	--	78	--	--
8	86	--	--	140	36	18	76	--	--
9	83	10	2.2	290	255	213	71	--	--
10	78	--	--	140	--	--	73	--	--
11	78	--	--	111	--	--	76	--	--
12	68	--	--	150	--	--	76	--	--
13	59	--	--	206	--	--	81	--	--
14	61	--	--	239	--	--	78	--	--
15	88	--	--	124	139	47	71	--	--
16	94	--	--	83	--	--	63	--	--
17	66	--	--	410	--	--	86	--	--
18	57	--	--	300	--	--	530	--	--
19	55	--	--	130	--	--	190	--	--
20	55	--	--	91	--	--	150	--	--
21	53	--	--	78	67	14	320	--	--
22	48	--	--	71	38	7.3	365	--	--
23	71	69	13	66	--	--	190	--	--
24	71	--	--	168	--	--	127	--	--
25	61	--	--	105	--	--	100	--	--
26	55	--	--	68	--	--	86	--	--
27	50	--	--	76	--	--	81	--	--
28	48	--	--	182	160	79	154	--	--
29	470	--	--	182	--	--	117	--	--
30	440	260	309	182	--	--	105	--	--
31	120	--	--	120	--	--	--	--	--
TOTAL	4016	--	--	4284	--	--	4207	--	--



## STREAMS TRIBUTARY TO LAKE ERIE

04212200 GRAND RIVER AT PAINESVILLE, OHIO

LOCATION.--Lat 41°44'09", long 81°15'59", in T.11 N., R.8 W., Lake County, at bridge on State Highway 535 in Painesville, 2.2 mi (3.5 km) upstream from mouth, and 8.0 mi (12.9 km) downstream from Kellogg Creek.

DRAINAGE AREA.--701 mi<sup>2</sup> (1,816 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: March 1950 to February 1952, October 1962 to September 1974.  
Water temperatures: March 1950 to February 1952, October 1962 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 15,000 micromhos Nov. 14; minimum, 455 micromhos Apr. 4.

pH: Maximum, 11.7 Nov. 14, Jan. 16; minimum, 6.2 Feb. 26, Aug. 14, 15.

Dissolved oxygen: Maximum, 13.5 mg/l Mar. 28; minimum, 1.0 mg/l July 18, 19.

Water temperatures: Maximum, 31.5°C Aug. 20, 24, 25; minimum, 1.0°C Dec. 20, 22, 23, Jan. 2, 16-19, Feb. 25, 26.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
20...	1315	46	20.0	--	11400	7.2	--	1200	12	--	--	0
31...	1045	1310	13.0	--	1880	7.5	--	220	9.9	--	--	0
NOV.												
02...	0830	3130	10.5	--	1150	8.0	--	--	--	--	--	0
14...	2230	223	14.0	--	11400	7.9	--	--	--	--	--	0
DEC.												
11...	1625	249	7.0	--	6420	8.0	--	--	--	--	--	0
26...	1745	3480	3.0	--	746	7.2	--	--	--	--	--	0
JAN.												
11...	1830	170	4.0	--	6410	7.2	--	760	9.9	--	--	0
22...	1830	3800	4.0	--	1190	6.6	--	120	6.1	--	--	0
FEB.												
12...	1900	190	4.5	--	5740	7.6	--	770	80	--	--	0
22...	1900	5500	3.0	--	618	7.3	--	34	8.6	--	--	0
MAR.												
19...	1625	1520	5.5	--	1630	6.9	--	180	6.5	--	--	0
APR.												
05...	1940	4100	11.0	--	815	6.8	--	78	5.0	--	--	0
17...	0830	1350	10.5	--	1210	--	--	--	--	--	--	--
MAY												
14...	2210	4080	16.0	--	953	6.9	--	99	4.7	--	--	0
29...	1310	124	14.0	--	6170	6.8	--	610	11	--	--	0
JUNE												
04...	1945	101	26.0	--	6280	7.0	--	760	11	--	--	0
11...	1310	30	25.0	--	8990	6.8	--	1200	11	--	--	0
AUG.												
13...	1445	96	28.0	4.6	8000	7.5	1.3	950	11	800	7.1	0

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.									
25...	1000	0	4	4	16	0	140	1.0	8.5
APR.									
17...	0830	2	--	--	--	--	--	.1	7.1

## STREAMS TRIBUTARY TO LAKE ERIE

371

## 04212200 GRAND RIVER AT PAINESVILLE, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1966-74): Maximum, 30,300 micromhos July 14, 1964; minimum, 300 micromhos Feb. 23-28, Mar. 1, 1971.

pH (1966-74): Maximum, 12.0 Nov. 9, 1971; minimum, 4.5 Sept. 28, 1972.

Dissolved oxygen (1966-74): Maximum, 15.0 mg/l or higher Dec. 2, 3, 23, 1971, Mar. 11, 1972; minimum, 0.0 mg/l on several days during July and August 1968.

Water temperatures (1966-74): Maximum, 33.5°C June 28, 1971; minimum, freezing point on many days during winter periods.

REMARKS.--Water-quality recorder operated since December 1966. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice a year to further define the quality of water. Records of discharge are given for Grand River near Madison, Ohio, station 04212000, drainage area 581 mi<sup>2</sup> (1,505 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
OCT.												
20...	111	91	3900	.2	--	.00	.21	--	--	3000	--	--
31...	204	65	490	.2	--	.00	1.5	--	--	590	--	--
NOV.												
02...	76	61	290	.3	--	.00	1.5	--	--	--	--	--
14...	62	100	3900	.3	--	.01	3.2	--	--	--	--	--
DEC.												
11...	73	71	2100	.2	--	.01	2.2	--	--	--	--	--
26...	44	56	160	.1	--	.01	1.2	--	--	--	--	--
JAN.												
11...	71	78	2100	.2	--	.00	1.5	--	--	1900	--	--
22...	39	44	310	.1	--	.00	.40	--	--	320	--	--
FEB.												
12...	77	96	1800	.2	--	.00	2.9	--	--	2300	--	--
22...	55	43	130	.2	--	.01	1.5	--	--	120	--	--
MAR.												
19...	45	48	450	.2	--	.00	.90	--	--	480	--	--
APR.												
05...	40	34	220	.3	--	.00	.55	--	--	220	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
14...	42	32	270	.2	--	.00	.61	--	--	270	--	--
29...	106	71	1900	.4	--	.00	2.5	--	--	1600	--	--
JUNE												
04...	64	96	2300	1.1	--	.00	3.4	--	--	1900	--	--
11...	88	140	3300	1.0	--	.00	4.0	--	--	3000	--	--
AUG.												
13...	121	85	2900	.2	3.6	.03	.09	.18	4810	2400	40	100



	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10400	9580	1920	1290	2500	1840	3000	2570	2900	2030	2330	1400
2	10000	8680	1800	995	3720	2370	4060	3000	4490	2780	1520	1290
3	8800	7330	1390	1030	4690	3720	4540	3750	4380	3600	1520	1230
4	9210	7930	1770	1350	5230	4570	4200	3350	4970	4070	1560	930
5	9350	4610	2170	1750	5860	3950	5400	3780	5780	4260	1110	855
6	6990	5130	2790	1990	4670	3890	5460	3890	6450	5480	1400	915
7	6930	5740	3450	2590	4500	4190	4620	4080	6890	5460	1590	1400
8	9680	6340	4630	3430	4620	4320	6510	4340	7200	5270	1950	855
9	11500	8490	4890	4080	5410	4610	6740	5630	5730	4800	990	630
10	12700	7120	5030	4230	6270	5370	8190	5940	6570	5120	795	630
11	7170	6050	5260	4400	6100	5490	7730	6480	6710	4820	990	705
12	8550	6270	9070	4260	6240	5410	8340	5750	6330	5810	1280	945
13	10300	8150	10700	9070	5620	4710	9810	7130	6950	5930	1310	1200
14	10900	7700	15000	8780	4870	1900	8330	5460	5970	4980	1640	1310
15	9640	6770	10100	5790	1900	1710	6360	5060	5480	3920	2990	1540
16	9560	7430	8300	7090	2380	1840	6260	3000	4520	3600	2730	1380
17	9580	7420	8120	6230	2730	2380	2670	1110	3890	3270	1340	1070
18	7420	5480	6880	5320	3560	2710	2070	1470	4980	3780	1310	1040
19	9390	7430	7110	4860	3750	3050	1700	1220	5100	4080	2100	1280
20	11000	9290	8050	6160	4600	1550	1320	1140	4310	3420	2280	1330
21	11300	6860	6230	4970	1270	1020	1230	1040	3360	1890	2630	2260
22	12500	6430	7290	5940	1020	630	1380	1080	1800	630	3260	2420
23	6880	5620	7560	6840	1150	853	1410	1170	915	675	3080	2350
24	7860	7160	7430	6350	1330	1050	1410	870	1460	1010	2900	2110
25	8040	7630	7370	2600	1490	923	1400	825	1700	1460	2950	2260
26	8010	7290	2770	2010	923	665	1830	1320	2160	1620	3040	2060
27	10300	7830	2320	1940	1450	628	1830	1110	2780	2280	2640	1650
28	11500	8920	2210	1700	1690	1450	1410	1100	2840	2540	1840	1490
29	8970	5740	1570	1410	1850	1650	1340	1050	---	---	1670	1190
30	6100	1740	1950	1410	2080	1810	1880	795	---	---	1190	1020
31	1780	1420	---	---	2750	2080	2480	1940	---	---	1160	984
MONTH	12700	1420	15000	995	6270	628	9810	795	7200	630	3260	630
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	24.0	23.0	12.5	11.0	7.5	6.5	2.5	1.5	4.5	3.0	3.5	2.5
2	23.5	22.0	12.0	10.5	7.0	5.5	2.5	1.0	3.5	2.5	3.5	2.0
3	23.5	22.0	11.5	10.5	8.5	6.5	3.0	2.0	3.0	2.5	6.0	3.5
4	24.0	22.5	11.0	10.5	10.5	8.5	3.0	2.0	3.0	2.5	7.5	6.0
5	23.5	20.0	11.0	10.0	11.0	9.5	4.0	2.0	3.5	2.5	8.5	7.5
6	20.5	18.5	10.0	9.0	10.0	7.5	3.5	2.5	3.5	3.0	8.5	7.5
7	19.5	18.0	10.0	8.5	8.0	7.5	3.0	2.5	3.5	2.5	9.0	8.0
8	21.5	19.5	11.0	9.5	8.5	7.5	4.0	2.5	4.0	2.5	9.0	6.5
9	22.0	20.5	10.5	8.5	8.0	7.5	4.0	3.0	4.0	2.5	7.0	6.0
10	23.0	21.5	9.5	8.0	8.0	6.5	5.0	3.5	4.0	2.5	7.5	6.5
11	24.0	23.0	10.0	9.0	6.5	5.0	4.5	4.0	4.0	3.0	6.5	6.0
12	24.5	23.5	11.0	9.0	6.0	5.0	5.0	3.5	3.5	3.5	7.0	6.0
13	24.5	23.5	12.5	11.0	6.0	5.0	5.0	3.5	5.0	4.0	6.0	5.0
14	23.5	21.5	14.0	12.0	6.0	2.5	5.5	4.0	4.0	2.5	5.5	4.0
15	23.5	22.0	15.5	13.5	2.5	2.0	4.5	3.5	3.5	2.5	5.5	5.0
16	23.0	20.5	15.0	11.5	2.5	2.0	4.0	2.5	3.5	2.5	6.0	4.0
17	20.5	18.5	11.5	8.5	2.5	2.0	2.5	1.0	3.0	2.0	5.0	3.5
18	19.5	17.5	9.0	7.5	3.5	2.0	1.5	1.0	4.0	2.5	5.0	3.5
19	19.0	18.0	10.0	9.0	3.5	2.5	1.5	1.0	3.5	2.5	6.0	5.0
20	20.5	18.5	11.5	9.5	3.5	1.0	3.0	1.5	3.5	2.5	6.0	4.5
21	22.5	17.5	12.0	10.0	1.5	1.5	3.5	3.0	2.5	1.5	6.0	5.0
22	23.0	19.5	12.0	10.5	1.5	1.0	3.5	3.0	2.5	1.5	6.5	4.0
23	23.0	21.5	12.0	11.0	1.5	1.0	4.0	3.5	2.0	1.5	6.0	5.5
24	23.5	22.5	12.0	11.0	2.0	1.5	3.5	3.0	2.5	1.5	5.5	3.5
25	23.5	22.0	12.5	9.5	3.0	2.0	3.5	2.5	2.0	1.0	5.0	3.0
26	22.0	21.0	9.5	8.5	3.0	2.5	4.5	2.5	2.0	1.0	5.5	4.0
27	21.0	20.0	10.0	9.5	3.5	3.0	5.5	5.0	3.5	1.5	5.0	4.0
28	21.0	19.0	10.5	9.5	3.5	3.0	5.0	4.5	3.5	3.0	5.0	4.0
29	19.5	16.5	9.5	8.0	3.5	3.0	4.5	4.0	---	---	5.0	4.0
30	16.5	13.0	8.0	7.0	3.0	2.0	4.5	3.5	---	---	6.0	4.5
31	13.0	12.5	---	---	2.5	2.0	4.5	4.0	---	---	6.0	5.5
MONTH	24.5	12.5	15.5	7.0	11.0	1.0	5.5	1.0	5.0	1.0	9.0	2.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	5.0	18.5	17.5	23.5	22.5	21.5	20.0	30.0	29.5	28.5	27.0
2	8.5	7.0	18.0	16.5	23.5	21.5	21.5	20.0	30.5	29.0	27.5	25.0
3	9.5	8.0	17.0	16.0	23.5	21.5	23.5	20.5	30.0	28.5	25.5	22.5
4	12.0	9.5	16.0	14.5	24.5	23.5	25.0	23.5	30.5	29.0	24.5	22.5
5	11.5	10.5	16.0	15.0	25.0	24.5	27.0	25.0	29.0	27.5	25.0	22.5
6	10.0	9.5	16.0	13.5	25.5	24.5	27.0	25.5	30.0	28.0	23.5	22.5
7	9.5	8.5	14.5	12.5	26.0	25.0	29.0	26.5	30.0	29.0	24.0	23.0
8	8.0	6.0	14.5	13.0	25.5	24.5	29.5	28.0	30.0	29.0	24.5	23.0
9	5.5	5.0	13.0	12.0	27.0	25.5	30.5	29.5	30.0	29.5	25.5	24.0
10	7.5	4.5	14.0	12.0	27.0	26.0	31.0	30.0	30.0	29.0	26.0	25.5
11	7.5	6.0	15.0	13.0	26.5	24.0	30.5	29.0	30.0	28.5	26.0	24.0
12	8.5	7.0	15.5	13.5	25.0	22.0	29.5	28.5	29.0	28.5	26.0	25.5
13	11.5	8.5	14.0	13.5	25.0	23.5	29.5	28.5	29.0	28.0	27.0	26.0
14	12.5	11.0	15.0	13.5	25.0	23.0	30.0	29.0	29.5	28.0	26.5	24.5
15	12.0	10.0	16.0	13.5	25.0	24.0	30.5	29.5	30.0	29.0	26.5	24.0
16	11.5	9.5	16.5	14.5	24.0	23.0	30.5	29.0	29.5	28.5	27.0	25.0
17	12.0	10.5	18.0	16.5	23.5	23.0	30.5	29.0	30.5	29.5	27.0	26.0
18	12.5	11.5	19.5	17.5	23.5	22.0	30.0	29.0	31.0	29.5	---	---
19	13.5	12.0	20.5	19.0	22.5	21.5	30.5	29.0	31.0	29.5	---	---
20	14.0	12.0	20.5	19.0	24.0	21.0	---	---	31.5	30.0	---	---
21	15.5	13.5	21.5	20.0	25.0	24.0	29.5	29.0	31.0	30.5	---	---
22	15.5	15.0	22.0	21.5	25.0	24.5	29.5	28.5	31.0	29.5	---	---
23	14.5	12.5	22.0	21.5	25.0	23.0	29.0	27.0	31.0	30.5	---	---
24	13.0	11.0	23.0	22.0	25.0	22.5	28.0	27.0	31.5	30.5	---	---
25	12.5	12.0	22.5	21.0	25.0	24.0	28.5	27.0	31.5	30.5	---	---
26	15.0	12.5	22.0	21.0	25.0	24.5	28.5	28.0	31.0	30.0	---	---
27	16.5	14.5	22.5	21.5	25.5	24.5	28.5	27.0	31.0	29.5	---	---
28	18.0	16.0	22.5	21.5	25.5	24.0	30.5	28.5	31.0	29.0	---	---
29	19.5	17.5	22.0	21.0	25.5	24.5	30.5	29.0	30.0	29.0	---	---
30	19.5	18.5	22.5	21.0	25.0	19.5	29.5	28.5	30.0	29.5	---	---
31	---	---	23.5	22.5	---	---	30.0	29.0	30.0	27.5	---	---
MONTH	19.5	4.5	23.5	12.0	27.0	19.5	31.0	20.0	31.5	27.5	---	---
YEAR	31.5	1.0										



## STREAMS TRIBUTARY TO LAKE ERIE

## 04212700 ASHTABULA RIVER AT ASHTABULA, OHIO

LOCATION.--Lat 41°54'00", long 80°47'44", in T.13 N., R.3 W., Ashtabula County, on right bank at Jack's Automarine, 600 ft (183 m) upstream from bridge on State Highway 531, 4,000 ft (1,219 m) upstream from mouth, and 4,000 ft (1,219 m) downstream from Fields Brook, in Ashtabula.

DRAINAGE AREA.--136 mi<sup>2</sup> (352 km<sup>2</sup>).

PERIOD OF RECORD.--Chemical analyses: June 1968 to September 1974.  
Water temperatures: June 1968 to September 1974.

## EXTREMES.--1973-74:

Specific conductance: Maximum, 3,000 micromhos Dec. 20, Jan. 27, Feb. 3, 4, Aug. 30, Sept. 1; minimum, 129 micromhos May 13.

pH: Maximum, 9.7 June 22; minimum, 6.4 Dec. 29, 30.

Dissolved oxygen: Maximum, 15.0 mg/l Dec. 15-17; minimum, 2.9 mg/l Aug. 29.

Water temperatures: Maximum, 27.0°C Aug. 20, 21, 23, 26; minimum, 0.5°C on many days during December to March.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OCT.												
18...	1000	14	15.0	--	1460	8.2	--	110	10	--	--	0
22...	1200	13	14.0	--	494	8.4	--	36	9.3	--	--	1
NOV.												
02...	1200	658	19.0	--	331	7.6	--	--	--	--	--	0
21...	0920	66	7.0	--	778	7.0	--	--	--	--	--	0
DEC.												
11...	1400	70	4.0	--	931	8.1	--	--	--	--	--	0
21...	1000	1970	.0	--	304	7.3	--	--	--	--	--	0
JAN.												
15...	1600	60	1.0	--	753	7.4	--	63	8.9	--	--	0
22...	1400	368	5.0	--	337	6.8	--	35	5.5	--	--	0
FEB.												
06...	1600	36	1.0	--	537	7.9	--	30	8.8	--	--	0
23...	1700	676	1.0	--	229	7.1	--	20	4.0	--	--	0
MAR.												
26...	0900	148	2.0	--	599	7.3	--	40	5.9	--	--	0
31...	1300	631	5.0	--	270	7.0	--	21	4.2	--	--	0
APR.												
05...	2200	374	11.0	--	272	6.8	--	24	4.1	--	--	0
23...	1200	189	13.0	--	769	7.1	--	47	7.3	--	--	0
MAY												
13...	2100	1090	14.0	--	188	6.7	--	18	3.2	--	--	0
29...	0900	26	17.0	--	849	7.2	--	71	8.2	--	--	0
JUNE												
08...	1000	9.0	17.0	--	573	7.2	--	53	8.6	--	--	0
18...	1800	26	20.5	--	1500	7.1	--	110	9.6	--	--	0
SEP.												
05...	1440	24	22.0	7.9	450	8.1	.6	44	8.5	27	1.7	0

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL CUPPER (CU) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL NICKEL (NI) (UG/L)
OCT.							
25...	1150	0	300	10	4	20	1
APR.							
17...	1030	2	--	--	--	--	--



## STREAMS TRIBUTARY TO LAKE ERIE

377

## 04212700 ASHTABULA RIVER AT ASHTABULA, OHIO--Continued

## EXTREMES.--Period of record:

Specific conductance (1968-74): Maximum, 3,000 micromhos Aug. 20, 1970, Dec. 20, 1973, Jan. 27, Feb. 3, 4, Aug. 30, Sept. 1, 1974; minimum, 39 micromhos June 18, 1972.

pH (1968-74): Maximum, 11.7 Aug. 22, 1970; minimum, 4.4 Sept. 28, 1970.

Dissolved oxygen (1968-74): Maximum, 15.0 mg/l or higher Feb. 22-28, 1971, Feb. 13-15, Dec. 15-17, 1973; minimum, 0.0 mg/l Mar. 16, 17, 1971.

Water temperatures (1968-74): Maximum, 29.0°C Aug. 23, 24, 1968; minimum, freezing point on many days during 1968 and 1969.

REMARKS.--Water-quality recorder operated since June 1968. Specific conductance values listed as 3,000 micromhos represents values of 3,000 micromhos or higher, due to instrument limitations. Dissolved oxygen concentrations listed as 15.0 mg/l represents concentrations of 15.0 mg/l or higher, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. In addition to the water-quality recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on samples with the maximum specific conductance and the minimum specific conductance for each month until June 30, 1974. Special samples were also collected twice during the year to further define the quality of water. Records of discharge are given for Ashtabula River near Ashtabula, Ohio, station 04212500, drainage area 121 mi<sup>2</sup> (195 km<sup>2</sup>).

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT.												
18...	101	68	350	.2	--	.00	.85	--	--	320	--	--
22...	108	35	74	.2	--	.00	.62	--	--	130	--	--
NOV.												
02...	31	56	46	.2	--	.01	.82	--	--	--	--	--
21...	52	75	170	.3	--	.22	.42	--	--	--	--	--
DEC.												
11...	75	80	190	.2	--	.01	.32	--	--	--	--	--
21...	31	44	47	.1	--	.01	.93	--	--	--	--	--
JAN.												
15...	90	60	150	.2	--	.00	.01	--	--	190	--	--
22...	31	41	54	.1	--	.00	.35	--	--	110	--	--
FEB.												
06...	85	50	88	.4	--	.00	.39	--	--	110	--	--
23...	23	32	31	.2	--	.00	.78	--	--	66	--	--
MAR.												
26...	45	61	130	.1	--	.00	.38	--	--	120	--	--
31...	32	37	38	.2	--	.01	.32	--	--	70	--	--
APR.												
05...	32	36	41	.2	--	.00	.30	--	--	77	--	--
23...	71	67	150	.2	--	.05	.60	--	--	150	--	--
MAY												
13...	27	26	24	.2	--	.01	.38	--	--	58	--	--
29...	96	61	180	.3	--	.00	.75	--	--	210	--	--
JUNE												
08...	107	44	110	.8	--	.00	.93	--	--	170	--	--
18...	94	110	340	.6	--	.01	1.7	--	--	310	--	--
SEP.												
05...	114	26	56	.2	.15	.00	.13	.03	221	140	280	30

DATE	TOTAL SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT.						
25...	1	320	90	2	.5	--
APR.						
17...	--	--	--	--	.3	6.8

## 04212700 ASHTABULA RIVER AT ASHTABULA, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25°C), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1460	1110	643	354	525	408	555	444	2560	1640	636	246
2	1500	1240	378	303	558	399	678	471	2760	2340	336	243
3	1430	607	546	378	687	558	690	459	3000	2710	327	291
4	1240	631	561	474	813	687	621	408	3000	1880	498	264
5	1490	976	573	495	939	813	495	408	1710	366	312	228
6	1550	571	744	573	1070	924	489	384	549	381	318	249
7	766	499	825	594	1010	531	501	405	2170	489	450	315
8	667	466	765	624	831	501	546	426	786	327	510	363
9	523	388	1180	720	792	645	534	381	366	330	336	183
10	751	403	1130	702	840	708	483	378	405	336	384	213
11	661	547	882	576	978	678	558	390	516	336	372	246
12	890	608	1020	825	927	729	492	384	372	333	471	306
13	1080	824	1150	708	1090	927	510	387	360	330	519	474
14	1290	1040	933	591	1310	354	756	402	351	333	531	417
15	1380	969	1340	561	462	327	1080	579	450	336	453	354
16	1400	1290	1540	1080	477	372	---	---	459	357	774	333
17	1490	1340	1370	450	573	372	891	459	384	333	330	270
18	1530	1360	573	444	585	501	504	414	480	339	375	300
19	1460	570	681	567	732	546	531	228	549	348	618	330
20	1180	927	771	552	3000	621	288	222	846	336	558	366
21	1110	394	792	711	621	228	345	288	531	351	516	375
22	571	385	945	789	327	249	357	288	663	210	558	456
23	573	384	1020	744	366	303	462	363	249	192	636	543
24	644	422	942	417	294	294	438	345	312	207	609	375
25	712	601	1250	750	720	387	441	360	303	240	606	504
26	934	445	750	348	810	258	1320	423	246	213	600	549
27	804	495	537	369	321	267	3000	1320	291	237	615	375
28	924	720	648	330	369	279	2810	495	474	276	447	369
29	1520	644	345	261	411	351	621	348	---	---	459	255
30	1700	728	456	291	507	411	369	342	---	---	285	243
31	706	586	---	---	531	426	1490	384	---	---	306	243
MONTH	1700	384	1540	261	3000	228	3000	222	3000	192	774	183

[illegible]

## PH (UNITS), WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

[illegible]



TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	19.5	12.0	10.0	6.0	4.5	2.0	1.0	4.0	2.5	1.5	0.5
2	19.5	19.5	10.5	9.5	5.0	4.5	1.5	1.0	3.0	1.5	2.0	1.0
3	19.5	19.0	10.5	9.5	5.5	4.5	1.5	1.0	2.0	1.5	7.0	2.0
4	19.5	19.0	9.5	9.0	7.5	5.5	1.5	0.5	2.0	0.5	9.0	7.5
5	20.0	19.5	9.5	9.0	8.5	7.5	1.0	1.0	1.0	0.5	9.5	8.5
6	19.5	18.0	9.0	8.0	8.5	8.0	1.0	0.5	1.5	0.5	8.5	7.5
7	18.5	17.5	8.0	7.5	8.0	6.5	1.0	1.0	2.0	0.5	9.0	9.0
8	19.0	17.5	7.5	6.5	7.0	6.0	1.0	0.5	1.0	0.5	9.5	6.0
9	19.0	18.0	6.5	6.5	6.0	6.0	1.0	0.5	0.5	0.5	6.5	5.5
10	19.5	19.0	6.5	6.0	6.0	5.0	1.0	0.5	1.0	0.5	7.5	6.0
11	20.0	19.0	6.0	5.0	5.0	4.0	1.0	0.5	1.0	0.5	7.0	5.5
12	19.5	19.0	5.5	5.0	4.0	3.0	1.0	0.5	0.5	0.5	6.0	5.5
13	19.5	19.0	6.5	5.0	3.5	3.0	1.0	0.5	0.5	0.5	5.5	4.5
14	19.5	19.0	8.5	6.5	4.0	1.0	1.5	0.5	0.5	0.5	4.5	3.5
15	19.0	18.0	10.5	8.0	1.0	0.5	2.0	1.0	1.0	0.5	4.0	3.0
16	18.0	17.0	10.5	10.0	1.0	0.5	2.5	0.5	1.0	0.5	5.0	4.0
17	17.0	15.5	10.0	6.0	1.5	1.0	2.0	0.5	1.0	0.5	3.5	2.5
18	15.5	14.5	6.0	5.0	1.0	1.0	1.0	0.5	1.0	0.5	4.0	3.0
19	14.5	13.5	6.0	5.0	1.5	1.0	1.0	0.5	1.5	0.5	5.0	2.5
20	14.0	14.0	7.0	6.0	2.0	1.0	1.0	0.5	2.0	0.5	5.0	4.0
21	14.5	13.5	7.5	7.0	1.0	0.5	3.5	1.0	1.5	0.5	5.0	4.0
22	15.0	14.0	8.5	7.5	1.0	0.5	4.0	3.5	2.0	0.5	4.5	3.5
23	15.0	14.5	9.5	8.5	1.0	0.5	4.5	4.5	1.0	0.5	5.0	3.5
24	15.5	14.5	9.5	9.0	1.0	0.5	4.5	3.0	1.0	0.5	4.5	2.5
25	15.0	15.0	10.5	9.5	2.0	1.0	3.5	2.5	1.0	0.5	2.5	2.0
26	15.5	15.0	9.0	7.5	2.0	1.0	3.5	2.5	0.5	0.5	3.0	2.0
27	15.5	15.0	9.5	8.0	4.0	1.5	6.0	3.5	1.0	0.5	3.5	2.5
28	15.5	15.0	11.0	9.5	4.0	3.5	6.0	5.5	1.0	0.5	4.0	3.0
29	16.0	14.5	9.5	6.0	4.0	3.0	5.5	3.5	---	---	3.5	3.0
30	15.5	12.5	6.0	5.5	3.5	2.0	3.5	3.0	---	---	5.5	3.0
31	12.5	12.0	---	---	2.0	1.5	4.5	3.5	---	---	5.5	5.0
MONTH	20.0	12.0	12.0	5.0	8.5	0.5	6.0	0.5	4.0	0.5	9.5	0.5
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	4.5	16.0	13.0	---	---	19.5	17.5	23.5	23.0	25.0	24.5
2	10.0	6.0	16.0	14.5	---	---	20.5	18.5	25.5	23.5	24.5	23.5
3	12.0	9.5	15.5	13.0	---	---	23.5	19.5	25.0	24.0	23.5	21.5
4	14.0	11.5	14.5	13.5	---	---	23.5	22.0	24.0	24.0	21.5	20.5
5	13.0	10.5	14.0	12.0	---	---	24.5	22.5	24.0	23.5	21.0	20.0
6	10.5	8.0	13.0	12.5	---	---	24.0	22.0	24.0	23.5	21.0	20.5
7	8.5	6.0	12.5	11.0	---	---	24.5	22.5	24.5	23.0	21.0	20.0
8	7.0	3.5	12.0	11.0	---	---	25.0	22.5	24.0	23.5	21.5	20.5
9	3.5	2.5	11.0	10.0	---	---	25.0	21.5	24.5	23.5	22.5	21.0
10	4.5	2.5	13.0	9.5	---	---	25.5	23.5	25.5	24.0	23.0	21.5
11	6.5	5.0	13.5	12.5	---	---	25.5	24.5	25.5	24.5	23.5	21.5
12	7.5	6.5	15.5	13.0	---	---	25.5	24.5	25.5	24.0	22.5	21.5
13	11.0	7.5	13.0	12.0	---	---	25.5	23.5	24.5	24.0	22.5	21.0
14	13.0	10.0	16.0	12.0	---	---	26.0	23.5	24.5	24.0	22.0	21.0
15	12.5	9.5	16.5	14.5	---	---	25.0	24.0	24.5	24.0	21.5	21.0
16	10.5	9.0	16.5	14.5	---	---	24.5	24.0	25.0	24.0	21.0	20.5
17	11.5	10.0	17.0	15.5	---	---	24.5	23.5	25.5	24.5	21.0	20.0
18	12.0	10.0	17.5	15.0	20.5	20.5	25.0	23.5	25.5	24.5	21.0	20.5
19	11.5	10.5	17.0	16.0	20.0	20.0	25.5	23.0	26.0	24.5	21.5	20.5
20	12.0	11.5	17.5	16.5	20.5	20.0	24.5	24.0	27.0	25.0	21.5	21.0
21	13.0	12.0	18.5	16.0	21.5	20.0	25.0	24.5	27.0	24.5	21.0	20.0
22	13.0	10.0	18.0	14.0	22.0	20.0	25.0	24.5	26.5	24.5	20.5	19.5
23	13.0	12.5	---	---	22.0	21.0	24.5	23.0	27.0	25.0	19.0	18.0
24	12.0	10.5	---	---	21.5	20.5	24.0	23.0	26.0	25.0	18.0	17.5
25	12.0	10.0	---	---	21.5	21.0	25.5	24.0	26.0	25.0	17.5	16.5
26	12.5	11.0	---	---	21.5	20.5	25.0	24.0	27.0	25.5	17.5	17.0
27	13.5	10.5	---	---	22.0	20.0	26.0	23.5	26.5	24.5	18.5	17.0
28	15.0	10.5	---	---	21.5	19.0	25.0	23.5	25.0	25.0	19.5	17.5
29	15.5	12.0	---	---	21.0	18.0	25.0	19.5	25.0	24.5	19.5	18.0
30	16.0	12.0	---	---	20.5	16.5	22.5	21.0	25.0	24.0	18.0	17.5
31	---	---	---	---	---	---	24.0	22.0	25.0	24.5	---	---
MONTH	16.0	2.5	---	---	---	---	26.0	17.5	27.0	23.0	25.0	16.5
YEAR	27.0	0.5										



## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
BEAVER RIVER BASIN												
03086500 - MAHONING R AT ALLIANCE OH (LAT 40 55 58 LONG 081 05 41)												
DEC., 1973												
11...	1330	46	3.0	--	633	8.4	--	--	--	--	--	--
FEB., 1974												
12...	1415	43	2.5	--	--	8.3	--	91	18	--	--	--
APR.												
29...	0915	35	17.5	--	--	7.5	--	82	24	--	--	0
SEP.												
09...	1430	46	17.5	5.3	595	7.6	8.7	70	21	18	4.7	0
03090500 - MAHONING R BL BERLIN DAM NR BERLIN CENTER OH (LAT 41 02 54 LONG 081 00 05)												
DEC., 1973												
10...	0950	472	--	--	545	8.2	--	--	--	--	--	--
FEB., 1974												
12...	1015	163	2.5	--	--	8.0	--	44	13	--	--	--
APR.												
29...	1245	82	16.0	--	374	7.3	--	45	11	--	--	0
SEP.												
10...	1730	934	20.0	7.0	413	7.5	2.1	44	13	15	4.6	0
03091500 - MAHONING R AT PRICETOWN OH (LAT 41 07 53 LONG 080 58 17)												
OCT., 1973												
19...	1005	62	14.0	--	482	7.3	--	--	--	--	--	0
DEC.												
14...	1020	41	4.0	--	491	8.2	--	--	--	--	--	--
FEB., 1974												
15...	1015	130	2.0	--	--	8.2	--	66	14	--	--	--
APR.												
19...	0930	102	10.0	--	384	7.5	--	42	12	--	--	0
AUG.												
15...	0900	336	22.0	7.8	395	7.7	2.1	35	14	15	4.0	0
03092000 - KALE C NR PRICETOWN OH (LAT 41 08 23 LONG 080 59 43)												
OCT., 1973												
19...	1200	1.2	10.0	--	773	7.9	--	--	--	--	--	0
DEC.												
14...	1135	40	1.0	--	485	8.1	--	--	--	--	--	--
FEB., 1974												
15...	1140	15	.0	--	--	7.8	--	58	23	--	--	0
APR.												
11...	1340	29	9.0	--	--	7.6	--	35	14	--	--	0
AUG.												
15...	1130	1.5	19.0	4.8	535	7.5	5.1	47	24	30	5.6	0
03092099 - HINKLEY C AT CHARLESTOWN OH (LAT 41 09 16 LONG 081 08 51)												
SEP., 1974												
11...	1030	.89	17.5	5.8	397	8.1	7.5	44	12	18	2.4	0
03092460 - W B MAHONING R AT WAYLAND OH (LAT 41 09 25 LONG 081 04 19)												
OCT., 1973												
24...	1200	93	15.5	--	351	8.2	--	--	--	--	--	--
FEB., 1974												
13...	1050	31	2.5	--	--	7.9	--	34	11	--	--	--
APR.												
11...	1225	211	8.0	--	--	7.7	--	15	12	--	--	0
AUG.												
16...	1015	54	19.0	7.8	335	7.6	2.5	32	9.3	15	2.6	0
03092500 - W B MAHONING R NR NEWTON FALLS OH (LAT 41 10 18 LONG 081 01 16)												
DEC., 1973												
12...	1315	63	3.5	--	371	7.7	--	--	--	--	--	--
FEB., 1974												
11...	1020	42	.0	--	--	8.1	--	47	11	--	--	--
APR.												
17...	1410	81	9.5	--	--	7.8	--	15	12	--	--	0
AUG.												
16...	0830	54	18.0	7.4	325	7.6	2.6	32	9.5	14	2.6	0
03093000 - EAGLE C AT PHALANX STATION OH (LAT 41 15 40 LONG 080 57 16)												
DEC., 1973												
13...	1510	52	2.0	--	373	8.3	--	--	--	--	--	--
MAR., 1974												
27...	1405	251	4.0	--	--	8.0	--	32	7.9	--	--	0
MAY												
10...	1020	507	9.0	--	239	7.2	--	33	6.6	--	--	0
SEP.												
12...	1330	21	19.0	6.3	395	7.9	7.5	46	12	15	2.5	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
BEAVER RIVER BASIN												
03086500 - MAHONING R AT ALLIANCE OH (LAT 40 55 58 LONG 081 05 41)												
DEC., 1973												
11...	--	140	31	--	--	.00	1.6	--	--	--	--	--
FEB., 1974												
12...	--	140	59	--	--	.03	4.8	--	--	300	--	--
APR.												
29...	149	160	24	--	--	.00	1.1	--	--	300	--	--
SEP.												
09...	164	97	24	.2	.25	.01	.67	.17	325	260	70	590
03090500 - MAHONING R BL BERLIN DAM NR BERLIN CENTER OH (LAT 41 02 54 LONG 081 00 05)												
DEC., 1973												
10...	--	120	27	--	--	.00	.93	--	--	--	--	--
FEB., 1974												
12...	--	97	26	--	--	.00	2.0	--	--	160	--	--
APR.												
29...	67	89	23	--	--	.00	1.4	--	--	160	--	--
SEP.												
10...	96	87	21	.4	.41	.00	.27	.06	235	160	30	140
03091500 - MAHONING R AT PRICETOWN OH (LAT 41 07 53 LONG 080 58 17)												
OCT., 1973												
19...	106	99	23	.2	--	.01	.46	.11	--	--	--	--
DEC.												
14...	--	110	23	--	--	.00	.55	--	--	--	--	--
FEB., 1974												
15...	--	110	27	--	--	.00	1.9	--	--	220	--	--
APR.												
19...	68	91	24	--	--	.00	1.4	--	--	150	--	--
AUG.												
15...	85	94	22	.2	.19	.01	.39	.07	228	150	10	300
03092000 - KALE C NR PRICETOWN OH (LAT 41 08 23 LONG 080 59 43)												
OCT., 1973												
19...	172	220	29	.5	--	.00	.16	.03	--	--	--	--
DEC.												
14...	--	140	26	--	--	.00	.00	--	--	--	--	--
FEB., 1974												
15...	93	170	43	--	--	.00	.59	--	--	240	--	--
APR.												
11...	61	88	24	--	--	.00	.09	--	--	150	--	--
AUG.												
15...	125	130	28	.2	.23	.02	.36	.06	332	220	70	230
03092099 - HINKLEY C AT CHARLESTOWN OH (LAT 41 09 16 LONG 081 08 51)												
SEP., 1974												
11...	146	50	26	.2	.09	.00	.10	.02	232	160	170	50
03092460 - W B MAHONING R AT WAYLAND OH (LAT 41 09 25 LONG 081 04 19)												
OCT., 1973												
24...	--	58	25	--	--	.00	.38	--	--	--	--	--
FEB., 1974												
13...	--	59	27	--	--	.00	.51	--	--	130	--	--
APR.												
11...	76	58	26	--	--	.00	.61	--	--	87	--	--
AUG.												
16...	91	50	22	.1	.39	.00	.20	.02	180	120	280	1300
03092500 - W B MAHONING R NR NEWTON FALLS OH (LAT 41 10 18 LONG 081 01 16)												
DEC., 1973												
12...	--	66	26	--	--	.00	.00	--	--	--	--	--
FEB., 1974												
11...	--	58	25	--	--	.01	.53	--	--	160	--	--
APR.												
17...	80	60	25	--	--	.00	.53	--	--	87	--	--
AUG.												
16...	91	52	22	.2	.12	.00	.32	.03	181	120	180	750
03093000 - EAGLE C AT PHALANX STATION OH (LAT 41 15 40 LONG 080 57 16)												
DEC., 1973												
13...	--	61	22	--	--	.01	.80	--	--	--	--	--
MAR., 1974												
27...	68	48	21	--	--	.01	.53	--	--	110	--	--
MAY												
10...	66	39	15	--	--	.00	.45	--	--	110	--	--
SEP.												
12...	156	38	22	.2	.16	.02	.40	.09	220	160	10	180

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)
BEAVER RIVER BASIN--Continued												
03095500 - MOSQUITO C BL MOSQUITO C DAM NR CORTLAND OH (LAT 41 17 59 LONG 080 45 31)												
OCT., 1973												
18...	0905	29	14.0	--	241	7.8	--	16	6.4	--	--	0
NOV. 08...	1510	29	7.5	--	238	7.9	--	--	--	--	--	--
MAR., 1974												
15...	1050	170	4.0	--	--	7.5	--	41	6.2	--	--	--
MAY 09...	1455	24	12.0	--	--	7.2	--	25	6.1	--	--	0
AUG. 14...	1530	46	23.5	7.9	240	8.0	7	23	5.5	12	2.8	0
03098000 - MAHONING R AT YOUNGSTOWN OH (LAT 41 06 40 LONG 080 40 23)												
OCT., 1973												
18...	1515	324	26.0	--	566	6.6	--	46	14	--	--	0
DEC. 13...	1305	454	13.0	--	608	8.0	--	--	--	--	--	--
FEB., 1974												
14...	1505	484	12.5	--	--	7.2	--	80	14	--	--	--
APR. 11...	1500	2770	9.5	--	--	7.2	--	43	11	--	--	0
AUG. 15...	1615	611	31.0	5.5	485	7.5	4.0	45	16	25	6.9	0
03099500 - MAHONING R AT LOWELLVILLE OH (LAT 41 02 12 LONG 080 32 11)												
OCT., 1973												
05...	1235	776	26.0	--	552	8.0	--	47	12	--	--	0
18...	1220	396	26.5	--	692	8.1	--	37	16	--	--	0
26...	1235	310	29.0	--	729	7.8	--	52	16	--	--	0
DEC. 13...	1015	566	14.5	--	650	7.9	--	--	--	--	--	--
FEB., 1974												
14...	1020	728	14.5	--	--	8.1	--	77	15	--	--	--
APR. 11...	1205	2960	10.0	--	--	7.1	--	44	12	--	--	0
03102950 - PYMATUNING C AT KINSMAN OH (LAT 41 26 34 LONG 080 35 18)												
NOV., 1973												
08...	1050	51	4.0	--	317	8.0	--	--	--	--	--	--
MAR., 1974												
14...	1510	224	3.0	--	--	7.4	--	27	4.7	--	--	--
MAY 09...	1150	100	10.0	--	--	7.3	--	28	6.8	--	--	0
SEP. 12...	1045	26	18.5	3.3	274	7.2	9.8	34	8.4	9.0	2.7	0
LITTLE BRAVER CREEK BASIN												
03109100 - M F L BEAVER C NR ROGERS OH (LAT 40 43 22 LONG 080 38 03)												
SEP., 1974												
26...	1345	53	12.5	8.6	700	8.0	6.5	79	20	24	3.0	0
03109200 - W F L BEAVER C AT WEST POINT OH (LAT 40 42 38 LONG 080 41 49)												
AUG., 1974												
27...	1500	8.4	24.0	8.9	720	7.7	2.7	80	25	22	3.6	0
03109400 - N F L BEAVER C NR NEGLEY OH (LAT 40 46 30 LONG 080 32 36)												
SEP., 1974												
26...	1145	76	11.5	9.7	960	7.7	6.6	130	29	19	2.5	0
03109500 - L BEAVER C NR EAST LIVERPOOL OH (LAT 40 40 33 LONG 080 32 27)												
NOV., 1973												
27...	1250	980	10.5	--	472	8.2	--	--	--	--	--	--
MAR., 1974												
26...	1130	854	2.5	--	--	7.3	--	70	18	--	--	0
APR. 25...	1215	486	8.5	--	609	7.8	--	81	23	--	--	0
AUG. 28...	0945	97	23.0	6.7	840	7.8	2.4	110	28	27	3.4	0
YELLOW CREEK BASIN												
03110000 - YELLOW C NR HAMMONDSVILLE OH (LAT 40 32 16 LONG 080 43 31)												
NOV., 1973												
27...	1035	269	10.5	--	335	7.8	--	--	--	--	--	--
MAR., 1974												
30...	1330	524	9.0	--	--	7.5	--	36	6.9	--	--	--
APR. 02...	1205	2180	9.5	--	--	7.2	--	27	7.1	--	--	0
AUG. 27...	1200	14	23.0	8.6	750	7.4	7.1	80	25	39	2.9	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
BEAVER RIVER BASIN--Continued												
03095500 - MOSQUITO C BL MOSQUITO C DAM NR CORTLAND OH (LAT 41 17 59 LONG 080 45 31)												
OCT., 1973												
18...	56	39	17	.2	--	.02	.60	.05	--	67	--	--
NOV.												
08...	--	44	18	--	--	.00	.46	--	--	--	--	--
MAR., 1974												
15...	--	44	19	--	--	.01	.77	--	--	130	--	--
MAY												
09...	51	44	19	--	--	.00	.54	--	--	88	--	--
AUG.												
14...	46	36	19	.2	.21	.01	.02	.06	122	80	10	20
03098000 - MAHONING R AT YOUNGSTOWN OH (LAT 41 06 40 LONG 080 40 23)												
OCT., 1973												
18...	84	130	41	.9	--	.00	4.6	.02	--	170	--	--
DEC.												
13...	--	130	51	--	--	.00	3.4	--	--	--	--	--
FEB., 1974												
14...	--	110	74	--	--	.01	4.6	--	--	260	--	--
APR.												
11...	65	77	29	--	--	.00	1.3	--	--	150	--	--
AUG.												
15...	92	97	38	.8	2.0	.13	.54	.30	278	180	20	380
03099500 - MAHONING R AT LOWELLVILLE OH (LAT 41 02 12 LONG 080 32 11)												
OCT., 1973												
05...	70	130	43	.7	--	.00	3.6	--	--	170	--	--
18...	74	130	64	.8	--	--	--	.52	--	160	--	--
26...	54	150	73	1.3	--	.00	9.8	--	--	200	--	--
DEC.												
13...	--	130	62	--	--	.00	5.4	--	--	--	--	--
FEB., 1974												
14...	--	140	79	--	--	.00	6.2	--	--	250	--	--
APR.												
11...	67	89	37	--	--	.00	2.0	--	--	160	--	--
03102950 - PYMATUNING C AT KINSMAN OH (LAT 41 26 34 LONG 080 35 18)												
NOV., 1973												
08...	--	66	20	--	--	.00	.83	--	--	--	--	--
MAR., 1974												
14...	--	33	12	--	--	.00	.88	--	--	87	--	--
MAY												
09...	78	30	12	--	--	.00	.30	--	--	98	--	--
SEP.												
12...	141	12	14	.3	.59	.00	.13	.25	162	120	1200	1200
LITTLE BEAVER CREEK BASIN												
03109100 - M F L BEAVER C NR ROGERS OH (LAT 40 43 22 LONG 080 38 03)												
SEP., 1974												
26...	158	170	31	.2	.12	.01	.72	.08	412	280	50	90
03109200 - W F L BEAVER C AT WEST POINT OH (LAT 40 42 38 LONG 080 41 49)												
AUG., 1974												
27...	92	210	37	.5	.05	.00	3.4	.02	426	300	30	190
03109400 - N F L BEAVER C NR NEGLEY OH (LAT 40 46 30 LONG 080 32 36)												
SEP., 1974												
26...	179	180	89	.2	.22	.03	.49	.10	545	440	40	230
03109500 - L BEAVER C NR EAST LIVERPOOL OH (LAT 40 40 33 LONG 080 32 27)												
NOV., 1973												
27...	--	130	27	--	--	.00	.96	--	--	--	--	--
MAR., 1974												
26...	69	160	37	--	--	.00	2.4	--	--	250	--	--
APR.												
25...	94	190	32	--	--	.00	1.1	--	--	300	--	--
AUG.												
28...	144	220	71	.3	.19	.00	.46	.07	533	390	20	40
YELLOW CREEK BASIN												
03110000 - YELLOW C NR HAMMONDSVILLE OH (LAT 40 32 16 LONG 080 43 31)												
NOV., 1973												
27...	--	100	11	--	--	.00	.98	--	--	--	--	--
MAR., 1974												
30...	--	64	9.8	--	--	.01	.85	--	--	120	--	--
APR.												
02...	17	61	5.9	--	--	.00	1.1	--	--	97	--	--
AUG.												
27...	26	320	27	.1	.06	.00	.07	.01	515	300	10	630

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
YELLOW CREEK BASIN--Continued												
03110600 - N F YELLOW C AT HAMMONDSVILLE OH (LAT 40 33 27 LONG 080 42 20)												
AUG., 1974												
27...	1300	14	24.0	10.0	900	7.9	7.3	75	21	88	4.9	0
SHORT CREEK BASIN												
03111500 - SHORT C NR DILLONVALE OH (LAT 40 11 36 LONG 080 44 04)												
OCT., 1973												
17...	0950	23	13.5	--	2920	8.2	--	--	--	--	--	--
FEB., 1974												
13...	1405	157	4.0	--	--	7.8	--	220	76	--	--	--
APR.												
04...	1350	592	16.0	--	--	7.5	--	170	54	--	--	0
AUG.												
08...	1600	81	23.0	8.0	2210	8.0	5.7	290	90	140	5.9	0
CAPTINA CREEK BASIN												
03114000 - CAPTINA C AT ARMSTRONGS MILLS OH (LAT 39 54 31 LONG 080 55 27)												
DEC., 1973												
11...	1115	16	3.5	--	451	8.5	--	--	--	--	--	--
FEB., 1974												
04...	1145	125	3.0	--	--	8.3	--	52	10	--	--	0
APR.												
04...	1120	1330	15.5	--	--	7.6	--	37	7.5	--	--	0
AUG.												
08...	1330	30	24.0	9.4	440	8.5	1.9	65	9.5	17	2.5	4
LITTLE MUSKINGUM RIVER BASIN												
03115300 - L MUSKINGUM R NR RINARD MILLS OH (LAT 39 36 25 LONG 081 07 21)												
AUG., 1974												
05...	1315	52	22.0	7.7	265	7.7	5.1	30	6.4	12	2.3	0
03115400 - L MUSKINGUM R AT BLOOMFIELD OH (LAT 39 33 47 LONG 081 12 14)												
DEC., 1973												
11...	1445	86	3.0	--	370	8.3	--	--	--	--	--	--
FEB., 1974												
04...	1540	230	3.0	--	--	8.2	--	34	7.8	--	--	--
APR.												
09...	1500	2420	6.0	--	--	7.3	--	24	5.7	--	--	0
AUG.												
05...	1500	50	21.5	6.7	345	7.8	5.7	43	8.6	13	2.5	0
DUCK CREEK BASIN												
03115650 - E F DUCK C AT LOWER SALEM OH (LAT 39 34 26 LONG 081 23 25)												
AUG., 1974												
06...	1530	29	21.0	8.0	840	7.1	9.8	130	32	7.5	2.6	0
03115700 - W F DUCK C AT DEXTER CITY OH (LAT 39 39 45 LONG 081 28 25)												
AUG., 1974												
06...	1315	24	21.5	8.0	560	7.8	6.2	85	15	15	3.2	0
MUSKINGUM RIVER BASIN												
03115890 - TUSCARAWAS R AT UNIONTOWN OH (LAT 40 59 18 LONG 081 24 04)												
SEP., 1974												
19...	1245	5.5	15.5	9.5	760	7.7	11	110	24	20	2.8	0
03115900 - TUSCARAWAS R NR EAST LIBERTY OH (LAT 41 00 25 LONG 081 29 31)												
SEP., 1974												
19...	1130	26	16.0	8.4	580	7.8	8.7	75	18	17	2.2	0
03115920 - TUSCARAWAS R AT BARBERTON OH (LAT 41 01 40 LONG 081 35 15)												
SEP., 1974												
18...	1415	32	20.0	5.6	705	7.3	8.5	76	16	37	2.6	0
03115990 - WOLF CR NR BARBERTON OH (LAT 41 02 56 LONG 081 36 00)												
SEP., 1974												
18...	1300	13	18.0	5.0	660	7.1	6.4	59	10	58	3.3	0
03116000 - TUSCARAWAS R AT CLINTON OH (LAT 40 55 40 LONG 081 37 58)												
NOV., 1973												
07...	1440	65	--	--	12900	6.8	--	--	--	--	--	--
MAR., 1974												
11...	1435	900	8.0	--	--	8.0	--	120	11	--	--	--
MAY												
22...	1030	143	23.0	--	--	7.1	--	540	16	--	--	0
SEP.												
19...	0930	77	19.0	3.4	8850	7.8	16	920	16	1000	14	0



ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

387

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
YELLOW CREEK BASIN--Continued												
03110600 - N F YELLOW C AT HAMMONDSVILLE OH (LAT 40 33 27 LONG 080 42 20)												
AUG., 1974 27...	77	340	44	.2	.08	.00	.05	.04	619	270	60	120
SHORT CREEK BASIN												
03111500 - SHORT C NR DILLONVALE OH (LAT 40 11 36 LONG 080 44 04)												
OCT., 1973 17...	--	1500	100	--	--	.01	.05	--	--	--	--	--
FEB., 1974 13...	--	910	43	--	--	.00	1.1	--	--	860	--	--
APR. 04...	149	500	23	--	--	.00	5.6	--	--	650	--	--
AUG. 08...	202	1100	56	.4	.21	.02	.32	.15	1790	1100	30	190
CAPTINA CREEK BASIN												
03114000 - CAPTINA C AT ARMSTRONGS MILLS OH (LAT 39 54 31 LONG 080 55 27)												
DEC., 1973 11...	--	75	18	--	--	.00	.13	--	--	--	--	--
FEB., 1974 04...	132	59	12	--	--	.00	.73	--	--	170	--	--
APR. 04...	89	42	6.2	--	--	.00	1.0	--	--	120	--	--
AUG. 08...	166	66	17	.1	.17	.01	.00	.04	265	200	30	10
LITTLE MUSKINGUM RIVER BASIN												
03115300 - L MUSKINGUM R NR RINARD MILLS OH (LAT 39 36 25 LONG 081 07 21)												
AUG., 1974 05...	93	28	20	.2	.17	.01	.02	.04	150	100	30	70
03115400 - L MUSKINGUM R AT BLOOMFIELD OH (LAT 39 33 47 LONG 081 12 14)												
DEC., 1973 11...	--	37	32	--	--	.00	.30	--	--	--	--	--
FEB., 1974 04...	--	37	15	--	--	.00	.42	--	--	120	--	--
APR. 09...	51	31	6.2	--	--	.00	.68	--	--	83	--	--
AUG. 05...	141	31	20	.1	.16	.01	.18	.05	194	140	30	70
DUCK CREEK BASIN												
03115650 - E F DUCK C AT LOWER SALEM OH (LAT 39 34 26 LONG 081 23 25)												
AUG., 1974 06...	44	410	5.2	.4	.59	.01	.20	.15	624	460	20	4800
03115700 - W F DUCK C AT DEXTER CITY OH (LAT 39 39 45 LONG 081 28 25)												
AUG., 1974 06...	145	150	15	.4	.34	.03	.42	.32	362	270	30	280
MUSKINGUM RIVER BASIN												
03115890 - TUSCARAWAS R AT UNIONTOWN OH (LAT 40 59 18 LONG 081 24 04)												
SEP., 1974 19...	289	130	34	.2	.11	.01	.55	.08	475	370	60	140
03115900 - TUSCARAWAS R NR EAST LIBERTY OH (LAT 41 00 25 LONG 081 29 31)												
SEP., 1974 19...	230	74	29	.3	.13	.01	.66	.10	338	260	50	70
03115920 - TUSCARAWAS R AT BARBERTON OH (LAT 41 01 40 LONG 081 35 15)												
SEP., 1974 18...	185	100	67	.1	.25	.10	.61	.08	399	260	220	320
03115990 - WOLF CR NR BARBERTON OH (LAT 41 02 56 LONG 081 36 00)												
SEP., 1974 18...	141	160	33	.2	.49	.06	.42	.26	400	190	510	280
03116000 - TUSCARAWAS R AT CLINTON OH (LAT 40 55 40 LONG 081 37 58)												
NOV., 1973 07...	--	160	4400	--	--	.00	1.1	--	--	--	--	--
MAR., 1974 11...	--	72	420	--	--	.00	1.8	--	--	340	--	--
MAY 22...	141	160	2700	--	--	.00	5.4	--	--	1400	--	--
SEP. 19...	174	150	3000	.3	1.8	.07	.13	.75	5200	2400	120	450

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
MUSKINGUM RIVER BASIN--Continued												
03116080 - CHIPPEWA CR AT STERLING OH (LAT 40 57 24 LONG 081 50 31)												
SEP., 1974												
18...	1100	10	17.0	4.5	745	7.4	6.4	68	19	40	5.0	0
03116200 - CHIPPEWA C AT EASTON OH (LAT 40 56 47 LONG 081 44 35)												
NOV., 1973												
28...	1010	512	11.0	--	494	7.7	--	--	--	--	--	--
MAR., 1974												
11...	0935	1430	5.5	--	--	7.2	--	36	9.6	--	--	0
MAY												
22...	1345	63	20.0	--	--	6.9	--	70	18	--	--	0
SEP.												
18...	0930	51	17.5	1.3	660	7.0	6.9	47	13	51	11	0
03116410 - NIMISILA CR NR CANAL FULTON OH (LAT 40 54 57 LONG 081 33 43)												
SEP., 1974												
20...	0915	8.3	16.0	6.9	440	7.4	9.2	57	17	12	1.8	0
03117000 - TUSCARAWAS R AT MASSILLON OH (LAT 40 46 13 LONG 081 31 27)												
NOV., 1973												
13...	1000	146	8.5	--	4990	8.3	--	--	--	--	--	--
MAR., 1974												
11...	1445	3540	7.5	--	--	7.5	--	80	9.3	--	--	--
MAY												
28...	0930	258	16.5	--	3720	7.2	--	270	19	--	--	0
SEP.												
20...	1030	161	18.5	4.7	4500	7.5	11	350	17	480	10	0
03117150 - SANDY CR AT MINERVA OH (LAT 40 43 53 LONG 081 05 57)												
SEP., 1974												
10...	1145	22	18.0	10.2	410	7.9	8.2	49	11	14	3.0	0
03117160 - STILL FK NR MINERVA OH (LAT 40 39 49 LONG 081 02 24)												
SEP., 1974												
10...	1000	6.5	17.0	6.9	220	6.8	9.0	20	7.4	8.5	2.6	0
03117500 - SANDY C AT WAYNESBURG OH (LAT 40 40 21 LONG 081 15 36)												
NOV., 1973												
28...	1445	1440	10.5	--	223	7.2	--	--	--	--	--	--
MAR., 1974												
13...	1540	689	5.0	--	--	7.5	--	28	8.0	--	--	--
MAY												
09...	1415	193	13.5	--	--	7.7	--	54	13	--	--	0
SEP.												
10...	1330	128	18.0	7.9	500	7.3	7.5	55	17	18	2.6	0
03118000 - M B NIMISHILLEN C AT CANTON OH (LAT 40 50 29 LONG 081 21 14)												
NOV., 1973												
13...	1520	21	8.5	--	742	8.6	--	--	--	--	--	--
MAR., 1974												
11...	1045	244	7.0	--	--	7.7	--	69	9.1	--	--	--
MAY												
28...	1345	22	19.0	--	705	8.0	--	93	21	--	--	0
SEP.												
19...	1430	16	20.0	10.4	710	8.1	8.8	100	21	21	3.0	0
03118100 - E BR NIMISHILLEN CR NR CANTON OH (LAT 40 49 24 LONG 081 17 55)												
SEP., 1974												
11...	1230	12	18.5	7.9	1050	7.5	10	110	16	61	3.2	0
03118300 - W BR NIMISHILLEN CR AT CANTON OH (LAT 40 47 48 LONG 081 23 26)												
SEP., 1974												
09...	1345	24	19.5	16.4	850	8.2	7.5	130	23	35	3.0	0
03118500 - NIMISHILLEN C AT NORTH INDUSTRY OH (LAT 40 44 03 LONG 081 21 08)												
NOV., 1973												
14...	1450	124	8.5	--	1270	8.6	--	--	--	--	--	--
MAR., 1974												
13...	1125	354	5.0	--	--	8.4	--	110	18	--	--	--
MAY												
09...	1040	315	14.0	--	--	7.1	--	100	21	--	--	0
SEP.												
09...	1045	126	19.0	6.4	1080	7.4	10	140	24	73	6.8	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03116080 - CHIPPEWA CR AT STERLING OH (LAT 40 57 24 LONG 081 50 31)												
SEP., 1974 18...	247	80	50	.4	.60	.04	.95	.37	391	250	40	260
03116200 - CHIPPEWA C AT EASTON OH (LAT 40 56 47 LONG 081 44 35)												
NOV., 1973 28...	--	89	37	--	--	.00	5.8	--	--	--	--	--
MAR., 1974 11...	62	58	22	--	--	.02	2.8	--	--	130	--	--
MAY 22...	171	110	71	--	--	.00	3.9	--	--	250	--	--
SEP. 18...	151	87	67	.3	3.5	.07	.69	1.5	358	170	50	570
03116410 - NIMISILA CR NR CANAL FULTON OH (LAT 40 54 57 LONG 081 33 43)												
SEP., 1974 20...	207	37	25	.1	.15	.01	.27	.06	261	210	70	120
03117000 - TUSCARAWAS R AT MASSILLON OH (LAT 40 46 13 LONG 081 31 27)												
NOV., 1973 13...	--	150	1400	--	--	.00	4.9	--	--	--	--	--
MAR., 1974 11...	--	54	100	--	--	.00	2.4	--	--	240	--	--
MAY 28...	189	140	1100	--	--	.00	3.1	--	--	750	--	--
SEP. 20...	198	89	1300	.3	1.5	.18	.29	.26	2360	940	50	500
03117150 - SANDY CR AT MINERVA OH (LAT 40 43 53 LONG 081 05 57)												
SEP., 1974 10...	148	47	22	.2	.14	.01	.70	.04	228	170	50	80
03117160 - STILL FK NR MINERVA OH (LAT 40 39 49 LONG 081 02 24)												
SEP., 1974 10...	55	35	10	.1	.36	.00	.65	.09	120	80	250	140
03117500 - SANDY C AT WAYNESBURG OH (LAT 40 40 21 LONG 081 15 36)												
NOV., 1973 28...	--	50	13	--	--	.00	1.6	--	--	--	--	--
MAR., 1974 13...	--	57	10	--	--	.00	2.0	--	--	100	--	--
MAY 09...	112	84	19	--	--	.00	.55	--	--	190	--	--
SEP. 10...	97	120	34	.3	.19	.00	.46	.06	303	210	40	990
03118000 - M B NIMISHILLEN C AT CANTON OH (LAT 40 50 29 LONG 081 21 14)												
NOV., 1973 13...	--	150	41	--	--	.00	1.9	--	--	--	--	--
MAR., 1974 11...	--	75	24	--	--	.01	4.7	--	--	210	--	--
MAY 28...	232	130	42	--	--	.00	1.9	--	--	320	--	--
SEP. 19...	250	110	45	.2	--	--	--	--	432	340	60	50
03118100 - E BR NIMISHILLEN CR NR CANTON OH (LAT 40 49 24 LONG 081 17 55)												
SEP., 1974 11...	200	190	88	4.5	.16	.01	.70	.08	582	340	40	870
03118300 - W BR NIMISHILLEN CR AT CANTON OH (LAT 40 47 48 LONG 081 23 26)												
SEP., 1974 09...	245	160	71	.3	1.1	.26	7.0	.75	551	420	30	170
03118500 - NIMISHILLEN C AT NORTH INDUSTRY OH (LAT 40 44 03 LONG 081 21 08)												
NOV., 1973 14...	--	230	150	--	--	.00	8.2	--	--	--	--	--
MAR., 1974 13...	--	150	78	--	--	.00	5.3	--	--	350	--	--
MAY 09...	171	160	88	--	--	.00	4.6	--	--	340	--	--
SEP. 09...	260	190	110	1.4	2.6	2.2	2.1	2.0	684	450	50	600

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	
MUSKINGUM RIVER BASIN--Continued													
03119580 - TUSCARAWAS R AT ZOAR OH (LAT 40 36 28 LONG 081 25 36)													
SEP., 1974	11...	1430	568	19.5	5.8	2200	7.3	11	200	21	200	5.8	0
03119700 - CONOTTON C AT JEWETT OH (LAT 40 21 59 LONG 081 00 13)													
AUG., 1974	09...	0930	5.3	18.0	5.6	1450	7.7	8.2	160	46	95	3.9	0
03119900 - CONOTTON C AT LEESVILLE OH (LAT 40 26 44 LONG 081 11 49)													
AUG., 1974	27...	0900	12	21.0	6.1	680	7.4	7.4	70	24	34	3.3	0
03120500 - MCGUIRE C NR LEESVILLE OH (LAT 40 28 13 LONG 081 11 48)													
NOV., 1973	05...	1210	190	11.0	--	184	8.0	--	--	--	--	--	--
MAR., 1974	20...	1515	1.9	9.0	--	--	7.6	--	26	4.2	--	--	--
APR.	26...	0935	44	10.5	--	--	7.3	--	21	4.4	--	--	0
AUG.	26...	1300	6.8	15.5	8.3	185	6.9	7.5	22	5.0	3.7	1.9	0
03121500 - INDIAN F BL ATWOOD DAM NR NEW CUMBERLAND OH (LAT 40 31 31 LONG 081 17 18)													
NOV., 1973	20...	1130	2.3	9.0	--	310	7.7	--	--	--	--	--	--
MAR., 1974	26...	1305	65	6.0	--	--	7.3	--	24	6.5	--	--	0
APR.	26...	1140	65	11.0	--	--	7.2	--	9.4	7.0	--	--	0
AUG.	26...	1445	7.2	20.0	7.3	275	7.2	9.5	26	8.8	12	2.4	0
03121600 - CONOTTON CR AT NEW CUMBERLAND OH (LAT 40 32 30 LONG 081 18 27)													
SEP., 1974	11...	0915	382	17.5	7.4	270	7.0	7.2	26	7.0	9.4	2.2	0
03122500 - TUSCARAWAS R BL DOVER DAM NR DOVER OH (LAT 40 31 47 LONG 081 25 48)													
NOV., 1973	20...	1415	705	8.5	--	1820	7.1	--	--	--	--	--	--
MAR., 1974	15...	1415	4740	5.0	--	--	7.4	--	94	14	--	--	--
MAY	14...	1125	5280	16.0	--	--	7.5	--	59	11	--	--	0
SEP.	12...	0845	1000	19.0	5.9	1240	7.2	9.2	120	16	110	4.2	0
03123000 - SUGAR C AB BEACH CITY DAM AT BEACH CITY OH (LAT 40 39 24 LONG 081 34 37)													
NOV., 1973	26...	1350	578	9.0	--	399	7.3	--	--	--	--	--	--
MAR., 1974	04...	1435	212	10.5	--	--	8.1	--	63	13	--	--	--
APR.	03...	1325	1610	13.5	--	--	7.5	--	33	9.3	--	--	0
SEP.	12...	1115	45	20.0	3.3	560	7.3	6.8	64	17	20	4.3	0
03124000 - SUGAR C BL BEACH CITY DAM NR BEACH CITY OH (LAT 40 38 08 LONG 081 33 11)													
NOV., 1973	08...	1435	83	5.0	--	689	8.3	--	--	--	--	--	--
MAR., 1974	04...	1135	442	10.5	--	--	7.4	--	68	18	--	--	--
MAY	16...	1145	212	13.5	--	--	7.8	--	68	24	--	--	0
SEP.	12...	1400	104	21.0	8.2	680	7.6	7.7	71	27	17	4.4	0
03124500 - SUGAR C AT STRASBURG OH (LAT 40 35 15 LONG 081 31 24)													
DEC., 1973	13...	1105	167	3.5	--	670	7.6	--	--	--	--	--	--
FEB., 1974	14...	1340	356	2.5	--	--	8.0	--	68	29	--	--	--
APR.	03...	1120	1760	14.5	--	--	7.2	--	14	14	--	--	0
AUG.	12...	1345	160	22.0	6.8	610	7.8	7.1	55	28	16	7.5	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

391

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03119580 - TUSCARAWAS R AT ZOAR OH (LAT 40 36 28 LONG 081 25 36)												
SEP., 1974 11...	181	110	520	1.3	1.6	.30	2.4	.37	1160	590	50	1100
03119700 - CONOTTON C AT JEWETT OH (LAT 40 21 59 LONG 081 00 13)												
AUG., 1974 09...	173	460	120	.2	.76	.05	.42	.17	979	590	30	300
03119900 - CONOTTON C AT LEESVILLE OH (LAT 40 26 44 LONG 081 11 49)												
AUG., 1974 27...	146	160	44	.2	.24	.02	.44	.08	415	270	30	300
03120500 - MCGUIRE C NR LEESVILLE OH (LAT 40 28 13 LONG 081 11 48)												
NOV., 1973 05...	--	28	7.1	--	--	.00	.34	--	--	--	--	--
MAR., 1974 20...	--	31	6.7	--	--	.00	1.0	--	--	82	--	--
APR. 26...	39	32	5.3	--	--	.00	.97	--	--	71	--	--
AUG. 26...	76	19	3.5	1.0	1.6	.00	.04	.05	104	76	880	2300
03121500 - INDIAN F BL ATWOOD DAM NR NEW CUMBERLAND OH (LAT 40 31 31 LONG 081 17 18)												
NOV., 1973 20...	--	39	34	--	--	.00	.00	--	--	--	--	--
MAR., 1974 26...	39	39	23	--	--	.00	1.3	--	--	87	--	--
APR. 26...	37	39	21	--	--	.00	1.1	--	--	52	--	--
AUG. 26...	96	26	22	.2	2.5	.02	.03	.22	160	100	20	6100
03121600 - CONOTTON CR AT NEW CUMBERLAND OH (LAT 40 32 30 LONG 081 18 27)												
SEP., 1974 11...	58	42	16	.2	.18	.02	.46	.08	139	94	60	330
03122500 - TUSCARAWAS R BL DOVER DAM NR DOVER OH (LAT 40 31 47 LONG 081 25 48)												
NOV., 1973 20...	--	160	480	--	--	.00	1.2	--	--	--	--	--
MAR., 1974 15...	--	110	120	--	--	.00	2.5	--	--	290	--	--
MAY 14...	84	79	61	--	--	.00	1.8	--	--	190	--	--
SEP. 12...	116	110	260	.8	.59	.13	1.5	.30	689	370	50	1100
03123000 - SUGAR C AB BEACH CITY DAM AT BEACH CITY OH (LAT 40 39 24 LONG 081 34 37)												
NOV., 1973 26...	--	70	26	--	--	.01	4.9	--	--	--	--	--
MAR., 1974 04...	--	78	24	--	--	.00	4.1	--	--	210	--	--
APR. 03...	54	50	11	--	--	.01	2.9	--	--	120	--	--
SEP. 12...	202	64	32	.2	.42	.04	.66	.48	308	230	10	310
03124000 - SUGAR C BL BEACH CITY DAM NR BEACH CITY OH (LAT 40 38 08 LONG 081 33 11)												
NOV., 1973 08...	--	210	29	--	--	.01	2.2	--	--	--	--	--
MAR., 1974 04...	--	110	24	--	--	.00	3.9	--	--	240	--	--
MAY 16...	130	130	26	--	--	.00	1.9	--	--	270	--	--
SEP. 12...	133	190	26	.3	.41	.04	.91	.15	411	290	30	1900
03124500 - SUGAR C AT STRASBURG OH (LAT 40 35 15 LONG 081 31 24)												
DEC., 1973 13...	--	200	32	--	--	.01	2.9	--	--	--	--	--
FEB., 1974 14...	--	200	28	--	--	.00	3.1	--	--	290	--	--
APR. 03...	52	79	13	--	--	.00	2.8	--	--	93	--	--
AUG. 12...	80	200	26	.3	.19	.04	1.8	.26	381	250	20	1200



## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO <sub>2</sub> ) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO <sub>3</sub> ) (MG/L)
MUSKINGUM RIVER BASIN--Continued												
03124520 - SUGAR CR AT DOVER OH (LAT 40 31 40 LONG 081 29 43)												
AUG., 1974												
13...	0900	131	20.5	7.9	640	7.7	7.5	70	35	16	7.6	0
03125000 - HOME C NR NEW PHILADELPHIA OH (LAT 40 28 06 LONG 081 24 10)												
NOV., 1973												
05...	1450	.32	10.5	--	870	8.0	--	--	--	--	--	--
MAR., 1974												
26...	1600	2.8	9.0	--	--	7.5	--	69	25	--	--	0
APR.												
26...	1355	1.4	16.5	--	711	7.2	--	78	33	--	--	0
SEP.												
09...	1200	.64	16.5	6.5	637	7.5	13	69	27	15	3.2	0
03126000 - STILLWATER C AT PIEDMONT OH (LAT 40 11 41 LONG 081 12 56)												
NOV., 1973												
06...	1150	21	10.0	--	1280	8.2	--	--	--	--	--	--
MAR., 1974												
08...	1120	46	13.5	--	--	8.0	--	190	51	--	--	--
MAY												
08...	1120	126	14.0	--	--	8.0	--	170	55	--	--	0
SEP.												
13...	1300	377	22.0	7.5	1060	7.8	4.9	140	55	15	2.9	0
03127000 - STILLWATER C AT TIPPECANOE OH (LAT 40 16 13 LONG 081 17 26)												
NOV., 1973												
06...	1520	38	10.0	--	1100	8.1	--	--	--	--	--	--
MAR., 1974												
08...	1525	141	14.0	--	--	8.1	--	89	29	--	--	--
MAY												
08...	1515	206	13.5	--	--	7.6	--	120	44	--	--	0
SEP.												
13...	1000	516	20.0	6.4	970	7.3	5.8	130	48	14	3.0	0
03127100 - CROOKED CR NR STILLWATER OH (LAT 40 18 29 LONG 081 19 26)												
SEP., 1974												
26...	1630	11	14.0	9.1	295	7.4	6.9	31	8.5	12	1.5	0
03127500 - STILLWATER C AT UHRICHSVILLE OH (LAT 40 23 10 LONG 081 20 50)												
DEC., 1973												
10...	1640	704	5.5	--	976	8.0	--	--	--	--	--	--
FEB., 1974												
13...	1605	640	3.5	--	--	7.7	--	100	39	--	--	--
APR.												
08...	1605	872	8.0	--	--	7.5	--	83	28	--	--	0
AUG.												
13...	1330	202	21.5	6.3	1080	7.6	5.6	120	40	36	4.5	0
03128500 - L STILLWATER C BL TAPPAN DAM AT TAPPAN OH (LAT 40 21 25 LONG 081 13 49)												
DEC., 1973												
13...	1510	2.1	3.0	--	708	7.2	--	--	--	--	--	--
FEB., 1974												
13...	1320	341	4.0	--	--	8.1	--	98	31	--	--	--
APR.												
10...	1510	222	10.5	--	636	7.5	--	80	28	--	--	0
AUG.												
09...	1130	12	18.5	5.8	700	7.7	7.5	100	30	8.1	2.5	0
03128600 - L STILLWATER CR NR DENNISON OH (LAT 40 24 19 LONG 081 17 18)												
AUG., 1974												
13...	1115	32	19.0	7.5	760	7.6	8.9	80	26	29	3.1	0
03128700 - TUSCARAWAS R AT TUSCARAWAS OH (LAT 40 23 37 LONG 081 23 26)												
SEP., 1974												
26...	1500	1290	16.0	8.0	1250	7.3	9.0	130	28	80	4.9	0
03129000 - TUSCARAWAS R AT NEWCOMERSTOWN OH (LAT 40 15 41 LONG 081 36 33)												
NOV., 1973												
06...	1130	1560	7.0	--	923	8.0	--	--	--	--	--	--
MAR., 1974												
21...	1550	3770	5.5	--	--	7.6	--	99	16	--	--	--
APR.												
05...	1130	10600	11.5	--	--	7.3	--	49	13	--	--	0
SEP.												
26...	0900	1480	14.0	8.2	1180	7.5	8.9	130	26	74	5.0	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

393

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DISSOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03124520 - SUGAR CR AT DOVER OH (LAT 40 31 40 LONG 081 29 43)												
AUG., 1974 13...	86	260	25	.3	.12	.03	1.6	.23	465	320	40	1400
03125000 - HOME C NR NEW PHILADELPHIA OH (LAT 40 28 06 LONG 081 24 10)												
NOV., 1973 05...	--	280	70	--	--	.00	2.2	--	--	--	--	--
MAR., 1974 26...	37	210	21	--	--	.00	1.6	--	--	280	--	--
APR. 26...	47	310	16	--	--	.00	1.0	--	--	330	--	--
SEP. 09...	70	230	19	.2	.23	.01	1.1	.04	412	280	30	1000
03126000 - STILLWATER C AT PIEDMONT OH (LAT 40 11 41 LONG 081 12 56)												
NOV., 1973 06...	--	650	15	--	--	.00	.39	--	--	--	--	--
MAR., 1974 08...	--	560	13	--	--	.00	.41	--	--	680	--	--
MAY 08...	129	520	13	--	--	.00	.46	--	--	650	--	--
SEP. 13...	102	450	8.8	.2	.35	.00	.04	.06	728	580	20	630
03127000 - STILLWATER C AT TIPPECANOE OH (LAT 40 16 13 LONG 081 17 26)												
NOV., 1973 06...	--	530	13	--	--	.00	.45	--	--	--	--	--
MAR., 1974 08...	--	290	11	--	--	.00	.40	--	--	340	--	--
MAY 08...	110	390	10	--	--	.00	.28	--	--	480	--	--
SEP. 13...	114	390	8.1	.1	.40	.01	.13	.09	656	520	30	830
03127100 - CROOKED CR NR STILLWATER OH (LAT 40 18 29 LONG 081 19 26)												
SEP., 1974 26...	96	32	21	.1	.14	.00	.11	.04	161	110	90	160
03127500 - STILLWATER C AT UHRICHSVILLE OH (LAT 40 23 10 LONG 081 20 50)												
DEC., 1973 10...	--	450	20	--	--	.00	.84	--	--	--	--	--
FEB., 1974 13...	--	360	29	--	--	.00	.78	--	--	410	--	--
APR. 08...	74	240	21	--	--	.00	.72	--	--	320	--	--
AUG. 13...	110	360	44	.1	.51	.00	.33	.06	665	460	10	710
03128500 - L STILLWATER C BL TAPPAN DAM AT TAPPAN OH (LAT 40 21 25 LONG 081 13 49)												
DEC., 1973 13...	--	280	7.3	--	--	.00	.82	--	--	--	--	--
FEB., 1974 13...	--	280	8.6	--	--	.00	.72	--	--	370	--	--
APR. 10...	83	260	8.3	--	--	.00	.39	--	--	320	--	--
AUG. 09...	158	240	8.0	.1	2.5	.01	.01	.10	478	370	50	3400
03128600 - L STILLWATER CR NR DENNISON OH (LAT 40 24 19 LONG 081 17 18)												
AUG., 1974 13...	112	220	33	.2	.13	.00	.87	.45	458	310	10	2600
03128700 - TUSCARAWAS R AT TUSCARAWAS OH (LAT 40 23 37 LONG 081 23 26)												
SEP., 1974 26...	127	200	200	.5	.47	.11	1.2	.19	716	440	30	1000
03129000 - TUSCARAWAS R AT NEWCOMERSTOWN OH (LAT 40 15 41 LONG 081 36 33)												
NOV., 1973 06...	--	160	140	--	--	.00	2.2	--	--	--	--	--
MAR., 1974 21...	--	130	130	--	--	.00	2.2	--	--	310	--	--
APR. 05...	52	110	48	--	--	.00	1.6	--	--	180	--	--
SEP. 26...	122	230	190	.4	.28	.07	1.3	.13	725	430	40	700

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SILICA (SI02) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	CARBONATE (CO3) (MG/L)
MUSKINGUM RIVER BASIN--Continued												
03129100 - WHITE EYES C NR FRESNO OH (LAT 40 18 17 LONG 081 45 01)												
SEP., 1974												
27...	0930	20	13.0	8.7	345	7.2	8.0	40	12	7.9	2.0	0
03129150 - TUSCARAWAS R AT COSHOCTON OH (LAT 40 16 44 LONG 081 52 15)												
SEP., 1974												
26...	1330	1580	15.5	8.6	1160	7.5	9.0	120	25	73	4.6	0
03130000 - BLACK F BL CHARLES MILL DAM NR MIFFLIN OH (LAT 40 44 16 LONG 082 21 48)												
NOV., 1973												
15...	1150	58	9.0	--	523	8.5	--	--	--	--	--	--
MAR., 1974												
19...	1105	925	5.0	--	--	7.4	--	52	11	--	--	0
MAY												
22...	1040	64	21.0	--	--	7.5	--	65	17	--	--	0
SEP.												
23...	1545	37	18.0	9.8	430	8.5	1.8	52	16	12	2.4	9
03130500 - TOUBY RN AT MANSFIELD OH (LAT 40 45 53 LONG 082 32 43)												
NOV., 1973												
14...	1400	.48	12.0	--	1460	8.5	--	--	--	--	--	--
MAR., 1974												
18...	1510	5.0	7.0	--	--	7.7	--	73	16	--	--	--
MAY												
21...	1520	1.1	21.5	--	--	8.6	--	90	24	--	--	11
SEP.												
23...	1300	.60	10.0	11.4	1010	8.1	11	110	31	65	3.4	0
03132000 - CLEAR F AT BUTLER OH (LAT 40 35 37 LONG 082 25 20)												
NOV., 1973												
15...	1435	39	12.5	--	480	8.1	--	--	--	--	--	--
MAR., 1974												
11...	1440	420	5.5	--	--	7.8	--	42	12	--	--	0
MAY												
22...	1615	79	22.0	--	--	8.0	--	55	17	--	--	0
SEP.												
25...	0900	28	11.0	7.8	480	7.7	5.1	59	19	11	1.7	0
03133500 - CLEAR F BL PLEASANT HILL DAM NR PERRYVILLE OH (LAT 40 37 13 LONG 082 19 28)												
NOV., 1973												
13...	1310	47	7.0	--	397	8.5	--	--	--	--	--	3
MAR., 1974												
19...	1710	386	6.0	--	--	8.3	--	43	11	--	--	0
MAY												
22...	1415	143	21.5	--	--	7.7	--	47	15	--	--	0
SEP.												
24...	1000	38	17.5	8.8	360	7.9	2.9	45	15	8.3	2.0	0
03134300 - MUDDY F NR ROWSBURG OH (LAT 40 50 10 LONG 082 08 16)												
SEP., 1974												
17...	1130	6.0	16.0	8.3	730	7.7	5.5	75	22	37	4.0	0
03135000 - LAKE F BL MOHICANVILLE DAM NR MOHICANVILLE OH (LAT 40 43 24 LONG 082 09 18)												
NOV., 1973												
14...	1055	52	9.0	--	673	7.4	--	--	--	--	--	--
MAR., 1974												
13...	1510	1150	5.0	--	--	7.1	--	42	9.6	--	--	0
MAY												
15...	1420	261	16.5	--	425	8.0	--	45	15	--	--	0
SEP.												
17...	1345	41	16.5	7.5	630	7.6	7.3	70	22	26	4.0	0
03136000 - MOHICAN R AT GREER OH (LAT 40 30 53 LONG 082 11 44)												
NOV., 1973												
12...	1140	284	4.0	--	542	8.5	--	--	--	--	--	--
MAR., 1974												
13...	1140	2710	5.0	--	--	7.9	--	33	9.3	--	--	--
MAY												
14...	1420	1780	--	--	387	8.3	--	42	14	--	--	0
SEP.												
16...	1200	417	16.0	8.9	470	7.8	5.1	52	17	16	3.2	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03129100 - WHITE EYES C NR FRESNO OH (LAT 40 18 17 LONG 081 45 01)												
SEP., 1974 27...	94	68	11	.2	.16	.01	.62	.03	196	150	70	490
03129150 - TUSCARAWAS R AT COSHOCTON OH (LAT 40 16 44 LONG 081 52 15)												
SEP., 1974 26...	122	200	200	.4	.26	.04	1.2	.14	693	400	50	420
03130000 - BLACK F BL CHARLES MILL DAM NR MIFFLIN OH (LAT 40 44 16 LONG 082 21 48)												
NOV., 1973 15...	--	85	24	--	--	.00	1.2	--	--	--	--	--
MAR., 1974 19...	121	52	15	--	--	.01	1.9	--	--	180	--	--
MAY 22...	168	64	21	--	--	.00	1.8	--	--	230	--	--
SEP. 23...	136	65	18	.2	.47	.01	.03	.13	243	200	30	10
03130500 - TOUBY RN AT MANSFIELD OH (LAT 40 45 53 LONG 082 32 43)												
NOV., 1973 14...	--	140	250	--	--	.00	.52	--	--	--	--	--
MAR., 1974 18...	--	67	52	--	--	.00	2.2	--	--	250	--	--
MAY 21...	244	79	100	--	--	.00	1.3	--	--	320	--	--
SEP. 23...	330	98	130	.3	.09	.02	1.3	.52	611	400	30	30
03132000 - CLEAR F AT BUTLER OH (LAT 40 35 37 LONG 082 25 20)												
NOV., 1973 15...	--	37	18	--	--	.00	.96	--	--	--	--	--
MAR., 1974 11...	122	37	17	--	--	.00	1.3	--	--	150	--	--
MAY 22...	200	35	17	--	--	.00	.95	--	--	210	--	--
SEP. 25...	242	36	19	.1	.20	.01	.52	.13	270	230	40	30
03133500 - CLEAR F BL PLEASANT HILL DAM NR PERRYVILLE OH (LAT 40 37 13 LONG 082 19 28)												
NOV., 1973 13...	188	30	16	.2	--	--	--	.01	--	--	--	--
MAR., 1974 19...	123	32	15	--	--	.01	1.3	--	--	150	--	--
MAY 22...	169	33	16	--	--	.00	1.0	--	--	180	--	--
SEP. 24...	175	29	14	.1	.28	.01	.04	.05	203	170	20	10
03134300 - MUDDY F NR ROWSBURG OH (LAT 40 50 10 LONG 082 08 16)												
SEP., 1974 17...	228	120	47	.3	.11	.00	.54	.05	423	280	50	70
03135000 - LAKE F BL MOHICANVILLE DAM NR MOHICANVILLE OH (LAT 40 43 24 LONG 082 09 18)												
NOV., 1973 14...	--	100	38	--	--	.00	1.6	--	--	--	--	--
MAR., 1974 13...	88	45	15	--	--	.01	2.2	--	--	140	--	--
MAY 15...	147	57	23	--	--	.00	1.9	--	--	170	--	--
SEP. 17...	233	82	38	.3	.16	.03	.86	.42	365	270	30	130
03136000 - MOHICAN R AT GREER OH (LAT 40 30 53 LONG 082 11 44)												
NOV., 1973 12...	--	68	29	--	--	.00	1.5	--	--	--	--	--
MAR., 1974 13...	--	42	15	--	--	.00	1.9	--	--	120	--	--
MAY 14...	147	52	18	--	--	.00	1.4	--	--	160	--	--
SEP. 16...	179	61	24	.2	.32	.00	.78	.25	267	200	50	30

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
MUSKINGUM RIVER BASIN--Continued												
03136400 - N B KOKOSING R NR FREDERICKTOWN OH (LAT 40 30 08 LONG 082 34 18)												
NOV., 1973												
15...	1300	11	8.0	--	458	8.4	--	--	--	--	--	--
16...	1300	15	8.0	--	347	8.4	--	--	--	--	--	--
MAR., 1974												
04...	1330	67	9.5	--	--	8.2	--	44	14	--	--	--
APR.												
04...	1245	286	13.0	--	--	7.8	--	35	10	--	--	0
AUG.												
20...	1020	2.9	16.5	7.3	505	8.1	7.1	57	22	6.9	2.0	0
03136500 - KOKOSING R AT MOUNT VERNON OH (LAT 40 24 20 LONG 082 30 00)												
NOV., 1973												
16...	1115	100	8.5	--	508	8.3	--	--	--	--	--	--
MAR., 1974												
04...	1420	300	12.0	--	--	7.7	--	58	16	--	--	0
MAY												
01...	1200	200	17.0	--	457	7.7	--	60	19	--	--	0
AUG.												
20...	1305	40	23.0	9.8	540	8.5	7.0	66	21	10	2.0	6
03137000 - KOKOSING R AT MILLWOOD OH (LAT 40 23 51 LONG 082 17 09)												
NOV., 1973												
13...	0950	168	6.0	--	486	8.6	--	--	--	--	--	--
MAR., 1974												
05...	0845	1030	9.0	--	--	7.5	--	43	12	--	--	0
MAY												
02...	1200	351	16.0	--	422	7.6	--	54	17	--	--	0
03138500 - WALHONDING R BL MOHAWK DAM AT NELLIE OH (LAT 40 20 29 LONG 082 03 56)												
NOV., 1973												
12...	1500	486	3.0	--	518	8.6	--	--	--	--	--	--
MAR., 1974												
25...	1250	2200	3.5	--	411	8.1	--	50	13	--	--	0
MAY												
17...	1150	1260	19.5	--	--	8.1	--	57	16	--	--	0
SEP.												
27...	1400	313	15.5	10.2	525	8.1	3.6	61	19	17	2.1	0
03138800 - KILLBUCK C AT WOOSTER OH (LAT 40 48 03 LONG 081 58 30)												
SEP., 1974												
17...	1015	11	16.5	7.7	620	7.7	6.7	73	23	19	3.2	0
03139000 - KILLBUCK C AT KILLBUCK OH (LAT 40 29 41 LONG 081 59 12)												
NOV., 1973												
07...	1230	157	5.5	--	535	8.5	--	--	--	--	--	--
MAR., 1974												
11...	1200	1380	7.5	--	--	7.2	--	45	12	--	--	0
APR.												
03...	1130	3100	10.0	--	168	7.3	--	25	5.0	--	--	0
SEP.												
16...	1000	109	15.5	7.4	510	7.5	7.2	64	17	16	3.2	0
03140000 - MILL C NR COSHOCTON OH (LAT 40 21 46 LONG 081 51 45)												
NOV., 1973												
07...	1500	7.6	4.0	--	328	8.2	--	--	--	--	--	--
MAR., 1974												
25...	1605	48	4.5	--	--	7.8	--	41	7.0	--	--	--
MAY												
17...	1450	18	20.0	--	--	7.5	--	35	8.8	--	--	0
SEP.												
27...	1130	6.6	12.0	9.0	335	7.3	6.9	38	10	8.3	3.1	0
03140500 - MUSKINGUM R NR COSHOCTON OH (LAT 40 14 54 LONG 081 52 23)												
NOV., 1973												
01...	1315	5350	--	--	745	8.3	--	--	--	--	--	--
MAR., 1974												
01...	1525	4830	4.0	--	--	8.2	--	84	16	--	--	--
APR.												
05...	1510	20100	11.0	--	--	7.2	--	42	11	--	--	0
SEP.												
25...	1415	2240	15.0	7.3	1000	7.5	8.0	100	26	57	3.6	0
03140700 - BUFFALO F AT PLEASANT CITY OH (LAT 39 54 15 LONG 081 33 14)												
AUG., 1974												
07...	1100	39	20.0	6.9	1160	7.7	6.4	160	59	21	3.3	0



ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

397

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03136400 - N B KOKOSING R NR FREDERICKTOWN OH (LAT 40 30 08 LONG 082 34 18)												
NOV., 1973												
15...	--	38	12	--	--	.00	1.9	--	--	--	--	--
16...	--	38	12	--	--	.00	1.9	--	--	--	--	--
MAR., 1974												
04...	--	37	14	--	--	.00	1.5	--	--	170	--	--
APR.												
04...	107	28	9.0	--	--	.00	1.8	--	--	130	--	--
AUG.												
20...	252	36	14	.2	--	--	--	.01	269	230	10	20
03136500 - KOKOSING R AT MOUNT VERNON OH (LAT 40 24 20 LONG 082 30 00)												
NOV., 1973												
16...	--	51	17	--	--	.00	1.0	--	--	--	--	--
MAR., 1974												
04...	179	42	16	--	--	.00	1.5	--	--	210	--	--
MAY												
01...	223	45	16	--	--	.00	.99	--	--	230	--	--
AUG.												
20...	248	47	19	.2	.13	.04	.44	.11	301	250	10	20
03137000 - KOKOSING R AT MILLWOOD OH (LAT 40 23 51 LONG 082 17 09)												
NOV., 1973												
13...	--	47	22	--	--	.00	1.2	--	--	--	--	--
MAR., 1974												
05...	128	32	13	--	--	.01	1.7	--	--	160	--	--
MAY												
02...	198	40	17	--	--	.00	1.2	--	--	200	--	--
03138500 - WALHONDING R BL MOHAWK DAM AT NELLIE OH (LAT 40 20 29 LONG 082 03 56)												
NOV., 1973												
12...	--	59	27	--	--	--	--	--	--	--	--	--
MAR., 1974												
25...	146	47	24	--	--	.00	1.9	--	--	180	--	--
MAY												
17...	170	51	20	--	--	.00	1.1	--	--	210	--	--
SEP.												
27...	221	56	26	.2	.10	.00	.94	.19	294	230	30	10
03138800 - KILLBUCK C AT WOOSTER OH (LAT 40 48 03 LONG 081 58 30)												
SEP., 1974												
17...	227	94	30	.2	.15	.01	.50	.08	361	280	30	120
03139000 - KILLBUCK C AT KILLBUCK OH (LAT 40 29 41 LONG 081 59 12)												
NOV., 1973												
07...	--	72	30	--	--	.01	1.5	--	--	--	--	--
MAR., 1974												
11...	109	46	16	--	--	.00	2.2	--	--	160	--	--
APR.												
03...	44	32	6.8	--	--	.00	1.3	--	--	83	--	--
SEP.												
16...	214	54	24	.2	.22	.02	.67	.21	291	230	70	200
03140000 - MILL C NR COSHOCTON OH (LAT 40 21 46 LONG 081 51 45)												
NOV., 1973												
07...	--	65	13	--	--	--	--	--	--	--	--	--
MAR., 1974												
25...	--	52	10	--	--	.01	1.7	--	--	130	--	--
MAY												
17...	70	62	7.8	--	--	.00	.66	--	--	120	--	--
SEP.												
27...	99	63	2.2	.1	.26	.01	.66	.03	181	140	110	190
03140500 - MUSKINGUM R NR COSHOCTON OH (LAT 40 14 54 LONG 081 52 23)												
NOV., 1973												
01...	--	--	--	--	--	.00	2.0	--	--	--	--	--
MAR., 1974												
01...	--	95	81	--	--	.00	2.2	--	--	280	--	--
APR.												
05...	65	73	28	--	--	.01	1.7	--	--	150	--	--
SEP.												
25...	144	160	150	.3	.18	.03	.93	.13	576	360	90	330
03140700 - BUFFALO F AT PLEASANT CITY OH (LAT 39 54 15 LONG 081 33 14)												
AUG., 1974												
07...	141	520	16	.4	.25	.02	.48	.19	856	640	30	720

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
MUSKINGUM RIVER BASIN--Continued												
03140800 - BUFFALO C AT PLEASANT CITY OH (LAT 39 54 10 LONG 081 33 03)												
AUG., 1974												
07...	1145	12	20.0	7.0	485	7.7	7.5	67	14	14	2.4	0
03141500 - SENECA F BL SENECAVILLE DAM NR SENECAVILLE OH (LAT 39 55 28 LONG 081 26 17)												
DEC., 1973												
12...	1135	6.9	3.0	--	366	8.1	--	--	--	--	--	--
FEB., 1974												
05...	1510	86	2.5	--	--	8.3	--	52	13	--	--	--
APR.												
10...	1335	99	9.0	--	--	7.8	--	59	13	--	--	0
AUG.												
07...	1430	296	24.5	7.7	355	8.3	4.8	45	13	5.5	1.7	1
03142000 - WILLS C AT CAMBRIDGE OH (LAT 40 00 52 LONG 081 35 14)												
OCT., 1973												
12...	1350	14	15.0	--	1050	7.1	--	82	38	--	--	0
DEC.												
12...	1335	92	3.0	--	626	8.4	--	--	--	--	--	--
FEB., 1974												
06...	1140	244	2.5	--	--	8.1	--	84	25	--	--	--
APR.												
18...	1020	589	11.0	--	--	7.8	--	70	21	--	--	0
SEP.												
25...	1030	804	15.5	7.6	480	7.5	6.4	56	15	8.5	1.6	0
03142295 - SALT F BL SALT F DAM NR CAMBRIDGE OH (LAT 40 06 15 LONG 081 33 15)												
OCT., 1973												
12...	1115	.00	15.5	--	349	8.5	--	--	--	--	--	4
DEC.												
12...	1515	117	3.5	--	310	7.3	--	--	--	--	--	0
MAR., 1974												
22...	1415	282	7.0	--	--	7.6	--	27	7.4	--	--	--
MAY												
07...	1410	112	13.5	--	--	7.4	--	29	7.8	--	--	0
AUG.												
08...	1030	75	24.0	7.3	265	8.2	2.8	38	8.1	6.5	2.0	0
03143500 - WILLS C BL WILLS C DAM AT WILLS CREEK OH (LAT 40 09 34 LONG 081 50 51)												
NOV., 1973												
06...	1445	229	9.0	--	777	8.3	--	--	--	--	--	--
MAR., 1974												
21...	1225	1070	6.0	--	--	7.9	--	58	14	--	--	--
MAY												
20...	1450	3140	22.0	--	--	7.0	--	37	11	--	--	0
SEP.												
26...	1130	1150	15.5	9.4	415	7.3	7.1	51	16	8.0	2.0	0
03144000 - WAKATOMIKA C NR FRAZEYSBURG OH (LAT 40 07 57 LONG 082 08 53)												
NOV., 1973												
12...	1140	19	2.0	--	409	8.4	--	--	--	--	--	--
MAR., 1974												
07...	1045	177	9.0	--	--	7.4	--	30	6.9	--	--	--
MAY												
03...	1200	145	14.0	--	--	7.3	--	26	8.3	--	--	0
AUG.												
21...	1145	14	22.5	7.7	425	7.9	6.6	32	12	23	3.5	0
03145000 - S F LICKING R NR HEBRON OH (LAT 39 59 19 LONG 082 28 30)												
NOV., 1973												
12...	1505	129	9.5	--	403	8.2	--	--	--	--	--	--
MAR., 1974												
05...	1520	122	11.0	--	--	7.7	--	50	17	--	--	--
MAY												
02...	0900	68	15.0	--	--	7.5	--	54	18	--	--	0
AUG.												
22...	0930	20	21.0	5.7	540	7.5	7.8	48	18	21	3.3	0
03146000 - N F LICKING R AT UTICA OH (LAT 40 13 41 LONG 082 27 06)												
NOV., 1973												
13...	1345	19	6.0	--	618	7.8	--	--	--	--	--	0
MAR., 1974												
05...	1235	189	12.0	--	--	8.0	--	47	17	--	--	--
MAY												
01...	1400	43	17.5	--	--	7.6	--	66	23	--	--	0
AUG.												
16...	1100	3.5	21.5	6.4	540	7.9	6.0	77	20	14	3.0	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

399

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03140800 - BUFFALO C AT PLEASANT CITY OH (LAT 39 54 10 LONG 081 33 03)												
AUG., 1974 07...	125	120	18	.2	.27	.01	.14	.09	305	230	40	270
03141500 - SENECA F BL SENECAVILLE DAM NR SENECAVILLE OH (LAT 39 55 28 LONG 081 26 17)												
DEC., 1973 12...	--	70	4.9	--	--	.00	.17	--	--	--	--	--
FEB., 1974 05...	--	73	6.1	--	--	.00	.57	--	--	180	--	--
APR. 10...	142	75	6.8	--	--	.00	.50	--	--	200	--	--
AUG. 07...	137	66	5.0	.2	.33	.01	.00	.06	210	170	10	60
03142000 - WILLS C AT CAMBRIDGE OH (LAT 40 00 52 LONG 081 35 14)												
OCT., 1973 12...	162	320	45	.9	--	.00	2.5	.18	--	--	--	--
DEC. 12...	--	180	17	--	--	.00	.61	--	--	--	--	--
FEB., 1974 06...	--	200	16	--	--	.00	.85	--	--	310	--	--
APR. 18...	135	140	10	--	--	.00	.36	--	--	260	--	--
SEP. 25...	130	99	7.6	.1	.24	.01	.13	.10	258	200	20	60
03142295 - SALT F BL SALT F DAM NR CAMBRIDGE OH (LAT 40 06 15 LONG 081 33 15)												
OCT., 1973 12...	144	50	10	.2	--	.01	.40	.02	--	--	--	--
DEC. 12...	79	69	9.5	.2	--	.01	.40	.02	--	--	--	--
MAR., 1974 22...	--	63	11	--	--	.00	.83	--	--	150	--	--
MAY 07...	51	61	9.9	--	--	.00	.79	--	--	100	--	--
AUG. 08...	84	55	8.2	.0	.29	.01	.00	.04	162	130	10	0
03143500 - WILLS C BL WILLS C DAM AT WILLS CREEK OH (LAT 40 09 34 LONG 081 50 51)												
NOV., 1973 06...	--	270	29	--	--	.00	1.3	--	--	--	--	--
MAR., 1974 21...	--	110	16	--	--	.00	.71	--	--	200	--	--
MAY 20...	68	72	12	--	--	.00	1.5	--	--	140	--	--
SEP. 26...	93	130	7.4	.2	.29	.02	.27	.09	268	190	100	200
03144000 - WAKATOMIKA C NR FRAZEYSBURG OH (LAT 40 07 57 LONG 082 08 53)												
NOV., 1973 12...	--	26	56	--	--	.00	.93	--	--	--	--	--
MAR., 1974 07...	--	27	32	--	--	.00	.91	--	--	100	--	--
MAY 03...	61	25	35	--	--	.00	.40	--	--	99	--	--
AUG. 21...	95	19	60	.1	.19	.00	.34	.04	203	130	90	150
03145000 - S F LICKING R NR HEBRON OH (LAT 39 59 19 LONG 082 28 30)												
NOV., 1973 12...	--	49	21	--	--	.01	1.8	--	--	--	--	--
MAR., 1974 05...	--	57	28	--	--	.00	1.1	--	--	200	--	--
MAY 02...	177	51	38	--	--	.00	1.3	--	--	210	--	--
AUG. 22...	180	55	32	.4	.45	.03	.86	.28	274	190	40	100
03146000 - N F LICKING R AT UTICA OH (LAT 40 13 41 LONG 082 27 06)												
NOV., 1973 13...	283	69	20	.3	--	.00	1.8	.10	--	--	--	--
MAR., 1974 05...	--	50	13	--	--	.00	1.7	--	--	190	--	--
MAY 01...	244	52	12	--	--	.00	.86	--	--	260	--	--
AUG. 16...	272	55	12	.4	.18	.01	.14	.05	321	270	60	40

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
MUSKINGUM RIVER BASIN--Continued												
03146250 - N F LICKING R AB NEWARK OH (LAT 40 06 19 LONG 082 25 02)												
AUG., 1974												
16...	0920	32	18.0	7.2	580	7.9	8.2	70	24	8.2	1.9	0
03148450 - JONATHAN C AT E FULTONHAM OH (LAT 39 51 20 LONG 082 07 35)												
AUG., 1974												
15...	1250	13	22.5	8.8	620	8.1	4.8	86	21	20	3.7	0
03150250 - MEIGS C NR BEVERLY OH (LAT 39 36 00 LONG 081 42 42)												
DEC., 1973												
05...	1440	88	6.0	--	952	8.1	--	--	--	--	--	--
MAR., 1974												
20...	1400	93	7.0	--	--	8.0	--	150	39	--	--	--
MAY												
15...	--	152	15.0	--	--	8.0	--	130	44	--	--	0
SEP.												
11...	0930	117	19.5	7.0	1000	8.0	5.5	150	46	19	2.2	0
03150480 - W B WOLF C NR WATERFORD OH (LAT 39 31 43 LONG 081 39 22)												
SEP., 1974												
24...	1445	43	12.5	7.9	300	7.2	7.4	26	8.6	9.0	2.5	0
03150490 - S B WOLF C NR WATERFORD OH (LAT 39 31 28 LONG 081 39 31)												
AUG., 1974												
06...	1100	4.0	20.5	7.2	345	7.7	3.8	39	10	15	11	0
LITTLE HOCKING RIVER BASIN												
03155800 - L HOCKING R NR L HOCKING OH (LAT 39 17 38 LONG 081 41 17)												
AUG., 1974												
06...	0945	1.0	19.0	6.8	365	7.8	3.0	43	9.7	18	3.7	0
HOCKING RIVER BASIN												
03156000 - HUNTERS RN AT LANCASTER OH (LAT 39 41 57 LONG 082 37 18)												
OCT., 1973												
16...	1005	2.2	13.0	--	477	8.3	--	30	28	--	--	0
NOV.												
27...	1455	43	7.5	--	449	7.9	--	--	--	--	--	--
FEB., 1974												
11...	1400	11	1.0	--	--	8.1	--	70	24	--	--	0
APR.												
01...	1035	16	8.5	--	--	8.2	--	72	24	--	--	0
SEP.												
18...	1020	4.3	16.5	8.7	600	8.1	6.8	77	25	8.0	3.2	0
03156400 - HOCKING R AT LANCASTER OH (LAT 39 42 24 LONG 082 36 03)												
OCT., 1973												
16...	1040	11	13.5	--	667	7.9	--	--	--	--	--	0
DEC.												
11...	--	25	6.0	--	1740	8.1	--	--	--	--	--	--
FEB., 1974												
12...	1430	46	7.0	--	--	7.7	--	98	27	--	--	0
APR.												
01...	1120	68	9.0	--	--	8.4	--	67	22	--	--	4
SEP.												
17...	1500	19	23.0	17.2	782	8.4	8.0	81	26	43	3.2	8
03157000 - CLEAR C NR ROCKBRIDGE OH (LAT 39 35 18 LONG 082 34 43)												
DEC., 1973												
11...	--	53	5.0	--	484	8.2	--	--	--	--	--	--
FEB., 1974												
11...	1230	100	1.0	--	--	8.5	--	54	17	--	--	2
APR.												
08...	1015	194	9.0	--	--	8.3	--	46	16	--	--	0
SEP.												
17...	1040	40	16.0	9.4	430	8.1	7.7	54	18	5.9	2.2	0
03157500 - HOCKING R AT ENTERPRISE OH (LAT 39 33 54 LONG 082 28 29)												
OCT., 1973												
16...	1505	87	14.5	--	758	7.6	--	59	30	--	--	0
DEC.												
11...	--	366	7.0	--	630	7.5	--	--	--	--	--	--
FEB., 1974												
11...	1000	610	.5	--	--	7.5	--	52	17	--	--	0
APR.												
01...	1500	1070	10.0	--	369	8.0	--	38	15	--	--	0
SEP.												
17...	1330	256	17.0	8.3	590	7.8	10	58	21	25	2.9	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MUSKINGUM RIVER BASIN--Continued												
03146250 - N F LICKING R AB NEWARK OH (LAT 40 06 19 LONG 082 25 02)												
AUG., 1974 16...	264	82	13	.1	.08	.00	.31	.03	337	270	0	20
03148450 - JONATHAN C AT E FULTONHAM OH (LAT 39 51 20 LONG 082 07 35)												
AUG., 1974 15...	160	150	39	.2	.14	.00	.24	.04	404	300	120	270
03150250 - MEIGS C NR BEVERLY OH (LAT 39 36 00 LONG 081 42 42)												
DEC., 1973 05...	--	390	19	--	--	.00	.01	--	--	--	--	--
MAR., 1974 20...	--	330	15	--	--	.01	.03	--	--	530	--	--
MAY 15...	184	330	9.8	--	--	.00	.05	--	--	510	--	--
SEP. 11...	254	370	10	.3	.09	.00	.05	.03	728	560	40	100
03150480 - W B WOLF C NR WATERFORD OH (LAT 39 31 43 LONG 081 39 22)												
SEP., 1974 24...	77	45	8.0	.1	.19	.01	.48	.06	145	100	100	60
03150490 - S B WOLF C NR WATERFORD OH (LAT 39 31 28 LONG 081 39 31)												
AUG., 1974 06...	152	41	11	.2	.32	.01	.04	.05	206	140	20	20
LITTLE HOCKING RIVER BASIN												
03155800 - L HOCKING R NR L HOCKING OH (LAT 39 17 38 LONG 081 41 17)												
AUG., 1974 06...	139	50	14	.2	.29	.01	.00	.05	210	150	10	130
HOCKING RIVER BASIN												
03156000 - HUNTERS RN AT LANCASTER OH (LAT 39 41 57 LONG 082 37 18)												
OCT., 1973 16...	221	54	14	.0	--	.00	.51	.00	--	190	--	--
NOV. 27...	--	49	15	--	--	.00	1.6	--	--	--	--	--
FEB., 1974 11...	238	56	14	--	--	.00	1.9	--	--	270	--	--
APR. 01...	257	55	16	--	--	.00	1.4	--	--	280	--	--
SEP. 18...	333	29	15	.2	.21	.01	.42	.10	329	300	190	50
03156400 - HOCKING R AT LANCASTER OH (LAT 39 42 24 LONG 082 36 03)												
OCT., 1973 16...	254	66	23	.1	--	.00	.87	.02	--	--	--	--
DEC. 11...	--	66	400	--	--	.00	1.6	--	--	--	--	--
FEB., 1974 12...	271	61	210	--	--	.00	2.3	--	--	360	--	--
APR. 01...	228	56	16	--	--	.00	2.1	--	--	260	--	--
SEP. 17...	284	38	95	.2	.40	.01	.57	.10	443	310	110	100
03157000 - CLEAR C NR ROCKBRIDGE OH (LAT 39 35 18 LONG 082 34 43)												
DEC., 1973 11...	--	47	13	--	--	.00	1.7	--	--	--	--	--
FEB., 1974 11...	171	40	8.4	--	--	.01	2.0	--	--	200	--	--
APR. 08...	157	40	8.1	--	--	.00	2.2	--	--	180	--	--
SEP. 17...	224	25	8.0	.2	.15	.00	.58	.02	232	210	190	80
03157500 - HOCKING R AT ENTERPRISE OH (LAT 39 33 54 LONG 082 28 29)												
OCT., 1973 16...	206	130	54	.3	--	.01	1.5	.32	--	270	--	--
DEC. 11...	--	100	50	--	--	.00	2.1	--	--	--	--	--
FEB., 1974 11...	123	75	25	--	--	.01	1.9	--	--	200	--	--
APR. 01...	96	69	24	--	--	.00	1.4	--	--	160	--	--
SEP. 17...	163	72	50	.3	.35	.11	.76	.13	321	230	100	1000



## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
HOCKING RIVER BASIN--Continued												
03159000 - SUNDAY C AT GLOUSTER OH (LAT 39 30 03 LONG 082 05 07)												
OCT., 1973												
03...	0930	4.9	16.0	--	3590	2.7	--	--	--	--	--	0
DEC.												
04...	1135	27	6.5	--	1110	3.1	--	--	--	--	--	--
MAR., 1974												
19...	1200	92	5.0	--	--	7.0	--	36	12	--	--	--
MAY												
15...	0840	365	15.0	--	--	7.2	--	27	7.3	--	--	0
SEP.												
11...	1300	63	19.0	6.7	520	6.6	10	45	13	23	2.9	0
03159500 - HOCKING R AT ATHENS OH (LAT 39 19 44 LONG 082 05 16)												
OCT., 1973												
26...	1130	103	14.0	--	1100	7.3	--	92	40	--	--	0
MAR., 1974												
19...	1100	1010	8.5	--	--	7.8	--	58	20	--	--	0
SHADE RIVER BASIN												
03159540 - SHADE R NR CHESTER OH (LAT 39 03 49 LONG 081 52 55)												
NOV., 1973												
27...	--	1860	10.5	--	187	7.5	--	--	--	--	--	--
MAR., 1974												
18...	1655	181	7.0	--	--	8.2	--	39	9.3	--	--	--
MAY												
14...	1000	198	14.0	--	--	7.3	--	35	8.3	--	--	0
SEP.												
16...	1225	36	17.0	7.8	490	7.5	7.8	60	14	12	3.8	0
LEADING CREEK BASIN												
03160050 - LEADING C NR MIDDLEPORT OH (LAT 39 00 31 LONG 082 05 07)												
SEP., 1974												
12...	1540	13	25.0	7.0	460	7.8	7.8	46	10	28	3.2	0
RACCOON CREEK BASIN												
03201990 - L RACCOON C NR VINTON OH (LAT 38 57 12 LONG 082 21 57)												
SEP., 1974												
12...	1315	59	20.0	7.7	430	3.8	14	36	12	10	3.0	0
INDIAN GUYAN CREEK BASIN												
03205210 - INDIAN GUYAN C NR BRADRIK OH (LAT 38 28 41 LONG 082 23 54)												
SEP., 1974												
13...	0950	29	21.0	7.5	335	7.8	7.1	37	8.6	10	4.0	0
PINE CREEK BASIN												
03216640 - PINE C NR WHEELERSBURG OH (LAT 38 39 12 LONG 082 48 09)												
SEP., 1974												
13...	1315	34	21.5	7.1	430	7.7	11	46	16	8.8	4.4	0
SCIOTO RIVER BASIN												
03219500 - SCIOTO R NR PROSPECT OH (LAT 40 25 10 LONG 083 11 50)												
DEC., 1973												
14...	1325	343	3.0	--	823	8.7	--	--	--	--	--	--
FEB., 1974												
21...	1830	1120	5.0	--	--	8.2	--	66	20	--	--	--
APR.												
18...	1515	305	13.0	--	--	8.3	--	96	29	--	--	0
AUG.												
05...	1345	26	23.0	6.8	940	7.9	7.9	84	23	82	7.6	0
03220000 - MILL C NR BELLEPOINT OH (LAT 40 14 54 LONG 083 10 26)												
FEB., 1974												
20...	1745	792	4.0	--	--	7.9	--	59	15	--	--	--
APR.												
19...	1030	60	12.0	--	--	8.4	--	84	33	--	--	4
AUG.												
07...	1045	4.2	20.5	8.3	1360	8.4	1.6	120	62	97	7.2	10
03221000 - SCIOTO R BL O'SHAUGHNESSY DAM NR DUBLIN OH (LAT 40 08 36 LONG 083 07 14)												
FEB., 1974												
25...	1400	1710	3.0	--	--	8.3	--	87	21	--	--	--
APR.												
17...	1050	611	13.0	--	--	8.1	--	75	23	--	--	0
AUG.												
07...	0850	45	21.0	7.6	775	8.0	1.6	85	28	24	8.9	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

403

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
HOCKING RIVER BASIN--Continued												
03159000 - SUNDAY C AT GLOUSTER OH (LAT 39 30 03 LONG 082 05 07)												
OCT., 1973												
03...	0	1800	60	.4	--	.00	.00	.01	--	--	--	--
DEC.												
04...	--	400	46	--	--	.01	.25	--	--	--	--	--
MAR., 1974												
19...	--	120	24	--	--	.00	.40	--	--	140	--	--
MAY												
15...	51	58	11	--	--	.00	.31	--	--	97	--	--
SEP.												
11...	10	170	18	.2	.67	.00	.13	.11	292	170	3900	1400
03159500 - HOCKING R AT ATHENS OH (LAT 39 19 44 LONG 082 05 16)												
OCT., 1973												
26...	127	310	96	.1	--	.01	.93	.02	--	390	--	--
MAR., 1974												
19...	65	140	47	--	--	.01	.75	--	--	230	--	--
SHADE RIVER BASIN												
03159540 - SHADE R NR CHESTER OH (LAT 39 03 49 LONG 081 52 55)												
NOV., 1973												
27...	--	47	3.4	--	--	.00	.50	--	--	--	--	--
MAR., 1974												
18...	--	71	6.0	--	--	.00	.37	--	--	140	--	--
MAY												
14...	69	65	4.1	--	--	.00	.43	--	--	120	--	--
SEP.												
16...	101	140	9.5	.2	.19	.00	.13	.04	298	210	60	1100
LEADING CREEK BASIN												
03160050 - LEADING C NR MIDDLEPORT OH (LAT 39 00 31 LONG 082 05 07)												
SEP., 1974												
12...	90	100	29	.2	.10	.00	.23	.03	269	160	140	180
RACCOON CREEK BASIN												
03201990 - L RACCOON C NR VINTON OH (LAT 38 57 12 LONG 082 21 57)												
SEP., 1974												
12...	0	170	6.4	.4	.90	.00	.21	.08	257	140	380	3800
INDIAN GUYAN CREEK BASIN												
03205210 - INDIAN GUYAN C NR BRADICK OH (LAT 38 28 41 LONG 082 23 54)												
SEP., 1974												
13...	78	75	6.6	.2	.29	.00	.87	.05	187	130	110	150
PINE CREEK BASIN												
03216640 - PINE C NR WHEELERSBURG OH (LAT 38 39 12 LONG 082 48 09)												
SEP., 1974												
13...	44	150	7.9	.2	.28	.00	.39	.04	267	180	180	1100
SCIOTO RIVER BASIN												
03219500 - SCIOTO R NR PROSPECT OH (LAT 40 25 10 LONG 083 11 50)												
DEC., 1973												
14...	--	140	36	--	--	.00	3.4	--	--	--	--	--
FEB., 1974												
21...	--	91	20	--	--	.00	5.3	--	--	250	--	--
APR.												
18...	268	120	21	--	--	.00	3.3	--	--	360	--	--
AUG.												
05...	265	200	49	1.2	2.1	.23	.66	.01	585	300	30	190
03220000 - MILL C NR BELLEPOINT OH (LAT 40 14 54 LONG 083 10 26)												
FEB., 1974												
20...	--	54	19	--	--	.00	3.8	--	--	210	--	--
APR.												
19...	255	130	23	--	--	.00	1.7	--	--	350	--	--
AUG.												
07...	272	390	84	1.0	.48	.01	.00	.02	907	560	20	50
03221000 - SCIOTO R BL O'SHAUGHNESSY DAM NR DUBLIN OH (LAT 40 08 36 LONG 083 07 14)												
FEB., 1974												
25...	--	74	21	--	--	.00	4.8	--	--	300	--	--
APR.												
17...	205	89	26	--	--	.00	3.4	--	--	280	--	--
AUG.												
07...	284	140	31	.4	.29	.07	1.3	.02	459	330	10	70

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
SCIOTO RIVER BASIN--Continued												
03223000 - OLENTANGY R AT CLARIDON OH (LAT 40 34 58 LONG 082 59 20)												
DEC., 1973												
28...	1035	863	4.0	--	396	8.2	--	--	--	--	--	--
FEB., 1974												
22...	1200	356	6.0	--	--	8.3	--	70	16	--	--	--
APR.												
18...	1530	82	12.0	--	--	8.4	--	73	21	--	--	4
AUG.												
05...	1045	32	20.0	6.7	710	7.9	6.5	65	22	36	5.8	0
03224500 - WHETSTONE C NR ASHLEY OH (LAT 40 27 18 LONG 082 57 28)												
DEC., 1973												
27...	1400	810	5.5	--	351	8.0	--	--	--	--	--	--
FEB., 1974												
22...	1315	292	5.0	--	--	7.9	--	62	15	--	--	--
APR.												
04...	1050	696	13.5	--	--	7.9	--	46	13	--	--	0
03225500 - OLENTANGY R NR DELAWARE OH (LAT 40 21 18 LONG 083 04 02)												
OCT., 1973												
31...	1220	268	13.0	--	535	8.5	--	--	--	--	--	--
FEB., 1974												
21...	1400	745	4.0	--	--	8.4	--	66	19	--	--	--
APR.												
15...	1030	179	10.5	--	--	8.1	--	54	15	--	--	0
AUG.												
08...	1100	45	23.5	7.8	575	7.6	2.5	53	21	26	3.0	0
03226800 - OLENTANGY R NR WORTHINGTON OH (LAT 40 06 37 LONG 083 01 55)												
FEB., 1974												
19...	1330	247	4.0	--	--	8.5	--	100	24	--	--	--
APR.												
16...	1355	278	12.0	--	--	7.6	--	68	20	--	--	0
JUNE												
22...	0900	40	22.0	--	--	7.7	--	78	28	--	--	0
22...	1630	53	22.0	9.5	1250	8.0	13	76	24	110	6.0	0
AUG.												
08...	0845	48	23.0	6.6	655	7.9	3.1	61	23	34	4.0	0
03227500 - SCIOTO R AT COLUMBUS OH (LAT 39 54 34 LONG 083 00 33)												
DEC., 1973												
03...	1145	2790	8.5	--	496	8.3	--	--	--	--	--	--
MAR., 1974												
01...	0910	1620	3.5	--	--	7.9	--	84	20	--	--	--
JULY												
01...	1120	303	22.0	--	812	6.9	--	72	24	--	--	0
SEP.												
20...	0915	377	20.5	6.8	650	7.6	3.6	64	26	30	3.6	0
03228200 - BIG WALNUT C AB SUNBURY OH (LAT 40 15 04 LONG 082 50 46)												
AUG., 1974												
16...	1415	.04	25.0	13.2	520	8.4	9.1	52	25	18	4.0	4
03228500 - BIG WALNUT C AT CENTRAL COLLEGE OH (LAT 40 06 13 LONG 082 53 03)												
OCT., 1973												
30...	1320	120	14.0	--	328	8.4	--	--	--	--	--	--
FEB., 1974												
19...	1700	104	4.0	--	--	7.6	--	46	13	--	--	0
APR.												
16...	1300	107	9.5	--	358	7.7	--	41	13	--	--	0
AUG.												
07...	1345	107	23.0	9.4	370	8.2	1.1	39	12	10	2.7	0
03228750 - ALUM C NR KILBOURNE OH (LAT 40 21 24 LONG 082 55 18)												
DEC., 1973												
27...	1140	783	5.5	--	302	7.6	--	--	--	--	--	--
FEB., 1974												
22...	1600	288	5.5	--	--	8.2	--	57	17	--	--	0
APR.												
15...	1455	94	9.5	--	--	7.8	--	57	19	--	--	0
AUG.												
06...	1130	2.0	19.0	9.4	2130	8.0	7.6	140	58	250	9.0	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
SCIOTO RIVER BASIN--Continued												
03223000 - OLENTANGY R AT CLARIDON OH (LAT 40 34 58 LONG 082 59 20)												
DEC., 1973	--	69	21	--	--	.00	5.5	--	--	--	--	--
28...												
FEB., 1974	--	70	21	--	--	.00	4.1	--	--	240	--	--
22...												
APR.												
18...	201	87	22	--	--	.00	2.0	--	--	270	--	--
AUG.												
05...	255	110	36	.5	.42	.02	.48	.01	407	250	30	90
03224500 - WHETSTONE C NR ASHLEY OH (LAT 40 27 18 LONG 082 57 28)												
DEC., 1973	--	50	21	--	--	.00	4.0	--	--	--	--	--
27...												
FEB., 1974	--	53	33	--	--	.00	3.5	--	--	260	--	--
22...												
APR.												
04...	118	43	23	--	--	.00	2.3	--	--	170	--	--
03225500 - OLENTANGY R NR DELAWARE OH (LAT 40 21 18 LONG 083 04 02)												
OCT., 1973	--	62	36	--	--	.00	1.2	--	--	--	--	--
31...												
FEB., 1974	--	74	34	--	--	.00	3.2	--	--	240	--	--
21...												
APR.												
15...	138	56	19	--	--	.00	2.9	--	--	200	--	--
AUG.												
08...	184	77	46	.3	.26	.01	.58	.02	319	220	20	130
03226800 - OLENTANGY R NR WORTHINGTON OH (LAT 40 06 37 LONG 083 01 55)												
FEB., 1974	--	110	120	--	--	.00	2.5	--	--	350	--	--
19...												
APR.												
16...	174	80	31	--	--	.00	3.0	--	--	250	--	--
JUNE												
22...	235	130	62	.7	--	.10	1.3	--	--	310	--	--
22...	256	140	91	4.1	--	--	--	--	604	290	10	43
AUG.												
08...	200	100	50	.3	.35	.02	.62	.01	374	250	10	20
03227500 - SCIOTO R AT COLUMBUS OH (LAT 39 54 34 LONG 083 00 33)												
DEC., 1973	--	68	26	--	--	.00	5.4	--	--	--	--	--
03...												
MAR., 1974	--	79	37	--	--	.00	4.0	--	--	290	--	--
01...												
JULY												
01...	183	140	58	--	--	.00	9.4	--	--	280	--	--
SEP.												
20...	196	120	43	.3	.36	.03	.74	.22	387	270	60	20
03228200 - BIG WALNUT C AB SUNBURY OH (LAT 40 15 04 LONG 082 50 46)												
AUG., 1974	218	75	23	.4	.24	.00	.16	.06	318	230	40	40
16...												
03228500 - BIG WALNUT C AT CENTRAL COLLEGE OH (LAT 40 06 13 LONG 082 53 03)												
OCT., 1973	--	46	14	--	--	.00	1.1	--	--	--	--	--
30...												
FEB., 1974	110	52	24	--	--	.00	1.9	--	--	170	--	--
19...												
APR.												
16...	109	54	21	--	--	.00	2.0	--	--	160	--	--
AUG.												
07...	125	51	18	.3	.13	.01	1.3	.01	196	150	10	10
03228750 - ALUM C NR KILBOURNE OH (LAT 40 21 24 LONG 082 55 18)												
DEC., 1973	--	49	27	--	--	.00	2.9	--	--	--	--	--
27...												
FEB., 1974	117	77	53	--	--	.00	2.3	--	--	210	--	--
22...												
APR.												
15...	148	77	50	--	--	.00	.68	--	--	220	--	--
AUG.												
06...	193	210	480	.2	.18	.00	.01	.01	1250	590	40	30

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
SCIOTO RIVER BASIN--Continued												
03228805 - ALUM C AT AFRICA OH (LAT 40 10 56 LONG 082 57 42)												
DEC., 1973												
04...	0925	317	8.0	--	429	8.2	--	--	--	--	--	--
JAN., 1974												
31...	--	522	--	--	--	8.0	--	46	11	--	--	0
APR.												
16...	1220	324	12.5	--	--	7.6	--	45	14	--	--	0
AUG.												
06...	0930	3.7	21.0	8.0	790	8.2	1.4	87	27	35	4.0	0
03229000 - ALUM C AT COLUMBUS OH (LAT 39 56 42 LONG 082 56 28)												
DEC., 1973												
13...	--	181	4.0	--	542	7.9	--	--	--	--	--	--
JAN., 1974												
31...	1520	588	--	--	--	8.1	--	55	15	--	--	0
APR.												
02...	0940	1790	--	--	--	7.6	--	--	--	--	--	0
SEP.												
19...	0930	20	18.0	7.0	716	7.5	5.2	78	27	35	3.0	0
03229500 - BIG WALNUT C AT REES OH (LAT 39 51 24 LONG 082 57 26)												
DEC., 1973												
13...	--	303	3.5	--	596	8.6	--	--	--	--	--	--
FEB., 1974												
12...	1100	631	1.0	--	--	8.4	--	60	18	--	--	1
APR.												
02...	1215	4310	11.5	--	--	7.5	--	54	18	--	--	0
SEP.												
19...	1220	65	19.5	8.3	690	7.9	6.7	76	36	30	3.0	0
03230500 - BIG DARBY C AT DARBYVILLE OH (LAT 39 42 03 LONG 083 06 35)												
DEC., 1973												
13...	--	378	3.5	--	735	8.3	--	--	--	--	--	--
FEB., 1974												
08...	1000	836	1.0	--	--	8.6	--	81	29	--	--	21
APR.												
02...	1545	3280	13.5	--	--	8.0	--	61	25	--	--	0
SEP.												
20...	1000	79	19.5	7.9	700	8.1	8.3	76	33	20	3.3	0
03230700 - SCIOTO R AT CIRCLEVILLE OH (LAT 39 36 05 LONG 082 57 19)												
APR., 1974												
05...	1255	28100	12.5	--	--	7.4	--	52	17	--	--	--
JUNE												
20...	0915	872	21.0	--	668	7.1	--	87	25	--	--	0
SEP.												
18...	1430	1090	21.5	3.6	730	7.8	6.5	72	26	34	5.4	0
03230800 - DEER C AT MOUNT STERLING OH (LAT 39 42 54 LONG 083 15 26)												
DEC., 1973												
10...	--	273	6.5	--	606	8.5	--	--	--	--	--	--
FEB., 1974												
07...	1500	1030	1.0	--	--	7.6	--	58	23	--	--	0
APR.												
09...	1400	1720	6.0	--	--	8.1	--	46	19	--	--	0
SEP.												
19...	1020	36	18.5	8.0	630	8.1	5.8	63	33	19	2.9	0
03230900 - DEER C NR PANCOASTBURG OH (LAT 39 37 14 LONG 083 12 47)												
DEC., 1973												
10...	--	821	6.5	--	491	8.5	--	--	--	--	--	--
FEB., 1974												
07...	1130	955	2.0	--	--	8.4	--	67	31	--	--	3
MAY												
30...	1125	82	19.0	--	475	7.9	--	45	27	--	--	0
SEP.												
19...	1230	68	21.5	8.7	460	7.9	1.9	38	29	9.0	2.2	0
03231000 - DEER C AT WILLIAMSPORT OH (LAT 39 35 09 LONG 083 07 22)												
DEC., 1973												
14...	--	540	2.0	--	565	8.4	--	--	--	--	--	--
FEB., 1974												
08...	1400	1300	1.0	--	--	8.3	--	65	25	--	--	0
APR.												
03...	1200	1590	12.0	--	--	7.9	--	59	27	--	--	--
SEP.												
19...	1450	75	21.0	9.2	490	8.2	1.7	47	29	9.5	1.6	0



## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
SCIOTO RIVER BASIN--Continued												
03228805 - ALUM C AT AFRICA OH (LAT 40 10 56 LONG 082 57 42)												
DEC., 1973												
04...	--	81	32	--	--	.00	3.9	--	--	--	--	--
JAN., 1974												
31...	89	61	26	--	--	.01	2.6	--	--	160	--	--
APR.												
16...	99	62	26	--	--	.00	2.3	--	--	170	--	--
AUG.												
06...	236	130	63	.4	.25	.04	.42	.18	464	330	30	100
03229000 - ALUM C AT COLUMBUS OH (LAT 39 56 42 LONG 082 56 28)												
DEC., 1973												
13...	--	92	38	--	--	.00	3.2	--	--	--	--	--
JAN., 1974												
31...	112	67	30	--	--	.01	2.5	--	--	200	--	--
APR.												
02...	112	53	20	--	--	.00	1.7	--	--	--	--	--
SEP.												
19...	229	99	59	.3	.24	.02	.49	.18	420	310	50	80
03229500 - BIG WALNUT C AT REES OH (LAT 39 51 24 LONG 082 57 26)												
DEC., 1973												
13...	--	84	39	--	--	.00	2.4	--	--	--	--	--
FEB., 1974												
12...	150	69	40	--	--	.00	2.2	--	--	220	--	--
APR.												
02...	125	58	24	--	--	.00	1.8	--	--	210	--	--
SEP.												
19...	279	91	53	.3	.24	.03	.64	.27	434	340	50	70
03230500 - BIG DARBY C AT DARBYVILLE OH (LAT 39 42 03 LONG 083 06 35)												
DEC., 1973												
13...	--	72	25	--	--	.00	4.0	--	--	--	--	--
FEB., 1974												
08...	250	56	24	--	--	.00	3.8	--	--	320	--	--
APR.												
02...	190	43	16	--	--	.00	4.8	--	--	260	--	--
SEP.												
20...	342	49	31	.4	.17	.00	1.6	.20	390	330	50	20
03230700 - SCIOTO R AT CIRCLEVILLE OH (LAT 39 36 05 LONG 082 57 19)												
APR., 1974												
05...	--	34	11	--	--	.00	5.1	--	--	200	--	--
JUNE												
20...	219	96	38	--	--	.01	5.0	--	--	320	--	--
SEP.												
18...	254	76	42	.7	2.7	.18	.82	1.2	388	290	260	70
03230800 - DEER C AT MOUNT STERLING OH (LAT 39 42 54 LONG 083 15 26)												
DEC., 1973												
10...	--	56	17	--	--	.00	3.4	--	--	--	--	--
FEB., 1974												
07...	207	40	20	--	--	.00	3.4	--	--	240	--	--
APR.												
09...	150	31	12	--	--	.00	4.0	--	--	190	--	--
SEP.												
19...	301	45	27	.6	.26	.00	1.2	.50	345	290	70	20
03230900 - DEER C NR PANCOASTBURG OH (LAT 39 37 14 LONG 083 12 47)												
DEC., 1973												
10...	--	48	16	--	--	.00	3.3	--	--	--	--	--
FEB., 1974												
07...	228	51	15	--	--	.00	3.2	--	--	300	--	--
MAY												
30...	234	45	14	--	--	.00	2.6	--	--	220	--	--
SEP.												
19...	220	43	16	.6	.22	.00	.89	.06	248	210	50	100
03231000 - DEER C AT WILLIAMSPORT OH (LAT 39 35 09 LONG 083 07 22)												
DEC., 1973												
14...	--	53	16	--	--	.03	3.0	--	--	--	--	--
FEB., 1974												
08...	230	43	18	--	--	.01	3.0	--	--	270	--	--
APR.												
03...	--	49	17	--	--	.00	4.3	--	--	260	--	--
SEP.												
19...	239	44	18	.4	.17	.01	.89	.04	269	240	60	20

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
SCIOTO RIVER BASIN--Continued												
03232000 - PAINT C NR GREENFIELD OH (LAT 39 22 45 LONG 083 22 32)												
OCT., 1973												
23...	1445	45	13.0	--	737	8.1	--	89	37	--	--	0
DEC.												
18...	1130	128	.0	--	670	8.5	--	--	--	--	--	--
FEB., 1974												
13...	1610	263	6.0	--	--	8.4	--	91	30	--	--	--
APR.												
09...	1035	1680	3.5	--	--	7.5	--	52	22	--	--	0
SEP.												
27...	1230	35	15.0	10.1	700	8.1	2.3	69	37	17	1.8	0
03232470 - PAINT C NR BAINBRIDGE OH (LAT 39 15 08 LONG 083 20 58)												
OCT., 1973												
24...	1315	90	20.5	--	704	7.5	--	62	32	--	--	0
DEC.												
17...	1430	336	1.5	--	637	8.5	--	--	--	--	--	--
JUNE, 1974												
06...	1225	231	19.5	--	507	7.8	--	54	28	--	--	0
SEP.												
26...	1240	120	18.0	8.9	500	7.9	3.7	54	27	7.5	2.0	0
03232500 - ROCKY F NR BARRETT'S MILLS OH (LAT 39 13 06 LONG 083 23 08)												
OCT., 1973												
24...	1500	17	14.0	--	410	7.9	--	--	--	--	--	0
DEC.												
17...	1600	128	.5	--	472	8.5	--	--	--	--	--	--
FEB., 1974												
13...	1050	184	4.5	--	--	8.6	--	65	22	--	--	--
APR.												
09...	1600	488	9.5	--	--	7.7	--	50	22	--	--	0
SEP.												
26...	1415	119	18.0	9.1	355	8.0	4.0	38	19	3.7	2.0	0
03234000 - PAINT C NR BOURNEVILLE OH (LAT 39 15 49 LONG 083 10 01)												
OCT., 1973												
24...	1140	124	20.5	--	568	8.1	--	65	30	--	--	0
DEC.												
17...	1130	535	.5	--	582	8.6	--	--	--	--	--	--
JUNE, 1974												
06...	1100	469	21.0	--	472	7.9	--	48	26	--	--	0
SEP.												
26...	1000	334	16.0	8.8	470	7.9	5.2	53	24	5.5	2.0	0
03234080 - N F PAINT C NR FRANKFORT OH (LAT 39 26 11 LONG 083 13 22)												
SEP., 1974												
25...	1600	29	21.5	9.7	695	7.9	6.2	78	37	7.5	2.0	0
03235100 - SALT C AT LAURELVILLE OH (LAT 39 27 46 LONG 082 44 08)												
SEP., 1974												
18...	1300	54	18.0	8.9	460	8.0	9.1	58	19	7.0	2.3	0
03235500 - TAR HOLLOW C AT TAR HOLLOW STATE PARK OH (LAT 39 23 22 LONG 082 45 03)												
FEB., 1974												
11...	1150	1.4	4.0	--	--	7.4	--	8.5	4.0	--	--	--
APR.												
11...	1525	2.8	12.0	--	--	7.2	--	6.9	4.1	--	--	0
SEP.												
25...	1310	.33	15.5	8.6	140	6.7	11	9.5	6.0	3.0	1.8	0
03237130 - SCIOTO BRUSH C AT OTWAY OH (LAT 38 51 43 LONG 083 11 24)												
SEP., 1974												
24...	1620	24	17.5	8.0	375	7.5	9.5	35	21	4.6	3.0	0
03237150 - S F SCIOTO BRUSH C AT WAMSLEY OH (LAT 38 49 54 LONG 083 16 42)												
SEP., 1974												
25...	1015	13	17.0	8.2	300	7.4	9.8	29	17	2.9	2.0	0
OHIO BRUSH CREEK BASIN												
03237295 - OHIO BRUSH C NR PEEBLES OH (LAT 38 58 06 LONG 083 25 34)												
SEP., 1974												
24...	1410	88	23.0	10.0	455	8.1	7.7	53	23	3.5	2.0	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
SCIOTO RIVER BASIN--Continued												
03232000 - PAINT C NR GREENFIELD OH (LAT 39 22 45 LONG 083 22 32)												
OCT., 1973												
23...	360	65	29	.4	--	.01	1.6	.71	--	370	--	--
DEC.												
18...	--	61	23	--	--	.00	4.0	--	--	--	--	--
FEB., 1974												
13...	--	51	26	--	--	.00	4.5	--	--	350	--	--
APR.												
09...	174	36	15	--	--	.00	4.0	--	--	220	--	--
SEP.												
27...	342	61	6.9	.4	.15	.00	1.3	.54	364	320	0	10
03232470 - PAINT C NR BAINBRIDGE OH (LAT 39 15 08 LONG 083 20 58)												
OCT., 1973												
24...	330	58	29	.4	--	.00	1.3	.45	--	290	--	--
DEC.												
17...	--	60	24	--	--	.00	2.5	--	--	--	--	--
JUNE, 1974												
06...	240	42	17	--	--	.00	4.5	--	--	250	--	--
SEP.												
26...	250	38	15	.3	.36	.05	.57	.10	271	250	30	50
03232500 - ROCKY F NR BARRETT'S MILLS OH (LAT 39 13 06 LONG 083 23 08)												
OCT., 1973												
24...	226	19	6.5	.2	--	.01	.70	.01	--	--	--	--
DEC.												
17...	--	28	11	--	--	.01	1.5	--	--	--	--	--
FEB., 1974												
13...	--	30	13	--	--	.00	1.6	--	--	250	--	--
APR.												
09...	218	29	11	--	--	.00	.76	--	--	220	--	--
SEP.												
26...	190	17	7.1	.2	.20	.05	.34	.04	185	170	50	10
03234000 - PAINT C NR BOURNEVILLE OH (LAT 39 15 49 LONG 083 10 01)												
OCT., 1973												
24...	289	46	17	.3	--	.00	1.0	.12	--	290	--	--
DEC.												
17...	--	51	18	--	--	.00	2.8	--	--	--	--	--
JUNE, 1974												
06...	242	38	14	--	--	.00	2.5	--	--	230	--	--
SEP.												
26...	248	34	11	.2	.13	.02	.78	.06	257	230	0	0
03234080 - N F PAINT C NR FRANKFORT OH (LAT 39 26 11 LONG 083 13 22)												
SEP., 1974												
25...	350	63	15	.5	.15	.00	1.4	.04	382	350	30	20
03235100 - SALT C AT LAURELVILLE OH (LAT 39 27 46 LONG 082 44 08)												
SEP., 1974												
18...	246	25	9.7	.2	.08	.00	.52	.03	252	220	90	50
03235500 - TAR HOLLOW C AT TAR HOLLOW STATE PARK OH (LAT 39 23 22 LONG 082 45 03)												
FEB., 1974												
11...	--	26	1.7	--	--	.00	.35	--	--	38	--	--
APR.												
11...	12	26	1.4	--	--	.00	.12	--	--	34	--	--
SEP.												
25...	39	27	2.6	.1	.06	.00	.15	.00	80	48	30	10
03237130 - SCIOTO BRUSH C AT OTWAY OH (LAT 38 51 43 LONG 083 11 24)												
SEP., 1974												
24...	110	89	11	.1	.10	.01	.62	.02	228	170	50	60
03237150 - S F SCIOTO BRUSH C AT WAMSLEY OH (LAT 38 49 54 LONG 083 16 42)												
SEP., 1974												
25...	124	38	3.3	.1	.08	.00	.61	.00	163	140	120	50
OHIO BRUSH CREEK BASIN												
03237295 - OHIO BRUSH C NR PEEBLES OH (LAT 38 58 06 LONG 083 25 34)												
SEP., 1974												
24...	258	28	6.2	.2	.12	.00	.49	.05	251	230	50	20

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
OHIO BRUSH CREEK BASIN--Continued												
03237500 - OHIO BRUSH C NR WEST UNION OH (LAT 38 48 13 LONG 083 25 16)												
OCT., 1973												
25...	1030	8.5	13.0	--	443	7.6	--	--	--	--	--	0
DEC.												
18...	1400	92	.5	--	502	8.5	--	--	--	--	--	--
FEB., 1974												
12...	1535	258	4.0	--	--	8.3	--	52	23	--	--	--
APR.												
10...	1125	767	7.0	--	--	7.5	--	44	17	--	--	0
SEP.												
25...	0850	142	13.5	8.5	400	7.8	6.7	49	19	3.6	2.5	0
WHITEOAK CREEK BASIN												
03238500 - WHITEOAK C NR GEORGETOWN OH (LAT 38 51 29 LONG 083 55 43)												
MAR., 1974												
21...	1230	333	8.0	--	--	8.3	--	61	16	--	--	--
MAY												
14...	2000	36	23.0	--	--	8.2	--	58	19	--	--	0
SEP.												
11...	1015	41	21.0	8.1	440	8.1	6.4	60	14	5.8	3.5	0
LITTLE MIAMI RIVER BASIN												
03240000 - L MIAMI R NR OLDTOWN OH (LAT 39 44 54 LONG 083 55 53)												
OCT., 1973												
18...	1530	38	13.0	--	746	8.4	--	--	--	--	--	1
DEC.												
12...	1500	118	1.5	--	583	8.3	--	--	--	--	--	--
FEB., 1974												
06...	1115	140	1.0	--	--	8.2	--	63	34	--	--	0
APR.												
03...	1030	639	11.5	--	--	7.9	--	66	25	--	--	0
SEP.												
19...	0915	47	15.5	7.9	698	7.9	9.0	90	38	11	2.0	0
03241500 - MASSIES C AT WILBERFORCE OH (LAT 39 43 22 LONG 083 52 58)												
OCT., 1973												
18...	1700	18	13.5	--	642	8.3	--	--	--	--	--	0
DEC.												
12...	1215	55	1.5	--	553	8.3	--	--	--	--	--	--
FEB., 1974												
06...	1430	70	1.0	--	--	7.9	--	110	32	--	--	--
APR.												
04...	1130	1220	14.0	--	--	7.3	--	45	17	--	--	0
SEP.												
19...	1100	26	16.0	8.5	702	8.0	8.3	90	38	11	1.8	0
03242150 - CAESAR C NR XENIA OH (LAT 39 37 25 LONG 083 54 09)												
OCT., 1973												
18...	1315	14	12.0	--	659	8.2	--	--	--	--	--	0
DEC.												
11...	1435	60	2.5	--	578	8.4	--	--	--	--	--	--
FEB., 1974												
05...	1320	50	1.0	--	--	8.1	--	73	29	--	--	0
APR.												
04...	1340	942	14.0	--	--	7.9	--	49	20	--	--	0
SEP.												
23...	1430	16	14.0	10.8	640	8.1	6.2	75	34	9.0	1.3	0
03242200 - ANDERSON F NR NEW BURLINGTON OH (LAT 39 33 59 LONG 083 54 10)												
OCT., 1973												
09...	1300	53	20.0	--	500	8.6	--	--	--	--	--	5
NOV.												
29...	1300	694	6.0	--	356	8.4	--	--	--	--	--	--
FEB., 1974												
01...	1745	104	--	--	--	8.2	--	81	31	--	--	0
MAY												
21...	1400	56	23.0	--	--	8.2	--	75	33	--	--	0
SEP.												
12...	1400	45	22.0	9.1	620	8.1	7.4	74	30	10	2.3	0
03242350 - CAESAR C NR WELLMAN OH (LAT 39 28 57 LONG 084 03 52)												
OCT., 1973												
02...	1600	631	20.0	--	392	7.3	--	--	--	--	--	0
NOV.												
07...	1400	67	6.0	--	594	8.0	--	--	--	--	--	--
MAR., 1974												
08...	1035	209	13.5	--	--	8.0	--	77	31	--	--	0
APR.												
17...	1100	194	10.5	--	577	8.1	--	76	29	--	--	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OHIO BRUSH CREEK BASIN--Continued												
03237500 - OHIO BRUSH C NR WEST UNION OH (LAT 38 48 13 LONG 083 25 16)												
OCT., 1973												
25...	230	29	8.6	.3	--	.00	.36	.04	--	--	--	--
DEC.												
18...	--	52	12	--	--	.00	1.0	--	--	--	--	--
FEB., 1974												
12...	--	42	7.8	--	--	.00	1.2	--	--	220	--	--
APR.												
10...	172	31	5.4	--	--	.00	.47	--	--	180	--	--
SEP.												
25...	210	29	5.0	.1	.25	.00	.44	.18	219	200	100	30
WHITEOAK CREEK BASIN												
03238500 - WHITEOAK C NR GEORGETOWN OH (LAT 38 51 29 LONG 083 55 43)												
MAR., 1974												
21...	--	44	10	--	--	.00	1.3	--	--	220	--	--
MAY												
14...	209	--	13	--	--	.00	.31	--	--	220	--	--
SEP.												
11...	225	27	9.0	.2	.16	.00	.55	.09	237	210	210	40
LITTLE MIAMI RIVER BASIN												
03240000 - L MIAMI R NR OLDTOWN OH (LAT 39 44 54 LONG 083 55 53)												
OCT., 1973												
18...	364	55	26	.2	--	.00	3.4	.03	--	--	--	--
DEC.												
12...	--	64	22	--	--	.00	4.0	--	--	--	--	--
FEB., 1974												
06...	247	64	20	--	--	.00	3.9	--	--	300	--	--
APR.												
03...	202	47	17	--	--	.00	6.2	--	--	270	--	--
SEP.												
19...	374	44	25	.3	.07	.00	2.7	.02	404	380	40	30
03241500 - MASSIES C AT WILBERFORCE OH (LAT 39 43 22 LONG 083 52 58)												
OCT., 1973												
18...	275	75	27	.2	--	.01	2.2	.04	--	--	--	--
DEC.												
12...	--	60	20	--	--	.00	3.9	--	--	--	--	--
FEB., 1974												
06...	--	54	22	--	--	.00	3.7	--	--	410	--	--
APR.												
04...	108	23	8.7	--	--	.01	2.4	--	--	180	--	--
SEP.												
19...	381	42	27	.3	.22	.00	1.8	.20	406	380	20	20
03242150 - CAESAR C NR XENIA OH (LAT 39 37 25 LONG 083 54 09)												
OCT., 1973												
18...	361	43	19	.5	--	.00	1.2	.01	--	--	--	--
DEC.												
11...	--	47	18	--	--	.00	2.7	--	--	--	--	--
FEB., 1974												
05...	249	47	18	--	--	.00	3.4	--	--	300	--	--
APR.												
04...	137	27	11	--	--	.00	3.9	--	--	200	--	--
SEP.												
23...	348	40	19	.2	.10	.00	1.0	.07	356	330	30	20
03242200 - ANDERSON F NR NEW BURLINGTON OH (LAT 39 33 59 LONG 083 54 10)												
OCT., 1973												
09...	220	52	21	.1	--	.00	3.2	.02	--	--	--	--
NOV.												
29...	--	29	14	--	--	.00	3.7	--	--	--	--	--
FEB., 1974												
01...	291	50	19	--	--	.00	4.8	--	--	330	--	--
MAY												
21...	285	54	23	--	--	.00	4.6	--	--	320	--	--
SEP.												
12...	318	34	22	.3	.15	.00	1.3	.11	337	310	10	10
03242350 - CAESAR C NR WELLMAN OH (LAT 39 28 57 LONG 084 03 52)												
OCT., 1973												
02...	172	33	14	.6	--	.00	2.6	.31	--	--	--	--
NOV.												
07...	--	53	21	--	--	.01	1.8	--	--	--	--	--
MAR., 1974												
08...	280	51	21	--	--	.00	2.9	--	--	320	--	--
APR.												
17...	284	48	17	--	--	.00	3.4	--	--	310	--	--



ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
LITTLE MIAMI RIVER BASIN--Continued												
03244000 - TODD F NR ROACHESTER OH (LAT 39 20 07 LONG 084 05 12)												
DEC., 1973												
17...	1210	249	1.5	--	467	8.3	--	--	--	--	--	--
FEB., 1974												
01...	1500	527	--	--	--	8.3	--	79	19	--	--	--
MAY												
21...	1100	184	21.0	--	--	8.0	--	68	24	--	--	0
03245500 - L MIAMI R AT MILFORD OH (LAT 39 10 17 LONG 084 17 53)												
OCT., 1973												
11...	1455	507	22.0	--	662	8.5	--	--	--	--	--	5
JAN., 1974												
31...	1730	2490	8.0	--	--	8.1	--	86	26	--	--	0
MAY												
15...	1530	674	21.0	--	603	8.1	--	83	27	--	--	0
SEP.												
11...	1525	451	22.5	9.0	660	8.1	8.4	78	26	19	2.8	0
03246200 - E F L MIAMI R NR MARATHON OH (LAT 39 06 52 LONG 084 01 29)												
FEB., 1974												
01...	1215	201	--	--	--	8.0	--	59	17	--	--	0
MAY												
14...	1200	48	19.0	--	498	8.1	--	65	23	--	--	0
SEP.												
11...	1245	38	22.0	7.9	510	7.8	8.7	61	19	7.5	2.7	0
03247050 - E F L MIAMI R NR BATAVIA OH (LAT 39 03 36 LONG 084 10 32)												
OCT., 1973												
03...	1500	942	21.5	--	251	8.0	--	31	7.5	--	--	0
NOV.												
12...	1345	68	6.5	--	482	8.2	--	--	--	--	--	--
MAR., 1974												
07...	1200	840	13.0	--	--	7.3	--	38	9.8	--	--	0
APR.												
16...	1830	145	14.5	--	--	8.4	--	65	18	--	--	4
AUG.												
13...	1400	29	25.5	8.8	435	8.4	1.5	48	20	14	3.4	6
SEP.												
19...	1300	89	20.0	8.5	410	7.8	6.9	54	14	7.0	2.2	0
03247500 - E F L MIAMI R AT PERINTOWN OH (LAT 39 08 13 LONG 084 14 17)												
FEB., 1974												
01...	0930	443	--	--	--	7.8	--	60	13	--	--	0
MAY												
14...	1415	96	19.5	--	483	8.0	--	67	17	--	--	0
SEP.												
11...	1415	134	23.5	8.2	475	7.7	8.0	62	13	9.6	3.2	0
MILL CREEK BASIN												
03255500 - MILL C AT READING OH (LAT 39 13 14 LONG 084 26 49)												
OCT., 1973												
16...	1120	12	16.0	--	778	8.6	--	94	26	--	--	13
DEC.												
04...	1215	97	16.0	--	636	8.5	--	--	--	--	--	--
JAN., 1974												
31...	0930	86	8.0	--	--	8.5	--	110	21	--	--	--
MAY												
17...	1000	23	23.0	--	--	7.8	--	87	25	--	--	0
SEP.												
18...	1540	26	23.0	9.1	700	8.1	8.1	93	25	27	2.9	0
03257500 - W F MILL C AT WOODLAWN OH (LAT 39 15 14 LONG 084 28 13)												
OCT., 1973												
16...	1400	2.9	17.0	--	329	7.4	--	43	7.4	--	--	0
DEC.												
03...	1515	101	11.0	--	334	8.2	--	--	--	--	--	--
JAN., 1974												
31...	1200	31	7.5	--	--	7.9	--	70	11	--	--	--
MAY												
16...	1530	9.8	24.0	--	--	7.5	--	59	12	--	--	0
SEP.												
18...	1415	3.2	20.0	4.3	455	7.4	5.9	50	10	21	3.2	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
LITTLE MIAMI RIVER BASIN--Continued												
03244000 - TODD F NR ROACHESTER OH (LAT 39 20 07 LONG 084 05 12)												
DEC., 1973												
17...	--	39	21	--	--	.00	2.4	--	--	--	--	--
FEB., 1974												
01...	--	49	23	--	--	.00	2.7	--	--	--	--	--
MAY												
21...	243	47	19	--	--	.00	3.3	--	--	270	--	--
03245500 - L MIAMI R AT MILFORD OH (LAT 39 10 17 LONG 084 17 53)												
OCT., 1973												
11...	308	50	31	.2	--	.01	2.6	.37	--	--	--	--
JAN., 1974												
31...	271	51	23	--	--	.00	3.5	--	--	320	--	--
MAY												
15...	295	52	33	--	--	.00	1.8	--	--	320	--	--
SEP.												
11...	324	36	34	.3	.15	.03	2.0	.44	364	300	20	20
03246200 - E F L MIAMI R NR MARATHON OH (LAT 39 06 52 LONG 084 01 29)												
FEB., 1974												
01...	187	41	13	--	--	.00	1.9	--	--	220	--	--
MAY												
14...	254	47	17	--	--	.00	.88	--	--	260	--	--
SEP.												
11...	248	31	14	.4	.13	.00	1.2	.16	267	230	40	50
03247050 - E F L MIAMI R NR BATAVIA OH (LAT 39 03 36 LONG 084 10 32)												
OCT., 1973												
03...	101	27	7.9	.3	--	.00	1.0	.18	--	110	--	--
NOV.												
12...	--	53	16	--	--	.00	.31	--	--	--	--	--
MAR., 1974												
07...	106	38	11	--	--	.01	.99	--	--	140	--	--
APR.												
16...	220	46	12	--	--	.00	1.2	--	--	240	--	--
AUG.												
13...	205	43	18	.3	.14	.00	.03	.12	255	200	10	20
SEP.												
19...	196	33	11	.2	.17	.01	.62	.17	225	190	50	30
03247500 - E F L MIAMI R AT PERINTOWN OH (LAT 39 08 13 LONG 084 14 17)												
FEB., 1974												
01...	165	40	12	--	--	.00	1.1	--	--	200	--	--
MAY												
14...	229	50	17	--	--	.00	1.5	--	--	240	--	--
SEP.												
11...	230	33	16	.2	.17	.01	1.1	.28	259	210	90	50
MILL CREEK BASIN												
03255500 - MILL C AT READING OH (LAT 39 13 14 LONG 084 26 49)												
OCT., 1973												
16...	272	89	63	.4	--	.00	1.8	.38	--	340	--	--
DEC.												
04...	--	72	39	--	--	.00	2.7	--	--	--	--	--
JAN., 1974												
31...	--	69	51	--	--	.01	2.7	--	--	360	--	--
MAY												
17...	265	83	55	--	--	.00	2.0	--	--	320	--	--
SEP.												
18...	302	76	46	.3	.68	.07	.93	.36	427	340	70	100
03257500 - W F MILL C AT WOODLAWN OH (LAT 39 15 14 LONG 084 28 13)												
OCT., 1973												
16...	131	50	13	.6	--	.00	.91	.17	--	140	--	--
DEC.												
03...	--	38	14	--	--	.00	1.8	--	--	--	--	--
JAN., 1974												
31...	--	48	53	--	--	.01	1.8	--	--	220	--	--
MAY												
16...	180	44	36	--	--	.00	1.4	--	--	200	--	--
SEP.												
18...	182	35	28	.3	1.9	.20	.37	1.5	244	170	20	670

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
MILL CREEK BASIN--Continued												
03259000 - MILL C AT CARTHAGE OH (LAT 39 12 07 LONG 084 28 16)												
OCT., 1973												
12...	1300	19	21.0	--	749	7.9	--	91	24	--	--	0
DEC.												
04...	1030	61	12.0	--	624	7.7	--	--	--	--	--	--
JAN., 1974												
30...	1600	150	8.5	--	--	8.1	--	76	19	--	--	--
MAY												
17...	1230	35	24.5	--	--	7.6	--	85	23	--	--	0
SEP.												
18...	1655	34	22.0	2.8	760	8.0	8.8	82	26	41	3.5	0
GREAT MIAMI RIVER BASIN												
03260620 - MUCHINIPPI C NR RUSSELLS POINT OH (LAT 40 26 21 LONG 083 56 28)												
SEP., 1974												
10...	1210	8.8	19.5	8.6	600	8.0	7.0	74	25	10	2.4	0
03262650 - SPRING C NR TROY OH (LAT 40 05 18 LONG 084 10 27)												
SEP., 1974												
09...	1420	.45	20.5	10.0	580	8.0	5.0	64	30	8.5	4.0	0
03262900 - HONEY C NR NEW CARLISLE OH (LAT 39 58 11 LONG 084 06 33)												
SEP., 1974												
09...	1215	21	18.0	8.5	675	7.8	6.6	76	29	18	2.7	0
03266500 - MAD R AT ZANESFIELD OH (LAT 40 21 01 LONG 083 40 28)												
OCT., 1973												
18...	1645	2.1	12.0	--	623	8.0	--	--	--	--	--	0
DEC.												
14...	1050	7.3	1.0	--	527	8.3	--	--	--	--	--	--
FEB., 1974												
07...	1425	18	1.0	--	--	8.3	--	56	27	--	--	--
APR.												
01...	1115	15	6.0	--	--	8.2	--	54	29	--	--	0
SEP.												
17...	1000	3.0	13.5	7.0	611	7.9	7.9	83	32	5.4	1.5	0
03267000 - MAD R NR URBANA OH (LAT 40 06 27 LONG 083 47 57)												
OCT., 1973												
02...	1430	174	15.5	--	584	8.2	--	--	--	--	--	0
03267400 - CEDAR RN NR TREMONT CITY OH (LAT 40 01 49 LONG 083 48 59)												
SEP., 1974												
17...	1430	7.8	16.0	11.8	709	7.8	10	98	37	5.0	2.0	0
03267500 - MAD R AT TREMONT CITY OH (LAT 40 00 25 LONG 083 49 24)												
OCT., 1973												
18...	1425	202	12.5	--	589	8.2	--	--	--	--	--	0
DEC.												
13...	1125	280	2.5	--	646	8.3	--	--	--	--	--	--
FEB., 1974												
06...	1615	435	1.0	--	--	8.0	--	87	33	--	--	--
APR.												
01...	1440	485	11.0	--	--	8.1	--	92	35	--	--	0
03267600 - CHAPMAN C AT TREMONT CITY OH (LAT 40 00 38 LONG 083 50 08)												
SEP., 1974												
17...	1315	4.4	18.0	8.3	560	7.9	3.1	65	35	9.2	2.4	0
03267900 - MAD R AT ST PARIS PIKE AT EAGLE CITY OH (LAT 39 57 51 LONG 083 49 54)												
OCT., 1973												
18...	1105	208	11.5	--	755	8.1	--	--	--	--	--	0
DEC.												
13...	0950	309	2.5	--	732	8.2	--	--	--	--	--	--
FEB., 1974												
06...	1400	458	1.5	--	--	8.0	--	98	34	--	--	--
APR.												
01...	1745	580	12.0	--	--	8.0	--	93	34	--	--	0
SEP.												
18...	1015	175	15.0	8.2	698	7.9	8.3	97	35	9.5	1.5	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
MILL CREEK BASIN--Continued												
03259000 - MILL C AT CARTHAGE OH (LAT 39 12 07 LONG 084 28 16)												
OCT., 1973												
12...	276	85	51	.4	--	.00	2.0	.35	--	330	--	--
DEC.												
04...	--	70	33	--	--	.00	1.7	--	--	--	--	--
JAN., 1974												
30...	--	70	51	--	--	.00	1.1	--	--	270	--	--
MAY												
17...	252	80	54	--	--	.01	2.5	--	--	310	--	--
SEP.												
18...	314	94	50	.4	1.7	.17	.73	.85	461	310	50	110
GREAT MIAMI RIVER BASIN												
03260620 - MUCHINIPPI C NR RUSSELLS POINT OH (LAT 40 26 21 LONG 083 56 28)												
SEP., 1974												
10...	278	66	16	.4	.20	.00	.57	.13	338	290	30	30
03262650 - SPRING C NR TROY OH (LAT 40 05 18 LONG 084 10 27)												
SEP., 1974												
09...	290	46	18	.4	.16	.01	1.8	.10	319	280	50	30
03262900 - HONEY C NR NEW CARLISLE OH (LAT 39 58 11 LONG 084 06 33)												
SEP., 1974												
09...	342	37	31	.4	.27	.13	2.2	.38	369	310	30	30
03266500 - MAD R AT ZANESFIELD OH (LAT 40 21 01 LONG 083 40 28)												
OCT., 1973												
18...	358	50	8.6	.2	--	.01	.68	.01	--	--	--	--
DEC.												
14...	--	45	10	--	--	.00	.90	--	--	--	--	--
FEB., 1974												
07...	--	38	8.5	--	--	.00	.82	--	--	250	--	--
APR.												
01...	237	40	8.2	--	--	.00	.82	--	--	250	--	--
SEP.												
17...	381	31	8.8	.3	.05	.00	2.4	.06	358	340	40	50
03267000 - MAD R NR URBANA OH (LAT 40 06 27 LONG 083 47 57)												
OCT., 1973												
02...	262	78	13	.4	--	.00	3.2	.03	--	--	--	--
03267400 - CEDAR RN NR TREMONT CITY OH (LAT 40 01 49 LONG 083 48 59)												
SEP., 1974												
17...	388	53	16	.3	.03	.00	4.9	.01	413	400	20	10
03267500 - MAD R AT TREMONT CITY OH (LAT 40 00 25 LONG 083 49 24)												
OCT., 1973												
18...	250	70	16	.2	--	.01	3.6	.00	--	--	--	--
DEC.												
13...	--	74	27	--	--	.00	3.3	--	--	--	--	--
FEB., 1974												
06...	--	71	14	--	--	.00	3.1	--	--	350	--	--
APR.												
01...	338	71	15	--	--	.00	3.3	--	--	370	--	--
03267600 - CHAPMAN C AT TREMONT CITY OH (LAT 40 00 38 LONG 083 50 08)												
SEP., 1974												
17...	342	29	15	.4	.04	.00	.47	.00	328	310	50	10
03267900 - MAD R AT ST PARIS PIKE AT EAGLE CITY OH (LAT 39 57 51 LONG 083 49 54)												
OCT., 1973												
18...	377	79	17	.3	--	.00	3.5	.01	--	--	--	--
DEC.												
13...	--	75	17	--	--	.00	3.4	--	--	--	--	--
FEB., 1974												
06...	--	75	15	--	--	.00	3.2	--	--	390	--	--
APR.												
01...	337	66	16	--	--	.00	3.5	--	--	370	--	--
SEP.												
18...	379	73	18	.3	.05	.02	2.7	.10	430	390	40	20

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
GREAT MIAMI RIVER BASIN--Continued												
03267950 - BUCK C NR NEW MOOREFIELD OH (LAT 40 00 38 LONG 083 41 56)												
OCT., 1973												
01...	1445	39	16.0	--	599	8.6	--	--	--	--	--	10
DEC.												
19...	1630	27	6.0	--	585	8.0	--	--	--	--	--	--
MAR., 1974												
08...	1730	37	17.0	--	--	7.9	--	96	37	--	--	0
APR.												
17...	1900	45	16.0	--	654	7.8	--	79	32	--	--	0
AUG.												
12...	1345	16	19.5	10.4	705	8.0	9.6	95	36	4.9	2.0	0
03267960 - E F BUCK C NR NEW MOOREFIELD OH (LAT 40 00 22 LONG 083 41 37)												
OCT., 1973												
01...	1330	46	16.0	--	575	7.3	--	--	--	--	--	0
DEC.												
19...	1645	27	5.0	--	562	8.3	--	--	--	--	--	--
MAR., 1974												
08...	1530	38	16.0	--	--	8.0	--	93	37	--	--	0
APR.												
17...	1730	55	17.0	--	--	7.8	--	100	39	--	--	0
AUG.												
12...	1100	15	19.0	7.8	705	7.9	9.9	100	38	6.0	2.4	0
03268500 - BEAVER C NR SPRINGFIELD OH (LAT 39 56 26 LONG 083 44 56)												
OCT., 1973												
15...	1620	19	18.0	--	572	8.1	--	--	--	--	--	0
DEC.												
13...	1345	38	1.5	--	517	8.3	--	--	--	--	--	--
FEB., 1974												
07...	1010	132	1.0	--	--	8.1	--	63	22	--	--	0
APR.												
02...	1345	385	11.5	--	410	7.7	--	55	24	--	--	0
SEP.												
18...	1330	14	17.5	9.8	669	7.9	7.9	86	36	12	1.8	0
03269000 - BUCK C AT SPRINGFIELD OH (LAT 39 55 57 LONG 083 49 02)												
OCT., 1973												
18...	1225	30	12.5	--	644	8.1	--	--	--	--	--	0
DEC.												
13...	1550	152	1.5	--	624	8.2	--	--	--	--	--	--
FEB., 1974												
07...	1120	291	1.0	--	--	8.2	--	72	26	--	--	0
APR.												
02...	1545	467	12.0	--	--	7.7	--	--	--	--	--	0
SEP.												
18...	1530	59	19.5	9.8	622	7.9	5.0	73	35	11	2.0	0
03272700 - SEVENMILE C AT CAMDEN OH (LAT 39 37 45 LONG 084 38 40)												
OCT., 1973												
11...	1100	6.7	17.0	--	797	8.0	--	--	--	--	--	0
SEP., 1974												
17...	1550	13	22.0	11.1	640	8.4	6.1	74	42	18	3.0	8
WABASH RIVER BASIN												
03322480 - WABASH R AB BEAVER C AT WABASH OH (LAT 40 32 44 LONG 084 44 29)												
OCT., 1973												
10...	1250	3.3	19.0	--	1360	7.0	--	82	59	--	--	0
SEP., 1974												
10...	0955	6.3	19.5	7.0	950	7.8	5.4	100	40	43	8.2	0

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ERIE

04177100 - E B ST JOSEPH R NR PIONEER OH (LAT 41 39 56 LONG 084 32 31)												
AUG., 1974												
28...	1300	15	20.5	7.1	570	8.4	8.3	90	23	8.9	1.9	8
04177230 - W B ST JOSEPH R NR PIONEER OH (LAT 41 39 14 LONG 084 34 20)												
AUG., 1974												
28...	1410	13	21.0	7.5	517	8.0	6.4	71	23	7.8	2.0	0
04177820 - FISH C NR EDGERTON OH (LAT 41 27 59 LONG 084 46 37)												
AUG., 1974												
29...	1045	4.8	19.5	6.7	570	7.8	7.3	76	24	12	2.5	0



## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
------	--	---	--	---	--------------------------------------	-----------------------------------	-----------------------------------	--------------------------------------	--	-------------------------------	--------------------------------------	---

## GREAT MIAMI RIVER BASIN--Continued

## 03267950 - BUCK C NR NEW MOOREFIELD OH (LAT 40 00 38 LONG 083 41 56)

OCT., 1973												
01...	283	63	15	.2	--	.00	4.0	.01	--	--	--	--
DEC.												
19...	--	72	15	--	--	.00	5.1	--	--	--	--	--
MAR., 1974												
08...	325	64	14	--	--	.00	4.6	--	--	390	--	--
APR.												
17...	323	63	14	--	--	.00	4.3	--	--	330	--	--
AUG.												
12...	378	60	15	.2	.07	.01	4.1	.02	409	390	10	10

## 03267960 - E F BUCK C NR NEW MOOREFIELD OH (LAT 40 00 22 LONG 083 41 37)

OCT., 1973												
01...	255	70	17	.2	--	--	--	.00	--	--	--	--
DEC.												
19...	--	100	18	--	--	.00	2.2	--	--	--	--	--
MAR., 1974												
08...	321	86	14	--	--	.00	1.8	--	--	380	--	--
APR.												
17...	332	85	14	--	--	.00	2.3	--	--	410	--	--
AUG.												
12...	398	83	14	.2	.09	.03	1.1	.02	450	410	10	40

## 03268500 - BEAVER C NR SPRINGFIELD OH (LAT 39 56 26 LONG 083 44 56)

OCT., 1973												
15...	270	53	22	.0	--	.00	3.0	.01	--	--	--	--
DEC.												
13...	--	54	26	--	--	.00	3.4	--	--	--	--	--
FEB., 1974												
07...	209	36	28	--	--	.00	2.0	--	--	250	--	--
APR.												
02...	184	34	15	--	--	.00	3.9	--	--	240	--	--
SEP.												
18...	367	36	25	.3	.06	.00	.43	.17	386	360	30	20

## 03269000 - BUCK C AT SPRINGFIELD OH (LAT 39 55 57 LONG 083 49 02)

OCT., 1973												
18...	285	67	30	.3	--	.00	2.3	.01	--	--	--	--
DEC.												
13...	--	71	24	--	--	.00	3.2	--	--	--	--	--
FEB., 1974												
07...	254	52	28	--	--	.00	2.1	--	--	290	--	--
APR.												
02...	222	49	16	--	--	.00	3.3	--	--	--	--	--
SEP.												
18...	339	42	23	.2	.14	.01	.96	.05	358	330	50	50

## 03272700 - SEVENMILE C AT CAMDEN OH (LAT 39 37 45 LONG 084 38 40)

OCT., 1973												
11...	369	58	46	.4	--	.00	1.6	.55	--	--	--	--
SEP., 1974												
17...	336	42	36	.4	.40	.01	1.7	.29	395	360	30	160

## WABASH RIVER BASIN

## 03322480 - WABASH R AB BEAVER C AT WABASH OH (LAT 40 32 44 LONG 084 44 29)

OCT., 1973												
10...	320	360	82	.8	--	.00	.73	.08	--	450	--	--
SEP., 1974												
10...	288	200	54	.7	.34	.04	2.0	.20	593	410	20	40

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN

## STREAMS TRIBUTARY TO LAKE ERIE

## 04177100 - E B ST JOSEPH R NR PIONEER OH (LAT 41 39 56 LONG 084 32 31)

AUG., 1974												
28...	312	44	13	.5	.20	.01	.29	.42	351	320	20	50

## 04177230 - W B ST JOSEPH R NR PIONEER OH (LAT 41 39 14 LONG 084 34 20)

AUG., 1974												
28...	290	48	11	.5	.23	.03	.13	4.8	313	270	20	30

## 04177820 - FISH C NR EDGERTON OH (LAT 41 27 59 LONG 084 46 37)

AUG., 1974												
29...	300	49	15	.6	.31	.00	.10	.07	334	290	10	40

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04183500 - MAUMEE R AT ANTWERP OH (LAT 41 11 56 LONG 084 44 40)												
NOV., 1973												
21...	1245	192	10.5	--	827	8.6	--	--	--	--	--	--
MAR., 1974												
12...	--	7840	6.5	--	--	8.2	--	68	13	--	--	--
MAY												
07...	1815	650	14.0	--	--	8.0	--	90	25	--	--	0
AUG.												
26...	1545	148	29.0	11.6	710	8.7	5.2	78	25	47	5.3	16
04184500 - BEAN C AT POWERS OH (LAT 41 40 39 LONG 084 13 56)												
NOV., 1973												
20...	1700	29	8.0	--	663	8.6	--	--	--	--	--	--
MAR., 1974												
13...	--	660	5.0	--	--	8.4	--	76	15	--	--	2
MAY												
09...	1525	482	7.5	--	--	7.5	--	73	18	--	--	0
AUG.												
29...	1410	18	19.5	8.8	650	8.4	6.7	98	23	18	3.0	8
04185000 - TIFFIN R AT STRYKER OH (LAT 41 30 17 LONG 084 25 49)												
NOV., 1973												
20...	1325	37	9.0	--	695	8.6	--	--	--	--	--	--
MAR., 1974												
13...	1930	1770	4.0	--	--	8.1	--	76	13	--	--	--
MAY												
08...	1645	150	9.0	--	--	8.1	--	89	23	--	--	0
AUG.												
30...	1045	32	20.0	5.7	685	8.1	5.6	77	27	25	3.2	0
04185900 - AUGLAIZE R NR BUCKLAND OH (LAT 40 39 11 LONG 084 15 35)												
AUG., 1974												
26...	1430	5.4	27.0	9.1	990	8.6	.2	100	34	72	5.2	24
04185950 - AUGLAIZE R NR SPENCERVILLE OH (LAT 40 44 36 LONG 084 18 57)												
NOV., 1973												
14...	1425	5.9	11.0	--	1060	7.9	--	--	--	--	--	0
MAR., 1974												
11...	--	241	7.0	--	--	8.2	--	65	20	--	--	0
MAY												
06...	1715	35	14.0	--	--	8.3	--	92	36	--	--	0
04188300 - BLANCHARD R AT MT BLANCHARD OH (LAT 40 53 28 LONG 083 33 50)												
AUG., 1974												
20...	1100	1.2	24.5	9.4	920	7.8	2.2	67	45	46	5.0	0
04188400 - BLANCHARD R AB FINDLAY OH (LAT 41 02 02 LONG 083 34 46)												
NOV., 1973												
16...	0930	11	8.5	--	894	8.4	--	--	--	--	--	--
MAR., 1974												
06...	1330	589	--	--	--	8.1	--	68	20	--	--	0
APR.												
24...	1145	67	8.0	--	--	8.3	--	92	32	--	--	0
04189180 - RILEY C NR OTTAWA OH (LAT 41 00 00 LONG 084 00 00)												
AUG., 1974												
20...	1450	2.0	28.0	7.2	1080	8.0	2.2	83	45	63	5.0	0
04190400 - L AUGLAIZE R NR MELROSE OH (LAT 41 03 33 LONG 084 24 01)												
AUG., 1974												
28...	1215	4.3	21.5	9.0	1075	8.2	11	91	40	87	8.0	0
04191100 - FLATROCK C NR PAYNE OH (LAT 41 05 57 LONG 084 40 06)												
AUG., 1974												
26...	1300	.20	23.5	6.1	780	8.4	2.6	100	25	37	3.2	8
04192500 - MAUMEE R NR DEFIANCE OH (LAT 41 17 31 LONG 084 16 52)												
NOV., 1973												
17...	1620	424	10.0	--	881	8.5	--	--	--	--	--	--

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04183500 - MAUMEE R AT ANTWERP OH (LAT 41 11 56 LONG 084 44 40)												
NOV., 1973												
21...	--	130	57	--	--	.00	1.5	--	--	--	--	--
MAR., 1974												
12...	--	50	15	--	--	.01	3.7	--	--	220	--	--
MAY												
07...	276	95	31	--	--	.00	1.8	--	--	330	--	--
AUG.												
26...	220	110	55	.8	.37	.12	1.7	.55	451	300	10	40
04184500 - BEAN C AT POWERS OH (LAT 41 40 39 LONG 084 13 56)												
NOV., 1973												
20...	--	70	23	--	--	.00	.15	--	--	--	--	--
MAR., 1974												
13...	178	50	12	--	--	.00	2.2	--	--	250	--	--
MAY												
09...	172	55	19	--	--	.00	5.3	--	--	260	--	--
AUG.												
29...	304	65	25	.6	.13	.00	.29	.21	397	340	170	70
04185000 - TIFFIN R AT STRYKER OH (LAT 41 30 17 LONG 084 25 49)												
NOV., 1973												
20...	--	78	34	--	--	.00	.24	--	--	--	--	--
MAR., 1974												
13...	--	50	16	--	--	.01	3.9	--	--	240	--	--
MAY												
08...	276	69	25	--	--	.00	1.7	--	--	320	--	--
AUG.												
30...	316	66	34	.7	.16	.01	.31	.44	394	300	0	110
04185900 - AUGLAIZE R NR BUCKLAND OH (LAT 40 39 11 LONG 084 15 35)												
AUG., 1974												
26...	268	140	97	1.2	.36	.00	.01	1.4	607	390	670	190
04185950 - AUGLAIZE R NR SPENCERVILLE OH (LAT 40 44 36 LONG 084 18 57)												
NOV., 1973												
14...	365	170	71	.8	--	.00	.79	.64	--	--	--	--
MAR., 1974												
11...	171	62	17	--	--	.01	3.8	--	--	240	--	--
MAY												
06...	313	110	50	--	--	.01	.77	--	--	380	--	--
04188300 - BLANCHARD R AT MT BLANCHARD OH (LAT 40 53 28 LONG 083 33 50)												
AUG., 1974												
20...	232	210	49	.6	.37	.04	.04	.11	540	350	480	190
04188400 - BLANCHARD R AB FINDLAY OH (LAT 41 02 02 LONG 083 34 46)												
NOV., 1973												
16...	--	210	28	--	--	.00	1.2	--	--	--	--	--
MAR., 1974												
06...	139	80	18	--	--	.01	4.5	--	--	250	--	--
APR.												
24...	247	140	25	--	--	.00	2.9	--	--	360	--	--
04189180 - RILEY C NR OTTAWA OH (LAT 41 00 00 LONG 084 00 00)												
AUG., 1974												
20...	266	170	85	.9	.21	.01	.03	.17	586	390	320	100
04190400 - L AUGLAIZE R NR MELROSE OH (LAT 41 03 33 LONG 084 24 01)												
AUG., 1974												
28...	198	340	37	1.2	.87	.25	.85	.40	713	390	460	110
04191100 - FLATROCK C NR PAYNE OH (LAT 41 05 57 LONG 084 40 06)												
AUG., 1974												
26...	292	94	52	.6	.35	.01	.05	.84	467	350	20	270
04192500 - MAUMEE R NR DEFIANCE OH (LAT 41 17 31 LONG 084 16 52)												
NOV., 1973												
17...	--	150	69	--	--	.00	1.7	--	--	--	--	--

420 ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN  
CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH  (UNITS)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	
STREAMS TRIBUTARY TO LAKE ERIE--Continued													
04192800 - BEAVER C NR GRAND RAPIDS OH (LAT 41 23 37 LONG 083 50 42)													
AUG., 1974	21...	0930	3.1	23.0	6.2	2300	8.0	1.0	160	54	280	8.5	0
04194400 - S B PORTAGE R NR SIX POINTS OH (LAT 41 18 41 LONG 083 30 36)													
AUG., 1974	21...	1215	9.4	25.5	5.6	665	7.8	8.6	65	21	31	6.6	0
04195500 - PORTAGE R AT WOODVILLE OH (LAT 41 26 58 LONG 083 21 41)													
MAR., 1974	05...	1700	3740	--	--	--	8.0	--	78.	15	--	--	--
04196000 - SANDUSKY R NR BUCYRUS OH (LAT 40 48 13 LONG 083 00 21)													
NOV., 1973	19...	1210	12	10.0	--	835	8.4	--	--	--	--	--	--
MAR., 1974	07...	1730	227	11.0	--	--	7.5	--	77	16	--	--	--
APR.	25...	1100	29	9.5	--	--	8.3	--	79	22	--	--	0
JULY	24...	1215	4.9	21.0	6.2	1050	7.2	7.6	86	21	92	13	0
04196600 - TYMOCHTEE C NR MARSEILLES OH (LAT 40 42 58 LONG 083 23 32)													
NOV., 1973	12...	1410	3.1	4.5	--	774	8.5	--	--	--	--	--	--
MAR., 1974	04...	1230	116	11.0	--	--	7.9	--	85	19	--	--	--
APR.	22...	1150	30	14.0	--	--	8.2	--	82	26	--	--	0
04197000 - SANDUSKY R NR MEXICO OH (LAT 41 02 39 LONG 083 11 42)													
NOV., 1973	19...	1610	73	3.0	--	871	8.6	--	--	--	--	--	--
MAR., 1974	07...	1230	1390	--	--	--	8.3	--	81	18	--	--	--
APR.	24...	1745	294	9.0	--	--	8.4	--	99	30	--	--	6
04198000 - SANDUSKY R NR FREMONT OH (LAT 41 18 28 LONG 083 09 32)													
MAR., 1974	05...	1430	3120	--	--	--	7.9	--	63	19	--	--	--
APR.	23...	0940	468	10.5	--	--	7.4	--	91	29	--	--	0
04198010 - GREEN C NR FREMONT OH (LAT 41 23 36 LONG 083 01 35)													
AUG., 1974	21...	1345	14	21.0	8.1	2300	7.9	8.5	570	58	16	3.5	0
04198020 - W B HURON R NR MONROEVILLE OH (LAT 41 16 46 LONG 082 40 32)													
AUG., 1974	21...	1600	19	30.0	9.9	585	8.3	4.9	66	22	19	4.9	3
04200050 - W B BLACK R NR OBERLIN OH (LAT 41 15 54 LONG 082 10 47)													
AUG., 1974	21...	0845	8.4	21.0	6.3	450	7.4	7.7	50	15	12	5.0	0
04201400 - W B ROCKY R AT WEST VIEW OH (LAT 41 21 03 LONG 081 54 12)													
AUG., 1974	23...	0845	25	23.0	7.7	660	7.8	5.8	53	17	54	5.8	0
04202000 - CUYAHOGA R AT HIRAM RAPIDS OH (LAT 41 20 26 LONG 081 10 01)													
NOV., 1973	09...	1045	175	3.5	--	290	8.2	--	--	--	--	--	--
MAR., 1974	15...	1335	450	14.0	--	--	7.6	--	22	5.0	--	--	0
MAY	10...	1300	224	11.5	--	--	7.5	--	28	6.2	--	--	0
SEP.	11...	1515	41	20.0	8.8	301	8.0	5.3	34	8.2	13	2.3	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (HCO <sub>3</sub> ) (MG/L)	DIS-SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA, MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04192800 - BEAVER C NR GRAND RAPIDS OH (LAT 41 23 37 LONG 083 50 42)												
AUG., 1974 21...	232	390	430	.9	.29	.01	.08	.42	1440	620	920	170
04194400 - S B PORTAGE R NR SIX POINTS OH (LAT 41 18 41 LONG 083 30 36)												
AUG., 1974 21...	166	99	48	.6	.53	.07	4.4	.67	364	250	1900	170
04195500 - PORTAGE R AT WOODVILLE OH (LAT 41 26 58 LONG 083 21 41)												
MAR., 1974 05...	--	50	19	--	--	.01	9.2	--	--	--	--	--
04196000 - SANDUSKY R NR BUCYRUS OH (LAT 40 48 13 LONG 083 00 21)												
NOV., 1973 19...	--	110	61	--	--	.00	7.6	--	--	--	--	--
MAR., 1974 07...	--	67	31	--	--	.00	3.6	--	--	260	--	--
APR., 1974 25...	218	97	47	--	--	.00	3.2	--	--	290	--	--
JULY 24...	224	110	140	.9	9.9	.31	.49	5.1	581	300	230	150
04196600 - TYMOCHTEE C NR MARSEILLES OH (LAT 40 42 58 LONG 083 23 32)												
NOV., 1973 12...	--	180	34	--	--	.00	2.1	--	--	--	--	--
MAR., 1974 04...	--	88	18	--	--	.00	4.7	--	--	290	--	--
APR., 1974 22...	203	120	22	--	--	.00	2.6	--	--	310	--	--
04197000 - SANDUSKY R NR MEXICO OH (LAT 41 02 39 LONG 083 11 42)												
NOV., 1973 19...	--	200	34	--	--	.00	2.5	--	--	--	--	--
MAR., 1974 07...	--	86	23	--	--	.00	4.6	--	--	280	--	--
APR., 1974 24...	233	150	23	--	--	.00	2.4	--	--	370	--	--
04198000 - SANDUSKY R NR FREMONT OH (LAT 41 18 28 LONG 083 09 32)												
MAR., 1974 05...	--	82	24	--	--	.00	6.0	--	--	240	--	--
APR., 1974 23...	236	120	27	--	--	.00	2.8	--	--	350	--	--
04198010 - GREEN C NR FREMONT OH (LAT 41 23 36 LONG 083 01 35)												
AUG., 1974 21...	282	1300	19	1.1	.15	.00	.10	.09	2120	1700	30	50
04198020 - W B HURON R NR MONROEVILLE OH (LAT 41 16 46 LONG 082 40 32)												
AUG., 1974 21...	160	130	23	.3	.25	.04	.85	.17	352	260	120	20
04200050 - W B BLACK R NR OBERLIN OH (LAT 41 15 54 LONG 082 10 47)												
AUG., 1974 21...	138	84	17	.3	.36	.05	1.2	.49	259	190	130	60
04201400 - W B ROCKY R AT WEST VIEW OH (LAT 41 21 03 LONG 081 54 12)												
AUG., 1974 23...	164	98	65	.3	.37	.04	.83	.61	380	200	20	80
04202000 - CUYAHOGA R AT HIRAM RAPIDS OH (LAT 41 20 26 LONG 081 10 01)												
NOV., 1973 09...	--	46	20	.2	--	.00	.44	.05	--	--	--	--
MAR., 1974 15...	55	30	17	--	--	.00	.30	--	--	76	--	--
MAY 10...	73	31	18	--	--	.00	.27	--	--	95	--	--
SEP. 11...	120	26	20	.1	.19	.00	.13	.06	168	120	40	100



## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04204000 - L CUYAHOGA R AT MOGADORE OH (LAT 41 03 47 LONG 081 23 38)												
DEC., 1973												
18...	1445	9.1	2.0	--	427	8.2	--	--	--	--	--	--
FEB., 1974												
20...	1005	14	2.5	--	--	8.2	--	55	12	--	--	0
APR.												
19...	1440	22	14.5	--	--	7.9	--	47	12	--	--	0
SEP.												
10...	1515	20	19.5	6.5	273	7.7	5.6	30	10	8.6	2.1	0
04204500 - L CUYAHOGA R AT MASSILLON RD AKRON OH (LAT 41 03 37 LONG 081 27 48)												
DEC., 1973												
19...	0915	14	1.0	--	495	8.5	--	--	--	--	--	--
MAR., 1974												
28...	1430	42	6.0	--	--	7.9	--	61	13	--	--	0
APR.												
02...	1500	188	12.0	--	--	7.3	--	42	11	--	--	0
04205000 - SPRINGFIELD LK OUTLET AT AKRON OH (LAT 41 03 21 LONG 081 27 52)												
DEC., 1973												
19...	1105	2.8	.0	--	554	8.1	--	--	--	--	--	--
MAR., 1974												
28...	1330	11	5.5	--	--	8.2	--	54	11	--	--	--
MAY												
14...	1215	17	16.5	--	--	7.5	--	55	11	--	--	0
04205700 - L CUYAHOGA R BL OHIO CA AT AKRON OH (LAT 41 05 40 LONG 081 31 18)												
DEC., 1973												
18...	1215	41	7.5	--	993	8.4	--	--	--	--	--	--
MAR., 1974												
28...	1040	82	11.0	--	--	7.9	--	78	13	--	--	0
MAY												
14...	0945	147	16.0	--	--	7.7	--	61	13	--	--	0
SEP.												
10...	1330	66	24.0	7.9	733	8.5	5.4	62	14	62	3.5	4
04206250 - CUYAHOGA R AT IRA OH (LAT 41 10 53 LONG 081 35 00)												
DEC., 1973												
17...	1550	443	5.0	--	705	7.0	--	--	--	--	--	--
MAR., 1974												
09...	1945	3640	10.5	--	--	7.9	--	49	11	--	--	0
MAY												
17...	1400	1630	19.5	--	406	7.2	--	39	8.7	--	--	0
SEP.												
10...	1100	280	20.5	5.1	719	7.8	9.9	62	14	57	6.2	0
04207500 - OHIO CA AT INDEPENDENCE OH (LAT 41 23 25 LONG 081 37 30)												
DEC., 1973												
17...	1255	68	2.0	--	721	7.1	--	--	--	--	--	--
FEB., 1974												
22...	1425	73	7.5	--	--	8.1	--	52	13	--	--	--
APR.												
17...	1600	79	--	--	--	7.5	--	50	11	--	--	0
AUG.												
22...	1145	38	24.0	5.8	800	7.4	9.3	63	16	69	5.8	0
04208502 - BIG C AT CLEVELAND OH (LAT 41 27 01 LONG 081 43 18)												
DEC., 1973												
14...	1005	71	4.5	--	777	8.2	--	--	--	--	--	--
FEB., 1974												
21...	1105	37	4.0	--	--	7.6	--	90	18	--	--	0
APR.												
24...	0940	34	9.0	--	--	7.2	--	71	18	--	--	0
AUG.												
23...	1030	11	23.0	10.6	840	8.2	15	64	19	74	11	0
04208900 - AURORA B NR CHAGRIN FALLS OH (LAT 41 24 40 LONG 081 24 44)												
AUG., 1974												
21...	1515	26	21.5	10.2	430	8.2	6.7	48	14	15	3.5	0
04211500 - MILL C NR JEFFERSON OH (LAT 41 45 11 LONG 080 48 03)												
NOV., 1973												
07...	1020	31	5.0	--	270	7.0	--	--	--	--	--	--
MAR., 1974												
13...	1525	75	3.0	--	--	7.3	--	24	3.9	--	--	--
APR.												
10...	1645	187	3.5	--	--	7.3	--	18	4.1	--	--	0

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICARBONATE (MCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA+MG) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04204000 - L CUYAHOGA R AT MOGADORE OH (LAT 41 03 47 LONG 081 23 38)												
DEC., 1973	--	61	29	--	--	.00	.83	--	--	--	--	--
FEB., 1974	120	65	31	--	--	.00	.83	--	--	190	--	--
APR., 1974	111	61	23	--	--	.00	.55	--	--	170	--	--
SEP., 1974	105	27	16	.3	1.1	.03	.20	.11	152	120	40	170
04204500 - L CUYAHOGA R AT MASSILLON RD AKRON OH (LAT 41 03 37 LONG 081 27 48)												
DEC., 1973	--	72	35	--	--	.00	.61	--	--	--	--	--
MAR., 1974	123	66	30	--	--	.00	.54	--	--	210	--	--
APR., 1974	83	56	26	--	--	.00	.94	--	--	150	--	--
04205000 - SPRINGFIELD LK OUTLET AT AKRON OH (LAT 41 03 21 LONG 081 27 52)												
DEC., 1973	--	63	59	--	--	.00	.58	--	--	--	--	--
MAR., 1974	--	62	46	--	--	.00	.56	--	--	180	--	--
MAY, 1974	132	57	38	--	--	.00	.59	--	--	180	--	--
04205700 - L CUYAHOGA R BL OHIO CA AT AKRON OH (LAT 41 05 40 LONG 081 31 18)												
DEC., 1973	--	110	200	--	--	.00	1.2	--	--	--	--	--
MAR., 1974	140	88	99	--	--	.00	1.2	--	--	250	--	--
MAY, 1974	125	80	64	--	--	.00	.74	--	--	210	--	--
SEP., 1974	158	76	100	.2	.14	.04	.34	.12	405	210	30	50
04206250 - CUYAHOGA R AT IRA OH (LAT 41 10 53 LONG 081 35 00)												
DEC., 1973	--	100	82	--	--	.00	4.6	--	--	--	--	--
MAR., 1974	87	54	46	--	--	.01	1.7	--	--	170	--	--
MAY, 1974	95	62	38	--	--	.00	1.9	--	--	130	--	--
SEP., 1974	197	88	80	.4	3.3	.05	1.6	.77	415	210	50	120
04207500 - OHIO CA AT INDEPENDENCE OH (LAT 41 23 25 LONG 081 37 30)												
DEC., 1973	--	100	86	--	--	.00	3.5	--	--	--	--	--
FEB., 1974	--	91	92	--	--	.00	3.5	--	--	180	--	--
APR., 1974	108	67	52	--	--	.00	1.6	--	--	170	--	--
AUG., 1974	183	100	88	.6	1.4	.39	2.5	.48	442	220	20	120
04208502 - BIG C AT CLEVELAND OH (LAT 41 27 01 LONG 081 43 18)												
DEC., 1973	--	140	100	--	--	.00	2.4	--	--	--	--	--
FEB., 1974	131	150	230	--	--	--	2.2	--	--	300	--	--
APR., 1974	118	140	130	--	--	.00	2.7	--	--	250	--	--
AUG., 1974	140	120	100	11	1.4	.11	.27	.23	485	240	40	1900
04208900 - AURORA B NR CHAGRIN FALLS OH (LAT 41 24 40 LONG 081 24 44)												
AUG., 1974	173	44	20	.2	.17	.03	.44	.20	237	180	20	80
04211500 - MILL C NR JEFFERSON OH (LAT 41 45 11 LONG 080 48 03)												
NOV., 1973	--	56	24	--	--	.00	.48	--	--	--	--	--
MAR., 1974	--	29	16	--	--	.00	.36	--	--	76	--	--
APR., 1974	35	27	23	--	--	.00	.26	--	--	62	--	--

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04212000 - GRAND R NR MADISON OH (LAT 41 44 26 LONG 081 02 48)												
NOV., 1973												
06...	1020	440	6.0	--	305	8.0	--	--	--	--	--	--
MAR., 1974												
10...	1130	6040	6.0	--	--	7.3	--	19	4.6	--	--	0
APR.												
10...	1220	1180	4.0	--	199	7.3	--	19	4.7	--	--	0
AUG.												
13...	1200	97	23.0	8.1	365	8.1	3.2	38	11	16	3.1	0
04212500 - ASHTABULA R NR ASHTABULA OH (LAT 41 51 20 LONG 080 45 44)												
NOV., 1973												
28...	0945	1090	--	--	204	7.5	--	--	--	--	--	--
MAR., 1974												
14...	1000	91	.0	--	--	7.4	--	22	4.6	--	--	0
MAY												
08...	1410	120	9.0	--	--	7.6	--	22	5.4	--	--	0
04213000 - CONNEAUT C AT CONNEAUT OH (LAT 41 55 37 LONG 080 36 15)												
NOV., 1973												
28...	1245	1100	10.5	--	208	7.3	--	--	--	--	--	0
MAR., 1974												
09...	1540	2280	6.0	--	--	7.5	--	13	3.0	--	--	0
MAY												
08...	1225	268	9.0	--	178	7.5	--	23	4.5	--	--	0
SEP.												
11...	1830	8.1	22.5	7.6	331	8.7	.6	40	10	13	2.8	5

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN 425

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	BICAR- BONATE (HCO <sub>3</sub> ) (MG/L)	DIS- SOLVED SULFATE (SO <sub>4</sub> ) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	HARD- NESS (CA+MG) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
STREAMS TRIBUTARY TO LAKE ERIE--Continued												
04212000 - GRAND R NR MADISON OH (LAT 41 44 26 LONG 081 02 48)												
NOV., 1973												
06...	--	65	22	--	--	.00	.88	--	--	--	--	--
MAR., 1974												
10...	30	29	13	--	--	.01	.58	--	--	66	--	--
APR.												
10...	40	33	18	--	--	.00	.36	--	--	67	--	--
AUG.												
13...	124	47	20	.2	.18	.01	.25	.06	200	140	10	20
04212500 - ASHTABULA R NR ASHTABULA OH (LAT 41 51 20 LONG 080 45 44)												
NOV., 1973												
28...	--	46	14	--	--	.00	.76	--	--	--	--	--
MAR., 1974												
14...	32	37	14	--	--	.00	.28	--	--	74	--	--
MAY												
08...	50	32	17	--	--	--	--	--	--	77	--	--
04213000 - CONNEAUT C AT CONNEAUT OH (LAT 41 55 37 LONG 080 36 15)												
NOV., 1973												
28...	36	48	13	.2	--	.00	.54	.04	--	--	--	--
MAR., 1974												
09...	24	23	5.1	--	--	.01	.51	--	--	45	--	--
MAY												
08...	56	28	8.2	--	--	.00	.08	--	--	76	--	--
SEP.												
11...	108	41	22	.1	.11	.00	.07	.01	188	140	40	0

## CHEMICAL ANALYSES OF GROUND WATER

## ATHENS COUNTY

391934082065000 - AT-10 MUNICIPAL WELL 2A ATHENS OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
DEC. 06...	--	13.0	878	7.5	--	--	--	0	361	84	63
APR. 30...	--	14.5	962	7.4	160	31	32	0	443	81	60

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 06...	--	.00	.13	.00	460	5000	320	--	0	--
APR. 30...	--	.01	.11	.00	668	4900	670	--	--	--

## AUGLAIZE COUNTY

403403084125700 - AU-11 MUNICIPAL WELL 6 WAPAKONETA OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
DEC. 20...	--	15.0	989	7.3	--	--	--	0	397	190	24
MAY 30...	--	14.5	978	7.5	100	43	30	0	397	190	22

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 20...	--	.00	.61	.00	687	1800	60	--	1	1
MAY 30...	--	.01	.01	.00	775	1700	33	0	3	--

## BUTLER COUNTY

392445084333000 - BU-36 CHAMPION PAPER CO WELL 4 HAMILTON OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
NOV. 15...	--	16.5	834	7.1	76	27	0	358	94
FEB. 07...	--	14.5	827	7.2	93	30	0	355	88
MAY 01...	0800	15.5	794	7.3	--	--	0	360	98
AUG. 09...	1145	20.0	850	7.0	97	36	0	378	93



## CHEMICAL ANALYSES OF GROUND WATER--Continued

427

## BUTLER COUNTY--Continued

392445084333000 - BU-36 CHAMPION PAPER CO WELL 4 HAMILTON OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS-SOLVED CHLORIDE (CL) (MG/L)	TOTAL FLUORIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL RESIDUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)
NOV. 15...	41	.2	.00	.00	538	100	13	--	9
FEB. 07...	42	.2	.01	1.8	564	50	50	--	--
MAY 01...	39	.3	.00	1.8	610	60	17	--	--
AUG. 09...	38	.3	.00	1.7	596	10	10	<1	<1

DATE	DIS-SOLVED CHROMIUM (CR) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV. 15...	--	--	--	12	--	6	--	30
FEB. 07...	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--
AUG. 09...	10	20	10	0	0	4	20	20

## CLARK COUNTY

395835083491700 - CL-20 MUNICIPAL WELL 4 SPRINGFIELD OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TOTAL CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	CARBONATE (CO3) (MG/L)	BICARBONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)
DEC. 13...	--	--	725	7.3	99	34	--	0	336	86	20
MAY 14...	--	--	765	7.3	90	39	9.5	0	374	89	23

DATE	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL RESIDUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 13...	--	.00	1.2	.00	470	630	140	--	0	--
MAY 14...	.05	.01	1.3	.00	582	1100	160	--	--	--

## HAMILTON COUNTY

391634084152600 - H-22 MUNICIPAL WELL 2 LOVELAND OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TOTAL CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	CARBONATE (CO3) (MG/L)	BICARBONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)
DEC. 18...	--	--	634	7.6	--	--	63	0	304	51	25
MAY 14...	--	15.0	696	7.2	--	--	29	0	362	--	--
SEP. 13...	--	13.5	666	--	--	--	14	0	328	49	2.0

## CHEMICAL ANALYSES OF GROUND WATER--Continued

## HAMILTON COUNTY--Continued

391634084152600 - H-22 MUNICIPAL WELL 2 LOVELAND OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 18...	--	.01	1.1	.01	314	500	22	--	--	--
MAY 14...	.00	.00	.86	.02	436	50	530	--	--	--
SEP. 13...	.01	.00	1.2	.03	412	130	110	0	7	--

390645084480500 - H-21 DUPONT CORPORATION WELL 38 NORTH BEND OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
DEC. 18...	--	--	883	7.4	--	--	--	0	359	130	35
MAY 14...	--	15.5	901	7.2	93	32	18	0	458	84	25
16...	--	15.5	904	--	--	--	--	--	--	--	--

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 18...	--	.00	1.3	.01	482	200	0	--	4	--
MAY 14...	.00	.00	1.8	.01	532	280	140	--	--	--
16...	.00	.00	1.8	.00	--	--	--	--	--	--

391748084393800 - H-19 SOUTHWEST OHIO WATER CO COLLECTOR 1 ROSS OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
NOV. 15...	--	14.0	740	7.8	71	24	0	328	71
MAY 02...	0900	14.5	715	7.5	--	--	0	336	75
AUG. 09...	1330	20.0	750	7.2	90	29	0	336	74

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	TOTAL FLUO- RIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)
NOV. 15...	34	.1	.00	1.2	480	100	330	--	6
MAY 02...	31	.3	.01	2.5	537	100	300	--	--
AUG. 09...	31	.2	.02	2.1	495	50	29	0	<1

## CHEMICAL ANALYSES OF GROUND WATER--Continued

429

## HAMILTON COUNTY--Continued

391748084393800 - H-19 SOUTHWEST OHIO WATER CO COLLECTOR 1 ROSS OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS-SOLVED CHROMIUM (CR) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV. 15...	--	--	--	0	--	3	--	5
MAY 02...	--	--	--	--	--	--	--	--
AUG. 09...	0	0	0	0	0	4	20	30

## JEFFERSON COUNTY

401853080361100 - JE-10 MUNICIPAL WELL MINGO JUNCTION OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TOTAL CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	CARBONATE (CO3) (MG/L)	BICARBONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)
JAN. 22...	--	16.0	663	7.0	--	--	--	0	100	190	40
MAY 30...	--	15.5	622	7.0	67	10	30	0	88	170	36

DATE	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL RESIDUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
JAN. 22...	--	.27	1.1	.00	557	200	--	--	0	1
MAY 30...	--	.00	.09	.02	407	310	1300	0	0	--

## MEDINA COUNTY

410040081424900 - MD-10 MUNICIPAL WELL 7 WADSWORTH OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TOTAL CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	CARBONATE (CO3) (MG/L)	BICARBONATE (HCO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)
DEC. 31...	--	--	237	6.9	--	--	--	0	108	29	2.5
MAY 16...	--	13.0	237	6.7	29	9.0	2.3	0	104	34	1.0

DATE	AMMONIA NITROGEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL RESIDUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 31...	--	.00	.01	.11	161	6500	11	--	5	--
MAY 16...	.04	.00	.01	.04	186	6600	480	--	--	--

## CHEMICAL ANALYSES OF GROUND WATER--Continued

## MIAMI COUNTY

400208084112900 - MI-44 MUNICIPAL WELL 4 TROY OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
AUG. 08...	1240	15.0	600	7.3	61	31	0	372	42

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	TOTAL FLUO- RIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)
AUG. 08...	9.0	1.1	.00	.01	388	1200	31	1	<1

DATE	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)
AUG. 08...	0	0	10	10	0	8	100	40

## MONTGOMERY COUNTY

393853084170700 - MT-63 BOX BOARD CO WELL 1 MIAMISBURG OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
DEC. 12...	1000	12.5	959	7.8	--	--	0	418	100
FEB. 06...	1900	--	972	7.3	96	37	0	426	70
MAY 01...	0900	14.5	975	7.4	120	32	0	436	100
AUG. 09...	0900	18.0	1000	7.0	97	42	0	464	92

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	TOTAL FLUO- RIDE (F) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC (AS) (UG/L)
DEC. 12...	56	.4	.01	.01	612	--	120	--	10
FEB. 06...	21	.5	.00	.01	614	2200	180	--	--
MAY 01...	57	.5	.00	.00	662	2400	160	--	--
AUG. 09...	54	.5	.00	.01	624	2700	210	6	7

## MONTGOMERY COUNTY--Continued

393853084170700 - MT-63 BOX BOARD CO WELL 1 MIAMISBURG OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC (ZN) (UG/L)
DEC. 12...	--	--	--	1400	--	49	--	160
FEB. 06...	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--
AUG. 09...	0	<10	0	90	0	6	10	320

## MUSKINGUM COUNTY

395753081593500 - MU-10 MUNICIPAL WELL 6 ZANESVILLE OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
DEC. 13...	--	15.0	922	7.9	92	18	--	0	176	130	120
MAY 07...	--	13.5	901	7.6	92	19	47	0	212	130	110

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 13...	--	.00	.93	.00	606	630	700	--	0	--
MAY 07...	--	.00	.24	.00	627	410	530	--	--	--

## PICKAWAY COUNTY

393325082571100 - PK 21 PITTSBURGH PLATE GLASS CO CIRCLEVILLE OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
JAN. 14...	--	--	690	7.3	--	--	--	0	408	49	8.1
MAY 16...	--	13.5	678	7.4	--	--	7.3	0	390	50	10

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
JAN. 14...	--	.00	.01	.02	431	940	22	--	10	--
MAY 16...	.19	.00	.01	.00	427	1700	33	--	--	--



## CHEMICAL ANALYSES OF GROUND WATER--Continued

## TUSCARAWAS COUNTY

403210081293100 - TU-10 MUNICIPAL WELL 7 DOVER OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
DEC. 19...	--	10.5	518	7.6	--	--	1.2	0	216	94	5.5
APR. 30...	--	12.0	514	7.8	--	--	4.1	0	215	87	5.1

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
DEC. 19...	--	.00	.04	.01	348	560	33	--	0	--
APR. 30...	--	.00	.11	.00	398	440	220	--	0	--

## WASHINGTON COUNTY

392556081281500 - WA-10 MUNICIPAL WELL 3 MARIETTA OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
MAY 09...	--	14.5	657	7.4	95	22	13	0	174	--	--

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
MAY 09...	--	.04	.81	.00	429	770	17	--	--	--

## WILLIAMS COUNTY

412853084322000 - WM-10 MUNICIPAL WELL 4 BRYAN OH

WATER QUALITY DATA, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TOTAL CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	CAR- BONATE (CO3) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
MAY 14...	--	12.0	635	7.6	51	39	28	0	384	28	9.5

DATE	AMMONIA NITRO- GEN (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	TOTAL RESI- DUE (MG/L)	TOTAL IRON (FE) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL LEAD (PB) (UG/L)	CHEM- ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)
MAY 14...	--	.00	.00	.00	383	470	17	--	--	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

433

## LITTLE BEAVER CREEK BASIN

03109500 LITTLE BEAVER CREEK NEAR EAST LIVERPOOL, OHIO (LAT 40°40'33", LONG 80°32'27")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
29...	1250	326	11.5	8	7.0
31...	1010	650	10.5	58	102
NOV.					
27...	1250	980	10.5	96	254
DEC.					
26...	1155	1090	4.5	34	100
JAN., 1974					
28...	1215	980	5.5	26	69
FEB.					
25...	1245	690	.0	4	7.5
APR.					
03...	1200	3220	12.0	96	835
25...	1215	486	8.5	2	2.6
JUNE					
26...	1155	392	17.0	22	23
JULY					
26...	1230	138	21.5	8	3.0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT., 1973												
31...	1010	58	48	61	73	82	87	90	100	--	--	--
NOV.												
27...	1250	96	47	64	74	85	91	94	95	100	--	--
APR., 1974												
03...	1200	96	42	52	64	76	88	92	93	96	98	100

## YELLOW CREEK BASIN

03110000 YELLOW CREEK NEAR HAMMONDSVILLE, OHIO (LAT 40°32'16", LONG 80°43'31")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
31...	1110	219	10.5	39	23
NOV.					
27...	1035	269	10.5	42	31
JAN., 1974					
28...	1515	257	5.5	44	31
MAR.					
26...	1415	222	6.5	15	9.0
30...	1300	524	9.0	123	174
APR.					
02...	1230	2180	9.5	1070	6300
03...	1420	960	10.5	161	417
04...	1340	971	14.0	159	417
JULY					
26...	1025	18	21.0	1	.05
SEP.					
25...	0840	68	10.5	8	1.5

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT., 1973												
31...	1110	39	60	72	81	93	98	99	99	100	--	--
MAR., 1974												
30...	1300	123	38	54	67	82	94	97	97	99	99	100
APR.												
02...	1230	1070	30	45	58	71	79	86	87	92	96	100
03...	1420	161	30	41	54	67	82	85	86	88	91	100
04...	1340	159	37	53	66	79	92	95	96	97	98	100

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## YELLOW CREEK BASIN--Continued

03110000 YELLOW CREEK NEAR HAMMONDSVILLE, OHIO (LAT 40°32'16", LONG 80°43'31")

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974 25...	1	0	0	0	1	2	2	4	10	40	80	100

## SHORT CREEK BASIN

03111500 SHORT CREEK NEAR DILLONVALE, OHIO (LAT 40°11'36", LONG 80°44'04")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SED- IMENT DIS- CHARGE (MG/L)	SUS- PENDE SED- IMENT DIS- CHARGE (T/DAY)
OCT., 1973					
17...	0950	23	13.5	6	.37
NOV.					
28...	1025	328	12.0	361	320
28...	1050	322	12.0	314	273
DEC.					
10...	1220	71	--	38	7.3
FEB., 1974					
12...	1405	157	4.0	57	24
APR.					
04...	1350	592	16.0	421	673
18...	1320	184	10.5	58	29
JUNE					
10...	1110	64	23.5	70	12
SEP.					
24...	1630	134	13.0	55	20

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SED- IMENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
28...	1025	361	42	50	66	82	93	94	95	97	99	100
APR., 1974												
04...	1350	421	26	37	52	64	78	82	83	89	93	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974 24...	1	11	11	23	27	29	32	36	43	70	100	--

## CAPTINA CREEK BASIN

03114000 CAPTINA CREEK AT ARMSTRONGS MILLS, OHIO (LAT 39°54'31", LONG 80°55'27")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
23...	1245	1.6	13.5	33	.14
NOV.					
27...	1045	150	11.0	49	20
DEC.					
11...	1115	16	3.5	0	.00
FEB., 1974					
04...	1145	125	3.0	2	.67
APR.					
04...	1120	1330	15.5	252	905
09...	1130	985	5.0	74	197
JUNE					
12...	1115	58	22.5	4	.63
SEP.					
24...	1445	181	12.5	0	.00

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
APR., 1974												
04...	1120	252	41	54	65	80	88	95	96	98	99	100
09...	1130	74	52	66	75	89	96	98	98	99	100	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
24...	1	0	0	1	2	4	7	13	22	28	52	100

## LITTLE MUSKINGUM RIVER BASIN

03115400 LITTLE MUSKINGUM RIVER AT BLOOMFIELD, OHIO (LAT 39°33'47", LONG 81°12'14")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
23...	1525	2.1	13.5	6	.03
NOV.					
27...	1230	992	10.5	123	329
DEC.					
11...	1445	86	3.0	0	.00
FEB., 1974					
04...	1540	230	3.0	5	3.1
APR.					
09...	1510	2400	6.0	247	1600
JUNE					
12...	1540	46	23.0	14	1.7
SEP.					
24...	1230	305	12.0	14	12

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
27...	1230	123	38	51	66	82	94	97	98	100	--	--
APR., 1974												
09...	1510	247	34	45	58	74	89	95	96	99	100	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## LITTLE MUSKINGUM RIVER BASIN--Continued

03115400 LITTLE MUSKINGUM RIVER AT BLOOMFIELD, OHIO (LAT 39°33'47", LONG 81°12'14")

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974 24...	1	10	10	23	43	47	49	50	51	53	53	100

## MUSKINGUM RIVER BASIN

03116200 CHIPPEWA CREEK AT EASTON, OHIO (LAT 40°56'47", LONG 81°44'35")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDIM- ENT (MG/L)	SUS- PENDE SEDIM- ENT DIS- CHARGE (T/DAY)
OCT., 1973					
30...	1130	76	10.0	88	18
NOV.					
07...	1125	25	6.5	36	2.4
28...	1010	512	11.0	203	281
JAN., 1974					
21...	1100	1270	7.5	83	285
MAR.					
08...	1045	744	9.0	993	2000
11...	0935	1430	5.5	100	386
MAY					
22...	1335	63	20.0	156	27
SEP.					
25...	1350	16	14.5	39	1.7

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDIM- ENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT., 1973												
30...	1130	88	63	75	84	92	96	98	98	99	100	--
NOV.												
28...	1010	203	39	49	58	67	78	93	95	99	100	--
JAN., 1974												
21...	1100	83	80	86	91	93	96	98	98	99	100	--
MAR.												
08...	1045	993	41	52	62	75	83	95	96	99	100	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974 25...	1	7	7	14	50	76	93	99	100	--	--	--



## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

437

## MUSKINGUM RIVER BASIN--Continued

03117500 SANDY CREEK AT WAYNESBURG, OHIO (LAT 40°40'21", LONG 81°15'36")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
30...	0940	709	9.5	160	306
NOV.					
14...	1050	132	8.0	1	.36
26...	1010	1010	9.0	86	235
28...	1445	1440	10.5	122	474
JAN., 1974					
11...	1425	262	2.0	6	4.2
21...	1100	2030	7.5	74	406
24...	1000	1200	4.5	48	156
MAR.					
13...	1540	689	5.0	20	37
MAY					
09...	1415	193	13.5	2	1.0
JULY					
15...	1445	87	22.0	55	13
SEP.					
25...	1055	112	11.5	10	3.0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
OCT., 1973												
30...	0940	160	37	48	58	67	74	79	80	83	88	100
NOV.												
26...	1010	86	52	65	74	80	85	88	88	91	95	100
28...	1445	122	45	60	70	80	83	88	89	93	97	100
JAN., 1974												
21...	1100	74	40	49	57	66	73	78	79	83	100	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 6.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
25...	1	0	0	2	12	17	20	28	39	75	100	--

03123000 SUGAR CREEK ABOVE BEACH CITY DAM, AT BEACH CITY, OHIO (LAT 40°39'24", LONG 81°34'37")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
30...	1015	94	11.5	45	11
NOV.					
08...	1120	52	5.5	6	.84
26...	1350	578	9.0	198	309
JAN., 1974					
14...	1125	84	1.0	7	1.6
24...	1245	1030	4.5	87	242
MAR.					
04...	1435	212	10.5	42	24
APR.					
03...	1325	1610	13.5	211	917
MAY					
06...	1410	85	13.0	44	10
JULY					
12...	1045	28	21.5	13	.98
SEP.					
25...	1220	35	12.0	40	3.8

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## MUSKINGUM RIVER BASIN--Continued

03123000 SUGAR CREEK ABOVE BEACH CITY DAM, AT BEACH CITY, OHIO (LAT 40°39'24", LONG 81°34'37")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
26...	1350	198	53	63	73	83	92	97	98	100	--	--
JAN., 1974												
24...	1245	87	54	61	71	79	87	94	94	97	100	--
APR.												
03...	1325	211	82	89	92	92	94	96	97	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
25...	1	2	2	4	7	11	16	22	29	48	100	--

03137000 KOKOSING RIVER AT MILLWOOD, OHIO (LAT 40°23'51", LONG 82°17'09")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973					
26...	1500	2370	9.0	134	857
28...	1400	4120	11.0	171	1900
MAR., 1974					
04...	0845	1010	9.0	38	104
APR.					
04...	1330	4880	14.0	316	4160
SEP.					
25...	1115	99	13.0	2	.53

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
26...	1500	134	44	54	65	74	86	93	94	100	--	--
28...	1400	171	33	41	51	62	74	84	85	90	100	--
APR., 1974												
04...	1330	316	41	51	58	67	74	92	93	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
25...	1	0	0	1	1	2	3	4	6	11	34	100
25...	1	0	0	0	1	2	12	38	62	94	100	100
25...	1	0	0	0	0	0	0	2	16	56	100	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

439

## MUSKINGUM RIVER BASIN--Continued

03144000 WAKATOMIKA CREEK NEAR FRAZEYSBURG, OHIO (LAT 40°07'57", LONG 82°08'53")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
02...	1030	57	18.5	49	7.5
NOV.					
26...	1200	793	8.5	112	240
28...	1200	2720	12.5	530	3890
JAN., 1974					
16...	1000	638	1.0	169	291
MAR.					
07...	1040	177	9.0	6	2.9
APR.					
04...	1145	3350	9.5	687	6210
SEP.					
25...	1000	24	--	4	.26

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT., 1973												
02...	1030	49	51	66	80	91	96	98	99	100	--	--
NOV.												
26...	1200	112	39	48	62	72	86	94	96	100	--	--
28...	1200	530	30	39	48	54	64	71	72	81	91	100
JAN., 1974												
16...	1000	169	34	46	60	74	86	94	95	98	100	--
APR.												
04...	1145	687	45	58	70	75	81	87	88	94	98	100

03146000 NORTH FORK LICKING RIVER AT UTICA, OHIO (LAT 40°13'41", LONG 82°27'06")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973					
26...	1615	778	9.0	87	183
28...	1600	2610	11.0	95	669
MAR., 1974					
05...	1235	189	12.0	14	7.1
APR.					
04...	1510	2640	15.5	436	3110
SEP.					
25...	1330	7.4	13.5	25	.50

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
28...	1600	95	55	63	71	79	86	92	93	100	--	--
APR., 1974												
04...	1510	436	77	83	87	91	95	97	97	99	100	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## MUSKINGUM RIVER BASIN--Continued

03146000 NORTH FORK LICKING RIVER AT UTICA, OHIO (LAT 40°13'41", LONG 82°27'06")--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
25...	1	0	0	1	1	2	3	5	17	57	100	--
25...	1	1	1	2	3	4	6	8	12	24	64	100
25...	1	26	26	57	74	83	90	98	100	--	--	--

## SHADE RIVER BASIN

03159540 SHADE RIVER NEAR CHESTER, OHIO (LAT 39°03'49", LONG 81°52'55")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973					
27...	1545	2010	11.5	248	1350
JAN., 1974					
22...	1540	228	--	40	25
MAR.					
18...	1645	181	7.0	14	6.8
APR.					
02...	1645	1460	--	557	2200
MAY					
14...	1000	198	14.0	70	37
JULY					
10...	1105	18	23.0	26	1.3
SEP.					
23...	1535	80	13.0	53	11

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
27...	1545	248	53	68	80	90	95	97	98	100	--	--
APR., 1974												
02...	1645	557	39	52	69	81	92	96	97	99	100	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
23...	1	0	1	1	2	4	8	21	40	65	84	100

## SCIOTO RIVER BASIN

03223000 OLENTANGY RIVER AT CLARIDON, OHIO (LAT 40°34'58", LONG 82°59'20")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
DEC., 1973					
28...	1040	863	4.0	94	219
JAN., 1974					
21...	1330	3310	--	110	983
AUG.					
23...	1410	33	24.5	37	3.3

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

441

## SCIOTO RIVER BASIN--Continued

03223000 OLENTANGY RIVER AT CLARIDON, OHIO (LAT 40°34'58", LONG 82°59'20")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974 23...	1	32	33	84	89	92	93	94	94	94	100	--

03230500 BIG DARBY CREEK AT DARBYVILLE, OHIO (LAT 39°42'03", LONG 83°06'35")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973 26...	1150	3800	11.0	291	2990
APR., 1974 02...	1415	3280	12.5	505	4470
02...	1455	3120	--	246	2070
JUNE 04...	1125	200	20.5	64	35
AUG. 20...	1020	123	23.5	98	33

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973 26...	1150	291	71	82	92	97	99	100	--	--	--	--
APR., 1974 02...	1455	246	73	86	92	95	98	99	100	--	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974 20...	2	2	4	8	16	24	33	44	60	76	100	--

03230800 DEER CREEK AT MOUNT STERLING, OHIO (LAT 39°42'54", LONG 83°15'26")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973 26...	1050	1770	9.0	167	798
28...	1430	3960	9.0	183	1960
DEC. 10...	1130	273	6.5	48	35
FEB., 1974 07...	1445	1030	--	87	242
APR. 02...	1100	2760	10.5	1320	9840
AUG. 20...	1110	13	23.0	50	1.8



## SEDIMENT-PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## SCIOTO RIVER BASIN--Continued

03230800 DEER CREEK AT MOUNT STERLING, OHIO (LAT 39°42'54", LONG 83°15'26")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
NOV., 1973												
26...	1050	167	70	80	84	89	93	96	96	97	100	--
28...	1430	183	80	86	89	93	97	98	98	100	--	--
FEB., 1974												
07...	1445	87	66	78	87	94	98	99	99	100	--	--
APR.												
02...	1100	1320	71	82	90	94	98	99	100	--	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
20...	2	0	0	1	2	6	14	24	33	38	47	100

03232000 PAINT CREEK NEAR GREENFIELD, OHIO (LAT 39°22'45", LONG 83°22'32")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
02...	1115	724	19.5	325	635
NOV.					
28...	1315	4030	9.5	204	2220
APR., 1974					
02...	1235	1910	12.0	946	4880
09...	1055	1700	3.5	371	1700
AUG.					
20...	1345	6.7	25.0	7	.13

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
OCT., 1973												
02...	1115	325	59	74	85	94	98	99	100	--	--	--
NOV.												
28...	1315	204	75	81	87	91	95	96	96	97	100	--
APR., 1974												
02...	1235	946	70	82	90	94	98	99	99	100	--	--
09...	1055	371	76	87	93	94	96	98	98	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
20...	2	0	1	3	10	15	22	33	49	65	85	100

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

443

## OHIO BRUSH CREEK BASIN

03237500 OHIO BRUSH CREEK NEAR WEST UNION, OHIO (LAT 38°48'13", LONG 83° 25'16")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
02...	1600	355	22.5	77	74
NOV.					
27...	1630	1420	11.0	245	939
APR., 1974					
02...	1230	4760	13.5	776	9970
10...	1135	767	9.0	38	79
JUNE					
05...	1600	217	22.0	42	25
18...	1500	115	25.0	118	37
AUG.					
20...	1600	32	26.0	24	2.1
SEP.					
03...	1400	1690	18.5	167	762

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
27...	1630	245	65	76	87	95	98	99	99	100	--	--
APR., 1974												
02...	1230	776	48	61	72	86	95	99	99	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
20...	1	0	0	0	0	0	0	0	0	1	24	100

## WHITEOAK CREEK BASIN

03238500 WHITEOAK CREEK NEAR GEORGETOWN, OHIO (LAT 38°50'42", LONG 83°55'16")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
02...	1430	1440	21.0	399	1550
11...	1745	29	--	25	2.0
JAN., 1974					
29...	1230	1280	7.5	294	1020
MAR.					
21...	1330	333	8.0	184	165
APR.					
02...	1400	2810	14.0	554	4200
MAY					
14...	2000	36	23.0	30	2.9
AUG.					
20...	1800	9.5	29.0	22	.56
SEP.					
02...	1535	500	18.0	71	96

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## WHITEOAK CREEK BASIN--Continued

03238500 WHITEOAK CREEK NEAR GEORGETOWN, OHIO (LAT 38°50'42", LONG 83°55'16")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
OCT., 1973												
02...	1430	399	54	69	84	92	95	99	99	100	--	--
JAN., 1974												
29...	1230	294	68	78	89	94	97	99	100	--	--	--
APR.												
02...	1400	554	54	65	74	86	93	98	99	99	100	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
20...	1	0	0	1	1	2	4	6	8	10	15	48

## LITTLE MIAMI RIVER BASIN

03246200 EAST FORK LITTLE MIAMI RIVER NEAR MARATHON, OHIO (LAT 39°06'52", LONG 84°01'29")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
FEB., 1974					
01...	1345	189	--	32	16
MAR.					
14...	1330	154	--	48	20
APR.					
02...	1640	1690	13.5	758	3460
AUG.					
21...	0935	11	23.0	23	.68
SEP.					
03...	1735	1100	17.0	154	457

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
APR., 1974												
02...	1640	758	66	78	87	92	97	99	99	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
21...	1	0	1	2	5	13	23	35	46	54	54	54

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

445

## GREAT MIAMI RIVER BASIN

03262700 GREAT MIAMI RIVER AT TROY, OHIO (LAT 40°02'25", LONG 84°11'52")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
DEC., 1973					
19...	1110	378	.5	6	6.1
26...	1530	7820	4.5	161	3400
JAN., 1974					
21...	1240	10700	--	222	6410
FEB.					
20...	1045	2780	4.0	260	1950
MAR.					
29...	1115	2780	9.5	278	2090
29...	1445	3950	10.0	420	4480
MAY					
13...	1600	926	16.5	45	113
JUNE					
26...	1415	664	18.0	79	142
AUG.					
21...	1630	150	26.0	40	16

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
DEC., 1973												
26...	1530	161	55	68	78	88	92	96	96	98	100	--
JAN., 1974												
21...	1240	222	80	81	86	89	92	94	94	100	--	--
MAR.												
29...	1115	278	50	61	72	85	93	98	99	100	--	--
29...	1445	420	59	69	81	91	96	99	99	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
21...	2	0	0	0	1	3	4	6	9	15	52	100

03264000 GREENVILLE CREEK NEAR BRADFORD, OHIO (LAT 40°06'08", LONG 84°25'48")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
DEC., 1973					
26...	1630	1080	5.5	245	714
FEB., 1974					
11...	1225	171	.5	14	6.5
MAR.					
29...	1230	562	9.5	326	495
29...	1400	566	--	296	452
MAY					
13...	1220	139	14.5	31	12
JUNE					
06...	1240	80	23.0	35	7.6
26...	1020	128	17.0	43	15
AUG.					
15...	1115	66	22.0	86	15
21...	1440	30	25.0	21	1.7
30...	1315	92	21.5	43	11

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## GREAT MIAMI RIVER BASIN--Continued

03264000 GREENVILLE CREEK NEAR BRADFORD, OHIO (LAT 40°06'08", LONG 84°25'48")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
DEC., 1973												
26...	1630	245	39	55	71	86	94	99	99	99	100	--
MAR., 1974												
29...	1230	326	77	83	89	94	98	100	--	--	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
JUNE, 1974												
06...	3	14	24	36	52	66	80	90	98	100	--	--

03267000 MAD RIVER NEAR URBANA, OHIO (LAT 40°06'27", LONG 83°47'57")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
DEC., 1973					
26...	1320	395	5.5	58	62
JAN., 1974					
15...	1105	355	5.5	48	46
FEB.					
28...	1025	267	6.5	27	19
MAR.					
29...	1550	490	9.5	561	742
APR.					
11...	1100	454	8.5	76	93
MAY					
24...	1340	231	18.0	86	54
JUNE					
06...	1100	165	18.5	36	16
AUG.					
22...	0900	94	17.0	38	9.6
30...	1530	121	18.0	66	22

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
DEC., 1973												
26...	1320	58	46	58	70	85	93	97	98	100	--	--
MAR., 1974												
29...	1550	561	45	61	74	86	94	98	99	100	--	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
22...	1	0	0	0	0	0	0	1	2	20	44	100



## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

447

## GREAT MIAMI RIVER BASIN--Continued

03271800 TWIN CREEK NEAR INGOMAR, OHIO (LAT 39°42'28", LONG 84°31'30")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDIM- ENT (MG/L)	SUS- PEN- DED SEDIM- ENT DIS- CHARGE (T/DAY)
JULY, 1974					
01...	1440	122	22.5	117	39
AUG.					
21...	1315	19	24.0	13	.67

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
21...	1	0	0	1	5	9	15	24	42	63	83	100

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974												
21...	2	0	0	1	4	6	10	17	25	45	66	100

03272800 SEVENMILE CREEK AT COLLINSVILLE, OHIO (LAT 39°31'23", LONG 84°36'39")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDIM- ENT (MG/L)	SUS- PEN- DED SEDIM- ENT DIS- CHARGE (T/DAY)
NOV., 1973					
20...	1325	37	9.0	5	.51
JAN., 1974					
25...	0930	3130	--	44	372
31...	1245	1840	--	78	388
MAR.					
13...	1900	1770	--	83	397
MAY					
08...	1645	150	9.0	48	19
09...	1135	418	--	199	225
JULY					
08...	1730	77	--	178	37
AUG.					
22...	1545	33	25.0	89	7.9

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDIM- ENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
MAR., 1974												
13...	1900	83	86	92	93	94	96	98	98	100	--	--
MAY												
09...	1135	199	68	76	85	92	96	98	98	99	100	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE OHIO RIVER BASIN

## GREAT MIAMI RIVER BASIN--Continued

03272800 SEVENMILE CREEK AT COLLINSVILLE, OHIO (LAT 39°31'23", LONG 84°36'39")--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974 22...	1	12	12	26	52	71	86	94	97	100	--	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN

## STREAMS TRIBUTARY TO LAKE ERIE

04185000 TIFFIN RIVER AT STRYKER, OHIO (LAT 41°30'17", LONG 84°25'49")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDIM- ENT (MG/L)	SUS- PENDE SEDIM- ENT DIS- CHARGE (T/DAY)
NOV., 1973					
19...	1155	13	10.0	3	.11
26...	1345	318	9.0	194	167
JAN., 1974					
08...	1235	24	2.5	14	.91
21...	1115	899	6.5	146	354
MAR.					
07...	1745	272	--	240	176
APR.					
04...	1100	950	12.0	663	1700
05...	1345	315	10.0	418	356
25...	1100	29	9.5	4	.31
JUNE					
20...	1700	11	25.0	8	.24
AUG.					
15...	1415	47	23.5	193	24
23...	1230	11	23.0	16	.48

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDIM- ENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
26...	1345	194	67	80	87	93	96	98	99	99	100	--
JAN., 1974												
21...	1115	146	64	74	81	89	95	98	98	99	100	--
MAR.												
07...	1745	240	74	79	86	91	94	96	97	100	--	--
APR.												
04...	1100	663	69	77	85	90	96	98	98	100	--	--
05...	1345	418	82	91	94	97	98	99	99	100	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG., 1974 23...	1	0	0	2	4	14	30	52	72	86	100	--

## STREAMS TRIBUTARY TO LAKE ERIE--Continued

04197000 SANDUSKY RIVER NEAR MEXICO, OHIO (LAT 41°02'39", LONG 83°11'42")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
NOV.. 1973					
26...	1550	910	9.0	130	319
JAN.. 1974					
21...	1315	12300	4.0	342	11400
MAR.					
07...	1200	1390	--	213	799
APR.					
24...	1745	294	9.0	40	32
AUG.					
12...	1555	85	25.0	40	9.2
23...	1030	51	23.5	40	5.5

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV.. 1973												
26...	1550	130	82	90	94	96	98	99	99	100	--	--
JAN.. 1974												
21...	1315	342	67	78	85	90	94	96	96	98	100	--
MAR.												
07...	1200	213	79	86	90	94	95	96	97	98	100	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
AUG.. 1974												
23...	1	0	1	2	6	10	15	19	23	30	37	100

04199000 HURON RIVER AT MILAN, OHIO (LAT 41°18'06", LONG 82°36'25")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
JAN.. 1974					
21...	1500	3050	5.5	218	1800
FEB.					
21...	1150	990	3.5	106	283
MAR.					
11...	1340	1620	6.0	296	1300
APR.					
04...	1250	7460	13.0	1980	39900
05...	1115	2000	10.0	591	3190
22...	1430	184	15.5	14	7.0
SEP.					
27...	1010	17	15.0	4	.18

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
JAN.. 1974												
21...	1500	218	59	67	75	83	90	92	93	96	100	--
FEB.												
21...	1150	106	67	76	84	89	92	94	94	100	--	--
MAR.												
11...	1340	296	59	69	77	83	95	96	97	100	--	--
APR.												
04...	1250	1980	65	79	88	94	97	99	99	100	--	--
05...	1115	591	71	82	87	91	94	96	96	100	--	--

## SEDIMENT PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN

## STREAMS TRIBUTARY TO LAKE ERIE--Continued

04199000 HURON RIVER AT MILAN, OHIO (LAT 41°18'06", LONG 82°36'25")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
27...	1	1	1	1	6	7	10	16	25	36	72	100

04200500 BLACK RIVER AT ELYRIA, OHIO (LAT 41°22'49", LONG 82°06'17")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973					
27...	1150	652	11.0	93	164
DEC.					
13...	1000	123	3.0	20	6.6
JAN., 1974					
22...	1140	1690	5.0	99	452
FEB.					
22...	0940	1020	4.0	65	179
MAR.					
11...	1715	3220	7.0	281	2440
APR.					
04...	1540	4570	15.0	931	11500
05...	0945	3240	12.5	606	5300
23...	1240	158	15.0	9	3.8
MAY					
29...	1310	342	17.0	65	60
30...	0900	996	17.0	199	535
JUNE					
25...	0910	142	19.0	49	19
SEP.					
26...	1750	15	17.5	2	.08

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
JAN., 1974												
22...	1140	99	68	78	87	94	98	100	--	--	--	--
MAR.												
11...	1715	281	68	80	86	92	96	98	99	100	--	--
APR.												
04...	1540	931	64	74	82	89	95	98	98	99	100	--
MAY												
30...	0900	199	69	85	91	96	97	98	99	100	--	--

04212000 GRAND RIVER NEAR MADISON, OHIO (LAT 41°44'26", LONG 81°02'48")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
NOV., 1973					
06...	1020	440	6.0	11	13
27...	1430	1590	9.0	35	150
JAN., 1974					
21...	1350	4180	2.5	66	745
MAR.					
10...	1050	6060	6.0	146	2390
APR.					
10...	1220	1180	4.0	28	89
SEP.					
26...	1055	120	12.5	9	2.9

## STREAMS TRIBUTARY TO LAKE ERIE--Continued

04212000 GRAND RIVER NEAR MADISON, OHIO (LAT 41°44'26", LONG 81°02'48")--Continued

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
27...	1430	35	61	73	83	91	96	98	99	99	100	--
JAN., 1974												
21...	1350	66	50	67	74	84	95	98	98	100	--	--
MAR.												
10...	1050	146	47	60	70	81	92	97	97	100	--	--

04212500 ASHTABULA RIVER NEAR ASHTABULA, OHIO (LAT 41°51'20", LONG 80°45'44")

## SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CF5)	TEMPER- ATURE (DEG C)	SUS- PEN- DED SEDI- MENT (MG/L)	SUS- PEN- DED SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
31...	1150	265	10.5	32	23
NOV.					
27...	1345	230	9.0	13	8.1
28...	0910	1070	11.5	126	364
JAN., 1974					
15...	1500	58	.0	4	.63
19...	1630	1670	1.0	305	1380
22...	1410	394	3.5	14	15
MAR.					
09...	1420	1450	6.0	139	544
APR.					
04...	1510	1870	14.5	272	1370
JULY					
10...	1350	130	25.5	32	11
SEP.					
26...	1215	4.6	14.5	0	.00

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PEN- DED SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
27...	1345	13	66	68	71	76	83	84	88	100	--	--
28...	0910	126	35	46	57	71	86	94	97	98	99	100
JAN., 1974												
19...	1630	305	22	33	45	62	79	90	94	94	96	100
MAR.												
09...	1420	139	40	54	64	78	91	98	98	100	--	--
APR.												
04...	1510	272	39	50	62	77	90	95	97	99	100	--

## PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	NUMBER OF SAM- PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
SEP., 1974												
26...	1	0	0	0	1	1	1	2	4	9	16	100



## SEDIMENT PARTIAL-RECORD STATIONS IN THE ST. LAWRENCE RIVER BASIN

## STREAMS TRIBUTARY TO LAKE ERIE--Continued

04213000 CONNEAUT CREEK AT CONNEAUT, OHIO (LAT 41°55'37", LONG 80°36'15")

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	TEMPER- ATURE (DEG C)	SUS- PENDE SEDI- MENT DIS- CHARGE (MG/L)	SUS- PENDE SEDI- MENT DIS- CHARGE (T/DAY)
OCT., 1973					
31...	1420	262	10.5	32	23
NOV.					
28...	1215	1040	10.5	64	180
JAN., 1974					
22...	1000	1040	3.0	55	154
MAR.					
09...	1530	2320	6.0	270	1690
APR.					
04...	1645	1180	14.0	151	481
SEP.					
26...	1330	16	14.5	0	.00

## PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DATE	TIME	SUS- PENDE SEDI- MENT (MG/L)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
NOV., 1973												
28...	1215	64	34	48	63	79	92	97	97	99	100	--
JAN., 1974												
22...	1000	55	36	49	64	79	93	97	97	98	100	--
MAR.												
09...	1530	270	33	43	59	73	88	92	94	97	100	--
APR.												
04...	1645	151	42	56	69	83	95	97	98	99	100	--

# INDEX

	Page		Page
Adamsville, Raccoon Creek at.....	110-115	Cuyahoga River--Continued	
Allentown, Ottawa River at.....	230-233	at Old Portage.....	336-343
Alum Creek, at Africa.....	406-407	at West Third Street bridge in Cleveland....	360-365
at Columbus.....	406-407		
near Kilbourne.....	404-405	Dayton, Mad River near.....	184-188
Anderson Fork near New Burlington.....	410-411	Deer Creek, at Mount Sterling.....	406-407
Ash weight, definition of.....	3	at Williamsport.....	441-442
Ashtabula, Ashtabula River at.....	376-381	near Pancoastburg.....	406-407
Ashtabula River, at Ashtabula.....	376-381	Defiance, Auglaize River near.....	246-251
near Ashtabula.....	424-425, 451	Maumee River at.....	212-217
Athens, Hocking River below.....	86-91	Definition of terms.....	2-9
Auglaize River, at Cloverdale.....	234-239	Dillon Falls, Licking River near.....	70-71
near Buckland.....	418-419	Discharge, definition of.....	4
near Defiance.....	246-251	Downstream order and station number.....	10-11
near Fort Jennings.....	224-229	Drainage area, definition of.....	4
near Spencerville.....	418-419	Drainage basin, definition of.....	60-63
Aurora Branch near Chagrin Falls.....	422-423	Dresden, Muskingum River at.....	386-387
		Duck Creek, East Fork, at Lower Salem.....	386-387
Bacteria, definition of.....	2-3	West Fork, at Dexter City.....	386-387
Bean Creek at Powers.....	418-419	Duck Creek basin, analyses of samples collected	
Beaver Creek (Great Miami River basin)		at water-quality partial-record	
near Springfield.....	416-417	stations in.....	386-387
Beaver Creek (St. Lawrence River basin)			
near Grand Rapids.....	420-421	Eagle Creek at Phalanx Station.....	382-383
Beaver River basin, analyses of samples		Elizabethtown, Great Miami River at.....	208-210
collected at water-quality partial-record		Elyria, Black River below.....	328-332
stations in.....	382-385	West Branch Black River near.....	324-327
water-quality records in.....	22-35	Englewood, Stillwater River at.....	179
Bed material, definition of.....	3	Evansport, Tiffin River at.....	218-223
Bedford, Pinkers Creek at.....	344-346	Explanation of water-quality data.....	12-15
Bellepoint, Mill Creek near.....	402-403		
Berea, Rocky River near.....	333-335	Fecal coliform bacteria, definition of.....	2
Big Creek at Cleveland.....	422-423	Fecal streptococcal bacteria, definition of....	2-3
Big Darby Creek at Darbyville.....	406-407, 441	Findlay, Blanchard River near.....	240-245
Big Four Hollow Creek near Lake Hope.....	98-102	Fish Creek near Edgerton.....	416-417
Big Walnut Creek, above Sunbury.....	404-405	Flatrock Creek near Payne.....	418-419
at Central College.....	404-405	Fort Jennings, Auglaize River near.....	224-229
at Rees.....	406-407	Premont, Sandusky River below.....	300-305
Biochemical oxygen demand, definition of.....	3		
Biomass, definition of.....	3	Gaging station, definition of.....	4
Black Fork, at Loudonville.....	48-53	Germanstown, Twin Creek at.....	196
below Charles Mill Dam near Mifflin.....	394-395	Grafton, East Branch Black River at.....	320-323
Black River, at Elyria.....	450	Grand River, at Painesville.....	370-375
below Elyria.....	328-332	near Madison.....	424-425, 450-451
East Branch, at Grafton.....	320-323	Great Miami River, at Elizabethtown.....	208-210
West Branch, near Elyria.....	324-327	at Hamilton.....	199-200
near Oberlin.....	420-421	at New Baltimore.....	202-206
Blanchard River, above Findlay.....	418-419	at Sidney.....	168-171
at Mount Blanchard.....	418-419	at Troy.....	445
near Findlay.....	240-245	at West Carrollton.....	189
Buck Creek, at New Moorefield.....	180-183	near Hamilton.....	201
at Springfield.....	416-417	near Miamisburg.....	190-195
East Fork, near New Moorefield.....	416-417	near Middletown.....	197-198
near New Moorefield.....	416-417	near Taylorsville Dam at Taylorsville.....	175
Buffalo Creek at Pleasant City.....	398-399		
Buffalo Fork at Pleasant City.....	396-397	Great Miami River basin, analyses of samples	
		collected at water-quality partial-	
Caesar Creek, at Harveysburg.....	154-157	record stations in.....	414-417
near Wellman.....	410-411	sediment partial-record stations in.....	445-448
near Xenia.....	410-411	water-quality records in.....	168-210
Captina Creek at Armstrongs Mills.....	386-387, 435	Green Creek near Premont.....	420-421
Captina Creek basin, analyses of samples		Greenville Creek near Bradford.....	445-446
collected at water-quality partial-		Ground water, chemical analyses of.....	426-432
record stations in.....	386-387		
sediment partial-record stations in.....	435	Hamilton, Great Miami River at.....	199-200
Cedar Run near Tremont City.....	414-415	Great Miami River near.....	201
Cells/volume, definition of.....	6	Hardness, definition of.....	4
Centerfield, Rattlesnake Creek near.....	128	Harveysburg, Caesar Creek at.....	154-157
Cfs-day, definition of.....	3	Higby, Scioto River at.....	130-137
Chagrin River at Willoughby.....	366-368	Hinkley Creek at Charlestown.....	382-383
Chapman Creek at Tremont City.....	414-415	Hocking River, at Athens.....	402-403
Chemical analyses of ground water.....	426-432	at Enterprise.....	400-401
Chemical oxygen demand, definition of.....	3	at Lancaster.....	400-401
Chillicothe, Scioto River at.....	122-127	below Athens.....	86-91
Chippewa Creek, at Easton.....	388-389, 436	Hocking River basin, analyses of samples	
at Sterling.....	388-389	collected at water-quality partial-	
Chlorophyll, definition of.....	3	record stations in.....	400-403
Clear Creek near Rockbridge.....	400-401	water-quality records in.....	86-91
Clear Fork, at Butler.....	394-395	Home Creek near New Philadelphia.....	392-393
below Pleasant Hill Dam near Perrysville.....	394-395	Honey Creek near New Carlisle.....	414-415
Cleveland, Cuyahoga River at Dupont intake in.....	358-359	Hunters Run at Lancaster.....	400-401
Cuyahoga River at West Third Street bridge in		Huron River, at Milan.....	449-450
Cloverdale, Auglaize River at.....	234-239	below Milan.....	310-315
Coliform organisms, definition of.....	2-3	West Branch, near Monroeville.....	420-421
Collection and examination of data.....	12-15	near Willard.....	306-309
Conesville, Muskingum River at.....	54-59	Hydrologic bench-mark station.....	9
Conneaut Creek at Conneaut.....	424-425		
Conotton Creek, at Conotton.....	452	Independence, Cuyahoga River at.....	348-357
at Jewett.....	390-391	Indian Fork near New Cumberland.....	390-391
at Leesville.....	390-391	Indian Guyan Creek near Bradrick.....	402-403
at New Cumberland.....	390-391	Instantaneous discharge, explanation of.....	4
Continuing record station, definition of.....	3	Introduction.....	1
Cooperation.....	1-2	Jonathan Creek at East Fultonham.....	400-401
Crawford, Tymochtee Creek at.....	288-293		
Crooked Creek near Stillwater.....	392-393	Kale Creek near Pricetown.....	382-383
Cubic foot per second, definition of.....	4	Killbuck Creek, at Killbuck.....	396-397
Cuyahoga River, at Dupont intake in Cleveland..		at Wooster.....	396-397
at Hiram Rapids.....	358-359	Kokosing River, at Millwood.....	396-397, 438
at Independence.....	420-421	at Mount Vernon.....	396-397
at Ira.....	348-357	North Branch, near Fredericktown.....	396-397
	422-423		

	Page		Page
Lake Erie, streams tributary to, analyses of samples collected at water-quality partial-record stations in.....	416-425	Middletown, Great Miami River near.....	197-198
sediment partial-record stations in.....	448-452	Milan, Huron River below.....	310-315
water-quality records in.....	212-381	Mill Creek basin, analyses of samples collected at water-quality partial-record stations in.....	412-415
Lake Fork below Mohicanville Dam near Mohicanville.....	394-395	Mill Creek (Mill Creek basin), at Carthage.....	414-415
Lake Hope, Big Four Hollow Creek near.....	98-102	at Reading.....	412-413
Sandy Run above Big Four Hollow Creek near.....	92-96	West Fork, at Woodlawn.....	412-413
Sandy Run near.....	104-109	Mill Creek (Muskingum River basin) near Coshocton.....	396-397
Leading Creek near Middleport.....	402-403	Mill Creek (St. Lawrence River basin) near Jefferson.....	422-423
Leavittsburg, Mahoning River above Duck Creek at.....	24-29	Mill Creek (Scioto River basin) near Bellepoint.....	402-403
Licking River, below Dillon Dam near Dillon Falls.....	70-71	Milligrams per litre, definition of.....	4,6
near Newark.....	64-69	Mohican River at Greer.....	394-395
North Fork, above Newark.....	400-401	Mosquito Creek below Mosquito Creek Dam near Cortland.....	384-385
at Utica.....	398-399, 439-440	Muchinippi Creek near Russells Point.....	414-415
South Fork, near Hebron.....	398-399	Muddy Fork near Rowsburg.....	394-395
Little Auglaize River near Melrose.....	418-419	Muskingum River, at Conesville.....	54-59
Little Beaver Creek, Middle Fork, near Rogers.....	384-385	at Dresden.....	60-63
near East Liverpool.....	384-385, 433	at McConnellsville.....	78-85
North Fork, near Negley.....	384-385	at Philo.....	72-77
West Fork, at West Point.....	384-385	near Coshocton.....	396-397
Little Beaver Creek basin, analyses of samples collected at water-quality partial-record stations in.....	384-385	Muskingum River basin, analyses of samples collected at water-quality partial-record stations in.....	386-401
sediment partial-record record stations in.....	433	sediment partial-record stations in.....	436-440
Little Cuyahoga River, at Massillon Road at Akron.....	422-423	water-quality records in.....	36-85
at Mogadore.....	422-423	National stream-quality accounting network, explanation of.....	9
below Ohio Canal, at Akron.....	422-423	Navarre, Tuscarawas River at.....	36-41
Little Hocking River near Little Hocking.....	400-401	New Baltimore, Great Miami River at.....	202-206
Little Miami River, at Miamiville.....	158-163	New Moorefield, Buck Creek at.....	180-183
at Milford.....	412-413	Newark, Licking River near.....	64-69
East Fork, at Perintown.....	412-413	Newport, Loramie Creek near.....	172-174
near Batavia.....	412-413	Nimishillen Creek, at North Industry.....	388-389
near Marathon.....	412-413, 444	East Branch, near Canton.....	388-389
near Williamsburg.....	164-167	Middle Branch, at Canton.....	388-389
near Oldtown.....	410-411	West Branch, at Canton.....	388-389
near Spring Valley.....	148-153	Nimisila Creek near Canal Fulton.....	388-389
Little Miami River basin, analyses of samples collected at water-quality partial-record stations in.....	410-413	Numbering system for wells.....	11
sediment partial-record stations in.....	444	Odor, definition of.....	6
water-quality records in.....	148-167	Ohio Brush Creek, near Peebles.....	408-409
Little Muskingum River, at Bloomfield.....	386-387, 435-436	near West Union.....	410-411, 443
near Rinard Mills.....	386-387	Ohio Brush Creek basin, analyses of samples collected at water-quality partial-record stations in.....	408-411
Little Muskingum River basin, analyses of samples collected at water-quality partial-record stations in.....	386-387	sediment partial-record stations in.....	443
sediment partial-record stations in.....	435-436	Ohio Canal at Independence.....	422-423
Little Raccoon Creek near Vinton.....	402-403	Ohio River basin, analyses of samples collected at water-quality partial-record stations in.....	382-416
Little Stillwater Creek below Tappan Dam at Tappan.....	392-393	sediment partial-record stations in.....	433-448
near Dennison.....	392-393	water-quality records in.....	22-210
Londonderry, Salt Creek above damsite near.....	138-139	Old Portage, Cuyahoga River at.....	336-343
Loramie Creek near Newport.....	172-174	Olestanty River, at Claridon.....	404-405, 440-441
Loudonville, Black Fork at.....	48-53	near Delaware.....	404-405
Lowellville, Mahoning River at Ohio-Pennsylvania State line below.....	30-35	near Worthington.....	404-405
Lucas, Rocky Fork near.....	42-47	Organism, definition of.....	6
Lucasville, Scioto River at.....	140-142	Organism count/area, definition of.....	6
Mad River, at St. Paris Pike at Eagle City.....	414-415	Ottawa River at Allentown.....	230-233
at Tremont City.....	414-415	Painesville, Grand River at.....	370-375
at Zanesfield.....	414-415	Paint Creek, below Paint Creek Dam near Bainbridge.....	408-409
near Dayton.....	184-188	near Bournville.....	408-409
near Urbana.....	414-415, 446	near Greenfield.....	408-409, 442
Mahoning River, above Duck Creek at Leavittsburg.....	24-29	North Fork, near Frankfort.....	408-409
at Alliance.....	382-383	Partial-record station, definition of.....	6
at Lowellville.....	384-385	Particle size, definition of.....	6
at Ohio-Pennsylvania State line below Lowellville.....	30-35	Particle-size classification, definition of.....	6-7
at Pricetown.....	382-383	Periphyton.....	7
at Youngstown.....	384-385	Pesticide program, explanation of.....	9-10
below Berlin Dam near Berlin Center.....	383-383	Philo, Muskingum River at.....	72-77
West Branch, below Michael J. Kirwan Dam at Wayland.....	382-383	Phytoplankton, definition of.....	7
near Newton Falls.....	382-383	Pine Creek near Wheelersburg.....	402-403
near Ravenna.....	22-23	Plankton, definition of.....	7
Massies Creek at Wilberforce.....	410-411	Pleasant Hill, Stillwater River at.....	176-178
Maumee River, at Antwerp.....	418-419	Portage, Middle Branch Portage River near.....	272-275
at center C. and O. Railroad Dock at Toledo.....	270-271	Portage River, at Railroad bridge at Woodville.....	276-281
at Defiance.....	212-217	at Woodville.....	420-421
at mouth, at U.S. Coast Guard station at Toledo.....	264-269	Middle Branch, near Portage.....	272-275
at Toledo Overseas Terminal Dock at Toledo.....	262-263	South Branch, near Six points.....	420-421
at Waterville.....	252-261	Pymatuning Creek at Kinsman.....	384-385
near Defiance.....	418-419	Raccoon Creek at Adamsville.....	110-115
McConnellsville, Muskingum River at.....	78-85	Raccoon Creek basin, analyses of samples collected at water-quality partial-record stations in.....	402-403
McGaw, Upper Twin Creek at.....	143-147	water-quality records in.....	92-115
McGuire Creek below Leesville Dam near Leesville.....	390-391	Radiochemical analyses in Ohio River basin.....	144
Mean concentration, definition of.....	8	Radiochemical program.....	10
Mean discharge, definition of.....	8	Rattlesnake Creek at Centerfield.....	128
Methylene blue active substance, definition of.....	8	Ravenna, West Branch Mahoning River near.....	22-23
Mexico, Sandusky River at St. Johns bridge near.....	294-298	Riley Creek near Ottawa.....	418-419
Miamisburg, Great Miami River near.....	190-195	Rocky Fork (Muskingum River basin) near Lucas.....	42-47
Miami, Little Miami River at.....	158-163	Rocky Fork (Scioto River basin) near Barretts Hills.....	408-409
Micrograms per litre, definition of.....	4	Rocky River, near Berea.....	333-335
		West Branch, at West View.....	420-421

	Page		Page
St. Joseph River, East Branch, near Pioneer.....	416-417	Sunday Creek at Glouster.....	402-403
West Branch, near Pioneer.....	416-417	Suspended sediment, definition of.....	7
St. Lawrence River basin, analyses of samples		Suspended sediment concentration, definition of.....	7
collected at water-quality partial-		Suspended sediment discharge, definition of.....	7
record stations in.....	416-425		
sediment partial-record stations in.....	448-452	Tar Hollow Creek at Tar Hollow State Park.....	408-409
water-quality records in.....	212-381	Taylorville, Great Miami River near	
Salt Creek, above dansite near Londonderry.....	138-319	Taylorville Dam at.....	175
at Laurelville.....	408-409	Temperature.....	14-15
at Tarlton.....	408-409	Thermograph, definition of.....	8
Salt Fork below Salt Fork Dam near Cambridge.....	398-399	Riffin River, at Evansport.....	218-223
Sandusky River, at St. Johns Bridge near Mexico.....	294-298	at Stryker.....	418-419, 448
below Fremont.....	300-305	Time-weighted average, definition of.....	8
near Bucyrus.....	420-421	Rinkers Creek at Bedford.....	344-346
near Fremont.....	420-421	Todd Fork near Roachester.....	412-413
near Mexico.....	420-421, 449	Toledo, Maumee River at Toledo overseas	
near Upper Sandusky.....	282-286	terminal dock at.....	262-263
Sandy Creek, at Minerva.....	388-389	Maumee River at Center C. and D. railroad	
at Waynesburg.....	388-389, 437	dock at.....	270-271
Sandy Run, above Big Four Hollow Creek near		Maumee River at mouth at U.S. Coast Guard	
Lake Hope.....	92-96	station at.....	264-269
near Lake Hope.....	104-109	Tons per day, definition of.....	8
Scioto Brush Creek, at Otway.....	408-409	Total coliform bacteria, definition of.....	2
South Fork, at Wamsley.....	408-409	Total sediment discharge, definition of.....	7
Scioto River, at Chillicothe.....	122-127	Touby Run at Mansfield.....	394-395
at Circleville.....	406-407	Turbidity, definition of.....	9
at Columbus.....	404-405	Tuscarawas River, at Barborton.....	386-387
at Higby.....	130-137	at Clinton.....	386-387
at Lucasville.....	140-142	at Coshocton.....	394-395
below O'Shaughnessy Dam near Dublin.....	402-403	at Massillon.....	388-389
below Shadeville.....	116-121	at Navarre.....	36-41
near Prospect.....	402-403	at Newcomerstown.....	392-393
Scioto River basin, analyses of samples		at Tuscarawas.....	392-393
collected at water-quality partial-		at Uniontown.....	386-387
record stations in.....	402-109	at Zoar.....	390-391
sediment partial-record stations in.....	440-442	below Dover Dam near Dover.....	390-391
water-quality records in.....	116-142	near East Liberty.....	386-387
Sediment.....	15	Twin Creek, at Germantown.....	196
Sediment, definition of.....	7-8	near Ingomar.....	447
Sediment partial-record stations, in Ohio		Tymochtee Creek, at Crawford.....	288-293
River basin.....	433-448	near Marseilles.....	420-421
in St. Lawrence River basin.....	448-452		
Selected references.....	16-19	Upper Sandusky, Sandusky River near.....	282-286
Seneca Fork below Senecaville Dam near		Upper Twin Creek at McGaw.....	143-147
Senecaville.....	398-399		
Sevensmile Creek, at Camden.....	416-417	Vermilion, Vermilion River near.....	316-319
at Collinsville.....	447-448	Vermilion River near Vermilion.....	316-319
Shade River basin, analyses of samples			
collected at water-quality partial-		Wabash River above Beaver Creek at Wabash.....	416-417
record stations in.....	402-403	Wakatomika Creek near Prazesburg.....	398-399, 439
sediment partial-record stations in.....	440	Walhonding River below Mohawk Dam at Nellie.....	396-397
Shade River near Chester.....	402-403, 440	Water-supply papers.....	16
Shadeville, Scioto River below.....	116-121	Waterville, Maumee River at.....	252-261
Short Creek basin, analyses of samples		Well number.....	11
collected at water-quality partial-		West Carrollton, Great Miami River at.....	189
record stations in.....	386-387	Whetstone Creek near Ashley.....	404-405
sediment partial-record stations in.....	434	White Eyes Creek near Fresno.....	394-395
Short Creek near Dillonvale.....	386-387, 434	Whiteoak Creek basin, analyses of samples	
Sidney, Great Miami River at.....	168-171	collected at water-quality partial-	
Solute, definition of.....	8	record stations in.....	410-411
Solutes.....	14	sediment partial-record stations in.....	443-444
Special networks and programs.....	9-10	Whiteoak Creek near Georgetown.....	410-411, 443-444
Specific conductance, definition of.....	8	Willard, West Branch Huron River near.....	306-309
Spring Creek near Troy.....	414-415	Williamsburg, East Fork Little Miami River near.....	164-167
Spring Valley, Little Miami River near.....	148-153	Willoughby, Chagrin River at.....	366-368
Springfield Lake Outlet at Akron.....	422-423	Wills Creek, at Cambridge.....	398-399
Station number.....	10-11	below Wills Creek Dam at Wills Creek.....	398-399
Still Fork near Minerva.....	388-389	Wolf Creek, near Barborton.....	386-387
Stillwater Creek, at Piedmont.....	392-393	South Branch, near Waterford.....	400-401
at Tippecanoe.....	393-393	West Branch, near Waterford.....	400-401
at Uhrichsville.....	393-393	Woodville, Portage River at railroad bridge at..	276-281
Stillwater River, at Englewood.....	179		
at Pleasant Hill.....	176-178	Yellow Creek, near Hammondsville.....	384-385, 433-434
Streamflow, definition of.....	8	North Fork, at Hammondsville.....	386-387
Streams tributary to Lake Erie, analyses of		Yellow Creek basin, analyses of samples	
samples collected at water-quality		collected at water-quality partial-	
partial-record stations in.....	416-425	record stations in.....	384-387
sediment partial-record stations in.....	448-452	sediment partial-record stations in.....	433-434
water-quality records in.....	212-381		
Sugar Creek, above Beach City Dam			
at Beach City.....	390-391, 437-438		
at Dover.....	392-393		
at Strasburg.....	390-391		
below Beach City Dam near Beach City.....	390-391		









U. S. DEPARTMENT OF THE INTERIOR  
Geological Survey  
975 West Third Avenue  
Columbus, Ohio 43212

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF THE INTERIOR  
INT 413

