

Quality of Surface Waters of the United States, 1968

Part 3. Ohio River Basin

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 2093

*Prepared in cooperation with the States
of Alabama, Illinois, Indiana, Kentucky,
Maryland, New York, North Carolina,
Ohio, Pennsylvania, Tennessee,
Virginia, West Virginia, and
with other agencies*



UNITED STATES DEPARTMENT OF THE INTERIOR

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PREFACE

This report was prepared by the U.S. Geological Survey in cooperation with the States of Alabama, Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and with other agencies, by personnel of the Water Resources Division, E. L. Hendricks, chief hydrologist, G. W. Whetstone, assistant chief hydrologist for Scientific Publications and Data Management, under the general direction of G. A. Billingsley, chief, Reports Section, and B. A. Anderson, chief, Data Reports Unit.

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QUALITY OF SURFACE WATERS OF THE UNITED STATES, 1968

PART 3

INTRODUCTION

The water-quality investigations of the United States Geological Survey are concerned with chemical and physical characteristics of surface- and ground-water supplies of the Nation. The data herein deal with the amounts of matter in solution and in suspension in streams, and represent that portion of the National Water Data System collected by the U.S. Geological Survey in cooperation with State, municipal, and other Federal agencies.

The records of chemical analysis, water temperature, and suspended sediment of surface waters given in this volume serve as a basis for determining the suitability of waters for various uses. The flow and water quality of a stream are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved solids may be expected during periods of high flow than during periods of low flow. Conversely, the suspended solids in some streams may change materially with relatively small variations in flow, whereas for other streams the quality of the water may remain relatively uniform throughout large ranges in discharge.

The Geological Survey has published annual records of chemical quality, water temperature, and suspended sediment since 1941. The records prior to 1948 were published each year in a single volume for the entire country, and in two volumes in 1948 and in 1949. From 1950 to 1958, the records were published in 4 volumes; from 1959 to 1963 in 5 volumes; from 1964 to 1967 in 6 volumes; and since 1968 in 10 volumes. The drainage basins covered by the 10 volumes are shown in Figure 1. The shaded area in Figure 1 represents the section of the country covered in this volume for the water year 1968 (October 1, 1967 to September 30, 1968).

To meet interim requirements, water-quality records have been released by the Geological Survey in annual reports, beginning with the 1964 water year, by State. These reports are entitled, "Water Resources Data for (State), Part 2. Water Quality Records." Distribution of these reports is limited and primarily for local needs. Any revisions or corrections found necessary to the records published in these annual State reports have been made and published in this volume without reference.

The records herein are listed by drainage basins in a downstream direction along the main stream. All stations on a tributary entering above a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. In the list of water-quality stations in the front of this volume, the rank of the tributaries is indicated by an indentation. Each indentation represents one rank.

As an added means of identification, a station number has been assigned for each stream location where regular measurements of water quantity or quality have been made. The numbers have been assigned to conform with the standard downstream order of listing gaging stations. The numbering system consists of an 8-digit number, such as 03144500. The first 2 digits, "03" identifies the Part or hydrologic region used by the Geological Survey for reporting hydrologic data. The next 6 digits is the

station number which represents the location of the station in the standard downstream order within each of the 16 parts (Fig. 1). The complete number (03144500) appears just to the left of the station name. The assigned numbers are in numerical order but are not consecutive. Gaps are left in the numbers to allow for new stations that may be established.

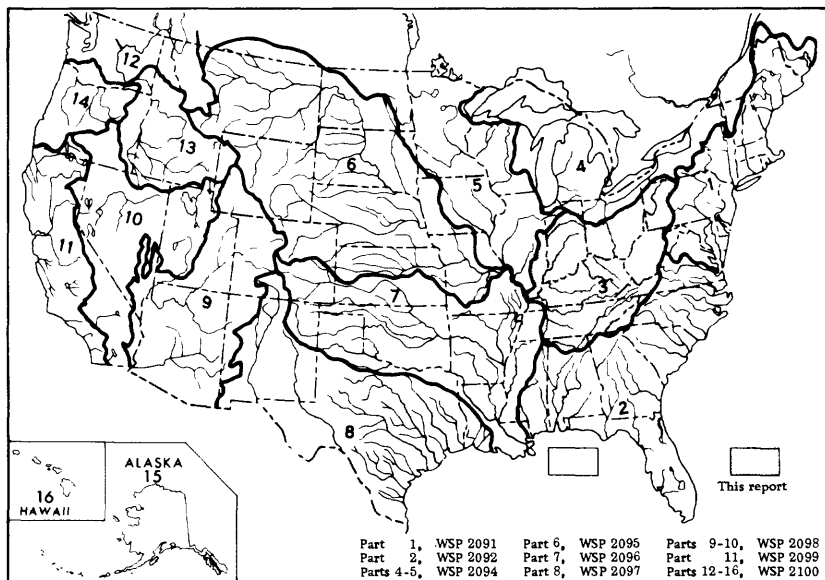


Figure 1.--Map of the United States showing basins covered by the 10 water-supply papers on quality of surface waters in 1968. The shaded part represents the section of the country covered by this volume; the unshaded part represents the section of the country covered by other water-supply papers.

Descriptive statements are given for each sampling station where chemical analyses, temperature measurements, or sediment determinations have been made. These statements include location of the station, drainage area, periods of records available, extremes of dissolved solids, hardness, specific conductance, temperature, sediment loads, and other pertinent data. Records of discharge of the streams at or near the sampling station are included in most tables of analyses.

During the water year ending September 30, 1968, the Geological Survey maintained 141 stations on 92 streams for the study of chemical and physical characteristics of surface water. Samples were collected daily and monthly at 75 of these locations for chemical-quality studies. Samples also were collected less frequently at many other points. Water temperatures were measured continuously at 67 and daily at 42 stations. All surface water samples collected and analyzed during the year have not been included. Single analyses made of daily samples before compositing have not been reported. Specific conductance is determined and reported for almost all daily samples.

At chemical-quality stations where data are continuously recorded at the stream site (monitors), the records consist of daily maximum, minimum, and mean values for each constituent measured. More detailed records (hourly values) may be obtained by writing the district office listed under Division of Work on page 21.

Quantities of suspended sediment are reported for 21 stations during the year ending September 30, 1968. Sediment samples were collected one or more times daily at most stations, depending on the rate of flow and changes in stage of the stream. Particle-size distributions of sediments were not determined.

Some of the stations for which data are published in this volume 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.

International Hydrological Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and the general distribution of water in the principal river basins of the conterminous United States and Alaska.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to water year 1966, these data were published in the annual water-supply paper series, "Quality of Surface Water for Irrigation, Western States."

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.

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.

COLLECTION AND EXAMINATION OF DATA

Quality of water stations usually are located at or near points on streams where streamflow is measured by the U.S. Geological Survey. The concentration of solutes and sediments at different locations in the stream-cross section may vary widely with different rates of water discharge depending on the source of the material and the turbulence and mixing of the stream. In general, the distribution of sediment in a stream section is much more variable than the distribution of solutes. It is necessary to sample some streams at several verticals across the channel and especially for sediment, to uniformly traverse the depth of flow. These measurements require special sampling equipment to adequately integrate the vertical and lateral variability of the concentration in the section. These procedures yield a velocity-weighted mean concentration for the section.

The near uniformly dispersed ions of the solute load move with the velocity of the transporting water. Accordingly, the mean section concentration of solutes determined from samples is a precise measure of the total solute load. The mean section concentration obtained from suspended sediment samples is a less precise measure of the total sediment load, because the sediment samplers do not traverse the bottom 0.3 foot of the sampling vertical where the concentration of suspended sediment is greatest and because a significant part of the coarser particles in many streams move in essentially continuous contact with the bed and are not represented in the suspended sediment sample. Hence, the computed sediment loads presented

in this report are usually less than the total sediment loads. For most streams the difference between the computed and total sediment loads will be small, in the order of a few percent.

CHEMICAL QUALITY

The methods of collecting and compositing water samples for chemical analysis are described by Rainwater and Thatcher (1960) and by Brown, Skougstad, and Fishman (1970). No single method of compositing samples is applicable to all problems related to the study of water quality. Composites are made on the basis of dissolved-solids content as indicated by measurements of conductivity of daily samples, supplemented by other information such as chloride content, river stage, weather conditions and other background information of the stream.

TEMPERATURE

Daily water temperatures were measured at most of the stations at the time samples were collected for chemical quality or sediment content. So far as practicable, the water temperatures were taken at about the same time each day. Large streams have a small diurnal temperature change while small, 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 averages.

SEDIMENT

In general, suspended-sediment samples were collected daily with depth-integrating samplers (U.S. Inter-Agency, 1963). At some stations, samples were collected at a fixed sampling point at one vertical in the cross section. Depth-integrated samples were collected periodically at three or more verticals in the cross section to determine the cross-sectional distribution of the concentration of suspended sediment with respect to that at the daily sampling vertical. In streams where transverse distribution of sediment concentration ranged widely, samples were taken at two or more verticals to define more accurately the average concentration of the cross section. During periods of high or rapidly changing flow, samples generally were taken several times a day and, in some instances, hourly.

Sediment concentrations were determined by filtration-evaporation method. At many stations the daily mean concentration for some days was obtained by plotting the velocity-weighted instantaneous concentrations on the gage-height chart. The plotted concentrations, adjusted if necessary, for cross-sectional distribution were connected or averaged by continuous curves to obtain a concentration graph. This graph represented the estimated velocity-weighted concentration at any time, and for most periods daily mean concentrations were determined from the graph. The days were divided into shorter intervals when the concentration or water discharge were changing rapidly. During some periods of minor variation in concentration, the average concentration of the samples was used as the daily mean concentration. During extended periods of relatively uniform concentration and flow, samples for a number of days were composited to obtain average concentrations and average daily loads for each period. (See Expression of Results, p. 5.)

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. The estimates were further guided by precipitation records and sediment discharge at other stations in the same or adjacent basins.

In many instances where there were no observations for several days, the suspended-sediment loads for individual days were not estimated, because numerous factors influencing the quantities of transported sediment made it very difficult to make accurate estimates for individual days. However, estimated loads of suspended sediment for missing days in an otherwise continuous period of sampling have been included in monthly and annual totals in order to provide a complete record. For some streams, samples were collected weekly, monthly, or less frequently, and only rates of sediment discharge at the time of sampling are shown.

In addition to the records of quantities of suspended sediment transported, records of particle sizes of sediment are included. The particle sizes of suspended sediment for many of the stations, and the particle sizes of the bed material for some of the stations were determined intermittently.

The size of particles carried in suspension by streams commonly ranges from colloids (finer than about 0.24 microns) to coarse sand (2.0 mm). The common methods of particle-size analysis cannot accommodate such a wide range. Hence, it was necessary to separate most samples into two parts, that part coarser than 0.062 mm and that part finer than 0.062 mm. The separations were made by sieve or by fall velocity technique. The coarse fractions were classified by sieve separation or by visual-accumulation tube (U.S. Inter-Agency, 1957). The fine fractions were classified by the pipet method (Kilmer and Alexander, 1949) or the bottom withdrawal tube method (U.S. Inter-Agency, 1943).

EXPRESSION OF RESULTS

The quantities of solute concentrations analyzed in the laboratory are measured in milligrams per liter. Milligrams per liter (mg/l, MG/L) is a unit which represents the weight of solute per unit volume of water.

Milliequivalents per liter are not reported but they can be converted easily from milligrams per liter data. A milliequivalent per liter (me/l) is one thousandth of a gram equivalent weight of a constituent. Chemical equivalence in milliequivalents per liter can be obtained by (a) dividing the concentration in milligrams per liter by the combining weight of that ion, or (b) by multiplying the concentration (in mg/l) by the reciprocals of the combining weights. Table 1 below, lists the reciprocals of the combining atomic weights based on carbon-12 (International Union of Pure and Applied Chemistry, 1961).

Table 1.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter

Ion	Multi- ply by	Ion	Multi- ply by
Aluminum (Al^{+3})	0.11119	Iodide (I^{-1})	0.00788
Ammonia as NH^{+1} . . . . .	.05544	Iron (Fe^{+3}) . . . . .	.05372
Arsenic (As^{+3}) . . . . .	.04004	Lead (Pb^{+2}) . . . . .	.00965
Barium (Ba^{+2}) . . . . .	.01456	Lithium (Li^{+1}) . . . . .	.14411
Bicarbonate (HCO_3^{-1}) . . . . .	.01639	Magnesium (Mg^{+2}) . . . . .	.08226
Bromide (Br^{-1}) . . . . .	.01251	Manganese (Mn^{+2}) . . . . .	.03640
Cadmium (Cd^{+2}) . . . . .	.01779	Mercury (Hg^{+2}) . . . . .	.00997
Calcium (Ca^{+2}) . . . . .	.04990	Nickel (Ni^{+2}) . . . . .	.03406
Carbonate (CO_3^{-2}) . . . . .	.03333	Nitrate (NO_3^{-1}) . . . . .	.01613
Chloride (Cl^{-1}) . . . . .	.02821	Nitrite (NO_2^{-1}) . . . . .	.02174
Chromium (Cr^{+6}) . . . . .	.11539	Phosphate (PO_4^{-3}) . . . . .	.03159
Cobalt (Co^{+2}) . . . . .	.03394	Potassium (K^{+1}) . . . . .	.02557
Copper (Cu^{+2}) . . . . .	.03148	Sodium (Na^{+1}) . . . . .	.04350
Cyanide (CN^{-1}) . . . . .	.03844	Strontium (Sr^{+2}) . . . . .	.02283
Fluoride (F^{-1}) . . . . .	.05264	Sulfate (SO_4^{-2}) . . . . .	.02082
Hydrogen (H^{+1}) . . . . .	.99209	Sulfide (S^{-2}) . . . . .	.06238
Hydroxide (OH^{-1}) . . . . .	.05880	Zinc (Zn^{+2}) . . . . .	.03060

The hardness of water is conventionally expressed in all water analyses in terms of an equivalent quantity of calcium carbonate. Such a procedure is required because hardness is caused by several different cations, present in variable proportions. It should be remembered that hardness is an expression in conventional terms of a property of water. The actual presence of calcium carbonate in the concentration given is not to be assumed. The hardness caused by calcium and magnesium (and other cations if significant) equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness in excess of this quantity is called noncarbonate hardness. Hardness or alkalinity values expressed in milligrams per liter as calcium carbonate may be converted to milliequivalents per liter by dividing by 50.

The value usually reported as dissolved solids is the residue on evaporation after drying at 180°C for 1 hour. For some waters, particularly those containing moderately large quantities of soluble salts, the value reported is calculated from the quantities of the various determined constituents using the carbonate equivalent of the reported bicarbonate. The calculated sum of the constituents may be given instead of or in addition to the residue. In the analyses of most waters used for irrigation, the quantity of dissolved solids is given in tons per acre-foot as well as in milligrams per liter.

Specific conductance is given for most analyses and was determined by means of a conductance bridge and using a standard potassium chloride solution as reference. Specific conductance values are expressed in micromhos per centimeter at 25°C. Specific conductance in micromhos is 1 million times the reciprocal of specific resistance at 25°C. Specific resistance is the resistance in ohms of a column of water 1 centimeter long and 1 square centimeter in cross section.

The discharge of the streams is reported in cubic feet per second (see Streamflow, p. 19) and the temperature in degrees Celsius (°C). Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892). A unit of color is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Hydrogen-ion concentration is expressed in terms of pH units. By definition the pH value of a solution is the negative logarithm of the concentration of gram ions of hydrogen.

An average of analyses for the water year is given for most daily sampling stations. Most of these averages are arithmetical, time-weighted, or discharge-weighted; when analyses during a year are all on 10-day composites of daily samples with no missing days, the arithmetical and time-weighted averages are equivalent. 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 river each day for the water year. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all of the water passing a given station during the year. A discharge-weighted average is computed by multiplying the discharge for the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. For most streams, discharge-weighted averages are lower than arithmetical averages because at times of high discharge the rivers generally have low concentrations of dissolved solids.

A program for computing these averages by digital computer was instituted in the 1962 water year. This program extended computations to include averages for pH values expressed in terms of hydrogen ion and averages for the concentration of individual constituents expressed in tons per day. Concentrations in tons per day are computed the same as daily sediment loads.

The concentration of sediment in milligrams per liter is computed as 1,000,000 times the ratio of the weight of sediment to the weight of water-sediment mixture. Daily sediment loads are expressed in tons per day and except for subdivided days, are usually obtained by multiplying daily mean sediment concentrations in mg/l by the daily mean discharge in cubic feet per second, and the conversion factor, normally 0.0027.

For those days when the published sediment discharge value differs from the value computed, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method.

Particle-size analyses are expressed in percentages of material finer than classified sizes (in millimeters). The size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Clay:	Smaller than 0.004 mm
Silt:	Between 0.004 and 0.062 mm
Sand:	Between 0.062 and 2.0 mm
Gravel:	Between 2.0 and 64.0 mm

The particle-size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

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 to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter 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. (See table 2 on page 8.) To convert temperature in degrees Celsius to degrees Fahrenheit see table 3 on page 8.

COMPOSITION OF SURFACE WATERS

All natural waters contain dissolved mineral matter. The quantity of dissolved mineral matter in a natural water depends primarily on the type of rocks or soils with which the water has been in contact and the length of time of contact. Ground water is generally more highly mineralized than surface runoff because it remains in contact with the rocks and soils for much longer periods. Some streams are fed by both surface runoff and ground water from springs or seeps. Such streams reflect the chemical character of their concentrated underground sources during dry periods and are more dilute during periods of heavy rainfall. The dissolved-solids content in a river is frequently increased by drainage from mines or oil fields, by the addition of industrial or municipal wastes, or--in irrigated regions--by drainage from irrigated lands.

The mineral constituents and physical properties of natural waters reported in the tables of analyses include those that have a practical bearing on water use. The results of analyses generally include silica, iron, calcium, magnesium, sodium, potassium (or sodium and potassium together calculated as sodium), carbonate, bicarbonate, sulfate, chloride, fluoride, nitrate, boron, pH, dissolved solids, and specific conductance. Aluminum, manganese, color, acidity, dissolved oxygen, and other dissolved constituents and physical properties are reported for certain streams. Microbiologic (coliforms) and organic components (pesticides, total organic carbon) and minor elements (arsenic, cobalt, cadmium, copper, lead, mercury, nickel, strontium, zinc, etc.) are determined occasionally for some streams in connection with specific problems and the results are reported. The source and significance of the different constituents and properties of natural waters are discussed in the following paragraphs. The constituents are arranged in the order that they appear in the tables.

MINERAL CONSTITUENTS IN SOLUTION

Silica (SiO₂)

Silica is dissolved from practically all rocks. Some natural surface waters contain less than 5 milligrams per liter of silica and few contain more than 50 mg/l, but the more common range is from 10 to 30 mg/l. Silica affects the usefulness of a water because it contributes to the formation of boiler scale; it usually is removed from

Table 2.--Factors for conversion of sediment concentration in parts per million to milligrams per liter *
[All values calculated to three significant figures]

Range of concentration (ppm)	Multi- ply by	Range of concentration (ppm)	Multi- ply by
0 - 15,900	1.00	322,000 - 341,000	1.26
16,000 - 46,800	1.02	342,000 - 361,000	1.28
46,900 - 76,500	1.04	362,000 - 380,000	1.30
76,600 - 105,000	1.06	381,000 - 399,000	1.32
106,000 - 133,000	1.08	400,000 - 416,000	1.34
134,000 - 159,000	1.10	417,000 - 434,000	1.36
160,000 - 185,000	1.12	435,000 - 451,000	1.38
186,000 - 210,000	1.14	452,000 - 467,000	1.40
211,000 - 233,000	1.16	468,000 - 483,000	1.42
234,000 - 256,000	1.18	484,000 - 498,000	1.44
257,000 - 279,000	1.20	499,000 - 514,000	1.46
280,000 - 300,000	1.22	515,000 - 528,000	1.48
301,000 - 321,000	1.24	529,000 - 542,000	1.50

* Based on water density of 1.000 g/ml and sediment density of 2.65 g/cc.

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°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
2.5	36	12.5	54	22.5	72	32.5	90	42.5	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
7.5	45	17.5	63	27.5	81	37.5	99	47.5	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

*C = 5/9 (°F - 32) or °F = 9/5 (°C) + 32.

feed water for high-pressure boilers. Silica also forms troublesome deposits on the blades of steam turbines. However, it is not physiologically significant to humans, livestock, or fish, nor is it of importance in irrigation water.

Aluminum (Al)

Aluminum is usually present only in negligible quantities in natural waters except in areas where the waters have been in contact with the more soluble rocks of high aluminum content such as bauxite and certain shales. Acid waters often contain large amounts of aluminum. It may be troublesome in feed waters where it tends to be deposited as a scale on boiler tubes.

Iron (Fe)

Iron is dissolved from many rocks and soils. On exposure to air, normal basic waters that contain more than 1 mg/l of iron soon become turbid with the insoluble reddish ferric compounds produced by oxidation. Surface waters, therefore, seldom contain as much as 1 mg/l of dissolved iron, although some acid waters carry large quantities of iron in solution. Iron causes reddish-brown stains on porcelain or enameled ware and fixtures and on fabrics washed in the water. Concentrations of more than 0.3 mg/l are not acceptable for drinking and culinary use. (U.S. Public Health Service, 1962).

Manganese (Mn)

Manganese is dissolved in appreciable quantities from rocks in some sections of the country. It resembles iron in its chemical behavior and in its occurrence in natural waters. However, manganese in rocks is less abundant than iron. As a result the concentration of manganese is much less than that of iron and is not regularly determined in many areas. It is especially objectionable in water used in laundry work and in textile processing. Concentrations as low as 0.2 mg/l may cause a dark-brown or black stain on fabrics and porcelain fixtures. Appreciable quantities of manganese are often found in waters containing objectionable quantities of iron.

Calcium (Ca)

Calcium is dissolved from almost all rocks and soils, but the highest concentrations are usually found in waters that have been in contact with limestone, dolomite, and gypsum. Calcium and magnesium make water hard and are largely responsible for the formation of boiler scale. Most waters associated with granite or silicious sands contain less than 10 mg/l of calcium; waters in areas where rocks are composed of dolomite and limestone contain from 30 to 100 mg/l; and waters that have come in contact with deposits of gypsum may contain several hundred mg/l.

Magnesium (Mg)

Magnesium is dissolved from many rocks, particularly from dolomitic rocks. Its effect in water is similar to that of calcium. The magnesium in soft waters may amount to only 1 or 2 mg/l, but water in areas that contain large quantities of dolomite or other magnesium-bearing rocks may contain from 20 to 100 mg/l or more of magnesium.

Sodium and potassium (Na and K)

Sodium and potassium are dissolved from practically all rocks. Sodium is the predominant cation in some of the more highly mineralized waters found in the western United States. Natural waters that contain only 3 or 4 mg/l of the two together are likely to carry almost as much potassium as sodium. As the total quantity of these constituents increases, the proportion of sodium becomes much greater. Moderate quantities of sodium and potassium have little effect on the usefulness of the water for most purposes, but waters that carry more than 50 to 100 mg/l of the two may require careful operation of steam boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

Bicarbonate, carbonate and hydroxide (HCO_3 , CO_3 , OH)

Bicarbonate, carbonate, or hydroxide is sometimes reported as alkalinity. The alkalinity of a water is produced by anions or molecular species of weak acids which

are not fully dissociated above a pH of 4.5. Since the major causes of alkalinity in most natural waters are carbonate and bicarbonate ions dissolved from carbonate rocks, the results are usually reported in terms of these constituents. Although alkalinity may suggest the presence of definite amounts of carbonate, bicarbonate or hydroxide, there are other ions that contribute to alkalinity such as silicates, phosphates, borates, possibly fluoride, and certain organic anions which may occur in colored waters. The significance of alkalinity to the domestic, agricultural, and industrial user is usually dependent upon the nature of the cations (Ca, Mg, Na, K) associated with it. Alkalinity in moderate amounts does not adversely affect most users.

Hydroxide may occur in water that has been softened by the lime process. Its presence in streams usually can be taken as an indication of contamination and does not represent the natural chemical character of the water.

Sulfide (S)

Sulfide occurs in water as a result of bacterial and chemical processes. It usually is present as hydrogen sulfide. Variable amounts may be found in waters receiving sewage and (or) industrial wastes, such as from tanneries, papermills, chemical plants, and gas manufacturing work (California State Water Quality Control Board, 1963).

Waters containing sulfides, especially hydrogen sulfide, may be considered undesirable because of their odor. The U.S. Public Health Service (1962) states that water on carriers subject to Federal quarantine regulations shall have no objectionable taste or odor. The toxicity to aquatic organisms differs significantly with the species and the nature of associated ions.

Sulfate (SO_4)

Sulfate is dissolved from most sedimentary rocks. Large quantities may be derived from beds of gypsum, sodium sulfate deposits, and some types of shale. Organic material containing sulfur adds sulfate to the water as a phase of the sulfur cycle. In natural waters, concentrations range from a few mg/l to several thousand mg/l.

The U.S. Public Health Service (1962) recommends that the sulfate concentration not exceed 250 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations.

Sulfates are less toxic to crops than chlorides.

Chloride (Cl)

Chloride is dissolved from rock materials in all parts of the country. Surface waters in the humid regions are usually low in chloride, whereas streams in arid or semiarid regions may contain several hundred mg/l of chloride leached from soils and rocks, especially where the streams receive return drainage from irrigated lands or are affected by ground-water-inflow carrying appreciable quantities of chloride. Large quantities of chloride in water that contains a high content of calcium and magnesium increases the water's corrosiveness. The presence of abnormal concentrations of chloride and nitrogenous material together in water supplies indicates possible pollution by human or animal wastes.

Fluoride (F)

Fluoride has been reported as being present in some rocks to about the same extent as chloride. However, the quantity of fluoride in natural surface waters is ordinarily very small compared to that of chloride. Investigations have proved that fluoride concentrations of about 0.6 to 1.7 mg/l reduced the incidence of dental caries and that concentrations greater than 1.7 mg/l also protect the teeth from cavities but cause an undesirable black stain (Durfor and Becker, 1964, p. 20). Public Health Service, 1962, states, "When fluoride is naturally present in drinking water, the concentration should not average more than the appropriate upper control limit (0.6 to 1.7 mg/l). Presence of fluoride in average concentration greater than two times the optimum values shall constitute grounds for rejection of the supply." Concentration higher than the stated limits may cause mottled enamel in teeth, endemic cumulative fluorosis, and skeletal effects.

Bromide (Br)

Bromine is a very minor element in the earth's crust and is normally present in surface waters in only minute quantities. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It resembles chloride in that it tends to be concentrated in sea water.

Iodide (I)

Iodide is considerably less abundant both in rocks and water than bromine. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It occurs in sea water to the extent of less than 1 mg/l. Rankama and Sahama (1950) report iodide present in rainwater to the extent of 0.001 to 0.003 mg/l and in river water in about the same amount. Few waters will contain over 2.0 mg/l.

Nitrogen, organic (N)

Organic nitrogen includes all nitrogenous organic compounds, such as amino acid, polypeptides, and proteins. It is present naturally in all surface waters as the result of inflow of nitrogenous products from the watershed and the normal biological life of the stream.

Organic nitrogen is not pathologically significant but is sometimes an indication of pollution.

Nitrogen, ammonia (NH_4 , as N)

Ammonia nitrogen includes nitrogen in the forms of NH_3 and NH_4^{+1} . As a component of the nitrogen cycle, it is often present in water, but usually in only small amounts. More than 0.1 mg/l usually indicates organic pollution (Rudolph, 1931).

There is no evidence that ammonia nitrogen in water is physiologically significant to man or livestock. Fish, however, cannot tolerate large quantities.

Nitrite (NO_2)

Nitrite is unstable in the presence of oxygen and is, therefore, absent or present in only minute quantities in most natural waters under aerobic condition. The presence of nitrite in water is sometimes an indication of organic pollution.

Recommended tolerances of nitrite in domestic water supplies differ widely. A generally accepted limit is 2 mg/l, but as little as 0.1 mg/l has been proposed (California State Water Quality Control Board, 1963).

Nitrate (NO_3)

Nitrate in water is considered a final oxidation product of nitrogenous material and may indicate contamination by sewage or other organic matter, such as agricultural runoff, or industrial waste. The quantities of nitrate present in surface waters are generally less than 5 mg/l (as NO_3) and have no effect on the value of the water for ordinary uses.

It has been reported that as much as 2 mg/l of nitrate in boiler water tends to decrease intercrystalline cracking of boiler steel. Studies made by Faucett and Miller (1946), Waring (1949) and by the National Research Council (Maxcy, 1950) concluded that drinking water containing nitrates in excess of 44 mg/l (as NO_3) should be regarded as unsafe for infant feeding. U.S. Public Health Service (1962) sets 45 mg/l as the upper limit.

Phosphorus (P)

Phosphorus is an essential element in the growth of plants and animals. It occurs in water as organically bound phosphorus or as phosphate (PO_4). Some sources that contribute nitrate, such as organic wastes are also important sources of phosphorus. The addition of phosphates in water treatment constitutes a possible source although the dosage is usually small. In some areas phosphate fertilizers may yield some phosphorus to water. Another important source is the use of phosphates in detergents.

Domestic and industrial sewage effluents often contain considerable amounts of phosphorus. Concentrations of phosphorus found in water are not reported to be toxic to man, animal, or fish. However, the element can stimulate the growth of algae, which may cause taste and odor problems in public water treatment and esthetic problems in recreation areas.

Boron (B)

Boron in small quantities has been found essential for plant growth, but irrigation water containing more than 1 mg/l boron is detrimental to citrus and other boron-sensitive crops. Boron is reported in Survey analyses of surface waters in arid and semiarid regions of the Southwest and West where irrigation is practiced or contemplated, but few of the surface waters analyzed have harmful concentrations of boron.

Dissolved solids

The reported quantity of dissolved solids--the residue on evaporation--consists mainly of the dissolved mineral constituents in the water. It may also contain some organic matter and water of crystallization. Waters with less than 500 mg/l of dissolved solids are usually satisfactory for domestic and some industrial uses. Water containing several thousand mg/l of dissolved solids are sometimes successfully used for irrigation where practices permit the removal of soluble salts through the application of large volumes of water on well-drained lands, but generally water containing more than about 2,000 mg/l is considered to be unsuitable for long-term irrigation under average conditions.

Arsenic (As)

Arsenic compounds are present naturally in some waters, but the occurrence of quantities detrimental to health is rare. Weed killers, insecticides and many industrial effluents contain arsenic and are potential sources of water pollution. The U.S. Public Health Service (1962) states that the concentration of arsenic in drinking water on carriers subject to Federal quarantine regulations should not exceed 0.01 mg/l and concentrations in excess of 0.05 mg/l are grounds for rejection of the supply. Concentrations of 2-4 mg of arsenic per liter are reported not to interfere with the self-purification of streams (Rudolfs and others, 1944) but concentrations in excess of 15 mg/l may be harmful to some fish.

Barium (Ba)

Barium may replace potassium in some of the igneous rock minerals, especially feldspar, and barium sulfate (barite) is a common barium mineral of secondary origin. Only traces of barium are present in surface water and sea water. Because natural water contains sulfate, barium will dissolve only in trace amounts. Barium sometimes occurs in brines from oil-well wastes.

The U.S. Public Health Service (1962) states that water containing concentrations of barium in excess of 1.0 mg/l is not suitable for drinking and culinary use because of the serious toxic effects of barium on heart, blood vessels, and nerves.

Cadmium (Cd)

This element is found in nature largely in the form of the sulfide, and as an impurity in zinc-lead ores. The carbonate and hydroxide are not very soluble in water and will precipitate at high pH values; the chloride, nitrate, and sulfate are soluble and remain in solution under most pH conditions.

The extensive use of the element and its salts in metallurgy, electroplating, ceramics, and photography make it a frequent component of industrial wastes.

The U.S. Public Health Service (1962) established as grounds for rejection any water containing more than 0.01 mg/l of cadmium.

Chromium (Cr)

Few if any waters contain chromium from natural sources. Natural waters can probably contain only traces of chromium as a cation unless the pH is very low. When

chromium is present in water, it is usually the result of pollution by industrial wastes. Concentrations of more than 0.05 mg/l of chromium in the hexavalent form constitute grounds for rejection of a water for domestic use on the basis of the standards of the U.S. Public Health Service (1962).

Cobalt (Co)

Cobalt occurs in nature in the minerals smaltite, $(\text{Co}, \text{Ni})\text{As}_2$, and cobaltite, CoAsS . Alluvial deposits and soils derived from shales often contain cobalt in the form of phosphate or sulfate, but other soil types may be markedly deficient in cobalt in any form (Bear, 1955). Ruminant animals may be adversely affected by grazing on land deficient in cobalt.

For domestic water supplies, no maximum safe concentration has been established.

Copper (Cu)

Copper is a fairly common trace constituent of natural water. Small amounts may be introduced into water by solution of copper and brass water pipes and other copper-bearing equipment in contact with the water, or from copper salts added to control algae in open reservoirs. Copper salts such as the sulfate and chloride are highly soluble in waters with a low pH but in water of normal alkalinity the salts hydrolyze and the copper may be precipitated. In the normal pH range of natural water containing carbon dioxide, the copper might be precipitated as carbonate. The oxidized portions of sulfide-copper ore bodies contain other copper compounds. The presence of copper in mine water is common.

Copper imparts a disagreeable metallic taste to water. As little as 1.5 mg/l can usually be detected, and 5 mg/l can render the water unpalatable. Copper is not considered to be a cumulative systemic poison like lead and mercury; most copper ingested is excreted by the body and very little is retained. The pathological effects of copper are controversial, but it is generally believed very unlikely that humans could unknowingly ingest toxic quantities from palatable drinking water. The U.S. Public Health Service (1962) recommends that copper should not exceed 1.0 mg/l in drinking and culinary water.

Lead (Pb)

Lead seldom occurs in most natural waters, but industrial mine and smelter effluents may contain relatively large amounts of lead which contaminates the streams. Also, atmospheric contamination which is produced from several types of engine exhausts has considerably increased the availability of this element for solution in rainfall, resulting in contamination of lead in streams (Hem, 1970).

Lead in the form of sulfate is reported to be soluble in water to the extent of 31 mg/l (Seidell, 1940) at 25°C. In natural water this concentration would not be approached, however, since a pH of less than 4.5 would probably be required to prevent formation of lead hydroxide and carbonate. It is reported (Pleissner, 1907) that at 18°C water free of carbon dioxide will dissolve the equivalent of 1.4 mg/l of lead and the solubility is increased nearly four fold by the presence of 2.8 mg/l of carbon dioxide in the solution. Presence of other ions may increase the solubility of lead. Reports on human tolerance of lead vary widely, but the U.S. Public Health Service (1962) states that lead shall not exceed 0.05 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations.

Lithium (Li)

Lithium is present in some minerals but is not abundant in nature. From available information, most fresh waters rarely contain lithium of concentrations exceeding 10 mg/l, but larger quantities may be present in brines and thermal waters. Lithium is used in metallurgy, medicinal water, and some types of glass and storage batteries. Waste from such industries may contain lithium.

Mercury (Hg)

Mercury is the only common metal which is liquid at ordinary temperatures. It occurs free in nature but its chief source is cinnabar (HgS). Mercury compounds are virulent culminative poisons which are readily absorbed through the respiratory and gastrointestinal tracts or through unbroken skin (Weast and Selby, 1967).

The main source of high concentrations of dissolved mercury in water, in the form of highly toxic methyl mercury, $\text{Hg}(\text{CH}_3)_2$, comes from waste discharges from industrial users of mercury and from mercurial pesticides.

Fish from streams and lakes subject to mercury contamination have been found to contain amounts of mercury above the safe limits for food consumption. The U.S. Public Health Service has proposed that the upper limits of dissolved mercury in water for domestic use should not exceed 5 micrograms per liter (0.005 mg/l).

Nickel (Ni)

Elemental nickel seldom occurs in nature, but its compounds are found in many ores and minerals. Many nickel salts are quite soluble and may contribute to water pollution, especially when discharged from metal-plating industries.

The U.S. Public Health Service (1962) has not placed a limit on nickel concentration in public water supplies.

Strontium (Sr)

Strontium is a typical alkaline-earth element and is similar chemically to calcium. Strontium may be present in natural water in amounts up to a few mg/l much more frequently than the available data indicate. In most surface water the amount of strontium is small in proportion to calcium. However, in sea water the ratio of strontium to calcium is 1:30.

Zinc (Zn)

Zinc is abundant in rocks and ores but is only a minor constituent in natural water because the free metal and its oxides are only sparingly soluble. In most alkaline surface waters it is present only in trace quantities, but more may be present in acid water. Chlorides and sulfates of zinc are highly soluble. Zinc is used in many commercial products, and industrial wastes may contain large amounts.

Zinc in water does not cause serious effects on health, but produces undesirable esthetic effects. The U.S. Public Health Service (1962, p. 55) recommends that the zinc content not exceed 5 mg/l in drinking and culinary water.

PROPERTIES AND CHARACTERISTICS OF WATER

Dissolved solids

Theoretically, dissolved solids are anhydrous residues of the dissolved substances in water.

All solutes affect the chemical and physical properties of the water and result in an osmotic pressure. Water with several thousand mg/l of dissolved solids is generally not palatable, although those accustomed to highly mineralized water may complain that less concentrated water tastes flat. The U.S. Public Health Service (1962) recommends that the maximum concentration of dissolved solids not exceed 500 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations, but permits 1,000 mg/l if no better water is available. Reported livestock tolerances range from 3,000 mg/l (Colorado Agricultural Experiment Station, 1943) to 15,000 mg/l (Heller, 1933).

Industrial tolerances for dissolved solids differ widely, but few industrial processes will permit more than 1,000 mg/l. The Geological Survey classifies the degree of salinity of these more mineralized bodies of water as follows (Swenson and Baldwin, 1965):

Dissolved solids (mg/l)	Degree of salinity
Less than 1,000	Nonsaline.
1,000 to 3,000	Slightly saline.
3,000 to 10,000	Moderately saline.
10,000 to 35,000	Very saline.

Hardness

Hardness is the characteristic of water that receives the most attention in industrial and domestic use. It is commonly recognized by the increased quantity of soap required to produce lather. The use of hard water is also objectionable because it contributes to the formation of scale in boilers, water heaters, radiators, and pipes, with the resultant decrease in rate of heat transfer, possibility of boiler failure, and loss of flow.

Hardness is caused almost entirely by compounds of calcium and magnesium. Other constituents--such as iron, manganese, aluminum, barium, strontium, and free acid--also cause hardness, although they usually are not present in quantities large enough to have any appreciable effect.

Generally, bicarbonate and carbonate determine the proportions of "carbonate" hardness of water. Carbonate hardness is the amount of hardness chemically equivalent to the amount of bicarbonate and carbonate in solution. Carbonate hardness is approximately equal to the amount of hardness that is removed from water by boiling.

Noncarbonate hardness is the difference between the hardness calculated from the total amount of calcium and magnesium in solution and the carbonate hardness. The scale formed at high temperatures by the evaporation of water containing non-carbonate hardness commonly is tough, heat resistant, and difficult to remove.

Although many people talk about soft water and hard water, there has been no firm line of demarcation. Water that seems hard to an easterner may seem soft to a westerner. In this report hardness of water is classified as follows:

Hardness range (calcium carbonate in mg/l)	Hardness description
0-60	Soft
61-120	Moderately hard
121-180	Hard
More than 180	Very hard

Durfor and Becker, 1964, p. 23-27.

Acidity (H^{+1})

The use of the terms acidity and alkalinity is widespread in the literature of water analysis and is a cause of confusion to those who are more accustomed to seeing a pH of 7.0 used as a neutral point. Acidity of a natural water represents the content of free carbon dioxide and other uncombined gases, organic acids and salts of strong acids and weak bases that hydrolyze to give hydrogen ions. Sulfates of iron and aluminum in mine and industrial wastes are common sources of acidity.

Sodium adsorption ratio (SAR)

The term "sodium adsorption ratio (SAR)" was introduced by the U.S. Salinity Laboratory Staff (1954). It is a ratio expressing the relative activity of sodium ions in exchange reaction with soil and is an index of the sodium or alkali hazard to the soil. Sodium adsorption ratio is expressed by the equation:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{++} + Mg^{++}}{2}}}$$

where the concentrations of the ions are expressed in milliequivalents per liter.

Waters are divided into four classes with respect to sodium or alkali hazard: low, medium, high, and very high, depending upon the SAR and the specific conductance. At a conductance of 100 micromhos per centimeter the dividing points are at SAR values of 10, 18, and 26, but at 5,000 micromhos the corresponding dividing points are SAR values of approximately 2.5, 6.5, and 11. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Specific conductance (micromhos per centimeter at 25°C)

Specific conductance is a convenient, rapid determination used to estimate the amount of dissolved solids in water. It is a measure of the ability of water to transmit a small electrical current (see p. 6). The more dissolved solids in water that can transmit electricity the greater the specific conductance of the water. Commonly, the amount of dissolved solids (in mg/l) is about 65 percent of the specific conductance (in micromhos). 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 (Durfor and Becker, 1964 p. 27-29).

Specific conductance of most waters in the eastern United States is less than 1,000 micromhos, but in the arid western parts of the country, a specific conductance of more than 1,000 micromhos is common.

Hydrogen-ion concentration (pH)

Hydrogen-ion concentration is expressed in terms of pH units (see p. 6). The values of pH often are used as a measure of the solvent power of water or as an indicator of the chemical behavior certain solutions may have toward rock minerals.

The degree of acidity or alkalinity of water, as indicated by the hydrogen-ion concentration, expressed as pH, is related to the corrosive properties of water and is useful in determining the proper treatment for coagulation that may be necessary at water-treatment plants. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity. The pH of most natural surface waters ranges between 6 and 8. Some alkaline surface waters have pH values greater than 8.0 and waters containing free mineral acid or organic matter usually have pH values less than 4.5.

The investigator who utilizes pH data in his interpretations of water analyses should be careful to place pH values in their proper perspective.

Temperature

Temperature is an important factor in properly determining the quality of water. This is very evident for such a direct use as an industrial coolant. Temperature is also important, but perhaps not so evident, for its indirect influence upon aquatic biota, concentrations of dissolved gases, and distribution of chemical solutes in lakes and reservoirs as a consequence of thermal stratification and variation.

Surface water temperatures tend to change seasonally and daily with air temperatures, except for the outflow of large springs. Superimposed upon the annual temperature cycle is a daily fluctuation of temperature which is greater in warm seasons than in cold and greater in sunny periods than with a cloud cover. Natural warming is due mainly to absorption of a solar radiation by the water and secondarily to transfer of heat from the air. Condensation of water vapor at the water surface is reported to furnish measurable quantities of heat. Heat loss takes place largely through radiation, with further losses through evaporation and conduction to the air and to the streambed. Thus the temperature of a small stream generally reaches a maximum in mid- to late afternoon due to solar heating and reaches a minimum from early to mid-morning after nocturnal radiation.

Color

In water analysis the term "color" refers to the appearance of water that is free from suspended solids. Many turbid waters that appear yellow, red, or brown when viewed in the stream show very little color after the suspended matter has been removed. The yellow-to-brown color of some waters is usually caused by organic matter extracted from leaves, roots, and other organic substances in the ground. In some areas objectionable color in water results from industrial wastes and sewage. Clear deep water may appear blue as the result of a scattering of sunlight by the water molecules. Water for domestic use and some industrial uses should be free from any perceptible color. A color less than 15 units generally passes unnoticed (U.S. Public Health Service, 1962). Some swamp waters have natural color in excess of 300 units.

The extent to which a water is colored by material in solution is commonly reported as a part of a water analysis because a significant color in water may indicate the presence of organic material that may have some bearing on the dissolved solids content. Color in water is expressed in terms of units between 0 and 500 or more based on the above standard (see p. 6).

Turbidity

Turbidity is the optical property of a suspension with reference to the extent to which the penetration of light is inhibited by the presence of insoluble material. Turbidity is a function of both the concentration and particle size of the suspended material. It is reported in terms of mg/l of silica or Jackson turbidity units (JTU).

Turbid water is abrasive in pipes, pumps, and turbine blades. Although turbidity does not directly measure the safety of drinking water, it is related to the consumer's acceptance of the water. A level of 5 JTU of turbidity becomes objectionable to a considerable number of people (U.S. Public Health, 1962).

Density at 20°C

Density is the mass of any substance per unit volume at a designated standard temperature. Density should not be confused with specific gravity, which is a mass-to-mass relation.

The density value has some use in industries that utilize brines and whose basic unit of concentration of dissolved material is density. Density is used primarily by the chemist in the computation of milligrams per liter for highly mineralized waters.

Dissolved oxygen (DO)

Oxygen dissolved in water is derived from the air and from the oxygen given off in the process of photosynthesis by aquatic plants.

Dissolved oxygen in water has no adverse physiological effect and actually increases the palatability of the water. No minimum concentration of dissolved oxygen required to support fish life has been listed because the oxygen requirements of fish vary with the species and age, with temperature, and with concentration of other substances in the water.

Dissolved oxygen is responsible for many of the corrosion problems in industry.

Chemical Oxygen demand (COD)

Chemical oxygen demand is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural-water color or with carbonaceous organic pollution from sewage or industrial wastes.

Biochemical oxygen demand (BOD)

Biochemical oxygen demand is a measure of the oxygen required to oxidize the organic material usable as a source of food by aerobic organisms.

Biological and microbiological information

Biological and microbiological information is an important aspect in the evaluation of water quality. The kinds and amount of aquatic biota in a stream or lake can be useful "indicators" of environmental conditions and particularly of the degree of pollution of water with organic wastes (Doudoroff and Warren, 1957). 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.

Chlorophyll (plant pigment).--The concentrations of photosynthetic pigments in natural waters vary with time and changing aquatic conditions. Concentrations of chlorophyll a, b, and c (spectrophotometric determination) are used to estimate the biomass and photosynthetic capacity of phytoplankton (blue-green algae). Ratios between the different forms of chlorophyll are thought to indicate the taxonomic composition or the physiological state of the algae community (Slack, 1970).

Plankton.--Plankton is the floating (or weakly swimming) animal or plant life in a body of water consisting, chiefly of minute plants (as diatoms and blue-green algae) and of minute animals (as protozoan, entomostracans and various larvae). Algae are known to cause tastes and odor in water supply.

Plankton population in water is obtained by count level (the number of organisms per milliliter).

Coliform bacteria.--Coliform organisms have long been used as indicators of sewage pollution, although the group includes bacteria from diverse natural sources and habitats. For example, members of the coliform group are indigenous to soil and vegetation as well as feces. Standards for drinking-water quality provide definite minimums as to number of samples examined and the maximum number of coliform organisms allowable per 100 milliliters (ml) of finished water (Slack, 1970). The coliform population of water is determined either by the most probable number (MPN), or by the incubation membrane filter method, a direct count of coliform colonies per plate.

Fecal coliform bacteria.--Fecal coliform is that portion of the coliform group that is present in the intestinal tract of warm-blooded animals and is capable of producing gas from lactos in suitable culture medium at 44.5° C. Organisms from other sources generally cannot produce gas in this manner. (American Public Health Assoc. and others, 1965). Thus, in general, the presence of fecal coliform organisms indicates recent pollution (Slack, 1970).

Organics

Phenols.--Phenolic material in water resources is invariably the result of pollution. Phenols are widely used as disinfectants and in the synthesis of many organic compounds. Waste products from oil refineries, coke areas, and chemical plants may contain high concentrations. Fortunately, phenols decompose in the presence of oxygen and micro-organisms, and their persistence downstream from point of entry is relatively short lived. The rate of decomposition is dependent on the environment.

Very low concentrations impart such a disagreeable taste to water that it is highly improbable that harmful amounts could be consumed unknowingly. Reported thresholds of detection of taste and odor range from 0.001 to 0.01 mg/l.

Cyanide (CN).--Cyanides are not found free in nature, but may become contaminants of water supplies by means of effluents from gasworks, coke ovens, steel mills, electroplating processes, and chemical industries. In natural streams and organic soils, simple cyanides are decomposed by bacterial action, whereas the metal-cyanide complexes are often quite stable and more resistant to degradation. The U.S. Public Health Service (1962) set a recommended limit of 0.01 mg cyanide per liter and a mandatory limit of 0.2 mg/l for waters subject to interstate regulations.

Detergents (methylene blue active substance, MBAS).--Anionic surfactants in detergents resist chemical oxidation and biological breakdown. Soap is an example of this class and the synthetic members are sodium salts of organic sulfonates or sulfates (Rose, 1966). Their persistence in water over long periods of time contributes to pollution of both ground water and surface water. Some of the effects produced from detergent pollution are unpleasant taste, odor, and foaming (Wayman, and others, 1962). Although the physiological implications of MBAS to human beings is unknown, prolonged ingestion of this material by rats is believed to be nontoxic (Paynter, 1960). The U.S. Public Health Service (1962) recommends that MBAS should not exceed 0.5 mg/l in drinking and culinary waters.

Total Organic Carbon (TOC).--Total organic carbon is a measure of the organically related carbonaceous content of water. It includes all natural and manmade organic compounds which are combustible at a temperature of 950° C.

Sediment

Fluvial sediment generally is regarded as that material which is transported by, suspended in, or deposited by water. Suspended sediment is that part which remains in suspension in water owing to the upward components of turbulent currents or by

colloidal suspension. Much fluvial sediment results from the natural process of erosion, which in turn is part of the geologic cycle of rock transformation. This natural process may be accelerated by agricultural practices. Sediment also is contributed by a number of industrial and construction activities. In certain sections, waste materials from mining, logging, oil-field, and other industrial operations introduce large quantities of suspended material.

The quantity of sediment, transported or available for transportation, is affected by climatic conditions, form or nature of precipitation, character of the solid mantle, plant cover, topography, and land use. The mode and rate of sediment erosion, transport, and deposition is determined largely by the size distribution of the particles or more precisely by the fall velocities of the particles in water. Sediment particles in the sand size range (larger than 0.062 mm) do not appear to be affected by flocculation or dispersion resulting from the mineral constituents in solution. In contrast, the sedimentation diameter of clay and silt particles in suspension may vary considerably from point to point in a stream or reservoir, depending on the mineral matter in solution and in suspension and the degree of turbulence present. The size of sediment particles in transport at any point depends on the type of erodible and soluble material in the drainage area, the degree of flocculation present, time in transport, and characteristics of the transporting flow. The flow characteristics include velocity of water, turbulence, and the depth, width, and roughness of the channel. As a result of these variable characteristics, the size of particles transported, as well as the total sediment load, is in constant adjustment with the characteristics and physical features of the stream and drainage area.

STREAMFLOW

Most of the records of stream discharge, used in conjunction with the chemical analyses and in the computation of sediment loads in this volume, are published in the Geological Survey water-supply paper series, "Surface Water Supply of the United States, 1966-70." The discharge reported for a composite sample is usually the average of daily mean discharges for the composite period. The discharges reported in the tables of single analyses are either daily mean discharges or discharges obtained at the time samples were collected and computed from a stage-discharge relation or from a discharge measurement.

PUBLICATIONS

Reports giving records of chemical quality and temperatures of surface waters and suspended-sediment loads of streams in the area covered by this volume for the water years 1941-68, are listed below:

Numbers of water-supply papers containing records for Part 3, 1941-68

Year	WSP	Year	WSP	Year	WSP	Year	WSP
1941	942	1948	1132	1955	1400	1962	1942
1942	950	1949	1162	1956	1450	1963	1948
1943	970	1950	1186	1957	1520	1964	1955
1944	1022	1951	1197	1958	1571	1965	1962
1945	1030	1952	1250	1959	1642	1966	1992
1946	1050	1953	1290	1960	1742	1967	2012
1947	1102	1954	1350	1961	1882	1968	2093

Geological Survey reports containing chemical quality, temperature, and sediment data obtained before 1941 are listed on next page. Publications dealing largely with the quality of ground-water supplies and only incidentally covering the chemical composition of surface waters are not included. Publications that are out of print are preceded by an asterisk.

PROFESSIONAL PAPER

- *135. Composition of river and lake waters of the United States, 1924.

BULLETINS

- *479. The geochemical interpretation of water analyses, 1911.
770. The data of geochemistry, 1924.

WATER-SUPPLY PAPERS

- *108. Quality of water in the Susquehanna River drainage basin, with an introductory chapter on physiographic features, 1904.
*161. Quality of water in the upper Ohio River basin and at Erie, Pa., 1906.
*193. The quality of surface waters in Minnesota, 1907.
*236. The quality of surface waters in the United States, Part 1, Analyses of waters east of the one hundredth meridian, 1909.
*237. The quality of the surface waters of California, 1910.
*239. The quality of surface waters of Illinois, 1910.
*273. Quality of the water supplies of Kansas, with a preliminary report on stream pollution by mine waters in southeastern Kansas, 1911.
*274. Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses, 1911.
*339. Quality of the surface waters of Washington, 1914.
*363. Quality of the surface waters of Oregon, 1914.
*418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917.
*596-B. Quality of water of Colorado River in 1925-26, 1928.
*596-D. Quality of water of Pecos River in Texas, 1928.
*596-E. Quality of the surface waters of New Jersey, 1928.
*636-A. Quality of water of the Colorado River in 1926-28, 1930.
*636-B. Suspended matter in the Colorado River in 1925-28, 1930.
*638-D. Quality of water of the Colorado River in 1928-30, 1932.
*839. Quality of water of the Rio Grande basin above Fort Quitman, Tex., 1938.
*889-E. Chemical character of surface water of Georgia, 1944.
*998. Suspended sediment in the Colorado River, 1925-41, 1947.
1048. Discharge and sediment loads in the Boise River drainage basin, Idaho, 1939-40, 1948.
1110-C. Quality of water of Conchas Reservoir, New Mexico, 1939-49, 1952.

Many of the reports listed are available for consultation in the larger public and institutional libraries. Copies of Geological Survey publications still in print may be purchased at a nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, who will, upon request, furnish lists giving prices.

COOPERATION

Many Municipal, State and Federal agencies assisted in collecting records for these quality-of-water investigations. Many of the investigations were supported by funds appropriated directly to the U.S. Geological Survey. The State, local, and Federal agencies that cooperated in these quality-of-water investigations are listed below:

Alabama--Geological Survey of Alabama, P. E. LaMoreaux, State geologist;
Tennessee Valley Authority.

Illinois--Illinois State Department of Public Works and Buildings, F. S. Lorenz, succeeded by Norbert Johnson, director, through Division of Waterways, J. C. Guillou,

chief waterway engineer; Ohio River Valley Water Sanitation Commission (including the States of Indiana, Kentucky, Ohio, and West Virginia), R. K. Horton, executive director and chief engineer.

Indiana--Indiana Department of Natural Resources, F. P. Provost, director, through Bureau of Water and Mineral Resources, W. J. Andrews, deputy director; Indiana Board of Health, A. C. Offutt, commissioner, and B. A. Poole, director, Bureau of Environmental Sanitation; Indiana State Highway Commission, R. W. Steele, chairman, R. H. Harrell, executive director, and F. L. Ashbaucher, chief engineer.

Kentucky--University of Kentucky, J. W. Oswald, president, succeeded by A. D. Kirwan, through State Geological Survey, W. W. Hagan, director and State geologist; Lexington and Fayette County Planning Commission, W. H. Qualls, executive director; Tennessee Valley Authority; National Park Service, U.S. Department of the Interior; Corps of Engineers, U.S. Army.

Maryland--Maryland Geological Survey, K. N. Weaver, director; Maryland National Park and Planning Commission, J. S. Hewins, director.

New York--New York State Department of Health, Environmental Health Service, D. F. Metzler, deputy commissioner; New York State Department of Conservation, Division of Water Resources, F. W. Montanari, assistant commissioner; Atomic Energy Commission.

North Carolina--North Carolina Department of Water Resources, G. E. Pickett, director; Soil Conservation Service, U.S. Department of Agriculture.

Ohio--Ohio Department of Natural Resources, F. E. Morr, director, and C. V. Youngquist, chief, Division of Water; Ohio Department of Health, Dr. E. W. Arnold, director, and G. H. Eagle, chief engineer; Miami Conservancy District, M. L. Mitchell, chief engineer.

Pennsylvania--Pennsylvania Department of Forests and Waters, M. K. Goddard, secretary, through Water and Power Resources Board, C. H. McConnell, chief engineer; Pennsylvania Department of Agriculture, L. H. Bull, secretary, through Soil and Water Conservation Commission, C. F. Hess, director.

Tennessee--Tennessee Department of Conservation, E. B. Garrett, commissioner, through Division of Water Resources, R. W. Robinson, director; Tennessee Valley Authority.

Virginia--Virginia Department of Conservation and Economic Development, M. M. Sutherland, director; Corps of Engineers, U.S. Army.

West Virginia--West Virginia Department of Natural Resources, T. R. Samsell, director, through Division of Water Resources, E. N. Henry, chief; Corps of Engineers, U.S. Army.

DIVISION OF WORK

The quality-of-water work was performed by the Water Resources Division of the Geological Survey, E. L. Hendricks, chief hydrologist, and under the direction of the district chiefs listed in the preface.

Correspondence regarding the records in this report or any additional information should be directed to the district chief of the appropriate Geological Survey-Water Resources Division district office as indicated in the following table.

State	District Office	Address
Alabama	Tuscaloosa 35486	P. O. Box V University, Ala.
Illinois	Champaign 61820	P. O. Box 1026 605 N. Neil Street
Indiana	Indianapolis 46202	1819 N. Meridian St.

State	District Office	Address
Kentucky	Louisville 40202	Room 572, Federal Bldg. 600 Federal Place
Maryland	Parkville 21234	8809 Satyr Hill Road
New York	Albany 12201	P. O. Box 948 Room 343, U.S. Post Office and Court House
North Carolina	Raleigh 27602	P. O. Box 2857 Room 440, Century Sta. P. O. Bldg.
Ohio	Columbus 43212	975 West Third Avenue
Pennsylvania	Harrisburg 17108	P. O. Box 1107 4th Floor, Federal Bldg. 228 Walnut Street
Tennessee	Nashville 37203	144 Federal Office Bldg.
Virginia	Richmond 23220	Room 304 200 West Grace St.
West Virginia	Charleston 25301	Room 3303 Federal Bldg. and U.S. Court House 500 Quarrier St., East

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WATER-QUALITY STATIONS IN DOWNSTREAM ORDER

PART 3. OHIO RIVER BASIN

OHIO RIVER MAIN STEM

03012500 ALLEGHENY RIVER NEAR KINZUA, PA.

LOCATION.--Lat 41°49'25", long 79°07'10", Warren County, at bridge on U.S. Highway 6, 6.9 miles downstream from Kinzua Dam, and at mile 191.2.

DRAINAGE AREA.--2,223 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1948 to September 1951, October 1961 to September 1968.
Water temperatures: October 1948 to September 1951, October 1961 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 302 micromhos Mar. 18; minimum daily, 46 micromhos Mar. 23.
Water temperatures: Maximum, 22.0°C Aug. 23-25; minimum, 1.0°C on several days during January to March.

Period of record:

Dissolved solids (1948-49): Maximum, 573 mg/l Sept. 11-20, 1949; minimum, 100 mg/l Apr. 11-20, 1949.

Hardness (1948-51): Maximum, 180 mg/l Oct. 1-10, 1948; minimum, 27 mg/l Mar. 1-10, 1951.

Specific conductance: Maximum daily, 1,110 micromhos Oct. 13, 1948; minimum daily, 43 micromhos Jan. 22, 1962.

Water temperatures: Maximum, 29.0°C July 13, 14, 1949; minimum, freezing point on many days during winter periods.

REMARKS.--Samples collected on Oct. 25, Dec. 8, Jan. 5, Feb. 2, Apr. 18, June 6, 13, July 2, 23, and Sept. 5 are 3 point cross sections composited.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA+K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)
OCT.											
01-10	18610	--	--	--	--	--	--	--	15	32	0
25...	7390	3.4	0.02	0.00	14	2.8	12	1.7	--	36	0
NOV.											
01-10	7830	--	--	--	11	3.1	--	--	13	31	0
DEC.											
01-10	7190	--	--	--	12	2.8	--	--	12	31	0
08...	8530	--	--	--	13	2.8	--	--	11	32	0
JAN.											
01-10	9630	--	--	--	11	2.5	--	--	11	28	0
05...	10900	--	--	--	12	2.6	--	--	8.5	27	0
FEB.											
02...	2000	--	--	--	16	3.8	--	--	17	40	0
MAR.											
01-10	673	--	--	--	15	3.5	--	--	21	46	0
APR.											
01-03,											
05-10	3880	4.5	.00	.00	12	2.4	9.2	1.1	--	26	0
18...	662	7.2	.03	.00	11	2.5	8.2	1.1	--	30	0
MAY											
01-09	664	--	--	--	10	2.4	--	--	17	40	0
JUNE											
01-10	3470	--	--	--	11	2.6	--	--	13	30	0
06...	3520	6.5	.00	.00	12	2.8	10	1.0	--	30	0
13...	2360	5.2	.02	.00	12	2.6	10	1.0	--	29	0
JULY											
02...	4320	3.8	.02	.00	13	2.9	10	1.0	--	32	0
02-10	4250	5.8	--	--	10	1.9	16	2.2	--	32	0
23...	1610	4.3	.00	.00	16	2.6	13	1.3	--	38	0
AUG.											
01-10	1620	--	--	--	14	3.0	--	--	14	36	0
SEPT.											
01-10	2030	--	--	--	17	3.0	--	--	15	41	0
05...	2390	--	--	--	14	3.0	--	--	16	40	0

DATE	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)
OCT.											
01-10	18	19	--	1.5	--	39	13	149	6.8	8	13
25...	16	22	0.2	.2	101	47	17	162	6.9	8	12
NOV.											
01-10	16	19	--	.6	--	41	15	136	7.4	5	--
DEC.											
01-10	14	18	--	1.4	--	42	16	147	6.9	1	--
08...	15	18	--	.7	--	44	18	146	7.3	4	2
JAN.											
01-10	14	16	--	1.4	--	38	15	136	6.9	5	--
05...	13	16	--	1.3	--	41	19	134	7.0	3	3
FEB.											
02...	15	29	--	2.8	--	56	23	201	7.4	3	2
MAR.											
01-10	15	30	--	2.3	--	52	15	211	7.3	1	--
APR.											
01-03,											
05-10	14	18	.0	2.0	82	40	19	137	7.4	1	--
18...	14	14	.0	.8	74	38	14	127	7.5	1	11
MAY											
01-09	15	15	--	2.3	--	35	2	129	6.9	7	--
JUNE											
01-10	15	18	--	1.4	--	38	14	145	7.0	3	--
06...	16	18	.1	.8	96	42	17	149	7.1	2	17
13...	15	18	.1	.8	87	41	17	140	6.8	2	16
JULY											
02...	15	18	.1	1.3	95	45	19	145	7.2	2	21
02-10	14	18	.1	1.4	91	33	7	152	7.1	5	--
23...	14	22	.2	1.2	98	51	20	160	7.5	5	25
AUG.											
01-10	15	22	--	1.4	--	48	18	164	7.6	3	--
SEPT.											
01-10	13	28	--	1.6	--	55	22	193	7.7	1	--
05...	12	26	--	.9	--	48	15	186	7.8	5	21

OHIO RIVER MAIN STEM

25

03012500 ALLEGHENY RIVER NEAR KINZUA, PA.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	151	158	152	137	229	173	162	128	139	--	156	195
2.....	147	150	148	138	227	178	166	125	150	172	163	183
3.....	150	149	149	135	--	153	98	131	137	147	162	191
4.....	129	143	149	136	48	208	--	129	136	146	161	191
5.....	129	109	154	136	179	222	146	128	138	146	161	190
6.....	134	140	147	136	178	230	124	128	139	145	161	178
7.....	154	142	141	135	177	240	115	130	137	144	162	188
8.....	146	144	143	136	157	250	115	129	145	143	167	187
9.....	129	147	123	134	149	254	120	130	152	151	166	185
10.....	150	147	145	132	145	263	124	72	139	143	169	188
11.....	136	148	145	131	151	268	125	129	139	150	176	193
12.....	127	157	147	131	147	234	114	132	140	152	170	196
13.....	125	156	146	134	144	279	120	125	139	156	169	196
14.....	125	159	146	139	152	275	119	129	142	151	176	192
15.....	171	157	147	136	147	284	--	120	142	159	171	196
16.....	148	153	147	139	--	301	--	122	142	151	180	201
17.....	140	156	151	138	171	298	--	125	139	155	167	198
18.....	139	159	152	--	170	302	--	127	141	152	169	192
19.....	136	156	147	141	166	289	--	128	142	155	139	195
20.....	141	158	146	151	131	281	--	128	143	160	167	188
21.....	158	157	146	150	159	288	131	127	143	158	178	182
22.....	159	159	146	142	131	292	122	129	146	154	179	185
23.....	161	158	--	205	131	46	121	131	145	160	178	193
24.....	169	161	145	193	132	227	126	130	143	159	178	178
25.....	165	160	149	198	132	192	125	147	141	157	172	177
26.....	154	152	163	227	161	162	122	146	143	158	180	178
27.....	149	155	143	231	156	153	122	144	146	156	190	178
28.....	145	154	144	208	162	148	122	146	144	156	185	172
29.....	156	153	141	239	165	140	123	148	141	154	184	172
30.....	159	161	140	275	--	153	124	142	141	159	183	169
31.....	156	--	135	--	--	144	--	139	--	156	183	--
AVERAGE	146	151	145	158	155	225	--	129	141	153	171	186

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	11.0	6.0	3.0	3.0	2.0	---	11.0	13.0	---	21.0	20.0
2	13.0	11.0	6.0	3.0	4.0	2.0	---	11.0	14.0	16.0	20.0	20.0
3	13.0	11.0	4.0	3.0	---	2.0	---	11.0	14.0	16.0	20.0	20.0
4	13.0	11.0	4.0	3.0	3.0	2.0	---	11.0	14.0	16.0	20.0	20.0
5	13.0	11.0	4.0	3.0	---	2.0	2.0	10.0	15.0	16.0	20.0	22.0
6	13.0	10.0	4.0	3.0	3.0	2.0	2.0	10.0	---	16.0	20.0	22.0
7	13.0	9.0	4.0	3.0	3.0	2.0	3.0	10.0	14.0	16.0	20.0	21.0
8	13.0	9.0	4.0	3.0	2.0	2.0	3.0	11.0	14.0	16.0	21.0	21.0
9	13.0	9.0	4.0	3.0	3.0	3.0	3.0	12.0	14.0	18.0	21.0	20.0
10	13.0	9.0	4.0	3.0	2.0	3.0	---	12.0	14.0	18.0	21.0	20.0
11	13.0	9.0	4.0	3.0	2.0	1.0	---	11.0	15.0	17.0	21.0	20.0
12	13.0	10.0	4.0	2.0	---	1.0	---	11.0	15.0	20.0	21.0	19.0
13	13.0	10.0	4.0	2.0	---	1.0	---	11.0	15.0	20.0	21.0	19.0
14	12.0	9.0	4.0	2.0	2.0	1.0	---	12.0	15.0	20.0	21.0	19.0
15	12.0	8.0	4.0	3.0	---	1.0	---	11.0	15.0	20.0	21.0	19.0
16	13.0	6.0	3.0	2.0	---	2.0	---	11.0	14.0	20.0	21.0	19.0
17	---	7.0	3.0	2.0	2.0	2.0	---	11.0	16.0	20.0	21.0	19.0
18	13.0	9.0	3.0	2.0	2.0	2.0	---	11.0	16.0	20.0	21.0	19.0
19	14.0	---	3.0	2.0	1.0	3.0	---	10.0	16.0	20.0	21.0	18.0
20	13.0	8.0	3.0	---	2.0	3.0	---	10.0	13.0	20.0	20.0	18.0
21	13.0	6.0	3.0	2.0	---	4.0	12.0	10.0	16.0	20.0	21.0	17.0
22	---	8.0	3.0	2.0	2.0	4.0	12.0	11.0	16.0	20.0	21.0	20.0
23	13.0	8.0	3.0	2.0	2.0	4.0	12.0	10.0	16.0	20.0	22.0	18.0
24	13.0	7.0	3.0	2.0	2.0	2.0	12.0	10.0	17.0	21.0	22.0	16.0
25	13.0	7.0	---	2.0	2.0	2.0	12.0	12.0	17.0	20.0	22.0	16.0
26	11.0	7.0	3.0	1.0	1.0	2.0	11.0	12.0	18.0	21.0	21.0	15.0
27	11.0	7.0	2.0	2.0	1.0	2.0	12.0	13.0	17.0	21.0	20.0	15.0
28	11.0	7.0	3.0	2.0	3.0	2.0	12.0	13.0	17.0	21.0	20.0	15.0
29	11.0	6.0	3.0	3.0	2.0	---	11.0	13.0	15.0	21.0	20.0	15.0
30	11.0	6.0	3.0	3.0	---	---	11.0	13.0	16.0	21.0	20.0	15.0
31	11.0	---	3.0	---	---	---	---	13.0	---	21.0	20.0	---
AVERAGE	12.5	8.5	3.5	2.5	---	2.0	---	11.0	15.0	19.0	20.5	18.5

CONEWAGO CREEK BASIN

03013000 CONEWAGO CREEK AT WATERBORO, N. Y.

LOCATION (revised).--Lat 42°10'15", long 79°04'10", Chautauqua County, at gaging station 300 ft downstream from bridge on State Highway 17 at Waterboro, 0.2 mile downstream from Davis Brook, and 1.9 miles northeast of Kennedy.

DRAINAGE AREA.--290 sq mi.

PERIOD OF RECORD.--Chemical analyses: August 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SIO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	AMMONIA (NH4)	BICAR- BONATE (HCC3)	SULFATE (SC4)	CHLO- RIDE (CL)
OCT.												
23...	1640	5.0	.29	.13	26	3.2	2.5	1.9	--	71	18	3.2
NOV.												
21...	1360	4.2	.20	.03	21	4.2	2.3	1.3	--	62	18	4.0
DEC.												
21...	1610	3.5	.24	.05	22	4.1	2.6	.8	--	63	15	4.0
JAN.												
24...	231	5.1	.71	.12	34	5.6	3.8	1.0	--	102	22	5.8
FEB.												
22...	195	--	--	--	37	6.4	--	--	--	112	25	5.5
MAR.												
22...	2640	2.9	.36	.08	16	2.6	2.1	1.0	--	40	14	4.0
APR.												
23...	176	--	--	--	40	5.8	--	--	--	120	24	5.2
MAY												
24...	359	--	--	--	29	5.7	--	--	--	90	18	3.6
JUNE												
21...	103	5.4	--	--	32	14	3.9	1.1	--	138	25	5.0
JULY												
24...	74	--	--	--	38	8.5	--	--	.06	132	20	6.0
AUG.												
21...	52	4.8	--	--	46	7.5	4.9	1.0	.09	148	26	6.4
SEPT.												
23...	49	4.7	--	--	48	11	4.8	1.5	.04	147	40	6.4

DATE	FLUO- RIDE (F)	NITRITE (NO2)	NITRATE (NC3)	ORGANIC NITRO- GEN (N)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS RESID- UE AT 180 C	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)
OCT.												
23...	.2	--	.6	--	--	97	78	20	169	7.1	--	9
NOV.												
21...	.0	--	1.2	--	--	95	70	19	152	7.3	14	1
DEC.												
21...	.1	--	1.2	--	--	90	72	20	156	7.4	--	1
JAN.												
24...	.2	--	2.5	--	--	132	108	24	228	7.4	7	1
FEB.												
22...	--	--	--	--	--	--	119	27	254	7.3	--	0
MAR.												
22...	.1	--	1.4	--	--	72	50	17	110	6.9	25	1
APR.												
23...	--	--	--	--	--	--	124	26	258	7.6	--	11
MAY												
24...	--	--	--	--	--	--	96	22	191	7.5	--	12
JUNE												
21...	.2	--	1.1	--	--	162	136	23	294	7.7	5	--
JULY												
24...	--	.00	1.2	.03	.00	--	130	22	275	7.5	--	22
AUG.												
21...	.1	.12	.8	.21	.10	177	146	25	302	7.4	9	21
SEPT.												
23...	.1	.02	.7	.03	.13	186	164	44	310	7.8	6	17

CLARION RIVER BASIN

03029400 TOMS RUN AT COOKSBURG, PA.

LOCATION.--Lat 41°20'15", long 79°12'50", Forest County, at gaging station on right bank about 100 ft downstream from footbridge on Longfellow Trail, 0.6 mile upstream from mouth, and 0.5 mile northwest of Cooksburg.

DRAINAGE AREA.--12.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SIO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA+K)	BICAR- BONATE (HCC3)	CAR- BONATE (CC3)
OCT.											
23...	24	6.0	0.00	0.01	4.8	2.3	2.5	1.2	--	2	0
JAN.											
02...	12	--	--	--	6.0	1.7	--	--	9.7	8	0
29...	26	--	--	--	8.7	5.5	--	--	9.7	3	0
FEB.											
27...	5.0	--	--	--	6.5	5.0	--	--	11	8	0
MAR.											
20...	37	--	--	--	5.0	3.0	--	--	5.8	4	0
APR.											
15...	12	5.3	.00	.38	6.9	3.3	4.8	1.1	--	7	0
MAY											
22...	57	--	--	--	5.0	2.1	--	--	3.4	3	0
JUNE											
04...	21	5.8	.00	.30	5.0	3.8	3.0	.9	--	4	0
JULY											
01	7.9	5.8	.02	.16	7.5	4.1	5.5	1.1	--	6	0
29...	1.8	6.2	.00	.00	12	6.1	14	2.1	--	16	0
SEPT.											
05...	2.7	--	--	--	11	6.0	--	--	19	21	0

03029400 TOMS RUN AT COOKSBURG, PA.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)
OCT. 23...	24	1.5	0.1	0.0	45	22	20	74	5.5	3	--
JAN. 02...	28	5.5	--	.0	--	22	16	91	6.5	3	0
29...	43	12	--	.8	--	44	42	152	6.1	2	1
FEB. 27...	43	5.5	--	.2	--	37	30	131	6.6	2	0
MAR. 20...	24	6.5	--	.1	--	25	22	87	5.6	1	0
APR. 15...	28	5.5	.0	.4	66	31	25	97	6.6	1	8
MAY 22...	21	3.0	--	.0	--	21	19	65	6.0	3	9
JUNE 04...	27	2.8	.2	.6	62	28	25	90	6.3	3	14
JULY 01...	38	5.1	.1	.0	81	36	31	116	6.2	3	17
29...	63	9.5	.2	.0	123	55	42	200	6.9	5	22
SEPT. 05...	60	10	--	.9	--	52	35	214	7.2	4	15

03029500 CLARION RIVER AT COOKSBURG, PA.

LOCATION.--Lat 41°19'50", long 79°12'35", Forest County, at gaging station on left bank at downstream side of bridge on State Highway 36 at Cooksburg, 300 ft downstream from Toms Run and 5 miles upstream from Cather Run.

WAINAGE AREA.--807 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1962 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (Mn)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- (NA+K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
"CT. 24...	1600	5.2	0.02	0.00	10	3.0	4.3	1.2	--	10	3	32
JAN. 09...	600	--	--	--	15	5.2	--	--	8.1	14	0	46
29...	1000	--	--	--	11	5.5	--	--	8.7	5	0	43
FEB. 01...	5200	--	--	--	9.1	2.7	--	--	2.5	2	0	26
27...	460	--	--	--	12	5.2	--	--	15	14	0	51
MAR. 20...	2590	--	--	--	4.5	2.8	--	--	8.7	4	0	26
PR. 15...	928	6.5	.19	.00	18	4.3	8.0	1.2	--	18	0	44
JULY 01...	1290	5.8	.00	.00	11	3.5	5.0	.9	--	10	0	33
29...	410	4.1	.00	.00	19	4.3	10	1.7	--	17	0	51
EPT. 05...	330	--	--	--	18	4.3	--	--	13	20	0	49

DATE	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)
OCT. 24...	7.0	0.0	0.0	68	38	30	114	6.6	7	8
JAN. 09...	12	--	.2	--	59	48	173	6.9	9	1
29...	14	--	.8	--	50	46	166	6.3	5	0
FEB. 01...	7.0	--	.8	--	34	32	100	5.7	4	3
27...	14	--	.2	--	52	40	191	6.7	5	0
MAR. 20...	7.5	--	.4	--	23	19	94	7.0	1	1
APR. 15...	15	.1	.4	116	63	48	184	7.2	4	7
JULY 01...	9.0	.1	.6	80	42	34	127	6.7	3	20
29...	18	.1	.1	126	65	51	208	7.2	5	26
SEPT. 05...	16	--	.4	--	63	46	189	7.2	7	21

CLARION RIVER BASIN

03030500 CLARION RIVER NEAR PINEY, PA.

LOCATION.--Lat 41°11'33", long 79°26'25", Clarion County, 0.2 mile downstream from hydroelectric plant of Pennsylvania Electric Co., 2.2 miles northeast of Piney, 2.4 miles upstream from Piney Creek, and 3 miles southwest of Clarion.

DRAINAGE AREA.--951 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1968.

REMARKS.--Samples collected by Pennsylvania Electric Co. Records of specific conductance of daily samples available in district office at Harrisburg, Pa.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA+K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)
OCT. 03...	1800	6.4	0.02	0.00	11	3.1	4.3	1.8	--	6	0	40
JAN. 09...	730	--	--	--	16	6.5	--	--	11	3	0	63
FEB. 01...	7220	--	--	--	10	5.0	--	--	12	2	0	49
MAR. 05...	630	--	--	--	14	11	--	--	28	4	0	110
19...	3410	--	--	--	18	7.8	--	--	18	6	0	77
APR. 16...	882	5.2	.06	.00	14	4.8	6.0	1.2	--	5	0	48
JUNE 04...	A32	4.8	.00	.88	13	5.1	5.2	1.0	--	3	0	48
04...	B4200	4.8	.00	.90	13	5.0	4.8	.9	--	6	0	48
JULY 02...	1420	--	--	--	16	8.0	--	--	14	2	0	84
30...	423	4.6	.02	2.4	25	9.7	10	1.8	--	0	0	108
SEPT. 06...	630	--	--	--	29	11	--	--	20	2	0	121

DATE	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE- HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)	ALUM- INUM (AL)	ZINC (ZN)
OCT. 03...	3.5	0.2	0.0	86	41	36	124	6.3	6	10	--	--
JAN. 09...	16	--	.6	--	67	64	196	5.7	3	3	--	--
FEB. 01...	13	--	.4	--	46	44	169	5.1	11	3	--	--
MAR. 05...	16	--	.4	--	80	77	288	6.5	2	1	--	--
19...	22	--	.5	--	77	72	261	6.4	3	0	--	--
APR. 16...	10	.1	.3	102	55	51	163	6.5	1	7	--	0.09
JUNE 04...	9.0	.2	.7	106	54	51	159	6.3	2	15	--	--
04...	8.5	.2	.3	103	53	48	157	6.9	10	14	--	--
JULY 02...	10	--	.0	--	73	72	230	5.0	3	19	--	--
30...	16	.2	1.0	188	103	103	295	4.6	15	25	1.4	--
SEPT. 06...	24	--	.4	--	118	117	344	5.1	2	21	--	--

A SAMPLE COLLECTED AT 0800 (INSTANTANEOUS DISCHARGE MEASUREMENT).

B SAMPLE COLLECTED AT 1100 (INSTANTANEOUS DISCHARGE MEASUREMENT).

03036500 ALLEGHENY RIVER AT KITTANNING, PA.

LOCATION.--Lat 40°49'15", long 79°31'55", Armstrong County, at center of bridge on U.S. Highway 422 at Kittanning, 2,500 ft downstream from gaging station.

DRAINAGE AREA.--8,973 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1944 to June 1953, October 1956 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 303 micromhos Aug. 25; minimum daily, 127 micromhos Oct. 2.

Water temperatures: Maximum, 27.0°C Aug. 21, 22, 25-27; minimum, 1.0°C on several days during January and February.

Period of record:

Dissolved solids (1944-47, 1958-59): Maximum, 304 mg/l Oct. 11-20, 1946; minimum, 63 mg/l Mar. 1-10, 1945.

Hardness (1944-47, 1949-53, 1956-59): Maximum, 148 mg/l Sept. 11-20, 1952; minimum, 34 mg/l Feb. 21-28 and Mar. 1-10, 1951.

Specific conductance: Maximum daily, 580 micromhos Oct. 18, 1946; minimum daily, 76 micromhos Apr. 8, 9, 1947.

Water temperatures: Maximum, 30.0°C July 31 and Aug. 4, 1957; minimum, freezing point on many days during

winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA+K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)
OCT.											
01-10	31020	--	--	--	16	2.8	--	--	13	36	0
NOV.											
01-10	17940	--	--	--	17	4.8	--	--	9.4	34	0
DEC.											
01-10	26420	--	--	--	17	5.4	--	--	8.0	25	0
JAN.											
02-03,											
05-08,											
10...	14740	--	--	--	17	4.6	--	--	10	31	0
FEB.											
01-09	49830	--	--	--	13	4.3	--	--	6.9	16	0
MAR.											
01-10	4930	--	--	--	21	7.2	--	--	14	32	0
APR.											
01-10	25600	4.1	0.00	0.00	15	4.4	5.9	1.3	--	20	0
MAY											
01-10	5690	--	--	--	22	7.0	--	--	9.4	26	0
JUNE											
01-10	10600	--	--	--	17	5.8	--	--	12	28	0
JULY											
01-10	7560	--	--	--	20	5.3	--	--	11	40	0
AUG.											
01-10	3320	--	--	--	25	6.9	--	--	14	44	0
SEPT.											
02-10	3840	--	--	--	31	6.6	--	--	7.4	50	0
DATE	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)
OCT.											
01-10	30	14	--	0.3	--	52	22	155	7.1	5	14
NOV.											
01-10	32	15	--	.2	--	62	34	178	6.6	5	--
DEC.											
01-10	41	13	--	.9	--	65	44	181	7.1	2	--
JAN.											
02-03,											
05-08,											
10...	36	14	--	1.4	--	62	36	180	7.2	3	--
FEB.											
01-09	35	10	--	1.6	--	50	37	147	6.0	4	--
MAR.											
01-10	61	16	--	1.7	--	82	56	252	6.9	3	--
APR.											
01-10	39	10	0.1	1.0	97	56	39	163	7.1	2	--
MAY											
01-10	61	14	--	.0	--	84	63	244	7.2	3	--
JUNE											
01-10	50	12	--	.4	--	67	44	203	6.7	2	--
JULY											
01-10	39	15	--	1.2	--	72	39	204	7.4	9	--
AUG.											
01-10	57	18	--	.9	--	91	55	254	7.7	6	--
SEPT.											
02-10	43	24	--	.4	--	105	64	272	7.9	1	--

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	10.0	4.0	---	3.0	2.0	7.0	14.0	14.0	21.0	25.0	---
2	17.0	10.0	4.0	2.0	3.0	2.0	8.0	13.0	14.0	23.0	24.0	25.0
3	12.0	10.0	4.0	2.0	2.0	2.0	2.0	13.0	13.0	23.0	24.0	24.0
4	13.0	10.0	4.0	---	2.0	2.0	8.0	14.0	14.0	23.0	25.0	24.0
5	13.0	10.0	4.0	1.0	1.0	2.0	8.0	15.0	14.0	23.0	26.0	25.0
6	13.0	9.0	3.0	2.0	2.0	2.0	6.0	14.0	14.0	23.0	25.0	24.0
7	14.0	9.0	4.0	2.0	2.0	2.0	7.0	14.0	18.0	23.0	26.0	25.0
8	13.0	7.0	4.0	2.0	2.0	2.0	12.0	14.0	18.0	23.0	26.0	23.0
9	13.0	7.0	3.0	---	2.0	2.0	11.0	14.0	20.0	23.0	26.0	24.0
10	14.0	7.0	---	2.0	---	2.0	11.0	14.0	16.0	24.0	25.0	23.0
11	14.0	9.0	4.0	2.0	2.0	---	---	14.0	17.0	24.0	25.0	23.0
12	14.0	7.0	---	2.0	2.0	2.0	11.0	14.0	20.0	24.0	25.0	22.0
13	14.0	7.0	4.0	2.0	2.0	2.0	11.0	14.0	23.0	24.0	25.0	22.0
14	13.0	7.0	6.0	1.0	2.0	2.0	11.0	14.0	23.0	24.0	25.0	22.0
15	13.0	7.0	4.0	2.0	2.0	2.0	11.0	14.0	24.0	24.0	25.0	22.0
16	13.0	7.0	4.0	1.0	2.0	2.0	11.0	14.0	24.0	24.0	25.0	22.0
17	14.0	6.0	4.0	2.0	2.0	2.0	11.0	14.0	24.0	26.0	25.0	22.0
18	13.0	6.0	4.0	2.0	2.0	2.0	11.0	---	24.0	26.0	25.0	22.0
19	14.0	6.0	4.0	2.0	2.0	2.0	12.0	14.0	24.0	26.0	25.0	22.0
20	---	6.0	---	2.0	2.0	3.0	12.0	13.0	22.0	24.0	25.0	22.0
21	14.0	6.0	4.0	2.0	1.0	3.0	13.0	14.0	22.0	25.0	27.0	22.0
22	13.0	5.0	6.0	2.0	1.0	3.0	13.0	13.0	23.0	26.0	27.0	22.0
23	13.0	5.0	---	2.0	1.0	4.0	13.0	13.0	21.0	26.0	26.0	21.0
24	12.0	5.0	---	2.0	1.0	5.0	13.0	16.0	22.0	26.0	26.0	21.0
25	13.0	5.0	---	2.0	1.0	8.0	14.0	13.0	22.0	26.0	27.0	21.0
26	12.0	5.0	4.0	2.0	1.0	7.0	14.0	13.0	21.0	26.0	27.0	21.0
27	12.0	5.0	---	2.0	1.0	4.0	13.0	13.0	23.0	26.0	27.0	21.0
28	12.0	5.0	3.0	2.0	2.0	5.0	14.0	13.0	22.0	26.0	25.0	21.0
29	12.0	5.0	---	2.0	2.0	6.0	14.0	13.0	22.0	25.0	25.0	22.0
30	12.0	5.0	3.0	2.0	---	6.0	14.0	13.0	21.0	26.0	25.0	---
31	11.0	---	---	3.0	---	6.0	---	13.0	---	26.0	24.0	---
AVERAGE	13.0	7.0	---	2.0	2.0	3.0	11.0	13.5	20.0	24.5	25.5	22.5

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	169	167	157	---	171	218	165	247	197	212	254	---
2.....	127	178	168	181	151	232	169	243	197	221	251	---
3.....	155	175	169	187	151	232	160	222	200	208	247	---
4.....	141	184	179	---	132	234	163	245	205	216	240	---
5.....	144	192	192	181	135	252	163	234	214	192	240	---
6.....	142	178	182	177	138	261	161	241	202	197	249	---
7.....	149	180	181	177	148	269	155	262	214	197	262	---
8.....	151	180	185	178	147	260	151	260	209	205	272	---
9.....	161	174	181	---	155	264	156	250	198	202	256	---
10.....	164	173	---	178	---	281	158	244	203	203	255	---
11.....	188	180	---	182	162	269	168	239	206	197	271	---
12.....	173	180	---	180	166	267	160	254	213	202	275	---
13.....	159	193	165	180	173	241	171	232	217	195	279	---
14.....	170	188	160	191	193	232	179	191	219	197	280	---
15.....	176	167	158	182	200	234	184	182	212	210	275	---
16.....	190	152	159	172	202	232	183	164	219	212	275	---
17.....	181	161	152	168	210	232	184	162	223	216	262	---
18.....	189	167	164	184	215	228	195	151	225	216	261	---
19.....	192	176	172	188	218	192	186	164	230	213	266	---
20.....	205	188	---	182	222	178	206	154	268	233	254	---
21.....	216	178	200	189	226	171	205	158	230	249	270	---
22.....	165	172	---	187	236	163	213	150	221	239	262	---
23.....	149	174	---	189	245	163	217	155	185	237	254	---
24.....	162	185	---	203	239	157	224	160	195	230	285	---
25.....	166	161	---	217	233	154	226	162	179	233	303	---
26.....	170	159	174	225	221	151	222	174	189	235	281	---
27.....	196	156	---	226	214	162	243	172	189	227	271	---
28.....	182	157	186	225	210	165	243	176	192	262	267	---
29.....	174	157	---	243	218	156	239	183	223	256	256	---
30.....	167	154	192	241	---	155	237	197	229	261	254	---
31.....	163	---	190	219	---	157	---	198	---	261	247	---
AVERAGE	168	172	---	194	190	211	189	200	210	220	263	---

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LOCATION.--Lat 40°25'10", long 79°01'40", Westmoreland County, temperature recorder at gaging station on left bank at highway bridge on State Highway 56 at Seward, 2.0 miles downstream from Findley Run and 9 miles northwest of Johnstown.

REMARKS.--Records furnished by the Pennsylvania Electric Co.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	MEAN DIS- CHARGE	SILICA (SI02)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
DATE	(CFS)											
FEB.. 08..	1360	--	--	--	35	13	--	--	0	0	200	11
MAY 06..	668	--	--	--	52	18	--	--	0	0	263	16
JULY 30..	285	14	0.00	3.1	89	29	17	7.4	0	0	399	18

DATE	FLUID- RIDE (F)	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEMP- PERA- TURE (DEG C)	TOTAL ACIDITY AS H ⁺	ALUMI- NUM (AL)
FEB. 08...	--	0.4	--	141	141	445	3.7	1	2	0.8	--
MAY 06...	--	.6	--	204	204	608	3.9	25	15	.8	--
JULY 30...	0.5	2.1	625	342	342	897	3.6	5	24	1.2	2.0

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

[illegible]

KISKIMINETAS RIVER BASIN

03048500 KISKIMINETAS RIVER AT LEECHBURG (VANDERGRIFT), PA.

LOCATION.--Lat 40°36'20", long 79°33'15", Armstrong County, at raw-water intake of West Leechburg plant of Allegheny-Ludlum Steel Corp., 0.2 mile downstream from Brady Run and 6.7 miles downstream from gaging station at Vandergrift.

DRAINAGE AREA.--1,860 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1946 to September 1951, October 1958 to July 1959, October 1959 to September 1968.

Water temperatures: October 1946 to September 1951, October 1958 to July 1959, October 1959 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 1,730 micromhos Sept. 7; minimum daily, 286 micromhos May 27.

Water temperatures: Maximum, 31.0°C Aug. 23, 25, 26; minimum, freezing point Jan. 8.

Period of record:

Dissolved solids (1946-47, 1959-62): Maximum, 945 mg/l Aug. 27 to Sept. 12, 1960; minimum, 141 mg/l Mar. 30 to Apr. 8, 1960.

Hardness (1946-47, 1959-62): Maximum, 514 mg/l Oct. 1-10, 1946; minimum, 74 mg/l Mar. 30 to Apr. 8, 1960.

Specific conductance: Maximum daily, 5,420 micromhos Aug. 12, 1951; minimum daily, 175 micromhos July 22, 1950.

Water temperatures: Maximum, 32.0°C July 25, 1950; minimum, freezing point on many days during winter periods.

REMARKS.--Records of discharge are based on records for Kiskiminetas River at Vandergrift.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CF5)	SILICA (SI02)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MNE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
OCT. 01-10	1530	--	--	--	--	--	--	--	0	0	267
NOV. 01-10	1610	--	--	--	48	16	--	--	0	0	256
DEC. 01-10	3510	--	--	--	31	12	--	--	0	0	159
JAN. 01-08, 10...	2470	--	--	--	48	17	--	--	0	0	278
FEB. 01, 03, 08-10	8970	--	--	--	27	11	--	--	0	0	134
MAR. 01-10	970	--	--	--	60	24	--	--	0	0	416
APR. 01-10	5560	9.5	0.04	0.78	33	11	12	2.2	0	0	160
MAY 01-06, 08-10	1330	--	--	--	54	18	--	--	0	0	316
JUNE 01-10	7100	--	--	--	28	9.5	--	--	0	0	140
JULY 01-10	745	--	--	--	78	28	--	--	0	0	443
AUG. 01-10	735	--	--	--	79	26	--	--	0	0	451
SEPT. 01-02, 06-10	526	--	--	--	90	28	--	--	0	0	538

DATE	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)	TOTAL ACIDITY AS H ⁺
OCT. 01-10	11	--	2.5	--	196	196	712	3.4	2	17	1.2
NOV. 01-10	14	--	1.9	--	186	186	614	3.7	2	--	.9
DEC. 01-10	14	--	1.4	--	127	127	461	3.8	2	--	.7
JAN. 01-08, 10...	16	--	.7	--	190	190	715	3.4	2	--	1.4
FEB. 01, 03, 08-10	13	--	2.3	--	113	113	390	3.9	2	--	.4
MAR. 01-10	24	--	2.7	--	248	248	1050	3.3	2	--	2.1
APR. 01-10	12	0.1	.9	254	128	128	462	3.7	1	--	.7
MAY 01-06, 08-10	16	--	7.5	--	209	209	735	3.5	5	--	1.4
JUNE 01-10	9.0	--	.8	--	109	109	409	3.7	1	--	.9
JULY 01-10	28	--	1.3	--	310	310	1090	3.1	1	--	2.2
AUG. 01-10	20	--	1.0	--	304	304	1080	3.3	3	--	2.0
SEPT. 01-02, 06-10	25	--	1.0	--	340	340	1350	3.2	3	--	3.0

KISKIMINETAS RIVER BASIN

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03048500 KISKIMINETAS RIVER AT LEESBURG (VANDERGRIFT), PA.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	957	489	486	637	470	954	376	750	308	1060	1020	1070
2.....	720	492	529	674	--	1060	402	758	348	973	852	1180
3.....	518	541	559	698	321	1080	416	772	376	966	1430	--
4.....	466	581	534	696	--	1080	449	772	399	992	1160	--
5.....	497	664	473	721	--	1110	441	770	387	1020	1070	--
6.....	594	676	440	721	--	1090	460	764	404	1110	1060	1200
7.....	665	555	377	788	--	1100	490	--	417	1250	1020	1730
8.....	769	667	406	826	308	1080	521	784	447	1210	1020	1660
9.....	876	673	447	--	377	1080	517	711	488	1260	1120	1470
10.....	944	748	440	839	491	1010	550	703	542	1270	1000	1360
11.....	975	783	426	931	523	870	586	746	582	1270	1250	1310
12.....	1030	812	431	908	659	776	633	707	631	1540	1190	--
13.....	1040	820	446	955	715	595	580	709	693	1320	1150	1470
14.....	1070	843	433	992	704	418	719	617	686	1410	1150	1310
15.....	1120	852	422	941	734	402	743	495	755	--	1060	1190
16.....	1120	866	480	--	712	428	766	510	788	1190	1070	1090
17.....	1100	807	507	966	743	390	793	467	773	1240	1100	1180
18.....	1120	895	537	1050	802	442	793	353	761	1010	1050	1190
19.....	975	815	559	1020	832	415	814	383	763	1080	1060	1130
20.....	1060	693	551	941	855	346	822	349	775	1190	1140	1140
21.....	860	575	565	977	907	307	832	321	859	1260	1040	1190
22.....	804	--	583	--	892	310	862	307	904	1310	1120	1230
23.....	574	489	610	919	971	337	903	316	959	1350	1090	1260
24.....	479	516	607	877	989	336	895	386	921	1390	--	1310
25.....	505	475	--	--	1010	338	873	406	1020	1360	1100	1360
26.....	561	473	604	682	971	336	825	--	1040	1350	1110	1360
27.....	623	365	617	--	1010	327	795	286	--	1050	1410	1390
28.....	683	356	595	609	1020	314	717	345	1080	1190	--	1460
29.....	633	378	604	--	1030	309	660	301	1120	1140	1050	1460
30.....	404	423	632	--	--	319	682	304	1120	1040	1040	1460
31.....	405	--	663	728	--	360	--	298	--	946	1090	--
AVERAGE	777	635	519	837	751	623	663	530	713	1200	1090	1310

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	12.0	3.0	2.0	7.0	1.0	10.0	16.0	17.0	27.0	27.0	23.0
2	16.0	13.0	4.0	1.0	---	2.0	11.0	17.0	17.0	27.0	26.0	22.0
3	18.0	11.0	6.0	3.0	4.0	2.0	12.0	18.0	18.0	28.0	27.0	---
4	18.0	12.0	5.0	3.0	---	2.0	14.0	19.0	18.0	20.0	27.0	---
5	19.0	12.0	5.0	3.0	---	3.0	14.0	17.0	19.0	25.0	28.0	---
6	17.0	9.0	7.0	2.0	---	3.0	13.0	17.0	20.0	26.0	29.0	24.0
7	19.0	8.0	7.0	3.0	---	3.0	13.0	---	18.0	26.0	29.0	26.0
8	17.0	6.0	6.0	0	6.0	4.0	14.0	17.0	19.0	27.0	29.0	24.0
9	18.0	8.0	7.0	---	5.0	5.0	15.0	17.0	23.0	27.0	29.0	23.0
10	17.0	6.0	4.0	3.0	6.0	7.0	14.0	19.0	24.0	27.0	---	24.0
11	19.0	8.0	7.0	2.0	2.0	7.0	14.0	19.0	27.0	27.0	30.0	22.0
12	14.0	9.0	8.0	1.0	2.0	6.0	14.0	23.0	24.0	27.0	24.0	---
13	13.0	9.0	7.0	2.0	3.0	4.0	16.0	18.0	24.0	28.0	26.0	22.0
14	14.0	9.0	8.0	2.0	2.0	4.0	17.0	18.0	26.0	29.0	26.0	20.0
15	14.0	8.0	7.0	2.0	3.0	6.0	16.0	19.0	26.0	---	27.0	22.0
16	16.0	6.0	7.0	---	3.0	6.0	14.0	17.0	26.0	30.0	28.0	23.0
17	17.0	7.0	7.0	2.0	3.0	7.0	16.0	20.0	22.0	29.0	28.0	23.0
18	17.0	7.0	8.0	2.0	3.0	7.0	16.0	21.0	21.0	30.0	28.0	23.0
19	16.0	7.0	9.0	3.0	3.0	6.0	17.0	18.0	23.0	30.0	28.0	23.0
20	11.0	7.0	6.0	2.0	3.0	8.0	17.0	20.0	22.0	29.0	28.0	21.0
21	15.0	8.0	6.0	3.0	1.0	9.0	18.0	16.0	24.0	28.0	29.0	26.0
22	14.0	---	6.0	---	3.0	10.0	18.0	14.0	23.0	29.0	29.0	26.0
23	12.0	6.0	4.0	3.0	3.0	9.0	19.0	14.0	24.0	29.0	31.0	24.0
24	12.0	7.0	4.0	2.0	3.0	9.0	18.0	15.0	24.0	30.0	---	26.0
25	13.0	7.0	---	---	5.0	9.0	14.0	14.0	23.0	29.0	31.0	23.0
26	11.0	7.0	2.0	4.0	3.0	9.0	14.0	---	24.0	29.0	31.0	26.0
27	10.0	7.0	2.0	---	3.0	10.0	16.0	17.0	26.0	29.0	---	23.0
28	11.0	5.0	1.0	5.0	3.0	11.0	14.0	15.0	22.0	29.0	---	26.0
29	10.0	6.0	3.0	2.0	4.0	11.0	16.0	16.0	24.0	27.0	30.0	26.0
30	10.0	6.0	3.0	---	---	10.0	17.0	16.0	27.0	26.0	30.0	26.0
31	10.0	---	3.0	8.0	---	11.0	---	15.0	---	26.0	30.0	---
AVERAGE	14.5	8.0	5.5	2.5	3.5	6.5	15.0	17.0	22.5	27.5	28.5	23.5

KISKIMINETAS RIVER BASIN

03048500 KISKIMINETAS RIVER AT LEESBURG (VANDERGRIFT), PA.--Continued

PH (UNITS), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	3.4	3.8	--	3.6	3.6	3.3	4.0	3.4	4.1	3.4	3.4	3.4
2.....	3.6	4.0	--	3.5	--	3.2	3.8	3.5	3.9	3.4	3.6	3.4
3.....	3.7	3.8	--	3.4	4.2	3.2	4.0	3.5	3.8	3.4	3.2	--
4.....	3.8	3.8	--	3.5	--	3.2	3.8	3.5	3.8	3.3	3.4	--
5.....	3.7	3.7	--	3.4	--	3.2	3.8	3.6	4.0	3.3	--	--
6.....	3.6	3.6	--	3.4	--	3.2	3.8	3.5	3.8	3.3	--	3.3
7.....	3.6	3.7	--	3.4	--	3.2	3.8	--	3.8	3.4	--	3.6
8.....	3.5	4.0	--	3.4	4.4	3.2	3.7	3.4	3.8	3.3	--	3.4
9.....	3.4	3.9	--	--	4.3	3.3	3.8	3.5	3.7	3.2	--	3.4
10.....	3.4	3.7	--	3.4	3.7	3.3	3.7	3.5	3.6	3.3	--	3.6
11.....	3.5	3.7	--	3.4	4.1	3.4	3.7	3.4	3.6	3.4	--	3.4
12.....	3.4	3.6	--	3.4	3.5	3.6	3.6	3.4	3.8	3.2	--	--
13.....	3.4	3.6	--	3.3	3.5	3.6	4.3	3.5	3.6	3.4	--	3.6
14.....	3.5	3.7	--	3.3	3.5	4.0	3.6	3.5	3.4	3.3	--	3.6
15.....	3.4	3.6	--	3.4	3.6	3.9	3.5	3.5	3.4	--	--	3.6
16.....	3.5	3.5	--	--	3.6	3.9	3.4	3.6	3.5	3.4	--	3.5
17.....	3.5	3.8	--	3.4	3.5	4.0	3.4	3.7	3.4	3.4	--	3.5
18.....	3.5	3.4	--	3.2	3.4	3.8	3.4	4.0	3.5	3.4	--	3.4
19.....	3.6	3.5	--	3.4	3.4	3.9	3.4	3.6	3.6	3.6	--	3.3
20.....	3.4	3.6	--	3.4	3.4	4.0	3.4	3.8	3.4	3.4	--	3.2
21.....	3.6	4.0	--	3.5	3.3	4.1	3.4	4.0	3.4	3.4	--	3.3
22.....	3.6	--	--	--	3.4	4.1	3.4	4.2	3.3	3.4	--	3.2
23.....	3.9	3.9	--	3.4	3.3	3.9	3.4	4.2	3.3	3.4	--	3.4
24.....	4.0	3.8	--	3.4	3.2	4.0	3.4	3.8	3.3	3.4	--	3.4
25.....	4.0	3.9	--	--	3.2	4.0	3.4	3.8	3.3	3.4	--	3.2
26.....	3.8	3.9	--	3.7	3.4	4.0	3.5	--	3.2	3.4	--	3.2
27.....	3.7	4.2	--	--	3.2	4.0	3.4	4.3	3.3	3.3	--	3.2
28.....	3.8	4.2	3.6	3.7	3.2	4.1	3.6	3.9	3.2	3.4	--	3.4
29.....	3.8	4.2	3.6	--	3.2	4.2	3.6	4.0	3.3	3.4	--	3.4
30.....	4.2	4.0	3.6	--	--	4.2	3.6	4.0	3.3	3.6	--	3.4
31.....	4.2	--	3.5	3.4	--	3.9	--	4.1	--	3.5	--	--

MONONGAHELA RIVER BASIN

03050400 TYGART VALLEY RIVER AT ELKINS, W. VA.

LOCATION.--Lat 38°55'00", long 79°50'43", Randolph County, at city waterplant at Elkins, 2.5 miles upstream from gaging station.

DRAINAGE AREA.--268 sq mi upstream from waterplant; 272 sq mi upstream from gaging station.

PERIOD OF RECORD.--Water temperatures: January 1947 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 8, 20-25; minimum, 1.0°C on many days during January to March.

Period of record:

Water temperatures: Maximum, 33.0°C July 22, 1952; minimum, freezing point on many days during winter period most years.

REMARKS.--No appreciable inflow between waterplant and gaging station except during periods of heavy local rains. During flood periods part of the flow is diverted around the waterplant in a flood by-pass channel.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENTS)

	DAY																															AVER- AGE	
MONTH	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		
OCTOBER..	14	14	16	17	17	16	16	17	15	14	13	13	12	13	15	16	14	11	10	11	11	11	12	11	11	10	9	9	10	12			
NOVEMBER.	11	12	13	11	8	6	6	5	5	7	8	8	8	6	4	4	4	4	5	7	5	4	6	7	6	3	3	2	1	1	4		
DECEMBER.	2	4	5	5	6	6	6	6	6	6	7	8	7	6	5	4	4	4	6	7	8	4	3	3	4	3	2	1	1	1	4		
JANUARY..	1	1	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	2	2	3	4	1	
FEBRUARY.	4	4	4	3	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	2	2	1	2	2	1	--	--	1	
MARCH....	1	1	1	2	2	2	1	1	2	2	3	6	4	3	4	6	7	7	7	9	9	11	7	5	7	8	10	9	11	13	14	5	
APRIL....	12	10	9	9	9	10	10	13	11	11	14	16	13	13	14	14	14	16	17	18	18	16	13	13	11	13	13	13	--	--	12		
MAY.....	13	13	14	16	16	16	16	17	16	16	17	18	19	17	16	16	16	14	14	13	14	13	12	15	16	14	14	14	13	13	15	15	
JUNE.....	14	16	16	17	18	20	21	22	23	23	24	24	20	21	21	22	21	21	21	21	22	21	22	22	23	24	24	22	22	23	--	--	21
JULY.....	23	24	24	23	23	23	23	23	23	24	24	24	24	24	24	25	26	26	26	25	24	24	24	26	26	24	24	24	23	24	24	24	
AUGUST...	23	24	24	24	26	24	27	26	26	24	23	23	23	24	25	26	26	27	27	27	27	27	27	27	25	23	22	21	21	21	21	24	
SEPTEMBER	21	21	20	21	21	21	21	20	21	20	18	19	19	19	19	20	20	20	19	19	20	21	21	21	21	21	20	19	19	17	--	19	

03054500 TYGART VALLEY RIVER AT PHILIPPI, W. VA.

LOCATION.--Lat 39°09'00", long 80°02'25", Barbour County, at Philippi, 0.2 mile downstream from Anglins Run and 5.0 miles downstream from Buckhannon River.

DRAINAGE AREA.--916 sq mi.

PERIOD OF RECORD.--Sediment records: May to September 1968.

REMARKS.--Records of daily discharge for the water year 1968 are published in Part 1 of this report.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, MAY TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)		DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	
				DISCHARGE (MG/L)	TRATION (MG/L)					DISCHARGE (MG/L)	TRATION (MG/L)
MAY 1, 1968	1210	410	0	0		JUL 17.....	1210	76	3		.62
MAY 25.....	1030	15100	89	3630		AUG 20.....	1305	241	12		7.8
JUN 10.....	1335	674	5	9.1							

LOCATION.--Lat 39°25'20", long 80°16'40", Harrison County, 150 ft downstream from highway bridge at Enterprise and 0.75 mile upstream from Binghamon Creek.

PERIOD OF RECORD.--Sediment records: May to September 1968.

REMARKS.--Records of daily discharge for the water year 1968 are published in Part 1 of this report.

DATE		TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE		TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
MAY	3, 1968	1350	290	20	16	AUG	16,	1130	702	30	57
MAY	31,	1730	1990	198	1060	SEP	26,	0950	92	11	2.7
JUL	11,	1350	113	7.5	2.3						

LOCATION.--Lat 39°20'50", long 79°40'00", Preston County, 50 ft downstream from Baltimore and Ohio Railroad bridge at Rowlesburg, and 300 ft upstream from Saltlick Creek.

PERIOD OF RECORD.--April to September 1968.

REMARKS.--Records of daily discharge for the water year 1968 are published in Part 1 of this report.

		SUSPENDED SEDIMENT				SUSPENDED SEDIMENT			
DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	DISCHARGE (TONS/DAY)
APR 2, 1968	1300	4990	8	108	JUN 27.....	1600	490	1	1.3
MAY 21.....	1250	2850	1.5	12	AUG 9.....	1410	1020	5.5	15
MAY 25.....	1250	16300	53	2330	SEP 19.....	1300	122	3.5	1.2

LOCATION.--Lat 39°43'15", long 79°51'20", Fayette County, at the Lake Lynn hydroelectric plant of the West Penn Power Co., at Lake Lynn 3 miles upstream from mouth.

PERIOD OF RECORD.--Water temperatures: October 1948 to September 1968.

Water temperatures: Maximum, 28.0°C on several days in July and August; minimum, 1.0°C on several days in January.

Water temperatures: Maximum, 30.0°C July 28, 29, 1964; minimum, 1.0°C on several days during winter periods most years.

REMARKS.--Records furnished by the West Penn Power Co.

[illegible]

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD.

LOCATION.--Lat 39°39'13", long 79°24'31", Garrett County, temperature recorder at gaging station on left bank 0.7 mile upstream from bridge on State Highway 42 at Friendsville, and 1.5 miles upstream from Bear Creek.

DRAINAGE AREA.--295 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum recorded, 28.0°C July 15; minimum, freezing point on many days during December to February.

Period of record:

Water temperatures: Maximum recorded, 28.0°C July 22, 27, 28, 1964, July 4, 1966, July 15, 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Records fair, probably because of friction in recorder. No temperature record August 11-13, 21-30.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968												
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	10.0	9.0	8.0	2.0	1.0	0	0	3.0	2.0	1.0	1.0
2	13.0	9.0	9.0	4.0	1.0	1.0	0	0	3.0	3.0	1.0	1.0
3	10.0	12.0	9.0	8.0	2.0	1.0	0	0	3.0	2.0	1.0	1.0
4	16.0	13.0	9.0	6.0	2.0	1.0	0	0	2.0	2.0	1.0	1.0
5	17.0	14.0	6.0	3.0	3.0	2.0	0	0	2.0	1.0	1.0	1.0
6	16.0	13.0	4.0	3.0	3.0	3.0	0	0	2.0	1.0	1.0	1.0
7	13.0	11.0	4.0	3.0	4.0	3.0	0	0	2.0	1.0	1.0	1.0
8	13.0	11.0	4.0	3.0	4.0	4.0	0	0	2.0	1.0	2.0	1.0
9	13.0	12.0	6.0	4.0	4.0	3.0	0	0	1.0	1.0	4.0	2.0
10	13.0	12.0	5.0	4.0	4.0	3.0	0	0	1.0	0	4.0	2.0
11	12.0	10.0	7.0	6.0	3.0	3.0	0	0	0	0	2.0	2.0
12	11.0	9.0	8.0	6.0	3.0	3.0	0	0	0	0	2.0	1.0
13	11.0	6.0	6.0	5.0	4.0	3.0	0	0	0	0	2.0	2.0
14	12.0	11.0	6.0	6.0	4.0	4.0	0	0	0	0	3.0	1.0
15	12.0	9.0	4.0	1.0	4.0	2.0	0	0	0	0	3.0	2.0
16	13.0	11.0	3.0	1.0	2.0	1.0	0	0	0	0	4.0	3.0
17	13.0	12.0	4.0	3.0	1.0	0	0	0	0	0	4.0	3.0
18	12.0	9.0	4.0	3.0	3.0	1.0	0	0	0	0	5.0	3.0
19	9.0	8.0	3.0	2.0	4.0	3.0	0	0	0	0	6.0	4.0
20	9.0	6.0	3.0	2.0	3.0	3.0	0	0	0	0	7.0	5.0
21	3.0	7.0	3.0	3.0	4.0	3.0	0	0	1.0	0	8.0	6.0
22	7.0	6.0	4.0	3.0	4.0	3.0	0	0	1.0	1.0	9.0	7.0
23	8.0	6.0	4.0	3.0	3.0	1.0	0	0	1.0	1.0	9.0	5.0
24	9.0	7.0	3.0	2.0	1.0	0	0	0	1.0	1.0	5.0	4.0
25	9.0	8.0	3.0	3.0	1.0	0	1.0	0	1.0	1.0	6.0	4.0
26	8.0	7.0	4.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0	5.0
27	8.0	6.0	4.0	3.0	1.0	0	1.0	1.0	1.0	1.0	9.0	7.0
28	8.0	5.0	3.0	2.0	1.0	0	1.0	1.0	1.0	1.0	10.0	7.0
29	5.0	4.0	2.0	1.0	0	0	1.0	1.0	1.0	1.0	12.0	8.0
30	8.0	4.0	2.0	0	0	0	1.0	1.0	1.0	1.0	9.0	9.0
31	9.0	7.0	---	---	0	0	2.0	1.0	---	---	12.0	9.0
MONTH	17.0	4.0	9.0	0	4.0	0	2.0	0	3.0	0	12.0	1.0
SEPTEMBER												
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	9.0	12.0	9.0	14.0	12.0	27.0	22.0	23.0	19.0	20.0	17.0
2	9.0	8.0	13.0	10.0	14.0	14.0	24.0	23.0	22.0	19.0	21.0	18.0
3	9.0	7.0	16.0	12.0	16.0	14.0	22.0	19.0	22.0	19.0	21.0	17.0
4	11.0	9.0	14.0	12.0	16.0	13.0	22.0	17.0	24.0	21.0	23.0	19.0
5	11.0	8.0	13.0	11.0	17.0	13.0	22.0	17.0	23.0	21.0	22.0	20.0
6	9.0	7.0	12.0	10.0	18.0	15.0	21.0	17.0	26.0	19.0	22.0	19.0
7	11.0	8.0	12.0	9.0	20.0	16.0	23.0	17.0	23.0	21.0	21.0	18.0
8	12.0	11.0	14.0	11.0	21.0	16.0	24.0	18.0	24.0	19.0	22.0	18.0
9	13.0	10.0	14.0	13.0	21.0	18.0	22.0	19.0	23.0	21.0	22.0	18.0
10	11.0	9.0	16.0	13.0	22.0	18.0	23.0	18.0	22.0	21.0	21.0	19.0
11	12.0	8.0	14.0	14.0	21.0	13.0	21.0	19.0	---	---	20.0	18.0
12	12.0	8.0	14.0	14.0	19.0	17.0	23.0	18.0	---	---	18.0	17.0
13	13.0	9.0	16.0	13.0	18.0	16.0	24.0	19.0	---	---	18.0	16.0
14	13.0	11.0	14.0	13.0	17.0	14.0	26.0	21.0	21.0	19.0	21.0	17.0
15	13.0	10.0	14.0	12.0	19.0	16.0	28.0	22.0	23.0	19.0	21.0	17.0
16	11.0	8.0	15.0	14.0	19.0	18.0	24.0	21.0	23.0	20.0	22.0	18.0
17	12.0	9.0	16.0	14.0	18.0	17.0	24.0	19.0	24.0	20.0	20.0	18.0
18	14.0	11.0	16.0	13.0	18.0	15.0	25.0	20.0	26.0	22.0	21.0	17.0
19	14.0	14.0	13.0	12.0	19.0	17.0	22.0	19.0	27.0	23.0	19.0	18.0
20	14.0	12.0	12.0	11.0	19.0	17.0	22.0	17.0	26.0	21.0	21.0	17.0
21	16.0	12.0	12.0	11.0	19.0	15.0	24.0	18.0	---	---	21.0	17.0
22	16.0	14.0	12.0	10.0	21.0	17.0	26.0	20.0	---	---	22.0	18.0
23	13.0	14.0	12.0	11.0	24.0	19.0	24.0	21.0	---	---	22.0	19.0
24	15.0	12.0	12.0	11.0	24.0	20.0	24.0	18.0	---	---	23.0	19.0
25	12.0	9.0	13.0	12.0	22.0	19.0	23.0	21.0	---	---	22.0	19.0
26	12.0	8.0	14.0	13.0	22.0	13.0	23.0	14.0	---	---	21.0	19.0
27	11.0	10.0	14.0	11.0	22.0	18.0	23.0	20.0	---	---	19.0	16.0
28	11.0	9.0	12.0	11.0	19.0	17.0	26.0	22.0	---	---	18.0	15.0
29	11.0	11.0	14.0	11.0	21.0	15.0	24.0	20.0	---	---	18.0	15.0
30	11.0	10.0	14.0	13.0	26.0	20.0	22.0	18.0	---	---	17.0	13.0
31	---	---	13.0	12.0	---	---	22.0	19.0	21.0	17.0	---	---
MONTH	16.0	7.0	16.0	9.0	26.0	12.0	28.0	17.0	---	---	23.0	13.0

MONONGAHELA RIVER BASIN

37

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD.

LOCATION.--Lat 39°42'08", long 79°08'12", Garrett County, at gaging station on left bank at downstream side of highway bridge, 0.3 mile upstream from Slaubough Run, 0.7 mile downstream from U.S. Highway 40, and 1.0 mile north-east of Grantsville.

DRAINAGE AREA.--62.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: August 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SI02)	TOTAL IRON (FE)	MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)
OCT. 17....	6.6	3.5	.27	.20	28	7.7	12	2.4	36	0
JAN. 10....	63	4.6	.11	.23	10	3.4	4.0	1.1	9	0
FEB. 07....	103	4.4	.17	.14	8.4	2.5	3.4	.8	6	0
MAR. 18....	420	3.8	.27	.20	6.7	1.9	3.3	1.0	5	0
APR. 04....	115	3.6	.19	.15	7.6	2.1	3.3	.8	7	0
MAY 06....	101	2.1	.12	.13	8.7	2.4	3.8	1.9	10	0
21....	249	2.8	.21	.15	8.3	2.1	4.6	.8	10	0
JUNE 20....	54	3.9	--	--	11	2.8	4.2	1.2	13	0
JULY 24....	7.6	2.9	.71	.49	20	5.0	4.9	2.9	33	0
SEPT. 04....	4.8	2.3	--	--	29	8.3	9.6	4.5	51	0
DATE	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS)	HARD- NESS (CA,MG)	NUN- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
OCT. 17....	62	24	.0	1.3	159	102	72	274	7.1	1
JAN. 10....	27	8.3	.1	2.4	65	39	32	120	6.6	0
FEB. 07....	21	6.7	.1	2.3	53	32	27	92	6.5	3
MAR. 18....	18	5.6	.1	2.1	44	25	21	77	6.0	5
APR. 04....	19	6.2	.1	1.3	47	28	22	85	7.1	2
MAY 06....	21	6.1	.1	2.4	54	32	24	90	6.1	5
21....	19	8.0	.1	1.7	52	29	21	90	6.8	3
JUNE 20....	27	7.8	.1	2.1	66	39	29	112	7.3	5
JULY 24....	41	9.0	.2	2.5	105	71	44	183	7.8	5
SEPT. 04....	61	18	.2	6.2	164	107	65	286	7.6	5

03082500 YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA.

LOCATION.--Lat 40°01'05", long 79°35'40", Fayette County, on left bank at downstream side of Crawford Avenue Bridge at Conneltsville, 1.2 miles upstream from Mounts Creek and at mile 44.0.

DRAINAGE AREA.--1,326 sq mi.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	MEAN DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MNN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
DATE												
NOV. 17...	1300	--	--	--	11	3.0	--	--	4.1	9	0	31
DEC. 27...	1160	--	--	--	14	4.4	--	--	4.4	4	0	45
PR. 09...	1930	5.0	0.06	0.00	13	2.8	4.8	1.2	--	12	0	32
MAY 14...	3140	--	--	--	10	2.2	--	--	5.1	9	0	29
JUNE 19...	1380	5.8	.00	.32	16	5.0	3.5	1.1	--	7	0	54
JULY 08...	817	4.8	.00	.17	13	3.5	1.8	1.0	--	5	0	43
25...	709	4.7	.00	.00	9.0	2.8	4.8	2.6	--	8	0	34
AUG. 28..A	835	--	--	--	10	2.6	--	--	2.5	10	0	25
28..B	835	--	--	--	14	2.4	--	--	11	29	0	16
	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR	TEM- PERA- TURE (DEG C)	ZINC (ZN)	
DATE												
NOV. 17...	6.0	--	0.7	--	40	33	117	6.6	8	7	--	
DEC. 27...	7.5	--	2.1	--	53	50	143	6.4	3	1	--	
APR. 09...	9.0	0.0	1.9	78	44	34	131	6.9	1	8	0.21	
MAY 14...	5.0	--	.8	--	34	27	98	6.3	5	14	--	
JUNE 19...	6.1	.1	1.2	110	61	55	157	6.6	5	17	--	
JULY 08...	3.0	.1	1.7	86	47	43	127	6.2	1	25	--	
25...	4.1	.1	1.7	72	34	28	115	6.6	2	22	--	
AUG. 28..A	4.0	--	1.8	--	36	28	94	6.8	4	17	--	
28..B	20	--	1.4	--	45	21	156	7.4	1	17	--	

A LEFT.

B CENTER AND RIGHT.

03086060 OHIO RIVER AT SOUTH HEIGHTS, PA.

LOCATION.--Lat 40°34'12", long 80°13'47", Beaver County, on left bank at intake line to Ohio River Valley Water Sanitation Commission (ORSANCO) monitor station at Duquesne Powerplant at South Heights, 1.6 miles upstream from Ambridge-Woodlawn Bridge, and at river mile 15.2.

DRAINAGE AREA.--19,520 sq mi (approximately).

PERIOD OF RECORD.--Chemical analyses: July 1963 to December 1965, October 1967 to September 1968.
Water temperatures: July 1963 to December 1965, October 1967 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 697 micromhos Aug. 15; minimum daily, 200 micromhos Dec. 17.
Water temperatures: Maximum, 29.0°C Aug. 9, 21-26; minimum, freezing point Jan. 2, 5-9, 11-15, 17.

Period of record:

Specific conductance: Maximum daily, 828 micromhos Oct. 12, 1963; minimum daily, 142 micromhos Mar. 8, 1964.
Water temperatures: Maximum, 29.0°C July 25, 26, 1964, Aug. 9, 21-26, 1968; minimum, freezing point Jan. 31 to Feb. 2, Feb. 4, 1965, Jan. 2, 5-9, 11-15, 17, 1968.

REMARKS.--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. Samples for iron and manganese were filtered clear when collected. Records of discharge are given for Ohio River at Sewickley (drainage area 19,500 sq mi, approximately).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)	FLUO- RIDE (F)
OCT.								
05...	40300	.69	.33	25	0	58	11	.4
20...	30300	.44	.62	6	0	136	18	.3
26...	40900	.67	.42	18	0	88	14	.2
NOV.								
02...	28400	1.3	.31	18	0	70	16	.1
21...	38200	1.4	.26	16	0	83	14	.0
26...	62700	--	--	4	0	111	12	.0
DEC.								
04...	66800	3.3	.34	--	--	102	14	--
07...	53100	1.4	.20	--	--	77	9.0	--
17...	39800	--	--	--	--	62	10	--
JAN.								
02...	25000	.90	.79	--	--	81	--	--
12...	22400	2.3	.62	--	--	100	--	--
28...	30900	1.2	.63	--	--	128	--	--
FEB.								
05...	83900	2.4	.25	--	--	74	10	--
14...	22100	1.2	.28	--	--	80	14	--
29...	11000	1.9	.53	--	--	122	19	--
MAR.								
10...	23300	--	--	--	--	174	--	--
17...	67100	--	--	--	--	85	--	--
21...	63000	1.9	.37	--	--	59	--	--
APR.								
01...	48000	.80	.27	--	--	74	--	--
17...	18100	.26	.30	--	--	94	--	--
28...	15200	.40	.30	--	--	136	--	--
MAY								
10...	13800	.29	.25	--	--	150	--	--
19...	77700	--	--	--	--	117	--	--
26...	109000	--	--	--	--	72	--	--
JUNE								
03...	71600	2.0	.60	--	--	104	--	--
16...	13900	--	--	--	--	136	--	--
30...	13200	--	--	--	--	171	--	--
JULY								
01...	12700	.31	.89	--	--	156	--	--
12...	6100	.36	.06	--	--	117	--	--
26...	7730	.19	.19	--	--	173	--	--
AUG.								
01...	7670	.30	.12	--	--	167	--	--
15...	9630	.14	1.5	--	--	295	--	--
23...	7910	--	--	--	--	226	--	--
SEPT.								
10...	9110	.21	.11	--	--	150	--	--
20...	5880	.26	.17	--	--	208	--	--
25...	6650	.21	.19	--	--	186	--	--

03086060 OHIO RIVER AT SOUTH HEIGHTS, PA.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO ₃)	TOTAL PHOS- PHORUS (PO ₄)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	pH
OCT.							
05...	1.4	.13	140	71	51	221	6.7
20...	2.4	.12	254	121	116	395	5.9
26...	1.7	.08	186	86	71	284	6.9
NOV.							
02...	1.8	.08	174	78	63	248	6.6
21...	2.2	.07	200	86	73	272	6.4
26...	2.2	.05	222	90	87	307	6.5
DEC.							
04...	3.2	.02	--	--	--	310	--
07...	1.9	.04	--	--	--	236	--
17...	1.8	.05	--	--	--	200	--
JAN.							
02...	1.8	.11	--	--	--	267	--
12...	2.2	.07	--	--	--	300	--
29...	3.0	.08	--	--	--	366	--
FEB.							
05...	2.8	.09	--	--	--	215	--
14...	3.1	.07	--	--	--	252	--
29...	4.6	.12	--	--	--	370	--
MAR.							
10...	3.8	.10	--	--	--	497	--
17...	3.1	.16	--	--	--	281	--
21...	3.0	.11	--	--	--	212	--
APR.							
01...	3.4	.06	--	--	--	252	--
17...	3.6	.17	--	--	--	290	--
28...	4.4	.11	--	--	--	391	--
MAY							
10...	6.8	.37	--	--	--	420	--
10...	3.8	.12	--	--	--	335	--
26...	3.6	.02	--	--	--	213	--
JUNE							
03...	1.9	.02	--	--	--	265	--
16...	2.9	.06	--	--	--	359	--
30...	4.2	.16	--	--	--	460	--
JULY							
01...	5.5	.20	--	--	--	414	--
12...	5.8	.41	--	--	--	362	--
26...	10	.50	--	--	--	489	--
AUG.							
01...	7.5	.82	--	--	--	478	--
15...	5.6	.11	--	--	--	697	--
23...	5.8	.16	--	--	--	581	--
SEPT.							
10...	6.8	.46	--	--	--	456	--
20...	9.4	.52	--	--	--	562	--
25...	7.2	.46	--	--	--	512	--

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0800)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	305	255	247	281	238	391	252	388	293	414	478	493
2.....	333	248	257	267	245	406	281	379	273	388	524	486
3.....	256	258	295	271	234	406	288	374	265	380	523	486
4.....	231	266	310	293	230	403	279	385	277	387	560	492
5.....	221	266	224	310	215	405	290	395	271	392	532	504
6.....	242	274	227	316	217	397	270	409	267	411	525	531
7.....	236	292	236	324	224	405	265	410	279	392	554	511
8.....	228	290	245	324	231	449	259	418	336	369	582	482
9.....	231	290	236	313	243	445	265	405	298	369	589	479
10.....	237	276	212	290	250	497	259	420	310	376	588	456
11.....	242	272	214	302	245	493	261	407	316	374	620	471
12.....	271	274	206	300	245	436	261	376	321	362	638	476
13.....	302	264	204	277	248	485	275	370	336	395	646	479
14.....	298	266	205	273	252	458	275	335	352	387	692	486
15.....	318	257	216	290	248	307	282	323	373	391	697	501
16.....	349	255	206	--	270	248	286	380	359	394	667	521
17.....	352	260	200	295	279	281	290	394	363	401	637	534
18.....	364	266	212	277	302	233	295	285	367	423	688	551
19.....	392	262	215	288	304	223	292	335	368	436	681	528
20.....	395	260	228	293	326	214	302	266	367	440	638	562
21.....	324	272	237	295	332	212	307	262	370	452	658	555
22.....	302	270	239	298	361	233	326	257	376	475	614	548
23.....	293	278	257	305	354	260	338	253	373	469	581	522
24.....	277	297	275	340	370	251	341	294	375	480	524	512
25.....	259	285	298	324	361	242	364	329	396	475	519	512
26.....	284	307	293	346	351	226	369	213	426	489	526	546
27.....	333	270	295	356	341	233	387	225	447	462	524	--
28.....	330	248	298	343	358	228	391	268	445	483	493	546
29.....	275	279	366	370	226	226	389	261	446	453	489	527
30.....	275	258	275	364	--	238	372	261	460	459	487	535
31.....	273	--	267	343	--	240	--	242	--	463	499	--
AVERAGE	291	269	245	308	284	328	303	332	350	420	579	511

OHIO RIVER MAIN STEM

03086060 OHIO RIVER AT SOUTH HEIGHTS, PA.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0800)

DAY																																		AVER- AGE
MONTH	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			
OCTOBER..	16	17	16	16	17	16	15	15	17	16	16	16	16	16	16	16	17	16	17	16	16	15	14	14	13	12	11	12	12	11	14			
NOVEMBER..	11	9	9	12	11	14	10	13	13	9	9	9	8	8	7	7	6	6	6	6	6	6	6	4	5	5	5	3	3	3	1	8		
DECEMBER..	4	5	5	5	4	4	6	6	6	6	6	6	6	7	7	6	6	6	5	6	6	6	6	6	4	5	5	5	3	3	3	1	4	
JANUARY..	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	2	3	2	2	3	1	1	2	2	3	3	3	1		
FEBRUARY..	1	2	4	3	3	3	3	3	4	3	2	1	1	1	1	1	2	1	1	1	2	1	1	1	2	2	1	2	3	2	--	1		
MARCH....	3	3	3	3	3	3	3	4	6	7	8	4	--	3	4	4	5	6	--	7	7	8	7	8	11	8	11	8	9	11	10	6		
APRIL.....	11	12	12	13	13	13	13	13	13	13	12	13	13	14	14	14	14	16	16	17	16	17	18	17	18	16	17	17	--	--	--	14		
MAY.....	16	17	18	--	--	18	18	17	18	18	18	18	18	18	18	17	18	18	17	17	16	16	15	16	--	14	14	15	14	14	14	16		
JUNE.....	15	16	17	17	17	18	20	21	22	23	24	25	24	23	24	24	24	24	24	24	24	25	25	--	26	26	24	25	25	25	--	22		
JULY.....	25	--	26	24	25	25	25	25	26	26	--	26	26	26	27	27	27	27	27	--	27	27	28	28	27	28	28	28	27	27	26			
AUGUST....	27	27	28	28	28	28	--	28	29	28	28	27	27	27	--	27	28	28	28	29	29	29	29	29	29	29	27	25	26	26	27			
SEPTEMBER	25	25	25	25	26	25	25	24	25	24	24	24	23	23	23	23	23	23	23	23	23	24	24	24	24	24	24	--	23	22	--	23		

BEAVER RIVER BASIN

03092090 WEST BRANCH MAHONING RIVER NEAR RAVENNA, OHIO

LOCATION.--Lat 41°09'40", long 81°11'50", in T.3 N., R.8 W., Portage County, temperature recorder at gaging station on left bank at downstream side of bridge on County Highway 177, 2.5 miles east of Ravenna.

DRAINAGE AREA.--21.8 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1965 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C Aug. 24; minimum, freezing point on several days during February and March.

Period of record:

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

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.0	11.0	11.0	7.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
2	15.0	11.0	11.0	10.0	1.0	1.0	1.0	1.0	3.0	1.0	0.0	0.0
3	16.0	13.0	11.0	9.0	1.0	1.0	1.0	1.0	2.0	1.0	0.0	0.0
4	17.0	13.0	11.0	8.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
5	17.0	15.0	3.0	6.0	3.0	2.0	1.0	1.0	1.0	1.0	0.0	0.0
6	18.0	12.0	6.0	4.0	4.0	3.0	1.0	1.0	1.0	1.0	1.0	0.0
7	18.0	11.0	9.0	3.0	6.0	4.0	1.0	1.0	1.0	1.0	1.0	0.0
8	16.0	13.0	5.0	3.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	0.0
9	15.0	13.0	6.0	3.0	5.0	4.0	1.0	1.0	1.0	1.0	--	0.0
10	13.0	12.0	7.0	4.0	4.0	4.0	1.0	1.0	1.0	1.0	1.0	0.0
11	12.0	11.0	8.0	7.0	5.0	4.0	1.0	1.0	1.0	1.0	3.0	1.0
12	12.0	10.0	7.0	4.0	5.0	5.0	1.0	1.0	1.0	1.0	2.0	0.0
13	11.0	8.0	7.0	6.0	6.0	5.0	1.0	1.0	1.0	1.0	0.0	0.0
14	12.0	11.0	6.0	4.0	5.0	4.0	1.0	1.0	1.0	1.0	1.0	0.0
15	13.0	10.0	4.0	3.0	4.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
16	15.0	13.0	3.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
17	15.0	14.0	3.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	4.0	1.0
18	14.0	12.0	4.0	3.0	4.0	2.0	1.0	1.0	1.0	1.0	6.0	2.0
19	12.0	9.0	4.0	4.0	5.0	4.0	1.0	1.0	1.0	1.0	7.0	3.0
20	10.0	7.0	4.0	3.0	4.0	3.0	1.0	1.0	1.0	1.0	7.0	6.0
21	11.0	8.0	4.0	3.0	8.0	4.0	1.0	1.0	1.0	1.0	7.0	4.0
22	10.0	7.0	6.0	4.0	8.0	4.0	1.0	1.0	1.0	1.0	4.0	2.0
23	10.0	7.0	5.0	4.0	4.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0
24	12.0	8.0	4.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	0.0
25	11.0	9.0	5.0	4.0	2.0	1.0	1.0	1.0	1.0	1.0	5.0	1.0
26	3.0	8.0	6.0	4.0	2.0	1.0	1.0	1.0	1.0	1.0	6.0	4.0
27	8.0	8.0	9.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	9.0
28	8.0	7.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	12.0	8.0
29	8.0	5.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	14.0	10.0
30	9.0	6.0	2.0	1.0	1.0	1.0	1.0	1.0	--	--	13.0	9.0
31	9.0	5.0	--	--	1.0	1.0	1.0	1.0	--	--	13.0	9.0
MONTH	17.0	5.0	11.0	1.0	9.0	1.0	1.0	1.0	3.0	1.0	--	--

03092090 WEST BRANCH MAHONING RIVER NEAR RAVENNA, OHIO --Continued
TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	WAK	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1	12.0	8.0	17.0	11.0	15.0	13.0	26.0	21.0	22.0	19.0	18.0	17.0	
2	11.0	6.0	17.0	10.0	19.0	14.0	22.0	19.0	22.0	19.0	20.0	17.0	
3	12.0	8.0	16.0	13.0	20.0	16.0	20.0	19.0	22.0	19.0	19.0	16.0	
4	14.0	11.0	17.0	14.0	21.0	16.0	21.0	15.0	23.0	21.0	22.0	17.0	
5	12.0	7.0	14.0	12.0	22.0	16.0	21.0	16.0	23.0	21.0	21.0	19.0	
6	9.0	4.0	15.0	9.0	23.0	17.0	23.0	17.0	25.0	22.0	21.0	19.0	
7	12.0	8.0	16.0	9.0	24.0	19.0	22.0	17.0	24.0	22.0	20.0	16.0	
8	13.0	11.0	17.0	11.0	24.0	19.0	24.0	17.0	25.0	21.0	19.0	15.0	
9	15.0	11.0	18.0	14.0	25.0	20.0	25.0	19.0	26.0	22.0	19.0	17.0	
10	12.0	9.0	18.0	14.0	24.0	20.0	23.0	21.0	24.0	20.0	19.0	17.0	
11	14.0	8.0	16.0	13.0	25.0	21.0	24.0	19.0	22.0	17.0	17.0	16.0	
12	15.0	9.0	15.0	15.0	25.0	21.0	25.0	19.0	22.0	16.0	18.0	14.0	
13	16.0	11.0	17.0	13.0	22.0	17.0	25.0	20.0	21.0	17.0	19.0	14.0	
14	17.0	13.0	16.0	14.0	21.0	14.0	26.0	21.0	24.0	18.0	19.0	14.0	
15	14.0	11.0	16.0	14.0	25.0	18.0	27.0	22.0	24.0	19.0	20.0	16.0	
16	15.0	9.0	18.0	15.0	19.0	13.0	25.0	22.0	24.0	21.0	20.0	18.0	
17	15.0	10.0	18.0	15.0	13.0	17.0	23.0	21.0	24.0	21.0	20.0	17.0	
18	16.0	15.0	17.0	13.0	19.0	15.0	26.0	21.0	24.0	21.0	20.0	16.0	
19	18.0	15.0	14.0	12.0	22.0	17.0	25.0	22.0	25.0	21.0	18.0	17.0	
20	15.0	15.0	16.0	12.0	21.0	16.0	24.0	20.0	26.0	22.0	20.0	17.0	
21	15.0	12.0	13.0	13.0	19.0	14.0	24.0	18.0	27.0	22.0	20.0	17.0	
22	18.0	12.0	16.0	12.0	22.0	17.0	23.0	20.0	27.0	23.0	21.0	17.0	
23	17.0	15.0	15.0	14.0	23.0	17.0	24.0	21.0	27.0	23.0	20.0	18.0	
24	15.0	11.0	16.0	13.0	22.0	19.0	23.0	22.0	28.0	23.0	21.0	18.0	
25	11.0	8.0	13.0	12.0	21.0	19.0	23.0	21.0	26.0	22.0	20.0	18.0	
26	13.0	6.0	15.0	14.0	20.0	19.0	24.0	19.0	22.0	19.0	18.0	14.0	
27	14.0	9.0	14.0	12.0	20.0	16.0	22.0	19.0	21.0	17.0	16.0	13.0	
28	16.0	9.0	13.0	11.0	18.0	17.0	21.0	21.0	15.0	15.0	17.0	14.0	
29	17.0	11.0	14.0	13.0	21.0	16.0	23.0	18.0	20.0	14.0	15.0	12.0	
30	16.0	12.0	14.0	13.0	25.0	19.0	21.0	17.0	21.0	14.0	16.0	12.0	
31	---	---	16.0	13.0	---	---	22.0	19.0	21.0	16.0	---	---	
MONTH	18.0	4.0	13.0	9.0	25.0	13.0	27.0	15.0	28.0	14.0	22.0	12.0	

03094000 MAHONING RIVER AT LEAVITTSBURG, OHIO

LOCATION.--Lat 41°14'20", long 80°52'50", in T.4 N., R.4 W., Trumbull County, at gaging station on right bank at upstream side of highway bridge at Leavittsburg, 300 ft downstream from Duck Creek, and 1.2 miles downstream from Eagle Creek.

DRAINAGE AREA.--575 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1951 to September 1953, July 1967 to September 1968.

Water temperatures: October 1948 to September 1968.

EXTREMES.--Period of record:

Water temperatures: Maximum, 30.0°C July 2, 1949; minimum, freezing point on many days during winter periods.

REMARKS.--Continuous recorder located in an Armco shelter just above dam at substation, 350 ft upstream from gage. In addition to the continuous recorder, twice-weekly samples were collected by a local observer for the period February to September. Partial analyses were made on the maximum specific conductance and the minimum specific conductance of the samples collected each month. Interruptions in the record were due to malfunctions of the instrument. Records for water temperatures are available in District office at Columbus.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, FEBRUARY TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH
FEB.													
05...	1200	950	70	0	108	26	.4	4.8	270	175	118	428	7.2
26...	1600	136	72	0	148	33	.2	4.4	384	254	195	581	7.2
MAR.													
04...	1600	146	116	0	148	34	.2	8.2	364	244	149	592	8.1
18...	1700	756	40	0	57	27	.1	5.6	170	98	65	282	7.4
APR.													
25...	1800	536	68	0	71	20	.0	2.5	206	130	74	332	--
MAY													
02...	0900	229	88	0	103	24	.2	2.0	242	174	102	437	7.3
16...	0800	850	50	0	53	14	.1	4.2	136	93	52	252	6.4
JUNE													
28...	1300	342	83	0	94	25	.2	2.8	250	170	102	416	6.9
JULY													
13...	1600	308	86	0	87	24	.1	3.8	254	164	94	390	7.1
29...	1205	304	86	0	94	25	--	6.0	262	172	102	429	6.9
AUG.													
03...	1300	325	96	0	89	24	.3	4.4	280	170	92	418	7.3
13...	1700	314	90	0	96	28	.3	9.7	300	178	104	444	--
SEPT.													
24...	1830	388	112	0	71	28	.4	5.3	282	164	72	420	8.0
27...	0800	286	108	0	72	30	.2	3.1	272	162	74	409	8.0

BEAVER RIVER BASIN

03094000 MAHONING RIVER AT LEAVITTSBURG, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

OCTOBER									NOVEMBER								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	530	360			9.2	7.3	15	13	640	380			10.7	8.4	11	8	
2	500	450			9.5	7.5	16	14	670	400			10.5	9.6	12	11	
3	510	470			8.4	7.4	16	14	670	400			10.7	8.2	12	11	
4	480	460			7.9	7.4	17	15	560	410			8.6	7.6	12	11	
5	570	340			8.7	7.2	18	17	570	520			8.1	7.6	11	10	
6	480	470			7.6	7.0	18	17	590	530			8.7	8.1	10	8	
7	480	470			7.3	6.7	17	15	610	540			9.2	8.7	9	7	
8	490	460			8.7	6.7	16	15	--	--			--	--	--	--	
9	490	460			7.7	7.5	16	15	--	--			--	--	--	--	
10	500	450			7.7	7.0	15	14	--	--			--	--	--	--	
11	500	440			7.1	6.6	14	14	--	--			--	--	--	--	
12	500	450			7.3	6.6	14	13	--	--			--	--	--	--	
13	490	460			7.6	7.1	14	12	--	--			--	--	--	--	
14	490	440			8.4	7.6	13	13	--	--			--	--	--	--	
15	510	480			13.8	7.7	13	12	--	--			--	--	--	--	
16	600	360			8.5	7.5	14	12	--	--			--	--	--	--	
17	520	360			8.2	7.3	15	13	--	--			--	--	--	--	
18	490	370			9.6	8.2	15	14	--	--			--	--	--	--	
19	530	470			8.8	7.4	15	14	--	--			--	--	--	--	
20	530	470			9.9	7.1	14	11	--	--			--	--	--	--	
21	500	470			7.6	7.3	13	11	--	--			--	--	--	--	
22	540	460			7.9	7.5	12	10	--	--			--	--	--	--	
23	590	470			8.2	7.8	12	9	--	--			--	--	--	--	
24	560	470			8.5	7.7	12	10	--	--			--	--	--	--	
25	550	480			8.3	8.0	12	11	--	--			--	--	--	--	
26	550	480			8.0	7.7	12	12	--	--			--	--	--	--	
27	620	500			7.8	7.7	12	11	--	--			--	--	--	--	
28	560	510			7.8	7.7	11	11	--	--			--	--	--	--	
29	580	500			8.5	7.8	11	8	--	--			--	--	--	--	
30	680	360			8.3	8.0	10	8	--	--			--	--	--	--	
31	710	460			8.6	8.3	10	8	--	--			--	--	--	--	

SPECIFIC CONDUCTANCE, PH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DECEMBER										JANUARY							
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	--	--					--	--									
2	--	--					--	--									
3	--	--					--	--									
4	--	--					--	--									
5							--	--									
6	--	--					--	--									
7	--	--					--	--									
8	--	--					--	--									
9	--	--					--	--									
10	--	--					--	--									
11	--	--					--	--									
12	--	--					--	--									
13	450	440			12.8	10.6	6	5									
14	440	420			11.3	10.0	7	6									
15	440	420			11.3	11.2	6	4									
16	450	430			11.3	11.2	5	4									
17	470	450			11.4	11.2	6	4									
18	550	450			11.5	11.4	4	4									
19	450	420			11.4	11.2	6	4									
20	450	410			11.9	10.7	6	4									
21	480	420			13.1	10.8	6	4									
22	--	--					--	--									
23	--	--					--	--									
24	--	--					--	--									
25	--	--					--	--									
26	--	--					--	--									
27	--	--					--	--									
28	--	--					--	--									
29	--	--					--	--									
30	--	--					--	--									
31	--	--					--	--									

03094000 MAHONING RIVER AT LEAVITTSBURG, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

FEBRUARY								MARCH								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1			--	--	--	--	--	--								
2			--	--	--	--	--	--								
3			--	--	--	--	--	--								
4			--	--	--	--	--	--								
5			7.5	7.3	12.6	12.4	2	0								
6			7.6	7.3	12.8	12.5	1	0								
7			7.6	7.4	12.8	12.4	1	0								
8			7.6	7.4	12.8	12.3	1	1								
9			7.5	7.4	12.7	12.4	2	1								
10			7.5	7.2	12.4	11.5	2	1								
11			7.6	7.4	12.6	11.8	2	1								
12			7.6	7.4	12.6	12.1	2	1								
13			7.5	7.4	12.6	11.6	2	1								
14			7.5	7.4	12.5	12.0	1	1								
15			7.5	7.4	12.3	11.9	1	1								
16			7.5	7.4	11.9	10.9	2	1								
17			--	--	--	--	--	--								
18			--	--	--	--	--	--								
19			--	--	--	--	--	--								
20			--	--	--	--	--	--								
21			--	--	--	--	--	--								
22			--	--	--	--	--	--								
23			--	--	--	--	--	--								
24			--	--	--	--	--	--								
25			--	--	--	--	--	--								
26			--	--	--	--	--	--								
27			--	--	--	--	--	--								
28			--	--	--	--	--	--								
29			--	--	--	--	--	--								
30			--	--	--	--	--	--								
31			--	--	--	--	--	--								
APRIL								MAY								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	--	--	430	410	7.5	7.3	--	--	16	14
2	--	--	--	--	--	--	--	--	430	420	7.6	7.3	--	--	16	14
3	450	450	7.9	7.8	11.0	10.3	12	11	430	420	7.5	7.4	--	--	16	15
4	450	420	7.8	7.6	10.6	9.8	13	11	430	410	7.4	7.3	--	--	17	16
5	420	390	7.7	7.5	10.4	9.6	13	11	420	400	7.4	7.3	--	--	17	16
6	390	380	7.8	7.6	11.3	10.3	11	10	410	400	7.5	7.2	--	--	16	16
7	400	390	7.8	7.6	11.6	11.0	11	10	420	400	7.5	7.2	--	--	16	14
8	420	400	7.8	7.7	11.4	10.7	13	11	460	400	7.6	7.4	10.2	9.6	17	15
9	430	420	7.9	7.7	11.2	10.3	13	12	480	410	7.4	7.3	9.6	9.0	18	17
10	430	420	7.8	7.7	11.2	10.6	13	12	470	410	7.3	7.2	9.0	8.1	18	17
11	430	410	7.8	7.5	11.6	10.7	13	11	470	410	7.7	6.9	8.2	7.3	18	17
12	430	420	7.9	7.7	11.5	11.0	13	11	420	260	8.0	7.3	7.3	6.8	17	15
13	450	420	7.8	7.7	11.4	10.5	15	12	260	200	7.5	6.3	7.1	6.9	16	14
14	450	420	7.8	7.6	11.2	10.4	16	14	270	220	7.1	6.3	6.9	6.8	17	16
15	420	420	7.6	7.4	10.4	8.4	16	15	330	270	7.7	7.0	7.1	6.7	16	15
16	420	400	7.6	7.3	9.1	7.0	16	14	320	260	7.8	6.5	6.8	6.1	18	16
17	420	410	7.6	7.4	9.2	7.0	16	14	280	250	6.6	6.5	--	--	18	17
18	430	420	7.5	7.4	9.7	7.2	16	15	310	240	7.0	6.5	6.2	6.0	19	17
19	440	420	7.5	7.3	10.4	9.2	16	15	380	310	7.0	6.8	7.5	6.1	18	16
20	450	440	7.5	7.2	10.1	9.6	17	16	380	350	7.3	6.9	7.9	7.5	16	14
21	450	440	7.8	7.4	10.4	10.0	17	16	380	350	7.5	6.9	8.0	7.8	16	15
22	440	430	7.8	7.3	10.1	9.6	17	15	400	370	7.2	6.8	8.1	7.8	17	16
23	440	430	7.5	7.3	10.6	9.8	16	16	410	400	7.1	6.8	8.0	7.6	17	16
24	430	400	7.4	7.1	9.9	9.0	16	16	420	400	7.8	7.0	7.9	7.7	17	16
25	400	320	7.1	6.8	9.0	8.2	16	12	420	400	7.8	7.0	8.1	7.7	17	16
26	350	330	7.1	6.9	9.6	8.8	12	11	440	410	7.7	6.9	8.0	7.7	18	16
27	360	350	7.1	7.0	--	--	12	11	420	320	7.7	7.1	7.8	7.4	17	16
28	370	360	7.2	6.9	--	--	13	11	320	220	7.5	7.1	7.7	7.5	16	14
29	410	370	7.6	7.2	--	--	14	12	280	220	7.8	6.9	7.8	7.6	15	14
30	420	410	7.4	7.4	--	--	15	14	380	280	7.5	6.9	8.2	7.8	17	15
31	--	--	--	--	--	--	--	--	390	370	7.5	7.0	8.2	8.1	17	16

03094000 MAHONING RIVER AT LEAVITTSBURG, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JUNE								JULY							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	390	380	7.8	6.9	8.1	7.9	17	16	--	--	--	--	--	--	--	--
2	420	390	8.4	7.1	7.9	6.5	18	16	--	--	--	--	--	--	--	--
3	410	390	8.2	7.1	6.7	6.3	19	18	--	--	--	--	--	--	--	--
4	410	400	7.5	7.1	6.6	6.1	19	18	--	--	--	--	--	--	--	--
5	420	400	7.3	--	6.5	--	19	18	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	19	16	--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	18	14	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	--	--	--	--	--	--	--	--	--	--	7.2	6.8	6.3	5.2	--	--
18	--	--	--	--	--	--	--	--	--	--	7.2	6.8	5.9	5.1	--	--
19	--	--	--	--	--	--	--	--	--	--	7.9	6.7	5.7	4.6	--	--
20	--	--	--	--	--	--	--	--	--	--	6.8	6.6	5.5	4.4	--	--
21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28	--	--	--	--	--	--	--	--	430	420	7.6	6.9	7.2	6.0	24	22
29	--	--	--	--	--	--	--	--	450	410	7.7	7.5	7.2	6.2	24	22
30	--	--	--	--	--	--	--	--	450	410	7.8	7.6	7.3	6.3	23	22
31	--	--	--	--	--	--	--	--	450	410	7.8	7.6	7.3	6.3	23	22

DAY	AUGUST								SEPTEMBER							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	430	410	8.4	7.6	7.3	6.3	23	21	430	410	7.4	7.3	6.6	6.0	22	21
2	420	390	8.4	7.4	6.6	6.0	22	21	420	410	7.8	7.3	6.4	6.0	22	21
3	470	390	8.2	6.7	7.1	6.0	22	21	420	420	7.9	7.3	6.5	5.8	22	21
4	470	440	8.0	7.3	7.1	5.8	23	22	430	420	7.8	7.2	6.8	6.0	22	21
5	470	440	8.5	7.4	6.6	5.7	23	22	430	410	7.7	7.4	6.4	6.0	23	22
6	470	430	8.4	7.4	7.0	6.0	24	22	440	420	7.8	7.2	6.2	5.7	23	22
7	470	420	8.3	7.0	7.0	6.1	24	22	430	420	7.7	7.0	6.0	5.8	23	21
8	470	420	8.2	7.4	6.4	5.5	24	23	440	420	7.6	7.0	6.4	5.9	22	21
9	470	430	8.2	7.4	6.5	5.8	24	22	440	430	7.2	7.1	6.4	5.8	22	21
10	480	440	8.2	7.4	6.6	5.5	25	24	440	430	8.1	7.2	6.2	5.9	22	21
11	480	440	7.5	7.4	6.1	5.2	25	22	440	430	--	--	6.3	6.0	22	21
12	470	440	7.6	6.9	6.7	5.9	24	20	430	420	7.4	7.1	6.8	6.1	21	20
13	480	440	7.6	7.5	6.8	6.2	23	20	430	420	7.2	7.0	6.4	6.1	21	19
14	480	440	7.8	7.6	6.5	5.8	24	22	440	430	7.3	6.9	6.4	6.2	21	19
15	470	430	7.6	7.5	6.6	5.8	24	22	440	420	7.4	6.9	6.5	6.1	22	20
16	480	440	7.6	7.5	6.7	5.8	25	22	420	410	7.0	6.8	6.3	6.0	22	20
17	490	440	8.0	7.6	6.5	5.8	25	23	420	420	7.1	6.8	6.3	5.9	22	21
18	460	440	8.2	7.6	6.2	5.8	25	24	430	420	7.9	6.8	6.2	5.9	22	21
19	460	430	8.2	7.6	6.2	5.5	25	24	440	420	8.2	7.3	6.2	5.9	22	22
20	460	430	8.1	7.6	6.1	5.5	25	24	430	420	7.5	6.8	6.2	5.9	22	21
21	480	450	8.0	7.6	6.0	5.6	26	25	430	410	7.7	6.8	6.4	5.9	22	21
22	460	440	8.0	7.4	6.0	5.0	26	25	420	420	7.5	7.1	6.2	5.9	23	21
23	450	440	8.0	7.2	6.1	5.3	26	25	430	410	--	--	6.7	5.8	23	22
24	500	440	7.9	7.5	6.1	5.3	26	25	420	410	--	--	6.4	5.7	23	22
25	440	430	8.0	7.4	5.9	5.2	27	26	430	420	--	--	6.4	6.0	22	21
26	460	430	7.5	7.5	6.0	5.2	27	25	420	410	--	--	6.2	5.8	22	21
27	450	420	7.5	6.8	6.2	5.3	25	23	420	410	--	--	6.3	6.0	21	19
28	470	420	7.5	6.9	6.6	5.9	23	21	420	410	--	--	6.4	6.2	20	18
29	480	420	7.5	7.1	6.9	6.1	22	21	420	410	--	--	6.4	6.3	19	18
30	460	420	7.4	7.2	6.8	6.1	22	21	420	410	--	--	6.6	6.3	19	18
31	440	420	7.4	7.3	6.7	6.1	22	21	--	--	--	--	--	--	--	--

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 upstream from Ohio-Pennsylvania State line just below Lowellville, 0.9 mile downstream from gaging station at Lowellville and 4 miles downstream from Yellow Creek.

DRAINAGE AREA.--1,075 sq mi.

PERIOD OF RECORD.--Chemical analyses: January 1967 to September 1968.

Water temperatures: January 1967 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 36.0°C on several days during July and August; minimum, 6.0°C Dec. 27.

Period of record:

Water temperatures: Maximum, 36.0°C on several days during July and August 1968; minimum, 4.0°C Feb. 3, 4, 1967.

REMARKS.--In addition to the recorder, samples were collected by a local observer on an approximate twice-weekly basis. Partial analyses were made on the maximum specific conductance and the minimum specific conductance of the samples collected each month. Interruptions in the record were due to malfunctions of the instrument. Records of discharge are given for Mahoning River at Lowellville (drainage area 1,073 sq mi).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (PPM)	MAN- GANESE (PPM)	RICAR- BONATE (MG/L)	CAR- BONATE (MG/L)	SULFATE (MG/L)	CHLOR- INE (MG/L)
OCT.								
30...	1930	325	.61	.70	9	0	220	94
NOV.								
15...	1915	397	2.0	--	3	0	237	112
20...	1820	648	2.0	--	24	0	193	74
DEC.								
13...	1820	1110	2.4	--	52	0	141	51
30...	1230	634	4.5	--	18	0	270	60
JAN.								
20...	0945	340	2.4	.70	24	0	236	135
30...	1500	7010	.39	.77	190	0	67	39
FEB.								
03...	1500	3990	1.4	.70	32	0	77	24
26...	1840	140	.78	1.0	4	0	221	112
MAR.								
05...	1530	320	--	--	2	0	240	114
27...	1530	2650	--	--	8	0	137	41
APR.								
05...	--	1770	--	--	60	0	135	42
12...	1430	541	--	--	0	0	263	66
MAY								
01...	1200	436	3.6	.91	0	0	190	90
29...	1300	2940	2.0	.31	56	0	92	26
JUNE								
01...	1520	1420	1.3	.11	52	0	120	37
22...	2130	490	.98	.25	20	0	173	75
JULY								
02...	1120	606	2.6	.65	1	0	177	52
29...	1335	534	--	--	28	0	152	66
AUG.								
21...	1000	590	.77	.52	52	0	141	56
30...	2130	466	1.4	.73	90	0	114	47
SEPT.								
25...	1320	527	.50	.39	86	0	111	68
30...	1830	360	.91	.46	44	0	138	70

DATE	FLUOR- IDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUED AT 180 C)	HARD- NESS (CA, MG)	HARD- CAR- BONATE NFSS	SPECI- FIC CON- DUCTANCE (MICRO- MHOS)	PH
OCT.							
30...	1.6	28	578	266	249	877	--
NOV.							
15...	3.5	27	614	278	276	933	--
20...	1.4	28	480	240	220	704	7.6
DEC.							
13...	.5	14	374	206	183	554	--
30...	2.6	33	514	260	245	748	6.8
JAN.							
20...	2.0	28	654	284	266	1000	--
30...	1.0	.4	298	198	42	443	7.1
FEB.							
03...	.3	10	218	130	104	329	7.6
26...	1.8	40	624	293	290	930	--
MAR.							
05...	3.8	30	614	278	276	960	5.2
27...	.6	14	298	170	164	478	6.7
APR.							
05...	.4	5.5	368	207	158	551	--
12...	.6	.9	494	258	258	853	--
MAY							
01...	1.1	24	476	231	231	783	--
29...	.5	8.5	246	144	98	380	6.3
JUNE							
01...	.7	6.8	290	176	134	482	6.4
22...	1.4	24	460	228	212	733	6.7
JULY							
02...	1.1	19	378	178	177	590	6.7
29...	1.5	25	394	216	193	661	--
AUG.							
21...	1.0	20	366	202	160	617	6.6
30...	.8	7.6	316	186	112	554	6.7
SEPT.							
25...	.9	10	324	175	105	522	6.7
30...	1.4	38	426	212	176	667	--

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

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER								NOVEMBER							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	730	680	7.8	7.7	3.6	3.2	25	23	890	860	6.7	6.2	--	--	29	28
2	770	730	7.8	7.2	3.7	2.6	25	25	880	730	6.9	6.6	--	--	29	23
3	810	770	7.4	6.6	3.3	2.5	32	28	820	730	6.8	6.4	--	--	26	23
4	840	800	7.1	6.3	2.9	2.0	33	31	880	840	6.8	6.3	--	--	25	22
5	820	780	7.4	6.8	2.4	1.8	33	32	890	830	6.6	6.3	--	--	22	21
6	830	790	7.5	7.1	2.6	1.2	32	30	900	830	6.8	6.3	--	--	22	20
7	850	800	7.5	6.8	--	2.3	31	28	940	870	6.5	6.2	--	--	22	21
8	820	800	7.5	7.4	--	--	29	28	930	880	6.6	6.3	--	--	23	21
9	800	710	7.5	7.3	--	--	28	27	930	870	6.6	6.3	4.5	3.6	23	22
10	870	730	7.3	6.5	3.4	3.0	28	27	910	880	6.6	6.3	4.7	3.6	25	23
11	840	780	6.9	6.7	3.4	2.9	28	26	1000	900	6.6	6.3	--	--	27	25
12	830	770	7.0	6.7	3.6	2.8	28	26	930	830	7.1	6.3	--	--	26	22
13	880	800	7.0	6.5	3.9	2.8	29	26	970	840	7.0	6.7	--	--	22	22
14	890	820	7.2	6.2	3.0	2.3	29	28	1040	940	6.8	6.0	--	--	22	22
15	850	810	7.2	7.0	3.4	2.3	29	28	1030	900	6.7	6.3	3.5	3.0	22	19
16	890	830	7.2	6.5	4.0	2.2	31	28	940	900	6.8	6.3	3.7	2.7	22	19
17	900	840	6.9	6.4	3.0	2.2	32	30	950	880	6.8	6.5	3.0	2.5	24	21
18	880	690	6.9	6.6	2.6	1.6	32	24	920	830	7.1	6.3	3.9	2.7	23	19
19	750	640	7.0	6.7	4.2	1.6	34	22	840	810	7.2	6.8	4.4	3.8	20	18
20	760	730	7.1	6.9	--	3.7	24	22	--	--	--	--	--	--	--	--
21	760	700	7.3	6.9	--	--	24	23	--	--	--	--	--	--	--	--
22	780	740	7.5	7.3	--	--	24	23	--	--	--	--	--	--	--	--
23	820	780	7.3	7.1	--	--	26	23	--	--	--	--	--	--	--	--
24	860	790	7.3	7.0	3.4	2.1	27	25	--	--	--	--	--	--	--	--
25	850	830	7.3	7.0	--	3.3	27	26	--	--	--	--	--	--	--	--
26	860	810	7.4	7.2	--	--	26	24	--	--	--	--	--	--	--	--
27	870	830	7.4	6.9	--	--	25	23	--	--	--	--	--	--	--	--
28	860	840	7.1	7.0	--	--	24	23	--	--	--	--	--	--	--	--
29	910	820	7.1	7.0	--	--	23	22	--	--	--	--	--	--	--	--
30	890	840	7.2	6.6	--	--	25	22	--	--	--	--	--	--	--	--
31	910	870	6.6	6.5	--	--	28	25	--	--	--	--	--	--	--	--

DAY	DECEMBER								JANUARY							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	--	--	830	770	--	--	7.1	6.0	12	11
2	--	--	--	--	--	--	--	--	810	780	--	--	6.3	4.9	13	9
3	--	--	--	--	--	--	--	--	800	720	--	--	5.5	4.0	14	12
4	--	--	--	--	--	--	--	--	820	730	--	--	5.1	3.6	14	11
5	--	--	--	--	--	--	--	--	790	710	--	--	5.7	5.0	15	12
6	--	--	--	--	--	--	--	--	760	710	--	--	5.2	4.6	15	14
7	--	--	--	--	--	--	--	--	880	750	--	--	5.5	4.8	16	11
8	--	--	--	--	--	--	--	--	890	880	--	--	5.7	5.3	13	11
9	--	--	--	--	--	--	--	--	1000	950	--	--	5.6	4.0	14	12
10	--	--	--	--	--	--	--	--	980	920	--	--	4.2	3.8	17	14
11	--	--	--	--	--	--	--	--	970	880	--	--	4.3	3.9	17	14
12	--	--	--	--	--	--	--	--	990	960	--	--	4.0	3.7	17	15
13	820	540	7.0	6.5	7.7	6.3	15	14	970	880	--	--	4.2	3.3	17	14
14	560	530	7.0	6.5	9.5	6.5	14	13	920	870	--	--	4.2	3.6	18	14
15	550	520	7.1	6.7	7.9	6.0	14	13	1180	920	--	--	3.8	3.6	18	17
16	540	480	7.3	6.8	6.5	6.2	13	12	1010	950	7.0	6.4	4.0	3.3	17	16
17	520	480	7.4	6.8	6.8	6.3	13	11	990	920	6.9	6.5	3.4	2.9	18	16
18	570	530	6.9	6.5	6.6	5.5	13	10	980	900	6.8	6.5	3.3	2.6	20	16
19	610	550	7.1	6.7	6.1	5.7	15	12	1100	940	7.0	6.6	3.2	2.7	20	20
20	630	570	7.0	6.7	6.5	5.6	16	14	1010	920	7.1	6.8	3.9	3.0	20	19
21	630	490	6.8	6.6	6.6	6.1	16	14	990	920	7.3	6.8	3.9	3.0	20	19
22	520	440	7.1	6.7	6.5	6.1	16	14	1010	950	7.4	7.1	4.1	3.4	20	18
23	--	--	7.1	6.9	7.4	6.3	14	11	990	940	7.1	6.9	4.0	3.7	20	17
24	--	--	8.1	7.0	7.9	7.2	11	8	980	910	--	--	4.4	3.9	17	16
25	--	--	8.7	8.0	7.9	7.5	8	7	910	860	--	--	4.3	3.9	18	17
26	--	--	8.6	7.2	7.8	7.5	7	7	920	810	--	--	3.9	3.4	19	16
27	--	--	7.7	6.6	7.6	6.8	10	6	900	840	--	--	3.8	3.1	22	19
28	760	690	7.7	7.1	7.1	6.6	11	9	--	--	--	--	--	--	--	--
29	800	710	--	--	6.6	5.9	11	11	--	--	--	--	--	--	--	--
30	770	700	--	--	7.6	5.7	13	12	--	--	--	--	--	--	--	--
31	800	760	--	--	7.3	6.4	13	12	--	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

FEBRUARY										MARCH									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		
1	--	--	--	--	--	--	--	--		1010	930	6.8	6.5	4.8	4.5	20	18		
2	--	--	--	--	--	--	--	--		950	900	7.4	6.7	4.6	4.0	19	18		
3	--	--	--	--	--	--	--	--		960	810	7.5	7.1	5.3	4.3	18	15		
4	--	--	--	--	--	--	--	--		970	920	7.6	6.7	5.0	4.4	17	15		
5	--	--	--	--	--	--	--	--		--	--	--	--	4.4	3.7	--	--		
6	--	--	--	--	--	--	--	--		--	--	--	--	4.3	3.6	--	--		
7	--	--	--	--	--	--	--	--		--	--	--	--	4.5	3.7	--	--		
8	--	--	--	--	--	--	--	--		--	--	--	--	3.9	3.1	--	--		
9	--	--	--	--	--	--	--	--		--	--	--	--	3.6	2.9	--	--		
10	--	--	--	--	--	--	--	--		--	--	--	--	4.4	3.2	--	--		
11	--	--	--	--	--	--	--	--		--	--	--	--	6.7	3.6	--	--		
12	--	--	--	--	--	--	--	--		--	--	--	--	6.7	5.4	--	--		
13	--	--	--	--	--	--	--	--		--	--	--	--	7.0	5.4	--	--		
14	--	--	--	--	--	--	--	--		--	--	--	--	7.1	6.7	--	--		
15	--	--	--	--	--	--	--	--		--	--	--	--	6.8	6.2	--	--		
16	--	--	--	--	--	--	--	--		--	--	--	--	7.7	5.9	--	--		
17	--	--	--	--	--	--	--	--		--	--	--	--	7.7	2.9	--	--		
18	--	--	--	--	--	--	--	--		--	--	--	--	7.9	1.2	--	--		
19	840	820	7.2	6.7	5.1	4.8	16	16		--	--	--	--	7.9	7.3	--	--		
20	850	790	7.0	6.6	5.5	4.8	17	16		--	--	--	--	7.4	7.0	--	--		
21	970	840	7.0	6.5	5.6	5.0	16	14		--	--	--	--	7.1	6.8	--	--		
22	880	830	7.2	6.7	5.5	4.7	16	14		--	--	--	--	7.4	4.6	--	--		
23	880	810	7.2	6.6	5.3	4.5	18	16		--	--	--	--	8.1	7.2	--	--		
24	990	820	7.0	6.4	5.1	4.6	19	18		--	--	--	--	8.2	7.7	--	--		
25	890	850	7.4	6.6	5.3	4.7	18	17		--	--	--	--	8.5	7.4	--	--		
26	960	860	7.3	6.7	5.4	4.6	19	17		--	--	--	--	8.4	7.6	--	--		
27	990	880	6.9	6.2	4.8	4.3	20	18		--	--	--	--	8.0	7.4	--	--		
28	990	880	6.9	6.4	4.8	4.1	21	19		--	--	--	--	7.8	7.1	--	--		
29	1050	930	6.9	6.4	4.8	4.4	20	19		--	--	--	--	--	--	--	--		
30	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--		
31	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--		
APRIL										MAY									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)					

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

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

JUNE										JULY							
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	--	--		630	600	--	--	--	--	35	32
2	--	--	--	--	--	--	--	--		630	600	--	--	--	--	33	30
3	--	--	--	--	--	--	--	--		650	610	--	--	--	--	33	32
4	--	--	--	--	--	--	--	--		700	640	--	--	--	--	34	31
5	--	--	--	--	--	--	--	--		720	640	--	--	--	--	34	31
6	630	550	7.3	6.8	--	--	30	27		670	630	7.2	6.5	--	--	33	28
7	600	560	7.0	6.5	--	--	31	28		670	630	7.4	6.9	--	--	32	29
8	600	550	6.6	6.3	--	--	31	28		660	630	7.2	6.7	--	--	34	30
9	600	540	7.0	6.1	--	--	31	29		650	620	7.2	6.5	--	--	35	33
10	630	540	7.3	6.2	--	--	31	29		690	630	7.0	6.4	--	--	36	34
11	590	570	7.1	6.3	--	--	33	30		690	640	7.1	5.1	--	--	36	34
12	650	580	6.8	5.8	--	--	32	30		680	640	6.9	6.1	--	--	36	35
13	700	650	7.0	6.3	--	--	31	29		680	630	7.1	5.8	--	--	36	34
14	760	660	--	--	--	--	32	29		650	590	7.5	7.1	--	--	35	33
15	730	660	--	--	--	--	33	21		630	610	7.4	7.1	--	--	35	33
16	720	640	--	--	--	--	31	29		610	570	7.4	6.6	--	--	35	34
17	680	630	--	--	--	--	30	29		650	590	7.3	5.9	2.3	2.0	36	33
18	640	600	--	--	--	--	31	28		620	590	6.6	6.0	2.3	1.7	36	34
19	690	620	--	--	--	--	34	30		650	590	6.6	5.9	2.2	1.6	35	33
20	740	670	--	--	--	--	33	31		620	590	7.0	6.5	2.4	1.9	35	33
21	750	700	--	--	--	--	33	30		640	580	7.3	6.8	2.5	1.6	34	32
22	740	700	--	--	--	--	33	32		660	600	7.2	6.3	1.9	1.2	34	32
23	740	670	--	--	--	--	33	31		650	600	6.8	6.3	1.4	1.1	36	33
24	710	660	--	--	--	--	34	32		650	570	6.7	6.3	1.2	.9	36	35
25	710	650	--	--	--	--	34	32		700	570	6.9	6.4	.9	.6	35	34
26	670	600	--	--	--	--	34	31		700	610	7.0	6.2	1.0	.7	36	33
27	640	580	--	--	--	--	32	31		680	610	6.9	6.4	1.9	.8	36	34
28	600	570	--	--	--	--	31	30		690	630	7.2	6.6	1.8	1.4	35	33
29	600	560	--	--	--	--	32	30		680	640	7.5	6.6	1.8	1.4	33	31
30	600	590	--	--	--	--	34	32		640	600	7.6	7.0	1.8	.8	32	31
31	--	--	--	--	--	--	--	--		650	600	7.3	6.7	1.8	1.2	33	32
AUGUST										SEPTEMBER							
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	620	560	--	--	2.0	.8	32	30		630	580	--	--	--	--	31	29
2	640	570	--	--	2.1	1.6	32	29		600	540	--	--	--	--	29	27
3	620	560	--	--	1.6	1.1	32	31		570	540	--	--	1.9	1.0	29	27
4	630	590	--	--	1.7	1.2	33	31		580	520	--	--	--	--	30	27
5	660	570	--	--	1.6	1.1	32	31		600	470	--	--	--	--	30	27
6	580	550	--	--	1.1	.7	33	31		550	480	--	--	2.5	1.6	29	27
7	580	430	--	--	1.4	.5	33	29		580	520	7.1	6.5	2.1	1.2	29	28
8	590	540	--	--	1.7	1.2	33	31		580	540	7.4	7.1	1.7	1.0	29	27
9	570	540	--	--	3.5	1.2	34	32		610	570	7.4	7.0	--	--	30	28
10	620	570	--	--	3.4	1.6	34	31		630	610	7.1	6.6	--	--	30	29
11	650	610	--	--	4.6	3.1	32	31		710	600	7.4	6.8	--	--	30	29
12	650	600	--	--	5.1	3.2	32	30		660	620	7.4	6.7	--	--	31	29
13	620	580	--	--	4.1	2.4	33	30		680	630	7.4	7.0	--	--	31	29
14	630	590	--	--	4.0	2.2	34	30		660	620	7.5	7.1	--	--	31	29
15	650	620	--	--	3.8	1.8	34	32		630	560	7.4	7.0	--	--	32	29
16	650	570	--	--	3.0	1.3	34	33		640	590	7.4	6.9	--	--	31	29
17	600	530	--	--	3.6	1.4	34	32		650	630	7.3	6.8	--	--	31	29
18	610	570	--	--	4.1	2.0	33	31		660	620	7.4	6.9	--	--	31	28
19	610	570	--	--	3.8	2.2	33	31		700	630	7.2	6.5	--	--	31	30
20	650	560	--	--	3.7	1.4	34	32		680	650	7.2	6.6	--	--	32	29
21	620	590	--	--	3.0	2.1	36	33		680	640	7.2	6.7	--	--	33	30
22	620	580	--	--	2.7	1.7	36	34		660	620	7.4	6.9	--	--	32	30
23	640	600	--	--	2.5	1.4	36	34		660	600	7.4	6.7	--	--	32	30
24	640	590	7.1	6.9	2.5	1.0	36	35		610	570	7.1	6.2	--	--	32	29
25	610	580	7.3	7.1	3.0	1.5	35	33		620	530	7.1	6.1	4.3	2.2	31	29
26	640	600	7.2	7.0	3.6	2.1	33	31		650	590	6.7	6.1	4.5	2.1	30	29
27	640	590	7.1	6.7	2.9	2.1	32	29		670	600	6.8	6.5	4.1	2.8	30	28
28	640	580	7.1	6.6	2.9	1.8	32	29		650	620	6.8	6.6	4.4	2.9	29	28
29	640	590	7.1	6.9	2.5	2.0	31	29		660	620	7.0	6.8	4.4	3.0	28	27
30	610	560	7.1	6.0	2.3	1.3	32	29		690	620	6.9	6.7	4.5	2.4	29	27
31	620	580	--	--	2.4	1.5	32	30		--	--	--	--	--	--	--	--

OHIO RIVER MAIN STEM

03110700 OHIO RIVER AT STRATTON, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH
OCT.							
06...	2.0	.14	196	77	59	229	7.0
17...	3.1	.11	228	90	67	294	7.0
21...	3.6	.10	310	134	121	424	6.7
NOV.							
01...	2.4	.05	186	94	78	292	6.6
10...	1.0	.06	206	102	80	312	6.6
27...	2.0	.05	180	90	75	276	6.5
DEC.							
20...	2.5	.05	158	83	66	237	6.7
22...	2.8	.10	176	86	68	254	6.7
27...	3.2	.05	198	102	86	300	6.7
JAN.							
02...	2.8	.10	176	96	80	302	6.3
10...	3.0	.05	188	106	94	326	6.1
29...	3.2	.08	220	126	113	391	7.0
FEB.							
06...	3.2	.10	136	80	67	217	6.6
14...	2.0	.10	180	100	84	283	6.8
29...	4.3	.07	242	134	128	397	6.1
MAR.							
02...	5.8	.18	264	134	126	394	7.0
11...	6.6	.07	304	158	155	478	6.5
28...	3.0	.07	146	86	71	241	6.7
APR.							
01...	3.4	.05	172	96	80	254	7.4
16...	4.0	.09	210	108	95	300	7.3
30...	5.5	.17	264	144	128	404	6.6
MAY							
10...	6.2	.24	282	150	134	435	7.3
15...	2.6	.11	221	121	102	339	6.6
27...	3.2	.08	146	84	70	227	7.4
JUNE							
04...	1.8	.07	164	97	90	269	6.4
30...	.8	.08	272	170	155	452	7.4
JULY							
09...	3.0	.24	266	137	130	405	6.3
31...	7.2	.19	346	167	156	506	6.4
AUG.							
07...	9.0	.15	302	164	148	491	6.8
10...	8.8	.15	354	184	173	557	6.2
22...	6.5	.11	448	221	216	672	5.6
SEPT.							
13...	10	.13	316	176	160	539	6.2
18...	8.5	.19	284	160	136	491	6.4
27...	8.8	.19	338	180	159	553	6.5

DATE	TOTAL CHRO- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	COBALT (CO)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
01-31	.00	.00	.01	.00	.05	.00	.00	.00
NOV.								
01-30	.00	.00	.01	.01	.24	.00	.00	.00
DEC.								
20-29	.00	.00	.01	.01	.05	.00	.00	.00
JAN.								
01-31	.00	.00	.02	.01	.06	.00	.00	.00
FEB.								
01-29	.00	.01	.02	.01	.06	.00	.00	.00
MAR.								
01-31	.00	.02	.03	.00	.09	.00	.00	.00
APR.								
01-30	.00	.02	.01	.00	.06	.00	.00	.00
MAY								
01-31	.00	.02	.02	.00	.06	.00	.00	.00
JUNE								
01-30	.00	.01	.02	.00	.14	.00	.01	.00
JULY								
01-31	.00	.01	.01	.00	.03	.00	.00	.00
AUG.								
01-31	.00	.02	.01	.00	.13	.01	.00	.00
SEPT.								
01-30	.00	.01	.01	.01	.05	.00	.01	.00

OHIO RIVER MAIN STEM

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03110700 OHIO RIVER AT STRATTON, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	2.0	2.0	17.0	---	25.0	31.0	---
2	18.0	12.0	---	2.0	2.0	3.0	---	---	---	26.0	29.0	---
3	17.0	---	---	2.0	---	---	---	19.0	17.0	26.0	29.0	27.0
4	17.0	---	---	2.0	---	3.0	---	---	17.0	---	29.0	26.0
5	16.0	---	---	1.0	3.0	4.0	---	---	---	26.0	29.0	---
6	14.0	11.0	---	---	3.0	4.0	---	17.0	---	---	29.0	24.0
7	---	---	---	---	3.0	4.0	---	18.0	---	---	28.0	---
8	---	---	---	1.0	---	5.0	12.0	18.0	---	27.0	28.0	---
9	15.0	---	---	1.0	3.0	---	12.0	18.0	---	27.0	28.0	25.0
10	15.0	---	---	1.0	---	---	12.0	18.0	22.0	27.0	28.0	25.0
11	15.0	---	---	1.0	---	6.0	13.0	---	---	28.0	28.0	24.0
12	15.0	---	---	0.0	1.0	7.0	---	---	---	28.0	28.0	24.0
13	14.0	---	---	---	1.0	5.0	---	18.0	---	---	28.0	24.0
14	---	---	---	---	1.0	5.0	---	18.0	---	---	28.0	---
15	---	8.0	---	1.0	1.0	---	13.0	18.0	---	---	28.0	---
16	16.0	7.0	---	1.0	1.0	---	14.0	17.0	---	---	28.0	24.0
17	16.0	---	---	2.0	---	---	14.0	17.0	---	---	---	24.0
18	15.0	---	---	4.0	---	7.0	15.0	---	---	---	---	24.0
19	15.0	---	---	2.0	1.0	7.0	16.0	---	---	---	29.0	24.0
20	16.0	7.0	---	---	1.0	7.0	---	16.0	---	---	29.0	24.0
21	16.0	7.0	---	---	1.0	7.0	---	15.0	23.0	---	28.0	---
22	---	7.0	7.0	---	---	---	---	---	24.0	---	29.0	---
23	14.0	---	---	3.0	---	---	---	15.0	---	---	30.0	24.0
24	---	6.0	---	3.0	---	---	---	14.0	24.0	---	31.0	---
25	12.0	---	---	2.0	---	7.0	---	15.0	24.0	---	---	27.0
26	12.0	---	5.0	2.0	3.0	7.0	---	---	24.0	30.0	28.0	25.0
27	12.0	6.0	5.0	---	3.0	8.0	17.0	14.0	24.0	31.0	28.0	25.0
28	---	---	4.0	---	3.0	8.0	---	---	24.0	29.0	28.0	---
29	---	---	3.0	3.0	2.0	10.0	13.0	---	---	30.0	27.0	---
30	13.0	---	---	3.0	---	11.0	17.0	---	26.0	29.0	27.0	---
31	13.0	---	---	3.0	---	---	---	14.0	---	31.0	---	---
AVERAGE	---	---	---	---	---	---	---	---	---	---	28.5	---

MIDDLE ISLAND CREEK BASIN

03114500 MIDDLE ISLAND CREEK AT LITTLE, W. VA.

LOCATION.--Lat 39°28'30", long 80°59'50", Tyler County, at highway bridge at Little, 0.1 mile upstream from Stewarts Run, and 5.0 miles west of Middlebourne.

DRAINAGE AREA.--458 sq mi.

PERIOD OF RECORD.--Sediment records: April to September 1968.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, APRIL TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
APR 16, 1968	1005	415	7.5	8.4	AUG 12.....	1530	607	152	249
MAY 27.....	1750	2310	114	711	SEP 23.....	1340	22	11	.65
JUL 1.....	1350	67	26	4.7					

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 upstream from bridge on Elton Road at Navarre, 3.5 miles downstream from gaging station at Massillon, 1.2 miles downstream from Pigeon Run, and just upstream from Wolf Creek.

DRAINAGE AREA.--534 sq mi.

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

Water temperatures: March to September 1968.

REMARKS.--In addition to the continuous recorder, twice-weekly samples were collected by a local observer. Partial analyses were made on the maximum specific conductance and minimum specific conductance of samples collected for period March to September. Interruptions in the record were due to malfunctions of the instrument. Records of discharge are given for Tuscarawas River at Massillon (drainage area 518 sq mi).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, MARCH TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	BICAR- BONATE (MG/L)	CAR- BONATE (MG/L)	SULFATE (MG/L)	CHLOR- IDE (MG/L)	FLUOR- IDE (MG/L)
MAR.							
11...	1500	300	50	0	216	2790	1.3
25...	---	1200	148	0	95	700	.8
APR.							
06...	1000	430	140	0	54	830	.9
20...	0900	224	151	8	134	1610	3.7
MAY							
08...	1020	188	119	0	141	1490	3.7
13...	1100	1230	165	0	92	370	.5
JUNE							
03...	1000	1110	237	0	55	100	.8
18...	1400	408	202	0	161	1370	2.0
JULY							
20...	0930	1280	166	0	72	540	.7
24...	1000	248	187	0	132	1800	2.4
AUG.							
18...	1200	143	116	0	180	2360	2.7
23...	1500	154	134	0	160	1720	.5
SEPT.							
15...	1400	138	156	0	152	2100	1.3
25...	1205	211	114	0	140	1360	3.7

MUSKINGUM RIVER BASIN

03117100 TUSCARAWAS RIVER AT NAVARRE, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, MARCH TO SEPTEMBER 1968

DATE	NITRATE (NO3)	DUE AT 180 C	DISE- SOLVED SOLIDS (RESI- DUAL) (CA. MG)	NON- CAP- RONATE NEFS	SPECI- FIC CONN- CONN- UCTANCE (MICRO- MMOS)	pH
MAR.						
11...	--	490C	2700	1960	7200	--
25...	20	1820	718	596	2560	7.4
APR.						
05...	15	1990	672	558	3050	7.4
20...	--	3760	1410	1270	5120	8.3
MAY						
08...	9.5	3110	1170	1070	4010	6.5
13...	7.2	1980	450	315	1600	--
JUNE						
05...	3.7	700	384	194	1120	8.2
19...	--	2910	1180	1710	4520	6.9
JULY						
20...	5.1	1470	574	478	2030	7.2
24...	--	3830	1540	1390	5650	--
AUG.						
14...	--	4770	1800	1700	7170	8.1
23...	--	3600	1420	1310	5410	--
SEPT.						
10...	--	4340	1560	1430	6430	--
25...	--	3010	1090	986	4380	7.3

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, MARCH TO SEPTEMBER 1968

DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX MIN		MAX MIN		MAX MIN		MAX MIN	
	MAX MIN		MAX MIN		MAX MIN		MAX MIN	
1	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	--	--
7	7.7	6.9	7.0	6.0	9	8		
8	8.0	6.7	7.7	6.5	9	6		
9	7.4	6.9	6.7	6.0	10	9		
10	7.9	4.3	6.4	5.0	9	9		
11	8.0	6.7	6.2	5.1	9	8		
12	7.9	6.4	5.1	3.9	8	5		
13	7.8	6.7	4.0	3.7	7	4		
14	7.5	6.6	3.7	3.2	8	7		
15	7.5	6.8	3.5	2.9	8	6		
16	8.0	7.3	3.0	2.6	7	6		
17	8.0	7.3	3.0	2.6	7	6		
18	7.8	7.2	3.5	2.6	8	6		
19	7.6	7.0	4.2	2.2	9	7		
20	7.5	7.0	3.5	2.0	11	9		
21	7.5	7.0	2.1	2.0	11	8		
22	7.7	7.2	3.9	1.7	8	5		
23	7.8	7.4	1.9	1.8	5	3		
24	8.5	6.9	1.9	1.8	4	3		
25	7.9	7.2	4.7	1.6	7	4		
26	7.9	7.5	1.6	1.4	8	6		
27	8.0	7.6	1.5	1.4	9	8		
28	8.0	7.6	1.4	1.3	12	9		
29	7.8	7.4	2.8	1.2	14	12		
30	7.8	7.4	1.2	1.0	14	12		
31	7.8	5.6	6.1	.9	14	12		
	MAX MIN		APRIL		MAX MIN		MAX MIN	
1	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--
9	7.2	6.4	4.9	3.7	18	14		
10	6.9	6.0	4.0	2.1	19	17		
	6.9	6.0	2.2	1.4	20	17		
11	7.1	6.5	2.5	1.2	18	16		
12	7.8	6.6	3.7	2.2	16	15		
13	7.6	7.3	4.4	2.8	17	14		
14	7.5	7.0	3.6	2.6	17	16		
15	7.5	7.4	3.4	2.6	19	17		
16	7.6	7.0	3.3	2.0	20	19		
17	7.9	7.2	3.0	.7	21	18		
18	8.0	7.4	2.9	.8	20	17		
19	8.0	7.4	2.9	.8	24	16		
20	7.9	6.9	4.1	.8	19	14		
21	7.6	7.2	3.2	.7	21	14		
22	7.8	7.1	3.3	.8	27	15		
23	7.8	5.8	3.1	.9	25	17		
24	7.2	6.2	3.4	.8	22	15		
25	7.5	6.2	3.4	.6	22	14		
26	7.8	6.4	2.8	.6	26	17		
27	7.8	6.4	3.0	.8	21	13		
28	7.8	7.0	3.0	.8	20	13		
29	7.7	6.9	2.2	.8	24	15		
30	--	--	--	--	--	--	--	--
31	--	--	--	--	--	--	--	--

0317100 TUSCARAWAS RIVER AT NAVARRE, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, MARCH TO SEPTEMBER 1968

DAY	JUNE								JULY							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1									--	--	--	--	--	--	--	--
2									--	--	--	--	--	--	--	--
3									--	--	--	--	--	--	--	--
4									--	--	--	--	--	--	--	--
5									--	--	--	--	--	--	--	--
6									--	--	--	--	--	--	--	--
7									--	--	--	--	--	--	--	--
8									--	--	--	--	--	--	--	--
9									--	--	--	--	--	--	--	--
10									--	--	--	--	--	--	--	--
11									5200	5010	7.2	7.0	5.0	3.9	27	25
12									5380	4400	7.1	6.1	3.9	2.1	27	22
13									5740	4660	7.4	6.3	5.4	1.7	27	22
14									6050	3800	7.4	5.4	4.6	1.2	26	23
15									6180	4960	7.2	6.8	5.0	2.4	26	21
16									6620	3110	7.0	6.4	3.8	1.0	25	23
17									5400	1080	7.7	6.4	4.8	.8	23	19
18									3240	540	7.5	7.3	3.2	1.2	25	22
19									3330	900	7.4	7.2	2.0	1.0	26	24
20									2250	1980	7.4	7.1	1.8	1.0	25	23
21									7650	2160	7.4	6.8	2.0	1.3	26	23
22									3010	1350	7.9	6.9	2.2	.8	26	23
23									4910	1080	7.8	7.0	1.5	.8	26	22
24									6300	2920	7.8	7.0	1.5	.8	29	24
25									5710	3060	7.8	6.7	2.1	.8	27	24
26									4810	3010	7.8	7.2	.9	.8	30	23
27									6520	3780	7.5	6.5	1.4	.7	27	23
28									7060	5400	7.3	6.5	1.9	.7	28	23
29									7020	5400	7.4	6.4	2.6	.7	24	19
30									7830	6080	7.0	6.6	4.1	1.6	24	19
31									8790	5440	7.1	6.8	3.4	.8	24	21
DAY	AUGUST								SEPTEMBER							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7880	6440	7.2	6.5	2.1	.4	24	22	7580	7040	7.2	6.9	.0	.0	21	19
2	9090	3280	7.4	6.9	1.7	.4	24	22	8960	5140	7.2	6.9	.4	.0	22	18
3	5760	3740	7.3	6.3	2.7	.6	25	22	8780	6520	7.4	6.4	2.2	.0	22	18
4	6390	4320	7.4	6.7	1.6	.7	24	22	6760	5170	7.3	6.6	2.0	.0	24	19
5	7380	5850	7.4	7.2	2.0	.6	26	22	7600	6120	6.9	6.4	1.0	.0	22	20
6	7420	5620	7.2	6.6	1.1	.1	28	24	8540	3100	7.3	6.6	2.2	.0	23	19
7	7090	5600	7.0	6.4	3.3	.8	27	25	8260	2450	7.5	5.4	1.0	.0	23	19
8	9180	3140	7.2	6.2	3.9	.9	28	24	3800	2630	7.4	7.2	2.4	.0	23	18
9	5630	3160	7.2	6.6	3.6	.9	27	24	5090	3600	7.4	6.5	2.0	.0	22	19
10	7040	4560	7.3	7.0	2.3	.6	26	23	6520	5080	7.1	6.6	.6	.0	21	20
11	7000	4930	7.6	5.8	3.4	1.0	24	21	6910	4120	7.0	6.6	.4	.0	20	18
12	5530	4780	7.6	6.9	2.5	.7	24	19	6660	5040	7.1	6.8	1.0	.0	20	16
13	6520	5530	7.4	6.6	2.0	.2	23	19	6550	5290	7.1	6.4	.5	.0	21	16
14	7170	5500	7.2	6.7	3.7	.2	26	20	7210	5540	7.4	5.4	.2	.0	22	17
15	6340	5800	7.4	6.6	2.9	.0	26	21	7230	6280	7.4	7.1	1.4	.0	23	18
16	7120	5280	7.2	6.7	2.0	.0	27	23	7410	6430	7.2	6.2	.8	.0	23	19
17	6670	4900	7.4	6.9	3.5	.0	27	24	5020	5020	7.0	6.6	.5	.0	21	19
18	7690	3990	7.8	5.8	2.8	.2	27	24	7260	9950	7.0	6.6	.2	.1	22	19
19	5540	4320	7.5	7.1	2.5	.0	28	24	7380	6120	7.0	6.6	.3	.2	20	19
20	8280	4560	7.6	7.1	2.0	.0	29	25	8750	7060	7.0	6.4	.5	.3	22	18
21	7100	6280	7.3	6.9	2.7	.0	30	26	7480	5140	7.0	5.6	.6	.5	23	19
22	7950	5920	7.2	6.7	2.0	.0	30	26	8090	6970	7.5	7.0	.7	.6	24	20
23	6220	5100	7.4	6.6	1.8	.0	30	26	7170	4160	7.3	6.8	.8	.7	23	21
24	6570	5720	7.4	6.7	2.8	.0	30	26	9170	4130	7.4	7.1	.9	.8	25	22
25	7060	1540	7.5	6.5	1.7	.0	28	25	4960	3620	7.1	6.4	2.2	.8	23	21
26	4440	1740	7.4	6.4	.6	.0	25	20	6940	4820	7.0	6.5	1.4	.8	21	18
27	7220	4440	7.1	6.5	.7	.0	22	18	7260	5720	6.9	6.7	2.5	.8	20	17
28	7530	5140	7.0	6.3	.4	.0	22	17	6760	5720	7.0	6.2	1.0	.2	20	15
29	7200	5540	7.0	6.5	.0	.0	23	17	7570	5860	7.6	7.0	1.0	.9	20	15
30	5980	4940	7.0	6.4	.0	.0	23	17	7520	6760	7.6	7.0	1.0	.9	19	15
31	7010	5480	7.0	5.4	.4	.0	23	18	--	--	--	--	--	--	--	--

03131500 BLACK FORK AT LOUDONVILLE, OHIO

LOCATION.--Lat 40°38'08", long 82°14'19", in NW $\frac{1}{4}$ sec.1, T.19 N., R.16 W., Ashland County, on right bank at Loudonville water treatment plant, just downstream from gaging station and bridge on State Highway 3 at Loudonville, 1.5 miles downstream from Big Run.

DRAINAGE AREA (revised).--349 sq mi.

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

REMARKS.--In addition to the continuous recorder, twice-weekly samples were collected by a local observer. Partial analyses were made on the maximum specific conductance and minimum specific conductance of samples collected each month. Interruptions in the record were due to malfunctions of the instrument.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, APRIL TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	BICAR- BONATE (MG/L)	CAR- BONATE (MG/L)	SILFATE (MG/L)	CHLO- RINE (CL)	FLUO- RIDE (F)
APR.							
26...	1600	207	164	0	111	26	.3
30...	1600	198	172	0	86	24	.3
MAY							
09...	1000	264	58	0	305	48	.4
17...	1300	560	208	0	67	24	.3
JUNE							
05...	1815	1470	119	0	64	14	.3
18...	1600	415	224	0	58	12	.2
JULY							
15...	0855	136	218	0	64	23	.3
25...	1300	204	186	0	84	28	.4
AUG.							
02...	1700	142	168	5	92	24	.4
23...	1000	131	98	0	211	25	.4
SEPT.							
17...	0900	85	148	0	197	24	.3
25...	1425	85	214	0	80	28	.4

DATE	NITRATE (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAP- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH
------	-------------------	--	--------------------------	---	---	----

APR.						
25...	5.9	364	247	113	567	7.0
30...	5.8	302	239	98	517	7.0
MAY						
09...	5.2	596	336	288	867	6.2
17...	.2	310	228	59	513	6.8
JUNE						
15...	15	252	180	82	384	7.5
18...	3.9	288	245	62	493	8.0
JULY						
15...	3.7	312	228	50	572	7.6
26...	2.4	312	233	80	523	7.3
AUG.						
02...	3.7	312	230	84	529	8.4
25...	2.4	434	280	100	655	8.0
SEPT.						
17...	2.9	434	337	186	692	7.3
25...	4.5	348	239	64	585	8.2

DISSOLVED OXYGEN, AND WATER TEMPERATURES, APRIL TO SEPTEMBER 1968

DAY	APRIL				MAY				JUNE				JULY			
	DISSOLVED OXYGEN (MG/L)		TEMPER- ATURE (°C)		DISSOLVED OXYGEN (MG/L)		TEMPER- ATURE (°C)		DISSOLVED OXYGEN (MG/L)		TEMPER- ATURE (°C)		DISSOLVED OXYGEN (MG/L)		TEMPER- ATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--			16	14					--	--	--	--
2	--	--	--	--			16	12					--	--	--	--
3	--	--	--	--			16	14					--	--	--	--
4	--	--	--	--			16	14					--	--	--	--
5	--	--	--	--			16	14					--	--	--	--
6	--	--	--	--			14	10					--	--	24	22
7	--	--	--	--			14	10					--	--	22	16
8	--	--	--	--			15	12					--	--	24	16
9	--	--	--	--			17	14					--	--	22	19
10	--	--	--	--			16	14					--	--	22	20
11	--	--	--	--			16	13					--	--	22	19
12	--	--	--	--			14	13					--	--	26	20
13	--	--	--	--			17	13					--	--	25	22
14	--	--	--	--			17	14					--	--	23	21
15	--	--	--	--			19	14					6.5	2.7	22	20
16	--	--	--	--			19	16					2.7	2.5	23	21
17	--	--	--	--			17	15					2.5	2.0	25	21
18	--	--	--	--			17	15					3.1	2.1	25	22
19	--	--	--	--			16	13					3.0	2.5	25	23
20	--	--	--	--			17	12					3.6	2.4	23	21
21	--	--	--	--			16	14					4.3	3.0	23	20
22	--	--	--	--			17	13					4.4	3.5	23	21
23	8.7	6.2	17	16			17	14					4.1	3.0	24	21
24	7.0	3.7	16	12			17	14					4.4	3.7	24	22
25	--	--	12	9			20	14					4.0	3.4	24	23
26	--	--	11	8			22	20					--	--	--	--
27	--	--	14	10			--	--					--	--	--	--
28	--	--	15	11			--	--					--	--	--	--
29	--	--	16	12			--	--					--	--	--	--
30	--	--	16	13			--	--					--	--	--	--
31	--	--	--	--			--	--					--	--	--	--

03131500 BLACK FORK AT LOUDONVILLE, OHIO--Continued
DISSOLVED OXYGEN, AND WATER TEMPERATURES, APRIL TO SEPTEMBER 1968

AUGUST

SEPTEMBER

AUGUST

SEPTEMBER

DAY	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		DAY	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	12.8	10.5	18	17	17	10.0	6.2	25	22	6.3	4.9	18	17
2	--	--	--	--	11.1	3.6	19	17	18	9.5	.7	24	22	5.3	3.6	18	17
3	--	--	--	--	7.4	1.8	20	17	19	9.2	5.0	24	21	5.1	3.7	18	17
4	--	--	--	--	8.5	4.0	20	18	20	7.9	2.0	25	23	5.7	3.7	19	16
5	--	--	--	--	7.5	6.1	19	18	21	9.1	3.4	25	23	6.2	4.5	20	17
6	--	--	--	--	6.1	3.2	20	19	22	8.0	4.6	25	22	6.7	4.7	20	17
7	4.9	4.0	23	22	7.9	1.9	20	18	23	7.9	3.1	25	24	6.9	4.7	20	19
8	5.9	3.3	24	21	6.4	4.0	19	17	24	6.3	3.8	25	24	7.0	4.9	20	18
9	5.2	3.6	24	22	6.9	4.3	19	18	25	5.5	2.9	24	21	5.9	4.5	20	18
10	5.1	2.6	23	20	5.7	4.7	18	18	26	6.6	1.8	21	18	--	--	18	16
11	6.3	3.9	20	18	4.8	2.9	18	17	27	7.3	3.5	19	16	--	--	17	15
12	7.7	4.7	20	18	4.5	2.9	17	15	28	11.0	6.8	19	16	--	--	16	14
13	8.4	5.0	20	18	5.6	3.8	18	15	29	11.9	8.4	19	16	--	--	15	13
14	8.8	6.6	22	19	6.7	4.4	18	16	30	13.2	10.4	19	16	--	--	15	13
15	11.9	5.6	22	20	7.0	5.2	19	16	31	13.0	10.1	19	16	--	--	--	--
16	9.7	6.5	23	21	6.9	4.9	19	16									

03139000 KILLBUCK CREEK AT KILLBUCK, OHIO

LOCATION.--Lat 40°29'43", long 81°59'10", in SW $\frac{1}{4}$ sec.6, T.8 N., R.7 W., Holmes County, at gaging station at bridge on County Road 2B at Killbuck, 0.1 mile downstream from Black Creek and 0.9 mile upstream from bridge on U.S. Highway 62.

DRAINAGE AREA.--462 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1957 to September 1958.

Water temperatures: October 1962 to September 1968.

Sediment records: October 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 24; minimum, 1.0°C on many days during December, January, February, and March.

Sediment concentrations: Maximum daily, 869 mg/l May 16; minimum daily, 2 mg/l Nov. 30, Jan. 9, Feb. 24, Mar. 3.

Sediment loads: Maximum daily, 3,700 tons Jan. 30; minimum daily, 0.52 ton Nov. 30.

Period of record:

Water temperatures: Maximum, 27.0°C July 27, 1964, Aug. 16, 1925, Aug. 24, 1968; minimum, freezing point on several days during December 1962 to March 1963, December 1963, and January 1964.

Sediment concentrations: Maximum daily, 2,170 mg/l June 11, 1963; minimum daily, 1 mg/l Dec. 14, 15, 17, 1962, Jan. 15, 1964.

Sediment loads: Maximum daily, 7,790 tons Mar. 10, 1964; minimum daily, 0.15 ton Jan. 15, 1964.

REMARKS.--Daily sediment loads were computed by subdivision on Dec. 3, 22, Jan. 29, Mar. 16, Apr. 23, May 11, 16, 27, June 16. Flow affected by ice Jan. 1-19, 25-28, Feb. 11 to Mar. 2, 13.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 1700 AND 1800)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	12.0	2.0	1.0	--	3.0	11.0	14.0	16.0	21.0	21.0	19.0
2	17.0	13.0	3.0	1.0	3.0	3.0	11.0	16.0	18.0	22.0	22.0	19.0
3	17.0	12.0	3.0	1.0	2.0	4.0	12.0	16.0	19.0	21.0	22.0	20.0
4	13.0	11.0	3.0	1.0	2.0	4.0	12.0	16.0	20.0	19.0	22.0	20.0
5	17.0	7.0	3.0	1.0	3.0	4.0	11.0	14.0	21.0	21.0	22.0	19.0
6	15.0	4.0	4.0	1.0	2.0	4.0	11.0	14.0	21.0	21.0	25.0	20.0
7	17.0	3.0	6.0	1.0	3.0	6.0	12.0	15.0	22.0	22.0	24.0	18.0
8	14.0	2.0	7.0	1.0	3.0	6.0	13.0	15.0	22.0	22.0	25.0	20.0
9	15.0	7.0	7.0	1.0	1.0	9.0	12.0	15.0	22.0	22.0	24.0	19.0
10	13.0	6.0	7.0	2.0	--	8.0	13.0	15.0	22.0	25.0	24.0	18.0
11	13.0	6.0	7.0	1.0	1.0	8.0	13.0	14.0	23.0	24.0	22.0	18.0
12	14.0	7.0	7.0	1.0	1.0	4.0	13.0	13.0	23.0	24.0	22.0	18.0
13	15.0	7.0	6.0	1.0	1.0	4.0	16.0	14.0	19.0	24.0	21.0	18.0
14	--	6.0	6.0	1.0	1.0	3.0	18.0	14.0	21.0	24.0	22.0	19.0
15	--	3.0	6.0	1.0	1.0	3.0	13.0	15.0	21.0	23.0	22.0	18.0
16	16.0	2.0	5.0	1.0	1.0	4.0	13.0	14.0	19.0	23.0	23.0	19.0
17	18.0	4.0	2.0	1.0	1.0	6.0	13.0	15.0	18.0	24.0	24.0	18.0
18	13.0	4.0	3.0	--	1.0	9.0	13.0	15.0	18.0	24.0	24.0	17.0
19	13.0	4.0	5.0	3.0	1.0	9.0	14.0	16.0	19.0	25.0	25.0	18.0
20	11.0	5.0	6.0	3.0	1.0	9.0	20.0	14.0	20.0	24.0	--	19.0
21	12.0	5.0	7.0	4.0	1.0	7.0	16.0	15.0	19.0	24.0	26.0	20.0
22	12.0	4.0	5.0	2.0	1.0	4.0	22.0	15.0	21.0	23.0	26.0	21.0
23	11.0	5.0	4.0	2.0	1.0	1.0	17.0	14.0	22.0	24.0	26.0	19.0
24	12.0	4.0	4.0	--	1.0	3.0	15.0	13.0	--	24.0	27.0	20.0
25	12.0	4.0	4.0	--	1.0	4.0	14.0	15.0	22.0	23.0	25.0	20.0
26	10.0	4.0	3.0	3.0	2.0	8.0	12.0	16.0	21.0	23.0	20.0	17.0
27	--	3.0	1.0	2.0	2.0	12.0	12.0	14.0	19.0	23.0	20.0	18.0
28	14.0	3.0	1.0	2.0	3.0	13.0	13.0	15.0	21.0	23.0	18.0	18.0
29	14.0	2.0	1.0	2.0	3.0	12.0	13.0	15.0	21.0	22.0	19.0	16.0
30	14.0	2.0	1.0	3.0	--	13.0	14.0	15.0	21.0	23.0	20.0	15.0
31	13.0	--	1.0	2.0	--	14.0	--	16.0	--	21.0	20.0	--
AVERAGE	14.0	5.5	4.0	1.5	1.5	6.5	13.5	15.0	20.5	23.0	23.0	18.5

MUSKINGUM RIVER BASIN

03139000 KILLBUCK CREEK AT KILLBUCK, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	83	110	27	59	29	4.6	96	6	1.6
2	65	93	16	114	45	14	94	9	2.3
3	58	101	16	194	69	36	271	38	31
4	52	99	14	159	61	26	422	72	82
5	48	82	11	133	32	11	340	58	53
6	54	73	11	107	13	3.8	316	32	27
7	49	54	7.1	93	8	2.0	359	40	39
8	54	57	8.3	83	7	1.6	349	39	37
9	101	79	22	78	35	7.4	284	29	22
10	96	70	18	74	29	5.8	238	38	24
11	71	70	13	75	27	5.5	291	43	34
12	62	101	17	107	49	14	428	68	55
13	59	77	12	113	63	19	421	50	42
14	58	43	6.7	103	40	11	322	92	43
15	57	47	7.2	98	11	2.0	271	44	32
16	52	54	7.6	91	5	1.2	231	39	24
17	52	55	7.7	106	8	2.3	261	21	11
18	95	44	11	189	11	5.6	203	8	4.4
19	83	52	12	144	15	7.5	243	24	16
20	76	27	5.5	150	12	4.9	254	37	25
21	71	46	8.8	125	8	2.7	254	53	36
22	63	47	8.0	115	6	1.9	439	143	189
23	59	37	5.8	130	3	1.1	563	162	246
24	56	37	5.6	129	4	1.4	440	90	107
25	59	37	5.9	134	5	1.8	340	68	62
26	59	32	5.1	130	5	1.8	347	45	42
27	58	30	4.7	117	4	1.3	273	13	9.6
28	61	15	2.5	108	5	1.5	249	7	4.7
29	59	14	2.2	94	3	.76	218	16	6.4
30	56	14	2.1	96	2	.52	199	16	8.6
31	55	15	2.2	--	--	--	176	8	3.8
TOTAL	1951	--	303.9	3488	--	209.88	9132	--	1338.4
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	160	18	7.8	2510	135	915	130	8	2.8
2	150	11	4.5	2930	87	689	130	6	2.1
3	140	15	5.7	3000	72	583	131	2	.71
4	130	10	3.5	2670	117	843	126	5	1.7
5	120	15	4.9	2330	87	447	135	7	2.6
6	110	8	2.4	1920	57	295	148	6	2.4
7	110	8	2.4	1480	65	260	147	8	2.2
8	100	5	1.4	1140	75	231	148	10	4.0
9	100	2	.54	853	44	101	172	12	5.6
10	100	16	4.3	594	55	90	217	8	4.7
11	100	17	4.6	430	62	72	217	10	5.9
12	100	11	3.0	350	15	14	196	10	5.3
13	100	7	1.9	300	3	2.4	200	4	2.7
14	100	24	6.5	280	4	3.0	201	6	4.9
15	110	19	5.6	260	7	4.9	219	10	5.9
16	110	5	1.5	240	17	11	335	30	29
17	110	3	.89	230	12	7.5	598	49	79
18	120	6	1.9	210	11	6.2	592	79	126
19	120	4	1.3	200	11	5.9	545	75	110
20	132	4	1.4	190	5	2.6	500	68	92
21	134	4	1.4	180	7	3.4	589	69	110
22	138	6	2.2	170	9	4.1	846	112	256
23	139	5	1.9	170	5	2.3	1240	280	937
24	126	7	2.4	160	2	.86	1250	185	624
25	110	8	2.4	150	5	2.0	1270	172	590
26	110	11	3.3	140	7	2.6	1230	84	279
27	110	9	2.7	140	8	3.0	1450	108	423
28	130	7	2.5	140	8	3.0	1460	90	355
29	816	458	1360	140	8	3.0	1280	118	468
30	2130	646	3700	--	--	--	1100	113	336
31	2640	627	3040	--	--	--	900	45	109
TOTAL	8905	--	8184.83	23507	--	4706.76	17702	--	4917.51

MUSKINGUM RIVER BASIN

03144500 MUSKINGUM RIVER AT DRESDEN, OHIO

LOCATION.--Lat 40°07'14", long 81°59'58", Muskingum County, at gaging station 70 ft downstream from bridge on State Highway 208, 0.5 mile east of Dresden and 0.5 mile downstream from Wakatomika Creek.

DRAINAGE AREA.--5,993 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1952 to September 1961, October 1961 to September 1963, unpublished; October 1963 to September 1968.
Sediment records: October 1952 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 30.0°C Aug. 24; minimum, freezing point on several days during December and January.

Sediment concentrations: Maximum daily, 350 mg/l Jan. 31; minimum daily, 6 mg/l Jan. 18.

Sediment loads: Maximum daily, 18,900 tons Jan. 31; minimum daily, 31 tons Sept. 15.

Period of record:

Water temperatures (1952-60, 1964-68): Maximum, 31.0°C Aug. 4, 1955; minimum, freezing point on many days during 1952-59, 1965-68.

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 loads: Maximum daily, 160,000 tons Jan. 22, 1959; minimum daily, 2.7 tons Dec. 17, 1960.

REMARKS.--Flow is regulated by 14 flood-control reservoirs. Daily sediment loads were computed by subdivision on Dec. 21, Jan. 29, 30, May 12.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968 (ONCE-DAILY MEASUREMENT BETWEEN 0800 AND 1300)												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	13.0	2.0	---	2.0	3.0	11.0	14.0	---	---	25.0	23.0
2	15.0	13.0	3.0	---	3.0	---	11.0	15.0	15.0	23.0	23.0	21.0
3	17.0	12.0	3.0	1.0	---	---	10.0	16.0	---	22.0	24.0	22.0
4	19.0	11.0	3.0	0.0	1.0	4.0	11.0	---	17.0	21.0	24.0	22.0
5	21.0	8.0	3.0	---	1.0	4.0	10.0	16.0	17.0	21.0	---	24.0
6	19.0	7.0	3.0	---	1.0	4.0	---	14.0	18.0	22.0	26.0	23.0
7	16.0	6.0	6.0	---	1.0	6.0	9.0	13.0	18.0	24.0	27.0	23.0
8	17.0	5.0	6.0	0.0	1.0	6.0	11.0	---	19.0	---	26.0	22.0
9	17.0	6.0	6.0	0.0	1.0	---	12.0	---	19.0	24.0	27.0	23.0
10	17.0	7.0	7.0	1.0	---	8.0	12.0	---	---	25.0	26.0	23.0
11	16.0	8.0	7.0	0.0	---	7.0	---	16.0	21.0	24.0	23.0	22.0
12	15.0	4.0	7.0	1.0	---	---	12.0	16.0	22.0	24.0	---	22.0
13	14.0	9.0	7.0	---	---	5.0	13.0	15.0	21.0	25.0	22.0	23.0
14	16.0	7.0	7.0	---	---	4.0	14.0	15.0	20.0	25.0	23.0	22.0
15	16.0	6.0	6.0	---	---	5.0	13.0	15.0	21.0	26.0	24.0	22.0
16	18.0	---	4.0	0.0	2.0	6.0	13.0	17.0	21.0	26.0	26.0	21.0
17	18.0	5.0	---	---	1.0	4.0	13.0	17.0	---	26.0	26.0	22.0
18	17.0	6.0	6.0	1.0	1.0	6.0	13.0	16.0	19.0	26.0	27.0	22.0
19	14.0	5.0	7.0	1.0	1.0	6.0	15.0	15.0	19.0	26.0	---	22.0
20	13.0	4.0	6.0	---	---	8.0	16.0	14.0	19.0	25.0	28.0	22.0
21	13.0	---	8.0	2.0	1.0	9.0	15.0	14.0	19.0	26.0	29.0	22.0
22	13.0	6.0	---	---	1.0	7.0	16.0	14.0	20.0	---	29.0	23.0
23	12.0	6.0	---	---	2.0	4.0	17.0	15.0	21.0	26.0	29.0	23.0
24	15.0	5.0	3.0	---	---	3.0	16.0	14.0	---	26.0	30.0	23.0
25	14.0	6.0	3.0	0.0	2.0	4.0	13.0	14.0	23.0	26.0	29.0	24.0
26	12.0	6.0	2.0	1.0	2.0	6.0	14.0	15.0	22.0	24.0	---	22.0
27	12.0	5.0	---	---	---	7.0	12.0	15.0	21.0	24.0	29.0	20.0
28	11.0	4.0	---	2.0	3.0	9.0	12.0	14.0	19.0	25.0	24.0	20.0
29	---	3.0	1.0	2.0	3.0	11.0	13.0	14.0	19.0	---	24.0	19.0
30	11.0	---	---	1.0	---	11.0	14.0	14.0	21.0	23.0	24.0	18.0
31	12.0	---	0.0	2.0	---	12.0	---	14.0	---	24.0	24.0	---
MONTH	15.0	7.0	4.5	---	---	6.0	13.0	15.0	19.5	24.5	25.5	22.0

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968									
DAY	MEAN DISCHARGE (CFS)	OCTOBER		LOAD (TONS)	NOVEMBER		LOAD (TONS)	DECEMBER	
		MEAN CONCENTRATION (MG/L)	MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)	MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)	MEAN CONCENTRATION (MG/L)
1	2400	29	188	1600	22	95	2960	8	64
2	1946	27	141	1910	23	119	2940	8	64
3	1820	23	101	2770	41	307	3530	29	276
4	1364	20	73	3360	35	318	6250	119	2010
5	1270	22	75	3590	22	213	7390	135	2690
6	1880	46	233	3420	15	139	6980	78	1470
7	1680	36	163	3100	14	117	6730	55	999
8	1480	25	100	2830	8	61	6980	56	1060
9	1540	24	100	2610	8	56	6250	52	878
10	1620	26	114	2520	8	54	5610	32	467
11	1560	23	97	2470	8	53	5140	36	500
12	1440	18	70	2580	16	111	6980	63	1190
13	1320	17	61	2860	22	170	7970	67	1440
14	1250	16	54	2940	19	151	7590	48	984
15	1190	18	55	2840	11	84	6540	37	653
16	1140	16	49	2830	8	61	5610	20	303
17	1080	17	50	2920	8	63	3880	15	157
18	1060	18	52	3800	29	298	2610	13	92
19	1110	17	51	4590	60	744	2440	8	53
20	1260	14	48	4540	80	961	2550	13	90
21	1380	18	67	3980	34	365	2960	42	391
22	1390	15	55	3660	23	227	5280	75	1070
23	1260	13	44	3610	23	672	6730	3	672
24	1170	15	47	3820	23	237	7010	28	336
25	1210	15	49	3880	18	189	6630	20	358
26	1260	18	61	3900	17	179	6250	23	388
27	1470	19	75	3750	15	152	6030	23	374
28	1560	17	72	3530	12	114	6250	21	354
29	1580	13	55	3300	8	71	5810	16	251
30	1580	15	64	3120	7	59	5280	13	185
31	1566	19	80	---	---	---	4880	15	198
TOTAL	44580	---	2544	96630	---	6012	169840	---	20211

03144500 MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	4320	15	175	20600	215	12000	2520	12	82
2	354C	15	143	21800	152	8950	2500	12	81
3	2960	13	104	22400	124	7500	2310	10	62
4	318C	17	146	22100	116	6920	2190	12	71
5	274C	15	111	23800	85	5460	2160	11	64
6	2330	9	57	24300	88	4460	2200	8	48
7	2450	8	53	24400	62	4080	2260	10	61
8	2080	8	45	24200	57	3720	2270	10	61
9	2050	13	72	24000	54	3500	2400	10	65
10	2230	17	102	21100	49	2790	2520	13	88
11	2290	12	74	17400	48	2260	2820	15	114
12	2230	11	66	15600	36	1520	3010	17	138
13	2240	15	91	14700	33	1310	3250	23	242
14	2050	13	72	13400	32	1160	3720	24	241
15	2030	10	55	12200	33	1090	4640	35	438
16	2030	8	44	9570	31	801	5020	54	732
17	2010	7	38	5750	59	916	6670	83	1490
18	2080	6	34	4610	32	398	8850	109	2600
19	2170	7	41	3960	16	171	9410	112	2890
20	2160	7	41	3850	14	146	8390	88	1990
21	2300	9	56	3460	14	131	8570	94	2180
22	2380	7	45	3070	13	108	13400	296	10700
23	2550	8	55	3020	16	130	18100	321	15700
24	2165C	7	50	3070	13	103	19000	173	8870
25	2880	7	54	2840	11	84	21500	128	7430
26	2980	8	64	2680	18	130	22600	115	7020
27	3040	14	115	2620	22	156	22900	112	6920
28	3040	107	107	2580	11	77	22900	97	6000
29	4710	50	703	2480	9	60	22500	84	3100
30	14900	322	14900	--	--	--	20400	78	4300
31	2000C	350	18900	--	--	--	16100	67	2910
TOTAL	110600	--	36613	355560	--	70136	287080	--	88608

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	15000	116	4700	4140	14	156	18700	65	3280
2	15900	133	5710	3880	16	168	19000	65	3330
3	15400	88	3660	3660	19	188	20000	66	3560
4	13900	67	2510	3620	20	195	21600	56	3270
5	12700	73	2500	3500	26	246	21200	45	2580
6	11800	74	2360	3340	20	180	20700	42	2350
7	10500	48	1360	3310	18	161	20200	43	2390
8	9330	42	1060	3100	13	109	19600	42	2220
9	8410	44	999	3010	14	114	19000	35	1800
10	7490	45	910	3250	22	193	18500	34	1700
11	6670	33	594	3610	31	302	17600	37	1760
12	6200	28	469	8390	158	4040	16200	49	2140
13	5750	23	357	13100	207	7320	16300	58	2590
14	5360	23	333	12500	130	4390	13800	43	1600
15	5790	82	1280	10700	123	3550	11800	41	1310
16	6140	38	630	10700	122	3520	11200	39	1180
17	5910	28	447	14500	223	8730	11300	42	1280
18	5390	22	320	15300	192	7930	11400	53	1630
19	5020	22	298	15600	166	6990	10700	46	1390
20	4710	23	292	14600	119	4690	7630	60	1240
21	4420	18	215	14600	98	3860	5860	52	823
22	4180	19	214	13100	96	3400	5140	39	541
23	4010	16	173	12200	95	3130	4540	35	429
24	4390	23	273	16200	203	8880	4060	28	367
25	5570	37	556	14700	176	6990	4040	32	349
26	5590	28	423	16500	112	4990	5720	84	1360
27	5140	19	264	20300	122	6690	7290	176	3460
28	4850	19	249	20900	168	9480	7790	143	3010
29	4620	18	225	19600	110	5820	7250	105	2060
30	4400	14	166	17100	83	3830	5840	68	1070
31	--	--	--	19000	73	3740	--	--	--
TOTAL	224540	--	33547	338010	--	113982	383960	--	55809

MUSKINGUM RIVER BASIN

03144500 MUSKINGUM RIVER AT DRESDEN, OHIO--Continued
SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	4860	53	695	2150	40	232	971	45	118
2	5540	142	2120	2310	40	249	1030	37	103
3	4640	92	1150	2860	52	404	1200	36	117
4	4060	53	581	3010	71	577	1270	42	144
5	3580	42	406	2770	53	396	1170	53	167
6	3200	33	285	2640	61	435	1230	50	166
7	2960	32	256	2620	63	446	1470	56	422
8	2820	28	213	2820	84	640	1870	61	308
9	2710	37	271	3020	66	538	1580	36	154
10	2640	31	221	4060	90	987	1320	32	114
11	2590	30	210	3880	83	870	1230	31	100
12	2470	33	220	3480	62	583	1150	30	93
13	2360	22	140	3320	58	520	1120	28	85
14	2290	28	173	2880	52	404	1090	16	47
15	2200	32	190	2500	47	317	1060	11	31
16	2160	30	175	2230	38	229	1000	13	35
17	2480	84	562	2010	37	201	949	13	33
18	3160	83	708	1850	43	215	905	16	39
19	4460	105	1260	1920	48	249	905	18	44
20	4090	125	1380	1810	53	259	916	19	47
21	3720	97	974	1680	45	204	916	25	62
22	3020	63	514	1560	34	143	916	18	45
23	2950	51	351	1500	36	146	927	20	50
24	2540	45	309	1420	27	104	960	18	47
25	3460	276	2580	1310	24	85	1080	27	79
26	4100	134	1480	1200	34	110	1260	38	129
27	3860	88	917	1140	36	111	1240	31	104
28	3260	57	502	1080	45	131	1080	25	73
29	2800	44	333	1060	41	117	971	26	68
30	2440	34	224	1020	44	121	894	22	53
31	2190	142	840	971	39	102	--	--	--
TOTAL	99230	--	20240	68101	--	10125	33650	--	2877
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)								2211761	
TOTAL LOAD FOR YEAR (TONS)								460704	

03146500 LICKING RIVER NEAR NEWARK, OHIO

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

DRAINAGE AREA.--537 sq mi.

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

Water temperatures: June 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 26.0°C Aug. 20, 21, 23-25; minimum, 1.0°C Mar. 23, 24.

Period of record:

Water temperatures: Maximum, 29.0°C Aug. 16, 17, 1965; minimum, freezing point on many days during winter periods.

REMARKS.--A continuous recorder was installed at this station on July 8, 1968 which records conductance, pH, dissolved oxygen, and temperature. Records of temperature for 1968 water year were taken from the thermograph. These data are shown in a separate temperature table. In addition to the continuous recorder, twice-weekly samples were collected by a local observer. Partial analyses were made on the maximum specific conductance and the minimum specific conductance of the samples collected for the period July to September. Interruptions in the record were due to malfunctions of the instrument.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, JULY TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	RICAR- BONATE (MG/L)	CAR- BONATE (MG/L)	SULFATE (MG/L)	CHLOR- IDE (MG/L)	FLUOR- IDE (MG/L)
JULY							
04...	1445	195	236	12	170	40	.4
26...	0945	630	234	0	78	22	.3
AUG.							
12...	1525	434	180	6	64	40	.3
15...	1539	220	218	8	80	79	.4
SEPT.							
02...	1518	109	216	8	104	41	.4
12...	0930	78	242	8	110	158	.5
DATE	NITRATE (MG/L)	DISS- SOLVED SOLIDS (MG/L)	HARD- NESS (MG/L)	NON- CAR- BONATE NESS	SPECI- FIC COND- UCTANCE (MICRO- MHO/CM)	pH	
JULY							
08...	20	444	322	108	715	--	
25...	14	344	274	82	576	7.3	
AUG.							
12...	14	344	230	72	655	--	
15...	10	470	294	102	806	8.5	
SEPT.							
02...	26	440	314	123	715	8.4	
12...	18	672	335	123	1130	8.4	

03146500 LICKING RIVER NEAR NEWARK, OHIO--Continued

SPECIFIC CONDUCTANCE, PH AND DISSOLVED OXYGEN, JULY TO SEPTEMBER 1968

JULY

AUGUST

SEPTEMBER

DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	730	580	7.8	7.1	6.6	4.3	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	730	600	7.2	6.9	5.1	3.9	--	--	--	--	--	--
7	--	--	--	--	--	--	780	430	6.9	6.6	4.2	2.3	--	--	--	--	--	--
8	710	610	8.3	8.1	7.6	5.6	620	440	6.8	6.7	4.6	3.3	--	--	--	--	--	--
9	700	670	8.2	8.0	6.1	4.9	580	540	6.7	6.5	4.0	2.5	--	--	--	--	--	--
10	670	640	8.2	7.9	5.4	4.4	580	320	6.7	6.6	3.8	1.5	--	--	--	--	--	--
11	700	670	7.9	7.6	4.8	4.3	480	360	6.8	6.7	5.2	3.8	--	--	--	--	--	--
12	690	650	7.7	7.6	6.0	4.2	620	480	6.9	6.8	5.7	4.0	1170	850	--	--	3.3	1.8
13	1120	670	7.7	7.5	4.2	3.6	700	600	7.3	6.9	5.3	2.0	1180	850	--	--	2.9	1.7
14	1080	780	7.5	7.4	3.9	3.1	850	640	--	--	5.6	4.0	1190	1020	--	--	2.0	1.8
15	910	810	7.7	7.5	3.9	3.5	820	740	--	--	8.7	5.4	1060	750	--	--	2.0	1.7
16	810	690	7.6	7.5	5.0	3.4	790	690	--	--	8.6	5.7	1000	750	--	--	2.1	1.8
17	930	770	7.5	7.4	4.1	3.4	670	740	--	--	5.7	4.1	1100	950	--	--	2.7	1.7
18	830	620	7.6	7.3	4.0	3.2	750	670	--	--	5.4	4.7	1140	970	--	--	2.4	.6
19	640	590	7.3	7.3	3.7	3.3	720	670	--	--	5.5	3.8	1060	830	--	--	1.2	.5
20	--	--	--	--	--	--	720	670	--	--	5.0	4.1	1080	1010	--	--	1.3	.7
21	--	--	--	--	--	--	830	680	--	--	4.7	4.1	1100	830	--	--	1.6	.9
22	--	--	--	--	--	--	860	750	--	--	4.4	3.7	1140	920	--	--	1.9	1.1
23	--	--	--	--	--	--	840	700	--	--	5.2	4.1	1070	500	--	--	1.5	1.3
24	--	--	--	--	--	--	740	690	--	--	4.9	3.7	810	430	--	--	1.9	.5
25	--	--	--	--	--	--	730	670	--	--	5.1	4.6	770	580	--	--	2.0	1.9
26	--	--	--	--	--	--	760	680	--	--	5.1	3.6	920	760	7.2	7.1	3.4	1.8
27	--	--	--	--	--	--	780	630	--	--	3.7	2.5	1040	870	7.1	6.9	2.7	1.0
28	--	--	--	--	--	--	740	480	--	--	3.2	1.9	1140	940	7.2	7.0	2.3	.8
29	--	--	--	--	--	--	--	--	--	--	--	--	1050	910	7.7	7.2	1.4	.3
30	--	--	--	--	--	--	--	--	--	--	--	--	1040	790	7.9	7.3	.8	.3
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

MONTH	DAY																															AVER- AGE		
	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			
OCTOBER																																		
MAXIMUM	16	18	18	19	19	18	14	17	17	14	13	12	13	13	16	16	16	15	12	11	12	14	14	11	11	9	9	9	11	11	14			
MINIMUM	12	13	15	16	17	14	12	13	14	13	11	11	10	13	12	14	15	12	10	8	10	9	9	11	11	9	9	8	7	8	11	12		
NOVEMBER																																		
MAXIMUM	13	13	11	11	8	6	5	6	8	9	9	11	9	8	6	5	6	6	6	6	7	7	6	6	6	5	4	3	--	7				
MINIMUM	11	11	11	8	6	5	5	4	6	9	9	8	6	4	3	5	5	5	4	6	6	4	4	6	6	5	4	3	2	3	6			
DECEMBER																																		
MAXIMUM	4	4	4	3	4	5	7	7	7	7	7	7	7	7	6	5	7	7	7	9	9	7	4	4	5	4	4	4	4	4	6			
MINIMUM	3	3	3	2	3	4	5	7	6	7	7	7	7	7	6	4	3	5	7	6	7	7	4	4	4	4	3	3	4	3	3	5		
JANUARY																																		
MAXIMUM	3	3	4	4	3	3	3	3	3	4	4	4	4	4	4	4	5	6	7	7	7	7	7	5	4	4	7	7	4	3	4	5		
MINIMUM	3	3	3	3	3	3	3	3	3	3	4	4	4	3	4	3	3	3	5	7	6	5	3	3	3	3	4	4	3	3	3	4		
FEBRUARY																																		
MAXIMUM	6	7	7	6	7	7	7	7	7	6	4	4	4	5	6	6	7	6	6	6	6	7	7	6	7	7	6	7	7	6	--	6		
MINIMUM	4	6	6	6	6	6	6	6	4	4	4	4	4	4	4	4	5	4	4	6	4	4	4	4	4	3	3	5	6	4	--	5		
MARCH																																		
MAXIMUM	6	5	5	7	8	7	8	9	11	9	9	8	6	6	6	7	8	9	9	9	9	6	3	3	3	3	5	8	11	12	11	7		
MINIMUM	3	4	2	3	4	6	4	6	4	8	8	7	4	3	3	4	6	4	4	6	8	6	3	1	1	2	3	5	7	8	9	5		
APRIL																																		
MAXIMUM	11	9	8	9	9	8	9	10	11	10	12	13	14	14	13	12	12	14	14	14	15	16	15	14	10	9	12	13	14	13	--	12		
MINIMUM	8	6	7	8	7	5	6	9	8	8	8	8	9	11	10	8	9	10	11	12	11	12	11	12	12	10	8	7	8	8	10	12	--	9
MAY																																		
MAXIMUM	16	16	16	16	15	14	14	16	15	16	15	12	14	14	17	16	16	14	13	13	13	13	16	15	12	13	13	13	12	13	13	14	14	
MINIMUM	11	11	13	13	11	9	9	11	13	12	12	11	13	13	14	14	12	12	10	11	11	12	11	11	11	11	11	13	12	12	12	13	12	12
JUNE																																		
MAXIMUM	14	15	17	17	18	19	19	21	22	21	22	21	19	18	19	18	17	18	18	19	19	19	18	19	21	21	18	18	16	21	23	--	19	
MINIMUM	13	13	15	14	16	17	18	18	18	18	18	18	16	14	16	16	15	15	16	15	15	16	16	17	18	17	16	14	15	18	--	16		
JULY																																		
MAXIMUM	23	23	19	20	21	22	22	23	23	23	22	22	22	22	24	25	25	24	24	24	24	24	24	24	22	23	22	22	22	21	21	23	23	
MINIMUM	19	19	17	15	16	18	17	18	19	20	19	20	19	19	19	20	20	21	21	20	19	19	20	20	22	20	20	19	18	18	19	19	19	
AUGUST																																		
MAXIMUM	20	22	21	20	21	23	22	22	22	21	21	21	22	22	23	25	25	24	26	26	24	24	24	26	26	26	24	21	21	21	21	23	23	
MINIMUM	19	18	19	19	18	20	21	19	20	20	19	17	18	18	19	20	22	22	22	23	24	24	24	24	24	23	20	18	18	18	18	18	20	
SEPTEMBER																																		
MAXIMUM	21	22	23	23	22	22	22	23	23	22	20	17	17	17	20	21	21	21	20	19	18	18	19	20	21	22	22	22	21	19	19	18	--	21
MINIMUM	19	19	19	21	21	20	19	19	21	20	18	17	17	18	18	19	20	19	18	18	19	20	20	20	20	21	20	17	17	17	16	16	--	19

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

LOCATION.--Lat 39°59'25", long 82°04'50", in T.1 N., R.8 W., Muskingum County, temperature recorder at gaging station on left bank, 500 ft downstream from Dillon Dam, 2 miles northwest of Dillon Falls and 5.8 miles up-stream from mouth.

DRAINAGE AREA.--742 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1961 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 25.0°C Aug. 9-12; minimum, 3.0°C Feb. 1, 3, 5, Mar. 13.

Period of record:

Water temperatures: Maximum, 27.0°C June 17-19, 1967; minimum, freezing point Feb. 7-12, 1967.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.0	14.0	9.0	9.0	---	---	5.0	5.0	4.0	3.0	4.0	4.0
2	14.0	14.0	9.0	9.0	---	---	5.0	5.0	4.0	4.0	4.0	4.0
3	14.0	14.0	9.0	9.0	---	---	5.0	5.0	4.0	3.0	5.0	4.0
4	15.0	14.0	9.0	9.0	---	---	5.0	5.0	4.0	4.0	5.0	4.0
5	16.0	15.0	9.0	8.0	5.0	5.0	5.0	5.0	4.0	3.0	5.0	4.0
6	16.0	16.0	8.0	8.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	4.0
7	16.0	16.0	8.0	7.0	6.0	5.0	4.0	4.0	5.0	4.0	5.0	4.0
8	16.0	16.0	7.0	7.0	7.0	6.0	4.0	4.0	5.0	5.0	5.0	4.0
9	16.0	16.0	7.0	8.0	8.0	7.0	4.0	4.0	6.0	5.0	5.0	4.0
10	16.0	16.0	7.0	6.0	8.0	7.0	5.0	4.0	6.0	5.0	5.0	4.0
11	16.0	14.0	6.0	6.0	8.0	7.0	5.0	4.0	6.0	5.0	5.0	4.0
12	14.0	14.0	7.0	6.0	8.0	8.0	4.0	4.0	5.0	4.0	5.0	4.0
13	14.0	13.0	7.0	7.0	8.0	8.0	4.0	4.0	4.0	4.0	5.0	3.0
14	13.0	13.0	7.0	6.0	8.0	8.0	4.0	4.0	4.0	4.0	6.0	5.0
15	13.0	13.0	6.0	6.0	8.0	8.0	4.0	4.0	4.0	4.0	6.0	5.0
16	13.0	13.0	6.0	6.0	8.0	6.0	4.0	4.0	4.0	4.0	6.0	5.0
17	14.0	13.0	6.0	5.0	6.0	6.0	4.0	4.0	4.0	4.0	6.0	6.0
18	14.0	14.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	6.0	6.0
19	14.0	13.0	5.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	6.0	6.0
20	13.0	13.0	5.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	8.0	6.0
21	13.0	12.0	5.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	8.0	8.0
22	12.0	12.0	5.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	8.0	8.0
23	12.0	11.0	5.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	8.0	8.0
24	11.0	11.0	4.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	8.0	8.0
25	12.0	11.0	---	---	6.0	6.0	4.0	4.0	4.0	4.0	8.0	7.0
26	12.0	11.0	---	---	6.0	6.0	4.0	4.0	4.0	4.0	7.0	6.0
27	11.0	11.0	---	---	6.0	6.0	4.0	4.0	4.0	4.0	6.0	6.0
28	11.0	10.0	---	---	6.0	5.0	4.0	4.0	4.0	4.0	6.0	5.0
29	10.0	9.0	---	---	5.0	5.0	4.0	4.0	4.0	4.0	6.0	6.0
30	9.0	9.0	---	---	5.0	5.0	4.0	4.0	---	---	10.0	8.0
31	9.0	9.0	---	---	5.0	5.0	4.0	4.0	---	---	12.0	10.0
MONTH	16.0	9.0	9.0	4.0	8.0	5.0	5.0	4.0	6.0	3.0	12.0	3.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	12.0	10.0	9.0	9.0	8.0	18.0	17.0	23.0	22.0	21.0	21.0
2	12.0	11.0	10.0	9.0	9.0	8.0	18.0	18.0	23.0	22.0	21.0	20.0
3	11.0	11.0	10.0	9.0	9.0	8.0	18.0	18.0	23.0	22.0	21.0	21.0
4	11.0	10.0	10.0	9.0	9.0	9.0	18.0	18.0	23.0	23.0	21.0	21.0
5	10.0	9.0	10.0	9.0	10.0	9.0	18.0	17.0	23.0	22.0	21.0	20.0
6	9.0	8.0	9.0	9.0	10.0	10.0	18.0	18.0	24.0	22.0	21.0	20.0
7	9.0	8.0	9.0	8.0	11.0	10.0	18.0	18.0	24.0	24.0	21.0	21.0
8	9.0	8.0	9.0	8.0	11.0	11.0	18.0	18.0	24.0	24.0	21.0	21.0
9	8.0	8.0	9.0	8.0	11.0	11.0	18.0	18.0	25.0	24.0	21.0	20.0
10	8.0	8.0	9.0	8.0	13.0	11.0	19.0	18.0	25.0	24.0	20.0	20.0
11	10.0	9.0	9.0	9.0	12.0	11.0	19.0	19.0	25.0	25.0	20.0	20.0
12	9.0	9.0	9.0	9.0	14.0	12.0	19.0	19.0	25.0	24.0	21.0	19.0
13	9.0	8.0	9.0	9.0	14.0	13.0	19.0	19.0	24.0	23.0	21.0	21.0
14	9.0	8.0	9.0	8.0	13.0	12.0	19.0	19.0	23.0	22.0	21.0	20.0
15	10.0	9.0	9.0	8.0	13.0	12.0	20.0	19.0	22.0	22.0	20.0	20.0
16	10.0	9.0	10.0	8.0	14.0	13.0	20.0	20.0	22.0	22.0	20.0	19.0
17	9.0	9.0	11.0	10.0	14.0	14.0	20.0	20.0	23.0	22.0	19.0	19.0
18	11.0	9.0	11.0	11.0	14.0	13.0	19.0	19.0	23.0	22.0	19.0	19.0
19	11.0	9.0	11.0	11.0	14.0	13.0	21.0	19.0	22.0	22.0	19.0	19.0
20	10.0	9.0	11.0	11.0	14.0	14.0	21.0	21.0	22.0	22.0	19.0	19.0
21	11.0	9.0	11.0	10.0	14.0	14.0	21.0	20.0	22.0	22.0	19.0	19.0
22	11.0	10.0	11.0	9.0	14.0	14.0	22.0	20.0	22.0	22.0	19.0	19.0
23	10.0	9.0	10.0	9.0	14.0	14.0	21.0	21.0	22.0	22.0	19.0	19.0
24	10.0	9.0	9.0	9.0	16.0	14.0	22.0	21.0	22.0	22.0	20.0	19.0
25	10.0	9.0	9.0	8.0	15.0	14.0	22.0	22.0	23.0	22.0	20.0	20.0
26	10.0	9.0	8.0	8.0	16.0	15.0	22.0	22.0	23.0	23.0	20.0	20.0
27	10.0	9.0	8.0	8.0	17.0	16.0	22.0	22.0	23.0	22.0	20.0	20.0
28	9.0	9.0	8.0	8.0	17.0	17.0	23.0	22.0	22.0	22.0	20.0	20.0
29	9.0	8.0	8.0	8.0	17.0	17.0	23.0	22.0	22.0	22.0	20.0	19.0
30	11.0	9.0	9.0	8.0	17.0	17.0	23.0	22.0	22.0	21.0	20.0	19.0
31	---	---	9.0	8.0	---	---	22.0	22.0	22.0	21.0	---	---
MONTH	12.0	8.0	11.0	8.0	17.0	8.0	23.0	17.0	25.0	21.0	21.0	19.0

03149200 MUSKINGUM RIVER AT PHILO, OHIO

LOCATION.--Lat 39°41'51", long 81°54'22", Muskingum County, along right bank of Muskingum River about 2,000 ft below Philo Dam on canal which supplies river water from above the dam to Ohio Power Co.'s Philo Generating Division at Philo.

DRAINAGE AREA.--7,196 sq mi.

PERIOD OF RECORD.--Chemical analyses: April to September 1968.
Water temperatures: April 1965 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 1,890 micromhos July 23; minimum daily, 340 micromhos May 24.
pH: Maximum daily, 8.7 Mar. 2, Sept. 14; minimum daily, 4.9 Sept. 26.
Water temperatures: Maximum, 30.0°C Aug. 23, 24; minimum, freezing point on several days during January and February.

Period of record:

Specific conductance: Maximum daily, 1,950 micromhos Oct. 25, 1966; minimum daily, 170 micromhos Apr. 28, 1965.
pH: Maximum daily, 9.5 Jan. 12, 20, 1966; minimum daily, 4.8 Mar. 16, 1966.
Dissolved oxygen (1965-67): Maximum daily, 15.0 mg/l or greater on many days during July, December 1966, January, February and September 1967; minimum daily, 2.0 mg/l June 15, 1967.
Water temperatures: Maximum, 31.0°C July 3, 1966; minimum, freezing point on many days in 1967 and 1968.

REMARKS.--The recorder is located in the basement of the generating plant. In addition to the monitor, daily samples were collected by a local observer. Partial analyses were made on the maximum and minimum daily specific conductance of samples collected each month. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or greater, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	BICARB- MONATE (HCO ₃)	CARB- MONATE (CO ₃)	SULFATE (SO ₄)	CHLOR- RIDE (CL)	FLUOR- RIDE (F)	NITRATE (NO ₃)	DIS- SOLVED SOLIDS RESID- UE AT 180°C	HARD- NESS (CA, MG)	NON- FAR- CON- NATE HARD- NESS	SPECI- FIC CON- DUCTANCE (MICRON- MHOS)	pH
ACT.												
10...	0640	110	0	199	146	.7	4.6	638	340	250	986	--
25...	1515	136	0	207	400	1.0	8.8	1470	572	460	1850	8.2
NOV.												
01...	1615	140	0	199	290	.8	7.2	944	485	370	1480	7.8
22...	0738	122	0	141	98	.5	6.5	498	294	196	702	--
DEC.												
04...	0725	102	0	212	195	.4	4.5	628	357	273	901	--
14...	0735	96	0	109	55	.3	6.8	334	235	156	564	--
JAN.												
20...	0748	132	0	183	175	.6	7.4	756	386	278	1000	7.1
31...	0740	34	0	175	40	.2	4.5	324	172	144	450	6.8
FEB.												
01...	0728	36	0	107	50	.3	7.8	282	170	141	448	--
27...	0722	134	0	177	136	.5	9.1	630	354	244	1070	--
MAR.												
11...	0730	124	0	192	228	.5	6.8	834	398	296	1310	7.2
28...	0735	62	0	89	36	.2	4.4	276	166	115	424	--
APR.												
05...	1615	80	0	123	42	.3	6.0	358	204	130	534	7.3
24...	0725	96	0	172	112	.4	5.1	564	318	230	872	7.2
MAY												
11...	0740	114	0	141	112	.4	4.5	556	311	217	866	--
24...	0730	50	0	99	22	.2	4.8	272	152	111	372	--
JUNE												
03...	0725	58	0	101	26	.1	6.2	246	166	119	406	--
29...	0750	106	0	140	132	.3	7.0	530	300	213	882	--
JULY												
04...	1340	116	0	141	79	.3	6.2	442	281	186	728	7.1
23...	2115	114	0	133	398	.4	4.6	1100	525	431	1700	7.1
AUG.												
11...	2230	128	0	120	96	.2	4.0	432	275	170	745	--
24...	2200	98	0	164	222	.5	2.3	740	354	273	1190	--
SEPT.												
19...	2250	138	0	190	195	.4	1.7	746	376	263	1220	--
30...	1525	118	0	183	340	.5	4.7	1030	480	363	1620	7.4

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER							NOVEMBER								
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1410	1120	--	--	14.8	9.9	16	15	1480	1420	--	--	--	--	12	11
2	1780	1410	--	--	15.0	11.4	16	14	1440	1220	--	--	--	--	12	12
3	1650	1450	--	--	15.0	10.4	17	16	1260	1220	--	--	--	--	13	12
4	1450	1330	--	--	15.0	11.4	18	16	1260	1110	--	--	--	--	12	11
5	1340	1230	--	--	13.5	10.6	19	18	1110	970	--	--	--	--	11	9
6	1290	1230	7.1	6.8	10.8	7.9	18	18	1050	1000	--	--	--	--	9	8
7	1360	1280	7.3	6.9	8.9	7.7	18	17	1080	1040	--	--	--	--	8	7
8	1280	1030	7.4	7.1	15.0	8.0	18	17	1120	1060	--	--	--	--	8	7
9	1040	920	7.3	7.0	13.7	8.0	17	16	1180	1050	--	--	--	--	8	7
10	1020	940	7.3	7.1	--	--	17	16	1050	850	--	--	--	--	8	7
11	1150	1020	--	--	--	--	16	15	900	840	--	--	--	--	9	8
12	1180	1150	--	--	--	--	16	14	1010	900	--	--	--	--	9	8
13	1180	1130	--	--	--	--	16	14	1040	950	--	--	--	--	9	8
14	1190	1140	--	--	--	--	16	14	950	920	--	--	--	--	9	8
15	1310	1150	--	--	--	--	16	14	950	920	--	--	--	--	8	7
16	1360	1300	--	--	--	--	17	15	990	950	--	--	--	--	7	6
17	1380	1350	--	--	--	--	17	16	1030	950	--	--	--	--	7	6
18	1440	1370	--	--	--	--	17	16	1020	950	--	--	--	--	7	6
19	1530	1440	--	--	--	--	16	13	1010	810	--	--	--	--	7	6
20	1650	1530	--	--	--	--	14	13	820	780	--	--	--	--	6	6
21	1690	1510	--	--	--	--	14	13	880	820	--	--	--	--	6	6
22	1520	1320	--	--	--	--	14	13	850	830	7.5	7.1	13.1	12.0	7	6
23	1500	1330	--	--	--	--	14	12	910	850	7.2	6.9	14.6	12.5	7	7
24	1750	1500	--	--	--	--	14	12	900	820	7.2	6.9	--	--	7	6
25	1850	1750	--	--	--	--	13	13	830	780	7.3	6.8	--	--	7	7
26	1830	1700	--	--	--	--	13	12	840	820	7.3	6.8	--	--	7	6
27	1700	1590	--	--	--	--	12	11	900	840	7.6	6.9	--	--	7	6
28	1590	1470	--	--	--	--	12	11	890	820	7.8	7.4	--	--	6	5
29	1490	1420	--	--	--	--	11	10	840	820	7.8	7.4	--	--	5	4
30	1420	1370	--	--	--	--	11	9	830	810	8.0	7.7	--	--	5	4
31	1450	1400	--	--	--	--	12	10	--	--	--	--	--	--	--	--

DAY	DECEMBER							JANUARY								
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	840	800	8.0	7.6	--	--	4	3	--	--	--	--	--	--	--	--
2	850	830	7.9	7.6	--	--	4	3	--	--	--	--	--	--	--	--
3	870	820	7.8	7.2	--	--	4	4	--	--	--	--	--	--	--	--
4	900	760	7.7	7.0	--	--	4	3	690	640	--	--	--	--	2	1
5	760	680	7.7	7.3	--	--	4	4	720	670	--	--	--	--	1	1
6	850	720	7.5	7.2	--	--	6	4	800	720	--	--	--	--	1	1
7	850	640	7.3	7.0	--	--	7	5	850	800	--	--	--	--	1	1
8	640	620	7.5	7.1	--	--	7	6	860	820	--	--	--	--	1	0
9	660	620	7.5	7.3	--	--	7	6	840	790	--	--	--	--	1	1
10	690	630	7.5	7.1	--	--	7	6	860	830	7.7	7.0	--	--	1	1
11	720	690	7.2	6.9	--	--	8	7	860	810	7.3	6.9	--	--	1	1
12	720	620	7.1	6.7	--	--	8	7	840	810	7.2	6.7	--	--	1	1
13	620	540	7.1	6.8	--	--	8	7	910	840	7.1	6.8	--	--	1	0
14	620	540	7.1	6.9	--	--	8	7	1020	910	7.2	6.8	--	--	1	1
15	660	590	7.6	7.0	--	--	7	6	1060	1020	7.4	7.0	--	--	1	0
16	640	590	7.5	7.1	--	--	6	4	1070	1030	7.8	7.2	--	--	1	0
17	740	580	7.8	7.0	--	--	4	4	1050	1040	7.5	6.7	--	--	1	0
18	780	710	7.5	6.9	--	--	6	4	1070	1050	7.2	6.8	--	--	1	0
19	790	720	--	--	--	--	7	5	1060	1030	7.3	6.7	--	--	2	1
20	790	770	--	--	--	--	7	6	1140	1060	7.0	6.5	--	--	3	2
21	780	760	--	--	--	--	8	7	1140	1080	7.0	6.5	--	--	3	2
22	900	760	--	--	--	--	8	7	1090	1030	6.9	6.5	--	--	3	2
23	880	790	--	--	--	--	7	5	1050	1000	6.9	6.4	--	--	3	2
24	840	670	--	--	--	--	5	4	1020	970	5.9	6.6	--	--	2	1
25	770	670	--	--	--	--	4	4	980	950	7.0	6.6	--	--	2	1
26	800	750	--	--	--	--	4	3	980	960	6.9	6.5	--	--	2	1
27	750	590	--	--	--	--	3	2	930	890	6.8	6.5	--	--	3	1
28	610	580	--	--	--	--	2	2	940	900	6.7	6.4	--	--	3	2
29	--	--	--	--	--	--	--	--	900	590	6.7	6.3	--	--	4	2
30	--	--	--	--	--	--	--	--	590	430	6.9	6.3	--	--	5	3
31	--	--	--	--	--	--	--	--	470	440	6.8	6.2	--	--	3	3

03149200 MUSKINGUM RIVER AT PHILO, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

FEBRUARY										MARCH									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		
1	460	390	6.8	6.6			4	3		1040	970	8.0	7.6			2	2		
2	820	390	6.9	6.5			4	4		1100	990	8.7	7.1			3	2		
3	670	620	7.3	6.8			4	3		1140	1010	8.0	7.5			3	2		
4	710	670	7.4	7.1			3	2		1150	1010	8.1	7.5			3	2		
5	710	680	7.5	7.2			3	2		1210	1040	8.2	7.7			4	2		
6	840	680	7.4	7.0			3	2		1220	1120	7.9	6.1			5	4		
7	850	660	7.6	7.0			3	2		1260	1180	--	--			5	4		
8	660	580	7.5	6.8			3	2		1290	1120	7.9	7.5			6	5		
9	580	470	7.3	7.0			3	2		1420	1280	8.1	7.6			7	6		
10	480	450	7.7	7.2			3	1		1330	1270	7.7	7.5			8	7		
11	460	430	7.9	7.5			2	1		1370	1250	7.9	7.3			9	8		
12	--	--	--	--			--	--		1260	1150	7.8	7.3			9	7		
13	530	480	7.4	6.9			1	0		1160	1070	7.7	7.0			7	5		
14	570	490	7.5	6.9			3	0		1160	1040	7.6	7.2			5	4		
15	600	480	8.6	7.2			1	1		1180	1060	7.6	7.2			5	4		
16	610	540	8.5	7.7			1	0		1060	880	7.6	7.4			8	5		
17	640	570	8.5	8.1			1	1		930	860	7.6	7.2			8	5		
18	750	640	8.4	8.1			1	0		870	750	7.9	7.3			7	5		
19	820	720	8.3	7.4			1	1		940	810	7.9	7.5			8	6		
20	870	790	8.3	7.5			1	1		940	640	7.8	7.6			9	7		
21	900	850	8.3	7.6			1	1		--	--	--	--			--	--		
22	960	850	8.0	7.4			1	10		--	--	--	--			--	--		
23	960	840	7.9	7.2			1	0		490	430	7.9	7.3			8	5		
24	1000	960	7.8	7.2			2	1		530	490	8.1	7.7			5	4		
25	1010	970	8.0	7.6			2	1		530	450	8.2	7.8			7	5		
26	1040	940	8.0	7.4			2	1		500	440	8.2	7.8			7	6		
27	1070	960	7.8	7.2			2	2		490	450	8.0	7.5			8	7		
28	1010	730	8.1	7.2			2	2		460	410	7.9	7.5			10	8		
29	1010	740	8.1	7.4			3	2		500	440	7.7	7.5			11	9		
30	--	--	--	--			--	--		470	430	7.6	7.4			13	11		
31	--	--	--	--			--	--		490	430	7.7	7.4			14	12		

APRIL										MAY									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		
1	560	440	7.6	7.4			14	13		830	750	7.6	7.4			17	16		
2	550	510	7.7	7.4			14	12		790	740	7.6	7.5			18	16		
3	570	530	7.9	7.6			12	11		820	760	7.6	7.4			19	17		
4	580	520	7.6	7.4			13	12		780	740	7.5	7.3			20	18		
5	530	520	7.7	7.4			12	11		800	760	7.6	7.4			20	17		
6	600	520	7.9	7.6			12	11		840	800	7.7	7.5			17	15		
7	650	550	7.8	7.6			12	10		810	790	7.7	7.6			18	14		
8	630	590	7.6	7.5			12	11		820	780	7.8	7.5			19	16		
9	610	590	7.7	7.5			13	12		840	800	7.7	7.5			18	17		
10	640	600	7.8	7.6			13	12		840	810	7.5	7.4			19	18		
11	640	630	7.7	7.6			14	12		880	840	7.5	7.3			23	18		
12	680	640	7.7	7.6			14	13		880	670	7.3	7.0			23	22		
13	710	670	7.6	7.5			15	14		670	520	7.5	7.0			22	16		
14	750	710	7.5	7.4			16	15		560	540	7.5	7.4			18	17		
15	780	720	7.4	7.3			16	15		560	480	7.4	7.3			19	16		
16	740	690	7.6	7.4			16	15		560	510	7.4	7.1			21	17		
17	750	700	7.6	7.4			15	14		710	560	7.3	7.1			18	17		
18	800	750	7.5	7.3			18	16		700	610	7.4	7.1			18	17		
19	820	760	7.5	7.2			19	17		700	600	7.4	7.0			17	16		
20	840	760	7.4	7.2			20	18		620	570	7.4	7.3			16	15		
21	850	830	7.3	7.2			18	15		570	550	7.5	7.3			16	15		
22	850	810	7.5	7.3			20	17		570	550	7.4	7.3			16	15		
23	850	820	7.6	7.5			20	17		600	500	7.4	7.0			16	15		
24	870	850	7.6	7.3			19	17		500	340	7.1	6.9			15	14		
25	870	830	7.7	7.5			17	15		500	380	7.0	6.7			15	14		
26	830	720	7.7	7.6			15	14		500	420	7.0	6.8			16	15		
27	820	740	7.7	7.4			15	13		420	370	7.1	6.8			16	15		
28	960	760	7.6	7.4			15	14		450	400	6.9	6.8			15	14		
29	770	720	7.6	7.5			16	15		500	420	6.9	6.8			15	14		
30	790	720	7.6	7.4			16	16		500	400	7.1	6.9			15	15		
31	--	--	--	--			--	--		460	420	7.1	7.0			16	15		

03149200 MUSKINGUM RIVER AT PHILO, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JUNE						JULY					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	420	410	7.3	7.1			16	15	990	870	7.2	7.1
2	440	380					17	15	910	740	7.5	7.0
3	410	390	7.1	6.8			18	17	740	700	7.1	6.9
4	420	400	7.2	7.1			18	17	790	700	7.6	6.9
5	450	420	7.2	7.0			18	17	850	790	7.7	7.2
6	440	420	7.3	7.1			19	18	900	850	7.7	7.3
7	420	410	7.3	7.1			19	18	940	900	7.8	7.4
8	490	420	7.3	7.1			20	19	1010	940	7.7	7.5
9	460	440	7.3	7.1			20	19	1050	980	8.1	7.5
10	440	430	7.3	7.0			21	20	980	900	7.8	7.5
11	480	410	7.3	6.9			21	21	950	920	7.6	7.4
12	510	440	7.3	7.0			22	21	950	920	--	--
13	450	430	7.3	7.2			22	20	1040	940	--	--
14	480	450	7.4	7.2			20	19	1060	980	--	--
15	490	460	7.4	7.3			21	20	980	950	--	--
16	490	460	7.4	7.3			21	20	1010	920	--	--
17	500	480	7.4	7.3			21	20	1020	980	7.0	6.8
18	550	460	--	--			21	20	1050	1000	6.9	6.8
19	680	550	--	--			21	20	1160	940	7.0	6.7
20	680	620	7.2	7.1			21	20	--	1160	7.1	6.7
21	730	680	7.2	7.1			21	20	1300	--	6.9	6.6
22	740	710	7.2	7.1			22	21	1720	1300	7.1	6.7
23	780	740	7.3	7.1			22	21	1890	1600	7.2	6.9
24	780	750	7.3	7.1			23	22	1600	1090	6.9	6.7
25	870	780	7.2	6.8			23	23	1090	1080	6.8	6.4
26	860	840	--	--			23	23	1080	980	6.5	6.3
27	880	740	--	--			23	22	980	920	6.4	6.2
28	780	730	7.1	7.0			22	21	1230	960	6.7	6.4
29	890	700	7.1	7.0			22	20	1420	1040	6.7	6.6
30	880	740	7.5	7.1			23	21	1040	900	6.9	6.7
31	--	--	--	--			--	--	1060	980	6.9	6.8

DAY	AUGUST						SEPTEMBER					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1020	940	7.0	6.5			1500	1440	7.8	7.3		
2	1020	940	7.1	6.1			1540	1500	7.8	7.2		
3	1100	940	7.0	6.7			1580	1480	7.6	6.8		
4	1100	1040	6.5	6.7			1500	1430	6.8	6.1		
5	1100	1020	7.2	6.6			1560	1500	6.6	5.8		
6	1160	1100	7.1	6.6			1560	1290	6.2	5.8		
7	1300	1140	6.9	6.2			1560	1280	6.7	6.1		
8	1300	1100	6.4	5.7			1610	1560	7.5	6.1		
9	1100	860	6.4	6.3			1610	1500	7.2	6.1		
10	890	810	6.5	5.9			1520	1320	7.5	6.0		
11	890	750	6.5	6.0			1520	1320	7.4	7.1		
12	800	760	6.8	6.5			1560	1520	8.3	7.1		
13	830	790	6.8	6.6			1560	1500	8.6	7.1		
14	920	790	6.9	6.5			1550	1400	8.7	7.7		
15	950	920	6.9	6.6			1400	1240	8.0	7.4		
16	940	830	6.9	6.5			1570	1290	7.9	7.1		
17	940	880	7.0	6.5			1660	1560	7.4	6.8		
18	980	940	6.8	6.6			1560	1230	7.1	6.6		
19	1050	980	6.9	6.5			1240	1180	6.7	6.3		
20	1050	1030	6.7	6.4			1320	1180	6.3	5.7		
21	1050	1020	6.5	6.3			1410	1320	6.6	6.2		
22	1100	1050	6.4	6.1			1460	1380	6.7	6.2		
23	1190	1100	6.3	6.1			1450	1400	6.5	6.0		
24	1200	1140	6.2	6.0			1430	--	6.5	5.6		
25	1250	1160	6.2	6.0			1400	1340	6.0	5.0		
26	1330	1200	6.2	5.5			1360	1300	6.3	4.9		
27	1460	1300	5.9	5.3			1360	1240	6.5	6.3		
28	1500	1460	6.6	5.4			1440	1360	6.5	6.4		
29	1480	1320	8.0	6.6			1480	1310	6.5	--		
30	1350	1300	8.2	7.3			1660	--	--	--		
31	1440	1350	7.9	7.5			--	--	--	--		

03150300 MUSKINGUM RIVER NEAR BEVERLY, OHIO

LOCATION.--Lat 39°35'30", long 81°40'50", Washington County, at Ohio River Valley Water Sanitation Commission (ORSANCO) monitor station at Ohio Power Co. water intake near Beverly, 1 mile downstream from Meigs Creek, and 1.1 miles upstream from Olive Green Creek.

DRAINAGE AREA.--7,626 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1963 to September 1968.
Water temperatures: July 1963 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 1,790 micromhos Nov. 1; minimum daily, 380 micromhos May 25, 27.
Water temperatures: Maximum, 32.0°C Aug. 26; minimum, freezing point Jan. 2-5, 12.

Period of record:

Specific conductance: Maximum daily, 2,070 micromhos Oct. 12, 1963, Nov. 7, 1964; minimum daily, 265 micromhos Mar. 12, 1964.
Water temperatures: Maximum, 36.0°C Sept. 1, 1966; minimum, freezing point Jan. 2-5, 12, 1968.

REMARKS.--Daily samples were collected at this station and samples were selected for analyses 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. Samples for iron and manganese were filtered clear when collected. Records of discharge are given for Muskingum River at McConnelsville (drainage area 7,422 sq mi). Flow regulated by 15 flood-control reservoirs.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BI(CAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLOR- RIDE (CL)
OCT.								
16...	1015	1470	.14	.29	116	0	169	150
25...	0730	1580	.09	.37	142	0	190	260
28...	1030	1670	.01	1.0	140	0	204	320
NOV.								
01...	0830	2180	.09	.31	143	0	203	400
17...	0830	3720	.05	.00	128	0	144	141
28...	0815	4190	.21	.37	116	0	151	10P
DEC.								
01...	0830	3650	--	--	--	--	153	120
09...	0930	8080	--	--	--	--	120	94
15...	0900	8890	--	--	--	--	106	60
JAN.								
11...	0845	3280	--	--	--	--	134	119
24...	0900	3830	--	--	--	--	164	194
31...	0800	26100	--	--	--	--	93	61
FEB.								
02...	0900	25600	--	--	--	--	82	43
21...	1115	4570	--	--	--	--	108	90
29...	1000	3120	--	--	--	--	156	143
MAR.								
01...	--	2980	.55	.30	--	--	160	139
12...	0900	3400	.76	1.3	--	--	168	210
28...	0830	27400	.19	.30	--	--	86	46
APR.								
01...	1100	17500	--	--	--	--	94	44
13...	0930	6680	--	--	--	--	123	68
27...	0840	6970	--	--	--	--	151	170
MAY								
09...	1000	3680	--	--	--	--	139	106
22...	0900	15900	--	--	--	--	97	61
27...	0945	32800	--	--	--	--	93	74
JUNE								
03...	0900	24900	--	--	--	--	87	30
13...	1215	21500	--	--	--	--	91	32
28...	--	8610	--	--	--	--	145	106
JULY								
05...	--	4240	--	--	--	--	133	81
16...	--	2620	--	--	--	--	155	115
23...	--	3020	--	--	--	--	203	245
AUG.								
14...	1300	3680	--	--	--	--	131	98
20...	0900	2240	--	--	--	--	151	140
31...	1330	1120	--	--	--	--	170	205
SEPT.								
09...	1115	2040	--	--	--	--	181	272
16...	1330	1200	--	--	--	--	198	315
28...	1100	1480	--	--	--	--	202	200

03150300 MUSKINGUM RIVER NEAR BEVERLY, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY BETWEEN 0800 AND 1200)

[illegible]

MUSKINGUM RIVER BASIN

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03150300 MUSKINGUM RIVER NEAR BEVERLY, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY BETWEEN 0800 AND 1200)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	14.0	4.0	---	3.0	---	19.0	---	17.0	24.0	27.0	---
2	20.0	14.0	---	0.0	4.0	4.0	19.0	---	---	25.0	---	---
3	20.0	14.0	3.0	0.0	6.0	---	19.0	---	17.0	---	---	28.0
4	20.0	---	4.0	0.0	---	5.0	19.0	---	18.0	---	---	27.0
5	20.0	---	3.0	0.0	3.0	4.0	19.0	---	18.0	24.0	27.0	27.0
6	21.0	---	3.0	1.0	2.0	6.0	18.0	19.0	19.0	---	27.0	28.0
7	---	12.0	3.0	---	2.0	6.0	---	---	19.0	---	---	---
8	19.0	11.0	4.0	---	3.0	6.0	19.0	24.0	21.0	26.0	27.0	---
9	18.0	9.0	5.0	1.0	4.0	7.0	18.0	26.0	---	26.0	---	26.0
10	18.0	9.0	---	1.0	---	---	18.0	19.0	22.0	27.0	---	24.0
11	19.0	---	6.0	1.0	---	8.0	14.0	---	22.0	27.0	---	24.0
12	19.0	---	---	0.0	2.0	12.0	---	---	22.0	27.0	26.0	29.0
13	19.0	9.0	9.0	---	2.0	7.0	19.0	---	22.0	---	25.0	23.0
14	19.0	10.0	7.0	---	2.0	7.0	---	---	22.0	---	25.0	23.0
15	---	8.0	7.0	1.0	2.0	9.0	16.0	17.0	---	29.0	---	---
16	20.0	---	6.0	1.0	2.0	9.0	16.0	17.0	---	29.0	27.0	27.0
17	19.0	8.0	---	2.0	3.0	---	16.0	18.0	21.0	28.0	---	27.0
18	---	---	6.0	1.0	---	7.0	---	---	21.0	---	---	27.0
19	19.0	---	6.0	2.0	2.0	7.0	16.0	---	21.0	29.0	27.0	26.0
20	---	6.0	5.0	3.0	---	9.0	---	17.0	21.0	---	28.0	26.0
21	---	6.0	6.0	---	2.0	---	---	---	21.0	---	28.0	---
22	---	6.0	6.0	6.0	3.0	11.0	---	16.0	---	29.0	29.0	---
23	17.0	---	7.0	6.0	3.0	---	---	17.0	---	29.0	31.0	26.0
24	17.0	6.0	---	6.0	3.0	---	---	16.0	23.0	29.0	---	24.0
25	17.0	8.0	---	3.0	---	---	---	15.0	23.0	29.0	---	25.0
26	17.0	---	3.0	---	3.0	15.0	---	---	24.0	---	32.0	27.0
27	15.0	7.0	---	3.0	4.0	16.0	16.0	17.0	24.0	---	31.0	24.0
28	14.0	6.0	---	---	---	18.0	---	16.0	23.0	---	29.0	24.0
29	---	5.0	2.0	3.0	9.0	---	---	16.0	---	---	29.0	---
30	15.0	5.0	1.0	4.0	---	18.0	---	---	---	---	28.0	27.0
31	16.0	---	---	3.0	---	---	---	17.0	---	---	29.0	---
AVERAGE	---	---	---	---	---	---	---	---	---	---	---	---

LITTLE KANAWHA RIVER BASIN

03153500 LITTLE KANAWHA RIVER AT GRANTSVILLE, W. VA.

LOCATION.--Lat 38°55'20", long 81°05'50", Calhoun County, 1,000 ft downstream from bridge on State Highway 16 at Grantsville, 1,200 ft downstream from Philip Run, and at mile 80.0.

DRAINAGE AREA.--913 sq mi.

PERIOD OF RECORD.--Sediment records: January to September 1968.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, JANUARY TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JAN 31, 1968	1150	9780	218	5760	MAR 13.....	1230	16700	318	14300
MAR 12.....	1345	10700	1040	30000	APR 1.....	1230	3710	448	4490
MAR 12.....	1830	13700	868	32100	JUN 26.....	1130	135	18	6.6
MAR 13.....	0815	17600	686	32600	AUG 27.....	1200	41	19	2.1

03159510 HOCKING RIVER BELOW ATHENS, OHIO

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

DRAINAGE AREA.--957 sq mi.

PERIOD OF RECORD.--Chemical analyses: May 1966 to September 1968.

Water temperatures: May 1966 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 31.0°C July 18; minimum, freezing point Jan. 29, 30.

Period of record:

Specific conductance (1966-67): Maximum daily, 1,500 micromhos July 12, 1966; minimum daily, 140 micromhos July 13, 1966, Mar. 5, 1967.

Water temperatures: Maximum, 30.0°C July 4, 1966, July 18, 1968; minimum, freezing point Feb. 25, 26, 1967, Jan. 29, 30, 1968.

REMARKS.--In addition to the continuous recorder, twice-weekly samples were collected by a local observer. Partial analyses were made on maximum specific conductance and minimum specific conductance of the samples collected each month. Specific conductance values listed as 1,500 micromhos represent values of 1,500 micromhos or greater, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. Records of discharge are given for Hocking River at Athens (drainage area 943 sq mi).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CF5)	PICAR- BONATE (MCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (Cl)	FLUO- RINE (F)
OCT.							
12...	18...	124	47	1	218	43	.3
27...	18...	113	43	1	416	116	.4
NOV.							
26...	11...	197	76	1	300	121	.3
DEC.							
14...	18...	475	78	1	317	184	.3
16...	18...	664	79	1	211	119	.3
JAN.							
4...	11...	373	48	1	86	42	.2
14...	11...	277	81	1	760	177	.4
FEB.							
13...	10...	5140	40	1	91	46	.2
21...	11...	31	0	1	244	09	.2
MAR.							
12...	10...	242	17	1	740	112	.1
24...	10...	270	36	1	86	25	.1
APR.							
17...	11...	164	46	1	136	40	.0
21...	13...	595	64	1	200	66	.2
MAY							
11...	14...	521	56	1	231	78	.1
24...	20...	2260	21	1	51	80	.1
JUNE							
12...	11...	4270	23	1	180	26	.2
13...	21...	1270	16	1	250	41	.2
JULY							
16...	21...	324	24	1	302	70	.1
31...	21...	194	4	1	516	71	.3
AUG.							
12...	11...	282	5	1	477	90	.4
SEPT.							
18...	12...	153	16	1	462	84	.3
31...	18...	85	14	1	448	98	.4

DATE	NITRATE (NO3)	DIC- SOLVED SOLIDS (RESI- DUE AT 18°C)	HAPD- NESS (CA, MG)	NON- CAR- BONATE HAPD- NESS	SPECI- FIC COND- CONDUCTANCE (MICRO- MHOS)	PH
OCT.						
12...	5.4	451	256	217	776	7.6
27...	7.2	844	448	413	1210	6.6
NOV.						
26...	4.4	651	410	248	1170	7.3
DEC.						
4...	5.7	56	451	286	1251	7.2
16...	6.5	596	335	270	850	7.6
JAN.						
14...	4.1	282	143	120	427	7.0
18...	6.5	668	336	318	494	6.0
FEB.						
13...	4.4	371	171	137	410	7.0
21...	5.2	651	378	304	883	7.2
MAR.						
12...	7.8	654	336	272	1141	7.0
24...	5.8	174	138	78	295	7.6
APR.						
17...	1.2	348	274	167	531	7.8
21...	1.1	500	303	240	744	7.1
MAY						
11...	2.8	57	331	254	705	7.0
24...	2.1	94	66	40	175	7.3
JUNE						
12...	2.4	352	219	166	531	6.1
13...	1.1	462	274	261	669	6.7
JULY						
16...	4.2	732	420	478	1020	6.6
31...	1.3	722	514	401	1210	6.1
AUG.						
12...	3.8	802	494	400	1200	6.3
SEPT.						
18...	3.1	874	444	451	1150	7.1
31...	6.0	94	448	44	1200	7.4

03159510 HOCKING RIVER BELOW ATHENS, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	OCTOBER						NOVEMBER						DECEMBER					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	1010	860	7.3	6.9			1260	1210	--	--			1220	980	12.4	10.4		
2	860	670	7.1	6.5			1220	1150	--	--								
3	980	840	6.8	6.3			1200	1140	--	--								
4	1050	980	6.7	5.9			1160	1110	--	--								
5	1060	990	6.5	5.8			1170	1150	--	--								
6	1000	970	6.0	5.6			--	--	--	--								
7	1030	950	6.6	5.9			1160	1130	--	--								
8	1080	1020	6.9	6.0			1180	1120	--	--								
9	1050	940	6.3	5.8			1120	1080	--	--								
10	1100	1020	6.8	5.7			1150	1070	--	--								
11	1140	1080	6.9	6.2			1120	1070	--	--								
12	1110	1080	7.5	6.6			1120	1090	--	--								
13	1130	1110	7.1	6.7			1140	1120	--	--								
14	1170	1110	6.8	6.4			1140	1100	--	--								
15	1130	1100	6.8	6.5			--	--	--	--								
16	1140	1110	6.9	6.4			--	--	--	--								
17	1140	1090	6.4	6.1			1030	990	--	--								
18	1180	1140	6.4	6.1			1100	1030	--	--								
19	1150	1110	6.9	5.7			--	--	--	--								
20	1210	1120	7.0	6.1			--	--	--	--								
21	1230	1180	7.2	6.8			1140	1090	10.8	10.3								
22	1220	1110	7.6	7.2			1090	960	10.3	9.3								
23	1230	1210	8.0	7.6			1080	1050	9.4	9.2								
24	1250	1180	7.7	6.4			--	--	--	--								
25	1230	1040	7.3	6.2			--	--	--	--								
26	1220	1170	7.5	6.5			1090	1040	9.2	8.9								
27	1230	1190	7.6	7.1			1080	1040	9.0	8.8								
28	1250	1200	7.2	7.0			--	--	--	--								
29	1240	1210	7.3	6.8			--	--	--	--								
30	1270	1230	7.0	6.4			--	--	--	--								
31	1260	1220	6.6	5.8			--	--	--	--								

DAY	JANUARY						FEBRUARY						MARCH					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--	--	--	--	--	1040	990	9.7	9.1	5	5
9	--	--	--	--	--	--	--	--	--	--	--	--	1090	960	9.1	8.7	7	5
10	--	--	--	--	--	--	--	--	--	--	--	--	1050	950	8.7	7.4	7	6
11	--	--	--	--	--	--	--	--	--	--	--	--	1010	950	8.2	7.6	8	7
12	--	--	--	--	--	--	--	--	--	--	--	--	970	450	9.4	7.0	8	5
13	--	--	--	--	--	--	--	--	--	--	--	--	450	340	9.4	6.9	8	5
14	--	--	--	--	--	--	--	--	--	--	--	--	860	370	10.3	8.3	5	3
15	--	--	--	--	--	--	--	--	--	--	--	--	630	490	10.5	9.2	5	4
16	--	--	--	--	--	--	850	810	11.3	10.4	1	1	680	600	10.6	7.8	6	5
17	--	--	--	--	--	--	870	830	10.5	10.2	2	1	640	540	10.5	8.5	7	6
18	--	--	--	--	--	--	870	--	10.3	--	1	--	540	470	10.3	8.8	8	6
19	--	--	--	--	--	--	--	--	--	--	--	--	490	370	9.7	7.3	8	7
20	--	--	--	--	--	--	--	--	--	--	--	--	490	370	8.7	7.3	8	6
21	--	--	--	--	--	--	--	--	--	--	--	--	460	350	7.9	5.7	7	5
22	--	--	--	--	--	--	--	--	--	--	--	--	390	230	8.3	6.9	7	4
23	--	--	--	--	--	--	--	--	--	--	--	--	350	220	9.0	6.8	6	4
24	--	--	--	--	--	--	--	--	--	--	--	--	330	170	10.0	7.7	5	4
25	--	--	--	--	--	--	--	--	--	--	--	--	320	170	9.1	7.7	5	4
26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29	630	570	12.5	11.1	0	0	--	--	--	--	--	--	--	--	--	--	--	--
30	570	--	11.1	--	0	--	--	--	--	--	--	--	--	--	--	--	--	--
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

HOCKING RIVER BASIN

03159510 HOCKING RIVER BELOW ATHENS, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

[illegible]

OHIO RIVER MAIN STEM

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03159900 OHIO RIVER AT NEW HAVEN, W. VA.

LOCATION.--Lat 38°58'01", long 81°55'18", Mason County, at raw water intake to Philip Sporn Plant of American Electric Power Service Co. at New Haven, and at mile 241.6.

DRAINAGE AREA.--40,200 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

Water temperatures: October 1967 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 891 micromhos Sept. 17; minimum daily, 230 micromhos May 25.

Water temperatures: Maximum, 29.0 July 19, 20, 22, 24-26, Aug. 7, 23, 24, 26; minimum, 2.0°C Jan. 10-13, 17-20, 24, 25, Feb. 13-17, 19-22.

REMARKS.--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) a composite analysis each month to determine heavy metals. Samples for iron and manganese were filtered clear when collected. Records of discharge are given for Ohio River at Pomeroy, Ohio (drainage area 40,500 sq mi approximately).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)
OCT.								
02...	--	.14	.54	25	0	152	48	.6
14...	--	.31	.50	32	0	82	33	.3
28...	46200	.17	.69	22	0	123	29	.4
NOV.								
07...	--	.26	.46	32	0	102	60	.2
15...	37000	.51	.64	34	0	97	43	.2
30...	67600	.56	.42	24	0	86	23	.1
DEC.								
14...	86500	.93	.32	30	0	80	24	.4
23...	58700	.29	.23	32	0	70	32	.3
28...	50300	.40	.26	38	0	85	38	.4
JAN.								
01...	36900	.29	.62	36	0	87	34	.3
16...	39300	.29	.68	32	0	107	34	.6
24...	75700	.93	.63	34	0	74	29	.3
FEB.								
05...	180000	.08	.39	30	0	80	21	.3
16...	52200	.12	.42	44	0	89	33	.3
28...	--	--	.54	44	0	109	40	.3
MAR.								
08...	--	.55	.83	46	0	124	54	.2
18...	120000	.34	.89	21	0	127	32	.1
30...	110000	--	--	30	0	70	22	.1
APR.								
02...	61300	.20	.24	36	0	68	22	.2
15...	--	.16	.42	38	0	94	26	.3
30...	--	.20	.34	54	0	108	42	.3
MAY								
10...	--	.11	.27	48	0	130	44	.4
16...	97500	.14	.23	44	0	120	28	.3
25...	270000	.62	.21	42	0	53	12	.2
JUNE								
04...	131000	.32	.14	36	0	78	14	.2
14...	50000	.74	.16	58	0	111	26	.4
28...	--	.13	.13	56	0	136	39	.3
JULY								
01...	--	.10	.08	64	0	143	40	.4
19...	--	--	.12	80	0	137	50	.5
31...	--	.11	.07	55	0	174	76	.5
AUG.								
05...	--	.05	.24	46	0	161	134	.6
12...	--	.36	.32	68	0	118	50	.5
29...	--	.05	.17	42	0	174	60	.7
SEPT.								
05...	--	.07	.06	44	0	194	64	.6
17...	--	.13	.37	32	0	251	94	.7
27...	--	.10	.11	28	0	228	73	.7

DATE	TOTAL CHLO- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	COBALT (CO)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
01-31	.00	.00	.00	.00	.04	--	--	--
NOV.								
01-30	.00	.00	.01	.01	.22	.00	.00	.00
DEC.								
01-31	.00	.00	.01	.01	.08	.00	--	.00
JAN.								
01-31	.00	.00	.02	.02	.06	.00	--	.00
FEB.								
01-29	.00	.00	.01	.00	.02	.00	--	.00
MAR.								
01-31	.00	.01	.01	.00	.02	.00	--	.00
APR.								
01-30	.00	.01	.01	.00	.01	.00	--	.00
MAY								
01-31	.00	.00	.01	.00	.02	.00	--	.00
JUNE								
01-30	.00	.01	.01	.00	.06	.00	--	.00
JULY								
01-31	.00	.01	.01	.00	.02	.00	--	.00
AUG.								
01-31	.00	.01	.01	.00	.02	.00	--	.00
SEPT.								
01-30	.00	.02	.02	.01	.05	.00	--	.00

OHIO RIVER MAIN STEM

03159900 OHIO RIVER AT NEW HAVEN, W. VA.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH
OCT.							
02...	3.4	.12	352	166	146	550	6.7
14...	3.0	.11	206	105	79	343	7.2
28...	2.9	.08	226	130	112	411	6.9
NOV.							
07...	2.6	.08	298	151	125	494	6.9
15...	2.6	.09	228	126	98	412	7.1
30...	2.8	.07	184	103	84	319	6.9
DEC.							
14...	2.8	.05	194	108	84	316	6.9
23...	2.7	.07	188	94	68	286	6.9
28...	3.7	.04	258	124	93	381	6.6
JAN.							
01...	3.4	.16	240	124	94	388	7.1
16...	3.6	.07	254	140	114	432	7.0
26...	2.5	.18	192	104	76	343	6.6
FEB.							
05...	4.0	.07	172	108	84	301	7.0
16...	4.3	.27	244	138	102	381	7.1
29...	4.2	.17	280	154	118	454	7.1
MAR.							
08...	5.9	.17	354	184	147	535	7.8
18...	3.3	.04	292	210	193	427	7.4
30...	3.4	.11	188	108	84	295	7.6
APR.							
02...	4.2	.11	196	106	76	285	7.7
15...	3.9	.10	230	134	103	362	7.8
30...	3.8	.12	304	166	122	463	7.9
MAY							
10...	5.2	.13	321	174	135	505	7.7
16...	5.2	.06	284	154	118	437	7.2
25...	2.7	.20	168	90	56	230	7.7
JUNE							
04...	2.0	.12	168	111	82	278	7.7
14...	3.2	.08	256	174	127	419	7.2
28...	3.1	.13	322	196	150	510	7.8
JULY							
01...	2.2	.13	346	210	158	548	7.2
19...	1.8	.09	372	204	139	588	6.9
31...	2.4	.16	448	230	185	705	6.9
AUG.							
05...	5.5	.08	516	262	224	861	6.7
12...	1.0	.08	318	176	121	530	6.8
29...	8.0	.16	404	204	170	640	7.0
SEPT.							
05...	7.5	.32	412	220	184	698	7.0
17...	6.6	.16	536	265	239	891	7.0
27...	7.6	.13	446	238	215	764	6.8

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	--	--	324	388	352	477	308	487	322	548	684	--
2.....	550	366	324	390	359	475	285	486	--	580	684	702
3.....	542	441	--	391	--	--	296	486	311	611	743	712
4.....	549	443	--	402	--	503	311	490	278	564	766	707
5.....	523	--	293	378	301	512	311	--	328	553	861	698
6.....	507	456	310	390	369	513	--	500	331	564	824	706
7.....	--	494	356	--	369	524	--	487	347	586	725	--
8.....	487	493	342	363	352	535	319	492	--	582	--	724
9.....	390	473	342	356	352	534	330	493	--	580	654	--
10.....	377	433	--	363	348	--	339	505	378	610	668	762
11.....	360	433	330	376	--	530	336	505	379	640	658	777
12.....	350	--	300	389	--	493	--	--	411	632	530	--
13.....	353	448	305	388	333	336	344	486	415	570	619	--
14.....	343	412	316	--	369	359	--	464	419	505	615	844
15.....	--	412	318	--	373	370	362	474	416	574	617	--
16.....	382	420	--	432	381	371	371	437	--	572	--	850
17.....	393	422	--	411	384	--	--	401	--	572	585	891
18.....	418	401	295	396	--	427	--	385	435	571	--	--
19.....	422	--	305	406	393	--	404	--	454	588	572	883
20.....	426	401	305	395	393	--	--	397	462	626	--	--
21.....	--	399	316	--	392	428	--	382	468	657	542	--
22.....	--	394	310	353	389	352	445	334	458	669	--	--
23.....	370	--	286	353	411	327	444	350	--	664	594	814
24.....	368	372	--	343	399	--	462	289	488	638	586	870
25.....	398	354	--	343	--	298	398	230	488	643	--	816
26.....	453	--	330	361	432	310	431	--	505	664	572	794
27.....	460	325	366	362	433	316	410	249	504	--	610	764
28.....	411	325	381	--	454	313	--	251	510	--	--	762
29.....	--	322	367	396	435	313	434	301	506	647	640	--
30.....	376	319	365	395	--	295	463	--	--	701	629	742
31.....	353	--	--	360	--	--	--	301	--	705	646	--
AVERAGE	422	406	--	380	--	412	--	410	--	609	651	--

OHIO RIVER MAIN STEM

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03159900 OHIO RIVER AT NEW HAVEN, W. VA.--Continued

DAY	TEMPERATURE (°C) OF WATER		WATER YEAR		OCTOBER 1967		TO SEPTEMBER 1968		AUG	SEP
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY		
1	---	---	---	4.3	4.0	3.0	12.0	17.0	15.0	25.0
2	19.0	13.0	7.0	3.0	5.0	3.0	13.0	17.0	---	26.0
3	20.0	13.0	---	3.0	---	---	13.0	17.0	17.0	26.0
4	21.0	14.0	---	4.0	---	---	12.0	19.0	19.0	26.0
5	21.0	---	7.0	3.0	4.0	4.0	12.0	---	18.0	26.0
6	23.0	12.0	7.0	3.0	4.0	4.0	---	17.0	18.0	26.0
7	---	11.0	7.0	---	4.0	5.0	---	---	19.0	26.0
8	21.0	11.0	6.0	3.0	4.0	5.0	13.0	19.0	---	25.0
9	19.0	10.0	6.0	3.0	3.0	7.0	14.0	19.0	---	27.0
10	18.0	---	---	2.0	3.0	---	13.0	19.0	22.0	27.0
11	18.0	---	6.0	2.0	---	7.0	13.0	19.0	22.0	27.0
12	18.0	---	7.0	2.0	---	8.0	---	---	23.0	27.0
13	18.0	11.0	8.0	2.0	2.0	8.0	14.0	19.0	23.0	27.0
14	18.0	---	7.0	---	2.0	7.0	---	19.0	22.0	27.0
15	---	10.0	7.0	---	2.0	8.0	15.0	19.0	22.0	27.0
16	18.0	9.0	---	3.0	2.0	8.0	14.0	18.0	---	27.0
17	18.0	11.0	---	2.0	2.0	---	---	18.0	---	27.0
18	18.0	10.0	7.0	2.0	---	8.0	---	20.0	23.0	27.0
19	---	---	7.0	2.0	2.0	---	16.0	---	23.0	27.0
20	17.0	9.0	7.0	2.0	2.0	---	---	17.0	23.0	27.0
21	---	8.0	7.0	---	2.0	8.0	---	17.0	23.0	27.0
22	---	---	7.0	3.0	2.0	5.0	17.0	16.0	23.0	27.0
23	17.0	---	7.0	4.0	3.0	8.0	18.0	---	23.0	27.0
24	16.0	9.0	---	2.0	3.0	---	19.0	16.0	24.0	27.0
25	16.0	8.0	---	2.0	---	7.0	17.0	15.0	25.0	27.0
26	16.0	---	7.0	3.0	3.0	8.0	16.0	---	25.0	27.0
27	16.0	7.0	6.0	3.0	3.0	8.0	16.0	15.0	25.0	27.0
28	16.0	8.0	6.0	4.0	---	9.0	---	15.0	24.0	27.0
29	---	7.0	5.0	4.0	4.0	9.0	16.0	15.0	24.0	27.0
30	13.0	---	4.0	4.0	---	11.0	17.0	---	24.0	27.0
31	13.0	---	4.0	---	---	---	---	15.0	---	27.0
AVERAGE	17.5	---	---	3.0	3.0	---	---	17.5	---	27.5

KANAWHA RIVER BASIN

03164000 NEW RIVER NEAR GALAX, VA.

LOCATION.--Lat 36°38'50", long 80°58'45", Carroll County, on left bank at upstream side of bridge on U.S. Highway 58, 500 ft downstream from Meadow Creek, 1.2 miles southwest of Old Town, 3.1 miles southwest of Galax and 3.6 miles downstream from Elk Creek.

DRAINAGE AREA.--1,131 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1930 to March 1931, October to December 1949, October 1951 to September 1952, October 1967 to February 1968 (monthly), April to September 1968 (daily).
Water temperatures: October to December 1949, April to September 1968.

EXTREMES.--April to September 1968:

Dissolved solids: Maximum, 48 mg/l June 21-30, Aug. 21-31; minimum, 35 mg/l Sept. 1-10.

Hardness: Maximum, 20 mg/l Aug. 11-20; minimum, 13 mg/l Apr. 11-20.

Specific conductance: Maximum daily, 73 micromhos Aug. 8; minimum daily, 39 micromhos May 8.

Water temperatures: Maximum, 30.0°C Aug. 23, 24.

Period of record:

Dissolved solids: Maximum, 48 mg/l June 21-30, 1968; minimum, 27 mg/l Apr. 1-10, 1930, Mar. 1-10, 1931.

Hardness: Maximum, 20 mg/l Aug. 1-10, Aug. 11-20, 1968; minimum, 11 mg/l Jan. 11-20, 21-31, 1931.

Specific conductance (April to September 1968): Maximum daily, 73 micromhos Aug. 8, 1968; minimum daily,

Water temperatures (April to September 1968): Maximum, 30.0°C Aug. 23, 24, 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SI02)	SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	POT- SIUM (K)	BICAR- BONATE (HCO3)	SULFATE (SO4)	CHLO- RIDE (CL)
OCT.										
06...	---	9.0	.06	3.7	1.4	2.1	1.1	17	2.8	2.4
NOV.										
15...	1010	12	.06	3.6	1.2	2.8	1.2	19	2.0	2.1
DEC.										
08...	1680	9.2	.05	3.6	1.0	2.3	1.2	16	3.0	2.5
JAN.										
04...	3380	11	.01	4.3	2.0	2.3	1.0	17	3.4	4.3
30...	2850	10	.12	3.0	1.7	2.1	1.2	16	3.8	2.6
FEB.										
14...	7100	10	.06	4.6	1.0	2.5	1.2	16	3.0	3.2
28...	2420	9.4	.06	3.6	.5	2.5	.8	14	2.6	2.9
APR.										
01-10	---	9.4	.00	3.6	1.2	2.3	1.2	16	2.2	3.1
11-20	---	10	.09	3.2	1.2	4.8	1.2	18	3.0	3.2
21-30	---	10	.06	4.2	1.3	2.5	.8	18	3.6	3.5
MAY										
01-10	---	11	.00	4.2	1.2	3.7	1.6	19	4.6	4.0
11-20	---	10	.05	4.4	1.2	2.8	1.2	19	2.6	4.0
21-31	---	9.8	.02	4.0	1.4	3.2	1.6	18	3.4	2.4
JUNE										
01-10	---	9.9	.05	3.8	1.4	3.2	1.6	17	3.0	2.4
11-20	---	11	.02	3.8	1.8	3.4	1.6	20	3.4	3.6
21-30	---	10	.06	4.4	1.2	3.0	1.2	20	3.0	3.9
JULY										
01-10	---	8.7	.03	4.4	1.2	3.2	1.6	22	1.8	3.4
11-20	---	9.1	.06	4.4	1.4	3.4	1.6	22	2.4	3.5
21-31	---	9.5	.04	5.0	1.3	3.4	1.6	22	3.8	4.7
AUG.										
01-10	---	9.9	.07	4.8	1.8	3.4	2.0	23	4.4	3.7
11-20	---	9.3	.02	4.4	2.1	3.9	.8	23	4.4	4.4
21-31	---	7.6	.09	4.0	2.2	3.7	2.0	22	5.6	4.2
SEPT.										
01-10	---	7.1	.10	4.0	1.2	3.2	1.6	22	.8	3.9
11-20	---	8.7	.06	3.8	1.1	3.7	2.3	20	1.0	4.2
21-30	---	8.0	.05	4.8	1.0	3.0	2.7	22	2.6	4.6
TIME										
WTD. AVG.	---	9.4	.54	4.2	1.4	3.3	1.5	20	3.1	3.8
ANALYSTS OF ADDITIONAL SAMPLES										
AUG.										
07...	---	---	.06	8.6	1.6	4.6	3.5	49	5.4	2.9

KANAWHA RIVER BASIN

03164000 NEW RIVER NEAR GALAX, VA.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 100 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
OCT.										
06....	.1	.7	.00	36	15	1	41	6.5	18	10
NOV.										
15....	.1	1.0	.00	35	14	C	44	6.9	6	8
DEC.										
08....	.1	1.8	.15	31	13	C	37	7.0	7	T
JAN.										
04....	.1	1.1	.00	32	19	5	47	6.9	4	5
30....	.0	2.7	.12	43	15	2	38	6.9	3	20
FEB.										
14....	.1	3.0	.00	47	14	1	43	7.1	0	3
28....	.0	2.6	.04	49	11	0	37	6.8	1	C
APR.										
01-10	.1	2.4	.02	40	14	1	44	7.0	--	10
11-20	.0	2.1	.00	37	13	C	46	6.8	--	7
21-30	.1	2.4	.00	40	16	1	46	6.7	--	10
MAY										
01-10	.1	1.8	.00	38	16	0	49	6.7	--	8
11-20	.1	2.7	.00	38	16	C	43	7.1	--	7
21-31	.0	2.4	.00	42	16	1	45	7.0	--	10
JUNE										
01-10	.1	2.5	.01	46	16	2	45	7.3	--	12
11-20	.1	3.4	.01	46	17	1	53	7.0	--	7
21-30	.2	1.6	.00	48	16	C	54	7.0	--	15
JULY										
01-10	.0	.7	.00	41	16	0	55	7.0	--	8
11-20	.0	1.5	.03	40	17	0	55	6.9	--	15
21-31	.0	2.1	.00	38	18	C	57	7.0	--	10
AUG.										
01-10	.1	2.0	.00	44	20	0	58	6.8	--	18
11-20	.1	2.5	.04	43	20	0	62	7.1	--	15
21-31	.1	.4	.02	48	19	1	58	7.1	--	18
SEPT.										
01-10	.1	.7	.00	35	15	0	52	7.1	--	8
11-20	.1	.6	.00	38	14	0	52	7.1	--	15
21-30	.0	.6	.00	39	16	0	52	7.1	--	10
TIME										
WTD. AVG.	.1	1.8	.50	41	16	C	51	7.0	--	--

ANALYSIS OF ADDITIONAL SAMPLES

AUG.										
07....	.4	.7	2.5	--	28	C	104	6.5	--	--

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C) APRIL TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	--	--	--	--	--	--	48	55	52	64	57	55
2.....	--	--	--	--	--	--	42	48	41	53	55	51
3.....	--	--	--	--	--	--	43	67	40	60	53	52
4.....	--	--	--	--	--	--	40	44	42	54	54	50
5.....	--	--	--	--	--	--	47	49	43	54	54	50
6.....	--	--	--	--	--	--	44	52	45	59	54	55
7.....	--	--	--	--	--	--	40	46	53	54	104	54
8.....	--	--	--	--	--	--	47	39	45	54	73	48
9.....	--	--	--	--	--	--	45	43	43	50	62	62
10.....	--	--	--	--	--	--	43	43	42	49	60	48
11.....	--	--	--	--	--	--	43	45	42	48	59	55
12.....	--	--	--	--	--	--	49	45	47	47	62	56
13.....	--	--	--	--	--	--	45	44	63	51	68	60
14.....	--	--	--	--	--	--	46	41	47	56	60	48
15.....	--	--	--	--	--	--	45	47	70	59	59	48
16.....	--	--	--	--	--	--	44	42	47	60	66	45
17.....	--	--	--	--	--	--	48	42	49	54	61	52
18.....	--	--	--	--	--	--	48	42	53	59	64	49
19.....	--	--	--	--	--	--	45	44	50	59	59	54
20.....	--	--	--	--	--	--	45	47	58	56	66	48
21.....	--	--	--	--	--	--	49	46	50	54	60	48
22.....	--	--	--	--	--	--	48	47	59	54	56	56
23.....	--	--	--	--	--	--	45	47	51	69	60	55
24.....	--	--	--	--	--	--	50	47	52	53	65	52
25.....	--	--	--	--	--	--	45	47	52	59	53	52
26.....	--	--	--	--	--	--	41	48	58	56	52	65
27.....	--	--	--	--	--	--	52	47	52	63	52	53
28.....	--	--	--	--	--	--	44	42	50	55	53	55
29.....	--	--	--	--	--	--	44	43	57	59	56	45
30.....	--	--	--	--	--	--	45	43	58	56	60	44
31.....	--	--	--	--	--	--	--	40	--	61	67	--
AVERAGE	--	--	--	--	--	--	45	45	50	55	60	52

KANAWHA RIVER BASIN

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03184000 NEW RIVER NEAR GALAX, VA.--Continued
TEMPERATURE (°C) OF WATER, APRIL TO SEPTEMBER 1968

DAY	CCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	13.0	11.0	19.0	25.0	27.0	26.0
2	---	---	---	---	---	---	9.0	12.0	18.0	27.0	25.0	26.0
3	---	---	---	---	---	---	8.0	15.0	18.0	26.0	24.0	25.0
4	---	---	---	---	---	---	11.0	15.0	13.0	27.0	22.0	21.0
5	---	---	---	---	---	---	12.0	13.0	19.0	28.0	25.0	23.0
6	---	---	---	---	---	---	11.0	14.0	19.0	28.0	27.0	23.0
7	---	---	---	---	---	---	12.0	14.0	20.0	27.0	29.0	23.0
8	---	---	---	---	---	---	12.0	13.0	---	28.0	29.0	23.0
9	---	---	---	---	---	---	12.0	14.0	22.0	25.0	29.0	23.0
10	---	---	---	---	---	---	11.0	14.0	20.0	25.0	26.0	21.0
11	---	---	---	---	---	---	10.0	14.0	21.0	25.0	27.0	19.0
12	---	---	---	---	---	---	12.0	16.0	22.0	21.0	26.0	20.0
13	---	---	---	---	---	---	12.0	19.0	20.0	23.0	25.0	20.0
14	---	---	---	---	---	---	16.0	17.0	19.0	24.0	26.0	21.0
15	---	---	---	---	---	---	14.0	14.0	22.0	24.0	27.0	21.0
16	---	---	---	---	---	---	14.0	18.0	20.0	26.0	26.0	23.0
17	---	---	---	---	---	---	14.0	17.0	21.0	28.0	26.0	23.0
18	---	---	---	---	---	---	16.0	17.0	20.0	27.0	26.0	21.0
19	---	---	---	---	---	---	14.0	15.0	23.0	26.0	28.0	22.0
20	---	---	---	---	---	---	15.0	17.0	23.0	27.0	28.0	23.0
21	---	---	---	---	---	---	14.0	15.0	21.0	27.0	29.0	22.0
22	---	---	---	---	---	---	15.0	15.0	23.0	21.0	29.0	21.0
23	---	---	---	---	---	---	15.0	17.0	21.0	27.0	30.0	24.0
24	---	---	---	---	---	---	13.0	18.0	23.0	28.0	30.0	24.0
25	---	---	---	---	---	---	10.0	21.0	21.0	28.0	25.0	24.0
26	---	---	---	---	---	---	10.0	12.0	25.0	27.0	26.0	24.0
27	---	---	---	---	---	---	13.0	11.0	24.0	27.0	25.0	23.0
28	---	---	---	---	---	---	11.0	13.0	19.0	21.0	25.0	20.0
29	---	---	---	---	---	---	11.0	15.0	21.0	23.0	24.0	21.0
30	---	---	---	---	---	---	10.0	14.0	25.0	24.0	28.0	21.0
31	---	---	---	---	---	---	---	14.0	---	25.0	22.0	---
AVERAGE	---	---	---	---	---	---	12.5	15.0	21.0	25.5	26.5	22.5

03176500 NEW RIVER AT GLEN LYN, W. VA.

LOCATION.--Lat 37°22'20", long 80°51'45", in Giles County, at the Glen Lyn steam electric plant of the Appalachian Electric Power Co., across the river from the gaging station, 0.3 mile upstream from East River, and 6.3 miles downstream from Wolf Creek.

DRAINAGE AREA.--3,768 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1930 to March 1931, October 1949 to September 1950, October 1951 to September 1956 (monthly), April to September 1968 (daily).
Water temperatures: October 1950 to September 1968.

EXTREMES.--April to September 1968:

Dissolved solids: Maximum, 177 mg/l Sept. 21-30; minimum, 88 mg/l Apr. 1-10.

Hardness: Maximum, 132 mg/l Sept. 21-30; minimum, 62 mg/l Apr. 1-10.

Specific conductance: Maximum daily, 340 micromhos Aug. 29; minimum daily, 105 micromhos Apr. 6.

Water temperatures: Maximum, 28.0°C July 2, Aug. 9, 20, 21, 23; minimum, freezing point Feb. 11-14.

Period of record:

Water temperatures: Maximum, 29.0°C June 28, 1952; minimum, freezing point on many days during winter periods.

REMARKS.--Water temperatures for first six months of water year furnished by Appalachian Power Co.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	SULFATE (SO4)	CHLOR- IDE (CL)
OCT.										
03...	2560	6.9	.01	24	6.3	3.0	1.6	69	25	3.1
NOV.										
13...	1250	6.4	.00	23	7.2	3.6	1.4	74	23	2.9
DEC.										
07...	7350	6.7	.02	17	5.1	3.7	1.2	57	17	4.5
JAN.										
03...	4980	7.6	.02	14	6.3	2.7	1.6	55	12	5.5
31...	11370	6.7	.09	18	4.7	2.3	1.2	60	13	3.1
FEB.										
12...	4580	6.3	.06	22	5.6	2.5	.8	65	14	3.6
APR.										
01-10	--	5.7	.00	17	4.5	1.8	.8	56	13	2.9
11-20	--	5.3	.02	22	6.0	2.1	1.2	69	18	3.5
21-30	--	6.1	.04	20	5.6	2.3	.8	65	17	3.0
MAY										
01-10	--	6.0	.00	18	4.9	2.3	.8	60	15	3.7
11-20	--	6.7	.00	21	6.6	2.8	1.2	66	18	2.5
21-31	--	5.4	.01	21	5.7	2.8	1.2	66	17	2.9
JUNE										
01-10	--	5.3	.01	19	5.7	2.3	1.2	62	15	2.7
11-20	--	5.5	.01	19	5.3	2.3	1.2	64	16	2.9
21-30	--	4.9	.00	26	7.0	3.7	1.2	70	26	3.2
JULY										
01-10	--	5.0	.09	29	7.0	3.0	1.6	77	32	3.5
11-16	--	5.5	.02	27	7.2	3.2	1.2	72	32	3.6
17-19	--	5.9	.01	20	6.1	2.8	1.6	66	19	3.5
20-31	--	6.1	.03	30	6.9	2.5	1.2	80	34	2.8
AUG.										
01-10	--	5.8	.04	26	6.6	2.8	1.6	78	27	4.0
11-20	--	6.0	.00	27	7.9	3.0	1.6	80	26	3.6
21-31	--	6.2	.01	31	8.0	4.6	1.2	80	29	3.8
SEPT.										
01-10	--	4.4	.02	44	4.1	3.9	3.1	87	45	4.3
11-20	--	6.0	.01	40	7.4	4.4	2.0	85	52	3.2
21-30	--	4.0	.02	39	8.4	4.4	2.3	88	48	4.0
TIME										
WTD. AVG.	--	5.6	.51	26	6.4	3.0	1.4	72	27	3.3

KANAWHA RIVER BASIN

03176500 NEW RIVER AT GLEN LYN, W. VA.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	DATE	FLUO- RIDE (F)	NITRATE (NO3)	PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUCE AT 180 C)	HARD- NESS (CA, MG)	NON- CAP- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR	
OCT.												
03...	.1	8.9	.10	112	86	29	174	7.1	19	7		
NOV.												
13...	.1	6.5	.00	115	88	16	177	6.9	--	7		
DEC.												
07...	.0	4.3	.12	89	63	17	142	7.4	6	5		
JAN.												
03...	.2	1.4	.00	72	61	16	121	6.9	4	5		
31...	.0	5.6	.11	99	64	15	120	7.5	4	22		
FEB.												
12...	.2	6.1	.09	88	70	16	142	7.6	1	2		
APR.												
01-10	.1	5.8	.06	88	62	16	123	6.8	--	5		
11-20	.3	7.5	.00	94	78	22	164	7.3	--	0		
21-30	.3	5.8	.00	96	72	16	152	7.1	--	5		
MAY												
01-10	.0	5.2	.00	97	66	16	141	7.6	--	5		
11-20	.0	7.6	.00	104	86	24	159	7.8	--	3		
21-31	.1	8.4	.01	109	76	22	161	7.8	--	5		
JUNE												
01-10	.1	7.1	.00	101	72	20	152	7.6	--	3		
11-20	.0	5.3	.03	89	70	18	153	7.4	--	3		
21-30	.0	13	.01	126	94	36	215	7.6	--	5		
JULY												
01-10	.1	12	.04	137	102	39	233	7.5	--	5		
11-16	.0	15	.03	129	97	38	214	8.1	--	8		
17-19	.1	10	.05	107	76	22	165	7.6	--	8		
20-31	.0	16	.02	142	104	39	236	7.5	--	8		
AUG.												
01-10	.0	13	.02	127	93	29	214	7.4	--	5		
11-20	.1	9.9	.00	121	99	34	204	7.4	--	7		
21-31	.1	13	.03	150	110	45	245	7.7	--	15		
SEPT.												
01-10	.1	15	.04	173	126	54	277	7.6	--	3		
11-20	.1	18	.02	172	130	60	282	7.8	--	10		
21-30	.2	17	.05	177	132	60	282	7.9	--	8		
TIME WTD. AVG.	.1	11	.02	123	92	37	198	7.5	--	--		
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C) APRIL TO SEPTEMBER 1968												
DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	--	--	--	--	--	--	151	122	153	222	252	290
2.....	--	--	--	--	--	--	125	128	144	240	270	310
3.....	--	--	--	--	--	--	114	136	146	206	251	320
4.....	--	--	--	--	--	--	106	138	146	--	232	303
5.....	--	--	--	--	--	--	106	142	162	227	232	283
6.....	--	--	--	--	--	--	105	144	154	250	170	210
7.....	--	--	--	--	--	--	118	148	152	203	180	219
8.....	--	--	--	--	--	--	130	152	157	216	203	298
9.....	--	--	--	--	--	--	149	148	160	215	166	279
10.....	--	--	--	--	--	--	147	154	147	240	185	255
11.....	--	--	--	--	--	--	150	144	139	215	200	320
12.....	--	--	--	--	--	--	137	144	157	225	195	275
13.....	--	--	--	--	--	--	140	183	154	223	233	275
14.....	--	--	--	--	--	--	144	195	143	225	241	285
15.....	--	--	--	--	--	--	185	168	152	189	232	285
16.....	--	--	--	--	--	--	183	138	150	205	189	267
17.....	--	--	--	--	--	--	180	146	156	171	179	270
18.....	--	--	--	--	--	--	180	148	156	156	170	270
19.....	--	--	--	--	--	--	180	158	156	167	205	295
20.....	--	--	--	--	--	--	160	168	163	230	201	278
21.....	--	--	--	--	--	--	178	195	170	203	175	287
22.....	--	--	--	--	--	--	190	160	165	242	174	286
23.....	--	--	--	--	--	--	205	175	188	225	193	279
24.....	--	--	--	--	--	--	165	168	245	285	185	278
25.....	--	--	--	--	--	--	116	171	220	233	210	293
26.....	--	--	--	--	--	--	120	197	223	255	215	329
27.....	--	--	--	--	--	--	150	188	235	223	300	261
28.....	--	--	--	--	--	--	130	112	247	220	305	263
29.....	--	--	--	--	--	--	148	115	235	210	340	272
30.....	--	--	--	--	--	--	118	136	224	275	290	269
31.....	--	--	--	--	--	--	--	153	--	221	315	--
AVERAGE	--	--	--	--	--	--	147	154	173	223	222	280

KANAWHA RIVER BASIN

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03176500 NEW RIVER AT GLEN LYN, W. VA.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	13.0	7.0	2.0	3.0	1.0	14.0	14.0	16.0	26.0	25.0	22.0
2	17.0	13.0	5.0	2.0	3.0	3.0	11.0	14.0	19.0	28.0	26.0	21.0
3	19.0	13.0	4.0	3.0	2.0	2.0	10.0	17.0	19.0	29.0	26.0	22.0
4	19.0	12.0	3.0	4.0	2.0	3.0	11.0	17.0	20.0	---	26.0	23.0
5	19.0	8.0	7.0	1.0	3.0	4.0	12.0	15.0	21.0	24.0	25.0	23.0
6	18.0	7.0	5.0	1.0	3.0	4.0	12.0	15.0	21.0	25.0	27.0	23.0
7	17.0	8.0	8.0	1.0	3.0	4.0	14.0	15.0	20.0	25.0	27.0	23.0
8	16.0	7.0	7.0	1.0	2.0	7.0	13.0	16.0	22.0	26.0	27.0	23.0
9	16.0	8.0	6.0	1.0	2.0	7.0	13.0	17.0	21.0	26.0	28.0	23.0
10	16.0	9.0	6.0	2.0	1.0	5.0	12.0	18.0	21.0	26.0	25.0	23.0
11	15.0	11.0	5.0	1.0	0.0	8.0	10.0	18.0	22.0	26.0	25.0	22.0
12	15.0	11.0	5.0	1.0	0.0	8.0	12.0	18.0	21.0	26.0	24.0	21.0
13	15.0	10.0	5.0	1.0	0.0	3.0	14.0	20.0	21.0	25.0	23.0	20.0
14	16.0	9.0	6.0	1.0	0.0	3.0	14.0	19.0	21.0	24.0	24.0	20.0
15	17.0	7.0	8.0	1.0	2.0	4.0	15.0	18.0	21.0	27.0	25.0	21.0
16	18.0	6.0	6.0	1.0	2.0	4.0	16.0	19.0	21.0	27.0	25.0	22.0
17	17.0	6.0	3.0	1.0	2.0	6.0	17.0	19.0	22.0	27.0	26.0	21.0
18	16.0	6.0	4.0	1.0	1.0	7.0	17.0	18.0	22.0	27.0	26.0	21.0
19	13.0	6.0	7.0	2.0	1.0	7.0	17.0	17.0	22.0	26.0	27.0	20.0
20	13.0	6.0	8.0	3.0	2.0	9.0	16.0	16.0	23.0	26.0	28.0	21.0
21	13.0	7.0	8.0	4.0	1.0	10.0	17.0	16.0	22.0	26.0	28.0	21.0
22	13.0	8.0	7.0	3.0	1.0	11.0	18.0	17.0	23.0	26.0	27.0	22.0
23	13.0	7.0	3.0	3.0	1.0	8.0	17.0	18.0	24.0	27.0	28.0	23.0
24	14.0	6.0	2.0	1.0	2.0	6.0	16.0	18.0	25.0	27.0	27.0	23.0
25	13.0	6.0	3.0	1.0	2.0	7.0	13.0	19.0	25.0	27.0	27.0	24.0
26	13.0	7.0	3.0	1.0	2.0	8.0	14.0	19.0	26.0	27.0	27.0	24.0
27	13.0	6.0	3.0	1.0	2.0	9.0	15.0	19.0	25.0	25.0	26.0	21.0
28	12.0	3.0	2.0	3.0	4.0	10.0	14.0	15.0	23.0	25.0	23.0	21.0
29	12.0	3.0	1.0	3.0	2.0	11.0	14.0	16.0	22.0	25.0	22.0	20.0
30	12.0	4.0	2.0	3.0	---	12.0	13.0	16.0	23.0	25.0	22.0	21.0
31	13.0	---	3.0	4.0	---	12.0	---	16.0	---	25.0	22.0	---
AVERAGE	15.0	8.0	5.0	2.0	2.0	6.5	14.0	17.0	22.0	26.0	25.5	22.0

03179000 BLUESTONE RIVER NEAR PIPESTEM, W. VA.

LOCATION.--Lat 37°32'45", long 81°00'30", Summers County, 1.2 miles downstream from Mountain Creek, 2.5 miles west of Pipestem, and 8.0 miles upstream from mouth.

DRAINAGE AREA.--363 sq mi.

PERIOD OF RECORD.--March to September 1968.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, MARCH TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
MAR 21. 1968	1200	668	14	25	JUL 24.....	1220	51	2.5	.34
APR 25.....	1130	470	17	22	SEP 5.....	1230	36	4.5	.44
JUN 12.....	1410	644	81	141					

KANAWHA RIVER BASIN

03182000 KNAPP CREEK AT MARLINTON, W. VA.

LOCATION.--Lat 38°12'40", long 80°04'30", Pocahontas County, at city waterplant at Marlinton, 1 mile upstream from mouth and 2 miles downstream from discontinued gaging station.

DRAINAGE AREA.--108 sq mi (at discontinued gaging station).

PERIOD OF RECORD.--Water temperatures: October 1946 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C July 17, 18; minimum, freezing point on many days during November to March.

Period of record:

Water temperatures: Maximum, 28.0°C July 24, 1952, June 2, 1959; minimum, freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	8.0	1.0	0.0	2.0	0.0	8.0	13.0	14.0	21.0	22.0	18.0
2	16.0	8.0	1.0	0.0	2.0	0.0	8.0	13.0	15.0	22.0	23.0	17.0
3	16.0	8.0	1.0	0.0	2.0	0.0	9.0	13.0	14.0	24.0	23.0	18.0
4	16.0	9.0	1.0	0.0	1.0	0.0	9.0	13.0	14.0	20.0	23.0	19.0
5	17.0	9.0	1.0	0.0	1.0	1.0	9.0	11.0	16.0	20.0	24.0	18.0
6	18.0	6.0	1.0	0.0	0.0	1.0	8.0	11.0	19.0	21.0	24.0	19.0
7	17.0	2.0	1.0	0.0	0.0	1.0	8.0	12.0	19.0	20.0	25.0	18.0
8	18.0	2.0	1.0	0.0	0.0	1.0	10.0	12.0	19.0	20.0	26.0	18.0
9	17.0	2.0	1.0	0.0	1.0	1.0	9.0	13.0	18.0	19.0	24.0	18.0
10	18.0	3.0	2.0	0.0	0.0	4.0	9.0	14.0	19.0	21.0	24.0	18.0
11	18.0	3.0	2.0	0.0	0.0	6.0	9.0	14.0	19.0	21.0	24.0	18.0
12	17.0	7.0	2.0	0.0	0.0	7.0	8.0	14.0	18.0	22.0	22.0	17.0
13	16.0	7.0	1.0	0.0	0.0	4.0	10.0	16.0	18.0	23.0	21.0	16.0
14	16.0	7.0	2.0	0.0	0.0	3.0	10.0	14.0	17.0	23.0	22.0	17.0
15	12.0	4.0	1.0	0.0	0.0	2.0	9.0	14.0	15.0	24.0	22.0	16.0
16	13.0	1.0	0.0	0.0	0.0	2.0	9.0	16.0	21.0	24.0	22.0	17.0
17	13.0	2.0	0.0	0.0	0.0	3.0	9.0	16.0	20.0	27.0	24.0	19.0
18	14.0	2.0	1.0	0.0	0.0	3.0	9.0	16.0	16.0	27.0	24.0	18.0
19	13.0	2.0	2.0	0.0	0.0	3.0	9.0	14.0	18.0	24.0	24.0	17.0
20	10.0	2.0	1.0	0.0	0.0	3.0	9.0	14.0	18.0	24.0	25.0	17.0
21	9.0	3.0	1.0	1.0	0.0	4.0	12.0	14.0	19.0	22.0	26.0	18.0
22	8.0	3.0	1.0	1.0	0.0	4.0	13.0	11.0	19.0	24.0	25.0	19.0
23	7.0	2.0	1.0	1.0	0.0	6.0	13.0	12.0	19.0	24.0	26.0	18.0
24	8.0	1.0	0.0	1.0	0.0	3.0	14.0	13.0	19.0	25.0	25.0	19.0
25	10.0	1.0	1.0	1.0	0.0	3.0	13.0	14.0	20.0	26.0	24.0	19.0
26	9.0	3.0	1.0	0.0	0.0	3.0	13.0	14.0	20.0	26.0	24.0	19.0
27	9.0	2.0	0.0	0.0	0.0	4.0	13.0	13.0	19.0	24.0	23.0	18.0
28	9.0	1.0	0.0	0.0	0.0	6.0	13.0	13.0	19.0	23.0	20.0	16.0
29	8.0	0.0	1.0	0.0	0.0	7.0	12.0	13.0	20.0	23.0	19.0	14.0
30	6.0	1.0	0.0	1.0	---	8.0	13.0	13.0	21.0	21.0	18.0	13.0
31	6.0	---	0.0	1.0	---	8.0	---	13.0	---	21.0	19.0	---
AVERAGE	13.0	3.5	1.0	0.0	0.5	3.5	10.0	13.5	18.0	23.0	23.0	17.5

03184000 GREENBRIER RIVER AT HILLDALE, W. VA.

LOCATION.--Lat 37°38'25", long 80°48'20", Summers County, 100 ft downstream from highway bridge on State Highway 3 at Hilldale, 0.1 mile upstream from Howard Creek, 0.9 mile upstream from Powley Creek, 5.0 miles southeast of Hinton, and 5.6 miles upstream from mouth.

DRAINAGE AREA.--1,625 sq mi.

PERIOD OF RECORD.--Sediment records: March to September 1968.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, MARCH TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
MAR 26, 1968	1520	4460	8.3	100	JUL 23, 1968	1530	827	38	85
APR 23, 1968	1505	854	2.3	5.3	AUG 28, 1968	1400	119	5.0	1.6
MAY 28, 1968	1430	11900	124	3980	SEP 24, 1968	1540	84	7.3	1.7
JUN 27, 1968	1015	391	7.7	8.1					

03189100 GAULEY RIVER NEAR CRAIGSVILLE, W. VA.

LOCATION.--Lat 38°17'30", long 80°38'30", Nicholas County, at highway bridge on W. VA. Route 20, 200 ft downstream from Cherry River, 1.8 miles downstream from Cranberry River, and 2.7 miles south of Craigs ville.

DRAINAGE AREA.--528 sq mi.

PERIOD OF RECORD.--Sediment records: April to September 1968.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, APRIL TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
APR 16, 1968	1410	902	1.0	2.4	JUL 18, 1968	1145	65	8.0	1.4
JUN 4, 1968	1245	1360	2.5	9.2	AUG 29, 1968	1230	100	4.0	1.1

KANAKHA RIVER BASIN

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03193770 KANAWHA RIVER AT CABIN CREEK, W. VA.

LOCATION.--Lat 38°11'58", long 81°28'41", Kanawha County, at the Applachian Electric Power Co. Cabin Creek steam electric cooling water intakes at Cabin Creek.

DRAINAGE AREA.--8,661 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1950 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 32.0°C July 27; minimum, 1.0°C on several days during January and February.

Period of record:

Water temperatures: Maximum, 33.0°C on several days in August 1955, 1959; minimum, freezing point Feb. 10, 1951, Feb. 14-16, 1958, and Jan. 16, 1964.

REMARKS.--Water temperature records furnished by the Applachian Electric Power Co.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	13.0	6.0	3.0	5.0	3.0	13.0	13.0	14.0	28.0	28.0	28.0
2	19.0	13.0	6.0	3.0	6.0	3.0	13.0	14.0	14.0	29.0	29.0	28.0
3	19.0	13.0	6.0	3.0	---	3.0	12.0	15.0	16.0	28.0	28.0	27.0
4	19.0	13.0	6.0	3.0	4.0	3.0	12.0	15.0	17.0	---	28.0	26.0
5	19.0	12.0	5.0	2.0	4.0	3.0	12.0	17.0	19.0	28.0	28.0	26.0
6	19.0	12.0	5.0	2.0	4.0	4.0	9.0	16.0	21.0	28.0	29.0	26.0
7	19.0	11.0	6.0	2.0	4.0	4.0	9.0	16.0	22.0	---	28.0	26.0
8	---	11.0	6.0	2.0	4.0	5.0	12.0	16.0	22.0	28.0	28.0	29.0
9	20.0	10.0	6.0	1.0	4.0	6.0	12.0	16.0	21.0	28.0	28.0	25.0
10	19.0	10.0	---	1.0	3.0	6.0	12.0	18.0	23.0	29.0	28.0	25.0
11	19.0	10.0	7.0	1.0	2.0	6.0	13.0	18.0	24.0	29.0	28.0	24.0
12	18.0	---	7.0	1.0	2.0	6.0	13.0	19.0	24.0	29.0	20.0	25.0
13	18.0	11.0	7.0	2.0	2.0	7.0	13.0	19.0	24.0	29.0	19.0	23.0
14	17.0	11.0	7.0	2.0	2.0	5.0	12.0	19.0	23.0	---	20.0	23.0
15	---	11.0	7.0	1.0	2.0	6.0	14.0	20.0	24.0	29.0	23.0	23.0
16	20.0	10.0	6.0	2.0	2.0	6.0	14.0	20.0	26.0	30.0	23.0	23.0
17	18.0	10.0	5.0	2.0	2.0	---	15.0	19.0	22.0	29.0	25.0	24.0
18	19.0	5.0	6.0	2.0	2.0	6.0	14.0	19.0	24.0	29.0	26.0	24.0
19	18.0	9.0	7.0	2.0	2.0	7.0	14.0	---	24.0	29.0	24.0	23.0
20	18.0	10.0	7.0	2.0	2.0	8.0	---	19.0	24.0	29.0	27.0	24.0
21	18.0	9.0	7.0	3.0	2.0	9.0	17.0	13.0	23.0	---	27.0	24.0
22	16.0	10.0	8.0	3.0	2.0	11.0	18.0	18.0	24.0	30.0	28.0	23.0
23	14.0	8.0	7.0	3.0	2.0	11.0	18.0	18.0	25.0	30.0	28.0	24.0
24	14.0	9.0	6.0	3.0	1.0	10.0	18.0	18.0	25.0	29.0	28.0	24.0
25	15.0	8.0	4.0	2.0	---	10.0	17.0	18.0	27.0	31.0	28.0	25.0
26	14.0	---	4.0	2.0	2.0	10.0	16.0	---	27.0	29.0	29.0	25.0
27	13.0	7.0	4.0	---	3.0	11.0	16.0	17.0	27.0	32.0	28.0	25.0
28	12.0	7.0	4.0	---	3.0	10.0	16.0	16.0	27.0	---	29.0	25.0
29	12.0	6.0	3.0	3.0	4.0	11.0	15.0	16.0	27.0	28.0	28.0	25.0
30	12.0	6.0	3.0	3.0	---	11.0	14.0	17.0	27.0	29.0	28.0	25.0
31	12.0	---	---	4.0	---	12.0	---	15.0	---	29.0	28.0	---
AVERAGE	16.5	10.0	6.0	2.0	3.0	7.0	14.0	17.0	23.0	29.0	26.5	25.0

03194700 ELK RIVER BELOW WEBSTER SPRINGS, W. VA.

LOCATION.--Lat 38°35'50", long 80°29'20", Webster County, 6.5 miles upstream from town of Centralia, 8.9 miles southwest of Salisbury Station, 8.9 miles northwest of Webster Springs, and at mile 122.7.

DRAINAGE AREA.--268 sq mi.

PERIOD OF RECORD.--April to September 1968.

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, APRIL TO SEPTEMBER 1968

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
APR 17, 1968	1145	360	3.0	2.9	JUL 31.....	1145	57	26	4.0
JUN 5.....	1050	890	10	24					

KANAWHA RIVER BASIN

03195500 ELK RIVER AT SUTTON, W. VA.

LOCATION.--Lat 38°39'45", long 80°42'35", Braxton County, temperature recorder at gaging station on left bank 150 ft upstream from highway bridge on Sutton, 0.5 mile upstream from Granny Creek, 0.8 mile downstream from Sutton Dam, 2.5 miles downstream from Wolf Creek, and at mile 100.1.

DRAINAGE AREA.--543 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1960 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 23.0°C Sept. 21-23; minimum, 1.0°C on several days during January to March.

Period of record:

Water temperatures: Maximum, 29.0°C Aug. 30 and Sept. 1, 1960; minimum, freezing point Feb. 25, 26, 1963.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(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	18.0	16.0	9.0	5.0	7.0	7.0	3.0	2.0	5.0	4.0	2.0	1.0
2	16.0	14.0	9.0	9.0	7.0	7.0	3.0	2.0	6.0	5.0	2.0	1.0
3	15.0	14.0	9.0	9.0	7.0	6.0	3.0	2.0	6.0	5.0	2.0	1.0
4	15.0	14.0	9.0	8.0	6.0	5.0	2.0	2.0	5.0	3.0	3.0	1.0
5	16.0	15.0	9.0	8.0	5.0	4.0	2.0	2.0	3.0	3.0	3.0	1.0
6	16.0	16.0	8.0	8.0	5.0	5.0	2.0	1.0	3.0	3.0	1.0	1.0
7	17.0	16.0	9.0	8.0	5.0	4.0	1.0	1.0	3.0	2.0	2.0	1.0
8	17.0	17.0	9.0	8.0	6.0	6.0	1.0	1.0	3.0	2.0	2.0	1.0
9	17.0	16.0	9.0	8.0	6.0	6.0	1.0	1.0	3.0	2.0	2.0	1.0
10	17.0	16.0	9.0	8.0	6.0	5.0	1.0	1.0	3.0	2.0	---	---
11	16.0	16.0	9.0	8.0	6.0	5.0	1.0	1.0	2.0	2.0	---	---
12	17.0	16.0	9.0	8.0	7.0	6.0	1.0	1.0	3.0	2.0	---	---
13	18.0	16.0	9.0	8.0	7.0	7.0	1.0	1.0	2.0	2.0	---	---
14	18.0	17.0	8.0	7.0	7.0	6.0	1.0	1.0	3.0	2.0	---	---
15	18.0	17.0	7.0	7.0	6.0	6.0	1.0	1.0	2.0	2.0	---	---
16	17.0	16.0	7.0	6.0	6.0	5.0	1.0	1.0	2.0	1.0	---	---
17	17.0	16.0	8.0	7.0	6.0	4.0	1.0	1.0	2.0	1.0	---	---
18	16.0	16.0	7.0	7.0	7.0	5.0	1.0	1.0	2.0	1.0	---	---
19	16.0	16.0	8.0	7.0	6.0	4.0	1.0	1.0	3.0	2.0	---	---
20	17.0	16.0	8.0	7.0	6.0	4.0	1.0	1.0	2.0	2.0	---	---
21	17.0	13.0	8.0	7.0	5.0	4.0	1.0	1.0	3.0	2.0	---	---
22	13.0	11.0	8.0	8.0	6.0	4.0	1.0	1.0	3.0	2.0	---	---
23	12.0	11.0	8.0	7.0	6.0	4.0	3.0	1.0	3.0	2.0	---	---
24	12.0	11.0	7.0	7.0	7.0	6.0	3.0	3.0	3.0	2.0	---	---
25	12.0	11.0	7.0	7.0	6.0	6.0	3.0	2.0	2.0	1.0	---	---
26	12.0	9.0	7.0	7.0	6.0	6.0	2.0	1.0	3.0	1.0	---	---
27	11.0	9.0	7.0	7.0	6.0	6.0	1.0	1.0	3.0	1.0	8.0	6.0
28	11.0	9.0	7.0	6.0	6.0	4.0	1.0	1.0	2.0	1.0	9.0	8.0
29	12.0	9.0	7.0	6.0	4.0	3.0	2.0	1.0	2.0	1.0	9.0	9.0
30	12.0	9.0	7.0	7.0	3.0	3.0	4.0	2.0	---	---	11.0	9.0
31	11.0	9.0	---	---	3.0	3.0	4.0	4.0	---	---	12.0	11.0
MONTH	18.0	9.0	9.0	6.0	7.0	3.0	4.0	1.0	6.0	1.0	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.0	11.0	9.0	8.0	---	---	19.0	14.0	18.0	14.0	17.0	17.0
2	12.0	10.0	9.0	8.0	---	---	19.0	14.0	19.0	15.0	18.0	17.0
3	11.0	9.0	10.0	8.0	---	---	16.0	14.0	19.0	15.0	19.0	17.0
4	9.0	8.0	9.0	9.0	---	---	17.0	14.0	17.0	15.0	19.0	17.0
5	9.0	7.0	9.0	8.0	---	---	17.0	13.0	19.0	15.0	18.0	17.0
6	10.0	8.0	10.0	8.0	---	---	17.0	13.0	20.0	15.0	19.0	18.0
7	11.0	8.0	10.0	9.0	---	---	17.0	14.0	19.0	15.0	19.0	18.0
8	9.0	8.0	11.0	9.0	---	---	17.0	14.0	18.0	14.0	19.0	18.0
9	11.0	8.0	10.0	9.0	---	---	17.0	14.0	17.0	15.0	20.0	18.0
10	9.0	8.0	12.0	9.0	---	---	17.0	14.0	16.0	14.0	20.0	19.0
11	11.0	8.0	11.0	9.0	---	---	17.0	14.0	15.0	14.0	19.0	18.0
12	11.0	7.0	---	---	---	---	18.0	14.0	16.0	14.0	21.0	18.0
13	11.0	8.0	---	---	---	---	17.0	14.0	16.0	15.0	21.0	18.0
14	10.0	8.0	---	---	---	---	17.0	14.0	16.0	15.0	20.0	18.0
15	9.0	8.0	11.0	10.0	---	---	17.0	14.0	17.0	16.0	21.0	19.0
16	11.0	7.0	11.0	10.0	---	---	17.0	14.0	17.0	15.0	21.0	19.0
17	10.0	7.0	11.0	11.0	---	---	17.0	14.0	17.0	15.0	21.0	19.0
18	9.0	8.0	11.0	11.0	17.0	14.0	18.0	14.0	17.0	15.0	21.0	19.0
19	9.0	8.0	12.0	11.0	17.0	14.0	16.0	14.0	16.0	15.0	20.0	19.0
20	9.0	8.0	12.0	11.0	16.0	14.0	18.0	14.0	18.0	16.0	22.0	19.0
21	9.0	8.0	12.0	12.0	17.0	13.0	18.0	14.0	18.0	16.0	23.0	19.0
22	9.0	8.0	13.0	12.0	18.0	13.0	17.0	14.0	19.0	16.0	23.0	19.0
23	9.0	8.0	12.0	12.0	18.0	14.0	18.0	14.0	19.0	17.0	23.0	19.0
24	9.0	8.0	13.0	12.0	19.0	14.0	18.0	14.0	18.0	17.0	21.0	20.0
25	8.0	8.0	13.0	13.0	18.0	14.0	17.0	14.0	20.0	17.0	21.0	21.0
26	10.0	8.0	---	---	17.0	15.0	17.0	14.0	18.0	16.0	21.0	21.0
27	8.0	8.0	---	---	18.0	14.0	17.0	14.0	18.0	16.0	21.0	21.0
28	9.0	8.0	---	---	18.0	13.0	17.0	14.0	18.0	16.0	22.0	21.0
29	8.0	8.0	---	---	19.0	13.0	18.0	14.0	17.0	16.0	21.0	21.0
30	9.0	9.0	---	---	19.0	14.0	19.0	14.0	17.0	16.0	22.0	21.0
31	---	---	13.0	13.0	---	---	17.0	14.0	17.0	16.0	---	---
MONTH	12.0	7.0	---	---	---	---	19.0	13.0	20.0	14.0	23.0	17.0

KANAWHA RIVER BASIN

83

03196800 ELK RIVER AT CLAY, W. VA.

LOCATION.--Lat 38°27'36", long 81°05'15", Clay County, temperature recorder at gaging station on right bank at downstream side of pier of highway bridge at Clay, 0.9 mile downstream from Buffalo Creek, 2.1 miles downstream from Lower Two Run Creek, and at mile 52.5.

DRAINAGE AREA.--894 sq mi.

PERIOD OF RECORD.--Water temperatures: November 1960 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C on several days in July; minimum, freezing point on several days during January and February.

Period of record:

Water temperatures: Maximum, 31.0°C July 23, 1964; minimum, freezing point on several days in February 1961, January to March 1967, and January, February 1968.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(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	16.0	15.0	8.0	8.0	4.0	4.0	2.0	1.0	3.0	3.0	2.0	2.0
2	17.0	16.0	8.0	8.0	5.0	4.0	2.0	1.0	3.0	3.0	2.0	2.0
3	18.0	17.0	9.0	8.0	5.0	5.0	2.0	1.0	3.0	3.0	2.0	2.0
4	18.0	17.0	9.0	8.0	5.0	4.0	1.0	1.0	3.0	3.0	2.0	2.0
5	17.0	17.0	8.0	7.0	4.0	4.0	1.0	1.0	3.0	2.0	2.0	2.0
6	17.0	16.0	7.0	6.0	4.0	4.0	1.0	1.0	2.0	2.0	2.0	2.0
7	16.0	16.0	6.0	6.0	4.0	3.0	1.0	0.0	2.0	1.0	2.0	2.0
8	16.0	16.0	6.0	5.0	3.0	3.0	0.0	0.0	1.0	1.0	2.0	2.0
9	16.0	16.0	5.0	5.0	3.0	3.0	1.0	0.0	1.0	1.0	3.0	2.0
10	16.0	15.0	6.0	5.0	3.0	3.0	0.0	0.0	1.0	1.0	3.0	3.0
11	15.0	13.0	6.0	6.0	4.0	3.0	0.0	0.0	1.0	1.0	3.0	3.0
12	14.0	13.0	7.0	6.0	4.0	4.0	0.0	0.0	1.0	0.0	4.0	3.0
13	13.0	12.0	7.0	7.0	4.0	4.0	0.0	0.0	0.0	0.0	4.0	4.0
14	13.0	12.0	7.0	7.0	4.0	4.0	0.0	0.0	0.0	0.0	4.0	4.0
15	13.0	13.0	7.0	6.0	5.0	4.0	0.0	0.0	0.0	0.0	4.0	4.0
16	13.0	12.0	6.0	5.0	5.0	4.0	0.0	0.0	1.0	0.0	4.0	4.0
17	13.0	13.0	5.0	5.0	4.0	3.0	0.0	0.0	1.0	1.0	4.0	4.0
18	13.0	13.0	5.0	5.0	4.0	3.0	0.0	0.0	1.0	1.0	6.0	4.0
19	13.0	12.0	5.0	4.0	4.0	4.0	0.0	0.0	1.0	0.0	6.0	6.0
20	12.0	12.0	4.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	6.0	6.0
21	12.0	11.0	4.0	4.0	4.0	4.0	0.0	0.0	1.0	0.0	7.0	6.0
22	11.0	11.0	6.0	4.0	5.0	4.0	1.0	0.0	1.0	1.0	8.0	7.0
23	11.0	11.0	6.0	6.0	5.0	4.0	1.0	1.0	1.0	1.0	8.0	8.0
24	11.0	11.0	6.0	6.0	4.0	2.0	1.0	1.0	1.0	1.0	8.0	7.0
25	11.0	10.0	6.0	6.0	3.0	2.0	1.0	1.0	1.0	1.0	7.0	6.0
26	10.0	10.0	6.0	6.0	3.0	3.0	1.0	1.0	1.0	1.0	6.0	6.0
27	10.0	9.0	5.0	5.0	3.0	3.0	1.0	1.0	1.0	1.0	6.0	6.0
28	9.0	8.0	5.0	4.0	3.0	3.0	1.0	1.0	2.0	1.0	8.0	7.0
29	8.0	8.0	4.0	4.0	3.0	3.0	2.0	1.0	2.0	2.0	9.0	8.0
30	8.0	7.0	4.0	4.0	3.0	2.0	2.0	2.0	---	---	11.0	9.0
31	8.0	6.0	---	---	2.0	2.0	3.0	2.0	---	---	11.0	11.0
MONTH	18.0	7.0	9.0	4.0	5.0	2.0	3.0	0.0	3.0	0.0	11.0	2.0

APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	11.0	13.0	12.0	15.0	14.0	27.0	24.0	26.0	25.0	22.0	22.0
2	11.0	9.0	14.0	13.0	15.0	15.0	27.0	26.0	26.0	24.0	22.0	21.0
3	9.0	9.0	15.0	14.0	15.0	15.0	27.0	26.0	26.0	25.0	21.0	21.0
4	9.0	8.0	15.0	15.0	16.0	15.0	26.0	24.0	26.0	26.0	21.0	21.0
5	8.0	8.0	15.0	14.0	17.0	16.0	24.0	23.0	26.0	26.0	21.0	21.0
6	8.0	8.0	14.0	13.0	17.0	17.0	24.0	24.0	26.0	24.0	21.0	21.0
7	9.0	8.0	14.0	13.0	17.0	17.0	26.0	24.0	26.0	24.0	21.0	21.0
8	9.0	9.0	14.0	13.0	15.0	17.0	26.0	24.0	24.0	22.0	22.0	21.0
9	10.0	9.0	14.0	14.0	19.0	19.0	27.0	26.0	24.0	23.0	21.0	21.0
10	10.0	10.0	14.0	14.0	19.0	19.0	26.0	26.0	23.0	22.0	21.0	20.0
11	11.0	10.0	14.0	14.0	22.0	19.0	26.0	25.0	22.0	22.0	20.0	20.0
12	11.0	10.0	15.0	14.0	22.0	21.0	26.0	26.0	22.0	22.0	20.0	19.0
13	12.0	11.0	15.0	15.0	21.0	19.0	27.0	26.0	22.0	20.0	19.0	19.0
14	12.0	11.0	15.0	15.0	19.0	18.0	27.0	26.0	22.0	20.0	19.0	19.0
15	12.0	12.0	15.0	15.0	20.0	16.0	26.0	26.0	20.0	20.0	19.0	19.0
16	12.0	11.0	15.0	15.0	20.0	20.0	26.0	26.0	20.0	20.0	19.0	19.0
17	12.0	11.0	15.0	14.0	20.0	19.0	27.0	26.0	21.0	20.0	19.0	19.0
18	12.0	12.0	14.0	14.0	20.0	19.0	27.0	26.0	22.0	21.0	19.0	19.0
19	14.0	12.0	14.0	13.0	21.0	20.0	27.0	27.0	22.0	21.0	19.0	19.0
20	14.0	13.0	13.0	13.0	22.0	21.0	27.0	26.0	22.0	21.0	20.0	19.0
21	14.0	13.0	13.0	13.0	22.0	21.0	27.0	25.0	22.0	21.0	22.0	20.0
22	14.0	14.0	13.0	13.0	22.0	22.0	26.0	26.0	21.0	21.0	23.0	22.0
23	14.0	13.0	13.0	13.0	23.0	22.0	26.0	26.0	22.0	21.0	23.0	22.0
24	14.0	14.0	13.0	13.0	25.0	23.0	27.0	26.0	24.0	22.0	23.0	22.0
25	14.0	13.0	14.0	13.0	26.0	24.0	27.0	26.0	26.0	24.0	23.0	22.0
26	13.0	12.0	15.0	14.0	26.0	25.0	27.0	26.0	26.0	24.0	22.0	22.0
27	13.0	13.0	15.0	15.0	26.0	24.0	26.0	26.0	24.0	23.0	22.0	21.0
28	13.0	12.0	15.0	15.0	24.0	23.0	26.0	26.0	23.0	22.0	21.0	20.0
29	13.0	13.0	16.0	15.0	24.0	23.0	27.0	26.0	22.0	22.0	20.0	20.0
30	13.0	12.0	16.0	16.0	26.0	23.0	27.0	26.0	22.0	22.0	20.0	20.0
31	---	---	16.0	14.0	---	---	26.0	26.0	22.0	22.0	---	---
MONTH	14.0	8.0	16.0	12.0	26.0	14.0	27.0	23.0	26.0	20.0	23.0	19.0

KANAWHA RIVER BASIN

03197000 ELK RIVER AT QUEEN SHOALS, W. VA.

LOCATION.--Lat 38°28'20", long 81°17'10", Kanawha County, temperature recorder at gaging station on right bank 50 ft upstream from Queen Shoals Creek, 100 ft downstream from highway bridge at Queen Shoals, 4 miles upstream from Big Sandy Creek, and at mile 25.8.

DRAINAGE AREA.--1,145 sq mi, including that of Queen Shoals Creek.

PERIOD OF RECORD.--Water temperatures: November 1960 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C July 2, 3, 18, 19; minimum, freezing point on several days during January.

Period of record:

Water temperatures: Maximum, 29.0°C on several days in July 1963, 1964 and 1968; minimum, freezing point on many days during winter periods most years.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.0	16.0	12.0	12.0	5.0	4.0	2.0	1.0	5.0	4.0	2.0	2.0
2	16.0	15.0	12.0	12.0	6.0	5.0	1.0	0.0	6.0	5.0	2.0	2.0
3	16.0	15.0	12.0	12.0	6.0	6.0	0.0	0.0	6.0	6.0	2.0	2.0
4	17.0	16.0	12.0	12.0	6.0	6.0	0.0	0.0	6.0	6.0	2.0	2.0
5	18.0	17.0	12.0	12.0	6.0	6.0	0.0	0.0	6.0	4.0	2.0	2.0
6	18.0	18.0	12.0	11.0	6.0	5.0	0.0	0.0	4.0	4.0	2.0	2.0
7	18.0	18.0	11.0	9.0	5.0	5.0	0.0	0.0	4.0	3.0	2.0	2.0
8	18.0	17.0	9.0	8.0	5.0	5.0	0.0	0.0	3.0	3.0	2.0	2.0
9	17.0	17.0	8.0	7.0	5.0	5.0	0.0	0.0	3.0	3.0	3.0	2.0
10	17.0	17.0	7.0	7.0	5.0	5.0	0.0	0.0	3.0	3.0	4.0	3.0
11	17.0	17.0	8.0	7.0	5.0	4.0	1.0	0.0	3.0	2.0	4.0	4.0
12	17.0	17.0	9.0	8.0	5.0	5.0	1.0	1.0	2.0	2.0	5.0	4.0
13	17.0	16.0	9.0	9.0	5.0	5.0	1.0	1.0	2.0	2.0	6.0	5.0
14	16.0	16.0	9.0	9.0	5.0	5.0	1.0	1.0	2.0	2.0	6.0	5.0
15	16.0	16.0	9.0	8.0	5.0	5.0	1.0	1.0	2.0	2.0	6.0	6.0
16	16.0	16.0	8.0	7.0	5.0	4.0	1.0	1.0	2.0	2.0	6.0	5.0
17	16.0	16.0	7.0	7.0	4.0	3.0	1.0	1.0	2.0	2.0	6.0	5.0
18	16.0	16.0	7.0	7.0	3.0	3.0	1.0	1.0	2.0	2.0	6.0	6.0
19	16.0	16.0	7.0	7.0	3.0	3.0	1.0	1.0	2.0	2.0	7.0	6.0
20	16.0	16.0	7.0	7.0	4.0	3.0	1.0	1.0	2.0	2.0	7.0	7.0
21	16.0	14.0	7.0	7.0	4.0	4.0	2.0	1.0	2.0	2.0	8.0	7.0
22	14.0	14.0	7.0	7.0	4.0	4.0	3.0	2.0	2.0	2.0	9.0	8.0
23	14.0	14.0	7.0	7.0	6.0	4.0	3.0	3.0	2.0	2.0	9.0	9.0
24	14.0	14.0	7.0	6.0	4.0	3.0	3.0	3.0	2.0	2.0	9.0	8.0
25	14.0	14.0	6.0	6.0	3.0	2.0	3.0	3.0	2.0	2.0	8.0	8.0
26	14.0	14.0	6.0	6.0	2.0	2.0	3.0	3.0	2.0	2.0	8.0	8.0
27	14.0	14.0	6.0	6.0	2.0	2.0	3.0	3.0	2.0	2.0	8.0	8.0
28	14.0	13.0	6.0	6.0	2.0	2.0	3.0	3.0	2.0	2.0	9.0	8.0
29	13.0	13.0	6.0	5.0	2.0	2.0	4.0	3.0	2.0	2.0	10.0	9.0
30	13.0	12.0	5.0	4.0	2.0	2.0	4.0	4.0	---	---	12.0	10.0
31	12.0	12.0	---	---	2.0	2.0	6.0	4.0	---	---	12.0	12.0
MONTH	16.0	12.0	12.0	4.0	6.0	2.0	6.0	0.0	6.0	2.0	12.0	2.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	13.0	13.0	15.0	15.0	28.0	28.0	27.0	27.0	23.0	23.0
2	---	---	13.0	13.0	15.0	15.0	29.0	28.0	27.0	27.0	23.0	23.0
3	---	---	14.0	13.0	---	---	29.0	28.0	27.0	27.0	22.0	22.0
4	---	---	14.0	14.0	---	---	28.0	27.0	27.0	27.0	22.0	22.0
5	---	---	14.0	14.0	---	---	27.0	27.0	27.0	27.0	22.0	22.0
6	---	---	14.0	14.0	---	---	27.0	27.0	27.0	27.0	22.0	22.0
7	10.0	9.0	14.0	14.0	---	---	27.0	27.0	27.0	27.0	22.0	22.0
8	10.0	10.0	14.0	14.0	---	---	27.0	27.0	27.0	27.0	22.0	22.0
9	11.0	10.0	15.0	14.0	---	---	27.0	27.0	27.0	27.0	22.0	22.0
10	11.0	11.0	15.0	15.0	---	---	27.0	27.0	27.0	27.0	22.0	22.0
11	11.0	11.0	15.0	15.0	---	---	27.0	27.0	27.0	23.0	22.0	22.0
12	11.0	11.0	16.0	15.0	---	---	28.0	27.0	23.0	22.0	22.0	21.0
13	12.0	11.0	16.0	16.0	---	---	28.0	28.0	22.0	22.0	21.0	21.0
14	13.0	12.0	17.0	16.0	---	---	28.0	28.0	22.0	22.0	21.0	20.0
15	13.0	13.0	17.0	17.0	---	---	28.0	28.0	22.0	22.0	20.0	20.0
16	13.0	13.0	17.0	17.0	---	---	28.0	28.0	22.0	22.0	21.0	20.0
17	13.0	13.0	18.0	17.0	---	---	28.0	28.0	23.0	22.0	21.0	21.0
18	13.0	13.0	18.0	17.0	---	---	29.0	28.0	24.0	23.0	21.0	21.0
19	13.0	13.0	18.0	15.0	---	---	29.0	28.0	26.0	24.0	21.0	21.0
20	14.0	13.0	15.0	15.0	25.0	24.0	28.0	28.0	26.0	26.0	21.0	21.0
21	14.0	14.0	15.0	15.0	25.0	25.0	28.0	28.0	27.0	26.0	21.0	21.0
22	15.0	14.0	15.0	15.0	25.0	25.0	28.0	28.0	27.0	27.0	21.0	21.0
23	15.0	15.0	15.0	15.0	26.0	25.0	28.0	28.0	27.0	27.0	22.0	21.0
24	15.0	15.0	15.0	15.0	26.0	26.0	28.0	28.0	28.0	27.0	22.0	21.0
25	15.0	14.0	15.0	15.0	27.0	26.0	28.0	28.0	28.0	28.0	22.0	22.0
26	14.0	14.0	15.0	15.0	28.0	27.0	28.0	28.0	28.0	27.0	22.0	22.0
27	14.0	13.0	15.0	15.0	28.0	28.0	28.0	28.0	27.0	26.0	22.0	20.0
28	13.0	13.0	15.0	15.0	28.0	28.0	28.0	28.0	26.0	24.0	20.0	20.0
29	13.0	13.0	15.0	15.0	28.0	28.0	27.0	28.0	24.0	24.0	20.0	20.0
30	13.0	13.0	15.0	15.0	28.0	27.0	27.0	27.0	24.0	24.0	20.0	20.0
31	---	---	15.0	15.0	---	---	27.0	27.0	24.0	23.0	---	---
MONTH	15.0	5.0	16.0	13.0	---	---	29.0	27.0	29.0	22.0	23.0	20.0

KANAWHA RIVER BASIN

85

03198000 KANAWHA RIVER AT CHARLESTON, W. VA.

LOCATION.--Lat 38°22'10", long 81°42'05", Kanawha County, temperature recorder at gaging station on left bank at old Lock 6, 1 mile upstream from Davis Creek, 1.5 miles downstream from Twomile Creek, 3.5 miles downstream from Elk River, and at mile 54.3.

DRAINAGE AREA.--10,419 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1953 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 33.0°C July 24; minimum, 1.0°C on several days in February.

Period of record:

Water temperatures: Maximum, 35.0°C Aug. 25, 26, 1959; minimum, 1.0°C Feb. 27, 1967 and several days in February 1968.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(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	21.0	19.0	14.0	13.0	---	---	4.0	3.0	---	---	6.0	2.0
2	19.0	19.0	14.0	13.0	---	---	4.0	3.0	---	---	7.0	2.0
3	21.0	19.0	14.0	13.0	---	---	5.0	3.0	---	---	7.0	4.0
4	22.0	20.0	14.0	13.0	---	---	5.0	3.0	---	---	7.0	4.0
5	22.0	21.0	13.0	12.0	---	---	4.0	3.0	---	---	6.0	4.0
6	22.0	21.0	13.0	12.0	---	---	3.0	2.0	---	---	8.0	4.0
7	22.0	21.0	13.0	12.0	---	---	2.0	2.0	---	---	7.0	5.0
8	23.0	21.0	13.0	12.0	---	---	---	---	4.0	3.0	7.0	6.0
9	22.0	21.0	12.0	11.0	---	---	---	---	4.0	3.0	7.0	6.0
10	22.0	21.0	13.0	11.0	---	---	---	---	4.0	4.0	8.0	7.0
11	22.0	21.0	12.0	11.0	---	---	---	---	4.0	3.0	7.0	6.0
12	22.0	20.0	13.0	11.0	---	---	---	---	4.0	2.0	6.0	4.0
13	21.0	20.0	12.0	11.0	---	---	---	---	3.0	2.0	6.0	5.0
14	22.0	21.0	12.0	11.0	---	---	---	---	3.0	2.0	6.0	4.0
15	21.0	19.0	12.0	11.0	6.0	6.0	---	---	4.0	1.0	4.0	4.0
16	22.0	20.0	12.0	10.0	7.0	6.0	---	---	4.0	1.0	5.0	4.0
17	22.0	20.0	12.0	10.0	7.0	6.0	---	---	3.0	1.0	5.0	4.0
18	22.0	19.0	13.0	11.0	8.0	6.0	---	---	4.0	1.0	6.0	5.0
19	20.0	19.0	12.0	10.0	7.0	6.0	---	---	4.0	1.0	7.0	6.0
20	19.0	18.0	12.0	10.0	8.0	6.0	---	---	4.0	1.0	7.0	7.0
21	18.0	18.0	13.0	10.0	8.0	7.0	---	---	4.0	2.0	8.0	7.0
22	18.0	17.0	12.0	10.0	7.0	7.0	---	---	5.0	2.0	8.0	8.0
23	17.0	16.0	---	---	7.0	7.0	---	---	5.0	1.0	10.0	9.0
24	17.0	16.0	---	---	7.0	6.0	---	---	4.0	1.0	9.0	9.0
25	17.0	16.0	---	---	6.0	4.0	---	---	5.0	2.0	9.0	9.0
26	16.0	16.0	---	---	5.0	4.0	---	---	3.0	1.0	9.0	9.0
27	16.0	15.0	---	---	4.0	4.0	---	---	6.0	2.0	10.0	9.0
28	15.0	14.0	---	---	4.0	4.0	---	---	6.0	2.0	10.0	9.0
29	14.0	14.0	---	---	4.0	4.0	---	---	---	---	11.0	9.0
30	14.0	13.0	---	---	4.0	3.0	---	---	---	---	11.0	10.0
31	14.0	13.0	---	---	4.0	3.0	---	---	---	---	12.0	11.0
MONTH	23.0	13.0	---	---	---	---	---	---	---	---	12.0	2.0
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	12.0	13.0	12.0	13.0	13.0	31.0	27.0	28.0	27.0	27.0	25.0
2	13.0	12.0	13.0	12.0	14.0	13.0	30.0	28.0	28.0	27.0	28.0	27.0
3	13.0	11.0	13.0	13.0	14.0	14.0	29.0	28.0	30.0	28.0	28.0	27.0
4	11.0	11.0	14.0	13.0	15.0	14.0	29.0	27.0	29.0	27.0	27.0	25.0
5	11.0	11.0	14.0	13.0	16.0	15.0	28.0	27.0	28.0	26.0	26.0	24.0
6	11.0	9.0	14.0	13.0	17.0	16.0	29.0	27.0	28.0	27.0	26.0	23.0
7	9.0	9.0	14.0	14.0	19.0	17.0	29.0	27.0	28.0	27.0	27.0	25.0
8	11.0	9.0	15.0	14.0	20.0	19.0	30.0	27.0	28.0	28.0	26.0	23.0
9	12.0	11.0	16.0	15.0	22.0	20.0	29.0	27.0	28.0	26.0	26.0	23.0
10	12.0	12.0	16.0	14.0	22.0	21.0	28.0	27.0	26.0	25.0	24.0	22.0
11	12.0	12.0	17.0	15.0	23.0	22.0	29.0	28.0	25.0	23.0	23.0	22.0
12	13.0	12.0	19.0	16.0	23.0	23.0	29.0	27.0	23.0	19.0	22.0	20.0
13	13.0	13.0	20.0	16.0	23.0	22.0	30.0	24.0	19.0	19.0	23.0	19.0
14	15.0	13.0	19.0	17.0	22.0	22.0	31.0	27.0	20.0	18.0	23.0	21.0
15	15.0	13.0	18.0	14.0	23.0	22.0	29.0	28.0	19.0	18.0	22.0	21.0
16	14.0	13.0	19.0	18.0	24.0	22.0	31.0	28.0	22.0	19.0	21.0	16.0
17	14.0	13.0	18.0	18.0	23.0	21.0	31.0	28.0	22.0	22.0	22.0	20.0
18	14.0	13.0	19.0	18.0	23.0	21.0	31.0	28.0	23.0	22.0	21.0	19.0
19	14.0	13.0	18.0	17.0	23.0	22.0	31.0	28.0	23.0	23.0	20.0	18.0
20	14.0	13.0	17.0	16.0	24.0	22.0	31.0	28.0	26.0	23.0	21.0	18.0
21	17.0	14.0	16.0	15.0	23.0	22.0	30.0	29.0	26.0	24.0	21.0	15.0
22	16.0	16.0	16.0	16.0	24.0	23.0	32.0	29.0	27.0	25.0	24.0	15.0
23	17.0	16.0	16.0	16.0	25.0	23.0	31.0	27.0	29.0	26.0	23.0	21.0
24	18.0	16.0	16.0	16.0	24.0	23.0	33.0	29.0	29.0	26.0	23.0	20.0
25	17.0	16.0	16.0	15.0	26.0	24.0	31.0	28.0	31.0	27.0	22.0	20.0
26	16.0	15.0	16.0	16.0	27.0	24.0	30.0	28.0	29.0	27.0	22.0	15.0
27	16.0	15.0	16.0	14.0	27.0	24.0	29.0	28.0	28.0	27.0	19.0	17.0
28	16.0	15.0	14.0	14.0	27.0	25.0	30.0	27.0	27.0	26.0	19.0	17.0
29	16.0	14.0	14.0	14.0	27.0	24.0	28.0	27.0	28.0	25.0	19.0	19.0
30	14.0	13.0	14.0	14.0	28.0	25.0	28.0	27.0	27.0	26.0	20.0	16.0
31	---	---	14.0	13.0	---	---	28.0	27.0	28.0	26.0	---	---
MONTH	18.0	9.0	20.0	12.0	28.0	13.0	33.0	24.0	31.0	18.0	28.0	16.0

03201300 KANAWHA RIVER AT WINFIELD DAM, AT WINFIELD, W. VA.

LOCATION.--Lat 38°31'32", long 81°54'40", Putnam County, on left bank at intake line to Ohio River Valley Water Sanitation Commission (ORSANCO) monitor station at Kanawha Valley Power Co. intake at Winfield Dam, 1 mile downstream from Winfield Toll Bridge.

DRAINAGE AREA.--11,809 sq mi.

PERIOD OF RECORD.-- Chemical analyses: October 1956 to September 1968.

Water temperatures: October 1956 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 695 micromhos July 15; minimum daily, 120 micromhos Mar. 15.

Water temperatures: Maximum, 31.0°C July 21-30; minimum, 2.0°C Feb. 20.

Period of record:

Specific conductance: Maximum daily, 2,700 micromhos Apr. 21, 1961; minimum daily, 77 micromhos Jan. 31, 1957.

Water temperatures: Maximum, 33.0°C July 24, 1964; minimum, freezing point Feb. 14, 1958, Mar. 12, 1960.

REMARKS.--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. Samples for iron and manganese were filtered clear when collected. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLOR- IDE (CL)	FLUOR- IDE (F)
OCT.								
01...	0700	.19	.13	92	0	58	91	.1
13...	0700	.14	.10	84	0	33	40	.2
30...	0800	.23	.04	80	0	16	30	.2
NOV.								
01...	0800	.21	.06	44	0	39	27	.2
10...	0800	.23	.08	28	0	57	49	.2
25...	0800	.30	.10	22	0	60	95	.4
DEC.								
06...	0800	.37	.20	25	0	24	11	.1
12...	0800	.18	.12	23	0	30	16	.1
21...	0800	.25	.15	24	0	50	42	.2
JAN.								
05...	0900	.16	.14	42	0	52	38	.0
11...	0800	.25	.11	34	0	43	19	.0
25...	0800	.17	.12	32	0	31	9.0	.0
FEB.								
02...	0800	.62	.11	27	0	25	8.0	.0
15...	0800	.19	.09	35	0	42	29	.2
29...	0800	.23	.17	40	0	64	48	.2
MAR.								
06...	0800	.35	.16	70	0	79	65	.2
15...	0800	.21	.09	24	0	22	6.0	.1
30...	0800	.46	.11	21	0	39	16	.1
APR.								
07...	0800	.27	.05	28	0	28	9.0	.1
15...	0800	.22	.14	34	0	45	26	.1
26...	0800	.13	.09	37	0	53	44	.2
MAY								
08...	0800	.24	.08	32	0	33	30	.3
16...	0900	.27	.09	64	0	47	56	.4
29...	0800	.40	.09	25	0	24	9.0	.3
JUNE								
02...	0800	.46	.12	34	0	21	7.0	.1
16...	0730	.27	.10	44	0	49	34	.2
30...	0800	.23	.13	32	0	64	64	.2
JULY								
02...	0800	.12	.11	31	0	70	64	.2
15...	0730	.24	.16	36	0	94	112	.4
31...	0800	.07	.08	46	0	94	78	.3
AUG.								
05...	0800	.22	.14	38	0	92	74	.3
16...	0800	.81	.16	14	0	39	18	.1
27...	0800	.27	.14	24	0	57	32	.2
SEPT.								
01...	0800	.25	.14	30	0	75	60	.2
05...	0800	.26	.25	22	0	90	110	.3
25...	0800	.27	.29	20	0	95	77	--

03201300 KANAWHA RIVER AT WINFIELD DAM, AT WINFIELD, W. VA.--Continued
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO ₃)	TOTAL PHOS- PHORUS (PO ₄)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA+MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHMS)	PH
OCT.							
01....	7.8	.24	322	128	61	515	7.5
13....	4.4	.27	216	94	25	329	7.6
30....	3.2	.12	188	78	12	247	7.8
NOV.							
01....	5.8	.10	142	83	47	255	7.1
10....	8.0	.12	218	100	77	365	6.4
25....	12	.13	338	142	124	430	7.2
DEC.							
06....	5.2	.10	80	50	28	144	6.5
12....	4.8	.08	86	56	33	181	6.5
21....	6.7	.51	182	90	67	315	6.7
JAN.							
05....	5.0	.15	192	94	60	317	7.1
11....	5.2	.13	154	67	39	227	7.0
25....	3.6	.10	104	56	30	161	7.4
FEB.							
02....	3.8	.10	72	51	29	131	6.8
15....	6.6	.22	150	84	54	268	7.8
29....	10	.20	218	115	82	404	7.6
MAR.							
06....	.1	.31	292	134	76	493	6.9
15....	3.4	.18	68	46	29	120	7.6
30....	4.7	.39	126	60	43	190	7.5
APR.							
07....	2.0	.08	92	50	27	146	7.1
16....	3.4	.16	164	85	57	248	7.5
26....	6.2	.13	220	101	70	344	7.4
MAY							
08....	7.1	.14	165	76	50	246	6.9
16....	2.8	.28	242	102	50	404	7.9
29....	3.2	.15	92	45	24	134	7.1
JUNE							
02....	4.4	.00	88	50	22	132	7.0
16....	9.4	.02	192	100	64	314	6.8
30....	12	.21	280	118	92	444	6.4
JULY							
05....	11	.36	264	123	98	450	6.8
15....	17	.38	406	192	163	695	6.7
31....	12	.23	330	172	135	581	6.3
AUG.							
05....	14	.39	330	156	125	543	6.4
16....	6.2	.22	110	56	44	184	6.6
27....	9.2	.21	184	86	66	308	6.3
SEPT.							
01....	8.7	.14	280	122	98	435	6.3
05....	17	.25	388	179	161	637	6.6
26....	14	.44	322	155	139	544	6.6

SPECIFIC CONDUCTANCE (MICROMHMS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
 (ONCE-DAILY MEASUREMENT USUALLY BETWEEN 0700 AND 0800)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	515	255	203	182	144	442	230	282	134	467	539	435
2.....	326	276	192	180	131	442	276	199	132	430	536	464
3.....	281	283	197	207	138	468	180	192	139	463	515	517
4.....	290	304	164	247	144	424	193	197	149	474	504	552
5.....	302	320	154	317	152	446	170	230	168	473	543	637
6.....	294	320	144	204	145	493	153	230	183	459	519	636
7.....	304	335	147	249	153	456	146	233	210	--	525	608
8.....	317	338	148	179	159	475	150	246	204	531	460	554
9.....	358	351	145	194	162	432	175	256	226	578	464	528
10.....	338	365	164	246	178	424	182	266	260	608	415	515
11.....	366	418	184	227	193	342	191	282	301	612	257	526
12.....	365	418	181	--	210	224	195	311	266	600	214	524
13.....	329	417	140	--	212	127	210	316	303	613	203	517
14.....	335	402	163	252	240	132	224	303	270	642	184	560
15.....	369	383	162	311	268	120	232	319	291	695	204	538
16.....	374	361	179	276	302	122	248	404	314	682	184	539
17.....	379	383	190	256	326	157	290	314	319	668	206	539
18.....	366	409	196	258	335	153	290	266	334	661	251	533
19.....	374	392	209	249	356	134	261	260	357	619	269	521
20.....	406	431	248	280	358	149	261	270	353	566	280	553
21.....	448	439	315	296	383	168	266	235	357	566	270	560
22.....	341	498	283	262	361	175	292	225	370	575	282	585
23.....	309	487	237	199	381	185	315	244	360	523	332	560
24.....	299	494	164	173	358	205	312	256	369	529	305	564
25.....	315	530	168	161	361	170	309	264	368	529	300	539
26.....	317	361	176	165	335	167	344	191	370	530	305	544
27.....	315	320	197	178	342	170	259	175	388	605	308	557
28.....	294	283	198	184	385	178	234	137	377	637	315	564
29.....	255	264	204	187	404	204	252	134	393	628	345	562
30.....	247	257	196	215	--	190	279	144	444	640	371	593
31.....	257	--	169	194	--	199	--	179	--	581	370	--
AVERAGE	334	369	190	225	262	263	237	243	290	573	347	546

KANAWHA RIVER BASIN

03201300 KANAWHA RIVER AT WINFIELD DAM, AT WINFIELD, W. VA.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY BETWEEN 0700 AND 0800)
DAY

MONTH	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	AVER- AGE
OCTOBER..	23	22	22	21	21	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	18	18	18	18	18	17	16	16	19
NOVEMBER.	16	16	16	16	15	14	13	13	13	13	13	13	13	13	12	12	12	12	12	10	10	10	12	4	4	4	4	4	4	10	--	10
DECEMBER.	8	8	8	8	8	8	7	8	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	9	8	8	8	9
JANUARY..	8	8	7	6	6	5	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	4	4	4	3	3	3	3	4	6	4
FEBRUARY.	6	7	7	6	5	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	2	3	3	--	3	3	3	4	4	--	3
MARCH....	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	8
APRIL.....	12	14	13	13	12	12	10	12	13	13	13	13	13	16	16	16	16	17	17	18	17	18	18	18	18	18	18	18	18	18	--	15
MAY.....	17	18	16	16	17	16	16	16	18	18	18	18	18	19	19	19	21	21	21	21	20	19	18	21	18	18	16	16	16	17	18	18
JUNE.....	16	16	17	18	18	18	19	21	22	23	23	24	19	24	24	26	26	26	26	26	26	26	26	26	27	27	27	27	27	28	--	23
JULY.....	28	28	29	29	29	29	--	29	29	29	29	29	29	29	29	29	30	30	30	31	31	31	31	31	31	31	31	31	31	31	29	29
AUGUST....	29	30	29	29	29	29	30	30	29	27	24	24	24	23	23	23	23	24	24	27	27	28	29	28	29	28	28	28	28	27	27	27
SEPTEMBER	28	27	27	27	27	27	27	27	27	27	27	27	27	27	26	26	24	24	24	24	24	24	25	24	24	24	24	24	24	24	--	25

RACCOON CREEK BASIN

03202000 RACCOON CREEK AT ADAMSVILLE, OHIO

LOCATION.--Lat 38°52'31", long 82°21'18", on line between secs. 25 and 26, T.6 N., R.16 W., Gallia County, at gaging station at bridge on U.S. Highway 35 at Adamsville, 1.3 miles downstream from Indian Creek.

DRAINAGE AREA.--585 sq. mi.

PERIOD OF RECORD.--Chemical analyses: October 1951 to September 1954, October 1964 to September 1968.
Water temperatures: October 1951 to September 1954, October 1964 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 2,340 micromhos Nov. 2; minimum daily, 122 micromhos May 24.

Water temperatures: Maximum, 27.0°C Aug. 24; minimum, freezing point Dec. 29, Jan. 2-15, 23, 24, 26, Feb. 28.

Period of record:

Specific conductance: Maximum, daily, 2,930 micromhos Nov. 20, 1964; minimum daily, 115 micromhos Mar. 23, 1952.

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

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) specific sample to further define the quality of water. Interruptions in the record of the continuous recorder are due to malfunctions of the instrument. The results of once-daily measurements of specific conductance and temperature are published here as a supplement to the data from the continuous recorder.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	CHARGE (CFS)	IRON (FE)	MANG. (MN)	BICARB- SONATE (HCO3)	CAP- SONATE (CO3)	SULFATE (SO4)	CHLOR- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)
OCT.										
08...	1700	16	--	--	0	0	224	282	.5	1.0
10...	1630	--	.78	.49	--	--	--	--	--	--
15...	1800	4.1	--	--	0	0	258	65	.4	.3
NOV.										
02...	1800	99	--	--	0	0	273	148	.4	.4
05...	1800	123	--	--	0	0	217	32	.3	.3
14...	1615	39	3.1	6.8	--	--	--	--	--	--
19...	1800	30	--	--	0	0	303	50	.3	.0
DEC.										
17...	1900	258	--	--	0	0	250	106	.3	1.1
19...	1615	220	--	6.0	--	--	--	--	--	--
23...	1700	541	--	--	0	0	144	24	.3	.6
29...	1800	190	--	--	0	0	219	76	.4	.5
JAN.										
03...	1800	120	--	--	0	0	206	50	.3	.8
11...	1700	80	--	--	0	0	245	65	.5	.8
22...	1730	842	.74	1.9	--	--	--	--	--	--
30...	1900	2400	--	--	4	0	88	14	.2	.4
FEB.										
02...	1800	2830	--	--	8	0	74	7.5	.2	1.2
13...	1700	230	2.5	3.0	--	--	--	--	--	--
15...	1800	170	--	--	0	0	181	39	.4	.4
27...	1700	40	--	--	0	0	189	56	.3	.8
MAR.										
03...	1800	70	--	--	0	0	203	52	.4	1.3
19...	1610	1530	1.2	1.8	--	0	79	8.0	.2	--
25...	1900	3790	--	--	0	0	115	14	.6	.7
29...	1900	965	--	--	0	0	--	--	--	--
APR.										
17...	1730	748	.15	2.4	--	--	--	--	--	--
19...	1800	525	--	--	0	0	138	32	.3	.4
24...	1830	2960	--	--	4	0	68	6.0	.1	1.0
29...	1830	1070	--	--	0	0	103	35	.3	.3
MAY										
10...	2000	597	--	--	0	0	150	22	.3	1.2
16...	1800	1430	--	--	0	0	98	16	.3	.6
21...	1700	2000	.46	1.6	--	--	--	--	--	--
24...	1700	4680	--	--	11	0	39	5.0	.2	1.8
JUNE										
04...	1345	1790	.64	3.0	--	--	--	--	--	--
05...	2130	945	--	--	0	0	136	13	.2	.7
20...	2000	1654	--	--	0	0	240	30	.4	.1
30...	2000	255	--	--	0	0	510	76	1.0	.1
JULY										
01...	2000	172	--	--	0	0	444	44	1.0	.3
08...	1700	63	--	--	0	0	258	38	.6	.7
10...	1940	54	1.2	.23	--	--	--	--	--	--
16...	1900	48	--	--	0	0	224	44	.6	.2
AUG.										
02...	1900	46	--	--	0	0	298	46	.6	.2
14...	1700	194	--	--	0	0	409	76	.9	.3
25...	2000	95	--	--	0	0	181	13	.3	.3
27...	1015	45	.92	4.6	--	--	--	--	--	--
SEPT.										
06...	1800	51	--	--	0	0	237	42	.4	.4
13...	1900	37	--	--	0	0	312	52	.6	.3
25...	1900	27	1.3	6.8	--	--	--	--	--	--

RACCOON CREEK BASIN

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03202000 RACCOON CREEK AT ADAMSVILLE, OHIO--Continued
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TOTAL PHOS- PHORUS (PPM)	DIS- SOLVED SOLIDS (RESI- DUE AT 190 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	TOTAL ACIDITY AS H+	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.										
08...	--	808	238	238	1.0	1390	3.8	17	--	--
10...	--	--	--	--	--	--	--	--	6.0	60
15...	--	510	208	208	.8	780	--	14	--	--
NOV.										
02...	.16	654	226	226	1.4	1060	3.8	11	--	--
05...	.20	378	172	172	1.0	613	3.8	7	--	--
14...	--	--	--	--	--	--	--	--	10.0	83
17...	.11	522	214	214	1.6	858	3.5	6	--	--
DEC.										
17...	.06	518	225	225	1.2	900	3.9	3	--	--
19...	--	--	--	--	--	--	--	--	12.0	92
23...	1.6	246	140	140	.5	436	4.6	4	--	--
29...	.00	410	184	184	.9	721	4.2	0	--	--
JAN.										
03...	.00	358	180	180	.9	627	4.4	0	--	--
11...	.04	462	202	202	1.2	778	3.8	0	--	--
22...	--	--	--	--	--	--	--	--	13.0	93
30...	.06	170	90	87	--	275	5.5	4	--	--
FEB.										
02...	.22	162	78	71	--	236	6.8	3	--	--
13...	--	--	--	--	--	--	--	--	12.0	82
15...	.13	352	160	160	.7	522	4.4	1	--	--
27...	.02	410	176	176	.9	626	4.2	1	--	--
MAR.										
03...	.04	308	186	186	1.0	625	4.2	1	--	--
19...	--	--	--	--	--	--	--	--	11.0	95
25...	.04	1138	74	74	.2	210	4.9	5	--	--
29...	.05	268	103	103	.4	309	4.7	12	--	--
APR.										
17...	--	--	--	--	--	--	--	--	9.6	91
19...	.05	266	128	128	.7	430	4.4	16	--	--
24...	.12	110	66	63	--	194	5.6	13	--	--
29...	.08	196	94	94	.3	294	4.9	13	--	--
MAY										
10...	.08	242	124	124	.6	405	4.5	16	--	--
16...	.04	172	90	90	.2	287	4.9	18	--	--
21...	--	--	--	--	--	--	--	14	9.0	86
24...	.09	69	42	33	--	122	6.7	16	--	--
JUNE										
04...	--	--	--	--	--	--	--	18	8.0	84
06...	.04	238	115	115	.7	369	4.4	20	--	--
20...	.04	402	174	174	1.4	648	4.1	20	--	--
30...	.05	824	342	342	4.0	1300	3.3	27	--	--
JULY										
01...	.07	718	307	307	2.8	1030	3.6	24	--	--
08...	.10	470	192	192	1.4	746	3.5	22	--	--
10...	--	--	--	--	--	--	--	--	7.4	85
15...	.09	388	169	169	1.0	680	3.6	24	--	--
AUG.										
02...	.12	502	219	219	1.9	835	3.6	23	--	--
14...	.06	692	321	321	2.6	1130	3.3	22	--	--
25...	.06	330	155	155	.9	574	3.9	26	--	--
27...	--	--	--	--	--	--	--	21	7.4	42
SEPT.										
06...	.21	426	190	190	1.2	716	3.6	21	--	--
13...	.03	530	235	235	1.8	875	3.6	18	--	--
25...	--	--	--	--	--	--	--	20	7.6	83

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY BETWEEN 1700 AND 2200)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	1060	--	711	--	247	622	216	--	--	1030	881	--
2.....	1100	1063	770	722	236	618	235	337	--	911	835	764
3.....	984	--	625	627	259	625	256	353	--	--	854	738
4.....	897	647	797	646	297	625	262	282	373	787	900	773
5.....	916	613	823	662	314	611	271	319	--	--	954	791
6.....	--	--	--	652	307	598	275	350	369	758	--	716
7.....	914	771	887	664	339	583	321	367	--	743	847	722
8.....	1390	779	830	740	380	592	288	382	--	746	--	--
9.....	1050	771	--	710	412	573	302	--	--	723	749	869
10.....	987	--	804	747	433	525	--	405	461	--	925	--
11.....	1180	804	844	778	461	551	342	364	--	723	--	730
12.....	--	829	662	743	479	285	--	248	539	709	939	810
13.....	944	--	806	683	493	215	365	287	538	703	1120	875
14.....	844	854	844	620	514	261	375	260	587	706	1130	822
15.....	780	865	803	602	522	263	370	274	597	688	981	779
16.....	848	844	819	--	554	256	389	287	612	680	1070	796
17.....	829	872	900	806	537	265	421	298	--	737	988	--
18.....	869	870	799	439	558	304	--	256	631	712	918	814
19.....	871	858	--	657	594	--	430	282	--	761	1000	--
20.....	969	892	765	645	556	312	--	254	648	804	755	--
21.....	827	903	736	520	595	317	384	--	687	784	713	--
22.....	863	914	501	363	593	215	--	278	673	815	718	--
23.....	940	--	436	367	603	214	--	223	691	758	665	--
24.....	1150	875	558	358	599	216	194	122	774	784	614	--
25.....	1070	--	536	456	612	210	--	--	791	761	574	--
26.....	1030	--	540	527	624	224	248	--	688	743	--	--
27.....	979	881	703	513	626	257	245	--	741	790	665	--
28.....	--	814	588	458	608	257	289	--	831	804	693	--
29.....	1100	766	721	331	608	309	294	--	984	725	710	--
30.....	1110	--	677	275	--	--	316	--	1300	740	741	--
31.....	1110	--	692	280	--	358	--	--	--	833	804	--
AVERAGE	990	--	723	572	481	388	307	--	--	766	841	--

RACCOON CREEK BASIN

03202000 RACCOON CREEK AT ADAMSVILLE, OHIO--Continued
TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	---	2.0	---	4.0	1.0	11.0	---	---	24.0	23.0	---
2	16.0	11.0	3.0	0.0	3.0	1.0	11.0	16.0	---	25.0	23.0	20.0
3	18.0	10.0	3.0	0.0	4.0	1.0	11.0	16.0	---	---	24.0	21.0
4	17.0	10.0	4.0	0.0	4.0	2.0	11.0	16.0	18.0	22.0	24.0	21.0
5	16.0	7.0	3.0	0.0	---	2.0	10.0	16.0	---	---	24.0	21.0
6	---	---	---	0.0	---	2.0	10.0	15.0	20.0	22.0	---	21.0
7	16.0	6.0	6.0	0.0	---	3.0	11.0	16.0	---	22.0	26.0	21.0
8	17.0	6.0	4.0	0.0	---	3.0	11.0	15.0	---	22.0	---	---
9	16.0	6.0	---	0.0	---	5.0	10.0	---	---	24.0	24.0	20.0
10	13.0	---	5.0	0.0	---	6.0	---	16.0	22.0	---	22.0	---
11	13.0	6.0	7.0	0.0	---	7.0	13.0	16.0	---	23.0	---	18.0
12	---	6.0	7.0	0.0	---	5.0	---	16.0	22.0	23.0	22.0	19.0
13	13.0	---	6.0	0.0	---	11.0	14.0	16.0	20.0	24.0	22.0	18.0
14	---	8.0	6.0	0.0	1.0	3.0	14.0	16.0	20.0	24.0	22.0	18.0
15	14.0	6.0	5.0	0.0	1.0	3.0	14.0	17.0	20.0	24.0	24.0	19.0
16	16.0	4.0	4.0	---	2.0	4.0	14.0	18.0	20.0	24.0	23.0	19.0
17	15.0	6.0	3.0	1.0	1.0	6.0	15.0	17.0	---	23.0	24.0	---
18	13.0	6.0	4.0	1.0	1.0	7.0	---	17.0	19.0	26.0	24.0	19.0
19	14.0	6.0	---	1.0	2.0	---	16.0	16.0	---	26.0	25.0	---
20	12.0	5.0	---	2.0	1.0	10.0	---	14.0	20.0	24.0	25.0	---
21	12.0	6.0	7.0	2.0	2.0	11.0	16.0	---	20.0	24.0	26.0	---
22	12.0	6.0	7.0	1.0	1.0	9.0	---	14.0	21.0	24.0	26.0	---
23	10.0	---	4.0	0.0	1.0	7.0	16.0	14.0	21.0	24.0	25.0	---
24	12.0	4.0	3.0	0.0	1.0	6.0	13.0	16.0	22.0	25.0	27.0	---
25	11.0	---	3.0	2.0	1.0	5.0	---	---	23.0	24.0	26.0	---
26	11.0	---	2.0	0.0	1.0	7.0	13.0	---	23.0	24.0	---	---
27	10.0	4.0	1.0	1.0	1.0	9.0	13.0	---	22.0	24.0	22.0	---
28	10.0	3.0	1.0	2.0	0.0	11.0	13.0	---	21.0	24.0	21.0	---
29	9.0	2.0	0.0	2.0	1.0	12.0	13.0	---	22.0	24.0	20.0	---
30	9.0	---	1.0	4.0	---	---	14.0	---	22.0	23.0	19.0	---
31	13.0	---	2.0	4.0	---	14.0	---	---	---	23.0	20.0	---
AVERAGE	13.5	---	4.0	1.0	---	6.0	13.0	---	---	24.0	23.5	---

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

OCTOBER									NOVEMBER								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)	pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)					
	MAX	MIN		MAX	MIN	MAX	MIN			MAX	MIN	MAX	MIN				
1	--	--	3.8	3.6	6.4	3.9	--	--	2180	1030	3.7	3.6	7.6	6.9	11	9	
2	--	--	3.9	3.6	7.3	4.1	--	--	2340	440	4.5	3.7	7.4	5.5	11	10	
3	1100	920	3.9	3.6	7.0	4.5	--	--	780	470	3.8	3.5	8.1	7.4	11	10	
4	960	900	4.0	3.6	4.5	4.0	18	16	--	--	3.9	3.6	8.2	8.0	11	9	
5	950	900	3.9	3.6	5.0	4.2	19	16	--	--	3.9	3.8	9.0	8.2	9	7	
6	910	850	4.0	3.8	5.9	4.4	18	14	--	--	3.8	3.6	9.5	9.0	7	6	
7	960	860	4.0	3.6	4.6	4.4	18	13	--	--	3.7	3.6	10.0	9.5	6	5	
8	1630	940	3.8	3.6	4.6	3.8	18	16	--	--	3.7	3.6	10.2	9.9	6	5	
9	1250	1050	3.9	3.8	4.6	4.2	18	14	--	--	3.7	3.6	10.2	9.9	6	4	
10	1090	990	3.9	3.8	4.7	4.2	16	12	--	--	3.8	3.7	9.9	9.7	6	5	
11	1310	1050	3.8	3.6	4.6	4.2	13	11	--	--	--	--	--	--	--	--	
12	1290	1130	3.7	3.4	4.9	4.1	17	9	--	--	--	--	--	--	--	--	
13	1190	890	3.6	3.4	5.4	3.9	16	7	--	--	--	--	--	--	--	--	
14	890	730	3.7	3.4	5.7	4.6	16	13	--	--	--	--	--	--	--	--	
15	840	730	3.6	3.3	5.7	4.8	17	13	--	--	3.7	3.6	9.7	8.7	7	5	
16	850	820	3.6	3.4	5.4	4.5	17	14	--	--	3.7	3.6	10.2	9.4	5	4	
17	900	820	3.6	3.4	4.9	3.9	17	16	--	--	3.7	3.6	10.1	9.6	5	4	
18	--	--	3.6	3.5	5.2	3.6	16	14	--	--	3.7	3.6	10.2	9.4	6	5	
19	--	--	--	--	--	--	--	--	--	--	3.7	3.6	10.2	9.4	6	5	
20	--	--	--	--	--	--	--	--	--	--	3.7	3.6	10.4	9.6	5	4	
21	--	--	--	--	--	--	--	--	--	--	3.6	3.6	10.2	9.7	5	4	
22	--	--	--	--	--	--	--	--	--	--	3.7	3.6	10.0	9.6	6	5	
23	--	--	--	--	--	--	--	--	--	--	3.8	3.6	10.1	9.3	6	5	
24	1180	900	4.0	3.8	8.1	7.5	11	9	--	--	3.8	3.7	10.1	9.4	5	4	
25	1200	1000	4.0	3.9	8.0	7.2	12	11	--	--	4.0	3.7	10.3	9.6	6	4	
26	1200	990	4.3	4.0	7.7	6.1	11	9	--	--	4.0	3.7	10.6	9.8	5	4	
27	1200	930	4.5	4.1	7.4	5.9	11	9	--	--	3.8	3.7	10.7	10.2	5	4	
28	1160	1020	4.1	3.9	7.4	6.9	10	9	--	--	3.8	3.7	11.0	10.4	4	3	
29	1250	1100	4.0	3.7	8.0	7.3	9	8	--	--	3.8	3.7	11.2	10.7	3	2	
30	1220	1050	3.8	3.4	8.4	7.8	9	7	--	--	4.5	3.8	--	--	2	1	
31	1110	1050	3.6	3.5	8.1	7.4	9	8	--	--	--	--	--	--	--	--	

03202000 RACCOON CREEK AT ADAMSVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DECEMBER								JANUARY								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		
	MAX	MIN		MAX	MIN	MAX	MIN		MAX	MIN		MAX	MIN	MAX	MIN	
1	--	--		4.6	4.2	--	--	2						2	2	
2	--	--		4.3	3.9	--	--	2						2	2	
3	--	--		4.2	3.9	--	--	3						3	2	
4	--	--		4.2	3.9	--	--	3						3	2	
5	--	--		4.0	3.9	--	--	3						3	2	
6	--	--		4.0	3.9	--	--	3						3	2	
7	910	820		3.9	3.7	9.6	9.0	4						4	3	
8	830	780		4.0	3.9	9.1	8.9	4						4	4	
9	810	740		4.0	3.9	9.3	8.9	4						4	3	
10	810	700		4.2	3.9	9.1	8.6	5						5	4	
11	890	680		4.6	4.2	8.8	8.4	6						6	5	
12	--	--		4.8	4.4	9.3	8.2	7						7	6	
13	820	640		4.4	4.0	12.5	9.2	7						7	6	
14	880	710		4.2	4.0	12.8	11.6	6						6	6	
15	880	720		4.3	4.2	13.3	11.4	6						6	4	
16	850	760		4.2	4.1	13.9	12.2	4						4	3	
17	910	760		4.2	4.0	13.9	12.1	3						3	2	
18	890	700		4.0	3.9	13.8	9.1	4						4	3	
19	740	690		4.0	3.8	13.2	11.3	5						5	4	
20	760	680		4.0	3.8	13.7	11.7	4						4	4	
21	--	--		4.0	3.9	12.4	11.3	7						7	4	
22	--	--		5.1	4.0	12.4	11.4	7						7	6	
23	--	--		5.0	4.3	13.2	9.0	6						6	4	
24	--	--		4.3	4.2	10.9	8.8	4						4	2	
25	--	--		4.4	4.1	11.6	9.8	3						3	2	
26	--	--		--	--	--	--	--						--	--	
27	--	--		--	--	--	--	--						--	--	
28	--	--		--	--	--	--	--						--	--	
29	--	--		--	--	--	--	--						--	--	
30	--	--		--	--	--	--	--						--	--	
31	--	--		--	--	--	--	--	290	250	5.8	5.5	12.3	12.0	2	1
FEBRUARY								MARCH								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		
	MAX	MIN		MAX	MIN	MAX	MIN		MAX	MIN		MAX	MIN	MAX	MIN	
1								1	--	--		--	--	--	--	
2								2	--	--		--	--	--	--	
3								3	--	--		--	--	--	--	
4								4	--	--		--	--	--	--	
5								5	--	--		--	--	--	--	
6								6	--	--		--	--	--	--	
7								7	--	--		--	--	--	--	
8								8	--	--		--	--	--	--	
9								9	--	--		--	--	--	--	
10								10	600	550		12.0	11.5	6	3	
11								11	570	510		11.5	11.2	6	5	
12								12	560	540		--	--	7	4	
13								13	--	--		--	--	--	--	
14								14	--	--		--	--	11	9	
15								15	--	--		--	--	--	--	
16								16	--	--		--	--	4	2	
17								17	--	--		--	--	4	4	
18								18	--	--		--	--	6	4	
19								19	--	--		--	--	--	--	
20								20	--	--		--	--	8	6	
21								21	--	--		--	--	10	8	
22								22	--	--		--	--	--	--	
23								23	--	--		--	--	11	9	
24								24	--	--		--	--	9	8	
25								25	--	--		--	--	--	--	
26								26	--	--		--	--	--	--	
27								27	--	--		--	--	--	--	
28								28	--	--		--	--	--	--	
29								29	--	--		--	--	--	--	
30								30	--	--		--	--	--	--	
31								31	--	--		--	--	--	--	

03202000 RACCOON CREEK AT ADAMSVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

APRIL										MAY									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)						
	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN					
1	--	--		--	--	--	--	370	330		14.3	10.7	15	13					
2	--	--		--	--	--	--	340	320		10.7	8.8	16	14					
3	--	--		--	--	--	--	360	330		11.2	8.8	16	14					
4	--	--		--	--	--	--	440	220		10.8	8.9	16	16					
5	--	--		--	--	--	--	350	260		10.0	8.6	17	16					
6	--	--		--	--	--	--	440	350		8.9	8.6	16	14					
7	--	--		--	--	--	--	390	350		8.9	8.6	16	14					
8	--	--		--	--	--	--	390	360		8.6	8.3	15	13					
9	--	--		--	--	--	--	400	380		8.5	8.3	15	14					
10	--	--		--	--	--	--	440	320		9.0	8.3	16	14					
11	--	--		--	--	--	--	570	260		9.6	9.0	16	15					
12	--	--		--	--	--	--	260	190		9.4	8.4	16	16					
13	--	--		--	--	--	--	310	190		8.5	8.2	16	15					
14	--	--		--	--	--	--	390	240		8.9	8.5	16	16					
15	--	--		--	--	--	--	300	220		9.5	8.7	18	17					
16	--	--		--	--	--	--	310	280		10.0	9.5	18	17					
17	--	--		--	--	--	--	380	290		9.7	9.3	17	17					
18	--	--		--	--	--	--	220	380		9.4	8.4	18	17					
19	--	--		--	--	--	--	290	220		8.5	8.2	17	16					
20	--	--		--	--	--	--	310	220		8.4	8.1	16	13					
21	--	--		--	--	--	--	250	200		8.4	8.2	14	14					
22	430	390		--	--	17	16	300	230		8.4	8.2	14	13					
23	450	430		--	--	17	15	300	140		8.4	8.1	15	14					
24	--	--		10.8	9.3	16	13	150	140		8.2	7.4	16	14					
25	--	--		9.4	9.2	13	13	140	140		7.4	7.2	16	15					
26	260	210		15.0	9.4	13	12	140	140		7.3	7.0	17	16					
27	270	210		15.0	15.0	13	12	--	--		--	--	--	--					
28	300	270		15.0	15.0	13	12	--	--		--	--	--	--					
29	300	260		15.0	15.0	13	12	--	--		--	--	--	--					
30	330	260		15.0	14.3	14	13	--	--		--	--	--	--					
31	--	--		--	--	--	--	--	--		--	--	--	--					
JUNE										JULY									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)						
	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN					
1	--	--		--	--	--	--	1180	980		5.6	5.4	24	23					
2	--	--		--	--	--	--	980	900		5.5	5.3	26	24					
3	470	430		7.0	6.8	18	17	1080	960		5.6	5.3	24	22					
4	480	340		6.9	6.7	19	18	960	760		5.7	5.5	23	21					
5	400	230		7.5	6.7	19	18	860	780		6.1	5.7	22	20					
6	380	310		9.7	7.3	20	19	780	760		6.2	5.8	22	20					
7	400	380		9.5	7.0	19	19	760	720		6.2	5.9	22	20					
8	440	400		11.5	7.4	20	19	740	740		6.3	5.9	22	21					
9	490	440		11.4	8.2	21	19	740	720		6.0	3.1	24	22					
10	490	440		11.0	9.6	22	21	730	710		7.3	5.0	23	22					
11	520	450		11.8	8.9	22	21	740	700		6.6	6.1	23	22					
12	540	520		11.3	9.5	22	21	710	690		6.7	5.8	23	22					
13	570	540		9.5	8.3	22	19	710	680		6.7	5.8	24	23					
14	600	570		8.7	8.3	20	19	720	690		6.3	5.5	24	23					
15	620	600		8.6	8.0	21	19	720	670		6.0	5.4	24	23					
16	620	610		8.0	7.2	21	20	690	670		6.2	5.6	24	23					
17	620	600		7.4	7.2	20	19	740	690		5.8	5.5	24	22					
18	660	610		7.3	6.9	20	18	740	720		5.8	5.3	26	24					
19	700	500		7.0	6.2	20	18	790	700		5.7	5.3	26	24					
20	700	500		6.4	6.1	21	18	830	790		6.0	5.3	25	23					
21	700	600		6.3	6.1	20	19	810	770		6.3	5.6	24	23					
22	710	670		6.2	5.8	21	18	910	790		5.8	5.3	24	23					
23	690	640		6.0	5.8	21	19	920	740		5.5	5.0	25	23					
24	810	690		5.8	5.6	23	21	830	730		5.2	5.0	25	24					
25	800	740		6.6	5.5	23	22	860	760		5.0	4.9	25	24					
26	750	630		5.7	5.1	23	22	810	670		5.5	4.9	24	24					
27	770	690		5.3	5.0	23	21	890	710		5.5	5.3	24	23					
28	900	660		5.9	5.4	21	20	890	760		5.5	5.3	24	23					
29	1030	710		6.0	5.7	22	20	760	660		5.8	5.4	24	23					
30	1400	720		5.9	5.5	23	21	790	660		6.1	5.8	24	22					
31	--	--		--	--	--	--	850	760		5.8	5.7	23	22					

BIG SANDY RIVER BASIN

03211500 JOHNS CREEK NEAR VAN LEAR, KY.

LOCATION.--Lat 37°43'37", long 82°43'27", Johnson County, temperature recorder at gaging station on right bank 100 ft upstream from Long Branch, 0.3 mile upstream from Daniels Creek, 0.7 mile downstream from Dewey Dam, and 2.5 miles southeast of Van Lear.

DRAINAGE AREA.--206 sq mi.

PERIOD OF RECORD.--Water temperatures: April 1954 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C Aug. 11; minimum, 1.0°C Jan. 21-23.

Period of record:

Water temperatures: Maximum, 32.0°C July 3, 1956; minimum, freezing point on several days during December 1962 and January 1963.

REMARKS.--Flow regulated by Dewey Reservoir.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	16.0	14.0	14.0	9.0	8.0	6.0	5.0	3.0	3.0	6.0	6.0
2	16.0	16.0	14.0	14.0	10.0	7.0	5.0	4.0	3.0	3.0	7.0	6.0
3	16.0	16.0	14.0	14.0	7.0	7.0	4.0	4.0	3.0	3.0	7.0	7.0
4	16.0	16.0	14.0	14.0	8.0	6.0	4.0	4.0	3.0	3.0	7.0	7.0
5	16.0	16.0	14.0	14.0	8.0	6.0	4.0	4.0	4.0	4.0	7.0	7.0
6	16.0	16.0	14.0	14.0	8.0	6.0	4.0	3.0	4.0	4.0	7.0	8.0
7	16.0	16.0	14.0	13.0	6.0	6.0	3.0	3.0	4.0	4.0	6.0	6.0
8	17.0	16.0	13.0	13.0	8.0	6.0	4.0	2.0	4.0	4.0	6.0	6.0
9	17.0	17.0	13.0	13.0	6.0	6.0	3.0	2.0	4.0	4.0	7.0	6.0
10	17.0	16.0	13.0	13.0	6.0	6.0	2.0	2.0	4.0	4.0	7.0	7.0
11	16.0	16.0	13.0	13.0	7.0	6.0	2.0	2.0	4.0	4.0	7.0	6.0
12	16.0	16.0	13.0	13.0	7.0	7.0	4.0	2.0	5.0	4.0	6.0	6.0
13	16.0	16.0	13.0	13.0	8.0	7.0	3.0	2.0	5.0	4.0	7.0	6.0
14	16.0	16.0	13.0	13.0	8.0	7.0	2.0	2.0	5.0	5.0	7.0	7.0
15	16.0	16.0	13.0	12.0	8.0	7.0	2.0	2.0	5.0	5.0	7.0	7.0
16	16.0	16.0	12.0	12.0	7.0	7.0	2.0	2.0	5.0	5.0	7.0	7.0
17	16.0	16.0	12.0	12.0	7.0	7.0	3.0	2.0	5.0	5.0	7.0	7.0
18	16.0	16.0	12.0	12.0	7.0	7.0	2.0	2.0	5.0	5.0	8.0	7.0
19	16.0	16.0	12.0	12.0	8.0	7.0	2.0	2.0	5.0	5.0	8.0	8.0
20	16.0	16.0	12.0	12.0	8.0	7.0	2.0	2.0	6.0	6.0	8.0	8.0
21	16.0	15.0	12.0	11.0	8.0	7.0	2.0	1.0	6.0	6.0	8.0	8.0
22	15.0	14.0	11.0	11.0	8.0	7.0	1.0	1.0	6.0	6.0	8.0	8.0
23	14.0	14.0	11.0	11.0	8.0	7.0	1.0	1.0	6.0	6.0	8.0	8.0
24	14.0	14.0	11.0	11.0	8.0	7.0	4.0	2.0	6.0	6.0	8.0	8.0
25	15.0	14.0	11.0	11.0	8.0	7.0	---	---	6.0	6.0	8.0	8.0
26	15.0	14.0	11.0	11.0	8.0	7.0	---	---	6.0	6.0	9.0	8.0
27	14.0	14.0	11.0	10.0	8.0	7.0	---	---	7.0	6.0	9.0	9.0
28	14.0	14.0	10.0	10.0	7.0	6.0	---	---	7.0	6.0	9.0	9.0
29	14.0	14.0	10.0	10.0	6.0	6.0	---	---	6.0	6.0	9.0	9.0
30	14.0	14.0	10.0	9.0	6.0	6.0	3.0	3.0	---	---	9.0	9.0
31	14.0	14.0	---	---	7.0	6.0	3.0	3.0	---	---	10.0	9.0
MONTH	17.0	14.0	14.0	9.0	10.0	6.0	6.0	1.0	7.0	3.0	10.0	6.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.0	14.0	13.0	19.0	19.0	22.0	21.0	23.0	22.0	24.0	24.0
2	9.0	9.0	14.0	13.0	19.0	19.0	27.0	22.0	24.0	22.0	24.0	24.0
3	9.0	9.0	13.0	13.0	21.0	19.0	24.0	22.0	22.0	22.0	25.0	24.0
4	11.0	9.0	13.0	13.0	21.0	20.0	22.0	22.0	22.0	22.0	25.0	25.0
5	11.0	11.0	13.0	13.0	20.0	19.0	22.0	21.0	22.0	22.0	25.0	25.0
6	11.0	11.0	13.0	13.0	19.0	19.0	21.0	21.0	26.0	22.0	25.0	25.0
7	11.0	11.0	13.0	13.0	19.0	19.0	21.0	21.0	23.0	23.0	25.0	25.0
8	11.0	11.0	13.0	13.0	23.0	19.0	21.0	21.0	23.0	23.0	25.0	25.0
9	11.0	11.0	13.0	13.0	21.0	19.0	21.0	21.0	27.0	23.0	25.0	23.0
10	11.0	11.0	14.0	13.0	21.0	20.0	21.0	21.0	25.0	23.0	25.0	24.0
11	11.0	11.0	16.0	14.0	20.0	20.0	21.0	21.0	28.0	23.0	25.0	25.0
12	13.0	11.0	15.0	14.0	24.0	20.0	21.0	21.0	24.0	23.0	25.0	25.0
13	11.0	11.0	14.0	14.0	23.0	21.0	21.0	21.0	23.0	23.0	25.0	25.0
14	11.0	11.0	17.0	14.0	21.0	21.0	24.0	21.0	24.0	23.0	25.0	24.0
15	11.0	11.0	17.0	15.0	22.0	21.0	22.0	22.0	25.0	22.0	25.0	24.0
16	11.0	11.0	16.0	15.0	21.0	21.0	22.0	22.0	23.0	22.0	25.0	25.0
17	11.0	11.0	17.0	15.0	24.0	21.0	22.0	22.0	25.0	23.0	26.0	23.0
18	11.0	11.0	16.0	16.0	22.0	21.0	22.0	22.0	26.0	23.0	24.0	24.0
19	12.0	11.0	16.0	16.0	21.0	21.0	22.0	22.0	26.0	23.0	24.0	24.0
20	12.0	12.0	16.0	16.0	21.0	21.0	24.0	22.0	23.0	23.0	24.0	24.0
21	12.0	12.0	16.0	16.0	21.0	21.0	22.0	22.0	23.0	23.0	24.0	24.0
22	12.0	12.0	16.0	16.0	21.0	21.0	24.0	22.0	23.0	23.0	24.0	24.0
23	12.0	12.0	16.0	16.0	21.0	21.0	23.0	23.0	23.0	23.0	25.0	24.0
24	12.0	12.0	17.0	16.0	21.0	21.0	23.0	23.0	24.0	23.0	25.0	25.0
25	12.0	12.0	17.0	16.0	21.0	21.0	27.0	23.0	24.0	24.0	27.0	23.0
26	12.0	12.0	16.0	16.0	21.0	21.0	26.0	23.0	24.0	24.0	27.0	26.0
27	12.0	12.0	16.0	16.0	21.0	21.0	23.0	23.0	24.0	24.0	26.0	26.0
28	12.0	12.0	19.0	19.0	21.0	21.0	23.0	23.0	24.0	24.0	26.0	26.0
29	13.0	12.0	19.0	18.0	21.0	21.0	23.0	23.0	24.0	24.0	26.0	24.0
30	14.0	12.0	22.0	18.0	21.0	21.0	27.0	23.0	24.0	24.0	24.0	24.0
31	---	---	21.0	19.0	---	---	24.0	23.0	24.0	24.0	---	---
MONTH	14.0	9.0	22.0	13.0	24.0	19.0	27.0	21.0	28.0	22.0	27.0	23.0

BIG SANDY RIVER BASIN

95

03212500 LEVISA FORK AT PAINTSVILLE, KY.

LOCATION.--Lat 37°48'55", long 82°47'30", Johnson County, at bridge on State Highway 40 at Paintsville, 200 ft downstream from Paint Creek and 700 ft upstream from gaging station.

DRAINAGE AREA.--2,143 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1949 to March 1953, November 1960 to September 1961.

Water temperatures: October 1949 to March 1953, November 1960 to September 1968.

Sediment records: October 1952 to March 1953, October 1960 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C on several days during July and August; minimum, freezing point Jan. 21, Feb. 23, 28.

Sediment concentrations: Maximum daily, 1,620 mg/l Aug. 16; minimum daily, 4 mg/l Feb. 18.

Sediment loads: Maximum daily, 56,800 tons Dec. 23; minimum daily, 3.0 tons Oct. 7.

Period of record:

Water temperatures: Maximum, 31.5°C July 21, 23, 1952, July 27, 1963; minimum, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 3,760 mg/l Oct. 1, 1964; minimum daily 1 mg/l on many days during 1963, 1965-66.

Sediment loads: Maximum daily, 402,000 tons Mar. 13, 1963; minimum daily, 0.25 ton Jan. 28, 1966.

REMARKS.--Flow slightly regulated by North Fork Pound and John W. Flannagan Reservoirs in Virginia and Dewey Reservoir.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT AT 1700)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	13.0	6.0	---	6.0	1.0	10.0	16.0	21.0	29.0	23.0	23.0
2	17.0	14.0	4.0	---	5.0	1.0	12.0	16.0	19.0	26.0	24.0	23.0
3	18.0	14.0	4.0	---	8.0	1.0	12.0	16.0	16.0	24.0	25.0	24.0
4	21.0	11.0	6.0	---	4.0	---	10.0	16.0	16.0	24.0	27.0	22.0
5	---	10.0	4.0	---	7.0	3.0	10.0	19.0	21.0	23.0	27.0	22.0
6	18.0	---	5.0	---	4.0	4.0	14.0	---	17.0	24.0	27.0	23.0
7	21.0	---	4.0	---	6.0	4.0	14.0	16.0	19.0	26.0	28.0	22.0
8	21.0	9.0	5.0	---	6.0	7.0	13.0	19.0	20.0	26.0	29.0	23.0
9	21.0	7.0	---	---	4.0	7.0	16.0	19.0	21.0	27.0	29.0	23.0
10	21.0	12.0	9.0	---	---	6.0	10.0	19.0	22.0	28.0	27.0	22.0
11	16.0	10.0	6.0	---	11.0	6.0	13.0	16.0	24.0	29.0	25.0	21.0
12	20.0	11.0	7.0	---	5.0	2.0	10.0	20.0	24.0	29.0	22.0	21.0
13	17.0	10.0	5.0	---	4.0	3.0	10.0	19.0	16.0	29.0	22.0	20.0
14	16.0	9.0	5.0	---	4.0	1.0	10.0	16.0	21.0	27.0	22.0	21.0
15	19.0	8.0	4.0	---	3.0	2.0	10.0	16.0	21.0	27.0	23.0	21.0
16	19.0	8.0	4.0	---	3.0	1.0	10.0	16.0	22.0	26.0	24.0	23.0
17	18.0	9.0	2.0	---	2.0	2.0	11.0	16.0	22.0	26.0	24.0	23.0
18	16.0	9.0	1.0	---	2.0	4.0	14.0	16.0	21.0	26.0	24.0	21.0
19	14.0	6.0	3.0	---	2.0	7.0	16.0	16.0	21.0	26.0	24.0	21.0
20	21.0	4.0	---	1.0	1.0	13.0	16.0	16.0	22.0	27.0	27.0	22.0
21	14.0	5.0	---	0.0	2.0	6.0	16.0	16.0	21.0	28.0	28.0	22.0
22	13.0	5.0	---	8.0	1.0	11.0	22.0	16.0	22.0	29.0	28.0	24.0
23	---	4.0	---	4.0	0.0	8.0	21.0	16.0	24.0	29.0	29.0	22.0
24	14.0	3.0	---	1.0	1.0	9.0	16.0	16.0	24.0	26.0	29.0	24.0
25	13.0	8.0	---	2.0	1.0	10.0	13.0	17.0	---	28.0	27.0	21.0
26	13.0	14.0	---	2.0	1.0	10.0	16.0	17.0	24.0	26.0	26.0	22.0
27	14.0	4.0	---	6.0	1.0	9.0	16.0	16.0	---	24.0	23.0	22.0
28	11.0	14.0	---	6.0	0.0	15.0	21.0	16.0	24.0	27.0	22.0	19.0
29	12.0	8.0	---	11.0	1.0	10.0	16.0	16.0	26.0	26.0	22.0	21.0
30	13.0	7.0	---	7.0	---	10.0	16.0	16.0	28.0	26.0	22.0	21.0
31	13.0	---	---	6.0	---	9.0	---	18.0	---	24.0	23.0	---
AVERAGE	16.5	9.0	---	---	3.5	6.0	14.0	17.0	21.5	26.5	25.0	22.0

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECONTAMIN; N, IN NATIVE WATER;
P, PIPE; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- ERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	SUSPENDED SEDIMENT PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED BY ANAL-											METH- OD OF ANAL- YSIS
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
MAY 27 1968	1200			2410		48	66	86	97	99	99	100	--	--	--	--	SBWC

03212500 LEVISA FORK AT PAINTSVILLE, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

OCTOBER				NOVEMBER				DECEMBER			
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)		
1	301	14	11	364	26	24	660	510	910		
2	222	13	10	1050	104	314	4620	360	4400		
3	225	11	6.7	2520	492	2490	8880	330	5210		
4	184	16	5.0	2670	530	3820	7010	320	6060		
5	159	12	5.2	1550	143	498	5160	164	2300		
6	167	12	4.8	1140	58	179	3850	88	914		
7	129	8	3.0	960	35	80	2530	62	364		
8	136	6	3.3	880	21	44	1810	34	164		
9	150	15	4.4	535	13	21	1410	27	103		
10	150	15	6.3	500	11	15	1370	76	302		
11	155	12	5.1	444	17	21	4960	356	4670		
12	153	10	4.1	435	25	29	4330	190	2250		
13	142	6	3.5	415	21	24	3490	155	1460		
14	191	6	4.6	430	21	23	2520	69	469		
15	217	9	4.7	445	19	23	2060	33	184		
16	208	9	4.5	546	15	22	1670	27	122		
17	205	8	4.4	533	12	17	1520	26	98		
18	228	6	5.5	534	12	17	2230	88	644		
19	240	14	10	542	12	18	6370	440	8850		
20	349	14	17	610	12	20	8300	470	10500		
21	404	40	56	575	12	19	5580	190	2860		
22	466	27	35	665	36	63	7000	976	21400		
23	382	15	15	1050	60	106	13800	1520	56800		
24	301	13	11	1620	142	613	13400	570	20400		
25	259	18	13	2360	231	1470	7300	163	3210		
26	370	27	37	2080	120	724	5030	97	1320		
27	514	54	74	1720	70	225	3550	79	757		
28	640	45	112	1430	81	367	2190	76	442		
29	544	47	46	1580	39	144	1810	60	209		
30	449	39	44	4140	316	4840	1770	64	268		
31	409	16	18	--	--	--	1500	47	100		
TOTAL	8911	--	520.1	34623	--	17505	140580	--	166419		

JANUARY				FEBRUARY				MARCH			
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)		
1	1250	25	119	2330	67	421	492	15	20		
2	1300	23	124	2330	102	655	503	15	20		
3	1540	33	137	2350	72	457	555	15	22		
4	5640	470	10600	2230	64	380	520	15	22		
5	12700	758	25900	1910	45	232	600	15	24		
6	11000	254	7540	1740	22	103	615	16	27		
7	8510	135	2370	1620	22	96	732	18	34		
8	4780	66	852	1590	21	90	732	10	38		
9	7080	46	374	1520	22	90	691	20	37		
10	2410	45	205	1410	23	88	777	27	46		
11	2280	45	227	1240	21	71	1680	44	204		
12	2160	45	262	1050	14	40	12800	1280	48400		
13	1970	45	230	895	12	20	21800	425	48600		
14	2100	52	307	904	17	41	20900	525	29600		
15	2640	62	442	850	13	30	13600	410	15100		
16	2450	52	344	766	8	17	7640	349	2200		
17	2020	39	173	706	5	9.5	5730	277	4290		
18	1700	30	138	730	4	7.9	6460	291	5080		
19	1520	43	174	736	5	9.9	7070	167	3190		
20	1600	64	276	635	11	19	6720	133	2410		
21	1820	73	371	440	18	31	5080	134	1940		
22	3140	152	1200	440	18	31	5740	152	2360		
23	5240	264	3760	540	18	27	9110	249	6120		
24	6360	164	2820	652	16	23	9950	259	7970		
25	4750	118	2150	526	15	21	8560	141	3260		
26	4720	78	1010	526	10	14	5980	108	1740		
27	2330	53	477	500	10	14	4290	94	1090		
28	2660	44	304	640	13	16	3320	76	681		
29	2320	41	257	460	16	20	2800	97	431		
30	2180	35	226	--	--	--	2600	52	377		
31	2170	31	182	--	--	--	2920	77	648		
TOTAL	111340	--	63771	32435	--	3082.3	170957	--	100497		

BIG SANDY RIVER BASIN

03214500 TUG FORK AT KERMIT, W. VA.

LOCATION.--Lat 37°50'17", long 82°24'35", Mingo County, at city waterplant at Kermit, 0.8 mile downstream from Wolf Creek and 3 miles downstream from gaging station near Kermit.

DRAINAGE AREA.--1,274 sq mi at waterplant; 1,185 sq mi at gaging station.

PERIOD OF RECORD.--Water temperatures: October 1946 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 26.0°C Aug. 21-24; minimum, 2.0°C Feb. 12, 14, 17, 19.

Period of record:

Water temperatures: Maximum, 32.0°C July 29, 1949; minimum, freezing point on several days in 1947 and 1951.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	13.0	9.0	4.0	9.0	3.0	18.0	11.0	11.0	16.0	20.0	19.0
2	17.0	12.0	13.0	3.0	10.0	7.0	12.0	12.0	13.0	18.0	21.0	18.0
3	17.0	13.0	13.0	4.0	12.0	7.0	13.0	13.0	13.0	18.0	21.0	18.0
4	18.0	13.0	7.0	4.0	10.0	6.0	14.0	13.0	13.0	23.0	24.0	19.0
5	19.0	18.0	8.0	4.0	9.0	7.0	12.0	12.0	13.0	23.0	21.0	21.0
6	21.0	12.0	9.0	4.0	7.0	8.0	14.0	12.0	21.0	22.0	22.0	21.0
7	20.0	6.0	10.0	4.0	7.0	7.0	13.0	11.0	21.0	23.0	23.0	21.0
8	16.0	6.0	10.0	3.0	9.0	7.0	13.0	11.0	13.0	23.0	23.0	21.0
9	19.0	7.0	10.0	8.0	10.0	11.0	12.0	12.0	13.0	24.0	24.0	21.0
10	16.0	8.0	12.0	9.0	5.0	13.0	13.0	13.0	14.0	24.0	22.0	20.0
11	14.0	8.0	11.0	9.0	6.0	13.0	12.0	12.0	13.0	24.0	22.0	19.0
12	13.0	16.0	12.0	4.0	2.0	11.0	13.0	13.0	10.0	25.0	21.0	18.0
13	12.0	13.0	10.0	10.0	3.0	6.0	16.0	13.0	13.0	24.0	21.0	18.0
14	16.0	11.0	9.0	9.0	2.0	7.0	12.0	12.0	11.0	24.0	21.0	17.0
15	8.0	5.0	9.0	8.0	4.0	9.0	13.0	13.0	12.0	24.0	21.0	21.0
16	16.0	3.0	10.0	4.0	3.0	9.0	13.0	14.0	13.0	25.0	21.0	21.0
17	17.0	7.0	10.0	4.0	2.0	13.0	14.0	13.0	12.0	23.0	21.0	21.0
18	18.0	7.0	8.0	3.0	3.0	12.0	13.0	13.0	13.0	24.0	23.0	21.0
19	18.0	7.0	10.0	3.0	2.0	13.0	14.0	13.0	14.0	23.0	24.0	21.0
20	18.0	7.0	10.0	4.0	3.0	13.0	13.0	11.0	14.0	21.0	24.0	20.0
21	18.0	10.0	11.0	9.0	3.0	13.0	14.0	10.0	13.0	23.0	26.0	21.0
22	18.0	13.0	12.0	9.0	3.0	13.0	14.0	11.0	13.0	24.0	26.0	21.0
23	18.0	13.0	10.0	9.0	3.0	11.0	14.0	11.0	14.0	23.0	26.0	21.0
24	19.0	13.0	7.0	7.0	3.0	8.0	13.0	12.0	16.0	24.0	26.0	21.0
25	16.0	12.0	7.0	4.0	4.0	11.0	12.0	10.0	15.0	24.0	24.0	21.0
26	13.0	13.0	6.0	4.0	4.0	10.0	12.0	10.0	14.0	23.0	21.0	21.0
27	14.0	9.0	4.0	7.0	5.0	10.0	12.0	11.0	14.0	22.0	20.0	21.0
28	13.0	7.0	4.0	8.0	7.0	16.0	13.0	12.0	12.0	22.0	18.0	20.0
29	9.0	6.0	4.0	9.0	5.0	18.0	12.0	13.0	13.0	23.0	18.0	21.0
30	9.0	7.0	3.0	9.0	---	18.0	12.0	10.0	14.0	21.0	19.0	20.0
31	12.0	---	4.0	9.0	---	11.0	---	11.0	---	21.0	18.0	---
AVERAGE	16.0	10.0	8.5	6.0	5.5	10.5	13.0	12.0	13.5	22.5	22.0	20.0

LITTLE SANDY RIVER BASIN

03216350 LITTLE SANDY RIVER BELOW GRAYSON DAM, NEAR LEON, KY.

LOCATION.--Lat 38°35'18", long 82°59'25", Carter County, temperature recorder at gaging station on right bank, approximately 1,200 ft downstream from Grayson Dam, 0.4 mile upstream from Big Sinking Creek, and 2.4 miles southwest of Leon.

DRAINAGE AREA.--196 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1967 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 32.0°C July 23; minimum, 1.0°C on many days during January.

REMARKS.--Water-temperature records furnished by Corps of Engineers. Flow regulated by Grayson Reservoir.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	16.0	13.0	12.0	4.0	4.0	2.0	1.0	4.0	3.0	3.0	2.0
2	21.0	17.0	13.0	12.0	5.0	4.0	2.0	1.0	6.0	4.0	4.0	3.0
3	22.0	18.0	12.0	12.0	5.0	5.0	2.0	1.0	7.0	6.0	4.0	2.0
4	22.0	18.0	12.0	12.0	5.0	4.0	2.0	1.0	7.0	6.0	4.0	3.0
5	22.0	18.0	12.0	10.0	6.0	5.0	1.0	1.0	7.0	6.0	5.0	3.0
6	21.0	18.0	10.0	9.0	6.0	6.0	1.0	1.0	6.0	5.0	4.0	4.0
7	19.0	17.0	9.0	8.0	6.0	5.0	1.0	1.0	5.0	4.0	5.0	3.0
8	20.0	17.0	8.0	7.0	6.0	5.0	1.0	1.0	4.0	3.0	6.0	4.0
9	19.0	17.0	8.0	7.0	7.0	6.0	1.0	1.0	3.0	3.0	7.0	4.0
10	18.0	16.0	9.0	7.0	7.0	7.0	1.0	1.0	3.0	2.0	6.0	6.0
11	17.0	16.0	9.0	8.0	7.0	7.0	1.0	1.0	3.0	2.0	7.0	6.0
12	18.0	14.0	11.0	9.0	7.0	7.0	1.0	1.0	2.0	2.0	8.0	6.0
13	15.0	13.0	10.0	8.0	7.0	7.0	1.0	1.0	2.0	2.0	7.0	5.0
14	19.0	16.0	9.0	8.0	7.0	7.0	1.0	1.0	3.0	2.0	6.0	4.0
15	19.0	16.0	9.0	7.0	7.0	7.0	1.0	1.0	3.0	2.0	6.0	5.0
16	19.0	16.0	9.0	7.0	7.0	6.0	1.0	1.0	3.0	2.0	6.0	6.0
17	19.0	17.0	8.0	7.0	6.0	4.0	1.0	1.0	3.0	2.0	6.0	6.0
18	18.0	14.0	8.0	7.0	5.0	4.0	1.0	1.0	3.0	2.0	7.0	5.0
19	16.0	14.0	8.0	7.0	6.0	5.0	1.0	1.0	3.0	2.0	7.0	7.0
20	17.0	13.0	7.0	7.0	7.0	6.0	2.0	1.0	3.0	3.0	9.0	7.0
21	17.0	13.0	7.0	7.0	8.0	7.0	1.0	1.0	3.0	2.0	8.0	8.0
22	16.0	12.0	9.0	7.0	9.0	8.0	1.0	1.0	3.0	2.0	9.0	8.0
23	16.0	12.0	7.0	7.0	8.0	7.0	1.0	1.0	3.0	2.0	9.0	7.0
24	17.0	13.0	7.0	6.0	7.0	7.0	1.0	1.0	3.0	2.0	7.0	7.0
25	16.0	13.0	7.0	6.0	4.0	3.0	2.0	1.0	3.0	2.0	7.0	6.0
26	15.0	12.0	7.0	6.0	3.0	3.0	2.0	2.0	3.0	2.0	8.0	6.0
27	14.0	12.0	7.0	6.0	3.0	3.0	2.0	2.0	4.0	3.0	9.0	8.0
28	14.0	12.0	6.0	6.0	3.0	2.0	2.0	2.0	3.0	3.0	10.0	9.0
29	14.0	11.0	6.0	5.0	2.0	2.0	2.0	2.0	3.0	2.0	10.0	10.0
30	14.0	11.0	6.0	4.0	2.0	2.0	3.0	2.0	---	---	14.0	12.0
31	13.0	12.0	---	---	2.0	2.0	3.0	3.0	---	---	14.0	14.0
MONTH	22.0	11.0	13.0	4.0	9.0	2.0	3.0	1.0	7.0	2.0	14.0	2.0

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DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	SUSPENDED SEDIMENT										MET OD OF ANA- LYSIS	
						PERCENT FINER THAN THE SIZE (1A MILLIMETERS) INDICATED											
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
R 13 1968	1525			305													
G 15.....	2035			1207		52	73	84	90	97	98	100	--	--	--	--	SBW
						54	72	85	92	96	97	100	--	--	--	--	SBW

TYGARTS CREEK BASIN

03217000 TYGARTS CREEK NEAR GREENUP, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1.4	6	.02	12	43	1.4	1520	504	2080
2	1.4	7	.03	310	43	77	802	111	160
3	1.2	12	.04	527	42	60	747	47	96
4	1.2	6	.02	229	30	24	664	48	86
5	.80	2	0	122	35	12	212	32	28
6	.80	3	0	94	28	6.4	204	22	12
7	.80	4	.01	59	22	3.5	164	15	6.2
8	1.4	5	.02	42	16	1.8	137	8	2.0
9	2.8	4	.03	33	13	1.2	113	5	1.5
10	3.0	7	.06	24	12	.91	94	5	1.3
11	2.8	9	.07	25	11	.74	174	8	3.8
12	2.5	9	.06	22	10	.50	433	11	12
13	2.2	9	.05	19	10	.51	315	10	8.5
14	2.0	9	.05	17	8	.37	202	9	6.0
15	1.8	10	.05	14	6	.26	165	10	4.5
16	1.6	10	.04	15	5	.20	172	12	5.6
17	2.0	10	.06	15	5	.20	152	7	2.0
18	4.2	11	.15	14	4	.15	142	24	1.5
19	5.7	11	.17	14	5	.10	150	3	1.2
20	4.2	10	.11	13	5	.18	154	3	1.2
21	3.2	10	.09	13	5	.18	137	4	1.5
22	3.0	12	.10	14	4	.15	408	24	36
23	4.4	13	.15	15	2	.08	285	42	80
24	9.0	11	.27	74	9	1.8	406	45	60
25	7.8	27	.57	122	3	.90	273	67	35
26	5.2	18	.30	104	1	.20	207	22	12
27	5.3	11	.17	84	1	.23	142	6	2.5
28	6.3	9	.15	43	1	.17	119	5	1.6
29	17	33	1.6	48	1	.13	190	3	.81
30	14	17	.64	453	77	240	72	3	.58
31	17	12	.42	--	--	--	50	2	.50
TOTAL	132.70	--	5.40	2606	--	435.65	9224	--	2748.50
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	52	3	.62	535	23	37	36	1	.10
2	49	2	.26	478	19	25	34	1	.10
3	44	2	.24	547	13	10	36	1	.10
4	63	2	.36	496	7	7.7	38	1	.10
5	73	2	.38	308	6	5.0	34	1	.10
6	74	2	.40	260	5	3.5	36	1	.10
7	64	2	.35	222	2	1.2	37	1	.10
8	52	2	.28	204	2	1.1	30	1	.11
9	47	2	.25	162	1	.44	37	1	.10
10	40	2	.25	77	1	.21	41	3	.23
11	47	1	.13	77	1	.21	43	7	1.2
12	47	1	.11	77	2	.42	2720	594	6320
13	50	1	.14	77	2	.42	6820	531	9780
14	54	1	.15	77	3	.42	1420	122	500
15	64	1	.17	72	3	.58	730	64	47
16	54	1	.15	63	3	.51	477	83	286
17	48	1	.13	53	3	.45	2650	210	1300
18	49	1	.13	41	3	.33	1080	71	207
19	62	1	.17	37	2	.23	648	27	40
20	122	1	.33	25	2	.14	523	18	26
21	427	7	1.0	25	2	.14	659	16	20
22	1190	60	193	20	2	.15	3040	320	3110
23	1220	65	214	30	2	.16	4480	210	2650
24	1020	25	69	31	2	.17	1700	82	376
25	579	14	22	36	2	.10	964	40	102
26	325	5	7.0	28	3	.23	633	10	32
27	243	7	4.6	32	3	.24	442	14	20
28	199	7	3.8	32	3	.26	357	14	13
29	176	11	5.2	31	2	.17	298	13	10
30	298	35	60	--	--	--	280	12	9.1
31	640	50	94	--	--	--	322	11	9.4
TOTAL	7470	--	640.28	4127	--	105.79	30949	--	25987.14

TYGARTS CREEK BASIN

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03217000 TYGARTS CREEK NEAR GREENUP, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	792	31	85	70	8	1.5	441	16	19
2	745	63	177	60	8	1.3	343	14	17
3	490	24	32	60	7	.94	304	11	9.0
4	1320	142	785	48	7	.91	239	11	7.1
5	2930	220	1810	47	6	.76	204	11	6.1
6	988	60	160	38	5	.51	154	10	4.2
7	420	22	37	30	5	.43	123	9	3.0
8	482	12	16	27	5	.36	104	10	2.8
9	511	11	15	27	5	.36	93	7	1.9
10	402	11	12	27	5	.36	93	5	1.1
11	322	12	11	30	6	.49	74	5	1.0
12	260	13	9.1	100	20	5.4	53	5	.72
13	222	13	7.8	187	13	6.6	41	4	.66
14	196	10	5.3	130	7	2.5	30	4	.68
15	754	10	6.2	94	4	1.5	35	4	.57
16	346	10	0.3	80	5	.92	31	4	.50
17	263	9	6.4	52	4	.56	27	4	.44
18	226	9	4.9	46	4	.50	26	4	.28
19	202	8	4.4	72	6	1.2	25	4	.27
20	173	8	3.7	109	5	1.5	24	4	.26
21	157	8	3.4	81	5	1.1	22	5	.30
22	142	8	3.1	74	4	.80	24	6	.42
23	124	7	2.3	40	29	6.5	45	33	4.0
24	135	7	2.6	3020	499	4970	114	39	16
25	702	9	4.2	5150	355	5200	187	26	15
26	150	7	3.0	1110	115	345	118	36	11
27	133	7	2.5	3170	311	2830	144	30	12
28	111	7	2.1	2160	46	308	123	30	10
29	98	7	1.9	788	30	44	101	36	9.8
30	84	7	1.6	655	25	44	70	32	6.0
31	--	--	--	584	22	35	--	--	--
TOTAL	13103	--	3175.2	18174	--	13833.00	3433	--	157.96

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	54	25	3.6	506	252	344	19	4	.31
2	43	22	2.6	708	204	390	16	5	.22
3	35	26	2.5	633	78	133	14	5	.10
4	30	22	1.8	151	62	25	13	5	.19
5	25	14	1.1	113	55	17	17	5	.24
6	22	15	.89	72	69	13	137	19	8.0
7	20	14	.76	48	73	13	219	10	5.9
8	18	9	.44	41	45	7.4	101	15	4.1
9	17	9	.41	72	35	6.8	51	20	3.3
10	12	14	.45	154	64	27	93	15	3.8
11	14	16	.60	1140	508	1870	109	15	4.4
12	12	27	.87	534	344	408	114	21	6.5
13	11	20	.49	233	320	201	66	10	3.4
14	10	12	.32	1420	474	3750	36	14	1.4
15	11	11	.33	3130	830	7010	26	13	.91
16	12	15	.69	1380	397	2240	22	10	.50
17	21	11	.42	474	79	101	16	10	.42
18	28	14	1.4	304	53	44	19	10	.51
19	33	13	1.2	357	100	96	21	10	.57
20	24	14	.91	236	56	36	23	10	.62
21	19	10	.61	253	29	19	45	10	1.2
22	16	6	.26	280	26	20	47	9	1.1
23	18	6	.20	109	17	5.0	41	9	1.0
24	16	11	.49	55	10	1.8	30	10	.81
25	18	34	2.3	54	11	1.8	17	10	.46
26	30	143	20	45	12	1.5	19	10	.51
27	1380	1100	4560	37	13	1.2	16	10	.43
28	234	629	651	31	12	1.0	13	10	.35
29	120	289	148	39	7	.53	12	7	.26
30	110	129	38	21	6	.24	10	7	.19
31	80	87	13	27	4	.32	--	--	--
TOTAL	2723	--	5456.72	12692	--	16895.50	1393	--	51.89

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)
TOTAL LOAD FOR YEAR (TONS)

106029.70
69613.29

SCIOTO RIVER BASIN

03224500 WHETSTONE CREEK NEAR ASHLEY, OHIO

LOCATION.--Lat 40°27'20", long 82°57'25", in NW¼ sec.19, T.7 N., R.18 W., Morrow County, at gaging station on left bank 800 ft upstream from bridge on State Highway 746, 0.6 mile downstream from Shaw Creek, and 3.2 miles north of Ashley, Delaware County.

DRAINAGE AREA.--98.7 sq mi.

PERIOD OF RECORD.--Chemical analyses (conductance recorder): October 1964 to June 1968 (discontinued).

EXTREMES.--October 1967 to June 1968:

Specific conductance: Maximum daily, 1,070 micromhos Oct. 15-17; minimum daily, 220 micromhos Jan. 30, 31.

Period of record:

Specific conductance: Maximum daily, >3,000 micromhos Nov. 12-25, 1964; minimum daily, 160 micromhos Feb. 21, 1965.

REMARKS.--Conductance recorder is installed in gagehouse with probe in creek.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), OCTOBER 1967 TO JUNE 1968

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
1.....	--	--	1000	940	810	810	920	810	370	330	920	920
2.....	--	840	940	950	840	810	850	370	360	970	880	880
3.....	900	830	850	730	--	--	900	850	400	360	950	880
4.....	920	200	730	700	440	410	910	810	470	470	950	850
5.....	920	380	710	700	520	440	--	--	540	470	850	810
6.....	830	880	700	700	520	440	--	--	500	540	830	790
7.....	940	880	710	700	460	450	--	--	630	590	850	740
8.....	840	840	760	730	510	460	--	--	720	630	800	730
9.....	890	380	790	750	580	510	--	--	720	710	740	670
10.....	930	230	940	780	610	550	--	--	740	710	730	670
11.....	950	330	850	840	530	430	--	--	800	740	750	730
12.....	940	950	900	850	570	440	--	--	830	800	760	710
13.....	1230	940	910	830	560	500	--	--	840	820	710	680
14.....	1040	1030	800	860	480	460	--	--	860	850	760	690
15.....	1070	1050	850	820	770	680	--	--	860	840	830	740
16.....	1070	1050	820	820	720	700	--	--	870	860	840	730
17.....	1070	1050	820	810	730	720	--	--	870	870	740	690
18.....	1040	950	810	850	730	580	--	--	870	860	540	500
19.....	990	380	650	630	590	500	--	--	870	860	570	540
20.....	990	340	670	620	580	500	--	--	870	870	500	570
21.....	1000	980	720	670	610	530	--	--	920	870	590	560
22.....	1020	1020	750	720	530	320	950	930	930	920	550	500
23.....	1020	1020	790	750	670	330	930	820	930	920	530	500
24.....	1020	1020	800	790	580	470	920	820	1000	920	560	530
25.....	1000	320	800	900	550	580	830	320	1000	940	640	430
26.....	930	320	800	800	750	650	830	930	970	940	440	380
27.....	930	380	800	800	770	750	840	810	950	940	420	380
28.....	990	380	800	800	770	770	810	380	940	910	480	470
29.....	930	330	810	800	770	770	380	240	920	910	530	480
30.....	900	320	810	810	810	770	240	220	--	--	570	530
31.....	1000	320	--	--	910	810	330	220	--	--	590	570
AVERAGE	990	350	804	771	637	574	--	--	781	750	693	630
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
1.....	620	550	730	730	550	540	--	--	--	--	--	--
2.....	600	530	750	730	620	540	--	--	--	--	--	--
3.....	640	540	770	760	630	620	--	--	--	--	--	--
4.....	650	540	780	770	650	610	--	--	--	--	--	--
5.....	600	520	810	780	630	650	--	--	--	--	--	--
6.....	560	520	910	810	720	600	--	--	--	--	--	--
7.....	600	510	890	850	750	720	--	--	--	--	--	--
8.....	620	520	850	840	760	750	--	--	--	--	--	--
9.....	680	620	840	830	730	740	--	--	--	--	--	--
10.....	670	540	870	830	830	780	--	--	--	--	--	--
11.....	630	670	890	820	820	800	--	--	--	--	--	--
12.....	700	530	820	810	830	770	--	--	--	--	--	--
13.....	710	540	510	430	790	730	--	--	--	--	--	--
14.....	730	720	540	510	730	680	--	--	--	--	--	--
15.....	720	590	610	560	580	570	--	--	--	--	--	--
16.....	720	630	620	570	740	660	--	--	--	--	--	--
17.....	690	670	600	550	730	600	--	--	--	--	--	--
18.....	710	670	580	550	610	600	--	--	--	--	--	--
19.....	740	720	630	590	540	600	--	--	--	--	--	--
20.....	730	720	630	630	630	660	--	--	--	--	--	--
21.....	720	710	680	620	630	680	--	--	--	--	--	--
22.....	730	710	640	600	--	--	--	--	--	--	--	--
23.....	750	710	600	520	--	--	--	--	--	--	--	--
24.....	720	620	590	630	--	--	--	--	--	--	--	--
25.....	750	720	490	430	--	--	--	--	--	--	--	--
26.....	750	730	500	340	--	--	--	--	--	--	--	--
27.....	750	750	350	350	--	--	--	--	--	--	--	--
28.....	740	730	310	250	--	--	--	--	--	--	--	--
29.....	730	710	470	350	--	--	--	--	--	--	--	--
30.....	730	730	520	470	--	--	--	--	--	--	--	--
31.....	--	--	540	520	--	--	--	--	--	--	--	--
AVERAGE	692	657	649	594	--	--	--	--	--	--	--	--

SCIOTO RIVER BASIN

103

03226800 OLENTANGY RIVER NEAR WORTHINGTON, OHIO

LOCATION.--Lat 40°06'35', long 83°01'55', in NW¼ T.2 N., R.18 W., Franklin County, temperature recorder at gaging station on right bank 30 ft downstream from Wilson Road Bridge, 1.5 miles northwest of Worthington, and 2.8 miles upstream from Rush Run.

DRAINAGE AREA.--497 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1955 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C Aug. 20; minimum, freezing point on many days during January to March.

Period of record:

Water temperatures: Maximum, 31.0°C July 7, 1962, July 2, 3, 1966; minimum, freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																																	AVER-
MONTH	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	AGE		
OCTOBER																																		
MAXIMUM	16	19	21	21	21	19	17	19	18	15	13	14	14	15	16	17	16	13	12	12	11	12	14	13	11	8	8	10	10	15				
MINIMUM	12	14	16	17	19	16	14	16	15	13	13	12	12	14	13	14	16	13	12	10	9	9	11	11	9	8	7	6	7	9	12			
NOVEMBER																																		
MAXIMUM	12	12	11	10	7	5	4	6	7	9	9	7	5	3	5	4	5	5	4	5	5	4	4	5	4	4	3	3	2	1	--	6		
MINIMUM	9	11	10	7	5	4	3	3	4	7	8	7	8	7	5	3	2	3	5	4	4	4	4	3	3	4	3	2	1	1	--	5		
DECEMBER																																		
MAXIMUM	1	2	2	2	3	3	4	4	4	5	6	6	6	5	4	4	5	5	4	8	8	4	4	3	3	3	3	3	2	2	4			
MINIMUM	1	1	2	1	2	2	3	3	4	5	5	5	5	4	3	4	4	4	3	4	4	3	3	3	2	2	2	2	1	1	1			
JANUARY																																		
MAXIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	0	0	1	1	1	1		
MINIMUM	1	1	1	1	1	0	0	1	1	0	0	0	1	1	0	1	0	0	1	1	2	2	0	0	0	0	0	0	0	1	0	1		
FEBRUARY																																		
MAXIMUM	1	1	1	1	2	2	3	3	3	2	2	2	2	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	--	--	1		
MINIMUM	0	1	0	0	1	1	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	0		
MARCH																																		
MAXIMUM	0	0	1	0	0	0	2	3	4	7	7	6	2	2	3	4	7	6	7	7	7	5	3	6	5	4	7	8	11	11	11	5		
MINIMUM	0	0	0	0	0	0	1	2	4	6	5	2	1	0	2	3	3	2	3	6	5	2	2	3	3	3	4	6	7	8	9	3		
APRIL																																		
MAXIMUM	10	9	10	12	11	9	12	12	12	12	14	15	15	15	14	13	15	15	17	18	18	16	12	11	13	14	16	14	--	--	13			
MINIMUM	8	7	9	10	7	6	8	11	9	10	9	11	12	13	11	11	12	12	14	14	14	14	16	12	9	11	11	12	13	14	--	11		
MAY																																		
MAXIMUM	16	16	16	16	16	14	14	15	16	16	16	14	15	15	16	16	16	14	14	14	14	14	15	15	14	14	14	15	14	12	17	12		
MINIMUM	13	13	14	14	14	12	12	13	15	14	14	13	14	14	16	14	14	14	14	14	14	13	14	14	13	14	14	14	12	11	11	12		
JUNE																																		
MAXIMUM	14	14	15	16	17	17	15	15	16	18	19	19	19	20	20	19	19	20	20	21	21	21	22	23	23	22	22	21	21	27	--	19		
MINIMUM	12	14	14	15	16	15	14	14	15	16	18	19	18	18	19	19	19	19	19	19	19	20	21	22	22	22	21	19	19	21	--	18		
JULY																																		
MAXIMUM	23	23	22	21	21	22	22	22	23	23	23	24	24	24	23	24	24	25	24	23	23	23	24	24	24	23	23	23	23	22	21	23		
MINIMUM	22	22	21	20	21	21	21	22	22	22	23	23	23	23	23	23	23	23	23	23	23	22	22	22	23	23	23	23	22	21	20	22		
AUGUST																																		
MAXIMUM	21	21	21	21	21	23	23	23	23	23	22	21	21	21	23	23	24	26	27	27	27	27	--	--	--	--	--	--	--	--	--	--		
MINIMUM	20	20	21	20	20	21	23	21	22	22	20	21	19	19	21	21	22	22	22	24	24	25	--	--	--	--	--	--	--	--	--	--		
SEPTEMBER																																		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		

03228805 ALUM CREEK AT AFRICA, OHIO

LOCATION.--Lat 40°11'00", long 82°57'45", in SE¼ sec.1, T.3 N., R.16 W., Delaware County, at gaging station at bridge on Orange Township Road 109, 0.3 mile west of Africa and 4.2 miles northwest of Westerville.

DRAINAGE AREA.--122 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1964 to August 1965, periodic; October 1965 to September 1966.
Water temperatures: October 1965 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 1,130 micromhos Dec. 23; minimum daily, 251 micromhos May 26, 28.
Water temperatures: Maximum, 26.0°C Aug. 7, 24; minimum, freezing point on several days during December to March.

Period of record:

Specific conductance: Maximum daily, 1,560 micromhos Feb. 6, 1966; minimum daily, 175 micromhos July 14, 1966.
Water temperatures: Maximum, 28.0°C July 3, 1966; 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, (3) median daily specific conductance for each month, and (4) special sample each month to further define the quality of water.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLOR- IDE (CL)	FLUOR- IDE (F)	NITRATE (NO3)
OCT.										
04...	1730	5.0	--	--	204	0	212	104	.3	.2
13...	1615	12	.12	.08	--	--	--	--	--	--
19...	1730	18	--	--	196	0	155	100	.3	5.8
27...	1730	26	--	--	256	0	216	98	.3	.7
NOV.										
05...	1830	50	--	--	196	0	158	100	.4	6.0
10...	1600	19	.19	.04	--	--	--	--	--	--
18...	1830	173	--	--	138	0	112	74	.3	18
19...	1830	72	--	--	214	0	171	94	.3	5.7
DEC.										
04...	1545	258	.23	.06	--	--	--	--	--	--
14...	1830	64	--	--	260	0	184	80	.4	5.3
23...	1830	316	--	--	324	0	318	29	.4	7.0
31...	1830	61	--	--	108	0	57	18	.2	23
JAN.										
09...	1830	21	--	--	180	0	113	52	.2	3.7
12...	1615	22	.11	.07	--	--	--	--	--	--
21...	1830	28	--	--	216	0	178	18	.2	1.1
26...	1830	35	--	--	110	0	54	18	.4	14

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03226805 ALUM CREEK AT AFRICA, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)
FEB.										
02...	1830	1240	--	--	210	0	157	117	.3	2.1
02...	1800	52	.11	.46	--	--	--	--	--	--
11...	1830	47	--	--	210	0	174	72	.2	1.9
27...	1830	19	--	--	250	0	144	104	.3	.8
MAY										
01...	1830	21	--	--	248	0	174	76	.3	2.8
04...	1800	29	.09	.05	--	--	--	--	--	--
24...	1830	373	--	--	110	0	85	56	.2	20
APR.										
05...	1715	212	.15	.07	--	--	--	--	--	--
09...	1810	48	--	--	180	0	123	52	.2	2.0
21...	1830	33	--	--	208	0	145	70	.3	.4
MAY										
11...	1130	200	.19	.39	--	--	--	--	--	--
17...	0630	245	--	--	172	0	89	42	.4	4.7
27...	--	56	--	--	188	0	117	96	.4	1.3
28...	0830	3250	--	--	64	0	35	12	.2	14
JUNE										
03...	0915	150	--	--	176	0	81	38	.2	5.9
13...	0730	32	.10	.05	--	--	--	--	--	--
17...	0830	59	--	--	226	0	131	68	.3	1.2
28...	0830	26	--	--	240	0	148	74	.3	.9
JULY										
11...	1000	9.8	.14	.23	--	--	--	--	--	--
12...	0830	6.2	--	--	224	0	154	99	.3	.6
25...	0830	775	--	--	90	0	40	13	.2	12
31...	0830	26	--	--	196	0	114	40	.3	3.5
AUG.										
02...	0830	26	--	--	196	0	104	47	.4	3.3
07...	0910	19	.21	.04	--	--	--	--	--	--
27...	0830	4.7	--	--	230	0	135	77	.3	.0
30...	0830	3.0	--	--	208	0	141	83	.3	.0
SEPT.										
02...	--	3.7	--	--	205	0	141	78	.3	.2
06...	0830	2.8	.06	.05	--	--	--	--	--	--
16...	0830	3.6	--	--	220	0	186	80	.3	.1
24...	0830	5.0	--	--	224	0	183	71	.4	.0
DATE	TIME	TOTAL PHOS- PHORUS (PP4)	DIS- SOLVED SULFIDS (RESID- UE AT 100 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.										
04...	--	.16	622	440	273	1040	7.8	13	--	--
13...	--	--	--	--	--	--	--	--	9.0	82
19...	--	.17	614	378	217	917	8.0	10	--	--
27...	--	.09	724	470	260	1090	7.5	8	--	--
NOV.										
05...	--	.55	626	382	221	926	7.8	4	--	--
10...	--	--	--	--	--	--	--	--	12.0	100
16...	--	.62	492	281	168	714	7.2	4	--	--
19...	--	.46	620	415	239	960	7.4	1	--	--
DEC.										
08...	--	--	--	--	--	--	--	--	11.0	92
16...	--	.62	596	445	232	992	7.6	4	--	--
23...	--	.64	776	510	346	1130	7.5	2	--	--
31...	--	.90	210	172	83	388	7.6	1	--	--
JAN.										
09...	--	.09	424	290	142	677	8.0	1	--	--
12...	--	--	--	--	--	--	--	--	10.0	71
21...	--	.04	470	384	207	770	7.9	1	--	--
26...	--	.38	216	166	76	385	7.1	2	--	--
FEB.										
02...	--	.24	696	408	219	1030	7.7	2	--	--
09...	--	--	--	--	--	--	--	--	13.0	92
11...	--	.02	554	323	151	903	8.2	1	--	--
27...	--	.06	648	400	195	974	7.9	1	--	--
MAR.										
01...	--	.00	596	416	213	958	8.1	1	--	--
08...	--	--	--	--	--	--	--	--	14.0	96
24...	--	.05	354	220	130	549	8.2	3	--	--
APR.										
05...	--	--	--	--	--	--	--	--	11.0	92
09...	--	.05	444	305	157	680	8.0	11	--	--
21...	--	.66	518	346	175	806	8.1	14	--	--
MAY										
11...	--	--	--	--	--	--	--	16	7.9	79
17...	--	.16	348	259	118	595	7.3	16	--	--
22...	--	.10	474	312	158	798	7.7	13	--	--
28...	--	.27	148	105	52	251	7.0	14	--	--
JUNE										
03...	--	.21	390	250	106	572	7.1	18	--	--
13...	--	--	--	--	--	--	--	21	6.4	71
17...	--	.14	526	346	161	795	7.4	19	--	--
28...	--	.05	596	376	179	854	7.5	18	--	--
JULY										
11...	--	--	--	--	--	--	--	--	6.2	71
12...	--	.09	596	379	195	918	7.7	23	--	--
26...	--	.26	204	124	50	240	7.5	21	--	--
31...	--	.19	416	290	129	640	8.2	24	--	--
AUG.										
02...	--	.13	422	280	119	640	8.2	21	--	--
07...	--	--	--	--	--	--	--	26	6.1	74
27...	--	.04	542	361	172	839	8.1	17	--	--
30...	--	.73	546	352	161	866	8.2	17	--	--
SEPT.										
02...	--	.05	514	346	178	842	8.1	17	--	--
04...	--	--	--	--	--	--	--	20	6.3	68
16...	--	.66	608	399	219	925	7.9	--	--	--
24...	--	.09	590	390	206	888	7.9	22	--	--

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03228805 ALUM CREEK AT AFRICA, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHMS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	1050	938	973	671	950	958	--	--	--	835	643	860
2.....	992	919	--	653	1030	951	--	--	--	837	640	842
3.....	970	950	464	664	960	--	--	--	572	842	--	860
4.....	1040	907	--	672	910	--	--	--	595	--	--	856
5.....	1070	926	541	679	--	--	--	--	635	876	645	864
6.....	--	955	516	685	--	--	--	--	644	885	645	850
7.....	1040	--	--	676	953	--	--	--	697	--	645	--
8.....	--	894	--	682	962	--	--	--	--	909	685	--
9.....	1080	953	--	677	965	--	680	--	--	891	646	--
10.....	1040	--	--	680	960	--	--	--	--	702	--	895
11.....	1080	--	--	676	903	--	--	--	724	904	846	893
12.....	--	--	--	694	918	--	--	618	778	918	846	884
13.....	--	--	--	655	955	--	--	609	833	916	844	871
14.....	--	--	--	650	958	--	--	636	--	--	838	893
15.....	976	--	--	688	1010	--	--	638	825	--	668	915
16.....	--	--	992	684	990	--	--	646	--	--	694	925
17.....	1050	--	1040	--	962	--	--	595	795	--	--	925
18.....	1040	714	945	667	977	--	--	611	--	543	848	920
19.....	917	960	958	656	1000	--	--	625	755	579	844	893
20.....	950	--	1040	386	1010	--	--	570	746	438	840	--
21.....	--	--	868	770	987	--	806	704	--	428	777	876
22.....	931	989	989	697	1010	--	--	798	--	505	788	880
23.....	--	--	1130	656	1010	--	--	473	802	430	846	880
24.....	--	--	1040	666	977	549	--	516	--	422	805	888
25.....	1060	--	1050	--	950	--	--	264	805	469	846	888
26.....	963	923	1040	385	1020	--	--	251	793	290	844	897
27.....	1080	919	1000	--	974	--	--	262	820	425	839	--
28.....	970	950	1050	690	997	--	--	251	854	570	848	893
29.....	931	--	1040	656	1010	--	--	472	811	616	856	--
30.....	963	910	823	698	--	--	--	472	841	647	866	906
31.....	1010	--	388	--	--	--	--	516	--	640	846	--
AVERAGE	--	--	--	656	974	--	--	--	--	660	769	885

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	12.0	1.0	1.0	4.0	1.0	---	---	---	24.0	23.0	16.0
2	14.0	2.0	---	1.0	2.0	1.0	---	---	---	23.0	21.0	17.0
3	14.0	3.0	2.0	1.0	2.0	---	---	---	18.0	19.0	---	17.0
4	13.0	2.0	---	1.0	1.0	---	---	---	18.0	---	---	18.0
5	13.0	4.0	4.0	1.0	---	---	---	---	20.0	18.0	22.0	19.0
6	---	2.0	6.0	1.0	---	---	---	---	21.0	18.0	24.0	19.0
7	12.0	---	---	1.0	1.0	---	---	---	22.0	---	26.0	---
8	---	2.0	---	1.0	1.0	---	---	---	---	20.0	23.0	---
9	12.0	2.0	---	1.0	0.0	---	11.0	---	---	21.0	24.0	---
10	12.0	---	---	1.0	3.0	---	---	---	---	23.0	---	19.0
11	11.0	---	---	1.0	1.0	---	---	---	23.0	22.0	18.0	17.0
12	---	---	---	1.0	1.0	---	---	14.0	---	23.0	20.0	15.0
13	---	---	---	1.0	1.0	---	---	15.0	21.0	23.0	21.0	15.0
14	---	---	---	0.0	1.0	---	---	17.0	---	---	20.0	16.0
15	16.0	---	---	1.0	1.0	---	---	15.0	21.0	---	21.0	17.0
16	---	---	4.0	1.0	0.0	---	---	16.0	---	---	23.0	---
17	16.0	---	3.0	---	0.0	---	---	16.0	19.0	---	---	14.0
18	11.0	4.0	5.0	1.0	1.0	---	---	14.0	---	24.0	24.0	18.0
19	10.0	1.0	2.0	1.0	1.0	---	---	16.0	20.0	25.0	22.0	17.0
20	10.0	---	3.0	1.0	1.0	---	---	9.0	19.0	22.0	25.0	---
21	---	---	3.0	1.0	---	---	14.0	10.0	---	23.0	25.0	18.0
22	9.0	---	2.0	1.0	1.0	---	---	13.0	---	23.0	25.0	22.0
23	---	---	2.0	1.0	0.0	---	---	14.0	21.0	22.0	25.0	21.0
24	---	---	2.0	1.0	1.0	3.0	---	14.0	---	23.0	26.0	22.0
25	11.0	---	1.0	---	1.0	---	---	13.0	24.0	24.0	19.0	20.0
26	8.0	6.0	1.0	2.0	1.0	---	---	15.0	22.0	21.0	19.0	19.0
27	8.0	1.0	1.0	---	1.0	---	---	16.0	20.0	21.0	17.0	---
28	10.0	1.0	1.0	0.0	1.0	---	---	14.0	18.0	19.0	16.0	18.0
29	11.0	---	1.0	3.0	1.0	---	---	13.0	18.0	19.0	16.0	---
30	8.0	1.0	0.0	3.0	---	---	---	16.0	---	22.0	17.0	---
31	10.0	---	1.0	---	---	---	---	14.0	---	24.0	16.0	---
AVERAGE	---	---	---	1.0	1.0	---	---	---	---	22.0	21.5	---

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 Co., 0.4 mile downstream from Big Walnut Creek and 3.2 miles downstream from Shaderville.

DRAINAGE AREA.--2,266 sq mi.

PERIOD OF RECORD.--Chemical analyses: March 1965 to September 1968.

Water temperatures: March 1965 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 1,000 micromhos Jan. 20; minimum daily, 190 micromhos May 27.

Dissolved oxygen: Maximum daily, 14.6 mg/l Dec. 24; minimum daily, 0.0 mg/l on several days during June to September.

Water temperatures: Maximum, 32.0°C Aug. 20; minimum, freezing point on several days during December to March.

Period of record:

Specific conductance: Maximum daily, 1,260 micromhos Feb. 9, 1966; minimum daily, 190 micromhos May 27, 1968.

Dissolved oxygen: Maximum daily, 14.8 mg/l Dec. 24, 1967; minimum daily, 0.0 mg/l on many days during

May 1965, June 1966, June to August 1967, June to September 1968.

Water temperatures: Maximum, 33.0°C Aug. 16, 1965; minimum, freezing point on several days during December 1967 to March 1968.

REMARKS.--In addition to the continuous recorder daily samples were collected by a local observer. Partial analyses were made on maximum specific conductance and minimum specific conductance of the samples collected each month. Interruptions in the record were due to malfunctions of the instrument. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	BICARBONATE (HCO ₃)	CARBONATE (CO ₃)	SULFATE (SO ₄)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO ₃)	DISSOLVED SOLIDS (RESIDUE AT 180 °C)	HARDNESS (CALCMG)	NON-HARDNESS (MCPMG)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.												
02...	0650	162	0	129	46	.8	28	434	258	125	723	6.8
19...	0700	139	0	176	68	1.7	60	572	294	180	965	7.8
NOV.												
01...	0745	102	0	201	60	1.5	50	672	294	210	921	8.2
03...	0908	174	14	109	44	.9	54	608	273	104	841	8.7
DEC.												
04...	0800	182	0	118	60	.5	2.8	450	288	139	803	7.4
13...	0725	128	0	86	24	.8	10	318	220	115	680	8.3
JAN.												
02...	1530	227	0	132	97	.9	9.5	584	343	157	914	7.2
31...	0730	86	0	51	18	.3	9.1	204	134	63	311	8.1
FEB.												
01...	0900	86	0	50	18	.3	15	208	134	66	318	7.9
28...	1415	210	0	137	52	1.5	14	512	322	152	787	7.0
MAR.												
08...	0800	216	0	153	51	1.5	14	536	345	148	848	7.2
29...	0800	132	2	60	25	.4	17	316	218	107	685	8.4
APR.												
01...	0800	146	0	77	25	.3	20	336	218	98	501	7.6
30...	0715	206	0	103	40	.5	10	432	282	113	685	7.1
MAY												
04...	0800	198	0	145	46	1.7	26	490	316	154	801	6.9
28...	0815	96	0	40	10	.2	9.1	172	122	44	271	7.0
JUNE												
03...	0800	144	0	58	16	.2	15	254	177	59	427	7.3
24...	1300	216	0	120	38	1.4	11	412	299	122	717	8.2
JULY												
11...	1105	216	0	104	26	.3	14	470	294	117	746	7.4
26...	0830	164	0	88	32	.4	15	340	235	101	559	8.0
AUG.												
02...	0720	148	0	88	24	.3	10	302	210	89	519	6.9
29...	1000	188	0	146	54	1.6	36	524	290	135	862	6.8
SEPT.												
18...	0800	266	0	149	56	1.9	5.0	510	280	78	894	7.1
24...	0800	174	0	129	50	.9	35	468	262	119	745	8.1

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER						NOVEMBER						DECEMBER									
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)			DISSOLVED OXYGEN (MG/L)	TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)			DISSOLVED OXYGEN (MG/L)	TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)			DISSOLVED OXYGEN (MG/L)	TEMPERATURE (°C)			
	MAX		MIN		MAX		MIN	MAX		MIN		MAX		MIN	MAX		MIN		MAX		MIN	
1	720	620	3.8	3.2	16	13	940	880	5.3	4.8	13	11	910	740	6.7	5.7	3	1				
2	760	720	4.1	2.9	18	15	890	630	5.3	4.8	13	9	920	810	6.8	5.8	4	1				
3	810	760	--	--	18	17	680	580	5.5	5.0	11	9	870	870	7.0	5.7	6	2				
4	900	810	--	--	19	18	720	620	5.6	5.0	11	8	750	600	6.8	6.2	3	1				
5	890	810	--	--	19	18	710	670	5.8	5.2	9	7	--	--	--	--	3	1				
6	940	880	--	--	19	17	800	690	5.9	5.2	7	4	--	--	--	--	3	1				
7	940	840	--	--	17	16	800	730	6.1	5.2	7	4	590	520	10.0	8.6	6	3				
8	870	750	--	--	18	16	780	720	5.6	5.1	6	4	590	530	11.5	7.5	6	2				
9	880	750	--	--	19	17	800	730	5.6	5.0	7	4	590	490	7.5	6.5	5	1				
10	760	710	--	--	17	16	860	790	5.5	4.8	9	6	550	500	7.0	6.0	7	4				
11	850	760	--	--	16	14	900	810	5.5	4.8	9	7	520	450	6.2	5.3	7	4				
12	890	850	--	--	14	13	880	750	5.3	4.8	10	7	510	410	5.8	5.1	8	5				
13	910	870	6.0	5.3	15	13	760	740	5.6	5.0	10	7	500	420	6.2	5.5	6	4				
14	930	880	5.6	5.1	15	13	780	700	5.5	5.0	7	5	520	470	6.1	5.8	6	3				
15	950	890	6.2	5.0	15	13	820	740	5.5	5.1	6	3	540	480	6.5	5.9	5	3				
16	920	840	5.5	4.8	18	12	860	770	5.8	5.1	5	3	560	500	6.7	6.0	4	1				
17	910	850	5.5	4.8	21	17	840	760	5.5	5.0	6	4	580	520	6.9	6.2	4	2				
18	950	890	5.4	5.0	17	15	820	710	5.4	4.8	6	4	590	520	6.8	5.7	4	3				
19	960	800	5.8	5.2	16	13	770	630	5.5	4.9	5	2	600	530	7.0	5.7	6	4				
20	890	800	5.6	5.2	14	12	--	--	--	--	--	--	620	550	7.4	6.4	6	4				
21	930	850	5.7	5.3	14	12	740	690	8.2	6.3	6	4	620	540	10.9	7.4	8	6				
22	940	880	5.8	5.2	14	11	750	680	6.8	5.9	6	4	580	480	10.8	9.1	8	6				
23	920	860	6.3	5.4	14	11	750	690	6.9	5.9	6	4	500	450	13.8	10.8	7	3				
24	870	810	5.8	5.2	15	12	730	690	6.8	6.0	5	3	570	450	14.6	13.5	4	2				
25	860	810	5.5	5.3	14	13	760	680	6.4	5.7	6	4	600	550	14.0	13.4	5	2				
26	880	720	5.5	5.1	13	11	730	690	6.2	5.7	6	3	580	510	13.5	12.9	4	2				
27	850	740	5.6	5.2	12	10	740	680	6.4	5.7	6	1	580	520	13.0	12.3	3	1				
28	900	840	5.6	5.3	11	9	780	680	6.7	5.8	3	1	580	530	13.0	12.1	3	1				
29	920	860	5.7	5.3	11	8	800	730	6.5	5.9	3	1	600	520	13.0	12.4	3	0				
30	910	880	5.7	5.2	12	9	780	750	6.3	5.8	3	1	570	510	13.3	11.8	2	0				
31	920	880	5.3	5.1	12	10	--	--	--	--	--	--	560	490	13.7	11.6	2	0				

SCIOTO RIVER BASIN

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03229600 SCIOTO RIVER BELOW SHADEVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JANUARY						FEBRUARY						MARCH					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	610	560	13.6	12.8	2	1	360	260	9.5	9.0	7	3	840	770	7.3	6.1	7	4
2	640	550	13.6	12.6	2	0	410	340	9.3	8.5	6	3	870	820	6.9	5.7	8	6
3	640	550	13.0	10.0	2	0	390	340	9.3	8.7	5	2	860	810	8.8	6.5	7	3
4	660	560	11.5	9.5	3	0	390	340	9.7	9.1	4	1	860	800	9.3	7.7	9	3
5	700	620	11.7	9.8	2	0	410	370	9.7	9.3	7	4	840	780	8.4	5.5	9	6
6	750	690	12.4	10.2	4	1	--	--	--	--	--	--	870	790	7.2	5.4	10	6
7	750	680	12.3	10.0	3	1	--	--	--	--	--	--	890	820	7.9	7.1	11	6
8	720	660	12.2	10.4	2	0	540	480	10.7	9.7	5	3	940	860	6.9	5.1	12	6
9	770	700	11.3	9.8	2	1	560	490	10.3	9.1	4	2	930	860	5.8	4.2	14	10
10	810	730	11.3	8.7	4	1	580	520	10.3	9.3	3	0	900	830	6.7	4.6	14	11
11	820	770	11.3	9.0	4	0	580	530	10.6	9.6	2	0	880	810	7.9	4.6	14	9
12	800	740	11.6	8.6	4	1	600	550	10.3	9.6	2	1	920	810	6.4	3.1	12	7
13	780	730	10.8	7.4	3	1	650	570	9.7	8.6	2	0	910	840	6.8	3.5	8	5
14	800	750	12.0	9.0	5	2	640	570	9.7	8.8	3	1	890	830	7.8	6.2	10	7
15	790	740	12.0	9.7	5	2	660	590	9.7	8.5	4	1	860	780	8.1	5.8	11	7
16	870	760	12.9	10.6	4	1	670	620	9.4	8.4	5	2	890	760	6.9	5.2	11	9
17	850	760	14.0	11.9	2	0	700	650	9.6	7.9	5	2	860	800	7.6	4.0	13	8
18	820	770	14.0	12.0	4	1	700	640	9.6	8.9	4	2	840	750	7.3	6.3	12	10
19	890	790	12.0	7.6	6	2	700	640	9.6	8.5	4	1	770	690	9.0	6.9	11	9
20	1000	840	13.1	2.4	6	2	720	650	9.1	7.4	4	1	820	700	10.2	8.4	13	11
21	990	890	8.2	1.3	7	3	780	680	9.6	7.9	4	1	860	690	10.1	8.1	14	11
22	970	880	11.2	4.5	4	2	790	760	9.9	8.9	4	2	690	590	10.3	8.8	12	6
23	920	850	11.6	3.3	7	1	780	730	9.6	7.9	6	2	590	430	11.1	10.0	6	0
24	900	860	7.6	6.9	6	1	790	710	8.8	7.5	6	3	580	460	11.5	10.7	5	1
25	870	690	8.9	6.9	3	0	780	720	9.4	8.7	6	2	550	420	11.1	10.6	7	4
26	790	710	9.0	7.3	4	1	750	730	9.7	8.8	7	3	540	440	11.1	10.4	8	4
27	800	710	8.7	7.5	7	2	800	720	9.3	6.8	8	4	540	460	11.1	10.4	9	5
28	810	690	8.6	7.1	8	4	840	780	8.7	7.0	8	5	550	510	10.8	10.2	9	6
29	800	480	9.2	8.4	7	3	800	760	8.3	7.0	6	4	540	450	10.4	9.4	11	7
30	480	330	9.3	8.8	4	2	--	--	--	--	--	--	510	450	10.1	9.0	14	9
31	330	240	9.6	8.6	4	2	--	--	--	--	--	--	520	470	9.4	8.4	13	11
DAY	APRIL						MAY						JUNE					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	570	480	9.3	8.1	13	10	730	600	5.8	2.2	18	13	540	420	--	--	17	14
2	570	510	9.7	8.3	13	9	730	650	4.2	2.3	18	15	540	290	--	--	18	15
3	540	500	9.3	8.6	12	10	760	680	3.9	1.8	19	15	490	310	7.0	5.1	19	16
4	550	470	8.6	7.3	13	10	850	750	3.4	2.0	19	16	490	410	5.6	4.9	20	16
5	570	520	8.9	7.3	12	11	800	730	4.0	3.2	17	14	540	430	5.5	4.6	19	16
6	600	530	9.9	8.3	13	10	750	670	6.8	3.0	17	12	540	440	5.4	4.6	21	17
7	610	570	10.4	9.5	13	9	770	680	4.9	3.4	17	13	600	450	5.0	3.5	21	17
8	620	560	9.9	8.7	14	12	810	740	4.8	3.1	18	15	670	580	4.2	3.3	23	18
9	640	550	9.6	7.8	16	11	840	740	4.6	3.2	19	16	690	580	6.5	5.9	25	18
10	680	580	9.2	7.6	16	13	790	710	4.7	3.5	19	16	650	540	6.0	3.1	24	19
11	660	610	9.7	7.4	18	14	840	550	4.0	1.2	19	16	690	530	3.8	2.0	25	19
12	690	630	9.1	7.0	19	14	850	280	7.5	3.9	19	13	700	580	6.1	2.9	24	21
13	700	630	8.5	8.5	21	16	500	380	8.2	7.4	18	15	750	630	4.7	2.6	23	19
14	680	620	8.6	6.0	20	17	590	500	7.6	6.5	19	16	740	650	4.0	1.5	24	18
15	700	620	8.3	6.4	19	15	660	560	8.1	5.3	21	16	760	630	2.0	.4	24	19
16	720	630	9.5	6.5	19	14	610	370	5.8	4.5	22	18	730	630	1.7	.0	22	17
17	800	620	8.3	5.5	18	13	490	410	6.4	5.1	21	18	740	600	3.3	1.1	23	19
18	670	540	8.6	5.0	16	13	510	410	6.9	5.9	19	16	780	550	3.6	1.6	24	18
19	700	600	8.5	4.3	19	14	550	450	7.4	6.2	18	16	700	570	4.5	.6	24	19
20	690	630	7.5	3.0	18	13	630	460	7.2	5.8	20	14	--	--	5.4	1.4	24	19
21	700	610	8.3	3.0	19	14	670	530	6.3	5.2	17	12	--	--	5.7	1.1	26	21
22	690	610	10.4	4.5	19	14	650	550	6.6	4.3	21	15	--	--	2.9	.3	24	21
23	720	610	7.0	.7	19	16	690	360	6.2	3.7	19	14	--	--	2.1	.2	27	21
24	690	500	6.7	.7	18	13	360	250	7.1	5.8	16	13	--	--	3.6	.1	27	22
25	640	550	6.3	4.5	14	11	440	270	7.1	6.6	17	14	--	--	1.6	.1	26	21
26	660	560	6.6	4.8	14	10	510	410	6.8	6.1	17	14	--	--	1.0	.2	27	22
27	690	570	6.5	4.1	16	11	510	190	7.1	5.9	18	16	--	--	1.1	.3	25	22
28	620	560	5.5	4.0	16	11	350	240	7.2	6.4	18	14	--	--	2.2	.9	23	20
29	650	590	5.9	3.4	17	13	400	250	7.4	6.4	16	14	--	--	--	--	--	--
30	700	630	6.1	2.1	17	13	450	370	7.7	6.6	16	13	--	--	--	--	--	--
31	--	--	--	--	--	--	500	400	7.7	7.0	17	13	--	--	--	--	--	--

SCIOTO RIVER BASIN

03229600 SCIOTO RIVER BELOW SHADEVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JULY						AUGUST						SEPTEMBER					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	840	530	2.2	.3	27	23	860	780	--	--	24	21
2	--	--	--	--	--	--	660	480	1.6	.4	28	22	800	590	--	--	23	18
3	--	--	--	--	--	--	700	800	1.2	.6	27	24	790	660	--	--	24	19
4	--	--	--	--	--	--	690	620	1.4	.3	27	23	760	660	--	--	21	17
5	--	--	--	--	--	--	640	470	.9	.0	27	21	840	740	--	--	21	18
6	--	--	--	--	--	--	670	550	.5	.0	27	22	830	690	--	--	25	18
7	--	--	--	--	--	--	700	560	.6	.0	27	21	760	670	--	--	24	18
8	--	--	--	--	--	--	700	590	.7	.0	26	23	810	690	--	--	23	19
9	810	720	5.3	4.1	26	22	690	530	1.2	.0	27	22	880	750	3.4	1.6	24	20
10	750	640	4.4	2.6	27	21	560	470	1.0	.0	27	22	880	750	1.8	.0	24	19
11	770	690	7.8	2.7	27	22	600	490	2.0	.5	25	21	890	790	.6	.0	23	18
12	790	710	5.8	3.3	28	24	620	540	--	--	25	21	850	770	2.0	.0	23	19
13	830	730	4.2	1.9	28	23	670	560	--	--	27	22	890	780	1.3	.0	23	19
14	840	760	3.1	1.4	27	23	670	580	--	--	26	22	910	820	1.5	.0	24	19
15	810	740	3.8	1.7	27	24	720	560	--	--	27	21	970	820	1.3	.0	26	19
16	780	670	3.4	1.2	27	23	750	630	--	--	26	22	930	830	--	--	28	18
17	790	630	4.1	.8	27	24	710	610	--	--	27	22	890	780	--	--	25	18
18	730	620	6.0	.8	29	22	730	620	--	--	28	23	950	820	--	--	26	19
19	720	520	4.3	.6	27	22	770	550	--	--	28	21	940	790	--	--	22	18
20	590	550	6.1	2.2	28	23	740	640	--	--	32	26	790	670	--	--	23	19
21	700	570	4.8	2.5	29	23	770	630	--	--	29	25	800	710	--	--	23	18
22	690	590	4.6	1.6	28	22	790	670	--	--	29	24	870	720	--	--	23	19
23	680	550	3.0	1.0	27	22	820	610	--	--	31	20	820	680	--	--	27	17
24	640	520	3.8	1.1	28	24	690	570	--	--	27	21	780	630	--	--	27	21
25	690	540	2.5	.1	29	24	700	600	--	--	26	21	810	640	--	--	24	18
26	620	450	1.5	.0	29	24	770	690	--	--	28	23	910	800	--	--	26	19
27	530	440	1.3	.2	27	23	770	710	--	--	24	20	930	840	--	--	24	19
28	520	420	1.3	.5	27	24	860	760	--	--	23	18	980	870	--	--	22	18
29	610	480	1.6	.5	27	24	870	720	--	--	23	17	990	880	--	--	23	17
30	640	570	2.9	1.0	27	24	880	790	--	--	24	19	950	850	--	--	26	19
31	680	560	1.7	.2	27	21	850	770	--	--	24	19	--	--	--	--	--	--

03231000 DEER CREEK AT WILLIAMSPORT, OHIO

LOCATION.--Lat 39°35'09", long 83°07'22", Pickaway County, at gaging station at bridge on U.S. Highway 22 at west edge of Williamsport, 2 miles downstream from Dry Run.

DRAINAGE AREA.--333 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968.

Water temperatures: October 1965 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 734 micromhos Jan. 4; minimum daily, 239 micromhos May 24.

Water temperatures: Maximum, 31.0°C Aug. 6, 21-23; minimum, 1.0°C Jan. 2, 4.

Period of record:

Specific conductance: Maximum daily, 871 micromhos Jan. 27, 1966; minimum daily, 239 micromhos May 24, 1968.

Water temperatures: Maximum, 31.0°C June 25, 1967, Aug. 6, 21-23, 1968; 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, (3) median daily specific conductance for each month, and (4) special sample each month to further define the quality of water.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	IRON (FE)	MAN-GANESE (MN)	BICAR-BONATE (HCO3)	CAP-BONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
OCT.										
05...	1600	21	--	--	280	0	92	22	.6	3.5
10...	1115	18	.06	.07	--	--	--	--	--	--
14...	1700	17	--	--	398	0	86	18	.6	2.4
17...	1700	16	--	--	194	0	51	12	.4	3.8
NOV.										
14...	0950	--	.05	.02	--	--	--	--	--	--
14...	1730	--	--	--	312	0	72	16	.3	3.4
16...	1700	--	--	--	196	0	71	16	.2	3.4
25...	1700	--	--	--	316	0	76	18	.2	5.5
DEC.										
13...	1700	358	--	--	276	0	64	18	.4	24
17...	1700	214	--	--	180	0	73	18	.4	22
19...	1100	143	.08	.04	--	--	--	--	--	--
29...	--	158	--	--	328	0	74	18	.5	22
JAN.										
04...	1700	138	--	--	328	0	75	18	.5	8.2
22...	0845	134	.08	.05	--	--	--	--	--	--
28...	1700	531	--	--	236	0	56	16	.5	6.8
30...	0830	1320	--	--	168	0	36	14	.4	20
FEB.										
02...	1700	1240	--	--	190	12	53	17	.4	24
13...	0900	232	.09	.03	--	--	--	--	--	--
25...	1700	94	--	--	328	0	82	18	.5	7.2
28...	1700	75	--	--	300	0	72	18	.5	8.6

SCIOTO RIVER BASIN

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03231000 DEER CREEK AT WILLIAMSPORT, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)
MAR.										
14...	1700	.42	--	--	152	4	72	16	.4	12
19...	0950	129	.08	.04	--	--	--	--	--	--
20...	1700	129	--	--	302	0	75	27	.5	12
APR.										
01...	1700	204	--	--	158	4	62	15	.4	21
10...	1700	41	--	--	290	2	76	17	.4	11
14...	0945	41	.02	1.9	--	--	--	--	--	--
26...	1700	34	--	--	302	0	82	17	.4	7.6
MAY										
15...	1700	63	--	--	230	0	69	17	.5	12
19...	1700	498	--	--	244	0	62	18	.4	6.0
21...	1030	268	.10	.06	--	--	--	--	--	--
24...	1700	2000	--	--	96	0	20	5.0	.4	10
JUNE										
01...	1700	1200	--	--	144	0	30	6.0	.3	15
04...	0845	1240	.28	.07	--	--	--	--	--	--
15...	1700	1200	--	--	176	0	33	10	.3	8.2
29...	1700	117	--	--	235	0	42	12	.1	5.6
JULY										
10...	1300	40	.06	.10	--	--	--	--	--	--
11...	1700	53	--	--	212	4	44	10	.2	4.4
22...	1700	35	--	--	232	0	45	12	.4	2.0
30...	1700	19	--	--	230	0	59	12	.4	2.2
AUG.										
04...	--	125	--	--	250	0	39	12	.2	2.8
12...	--	191	--	--	266	4	40	13	.3	1.4
26...	1115	28	.14	.09	--	--	--	--	--	--
31...	--	13	--	--	264	0	68	14	.3	1.6
SEPT.										
02...	--	14	--	--	270	0	64	14	.4	2.5
23...	--	3.3	--	--	256	8	146	14	.4	1.8
25...	0935	15	.10	.09	--	--	--	--	--	--
29...	--	11	--	--	213	6	70	14	.4	1.1

DATE	TOTAL PHOS- PHORUS (PU4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.									
03...	.44	404	322	92	656	7.3	21	--	--
10...	--	--	--	--	--	--	--	7.8	71
14...	.26	420	338	85	673	7.5	17	--	--
17...	.72	270	210	51	445	7.0	18	--	--
NOV.									
14...	--	--	--	--	--	--	--	10.0	83
14...	.50	414	338	82	646	7.6	--	--	--
16...	.41	312	240	79	485	7.9	4	--	--
25...	.63	414	346	87	664	7.5	7	--	--
DEC.									
13...	.88	362	322	96	606	8.1	9	--	--
17...	.86	274	246	98	503	7.8	7	--	--
19...	--	--	--	--	--	--	--	11.0	92
29...	.85	396	376	107	703	7.6	2	--	--
JAN.									
04...	.06	374	360	91	734	7.9	1	--	--
22...	--	--	--	--	--	--	--	13.0	93
28...	.42	284	266	72	529	8.2	3	--	--
30...	.45	236	190	52	417	7.2	4	--	--
FEB.									
02...	.34	352	270	94	511	8.6	7	--	--
13...	--	--	--	--	--	--	--	7.2	49
25...	.10	462	378	109	706	8.1	2	--	--
28...	.04	424	305	59	667	8.1	3	--	--
MAR.									
14...	.00	278	230	90	455	8.4	5	--	--
19...	--	--	--	--	--	--	--	11.0	92
20...	.12	412	358	110	675	8.0	13	--	--
APR.									
01...	.14	284	225	89	489	8.5	14	--	--
10...	.19	388	340	98	640	8.3	13	--	--
16...	--	--	--	--	--	--	--	10.0	92
26...	.12	394	360	112	656	8.1	16	--	--
MAY									
15...	.12	366	340	110	641	7.7	23	--	--
19...	.22	324	302	102	583	7.9	17	--	--
21...	--	--	--	--	--	--	16	8.4	84
24...	.34	110	117	38	239	7.3	17	--	--
JUNE									
01...	.29	226	168	50	342	7.2	17	--	--
04...	--	--	--	--	--	--	16	8.6	96
15...	.50	264	198	54	393	7.1	24	--	--
29...	.38	292	250	58	484	7.5	25	--	--
JULY									
10...	--	--	--	--	--	--	--	7.4	90
11...	.11	284	236	56	456	8.3	27	--	--
22...	.09	294	264	58	508	8.5	28	--	--
30...	.15	336	266	36	552	8.1	26	--	--
AUG.									
04...	.03	282	254	48	481	7.8	27	--	--
12...	.18	310	272	47	508	8.3	24	--	--
26...	--	--	--	--	--	--	23	6.4	74
31...	.15	338	292	75	553	8.0	24	--	--
SEPT.									
02...	.17	332	296	74	553	8.0	24	--	--
23...	.11	448	380	156	699	8.4	25	--	--
25...	--	--	--	--	--	--	22	6.4	73
29...	.06	318	272	87	519	8.5	20	--	--

SCIOTO RIVER BASIN

03231000 DEER CREEK AT WILLIAMSPORT, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	588	660	590	--	514	674	489	637	342	478	509	546
2.....	631	644	653	617	511	500	551	568	356	507	496	553
3.....	656	--	573	506	534	578	641	567	349	531	499	552
4.....	660	--	611	734	567	657	621	635	352	518	481	534
5.....	631	604	648	--	--	538	622	618	356	509	498	542
6.....	635	--	650	--	532	527	641	617	356	503	500	525
7.....	628	646	511	--	577	648	619	636	349	503	493	535
8.....	661	--	687	--	592	646	650	617	356	506	496	549
9.....	660	597	553	--	550	641	547	625	373	507	501	533
10.....	660	645	690	--	--	636	640	619	374	501	505	535
11.....	659	647	645	--	688	642	645	600	382	456	509	537
12.....	669	644	592	--	--	513	641	566	384	471	508	571
13.....	496	496	606	--	--	624	646	616	389	501	508	552
14.....	673	646	607	--	--	655	643	631	384	497	515	567
15.....	643	647	657	--	667	619	595	641	393	481	503	563
16.....	655	489	672	--	686	648	619	586	394	498	506	556
17.....	445	642	503	--	--	652	642	581	396	492	498	567
18.....	667	495	562	--	--	562	640	580	396	514	503	542
19.....	652	528	686	--	--	644	624	583	405	517	505	574
20.....	651	662	507	--	--	675	631	588	405	517	511	574
21.....	499	662	684	--	--	464	569	586	419	514	514	592
22.....	543	628	--	--	672	474	628	578	420	508	510	574
23.....	502	660	571	--	697	513	632	417	426	468	508	699
24.....	657	630	630	--	702	548	653	239	432	523	534	582
25.....	546	664	632	--	709	522	638	434	438	526	--	543
26.....	563	654	669	--	701	533	656	521	442	535	508	604
27.....	657	653	558	623	692	542	649	325	447	532	518	594
28.....	658	648	690	529	667	556	642	389	460	526	522	577
29.....	590	647	703	--	680	593	643	494	484	543	528	519
30.....	672	647	529	417	--	614	641	562	482	552	534	560
31.....	--	--	702	446	--	614	--	563	--	525	553	--
AVERAGE	622	622	619	--	--	582	623	554	398	508	509	561

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 1700 AND 1800)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	14.0	2.0	---	10.0	3.0	14.0	21.0	17.0	27.0	26.0	22.0
2	21.0	14.0	4.0	1.0	7.0	3.0	13.0	21.0	20.0	27.0	27.0	24.0
3	21.0	---	4.0	4.0	6.0	2.0	12.0	22.0	19.0	24.0	26.0	26.0
4	21.0	---	4.0	1.0	6.0	3.0	13.0	21.0	21.0	24.0	27.0	27.0
5	21.0	7.0	7.0	---	---	5.0	10.0	16.0	22.0	25.0	27.0	20.0
6	19.0	---	7.0	---	6.0	6.0	13.0	18.0	21.0	26.0	31.0	24.0
7	17.0	7.0	8.0	---	7.0	6.0	13.0	19.0	21.0	26.0	27.0	26.0
8	16.0	---	9.0	---	6.0	9.0	15.0	19.0	22.0	28.0	27.0	25.0
9	16.0	7.0	7.0	---	3.0	11.0	16.0	18.0	21.0	28.0	27.0	22.0
10	16.0	8.0	8.0	---	---	9.0	13.0	19.0	21.0	27.0	24.0	22.0
11	13.0	9.0	9.0	---	2.0	11.0	16.0	17.0	23.0	27.0	24.0	19.0
12	14.0	12.0	8.0	---	---	6.0	17.0	16.0	20.0	27.0	24.0	21.0
13	17.0	9.0	9.0	---	---	4.0	18.0	13.0	18.0	26.0	24.0	22.0
14	17.0	7.0	7.0	---	---	5.0	19.0	21.0	20.0	27.0	27.0	27.0
15	18.0	6.0	5.0	---	2.0	7.0	16.0	23.0	24.0	25.0	27.0	24.0
16	18.0	4.0	4.0	---	3.0	8.0	17.0	21.0	19.0	27.0	27.0	23.0
17	18.0	7.0	7.0	---	---	9.0	15.0	19.0	20.0	29.0	28.0	21.0
18	13.0	7.0	8.0	---	---	14.0	19.0	19.0	21.0	26.0	27.0	19.0
19	13.0	7.0	8.0	---	---	11.0	19.0	17.0	21.0	29.0	29.0	20.0
20	13.0	6.0	8.0	---	---	13.0	20.0	17.0	22.0	29.0	29.0	24.0
21	13.0	6.0	---	---	---	9.0	21.0	18.0	23.0	29.0	31.0	24.0
22	13.0	7.0	---	---	2.0	5.0	22.0	19.0	23.0	28.0	31.0	26.0
23	13.0	7.0	4.0	---	3.0	4.0	20.0	19.0	24.0	29.0	31.0	25.0
24	16.0	6.0	4.0	---	3.0	7.0	16.0	17.0	24.0	29.0	30.0	26.0
25	12.0	7.0	4.0	---	2.0	8.0	13.0	19.0	24.0	27.0	---	22.0
26	13.0	7.0	2.0	---	2.0	11.0	16.0	17.0	24.0	28.0	24.0	22.0
27	10.0	6.0	2.0	4.0	2.0	10.0	18.0	17.0	22.0	26.0	22.0	22.0
28	10.0	4.0	2.0	3.0	3.0	17.0	18.0	17.0	23.0	27.0	24.0	20.0
29	10.0	4.0	2.0	---	2.0	16.0	19.0	17.0	25.0	27.0	24.0	20.0
30	11.0	3.0	3.0	4.0	---	17.0	19.0	17.0	27.0	26.0	24.0	20.0
31	---	---	2.0	8.0	---	16.0	---	19.0	---	26.0	24.0	---
AVERAGE	15.5	7.0	5.5	---	---	8.5	16.5	18.5	21.5	27.0	26.5	23.0

SCIOTO RIVER BASIN

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03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO

LOCATION.--Lat 39°20'31", long 82°58'27", Ross County, at center of Bridge Street bridge on U.S. Highway 23 at north end of Chillicothe, 450 ft upstream from gaging station.

DRAINAGE AREA.--3,849 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1951, May 1965 to September 1968.
Water temperatures: October 1950 to September 1951, October 1953 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C Aug. 22-25; minimum, freezing point on several days during December to February.

Period of record:

Specific conductance (1950-51, 1965-66): Maximum daily, 1,040 micromhos Feb. 9, 1966; minimum daily, 245 micromhos Dec. 9, 1950.

Dissolved oxygen (1965-67): Maximum daily, 15.0 mg/l or greater on several days during June 1966, June and July 1967; minimum daily, 0.0 mg/l Apr. 27, Aug. 12, Sept. 22, 1966.

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

REMARKS.--In addition to the continuous recorder, twice-weekly samples were also collected by a local observer. Partial analyses were made on the maximum specific conductance and the minimum specific conductance of the samples collected each month. Temperature observations, Mar. 18 to Apr. 23, May 1-9, June 4-27, July 16-31, Aug. 1-21, were taken from the thermograph. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or greater, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CF5)	RICAR- DONATE (HCO3)	CAR- DONATE (CO3)	SULFATE (SO4)	CHLOR- IDE (CL)	FILIN- IDE (F)
OCT.							
30...	0850	418	236	6	135	46	1.0
NOV.							
03...	0835	1570	246	0	131	46	1.3
06...	0850	1110	228	0	101	34	.9
DEC.							
04...	0820	2380	228	0	110	50	1.0
11...	1300	5580	158	0	89	26	.3
JAN.							
19...	1205	877	256	14	124	50	.7
29...	0830	4140	190	12	95	32	.6
FEB.							
05...	1315	18100	130	0	58	16	.3
28...	1230	965	274	0	112	34	.7
MAR.							
07...	0830	877	248	18	116	36	.8
22...	0900	11600	176	0	76	35	.4
APR.							
05...	1300	4440	182	10	84	23	.6
24...	1200	1770	248	0	100	27	.5
MAY							
07...	--	887	262	0	109	34	.8
20...	0830	4540	214	0	88	26	.5
JUNE							
03...	1315	16000	144	0	52	13	.3
25...	0900	3350	224	0	61	18	.4
JULY							
03...	0830	1770	256	0	98	23	.3
11...	0830	1080	288	0	102	39	.2
AUG.							
06...	0735	1680	205	12	87	25	.5
30...	0730	590	284	0	102	34	.7
SEPT.							
09...	1030	610	264	0	106	36	.8
23...	1400	500	252	0	132	44	1.1

DATE	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECT- FIC CONN- UTANCE (MICRO- MHO5)	PH
OCT.						
10...	24	492	332	128	816	8.4
NOV.						
03...	18	468	324	122	793	7.0
05...	6.8	356	292	105	640	8.2
DEC.						
04...	9.2	468	324	137	737	7.3
11...	20	370	252	122	531	7.3
JAN.						
19...	11	530	352	115	814	8.6
29...	8.2	412	300	124	611	8.6
FEB.						
05...	22	272	186	80	387	7.6
28...	24	484	348	123	776	7.9
MAR.						
07...	10	486	378	145	781	8.7
22...	6.6	320	255	111	513	7.9
APR.						
05...	21	386	270	104	576	8.6
24...	17	426	312	109	670	8.0
MAY						
07...	10	450	326	111	718	7.5
20...	16	372	280	104	591	7.2
JUNE						
03...	20	242	184	64	426	7.3
25...	13	300	264	80	541	7.4
JULY						
03...	13	420	321	111	652	7.0
11...	6.3	440	334	98	707	7.7
AUG.						
06...	12	378	276	88	600	8.5
30...	9.8	458	324	91	724	7.4
SEPT.						
09...	13	464	314	97	718	7.5
23...	33	532	322	115	828	7.8

SCIOTO RIVER BASIN

03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	October						November						December					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	680	460	7.4	4.4	16	14	810	750	6.3	5.0	11	10	760	730	9.0	8.6	4	3
2	580	560	7.3	5.2	17	14	770	720	6.4	4.6	12	11	770	760	9.3	8.2	4	4
3	600	570	7.2	4.7	18	16	--	--	--	--	12	12	760	720	8.3	7.9	5	4
4	610	590	7.8	4.6	19	17	--	--	--	--	12	11	800	720	8.1	6.7	5	4
5	640	610	7.6	4.5	19	18	--	--	--	--	11	9	730	690	9.8	5.9	4	3
6	660	620	6.0	4.3	18	17	650	640	7.4	7.2	9	7	720	700	11.0	9.8	4	3
7	700	660	6.6	4.2	17	16	700	640	8.2	7.4	7	6	770	720	11.1	10.7	4	4
8	730	700	7.1	4.7	18	16	720	700	8.1	7.4	6	6	750	570	11.2	10.8	5	4
9	760	720	5.5	4.2	17	16	760	710	8.1	7.3	7	5	600	560	11.4	11.0	5	5
10	810	760	5.7	4.1	16	15	770	750	7.9	7.1	8	7	610	530	11.3	10.9	5	5
11	830	800	5.9	4.4	15	14	750	740	7.1	6.6	8	8	540	530	11.0	9.7	6	5
12	860	830	6.1	4.6	16	14	750	740	7.5	6.1	10	8	540	520	10.2	9.5	7	6
13	840	810	7.8	4.9	15	13	770	740	6.1	5.7	10	9	530	520	10.2	9.7	8	7
14	--	--	--	--	16	14	810	770	6.8	5.7	9	8	540	520	10.6	10.2	8	7
15	--	--	--	--	16	14	800	740	7.4	6.1	8	7	560	540	10.6	10.3	7	6
16	740	730	8.0	4.9	16	14	740	710	8.6	7.1	7	6	580	560	10.7	10.5	6	5
17	760	690	7.1	4.6	15	15	730	720	8.4	7.2	6	6	590	580	10.6	10.5	6	4
18	780	760	7.8	4.6	15	13	770	730	7.7	6.7	7	6	610	590	10.6	9.9	6	5
19	790	760	7.9	5.3	14	12	800	770	7.5	6.5	7	6	600	590	10.1	9.5	7	6
20	810	790	8.8	5.4	13	11	770	720	7.2	6.3	7	7	600	590	9.9	9.3	7	7
21	810	800	9.0	5.7	15	11	760	720	8.2	7.1	7	6	620	600	10.0	9.9	8	7
22	800	790	9.0	5.8	13	11	720	700	8.0	7.4	7	6	600	500	9.9	9.4	9	8
23	810	790	9.3	5.9	12	11	730	700	8.1	7.3	7	7	540	510	10.8	9.6	9	7
24	830	810	9.3	5.7	13	11	750	730	8.1	7.2	7	6	530	520	12.1	10.8	7	5
25	820	790	8.6	5.5	13	12	750	740	8.9	7.7	7	6	560	530	12.2	11.9	5	4
26	790	770	8.5	5.3	12	11	750	730	8.9	7.4	7	6	570	560	12.1	11.8	5	5
27	810	780	7.4	5.2	11	10	740	720	9.3	7.6	8	6	570	550	12.1	11.8	5	3
28	820	810	8.0	5.5	11	9	750	730	8.9	7.1	6	5	560	550	12.0	11.7	3	2
29	810	800	8.7	5.8	11	9	740	730	9.4	7.7	5	4	580	560	11.9	11.6	2	1
30	810	800	8.6	6.0	11	9	740	730	9.5	8.3	5	3	600	560	11.9	11.5	1	1
31	820	800	6.6	5.3	10	10	--	--	--	--	--	--	620	600	11.7	11.5	1	0
DAY	January						February						March					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	620	550	11.6	11.4	1	1	460	410	11.1	10.9	2	1	750	730	10.1	7.8	5	3
2	620	550	11.7	11.3	1	0	410	370	10.9	10.4	4	2	760	750	10.6	9.9	4	3
3	640	520	11.4	7.8	0	0	380	370	12.6	10.3	3	3	760	750	9.9	5.8	5	3
4	650	590	11.1	4.4	1	0	380	370	12.2	10.6	3	2	760	750	10.7	8.9	5	3
5	670	610	9.8	7.2	1	0	390	380	12.7	10.4	3	2	770	750	--	--	5	4
6	690	650	9.8	9.6	0	0	420	390	11.8	9.0	3	2	770	770	11.0	6.9	7	5
7	690	670	9.8	9.7	1	0	480	420	10.0	9.8	3	2	780	770	--	--	7	5
8	720	660	9.7	8.7	1	0	530	480	9.9	9.4	3	2	770	760	--	--	7	6
9	740	680	9.7	5.3	0	0	550	530	10.0	9.5	3	3	780	770	--	--	9	7
10	730	660	8.4	8.0	0	0	570	550	10.8	9.6	3	2	780	780	--	--	10	9
11	710	660	9.0	8.4	0	0	610	570	11.0	10.0	2	0	780	780	--	--	11	9
12	730	640	9.0	8.3	0	0	630	580	11.1	10.8	1	0	790	770	--	--	11	9
13	780	700	8.3	7.7	0	0	640	460	11.1	10.6	1	0	770	740	--	--	9	7
14	780	710	8.7	7.5	2	0	650	610	11.1	10.8	2	0	760	740	--	--	9	6
15	760	750	8.4	8.1	3	2	660	650	11.0	9.4	2	1	770	740	--	--	7	6
16	760	750	8.2	7.9	3	2	660	660	10.5	8.7	2	1	780	770	--	--	7	6
17	760	750	8.4	7.9	2	2	670	660	10.1	9.3	3	1	770	720	--	--	8	6
18	770	760	8.1	7.2	3	2	670	660	9.9	9.3	2	2	--	--	--	--	9	8
19	820	770	8.2	7.0	3	2	680	670	10.1	9.5	2	1	--	--	--	--	9	8
20	830	820	8.5	7.6	3	2	670	670	10.2	9.6	3	2	--	--	--	--	9	9
21	820	790	8.5	8.2	4	3	680	670	10.1	9.1	2	1	--	--	--	--	9	9
22	790	760	8.5	8.2	4	3	690	680	10.2	9.0	2	1	--	--	--	--	9	6
23	760	700	9.2	8.3	4	3	700	690	9.5	8.9	2	1	--	--	--	--	6	4
24	710	700	10.2	8.9	3	2	720	700	9.7	9.3	3	1	--	--	--	--	5	5
25	750	700	10.3	9.7	2	1	730	720	9.4	8.8	3	2	--	--	--	--	6	5
26	770	750	10.8	10.1	1	1	730	720	9.6	8.7	3	2	--	--	--	--	7	6
27	760	720	11.3	10.5	1	1	730	720	10.0	8.9	4	3	--	--	--	--	8	7
28	720	690	10.9	10.3	2	1	750	730	10.3	9.5	4	4	--	--	--	--	8	8
29	690	570	10.6	9.8	2	2	730	720	10.2	8.6	4	4	--	--	--	--	9	8
30	570	420	10.6	9.6	3	1	--	--	--	--	--	--	--	--	--	--	11	9
31	460	420	10.9	10.4	2	1	--	--	--	--	--	--	--	--	--	--	11	11

03231500 SCIOTO RIVER AT CHILLICOTHE, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	April						May						June					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	12	11	--	--	--	--	17	15	480	430	6.8	6.2	19	18
2	--	--	--	--	12	11	--	--	--	--	17	16	490	460	6.7	6.2	19	18
3	--	--	--	--	11	11	--	--	--	--	18	17	460	420	6.5	6.1	19	18
4	--	--	--	--	11	11	--	--	--	--	18	17	--	--	--	--	18	18
5	--	--	--	--	11	11	--	--	--	--	18	16	--	--	--	--	19	18
6	--	--	--	--	11	11	--	--	--	--	17	15	--	--	--	--	19	19
7	--	--	--	--	11	11	--	--	--	--	17	15	--	--	--	--	20	19
8	--	--	--	--	12	11	--	--	--	--	17	16	--	--	--	--	21	20
9	--	--	--	--	13	12	--	--	--	--	17	16	--	--	--	--	22	21
10	--	--	--	--	13	12	740	720	8.6	5.9	19	17	--	--	--	--	22	22
11	--	--	--	--	13	12	740	660	5.9	3.3	19	18	--	--	--	--	22	21
12	--	--	--	--	14	12	720	600	4.7	1.8	19	18	--	--	--	--	22	22
13	--	--	--	--	16	13	580	520	5.8	3.1	18	17	--	--	--	--	22	20
14	--	--	--	--	17	16	540	520	6.8	6.1	17	16	--	--	--	--	20	19
15	--	--	--	--	17	16	620	540	6.7	6.2	20	16	--	--	--	--	21	19
16	--	--	--	--	16	14	630	620	6.0	5.8	22	20	--	--	--	--	21	20
17	--	--	--	--	16	15	640	610	6.0	4.9	22	21	--	--	--	--	20	19
18	--	--	--	--	17	14	610	560	6.2	5.3	22	20	--	--	--	--	21	20
19	--	--	--	--	17	16	600	570	6.5	6.1	20	19	--	--	--	--	21	21
20	--	--	--	--	18	16	620	590	7.2	6.4	19	16	--	--	--	--	22	21
21	--	--	--	--	18	17	640	610	7.4	6.5	19	18	--	--	--	--	22	21
22	--	--	--	--	19	17	660	640	7.4	6.8	19	18	--	--	--	--	22	21
23	--	--	--	--	19	18	670	420	7.6	6.5	19	16	--	--	--	--	23	22
24	700	660	7.2	5.0	18	16	430	180	8.0	6.3	18	16	--	--	--	--	23	22
25	700	650	6.0	4.0	16	14	380	250	7.6	7.3	18	17	--	--	--	--	23	23
26	650	630	8.2	5.9	14	13	420	380	7.4	7.3	18	18	--	--	--	--	24	23
27	650	630	8.4	6.0	15	13	420	330	7.5	7.1	19	18	--	--	--	--	24	22
28	680	650	8.0	5.5	16	14	360	320	7.2	6.9	19	18	640	610	5.0	4.0	23	22
29	670	650	8.6	5.3	16	14	350	330	7.2	7.0	18	17	680	630	4.7	3.7	23	22
30	680	670	7.9	4.7	17	15	390	340	7.4	7.1	18	17	660	640	4.6	3.0	25	23
31	--	--	--	--	--	--	430	390	7.1	6.5	18	17	--	--	--	--	--	--
DAY	July						August						September					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	680	660	4.6	3.1	26	24	--	--	--	--	23	23	710	700	--	--	23	22
2	680	660	5.2	3.4	27	26	--	--	--	--	24	23	730	710	--	--	23	22
3	680	650	6.6	2.8	26	24	--	--	--	--	24	23	740	720	--	--	23	22
4	680	670	9.2	4.0	25	23	--	--	--	--	24	23	750	740	--	--	23	23
5	700	680	8.2	4.3	24	23	--	--	--	--	24	24	760	750	--	--	23	22
6	700	660	12.7	4.6	25	23	--	--	--	--	26	24	760	730	--	--	23	22
7	690	650	11.0	6.5	25	23	--	--	--	--	27	26	760	720	--	--	23	22
8	680	650	10.7	7.5	25	24	--	--	--	--	27	26	720	700	--	--	24	22
9	700	660	8.3	5.1	26	24	--	--	--	--	27	24	710	690	--	--	23	22
10	720	690	5.6	3.5	25	25	--	--	--	--	25	24	740	700	--	--	23	22
11	730	710	4.0	3.0	26	25	--	--	--	--	24	23	730	700	--	--	22	20
12	740	730	5.8	2.5	27	26	--	--	--	--	23	22	700	690	--	--	23	20
13	730	650	5.5	3.7	26	25	--	--	--	--	23	22	730	700	--	--	23	21
14	700	670	6.9	3.6	27	26	--	--	--	--	23	22	760	730	--	--	22	21
15	700	700	5.8	3.8	26	25	--	--	--	--	23	22	760	740	--	--	23	21
16	--	--	--	--	25	24	--	--	--	--	24	23	760	750	--	--	23	22
17	--	--	--	--	26	24	--	--	--	--	26	24	760	750	--	--	22	21
18	--	--	--	--	27	26	--	--	--	--	26	24	760	730	--	--	21	21
19	--	--	--	--	27	27	--	--	--	--	26	24	750	730	--	--	21	20
20	--	--	--	--	27	26	--	--	--	--	27	26	790	740	--	--	22	20
21	--	--	--	--	27	26	--	--	--	--	28	27	780	760	--	--	23	22
22	--	--	--	--	26	25	710	700	--	--	29	27	790	760	--	--	25	23
23	--	--	--	--	26	24	720	680	--	--	29	28	840	760	7.7	5.3	25	23
24	--	--	--	--	26	25	700	680	--	--	29	28	830	780	9.0	3.8	26	24
25	--	--	--	--	26	25	680	640	--	--	29	27	790	760	5.0	3.2	25	24
26	--	--	--	--	26	24	690	670	--	--	27	25	770	760	5.5	3.1	24	23
27	--	--	--	--	26	25	700	690	--	--	25	23	790	770	5.2	3.0	23	22
28	--	--	--	--	26	25	700	690	--	--	24	22	780	760	6.6	3.8	23	22
29	--	--	--	--	25	24	700	690	--	--	23	22	760	750	5.6	3.5	23	21
30	--	--	--	--	24	23	700	690	--	--	23	22	760	750	5.5	3.6	22	21
31	--	--	--	--	24	23	710	700	--	--	23	22	--	--	--	--	--	--

SCIOTO RIVER BASIN

03234000 PAINT CREEK NEAR BOURNEVILLE, OHIO

LOCATION.--Lat 39°15'49", long 83°10'01", Ross County, at gaging station at highway bridge, 1.2 miles southwest of Bourneville and 1.2 miles upstream from Upper Twin Creek.

DRAINAGE AREA.--807 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968.

Water temperatures: October 1956 to September 1962, October 1965 to September 1968.

Sediment records: October 1956 to September 1962.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 730 micromhos Jan. 11, 12; minimum daily, 239 micromhos May 27.

Water temperatures: Maximum, 25.0°C Sept. 3, 6, 8; minimum, 1.0°C on many days during December and March.

Period of record:

Specific conductance (1965-68): Maximum daily, 730 micromhos Jan. 11, 12, 1968; minimum daily, 239 micromhos May 27, 1968.

Water temperatures: Maximum, 27.0°C June 30, July 1, 1959; 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 analyses 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. Flow slightly regulated by Rocky Fork Lake since 1952.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)
OCT.										
10...	1340	41	.07	.07	--	--	--	--	--	--
14...	0700	40	--	--	284	0	42	18	.2	3.2
20...	0700	562	--	--	212	0	27	12	.3	4.3
25...	0700	544	--	--	198	0	27	10	.3	2.4
NOV.										
01...	0800	490	--	--	202	0	30	10	.1	1.5
12...	0800	101	--	--	298	0	61	24	.1	2.9
14...	1150	115	.06	.05	--	--	--	--	--	--
16...	0800	89	--	--	274	0	57	18	.4	2.5
DEC.										
12...	0800	1560	--	--	182	0	44	11	.2	8.6
19...	1300	781	.06	.04	--	--	--	--	--	--
20...	0800	648	--	--	248	0	55	15	.2	8.2
29...	0800	510	--	--	296	0	61	17	.2	12
JAN.										
11...	0800	254	--	--	356	0	52	19	.3	12
15...	0800	198	--	--	262	0	65	20	.3	10
22...	1115	731	.09	.04	--	--	--	--	--	--
31...	0800	3910	--	--	156	0	39	14	.2	20
FEB.										
01...	0800	3380	--	--	160	4	45	18	.2	18
13...	1100	1070	.03	.06	--	--	--	--	--	--
15...	0800	338	--	--	350	0	64	19	.2	9.9
28...	0800	170	--	--	206	4	62	18	.2	9.8
MAR.										
02...	0800	154	--	--	310	0	59	18	.3	7.0
14...	0800	1100	--	--	220	0	51	22	.3	8.2
19...	1145	930	.12	.06	--	--	--	--	--	--
22...	0800	6760	--	--	143	0	36	10	.3	18
APR.										
11...	0800	608	--	--	256	0	53	14	.3	12
18...	1250	535	.17	.07	--	--	--	--	--	--
22...	0800	431	--	--	268	0	54	15	.3	6.6
25...	0800	946	--	--	178	0	40	9.0	.2	7.6
MAY										
03...	0800	294	--	--	240	0	55	16	.3	13
19...	0800	1350	--	--	246	0	49	14	.4	22
21...	1315	866	.15	.12	--	--	--	--	--	--
27...	0800	20800	--	--	122	0	17	4.0	.4	10
JUNE										
02...	0800	3860	--	--	212	0	38	9.0	.2	19
04...	1055	2550	.14	.12	--	--	--	--	--	--
14...	0800	474	--	--	291	0	46	13	.2	16
30...	0800	212	--	--	309	0	46	14	.2	10
JULY										
10...	1510	114	.09	.15	--	--	--	--	--	--
14...	0800	257	--	--	278	12	50	18	.3	6.8
19...	0800	198	--	--	224	8	42	14	.3	8.4
27...	0800	173	--	--	248	8	44	16	.3	7.6
AUG.										
11...	0800	792	--	--	184	4	34	10	.3	5.1
15...	0800	217	--	--	253	4	42	16	.3	8.7
26...	1335	84	.17	.08	--	--	--	--	--	--
29...	0800	69	--	--	260	4	43	15	.2	5.1
SEPT.										
09...	0800	58	--	--	192	4	44	15	.2	3.8
24...	0800	43	--	--	334	0	43	14	.2	4.8
25...	1115	39	.06	.14	--	--	--	--	--	--
29...	0800	28	--	--	289	0	43	16	.2	3.4

03234000 PAINT CREEK NEAR BOURNEVILLE, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TOTAL PHOS- PHORUS (PO4)	DISS- SOLVED SOLIDS (FESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.									
10...	--	--	--	--	--	--	--	8.4	84
14...	.52	324	280	47	617	7.7	13	--	--
20...	.98	238	208	34	435	7.3	10	--	--
25...	.57	230	190	28	386	7.5	13	--	--
NOV.									
01...	1.0	240	200	34	406	7.4	13	--	--
12...	1.9	392	304	68	631	7.8	13	--	--
14...	--	--	--	--	--	--	--	10.0	83
16...	1.3	354	290	65	582	7.4	6	--	--
DEC.									
12...	.76	238	208	59	422	7.0	8	--	--
19...	--	--	--	--	--	--	--	11.0	92
20...	.32	306	277	74	531	8.2	6	--	--
29...	.77	350	332	89	630	7.7	1	--	--
JAN.									
11...	.50	418	374	82	770	8.0	1	--	--
15...	.12	334	295	80	616	8.1	1	--	--
22...	--	--	--	--	--	--	--	14.0	100
31...	.64	236	188	60	417	7.5	4	--	--
FEB.									
01...	.54	288	226	38	445	8.3	4	--	--
13...	--	--	--	--	--	--	--	10.0	68
15...	.56	426	372	85	678	8.1	1	--	--
28...	.14	382	265	89	622	8.4	1	--	--
MAR.									
02...	.38	398	342	88	678	8.2	1	--	--
18...	.22	324	254	74	518	7.6	7	--	--
19...	--	--	--	--	--	--	--	12.0	103
22...	.39	240	181	64	350	7.3	4	--	--
APR.									
11...	.26	334	294	84	591	7.8	10	--	--
18...	--	--	--	--	--	--	--	9.6	91
22...	.34	358	287	67	558	7.5	16	--	--
25...	.43	240	194	48	392	7.9	13	--	--
MAY									
03...	.19	346	270	73	580	8.1	17	--	--
19...	.37	318	276	74	541	7.5	16	--	--
21...	--	--	--	--	--	--	16	9.0	90
27...	.25	138	123	23	239	7.1	17	--	--
JUNE									
02...	.32	288	228	54	446	7.9	17	--	--
04...	--	--	--	--	--	--	19	7.8	83
14...	.32	360	298	59	570	7.5	21	--	--
30...	.44	376	301	48	578	7.8	22	--	--
JULY									
10...	--	--	--	--	--	--	--	8.4	99
14...	.62	348	303	54	590	8.4	24	--	--
18...	.57	326	290	53	491	8.5	23	--	--
27...	.60	328	283	66	514	8.4	23	--	--
AUG.									
11...	.54	224	196	38	396	8.4	23	--	--
15...	.54	300	264	60	512	8.3	22	--	--
26...	--	--	--	--	--	--	23	8.4	96
29...	.18	344	265	45	573	8.4	22	--	--
SEPT.									
09...	.11	228	214	50	501	8.4	24	--	--
24...	.15	352	322	49	605	7.3	22	--	--
25...	--	--	--	--	--	--	21	5.0	56
29...	.13	332	290	52	559	7.6	18	--	--

SCIOTO RIVER BASIN

03234000 PAINT CREEK NEAR BOURNEVILLE, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0900)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	513	406	602	--	445	--	427	575	499	577	512	536
2.....	508	409	602	--	463	638	497	507	446	581	520	538
3.....	508	424	544	686	491	565	538	580	489	579	528	514
4.....	509	436	468	700	518	617	511	534	501	578	492	526
5.....	512	452	483	--	521	619	421	561	531	576	468	520
6.....	518	471	546	--	535	615	537	552	544	582	444	532
7.....	520	520	561	--	567	610	553	571	541	562	473	534
8.....	542	572	552	--	565	604	520	571	563	549	473	532
9.....	545	604	553	--	575	586	587	575	564	543	466	501
10.....	552	619	560	--	574	595	583	552	485	530	465	539
11.....	556	615	--	730	646	557	591	554	464	513	396	544
12.....	562	631	422	730	633	591	588	353	464	515	414	562
13.....	572	620	516	708	671	510	588	514	560	516	438	571
14.....	617	616	523	639	484	--	486	510	570	590	505	587
15.....	589	572	--	616	678	508	504	545	570	543	512	582
16.....	585	582	492	685	672	456	486	538	554	540	520	579
17.....	430	577	510	688	563	452	545	526	567	508	522	568
18.....	398	606	541	692	--	518	561	544	561	491	486	545
19.....	408	620	521	694	--	521	574	541	567	503	491	542
20.....	435	564	531	572	645	539	560	547	568	530	496	563
21.....	395	536	570	569	646	478	562	562	560	532	480	565
22.....	396	538	434	572	--	350	558	569	564	512	515	560
23.....	408	539	528	470	662	405	559	435	572	522	545	598
24.....	392	593	510	475	666	450	508	--	570	543	532	605
25.....	386	590	501	--	--	382	392	--	573	543	--	601
26.....	400	612	501	--	--	441	560	256	564	544	564	555
27.....	434	628	541	544	650	453	529	239	561	534	588	569
28.....	398	630	537	526	622	469	536	282	558	516	572	540
29.....	393	609	630	530	642	490	559	282	557	508	573	559
30.....	389	606	619	514	--	528	570	383	578	525	567	559
31.....	432	--	629	417	--	545	--	371	--	523	566	--
AVERAGE	477	559	535	--	--	518	536	487	542	538	503	554

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0800)

AY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	13.0	3.0	---	4.0	---	14.0	17.0	17.0	23.0	23.0	24.0
2	14.0	13.0	4.0	---	7.0	1.0	9.0	15.0	17.0	24.0	23.0	24.0
3	16.0	12.0	3.0	1.0	5.0	1.0	11.0	17.0	18.0	22.0	23.0	25.0
4	16.0	10.0	3.0	1.0	3.0	1.0	12.0	16.0	18.0	21.0	23.0	24.0
5	15.0	9.0	3.0	---	3.0	1.0	11.0	18.0	18.0	21.0	23.0	24.0
6	18.0	7.0	4.0	---	2.0	4.0	10.0	13.0	19.0	21.0	23.0	25.0
7	14.0	7.0	7.0	---	3.0	2.0	9.0	13.0	21.0	21.0	23.0	24.0
8	14.0	7.0	7.0	---	3.0	3.0	11.0	14.0	19.0	21.0	23.0	25.0
9	15.0	7.0	4.0	---	3.0	4.0	13.0	17.0	21.0	21.0	26.0	24.0
10	15.0	7.0	7.0	---	1.0	8.0	12.0	16.0	22.0	21.0	24.0	24.0
11	14.0	7.0	---	1.0	1.0	4.0	10.0	14.0	22.0	21.0	23.0	22.0
12	13.0	13.0	8.0	1.0	1.0	7.0	14.0	16.0	22.0	23.0	21.0	20.0
13	13.0	7.0	7.0	1.0	1.0	3.0	16.0	16.0	21.0	22.0	22.0	20.0
14	13.0	7.0	7.0	1.0	---	2.0	15.0	17.0	21.0	24.0	22.0	20.0
15	14.0	7.0	---	1.0	1.0	2.0	13.0	17.0	20.0	23.0	22.0	22.0
16	16.0	6.0	6.0	1.0	1.0	7.0	12.0	17.0	21.0	23.0	22.0	20.0
17	16.0	7.0	3.0	1.0	1.0	7.0	15.0	17.0	20.0	23.0	22.0	20.0
18	16.0	7.0	7.0	2.0	---	7.0	13.0	17.0	20.0	23.0	23.0	20.0
19	13.0	4.0	4.0	4.0	---	7.0	15.0	16.0	21.0	24.0	23.0	20.0
20	19.0	5.0	6.0	1.0	1.0	9.0	16.0	14.0	20.0	24.0	23.0	20.0
21	13.0	7.0	8.0	2.0	1.0	9.0	16.0	14.0	20.0	24.0	23.0	20.0
22	13.0	7.0	7.0	3.0	---	4.0	16.0	14.0	20.0	24.0	23.0	22.0
23	12.0	6.0	3.0	2.0	1.0	3.0	16.0	14.0	21.0	24.0	23.0	22.0
24	13.0	4.0	3.0	2.0	1.0	3.0	15.0	---	22.0	24.0	23.0	22.0
25	13.0	7.0	3.0	---	---	4.0	13.0	---	23.0	24.0	22.0	22.0
26	15.0	7.0	1.0	---	---	7.0	11.0	14.0	23.0	24.0	22.0	20.0
27	11.0	7.0	1.0	1.0	1.0	9.0	12.0	17.0	22.0	23.0	21.0	19.0
28	11.0	4.0	1.0	2.0	1.0	10.0	12.0	16.0	19.0	23.0	21.0	19.0
29	10.0	4.0	1.0	3.0	1.0	12.0	11.0	16.0	20.0	23.0	22.0	19.0
30	10.0	3.0	1.0	4.0	---	21.0	16.0	16.0	22.0	23.0	20.0	17.0
31	12.0	---	1.0	4.0	---	14.0	---	16.0	---	23.0	21.0	---
TH	13.5	7.0	4.0	---	2.0	6.0	13.0	15.5	20.5	22.5	22.5	21.5

SCIOTO RIVER BASIN

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03234500 SCIOTO RIVER AT HIGHY, OHIO

LOCATION.--Lat 39°12'44", long 82°51'35", in sec. 6, T.7 N., R.20 W., Ross County, at gaging station at highway bridge, 0.8 mile downstream from Walnut Creek and 1.2 miles north of Highy.

DRAINAGE AREA.--5,131 sq mi.

PERIOD OF RECORD.--Chemical analyses: March 1967 to September 1968.

Water temperatures: October 1953 to September 1968.

Sediment records: October 1953 to September 1968.

EXTREMES.--1967-68:

Sediment concentrations: Maximum daily, 2,020 mg/l May 24; minimum daily, 8 mg/l Nov. 6.

Sediment loads: Maximum daily, 294,000 tons May 25; minimum daily, 19 tons Oct. 14.

Period of record:

Water temperatures: Maximum, 34.0°C June 29, 1968; minimum, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 2,130 mg/l July 21, 1954; minimum daily, 1 mg/l on several days during 1955-56.

Sediment loads: Maximum daily, 550,000 tons Jan. 23, 1959; minimum daily, 0.82 ton Sept. 8, 1955 (revised).

REMARKS.--In addition to the continuous recorder, twice-weekly samples were collected by a local observer. Partial analyses were made on maximum and minimum specific conductance of samples collected each month. Interruptions in the record were due to malfunctions of the instrument. Flow slightly regulated by O'Shaughnessy, Griggs, Delaware, Hoover, Rocky Fork and Deer Creek Reservoirs. Daily sediment loads were computed by subdivision on Nov. 2, Dec. 22, Jan. 29, 30, Mar. 12, 16, 21, Apr. 23, May 11, 23, 24, June 22, 23, Aug. 9, 18.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	015- CHARGE (CFS)	BICAR- BONATE (MG/L)	CAR- BONATE (MG/L)	SULFATE (MG/L)	CHLOR- IDE (MG/L)	FLUOR- IDE (MG/L)
OCT...							
30...	1010	1120	217	4	92	43	.9
NOV...							
03...	0940	2460	226	4	82	30	.5
27...	0925	1460	246	0	118	46	.8
DEC...							
01...	0930	1250	254	0	116	50	.4
04...	0900	3260	228	7	97	30	.6
JAN...							
23...	0920	3630	196	14	90	34	.6
29...	0930	4430	217	14	101	36	.6
FEB...							
05...	1400	27300	136	2	57	16	.4
26...	1200	1580	252	18	137	38	.7
MAR...							
07...	0930	1390	294	0	114	42	.9
22...	0930	18900	144	2	62	16	.4
APR...							
05...	1400	8120	186	7	67	18	.4
17...	0915	2770	214	12	95	46	.4
MAY...							
10...	1500	1680	268	7	100	40	.5
19...	1100	7240	270	0	86	24	.4
JUNE...							
28...	1515	3410	238	0	76	24	.4
JULY...							
03...	1000	2520	238	10	99	27	.2
11...	0945	1590	296	0	80	34	.2
AUG...							
12...	0935	2940	210	8	75	26	.4
28...	1010	950	294	0	101	36	.7
SEPT...							
03...	1030	814	270	14	98	30	.6
23...	1115	760	255	8	126	56	.9

DATE	NITRATE (MG/L)	SOLVFO SOLIDS (RESID- DUE AT 150°C)	HARD- NESS (CA, MG)	NON- CAP- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHO)	PH
OCT...						
30...	11	368	276	91	657	9.4
NOV...						
23...	12	378	266	90	596	9.4
27...	7.5	476	326	124	743	7.2
DEC...						
01...	2.7	480	328	120	740	7.3
04...	1.7	378	282	95	603	7.3
JAN...						
23...	5.6	406	276	92	607	9.7
29...	7.4	434	313	117	655	8.7
FEB...						
05...	22	268	194	80	401	9.3
26...	17	480	352	115	732	8.4
MAR...						
07...	3.0	496	364	123	794	8.2
22...	6.8	264	198	76	417	8.6
APR...						
05...	17	340	232	81	490	7.5
17...	14	466	372	106	713	--
MAY...						
10...	1.1	456	324	104	712	--
19...	27	356	274	110	580	--
JUNE...						
28...	15	360	284	88	611	7.1
JULY...						
03...	15	430	321	109	688	9.6
11...	6.4	452	335	92	736	7.4
AUG...						
12...	9.0	354	262	126	565	8.6
28...	3.3	450	322	80	735	7.4
SEPT...						
03...	5.2	446	326	81	710	8.6
23...	15	522	332	108	841	8.4

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

FEBRUARY										MARCH									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)				
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN			
1	--	--	--	--	--	--	--	--	730	720	--	--	9.1	8.8	4	2			
2	--	--	--	--	--	--	--	--	740	710	--	--	8.8	8.1	4	3			
3	--	--	--	--	--	--	--	--	780	740	--	--	8.6	8.0	4	2			
4	--	--	--	--	--	--	--	--	780	730	--	--	9.0	8.1	5	3			
5	--	--	--	--	--	--	--	--	790	720	--	--	8.5	7.9	6	4			
6	--	--	--	--	--	--	--	--	740	710	--	--	7.9	7.2	6	6			
7	--	--	--	--	--	--	--	--	800	740	--	--	8.1	7.3	7	5			
8	--	--	--	--	--	--	--	--	770	710	--	--	8.4	7.8	8	6			
9	--	--	--	--	--	--	--	--	710	580	--	--	8.0	6.5	11	8			
10	--	--	--	--	--	--	--	--	660	600	--	--	7.6	5.7	11	11			
11	--	--	--	--	--	--	--	--	660	610	--	--	8.6	6.4	11	9			
12	--	--	--	--	--	--	--	--	690	500	--	--	9.5	7.6	11	6			
13	--	--	--	--	--	--	--	--	680	500	--	--	10.6	9.2	6	4			
14	670	650	--	--	9.1	8.8	2	1	750	680	--	--	10.6	8.3	7	5			
15	690	660	--	--	8.8	8.5	2	1	720	580	--	--	10.6	9.7	8	6			
16	680	660	--	--	9.0	8.8	3	2	740	520	--	--	9.9	8.7	8	7			
17	700	670	--	--	10.1	8.8	3	2	610	510	--	--	9.9	9.0	9	6			
18	710	670	--	--	11.7	10.0	2	1	650	610	--	--	9.9	8.3	10	8			
19	700	680	--	--	11.7	11.3	2	1	690	610	--	--	8.8	8.0	11	8			
20	710	690	--	--	11.7	11.2	3	2	740	580	--	--	8.2	6.6	12	11			
21	710	670	--	--	12.0	11.6	2	1	690	430	--	--	8.3	7.0	11	10			
22	730	670	--	--	12.1	11.3	2	1	450	380	--	--	10.7	8.2	13	6			
23	720	680	--	--	11.6	10.9	3	1	470	380	--	--	10.6	9.6	6	3			
24	720	700	--	--	11.3	10.6	3	2	520	470	--	--	10.6	10.1	4	3			
25	740	700	--	--	11.4	9.8	3	2	530	500	--	--	10.5	9.9	5	3			
26	740	720	--	--	11.1	10.4	3	2	540	510	--	--	10.2	9.7	7	5			
27	720	690	--	--	--	--	4	3	550	510	--	--	9.8	9.3	8	7			
28	730	720	--	--	--	--	4	3	530	510	--	--	9.5	9.1	11	7			
29	730	690	--	--	--	--	3	2	550	520	--	--	9.1	8.6	11	9			
30	--	--	--	--	--	--	--	--	530	490	--	--	8.6	8.0	11	10			
31	--	--	--	--	--	--	--	--	500	480	--	--	8.0	7.6	12	11			
APRIL										MAY									
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)				
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN			
1	480	450	--	--	8.0	7.6	12												

SCIOTO RIVER BASIN

03234500 SCIOTO RIVER AT HIGHBY, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

JUNE									JULY								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	--	--			--	--	--	--	730	620			4.1	3.3	27	24	
2	--	--			--	--	--	--	730	540			4.6	3.1	27	25	
3	--	--			--	--	--	--	730	650			5.0	3.5	26	24	
4	--	--			--	--	--	--	700	610			8.4	4.7	24	23	
5	--	--			--	--	--	--	700	630			12.0	7.6	24	22	
6	--	--			--	--	--	--	730	610			9.8	5.7	25	23	
7	--	--			--	--	--	--	720	610			8.7	5.1	25	23	
8	--	--			--	--	--	--	740	550			9.0	4.0	25	23	
9	--	--			--	--	--	--	780	620			4.8	2.6	26	24	
10	--	--			--	--	--	--	780	710			2.5	1.7	26	25	
11	--	--			--	--	--	--	740	670			1.7	1.3	27	25	
12	--	--			--	--	--	--	800	670			2.8	1.3	27	26	
13	--	--			--	--	--	--	820	770			3.1	2.1	27	26	
14	--	--			--	--	--	--	770	690			3.8	1.4	27	26	
15	--	--			--	--	--	--	690	660			5.3	2.7	27	25	
16	--	--			--	--	--	--	740	680			3.5	1.3	26	25	
17	--	--			--	--	--	--	760	730			3.9	2.0	28	26	
18	--	--			--	--	--	--	730	770			5.1	2.5	28	27	
19	--	--			--	--	--	--	770	690			5.6	1.7	28	27	
20	--	--			--	--	--	--	720	690			4.2	2.5	29	27	
21	--	--			--	--	--	--	740	700			2.6	1.3	29	27	
22	--	--			--	--	--	--	700	650			2.8	1.2	29	25	
23	--	--			--	--	--	--	--	--			--	--	--	--	
24	--	--			--	--	--	--	--	--			--	--	--	--	
25	--	--			--	--	--	--	--	--			--	--	--	--	
26	--	--			--	--	--	--	--	--			--	--	--	--	
27	--	--			--	--	--	--	--	--			--	--	--	--	
28	670	610			4.4	3.9	22	21	--	--			--	--	--	--	
29	690	670			4.7	3.3	24	21	--	--			--	--	--	--	
30	740	680			3.9	2.7	28	23	--	--			--	--	--	--	
31	--	--			--	--	--	--	--	--			--	--	--	--	
AUGUST									SEPTEMBER								
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPER-ATURE (°C)		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	--	--			--	--	--	--	700	680			9.7	5.6	24	23	
2	--	--			--	--	--	--	700	650			11.0	5.6	24	22	
3	--	--			--	--	--	--	620	620			13.0	5.3	24	22	
4	--	--			--	--	--	--	710	600			12.0	5.5	24	23	
5	--	--			--	--	--	--	780	710			5.5	2.1	24	23	
6	--	--			--	--	--	--	790	750			6.9	.7	24	22	
7	--	--			--	--	--	--	780	740			6.5	.8	23	22	
8	--	--			--	--	--	--	760	760			2.3	.0	24	23	
9	--	--			--	--	--	--	780	760			.6	.0	24	23	
10	--	--			--	--	--	--	770	720			4.5	.0	23	22	
11	--	--			--	--	--	--	790	730			.6	.0	23	21	
12	--	--			--	--	--	--	800	780			1.5	.0	23	20	
13	--	--			--	--	--	--	800	780			5.5	.0	22	21	
14	--	--			--	--	--	--	850	800			6.4	.2	23	21	
15	--	--			--	--	--	--	820	800			1.7	.0	23	22	
16	--	--			--	--	--	--	810	800			1.6	1.1	23	22	
17	--	--			--	--	--	--	840	790			3.3	1.2	23	22	
18	--	--			--	--	--	--	840	830			1.7	1.5	22	21	
19	--	--			--	--	--	--	830	800			3.2	1.6	21	20	
20	690	670			1.4	0.7	29	28	820	800			3.4	1.6	22	20	
21	710	670			4.1	.5	29	28	800	760			5.0	1.4	24	22	
22	730	680			4.0	.7	29	28	840	780			1.9	1.2	25	23	
23	740	700			6.5	.5	29	28	860	840			2.6	.7	26	24	
24	740	710			2.3	.7	29	28	880	860			3.2	1.2	26	25	
25	750	720			4.2	.6	29	28	880	840			1.6	.9	26	24	
26	760	710			3.4	.5	28	25	840	740			5.0	1.0	24	22	
27	770	750			2.1	.7	25	23	810	750			2.9	.9	23	22	
28	750	720			3.6	.8	24	22	840	810			1.1	.9	23	21	
29	770	730			5.1	.6	24	22	840	830			2.1	.9	24	21	
30	770	730			9.7	2.6	24	22	830	790			2.2	.6	22	21	
31	760	680			11.0	4.7	24	23	--	--			--	--	--	--	

SCIOTO RIVER BASIN

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03234500 SCIOTO RIVER HIGBY, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	1150	20	62	1170	21	66	1240	11	37
2	841	18	41	1690	81	404	1270	46	158
3	706	18	34	2490	211	1420	2010	53	288
4	643	18	31	2280	104	640	3370	78	710
5	607	18	30	1850	22	110	5770	554	8030
6	634	18	31	1480	8	32	7480	253	5110
7	652	19	33	1260	13	44	7320	130	2570
8	661	18	32	1470	18	71	7890	128	2730
9	625	15	25	1380	20	75	7800	82	1730
10	661	13	23	1190	12	39	6700	82	1460
11	706	13	25	1100	15	45	6150	93	1540
12	652	12	21	1110	18	54	9030	272	5630
13	607	20	20	1440	20	78	10600	227	6500
14	589	12	19	1390	18	68	9020	97	2360
15	571	13	20	1230	11	37	8060	116	2520
16	562	15	23	1130	18	55	6220	58	974
17	715	15	29	1110	22	66	4750	28	355
18	960	20	52	1450	11	43	4010	38	411
19	1000	22	59	1880	23	117	3910	46	486
20	1140	23	71	1860	23	116	4010	60	650
21	1200	26	84	1780	11	53	4450	77	525
22	1170	13	41	1800	12	58	7450	490	11400
23	1140	14	43	1710	13	60	10600	330	9620
24	1120	16	48	1620	13	57	12400	208	6960
25	1190	12	39	1540	13	54	19100	120	3440
26	1210	20	65	1530	12	50	7770	84	1760
27	1280	25	86	1450	9	35	5880	76	1210
28	1210	24	78	1410	12	46	4200	72	816
29	1200	23	75	1280	22	76	3430	68	930
30	1160	22	69	1260	17	58	2980	65	523
31	1140	21	65	--	--	--	2740	00	486
TOTAL	27702	--	1374	45340	--	4127	188610	--	83045
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	2560	48	332	24500	276	18300	1510	11	45
2	2080	50	281	26800	170	12300	1470	10	40
3	2050	54	305	26200	133	9410	1430	10	39
4	2110	60	342	23700	129	8250	1350	13	47
5	1740	68	319	20500	96	5310	1320	15	53
6	1760	44	209	15700	77	3260	1360	16	59
7	1670	37	167	10900	62	1820	1380	15	56
8	1370	43	159	7060	47	896	1370	15	55
9	1450	42	164	5470	42	620	1350	17	64
10	1500	48	194	4400	33	392	1370	20	74
11	1430	35	135	3500	26	246	1380	17	63
12	1410	34	129	3010	27	219	1850	49	245
13	1450	28	110	2790	28	211	2430	98	643
14	1470	26	103	2630	30	213	2350	47	290
15	1490	38	153	2520	23	156	2130	28	161
16	1410	36	137	2400	20	130	2710	45	389
17	1330	25	90	2330	15	94	4150	272	3150
18	1350	26	95	2140	15	87	3460	126	1180
19	1370	22	81	1960	13	69	3620	75	733
20	1390	22	83	1940	10	52	4230	78	891
21	1610	25	109	1920	10	52	8650	1270	41000
22	2530	88	601	1770	10	48	21100	1310	74000
23	3780	176	1800	1680	11	50	26700	530	38000
24	3970	84	900	1700	13	60	20900	416	23500
25	3480	29	272	1650	18	80	18200	272	13400
26	3400	20	184	1570	27	114	16500	178	7430
27	3140	24	203	1540	18	75	17700	163	7790
28	2880	26	202	1590	13	54	18100	132	9050
29	4850	102	1450	1540	12	50	16800	106	4810
30	13800	433	19000	--	--	--	14400	117	4550
31	24500	580	38400	--	--	--	17600	117	3350
TOTAL	100370	--	66709	205370	--	62618	231870	--	233813

SCIOTO RIVER BASIN

03234500 SCIOTO RIVER HIGBY, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1040C	264	7410	2120	50	286	24100	196	12800
2	7660	114	2360	2060	41	228	18900	539	27500
3	6330	150	2560	1960	30	159	19500	428	22500
4	7740	215	4490	1890	38	194	18100	198	9680
5	8710	172	4040	1800	39	190	14200	138	5290
6	6640	113	2030	1670	33	149	12100	138	4510
7	6410	81	1400	1620	29	127	10600	152	4350
8	5580	62	934	1540	24	101	7840	140	2960
9	4710	65	827	1520	22	90	6320	127	2170
10	3870	58	606	1670	28	126	5680	128	1960
11	3450	42	391	2740	134	1480	5740	165	2560
12	3070	47	390	4000	428	6930	5560	196	2940
13	2810	47	357	9080	220	5390	4700	168	2130
14	2640	42	299	8580	142	3290	4280	110	1270
15	3400	195	1790	7110	109	2090	4000	72	778
16	3150	89	757	5650	102	1560	3920	65	688
17	2770	52	389	6390	128	2210	4200	81	919
18	2760	50	373	6950	143	2680	4140	107	1200
19	2680	38	275	7000	108	2040	4420	127	1520
20	2540	28	192	5890	106	1690	4760	128	1050
21	2540	30	206	4510	92	1120	4360	108	1270
22	2410	42	273	3730	70	705	4660	135	1900
23	2480	134	1060	11000	959	45060	7720	1320	32200
24	3790	294	3910	46700	2020	271000	5300	548	7840
25	4160	243	2730	83700	1300	294000	4340	356	4170
26	3420	100	923	65500	542	95900	4600	230	2800
27	2960	56	448	57800	575	85700	4420	457	5450
28	2980	42	338	63000	500	85000	3680	194	1930
29	2560	32	221	57300	394	61000	3300	133	1490
30	2300	18	112	57000	324	49900	3250	110	965
31	--	--	--	42200	200	22800	--	--	--
TOTAL	126920	--	41191	575700	--	1047135	228690	--	169210
DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	3160	90	768	1580	57	243	844	89	403
2	2910	50	393	2150	83	482	843	97	221
3	2490	46	309	1920	55	285	835	95	214
4	2220	60	360	1680	21	95	881	98	233
5	2020	52	284	1950	33	174	856	45	104
6	1880	45	228	2020	39	213	875	42	99
7	1790	78	377	1920	25	130	895	70	169
8	1700	98	450	1840	18	89	876	38	90
9	1590	42	180	2890	119	1280	843	11	25
10	1540	20	83	3180	237	2030	837	12	27
11	1590	15	64	3410	312	2870	834	14	32
12	1720	15	70	2910	264	2070	831	13	29
13	1610	13	57	2770	175	1310	823	15	33
14	1660	20	90	2130	85	489	810	52	114
15	1600	25	108	1790	49	237	789	40	85
16	1590	23	99	1650	30	134	770	17	35
17	1670	21	95	1590	23	99	759	17	35
18	1840	33	164	1670	102	545	773	18	38
19	1770	50	239	1720	126	585	784	17	36
20	2080	59	331	1500	30	122	859	15	35
21	1920	55	285	1480	32	128	843	12	27
22	1730	50	234	1370	30	111	796	13	26
23	1550	43	180	1270	32	110	752	23	47
24	1430	46	178	1200	23	75	718	25	48
25	1480	45	180	1130	18	55	743	18	36
26	1650	24	107	1050	20	57	784	16	36
27	2060	52	289	971	27	71	750	12	24
28	2380	72	443	967	23	59	722	15	29
29	2320	85	532	904	26	63	707	27	54
30	2020	55	300	870	73	171	689	43	80
31	1720	36	167	851	88	202	--	--	--
TOTAL	58690	--	7664	54313	--	14584	24117	--	4466

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL LOAD FOR YEAR (TONS)

1807694

1734336

SCIOTO RIVER BASIN

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03234500 SCIOTO RIVER HIGBY, OHIO--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: R, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPE; S, SIEVE;
V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	SUSPENDED SEDIMENT PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED										METH- OD OF ANAL- YSIS
MAY 24 1968	1215	49.40	0	242	323000	17	55	60	84	97	99	99	100	100	100	SBWC
MAY 24 1968	1215	49.40	0	242	323000	17	28	43	62	91	97	99	99	100	100	SBN

03237100 SCIOTO RIVER AT LUCASVILLE, OHIO

LOCATION.--Lat 38°52'32", long 83°00'52", Scioto County, at bridge on State Highway 348 at Lucasville, 0.4 mile downstream from Miller Run, and 4.9 miles upstream from Scioto Brush Creek.

DRAINAGE AREA.--6,178 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1956 to September 1968.

Water temperatures: October 1956 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 827 micromhos Oct. 17; minimum daily, 240 micromhos May 24.

Water temperatures: Maximum, 28.0°C Aug. 23, 24; minimum, freezing point on several days during January and February.

Period of record:

Specific conductance: Maximum daily, 1,020 micromhos Dec. 22, 1963; minimum daily, 207 micromhos May 8, 1961.

Water temperatures: Maximum, 29.0°C July 22, 1957; 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 as follows: (1) Maximum daily specific conductance for each month, (2) minimum daily specific conductance for each month, (3) median daily specific conductance for each month, (4) special sample each month to further define the quality of water. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLOR- IDE (CL)	FLUOR- IDE (F)	NITRATE (NO3)
OCT.									
10...	0930	--	--	250	0	98	50	.4	2.9
17...	0830	--	--	260	0	125	45	.6	10
26...	0930	.24	.17	--	--	--	--	--	--
27...	0830	--	--	230	0	73	28	.3	11
NOV.									
04...	0930	--	--	196	0	74	30	.4	3.3
15...	1750	.28	.30	--	--	--	--	--	--
18...	0930	--	--	224	0	135	46	.8	7.0
23...	0930	--	--	230	0	114	38	.6	4.4
DEC.									
08...	0930	--	--	210	0	138	34	.4	7.5
19...	0900	--	--	200	0	88	24	.3	12
20...	1430	.18	.35	--	--	--	--	--	--
24...	0900	--	--	166	0	74	19	.3	12
JAN.									
05...	0900	--	--	240	0	90	28	.4	10
12...	0930	--	--	276	0	108	40	.5	7.0
23...	1315	.48	.20	--	--	--	--	--	--
31...	0900	--	--	132	0	60	18	.2	11
FEB.									
04...	0900	--	--	130	0	55	14	.4	17
14...	1520	.28	.12	--	--	--	--	--	--
15...	0900	--	--	218	14	86	27	.5	12
28...	0900	--	--	280	0	100	36	.6	7.3
MAR.									
05...	0915	--	--	282	0	101	37	.7	11
20...	1320	.12	.10	--	--	--	--	--	--
23...	0900	--	--	98	0	43	10	.3	8.1
28...	0900	--	--	174	0	72	24	.4	12
APR.									
14...	0930	--	--	208	0	83	22	.4	6.3
18...	--	.09	.14	--	--	--	--	--	--
24...	0930	--	--	84	0	46	10	.4	3.6
29...	0930	--	--	189	0	71	22	.4	4.7
MAY									
01...	0930	--	--	182	8	74	24	.4	8.8
24...	0930	--	--	108	0	30	5.0	.2	6.2
JUNE									
04...	1500	.55	.12	--	--	--	--	--	--
10...	0930	--	--	244	0	61	16	.3	16
19...	0930	--	--	244	10	72	22	.3	13
24...	0930	--	--	148	0	40	10	.2	7.5
JULY									
06...	0930	--	--	280	0	84	23	.4	3.4
13...	0930	--	--	300	0	90	32	.4	2.6
17...	1705	.26	.19	--	--	--	--	--	--
26...	0930	--	--	208	0	69	28	.4	1.8
AUG.									
04...	0930	--	--	236	0	87	28	.4	8.3
20...	0930	--	--	192	4	64	24	.4	6.2
28...	1600	.49	.30	--	--	--	--	--	--
30...	0930	--	--	296	0	91	38	.6	4.8
SEPT.									
02...	0930	--	--	272	12	91	28	.6	6.8
12...	0930	--	--	280	0	96	42	.5	7.1
26...	--	.27	.39	--	--	--	--	--	--
28...	0930	--	--	308	8	112	52	.7	9.0

SCIOTO RIVER BASIN

03237100 SCIOTO RIVER AT LUCASVILLE, OHIO--Continued
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TOTAL PHOS- PHORUS (PP4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.									
10...	2.1	442	300	95	733	7.1	14	--	--
17...	4.0	540	329	116	827	7.2	17	--	--
26...	--	--	--	--	--	--	--	7.6	69
27...	2.8	346	261	72	600	7.2	12	--	--
NOV.									
04...	1.7	342	234	73	563	7.5	11	--	--
15...	--	--	--	--	--	--	--	7.6	63
18...	6.1	510	318	134	765	7.9	7	--	--
23...	1.6	466	308	119	715	7.2	6	--	--
DEC.									
08...	1.0	414	310	138	697	8.2	5	--	--
19...	1.0	368	268	104	577	7.4	4	--	--
20...	--	--	--	--	--	--	--	9.2	77
24...	1.4	312	226	90	492	8.0	3	--	--
JAN.									
05...	1.0	384	302	105	655	7.3	0	--	--
12...	1.4	442	334	108	774	7.5	0	--	--
23...	--	--	--	--	--	--	--	10.0	71
31...	.82	240	184	76	415	6.9	4	--	--
FEB.									
04...	.64	258	196	89	388	8.3	3	--	--
14...	--	--	--	--	--	--	--	11.0	77
15...	.96	402	316	111	628	8.7	1	--	--
28...	1.4	460	342	112	732	7.5	2	--	--
MAR.									
05...	1.2	470	342	111	746	7.5	3	--	--
20...	--	--	--	--	--	--	--	8.8	81
23...	.31	196	141	61	299	7.8	6	--	--
28...	.44	366	254	111	521	7.5	7	--	--
APR.									
14...	.78	326	280	109	580	7.9	14	--	--
18...	--	--	--	--	--	--	--	7.6	72
24...	.35	148	116	47	269	7.0	15	--	--
29...	.74	270	231	77	503	7.6	13	--	--
MAY									
01...	.85	362	246	84	535	8.5	16	--	--
24...	.20	168	120	32	240	7.4	14	--	--
JUNE									
04...	--	--	--	--	--	--	21	6.0	67
10...	.47	374	272	72	545	8.0	23	--	--
19...	.80	400	296	79	592	8.4	21	--	--
24...	.31	230	160	39	351	7.2	22	--	--
JULY									
06...	.73	382	316	86	650	7.5	22	--	--
13...	1.1	434	330	84	704	7.7	25	--	--
17...	--	--	--	--	--	--	--	6.4	79
26...	.95	326	250	80	539	7.5	24	--	--
AUG.									
04...	.94	366	290	96	620	7.4	24	--	--
20...	.78	290	225	61	503	8.4	26	--	--
28...	--	--	--	--	--	--	23	13.0	149
30...	1.7	422	325	82	714	7.8	21	--	--
SEPT.									
02...	1.6	334	325	82	579	8.5	21	--	--
12...	2.4	434	320	90	729	8.1	19	--	--
26...	--	--	--	--	--	--	22	10.2	116
28...	4.2	492	335	68	792	8.3	18	--	--

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0830 AND 0930)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	792	659	675	613	395	740	367	535	--	617	583	716
2.....	740	619	678	642	432	734	364	560	--	621	606	579
3.....	778	589	599	642	396	734	401	567	431	643	628	690
4.....	794	563	--	630	388	737	441	586	426	645	620	686
5.....	748	627	561	655	407	746	324	600	447	637	512	676
6.....	684	651	671	680	411	736	376	588	482	650	--	682
7.....	682	634	681	704	430	746	456	608	504	636	--	696
8.....	708	620	697	702	484	713	482	622	519	678	--	728
9.....	707	620	670	742	513	746	519	635	536	690	--	724
10.....	733	648	589	737	538	730	538	627	545	690	--	696
11.....	714	703	582	749	567	706	551	590	577	696	--	734
12.....	741	714	542	774	585	478	559	313	569	692	--	729
13.....	747	739	--	739	600	373	563	391	578	704	--	728
14.....	732	752	--	712	625	309	580	452	572	690	--	722
15.....	796	737	--	646	628	376	--	498	580	696	581	736
16.....	801	734	--	742	662	420	--	506	590	659	578	728
17.....	827	731	539	764	676	404	--	469	586	652	565	732
18.....	814	765	564	772	668	387	520	520	579	668	612	728
19.....	818	764	577	757	684	448	536	433	592	671	604	735
20.....	782	740	690	--	699	539	554	455	576	671	503	752
21.....	742	743	587	693	689	579	534	488	554	681	532	770
22.....	713	746	547	560	701	366	550	509	548	673	614	767
23.....	690	715	498	494	699	299	563	519	563	640	647	761
24.....	665	731	492	696	695	335	269	240	351	555	643	750
25.....	645	688	539	470	687	415	308	--	428	574	664	750
26.....	602	695	501	535	714	455	389	--	502	539	675	782
27.....	600	733	564	620	714	490	428	--	527	621	674	778
28.....	653	714	580	642	732	521	478	--	432	632	674	792
29.....	665	728	562	616	716	526	503	--	542	625	693	788
30.....	661	711	564	503	--	529	530	--	590	591	714	755
31.....	652	--	615	415	--	490	--	--	--	594	709	--
AVERAGE	723	693	588	647	590	542	469	512	525	646	--	729

03237100 SCIOTO RIVER AT LUCASVILLE, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0830 AND 0930)

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

UPPER TWIN CREEK BASIN

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

LOCATION.--Lat 38°38'15", long 83°13'30", Scioto County, at gaging station at bridge on U.S. Highway 52 at McGaw, 2 miles northeast of Buena Vista and 2.8 miles upstream from mouth.

DRAINAGE AREA.--12.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1963 to May 1967, periodic; August 1967 to September 1968, monthly.
Water temperatures: October 1963 to September 1966, October 1967 to September 1968.
Sediment records: October 1963 to September 1968 (intermittent).

EXTREMES.--1967-68:

Water temperatures: Minimum, freezing point on many days during January and February.

Period of record:

Water temperatures: Maximum, 30.0°C July 27, 1964; minimum, freezing point on many days during January and February 1968.

REMARKS.--No temperature record Nov. 17 to Dec. 26, Feb. 18 to Mar. 20, May 1-9, May 31 to June 6, July 16 to Aug. 28. No flow Oct. 16, 20-24.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	IRON (FE)	MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NESIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
OCT.												
26...	1200	.09	9.2	.06	.01	7.9	6.2	4.6	3.0	20	0	34
NOV.												
16...	1200	.41	8.4	.02	.02	7.0	5.2	4.0	2.6	18	0	28
DEC.												
21...	0915	2.2	9.2	.02	.04	6.5	3.8	3.4	1.7	15	0	25
JAN.												
23...	1640	30	8.0	.08	.05	4.0	3.2	2.4	1.6	10	0	20
FEB.												
14...	1825	2.7	--	.01	.27	4.9	3.7	2.8	1.4	11	0	22
MAR.												
20...	1430	17	8.9	.02	.05	3.6	3.0	2.2	1.6	9	0	20
APR.												
18...	1215	11	11	.00	.07	3.3	3.3	2.3	1.8	10	0	19
MAY												
28...	1130	66	9.5	.05	.00	2.9	3.0	1.9	1.6	10	0	17
JUNE												
06...	1105	4.2	9.5	.31	.06	4.1	3.3	2.5	1.9	11	0	21
JULY												
17...	1600	.17	11	.09	.05	9.0	5.2	4.1	2.7	24	0	31
AUG.												
29...	1140	.33	10	.15	.11	7.6	5.0	3.8	2.2	20	0	27
SEPT.												
26...	1130	.33	9.3	.28	.06	7.9	4.9	3.8	2.2	19	0	27

UPPER TWIN CREEK BASIN

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03237280 UPPER TWIN CREEK AT McGAW, OHIO--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
OCT 26, 1967	1200	.73	12	.02	APR 4.....	1615	307	242	2C1
DEC 21.....	0915	2.2	1	.01	APR 18.....	1215	9.2	1	.02
DEC 27.....	1500	4.7	2	.03	MAY 11.....	1435	33	112	10
JAN 23, 1968	1640	31	8	.67	MAY 12.....	1210	110	102	30
FEB 14.....	1825	2.8	8	.06	MAY 24.....	1530	345	78	73
MAR 12.....	1530	262	714	505	MAY 28.....	1130	65	15	2.6
MAR 12.....	1630	371	642	643	JUN 6.....	1105	4.2	0	0
MAR 20.....	1430	17	1	.05	SEP 29.....	1140	.29	0	0

LITTLE MIAMI RIVER BASIN

03247500 EAST FORK LITTLE MIAMI RIVER AT PERINTOWN, OHIO

LOCATION.--Lat 39°08'13", long 84°14'17", Clermont County, at gaging station at highway bridge at Perintown 5 miles upstream from mouth.

DRAINAGE AREA.--476 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968.

Water temperatures: October 1965 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 631 micromhos Feb. 25, 27; minimum daily, 175 micromhos May 27.

Water temperatures: Maximum, 28.0°C Aug. 21-24; minimum, freezing point on several days during December and February.

Period of record:

Specific conductance: Maximum daily, 641 micromhos Mar. 1, 1967; minimum daily, 172 micromhos Jan. 7, 1966.

Water temperatures: Maximum, 28.0°C Aug. 21-24, 1968; minimum, freezing point on several days during winter periods in 1966-68.

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, (3) median daily specific conductance for each month, and (4) special sample each month to further define the quality of water. Occasional regulation of flow by Stonelick Lake on Stonelick Creek.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)
OCT.										
04...	0700	1.5	--	--	264	0	59	26	.2	1.4
09...	0700	3.8	--	--	148	0	54	18	.2	1.5
17...	1300	4.8	.06	.02	--	--	--	--	--	--
20...	0700	6.0	--	--	276	0	57	24	.2	.8
NOV.										
01...	0800	23	--	--	240	0	69	36	.2	2.2
04...	0800	268	--	--	132	0	49	12	.2	2.0
06...	1045	109	.19	.10	--	--	--	--	--	--
19...	0800	73	--	--	194	0	58	20	.1	1.0
DEC.										
12...	--	1980	--	--	94	0	37	10	.2	7.6
19...	1245	663	.40	.06	--	--	--	--	--	--
20...	--	468	--	--	128	0	48	12	.2	9.7
31...	--	40	--	--	202	0	57	18	.2	11
JAN.										
31...	0800	4830	--	--	88	0	32	12	.3	12
FEB.										
01...	0800	1330	--	--	86	0	38	14	.4	12
17...	0800	55	--	--	218	12	65	23	.3	6.3
21...	0930	38	.04	.04	--	--	--	--	--	--
25...	0800	34	--	--	280	0	66	26	.2	5.8
MAR.										
01...	0800	34	--	--	240	16	69	28	.2	7.3
17...	0800	1200	--	--	150	0	53	22	.2	5.5
18...	1100	643	.15	.02	--	--	--	--	--	--
26...	0800	3710	--	--	78	0	26	10	.2	8.2
APR.										
05...	0800	3200	--	--	102	0	31	8.0	.2	6.6
13...	0800	174	--	--	232	0	50	16	.2	3.8
22...	0930	360	.13	.03	--	--	--	--	--	--
27...	0800	346	--	--	176	0	42	13	.2	3.3
MAY										
06...	0800	65	--	--	219	0	49	16	.1	4.0
08...	1000	64	.17	.06	--	--	--	--	--	--
10...	0800	835	--	--	164	0	41	12	.3	3.8
27...	0800	23600	--	--	78	0	16	3.0	.3	4.4
JUNE										
04...	0800	512	--	--	152	0	28	8.0	.4	3.4
10...	1045	115	.12	.02	--	--	--	--	--	--
17...	0800	69	--	--	220	0	45	16	.2	2.3
28...	0800	34	--	--	250	0	47	18	.2	1.5
JULY										
12...	0800	21	--	--	260	0	56	22	.1	1.1
23...	0915	32	.08	.06	--	--	--	--	--	--
24...	0800	27	--	--	178	6	37	12	.2	1.6
26...	0800	1120	--	--	102	0	20	6.0	.3	3.6
AUG.										
11...	0800	2400	--	--	88	0	18	4.0	.1	3.4
12...	1030	397	.29	.04	--	--	--	--	--	--
19...	0800	120	--	--	164	6	30	12	.2	4.1
30...	0800	14	--	--	218	12	39	14	.2	2.5
SEPT.										
04...	0800	11	--	--	200	8	42	16	.2	1.0
17...	0800	9.0	--	--	242	0	44	18	.2	1.1
17...	1000	--	.02	.06	--	--	--	--	--	--
30...	0800	7.0	--	--	262	0	44	20	.2	.8

LITTLE MIAMI RIVER BASIN

03247500 EAST FORK LITTLE MIAMI RIVER AT PERINTOWN, OHIO--Continued
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHMS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.									
04....	.47	382	276	59	575	8.1	16	--	--
04....	.10	240	177	56	412	7.8	16	--	--
17....	--	--	--	--	--	--	--	7.0	71
20....	.41	374	286	60	599	7.5	13	--	--
NOV.									
04....	2.2	400	270	73	626	8.1	12	--	--
04....	1.2	226	144	36	345	7.2	10	--	--
06....	--	--	--	--	--	--	--	11.0	92
14....	1.2	310	216	57	479	7.8	5	--	--
DEC.									
12....	1.0	158	118	41	272	7.4	9	--	--
19....	--	--	--	--	--	--	--	11.0	92
20....	.60	200	158	53	348	7.2	5	--	--
31....	1.2	272	234	68	491	7.7	0	--	--
JAN.									
31....	.43	152	116	44	277	7.0	4	--	--
FEB.									
01....	.45	200	123	52	276	7.9	4	--	--
17....	.42	386	284	85	574	8.6	1	--	--
21....	--	--	--	--	--	--	--	14.0	98
25....	.58	423	315	85	631	8.1	1	--	--
MAR.									
01....	.50	394	310	86	622	8.5	1	--	--
17....	.26	264	188	65	416	8.2	6	--	--
18....	--	--	--	--	--	--	--	11.0	90
26....	.25	143	99	35	225	7.9	4	--	--
APR.									
05....	.48	158	116	32	257	7.3	11	--	--
13....	.40	296	248	58	504	7.6	14	--	--
22....	--	--	--	--	--	--	--	7.8	91
27....	.51	232	203	59	398	7.5	13	--	--
MAY									
06....	.46	268	240	60	499	7.5	14	--	--
08....	--	--	--	--	--	--	--	9.4	97
10....	.54	240	184	46	391	7.9	16	--	--
27....	.39	98	82	18	175	7.2	17	--	--
JUNE									
04....	.35	212	158	34	328	7.1	19	--	--
10....	--	--	--	--	--	--	--	8.2	98
17....	.38	304	230	50	467	8.0	22	--	--
28....	.45	330	257	52	521	7.6	--	--	--
JULY									
12....	.80	328	272	58	556	8.0	25	--	--
23....	--	--	--	--	--	--	--	6.6	80
24....	.32	236	193	37	398	8.5	27	--	--
26....	.39	134	102	18	224	7.8	24	--	--
AUG.									
11....	.31	116	78	6	191	7.2	24	--	--
12....	--	--	--	--	--	--	--	6.6	73
19....	.29	206	174	30	363	8.4	26	--	--
10....	.22	286	214	16	483	8.6	20	--	--
SEPT.									
04....	.10	258	220	42	449	8.5	22	--	--
17....	.15	284	244	46	503	7.8	20	--	--
17....	--	--	--	--	--	--	--	8.2	89
30....	.18	298	260	45	535	8.0	17	--	--

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
 (ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0800)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	529	626	342	--	276	622	320	436	357	491	342	460
2.....	580	543	307	--	323	616	312	457	394	477	329	475
3.....	579	486	320	--	309	599	361	472	414	531	332	460
4.....	575	345	302	--	338	410	294	476	328	502	348	449
5.....	552	395	335	--	351	603	257	476	357	540	365	475
6.....	568	441	365	--	380	595	272	499	388	528	369	497
7.....	576	430	362	--	408	570	329	497	411	499	362	507
8.....	561	437	380	--	435	570	379	495	437	499	370	487
9.....	412	452	393	--	453	556	415	492	459	512	363	481
10.....	571	445	412	--	482	557	447	391	472	518	298	474
11.....	575	469	440	--	--	545	472	381	473	530	191	512
12.....	594	523	272	--	--	508	485	242	457	556	228	528
13.....	595	483	332	--	--	302	504	276	444	535	248	512
14.....	579	460	342	--	--	348	503	320	444	501	275	490
15.....	438	351	323	--	--	407	457	371	442	305	264	489
16.....	462	366	329	--	587	443	361	397	456	251	329	499
17.....	526	414	366	--	574	416	422	416	467	260	229	503
18.....	580	462	393	--	581	392	455	441	474	310	405	503
19.....	587	479	392	--	589	431	469	472	487	302	363	523
20.....	599	485	348	--	603	436	455	456	494	318	308	532
21.....	588	493	394	--	600	326	410	419	502	351	278	527
22.....	484	500	320	--	--	262	387	441	496	372	420	520
23.....	563	511	294	405	--	234	411	390	493	368	428	514
24.....	579	507	285	--	--	261	292	186	487	395	408	521
25.....	566	519	323	--	631	276	373	193	485	397	426	519
26.....	595	522	358	--	619	225	341	283	497	224	440	526
27.....	593	514	365	--	631	268	398	175	503	226	457	521
28.....	583	525	418	--	610	312	381	208	521	284	472	528
29.....	592	530	445	440	624	361	393	312	521	324	480	532
30.....	582	520	467	360	--	402	420	261	521	310	493	535
31.....	569	--	491	277	--	369	--	302	--	321	480	--
AVERAGE	559	474	361	--	--	432	393	375	456	405	357	503

03247500 EAST FORK LITTLE MIAMI RIVER AT PERINTOWN, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0800)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	12.0	2.0	---	4.0	1.0	12.0	16.0	16.0	23.0	24.0	22.0
2	14.0	12.0	2.0	---	7.0	2.0	11.0	16.0	17.0	26.0	24.0	21.0
3	16.0	12.0	4.0	---	4.0	1.0	11.0	18.0	19.0	24.0	24.0	21.0
4	16.0	10.0	3.0	---	3.0	1.0	13.0	19.0	22.0	24.0	24.0	22.0
5	18.0	8.0	3.0	---	3.0	2.0	11.0	13.0	20.0	22.0	24.0	21.0
6	18.0	6.0	4.0	---	3.0	4.0	9.0	14.0	21.0	22.0	26.0	20.0
7	14.0	6.0	5.0	---	3.0	3.0	8.0	15.0	22.0	23.0	27.0	20.0
8	16.0	4.0	6.0	---	3.0	3.0	12.0	17.0	23.0	24.0	27.0	20.0
9	16.0	6.0	5.0	---	2.0	6.0	12.0	19.0	23.0	24.0	27.0	20.0
10	14.0	7.0	6.0	---	0.0	9.0	12.0	16.0	24.0	24.0	27.0	20.0
11	13.0	7.0	7.0	---	---	8.0	11.0	16.0	25.0	24.0	24.0	19.0
12	9.0	10.0	9.0	---	---	7.0	12.0	16.0	26.0	25.0	27.0	15.0
13	11.0	9.0	7.0	---	---	7.0	14.0	15.0	26.0	26.0	23.0	18.0
14	13.0	7.0	8.0	---	---	1.0	16.0	18.0	22.0	25.0	23.0	18.0
15	13.0	6.0	6.0	---	---	3.0	13.0	19.0	22.0	24.0	23.0	19.0
16	15.0	4.0	3.0	---	1.0	6.0	12.0	21.0	23.0	22.0	24.0	19.0
17	16.0	7.0	2.0	---	1.0	6.0	14.0	20.0	22.0	23.0	25.0	20.0
18	13.0	8.0	4.0	---	1.0	7.0	13.0	18.0	22.0	24.0	26.0	19.0
19	13.0	5.0	5.0	---	1.0	8.0	16.0	18.0	22.0	26.0	25.0	18.0
20	13.0	5.0	5.0	---	2.0	11.0	17.0	16.0	22.0	27.0	27.0	19.0
21	11.0	5.0	7.0	---	0.0	9.0	13.0	16.0	22.0	26.0	28.0	20.0
22	9.0	7.0	9.0	---	---	8.0	17.0	16.0	22.0	26.0	28.0	20.0
23	9.0	6.0	6.0	1.0	---	2.0	18.0	16.0	24.0	26.0	28.0	21.0
24	11.0	7.0	3.0	---	---	2.0	16.0	16.0	24.0	27.0	28.0	22.0
25	12.0	6.0	3.0	---	1.0	3.0	16.0	16.0	24.0	27.0	27.0	25.0
26	10.0	6.0	2.0	---	1.0	4.0	12.0	17.0	24.0	24.0	25.0	18.0
27	11.0	5.0	0.0	---	2.0	8.0	13.0	17.0	22.0	24.0	22.0	17.0
28	9.0	4.0	0.0	---	2.0	11.0	13.0	---	26.0	21.0	26.0	17.0
29	8.0	3.0	0.0	1.0	---	2.0	12.0	15.0	26.0	21.0	24.0	17.0
30	8.0	3.0	0.0	3.0	---	13.0	16.0	15.0	23.0	23.0	20.0	17.0
31	11.0	---	0.0	4.0	---	14.0	---	15.0	---	24.0	22.0	---
AVERAGE	12.5	7.0	4.0	---	---	6.0	13.5	17.0	22.0	24.5	24.5	19.5

LICKING RIVER BASIN

03249500 LICKING RIVER AT FARMERS, KY.

LOCATION.--Lat 36°08'24", long 83°33'26", Rowan County, at auxiliary gaging station near right bank at bridge on U.S. Highway 60, 300 ft upstream from Chesapeake and Ohio Railway bridge, 0.8 mile west of Farmers, 1.1 miles upstream from Triplett Creek, 3.4 miles downstream from base gaging station, and 4.0 miles downstream from Cave Run Dam (under construction).

DRAINAGE AREA.--831 sq mi.

PERIOD OF RECORD.--Chemical analyses: September 1949 to August 1950.

Water temperatures: October 1949 to September 1968.

Sediment records: November 1960 to September 1967.

EXTREMES.--1967-68:

Water temperatures: Maximum, 26.0°C Aug. 7, 24, 25; minimum, freezing point on many days during December to March.

Period of record:

Water temperatures: Maximum, 33.5°C July 19, 1951; minimum, freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT AT 0700)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	---	---	---	7.0	0.0	12.0	13.0	16.0	22.0	23.0	20.0
2	20.0	---	---	0.0	7.0	1.0	10.0	13.0	16.0	22.0	23.0	20.0
3	---	---	---	---	6.0	0.0	11.0	16.0	16.0	22.0	24.0	20.0
4	---	---	---	---	3.0	1.0	11.0	16.0	17.0	21.0	24.0	21.0
5	---	---	---	---	2.0	1.0	10.0	16.0	17.0	21.0	24.0	21.0
6	---	---	---	---	2.0	3.0	10.0	14.0	18.0	21.0	24.0	20.0
7	---	6.0	14.0	---	1.0	2.0	9.0	14.0	18.0	21.0	26.0	19.0
8	---	---	---	---	2.0	3.0	9.0	15.0	19.0	22.0	25.0	19.0
9	---	---	7.0	---	2.0	1.0	10.0	16.0	20.0	23.0	25.0	19.0
10	---	---	5.0	---	1.0	3.0	9.0	16.0	22.0	23.0	24.0	21.0
11	---	---	6.0	---	0.0	7.0	9.0	17.0	22.0	24.0	24.0	20.0
12	---	---	7.0	---	0.0	5.0	11.0	16.0	23.0	24.0	22.0	18.0
13	---	---	7.0	---	0.0	3.0	13.0	18.0	22.0	24.0	21.0	18.0
14	---	---	5.0	---	0.0	2.0	12.0	18.0	21.0	24.0	21.0	18.0
15	---	---	6.0	---	0.0	3.0	12.0	18.0	22.0	24.0	21.0	18.0
16	---	---	3.0	---	0.0	6.0	13.0	18.0	22.0	23.0	22.0	19.0
17	---	---	2.0	---	0.0	6.0	13.0	18.0	22.0	23.0	22.0	19.0
18	---	---	5.0	---	0.0	5.0	14.0	17.0	20.0	24.0	23.0	18.0
19	---	---	---	---	0.0	7.0	15.0	17.0	21.0	25.0	23.0	18.0
20	---	---	5.0	---	0.0	8.0	15.0	17.0	22.0	24.0	24.0	18.0
21	---	---	4.0	---	0.0	9.0	15.0	15.0	22.0	24.0	24.0	19.0
22	---	---	8.0	---	0.0	9.0	15.0	19.0	21.0	24.0	24.0	20.0
23	---	---	5.0	---	1.0	6.0	14.0	16.0	22.0	23.0	24.0	21.0
24	---	---	4.0	2.0	0.0	4.0	15.0	16.0	23.0	24.0	26.0	21.0
25	---	---	4.0	0.0	0.0	4.0	13.0	16.0	22.0	24.0	26.0	19.0
26	---	---	3.0	0.0	0.0	6.0	14.0	16.0	22.0	24.0	23.0	18.0
27	---	---	4.0	0.0	0.0	7.0	12.0	16.0	21.0	23.0	21.0	18.0
28	---	---	---	1.0	0.0	8.0	13.0	15.0	19.0	23.0	20.0	17.0
29	---	---	---	3.0	0.0	10.0	13.0	15.0	20.0	22.0	19.0	16.0
30	---	---	0.0	4.0	---	11.0	13.0	15.0	21.0	23.0	19.0	17.0
31	---	---	0.0	4.0	---	13.0	---	15.0	---	23.0	15.0	---
AVERAGE	---	---	---	---	1.0	5.0	12.0	16.0	20.5	23.0	23.0	19.0

LICKING RIVER BASIN

03251500 LICKING RIVER AT MCKINNEYSBURG, KY.

LOCATION.--Lat 38°35'52", long 84°16'00", Pendleton County, at gaging station at county highway bridge at McKinneysburg, 6.5 miles southeast of Falmouth, 9.0 miles upstream from Blanket Creek, and 12.8 miles upstream from South Fork.

DRAINAGE AREA.--2,326 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1968.

Water temperatures: October 1952 to September 1968.

Sediment records: October 1952 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 425 micromhos Nov. 25; minimum daily, 110 micromhos Apr. 8.

Water temperatures: Maximum, 32.0°C July 3, 1964; minimum, freezing point on several days during January and February.

Sediment concentrations: Maximum daily, 1,520 mg/l Mar. 12; minimum daily, 1 mg/l Feb. 26-28, Mar. 6-8.

Sediment loads: Maximum daily, 56,200 tons Mar. 13; minimum daily, 1.0 ton Feb. 27, 28.

Period of record:

Specific conductance: Maximum daily, 674 micromhos Nov. 20, 1961; minimum daily, 83 micromhos Mar. 4, 1962.

Water temperatures: Maximum, 32.0°C July 3, 1964; minimum, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 4,230 mg/l Feb. 25, 1956; minimum daily, 1 mg/l on many days during 1952-56, 1963, 1968.

Sediment loads: Maximum daily, 223,000 tons Feb. 25, 1956; minimum daily, 0.04 ton Nov. 14, 15, 1953.

REMARKS.--Daily samples were collected for maximum and minimum specific conductance for each month.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CF5)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLD- RIDE (CL)	NITRATE (NO3)	DIS- SOLVED SOLIDS (PRESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRON- MHOS)	PH	TEMP- ERATURE (DEG C)
OCT.												
01...	159	104	0	22	3.0	1.8	142	106	21	223	7.2	13
23...	42	142	0	22	21	.4	216	140	24	327	7.5	12
NOV.												
24...	440	144	0	37	39	1.1	278	171	53	424	7.9	4
30...	6840	87	0	21	5.0	4.5	154	96	25	210	7.8	3
DEC.												
15...	2440	132	0	34	6.0	2.3	198	146	38	301	7.4	6
26...	4220	72	0	25	6.0	2.0	96	78	19	176	7.0	7
JAN.												
23...	5200	122	0	28	8.0	4.1	152	134	34	280	7.6	1
26...	4950	72	0	24	6.0	2.8	98	84	25	194	7.0	2
FEB.												
01...	6350	108	0	28	2.0	4.2	168	120	31	252	8.2	6
28...	370	117	0	33	12	1.6	194	134	38	299	7.9	1
MAR.												
11...	1930	128	0	33	9.0	3.7	188	148	43	311	7.7	8
16...	17100	38	0	19	4.0	2.2	80	50	19	120	6.6	7
APR.												
02...	6930	112	0	26	5.0	2.0	164	120	28	250	7.3	12
08...	14900	42	0	14	2.0	1.4	62	48	14	110	6.7	12
MAY												
13...	1270	140	0	29	4.0	1.7	174	142	28	298	7.6	18
27...	26100	70	0	13	1.5	3.6	100	72	14	151	8.0	17
JUNE												
03...	4340	110	0	23	4.0	2.4	130	111	21	239	7.5	17
25...	1740	76	0	19	4.5	3.0	124	79	17	183	7.2	24
JULY												
17...	448	138	0	23	4.5	2.7	192	136	23	280	8.0	26
28...	6640	80	0	12	1.5	6.2	134	80	14	175	7.0	23
AUG.												
05...	12100	72	0	11	.5	4.0	128	70	11	150	7.6	23
12...	4530	120	0	23	12	3.4	186	126	28	285	7.1	24
SEPT.												
25...	87	122	0	22	14	1.0	184	122	22	282	7.7	23

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECONTANTION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CF5)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE											METH- OD OF ANAL- YSIS
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
MAR 13 1968	1730			1090		42	57	68	80	98	99	100	--	--	--	--	SBWC

LICKING RIVER BASIN

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03251500 LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	223	270	251	--	252	--	196	231	212	242	230	243
2.....	228	215	269	--	252	301	250	225	--	234	274	262
3.....	237	290	187	--	281	296	186	220	239	210	260	264
4.....	244	315	206	--	--	--	162	221	223	226	259	276
5.....	253	302	215	--	272	206	159	223	221	226	150	272
6.....	--	--	203	251	257	--	159	223	215	227	257	276
7.....	240	272	195	--	255	293	122	223	209	226	276	270
8.....	264	287	202	--	259	291	110	220	214	216	210	247
9.....	264	287	221	--	262	--	115	228	219	216	224	224
10.....	274	281	210	--	261	301	144	228	218	218	264	220
11.....	281	281	--	--	261	311	141	244	221	219	268	230
12.....	285	294	220	--	253	238	188	281	219	222	285	240
13.....	--	309	249	--	--	244	189	298	218	214	233	243
14.....	290	292	276	--	--	158	194	289	218	214	203	253
15.....	298	292	301	--	--	126	234	277	218	215	234	255
16.....	302	307	276	--	279	120	220	261	217	240	194	247
17.....	302	329	284	--	276	140	222	259	221	280	191	236
18.....	305	387	282	--	276	161	203	256	--	248	224	239
19.....	313	388	289	--	276	158	--	256	229	250	222	251
20.....	316	400	291	--	--	--	197	259	230	236	223	263
21.....	318	400	264	--	--	210	198	259	229	240	236	267
22.....	321	378	264	--	199	208	229	244	217	253	257	270
23.....	327	--	228	280	--	217	208	244	217	253	257	270
24.....	326	424	223	229	294	185	188	174	223	250	231	278
25.....	318	425	191	195	292	160	228	210	183	243	222	282
26.....	--	355	176	194	292	156	210	190	229	206	222	282
27.....	312	355	177	196	292	150	228	151	238	194	228	282
28.....	312	348	177	197	299	162	230	211	219	175	228	278
29.....	315	362	--	--	297	195	227	156	218	228	236	270
30.....	312	210	198	226	--	210	227	160	235	--	240	264
31.....	312	--	199	229	--	215	--	195	--	228	241	--
AVERAGE	289	323	231	--	--	211	191	229	220	228	234	258

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	13.0	4.0	---	6.0	---	12.0	18.0	16.0	27.0	23.0	23.0
2	14.0	13.0	3.0	---	7.0	1.0	12.0	19.0	17.0	26.0	24.0	23.0
3	15.0	14.0	4.0	---	8.0	3.0	12.0	20.0	17.0	24.0	23.0	24.0
4	16.0	11.0	5.0	---	7.0	---	13.0	15.0	21.0	24.0	24.0	23.0
5	17.0	8.0	5.0	---	6.0	2.0	11.0	18.0	21.0	25.0	23.0	23.0
6	---	---	6.0	0.0	6.0	4.0	12.0	18.0	22.0	26.0	26.0	22.0
7	15.0	8.0	8.0	---	6.0	4.0	11.0	18.0	22.0	25.0	26.0	22.0
8	17.0	9.0	8.0	---	4.0	4.0	12.0	18.0	23.0	25.0	26.0	22.0
9	16.0	9.0	6.0	---	1.0	---	12.0	18.0	23.0	27.0	24.0	22.0
10	14.0	8.0	8.0	---	0.0	7.0	12.0	18.0	23.0	24.0	26.0	19.0
11	12.0	11.0	---	---	0.0	8.0	11.0	18.0	23.0	28.0	24.0	20.0
12	12.0	9.0	8.0	---	0.0	6.0	13.0	19.0	26.0	28.0	24.0	21.0
13	---	8.0	8.0	---	0.0	3.0	13.0	19.0	26.0	28.0	23.0	21.0
14	12.0	7.0	7.0	---	0.0	5.0	14.0	21.0	24.0	27.0	23.0	22.0
15	13.0	6.0	6.0	---	0.0	6.0	11.0	21.0	23.0	24.0	23.0	21.0
16	17.0	6.0	4.0	---	1.0	7.0	13.0	22.0	24.0	24.0	23.0	21.0
17	16.0	6.0	4.0	---	0.0	7.0	14.0	22.0	24.0	26.0	24.0	21.0
18	16.0	6.0	4.0	---	2.0	7.0	16.0	18.0	22.0	27.0	23.0	21.0
19	15.0	6.0	4.0	---	1.0	7.0	15.0	18.0	25.0	27.0	26.0	21.0
20	12.0	5.0	4.0	---	3.0	9.0	16.0	17.0	26.0	27.0	28.0	22.0
21	13.0	6.0	7.0	---	---	9.0	16.0	18.0	26.0	28.0	29.0	23.0
22	12.0	7.0	7.0	---	---	7.0	17.0	18.0	26.0	28.0	30.0	24.0
23	12.0	---	6.0	1.0	---	7.0	16.0	18.0	27.0	28.0	30.0	24.0
24	11.0	4.0	6.0	1.0	1.0	4.0	15.0	16.0	26.0	28.0	29.0	24.0
25	12.0	5.0	4.0	1.0	2.0	6.0	14.0	17.0	24.0	28.0	28.0	23.0
26	---	6.0	7.0	2.0	2.0	7.0	16.0	17.0	25.0	24.0	25.0	22.0
27	11.0	6.0	3.0	2.0	1.0	7.0	16.0	17.0	26.0	23.0	24.0	21.0
28	9.0	4.0	3.0	2.0	1.0	9.0	17.0	17.0	23.0	23.0	23.0	21.0
29	8.0	3.0	---	---	1.0	10.0	17.0	17.0	24.0	24.0	23.0	26.0
30	9.0	3.0	2.0	6.0	---	13.0	18.0	16.0	24.0	24.0	23.0	21.0
31	10.0	---	1.0	4.0	---	13.0	---	16.0	---	24.0	24.0	---
AVERAGE	13.0	7.5	5.0	---	2.5	6.5	14.0	18.0	23.5	26.0	25.0	22.0

LICKING RIVER BASIN

03251500 LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	159	58	25	2050	357	3310	8820	795	18900
2	34	27	9.4	5800	397	6370	9170	610	15100
3	79	31	6.6	3090	170	1420	9850	350	9310
4	76	30	6.2	2640	174	912	7260	250	4900
5	73	35	6.0	1950	95	475	5390	165	2400
6	205	48	37	1370	66	244	3570	103	903
7	335	106	96	1050	44	126	3070	73	606
8	130	46	14	740	24	55	2380	45	363
9	30	42	10	614	17	28	1800	44	214
10	73	29	5.5	505	15	20	1770	63	301
11	48	24	4.4	425	22	25	4720	371	5960
12	63	20	1.4	683	35	64	5060	413	6450
13	57	20	3.1	475	24	31	3600	290	2460
14	55	21	3.1	325	16	14	2310	104	640
15	51	31	4.3	283	15	12	2440	57	376
16	48	20	2.5	264	15	10	2360	33	236
17	45	19	2.4	224	14	9.5	2160	28	183
18	42	20	2.3	201	13	7.1	2030	25	137
19	43	17	2.0	183	10	5.1	1940	28	147
20	43	17	2.0	173	10	4.7	1780	29	139
21	42	13	1.5	164	10	4.4	2060	29	161
22	42	12	1.4	173	12	5.6	2240	473	9670
23	42	12	1.4	281	12	9.1	6000	192	3110
24	41	13	1.4	460	12	14	6450	251	4370
25	245	46	63	750	15	30	5190	150	2100
26	397	89	106	806	19	41	4220	87	901
27	146	31	12	890	17	41	3170	64	548
28	169	18	9.6	830	13	29	2290	44	271
29	140	15	2.8	775	10	21	1760	37	128
30	41	14	2.3	6960	566	14400	1610	16	67
31	182	36	30	--	--	--	1270	10	34
TOTAL	3295	--	468.6	34079	--	27736.5	123270	--	91546
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1150	9	28	6350	129	2210	390	2	2.1
2	1150	9	28	5270	205	3250	390	2	2.1
3	1090	6	26	4420	192	2200	614	2	2.2
4	1510	10	41	3630	60	688	402	3	3.3
5	2200	20	110	2460	45	347	422	2	2.3
6	3330	150	1340	2250	32	194	420	1	1.1
7	3200	80	601	1890	25	127	440	1	1.2
8	2700	50	764	1640	17	75	425	1	1.1
9	2070	30	142	1440	14	54	470	2	2.3
10	1900	25	124	1260	9	31	907	56	227
11	1850	20	100	1070	7	20	1930	150	783
12	1750	15	71	1030	4	11	10600	1520	50300
13	2000	81	795	4	8.6	16000	1300	64200	3880
14	1750	10	67	814	4	8.8	17900	900	43500
15	1220	10	33	856	4	8.7	17700	610	29200
16	1200	9	29	730	6	9.9	17100	515	23800
17	1350	9	34	713	4	7.7	17400	420	19700
18	1380	9	30	655	4	7.2	15800	354	15100
19	1250	8	27	613	3	4.0	12200	340	11200
20	1170	8	24	566	2	3.1	8390	310	7010
21	1000	15	77	530	2	2.9	10600	828	23700
22	2200	70	674	558	2	3.2	15400	645	26800
23	5230	200	2810	558	2	3.6	20300	388	20800
24	5960	350	7700	658	3	6.5	20900	352	19800
25	7500	152	3090	520	2	2.8	20800	240	14000
26	4950	27	1390	410	1	1.1	18200	200	9880
27	3400	57	522	360	1	1.0	16000	158	5970
28	2500	65	3111	370	1	1.0	8680	121	2860
29	2470	47	280	380	2	2.1	4860	95	1260
30	5810	334	7030	--	--	--	3330	90	890
31	7040	370	7030	--	--	--	3090	103	965
TOTAL	37453	--	36256	43644	--	9277.8	270900	--	221850.7

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	8310	935	21000	908	15	40	5350	154	2220
2	6930	745	6450	985	13	33	4800	157	2030
3	5170	290	6670	800	14	34	4240	174	2040
4	14300	650	31700	840	15	35	3290	119	1050
5	21700	540	31600	830	11	25	2780	85	630
6	18200	305	20100	770	7	15	2210	65	380
7	16600	252	11170	710	0	17	1720	53	245
8	14900	209	8410	650	9	15	1320	47	168
9	13600	127	6660	618	8	13	1120	80	242
10	10600	130	3980	590	8	13	938	41	104
11	5750	163	2530	780	23	54	424	65	145
12	3560	144	1470	1300	83	201	725	31	51
13	2780	105	788	788	98	234	634	13	22
14	2470	40	327	1210	76	248	522	14	20
15	2730	184	1850	983	75	198	470	15	19
16	3500	177	1670	800	42	91	410	15	17
17	3730	150	1510	690	20	37	374	12	12
18	3110	102	856	896	34	98	344	12	11
19	2630	77	541	1300	65	100	317	13	13
20	2280	60	360	1040	42	114	288	13	10
21	2050	50	277	1040	44	124	269	14	10
22	1770	36	172	850	36	70	289	14	11
23	1480	120	952	2517	258	380	284	20	16
24	2770	565	4820	918	13800	574	1890	159	159
25	1720	63	293	15500	630	26400	1740	755	3560
26	1850	41	205	21200	460	26300	1210	220	710
27	1550	31	103	26100	785	55500	1360	128	470
28	1300	20	107	21700	330	19300	1210	217	700
29	1170	10	60	17900	262	12200	1210	223	729
30	1070	18	42	13400	173	6760	1060	120	363
31	--	--	--	9270	144	6110	--	--	--
TOTAL	135150	--	165015	160392	--	192660	41982	--	16163
DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	730	97	183	2350	468	3080	212	10	11
2	485	96	126	1860	226	1160	175	17	8.0
3	384	40	85	1773	125	507	147	16	6.4
4	371	59	51	1450	120	515	129	13	4.5
5	248	51	40	12100	991	35200	123	21	7.0
6	249	43	20	2440	130	2440	225	37	33
7	234	37	23	1650	3170	1430	1290	94	24
8	276	82	30	2760	605	5140	140	68	200
9	306	46	38	2180	480	2830	690	60	112
10	241	28	18	1450	268	1930	458	46	57
11	198	24	13	4860	690	9050	325	30	34
12	164	22	9.7	4530	510	6740	310	38	32
13	144	23	8.9	3270	500	4410	227	65	28

LICKING RIVER BASIN

03252500 SOUTH FORK LICKING RIVER AT CYNTHIANA, KY.

LOCATION.--Lat 38°23'27", long 84°18'11", Harrison County, at gaging station at bridge on State Highway 356 and 36 at Cynthiana, 0.4 mile downstream from Grays Run and in pool formed by old milldam 2.6 miles downstream.

DRAINAGE AREA.--621 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1950 to August 1951.

Water temperatures: October 1949 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 30.0°C Aug. 23; minimum, freezing point on many days during December to March.

Period of record:

Water temperatures: Maximum, 30.5°C June 30, 1952, July 14, 1954; minimum, freezing point on many days during winter periods.

REMARKS.--Small diversion by Cynthiana municipal waterplant.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENTS, AT APPROXIMATELY 0700 AND 1800)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	13.0	17.0	13.0	13.0	4.0	4.0	0.0	0.0	7.0	9.0	0.0	2.0
2	13.0	18.0	12.0	13.0	4.0	6.0	0.0	0.0	8.0	8.0	1.0	1.0
3	16.0	19.0	12.0	12.0	6.0	6.0	0.0	0.0	7.0	7.0	0.0	1.0
4	16.0	19.0	11.0	10.0	4.0	6.0	0.0	0.0	5.0	6.0	0.0	4.0
5	17.0	20.0	8.0	8.0	5.0	7.0	0.0	0.0	4.0	6.0	1.0	5.0
6	19.0	18.0	7.0	7.0	6.0	7.0	0.0	0.0	4.0	5.0	3.0	4.0
7	16.0	18.0	4.0	7.0	7.0	8.0	0.0	---	3.0	4.0	1.0	6.0
8	17.0	19.0	4.0	7.0	7.0	8.0	---	0.0	3.0	3.0	3.0	7.0
9	17.0	16.0	6.0	8.0	6.0	7.0	---	0.0	3.0	3.0	6.0	8.0
10	14.0	15.0	6.0	8.0	7.0	8.0	---	0.0	1.0	2.0	8.0	8.0
11	13.0	14.0	8.0	8.0	8.0	10.0	---	0.0	0.0	1.0	8.0	9.0
12	12.0	15.0	8.0	11.0	9.0	9.0	---	0.0	0.0	1.0	7.0	5.0
13	12.0	16.0	8.0	8.0	8.0	9.0	0.0	0.0	0.0	1.0	3.0	4.0
14	14.0	17.0	9.0	9.0	8.0	8.0	---	0.0	0.0	1.0	2.0	5.0
15	15.0	18.0	7.0	7.0	7.0	7.0	---	0.0	0.0	1.0	4.0	7.0
16	17.0	19.0	4.0	7.0	3.0	5.0	---	0.0	0.0	2.0	6.0	7.0
17	17.0	19.0	6.0	7.0	3.0	4.0	0.0	0.0	1.0	1.0	6.0	8.0
18	16.0	16.0	6.0	7.0	6.0	8.0	0.0	1.0	0.0	1.0	7.0	9.0
19	14.0	14.0	4.0	7.0	7.0	7.0	0.0	1.0	0.0	2.0	8.0	11.0
20	12.0	15.0	5.0	6.0	6.0	8.0	0.0	1.0	---	---	9.0	11.0
21	12.0	14.0	4.0	6.0	8.0	10.0	1.0	1.0	0.0	0.0	11.0	10.0
22	12.0	15.0	5.0	7.0	9.0	7.0	1.0	1.0	0.0	0.0	9.0	7.0
23	11.0	15.0	5.0	6.0	4.0	4.0	1.0	1.0	0.0	0.0	5.0	4.0
24	13.0	16.0	3.0	6.0	3.0	5.0	1.0	2.0	0.0	0.0	2.0	5.0
25	13.0	13.0	4.0	6.0	---	6.0	1.0	2.0	0.0	1.0	4.0	7.0
26	11.0	13.0	6.0	7.0	3.0	3.0	1.0	3.0	0.0	2.0	6.0	10.0
27	12.0	11.0	6.0	6.0	2.0	1.0	2.0	3.0	1.0	1.0	8.0	12.0
28	10.0	11.0	3.0	5.0	1.0	1.0	3.0	5.0	1.0	2.0	10.0	13.0
29	9.0	12.0	2.0	4.0	1.0	1.0	4.0	6.0	1.0	1.0	12.0	15.0
30	11.0	13.0	3.0	4.0	0.0	1.0	6.0	7.0	---	---	14.0	16.0
31	12.0	13.0	---	---	1.0	1.0	6.0	7.0	---	---	15.0	15.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	12.0	13.0	16.0	21.0	16.0	17.0	24.0	28.0	24.0	26.0	21.0	23.0
2	12.0	12.0	17.0	22.0	16.0	19.0	25.0	27.0	23.0	26.0	21.0	24.0
3	12.0	12.0	19.0	23.0	18.0	20.0	24.0	27.0	23.0	26.0	22.0	25.0
4	12.0	13.0	19.0	22.0	18.0	22.0	22.0	27.0	25.0	27.0	22.0	23.0
5	11.0	10.0	19.0	19.0	20.0	23.0	22.0	27.0	23.0	25.0	22.0	23.0
6	9.0	11.0	16.0	19.0	21.0	24.0	23.0	27.0	25.0	28.0	21.0	24.0
7	9.0	12.0	16.0	19.0	22.0	24.0	22.0	26.0	26.0	28.0	21.0	24.0
8	12.0	13.0	18.0	19.0	23.0	24.0	24.0	26.0	23.0	29.0	20.0	23.0
9	11.0	13.0	18.0	19.0	23.0	26.0	24.0	29.0	26.0	27.0	21.0	23.0
10	12.0	14.0	17.0	18.0	24.0	28.0	25.0	28.0	26.0	27.0	21.0	21.0
11	12.0	14.0	18.0	19.0	26.0	29.0	26.0	29.0	23.0	26.0	20.0	20.0
12	13.0	15.0	18.0	21.0	26.0	28.0	26.0	29.0	22.0	24.0	19.0	22.0
13	14.0	16.0	17.0	21.0	23.0	27.0	25.0	27.0	23.0	24.0	18.0	22.0
14	16.0	17.0	19.0	23.0	22.0	26.0	24.0	26.0	23.0	24.0	19.0	22.0
15	14.0	16.0	21.0	24.0	23.0	26.0	23.0	25.0	22.0	23.0	19.0	23.0
16	13.0	16.0	22.0	24.0	23.0	26.0	23.0	26.0	22.0	24.0	20.0	21.0
17	14.0	14.0	21.0	22.0	22.0	25.0	24.0	29.0	23.0	26.0	20.0	22.0
18	14.0	17.0	19.0	22.0	22.0	26.0	25.0	29.0	24.0	26.0	20.0	20.0
19	15.0	18.0	19.0	19.0	23.0	26.0	26.0	29.0	25.0	27.0	19.0	21.0
20	17.0	19.0	17.0	21.0	23.0	26.0	26.0	29.0	26.0	28.0	19.0	23.0
21	18.0	20.0	17.0	19.0	22.0	27.0	26.0	29.0	27.0	29.0	20.0	24.0
22	18.0	20.0	16.0	20.0	23.0	27.0	27.0	27.0	27.0	29.0	21.0	26.0
23	19.0	19.0	18.0	24.0	24.0	27.0	26.0	28.0	27.0	29.0	22.0	26.0
24	19.0	17.0	17.0	17.0	24.0	26.0	27.0	27.0	27.0	29.0	22.0	25.0
25	14.0	17.0	17.0	18.0	25.0	26.0	27.0	28.0	26.0	28.0	23.0	22.0
26	13.0	19.0	17.0	18.0	24.0	26.0	26.0	26.0	25.0	25.0	20.0	23.0
27	14.0	17.0	17.0	17.0	23.0	23.0	25.0	24.0	22.0	24.0	21.0	23.0
28	15.0	18.0	16.0	17.0	21.0	24.0	24.0	26.0	21.0	25.0	19.0	23.0
29	16.0	19.0	15.0	16.0	23.0	25.0	23.0	27.0	21.0	24.0	19.0	23.0
30	16.0	19.0	16.0	16.0	23.0	27.0	23.0	27.0	21.0	24.0	19.0	22.0
31	---	---	15.0	18.0	---	---	24.0	25.0	21.0	24.0	---	---

GREAT MIAMI RIVER BASIN

03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	AMMONIA (NH ₄)	NITRITE (NO ₂)	DIS- SOLVED OXYGEN	PER- CENT SATUR- ATION	PHENOLS	METHY- LENE BLUE ACTIVE SUB- STANCE	TUR- BID- ITY	ODOR
OCT.								
03...	.22	.00	9.2	93	.008	.04	20	0
10...	.30	.00	7.8	74	.008	.05	35	0
17...	.07	.05	8.2	82	--	.05	30	0
24...	.22	.00	11.0	98	.001	.04	20	0
31...	.07	.00	10.0	87	.000	.05	20	0
NOV.								
07...	.22	.05	6.0	46	.002	.13	4400	2
15...	.07	.05	12.0	92	.002	.04	30	4
DEC.								
12...	.07	.05	9.8	80	.004	.04	138	2
JAN.								
17...	.37	.05	12.0	84	.006	.20	20	0
FEB.								
13...	.22	--	12.0	84	.003	.13	7.0	0
MAR.								
19...	1.1	.05	11.0	90	.001	.22	50	0
APR.								
22...	.22	.05	13.0	138	.000	.04	8.0	4
MAY								
14...	.07	.05	8.8	91	.004	.06	28	2
JUNE								
11...	.22	.05	7.8	94	.007	.04	45	2
JULY								
01...	.15	.05	7.8	90	.001	.06	40	8
09...	.00	.05	10.8	132	.003	.18	45	4
16...	.00	.05	7.4	85	.001	.04	60	2
24...	.15	.05	8.0	98	.003	.14	50	0
30...	.07	.05	7.6	83	.005	.22	70	4
AUG.								
06...	.15	.05	6.8	78	.008	.11	85	2
13...	.22	.05	7.2	78	.000	.05	70	4
20...	.00	.05	7.2	86	.006	.29	49	2
27...	.15	.00	8.2	87	.000	.20	30	4
SEPT.								
04...	.07	.05	8.5	94	.023	.05	35	2
11...	.07	.05	7.8	82	.006	.13	25	2
17...	.00	.00	9.1	97	.011	.16	22	2
24...	.15	.00	7.2	82	.001	.10	50	2

DATE	TOTAL CHRO- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	COBALT (CO)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
03...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
17...	.00	.01	.07	.00	.01	.00	.00	.00
24...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
NOV.								
07...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
DEC.								
12...	--	--	--	--	--	--	--	--
JAN.								
17...	--	--	--	--	--	--	--	--
FEB.								
13...	--	--	--	--	--	--	--	--
MAR.								
19...	--	--	--	--	--	--	--	--
APR.								
22...	--	--	--	--	--	--	--	--
MAY								
14...	--	--	--	--	--	--	--	--
JUNE								
11...	--	--	--	--	--	--	--	--
JULY								
01...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
AUG.								
06...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
27...	.00	.01	.02	.01	.01	.00	.00	.00
SEPT.								
04...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
17...	.00	.01	.01	.01	.01	.00	.01	.00
24...	--	--	--	--	--	--	--	--

GREAT MIAMI RIVER BASIN

137

03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 1500 AND 1800)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1.0	---	6.0	---	11.0	18.0	17.0	27.0	26.0	---
2	18.0	11.0	0.0	0.0	---	---	11.0	17.0	---	23.0	23.0	---
3	18.0	---	---	0.0	3.0	---	11.0	20.0	---	22.0	23.0	---
4	---	---	0.0	0.0	---	6.0	13.0	18.0	22.0	---	---	---
5	18.0	---	4.0	0.0	4.0	2.0	8.0	16.0	23.0	24.0	24.0	---
6	---	---	4.0	0.0	5.0	3.0	9.0	---	24.0	25.0	25.0	---
7	18.0	---	6.0	---	4.0	4.0	---	18.0	24.0	---	25.0	---
8	---	---	---	3.0	---	6.0	13.0	18.0	25.0	---	25.0	---
9	---	---	6.0	0.0	---	8.0	14.0	18.0	---	26.0	26.0	---
10	---	---	---	1.0	---	---	12.0	17.0	27.0	---	---	---
11	---	---	7.0	1.0	---	7.0	13.0	15.0	---	27.0	---	---
12	---	---	7.0	1.0	---	---	16.0	---	26.0	---	22.0	---
13	---	---	6.0	1.0	---	0.0	16.0	18.0	23.0	---	22.0	---
14	13.0	---	6.0	---	---	0.0	---	20.0	---	---	---	---
15	---	3.0	4.0	---	1.0	4.0	14.0	---	24.0	23.0	23.0	---
16	---	2.0	---	---	1.0	4.0	---	20.0	---	26.0	---	---
17	---	4.0	---	1.0	---	---	12.0	17.0	22.0	---	25.0	---
18	---	---	6.0	---	---	8.0	14.0	16.0	22.0	27.0	---	---
19	---	---	6.0	1.0	---	10.0	---	---	24.0	27.0	26.0	---
20	---	3.0	6.0	---	---	10.0	17.0	16.0	24.0	26.0	---	---
21	12.0	3.0	8.0	---	---	4.0	---	---	24.0	---	---	---
22	13.0	4.0	---	1.0	0.0	---	---	17.0	25.0	26.0	---	---
23	13.0	4.0	2.0	---	2.0	2.0	19.0	15.0	---	28.0	---	---
24	14.0	4.0	---	---	0.0	---	13.0	13.0	---	---	29.0	---
25	---	6.0	---	0.0	---	7.0	12.0	16.0	21.0	22.0	---	---
26	---	---	---	---	---	6.0	12.0	---	23.0	24.0	---	---
27	8.0	3.0	---	---	---	13.0	15.0	16.0	19.0	23.0	---	---
28	---	2.0	---	---	---	12.0	---	15.0	---	---	---	---
29	---	1.0	---	3.0	---	11.0	18.0	16.0	22.0	23.0	---	---
30	---	1.0	0.0	---	---	15.0	16.0	---	---	23.0	---	19.0
31	---	---	---	3.0	---	---	---	---	---	22.0	---	---
AVERAGE	---	---	---	---	---	---	---	---	---	---	---	---

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPE; S, SIEVE;
V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	LOAD TRANSPORT RATE (TONS PER DAY)	PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED	SUSPENDED SEDIMENT	METH- OD OF ANAL- YSIS
DEC 11 1967	2040		2730	112	826	85 91 92 98 99 99 100	-- -- -- -- --	SBWC
JAN 30 1968	1935		5260	161	2290	63 76 82 89 94 95 100	-- -- -- -- --	SBWC
MAY 27.....	1710		4200	626	7100	60 68 81 88 95 96 98	99 100 -- --	SBWC
MAY 27.....	1710		4200	626	7100	23 38 58 80 94 95 97	98 100 -- --	SBN

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	64	28	4.8	89	23	5.5	158	10	4.3
2	54	22	3.2	300	75	5.67	507	107	5.477
3	47	23	2.9	425	62	71	4270	298	3440
4	54	38	5.5	419	91	58	3880	102	1070
5	60	40	7.9	439	38	45	3200	52	449
6	77	36	7.5	298	25	20	2920	42	331
7	77	27	5.2	236	18	11	2570	43	333
8	64	43	7.7	195	32	17	2130	90	518
9	62	28	4.7	161	17	7.4	1660	48	215
10	70	30	5.7	154	13	5.4	1910	59	5580
11	62	38	6.4	143	22	8.5	2790	135	1020
12	54	56	8.2	132	24	8.6	2550	90	620
13	52	55	7.7	179	27	13	2020	73	348
14	50	52	7.0	159	19	8.2	1480	72	288
15	49	70	9.3	226	19	12	1120	44	133
16	45	56	7.4	293	12	9.5	845	29	66
17	62	42	7.0	340	13	12	624	22	37
18	77	55	11	527	22	31	742	22	44
19	132	80	29	535	22	32	1100	41	122
20	122	41	14	493	16	20	958	48	124
21	88	30	7.1	425	15	17	1120	66	5292
22	72	27	5.2	340	12	11	4150	473	5300
23	64	23	4.0	183	20	9.9	3080	234	1950
24	62	32	5.4	165	17	7.6	1920	84	467
25	66	32	5.7	177	17	8.1	1240	59	198
26	65	21	3.7	187	20	10	958	42	109
27	67	21	3.8	163	15	6.6	600	38	62
28	68	18	3.3	148	15	6.0	450	35	43
29	67	15	2.7	137	12	4.4	400	34	37
30	66	14	2.5	143	10	3.9	320	32	28
31	67	21	3.8	--	--	--	270	30	22
TOTAL	2086	--	209.3	7771	--	546.6	51942	--	18597.3

GREAT MIAMI RIVER BASIN

3-2615. GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	230	28	17	3940	62	660	120	9	2.9
2	220	27	16	3480	52	489	120	9	2.9
3	230	33	20	2790	43	324	110	9	2.7
4	200	35	19	2060	34	189	110	10	3.0
5	200	32	17	1510	31	126	120	11	3.6
6	210	49	28	1050	28	79	130	8	2.8
7	190	30	15	778	27	57	125	11	3.7
8	170	23	11	500	22	30	122	19	6.3
9	170	18	8.3	400	16	17	125	20	6.8
10	190	22	11	300	10	8.1	139	19	7.1
11	180	13	6.3	240	10	6.5	137	22	8.1
12	170	16	7.3	230	10	6.2	141	22	8.4
13	160	23	6.9	220	10	5.9	252	18	13
14	170	22	10	210	10	5.7	140	20	7.6
15	170	21	9.6	200	10	5.4	120	27	8.7
16	170	20	9.2	190	15	7.7	181	27	13
17	170	18	6.3	170	22	10	647	28	49
18	170	10	4.6	160	25	11	683	35	65
19	177	10	4.8	150	28	11	624	34	57
20	175	13	6.1	140	28	11	551	29	43
21	195	13	6.8	140	28	11	555	29	43
22	312	10	8.4	140	28	11	692	28	52
23	634	28	48	130	24	8.4	755	24	49
24	600	25	40	130	14	4.9	647	22	38
25	430	12	14	130	12	4.2	890	45	\$ 123
26	320	8	6.9	130	18	6.3	2170	131	768
27	260	8	5.6	120	33	11	2570	144	999
28	650	61	5 131	120	21	6.8	2030	72	395
29	2260	195	1190	120	12	3.9	1460	68	268
30	450	205	2520	--	--	--	1020	72	198
31	4710	108	1370	--	--	--	728	68	134
TOTAL	18653	--	5579.1	19878	--	2127.0	18224	--	3381.6
DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1130	92	281	179	47	23	1340	68	246
2	922	54	134	159	46	20	1020	53	146
3	647	36	63	134	27	9.8	760	46	94
4	1620	250	5 1330	144	27	10	539	35	51
5	2010	188	1020	146	27	11	412	33	37
6	1400	70	265	163	28	12	334	85	77
7	944	59	150	120	30	9.7	290	110	86
8	678	48	88	114	42	13	245	102	67
9	515	47	66	124	37	12	236	92	59
10	439	42	50	132	38	14	217	75	44
11	403	36	39	171	45	21	191	82	42
12	320	34	29	409	81	89	171	82	38
13	270	37	27	357	30	29	198	82	44
14	272	26	19	262	22	16	181	107	52
15	331	41	37	222	27	16	144	82	32
16	334	33	30	262	30	21	222	84	50
17	262	33	23	303	30	25	306	123	102
18	258	22	15	231	22	14	229	88	54
19	265	29	21	229	30	19	179	90	43
20	245	24	16	204	30	17	161	103	45
21	245	26	17	189	33	17	152	103	42
22	243	28	18	169	27	12	124	113	38
23	213	25	14	372	74	5 97	117	107	34
24	195	25	15	1660	156	699	130	81	28
25	198	22	12	1770	94	449	187	116	59
26	187	16	8.1	1170	56	177	492	120	159
27	177	20	9.6	3190	433	5 4010	755	90	183
28	158	23	6.8	4050	246	2690	800	122	264
29	143	22	8.5	3080	156	1300	563	80	122
30	137	28	10	2380	98	630	387	68	71
31	--	--	--	1850	82	410	--	--	--
TOTAL	15165	--	3825.0	23945	--	10892.5	11082	--	2409

5 COMPUTED BY SUBDIVIDING DAY.

GREAT MIAMI RIVER BASIN

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03261500 GREAT MIAMI RIVER AT SIDNEY, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	283	48	37	241	62	40	81	63	14
2	241	53	34	403	73	79	88	60	14
3	204	70	39	334	72	65	84	46	10
4	189	73	37	355	94	5	77	52	11
5	143	70	27	791	170	363	68	92	15
6	119	56	18	611	98	162	73	87	17
7	120	50	16	499	93	125	76	132	27
8	105	58	16	742	106	212	72	67	17
9	92	58	14	1080	142	414	68	104	19
10	84	42	9.5	1320	172	613	71	84	16
11	92	53	13	1140	99	305	72	82	16
12	89	38	9.1	728	62	122	81	50	20
13	78	42	8.8	422	58	66	80	110	24
14	102	57	16	303	88	72	67	86	16
15	172	82	38	250	105	71	64	85	15
16	215	56	33	217	106	62	60	93	15
17	163	31	14	222	101	61	62	68	11
18	120	29	9.4	272	94	69	80	93	20
19	256	74	5.54	245	62	41	96	58	15
20	272	57	42	181	52	25	73	58	15
21	177	43	21	156	68	29	76	56	11
22	127	51	17	139	81	30	72	55	11
23	135	47	18	122	68	22	77	59	12
24	217	145	5.184	119	88	28	86	56	13
25	2410	704	4580	120	77	25	76	52	11
26	1650	222	989	130	80	28	71	50	9.6
27	863	118	275	134	73	26	66	48	8.6
28	863	136	317	105	58	16	62	55	9.2
29	638	105	181	86	41	10	60	50	8.1
30	357	65	63	80	48	10	59	39	6.2
31	245	67	44	76	58	12	--	--	--
TOTAL	10825	--	7173.8	11623	--	3300	2218	--	426.7
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)									193414
TOTAL LOAD FOR YEAR (TONS)									58467.9

S COMPUTED BY SUBDIVIDING DAY.

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 at bridge on Cardo Roman Road, 1.1 miles northwest of Newport, 3 miles south of Fort Loramie and 3 miles downstream from Mile Creek.

DRAINAGE AREA.--152 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1967 to September 1968.

Sediment records: October 1967 to September 1968.

EXTREMES.--1967-68:

Sediment concentrations: Maximum daily, 548 mg/l July 25; minimum daily, 4 mg/l Mar. 3, 4.

Sediment loads: Maximum daily, 1,320 tons Dec. 4; minimum daily, 0.04 ton Oct. 3.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0700 AND 0900)

MONTH	DAY																															AVFP- AGE
	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	
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY..	3	4	0	1	1	1	2	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	1	1	2	3	3	2	--	
MARCH....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	1	3	7	9	--	3	2	2	3	9	10	12	10	12	
APRIL....	7	8	10	11	9	6	9	11	10	10	--	--	--	--	8	8	--	11	12	11	14	17	--	--	--	--	--	--	18	--	--	
MAY.....	11	7	--	--	--	--	--	--	--	11	14	13	13	--	--	--	--	--	--	--	--	--	14	13	14	16	15	14	14	14	--	
JUNE.....	17	17	18	24	19	--	--	--	--	--	--	23	20	--	--	19	20	19	--	--	--	--	--	22	23	--	19	17	10	21	--	
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	23	23	22	23	25	23	23	23	24	23	22	22	23	23	22	19	20	--	
AUGUST....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	--	--

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPE; S, SIEVE;
V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	LOAD TRANSPORT RATE (TONS PER DAY)	SUSPENDED SEDIMENT PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED										METHOD- OD OF ANAL- YSIS	
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
DEC 11 1967	1845		1680	89	404	92	94	96	97	98	98	100	--	--	--	--	SBWC
JAN 31 1968	1000		1960	88	466	83	92	94	96	97	98	100	--	--	--	--	SBWC
MAY 27.....	1855		1500	318	1290	69	80	87	93	97	98	100	--	--	--	--	SBWC
MAY 27.....	1855		1500	318	1290	20	38	59	85	93	94	100	--	--	--	--	SBW

03261950 LORAMIE CREEK NEAR NEWPORT, OHIO--CONTINUED

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	.66	43	.08				--	--	--
2	.42	41	.05				187	50	\$ 45
3	.36	44	.04				1650	240	1130
4	.36	48	.05				2017	243	1320
5	.46	52	.06				1487	126	503
6	1.9	80	.41				1160	53	166
7	1.3	71	.25				875	36	85
8	1.0	66	.18				575	35	54
9	1.7	50	.23				374	53	54
10	1.7	32	.15				694	178	\$ 423
11	1.5	33	.13				1650	151	673
12	1.2	37	.12				1390	100	375
13	1.0	41	.11				843	122	279
14	.84	43	.10				464	112	140
15	1.1	43	.13				297	95	76
16	1.0	44	.12				207	90	50
17	6.0	46	.75				159	77	33
18	12	45	1.5				--	--	--
19	5.7	45	.69				--	--	--
20	2.9	43	.34				--	--	--
21	2.5	41	.28				--	--	--
22	1.7	40	.18				--	--	--
23	1.2	39	.13				1127	173	523
24	1.3	37	.13				552	157	234
25	2.2	36	.21				308	145	121
26	2.5	33	.22				--	--	--
27	2.5	33	.22				--	--	--
28	3.3	33	.29				--	--	--
29	2.3	33	.20				--	--	--
30	1.9	33	.17				--	--	--
31	2.5	32	.22				--	--	--
TOTAL	67.00	--	7.74	--	--	--	16000	--	6284

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	--	--	--	1320	70	249	5.4	5	.07
2	--	--	--	1110	73	219	5.7	5	.08
3	--	--	--	860	56	130	5.2	4	.08
4	--	--	--	510	48	66	4.4	4	.05
5	--	--	--	400	50	54	4.4	1	.20
6	--	--	--	382	48	50	36	67	6.5
7	--	--	--	358	48	46	36	52	5.1
8	--	--	--	328	50	44	24	36	2.7
9	--	--	--	202	48	26	8.6	28	.65
10	--	--	--	31	35	2.9	7.0	23	.43
11	--	--	--	25	22	1.5	6.3	19	.32
12	--	--	--	20	15	.81	7.0	17	.32
13	--	--	--	16	15	.65	6.6	16	.29
14	--	--	--	13	15	.53	6.3	13	.22
15	--	--	--	13	15	.53	35	23	2.2
16	--	--	--	14	15	.57	72	34	\$ 8.7
17	--	--	--	12	15	.49	360	97	94
18	--	--	--	9.3	15	.38	364	65	64
19	--	--	--	8.6	15	.35	324	47	41
20	--	--	--	9.7	15	.39	213	50	29
21	--	--	--	9.3	15	.38	252	46	31
22	--	--	--	7.4	15	.30	367	38	36
23	422	58	66	6.5	15	.27	353	28	25
24	276	40	30	6.3	15	.26	306	27	22
25	151	37	15	5.4	13	.19	606	74	\$ 143
26	106	36	10	5.4	11	.16	1170	134	423
27	93	39	9.8	5.7	8	.12	1220	52	171
28	303	47	\$ 44	6.3	8	.14	890	50	108
29	922	208	\$ 578	6.0	7	.11	486	60	79
30	1810	164	801	--	--	--	263	57	48
31	1880	95	482	--	--	--	192	70	36
TOTAL	5963	--	2035.8	5700.0	--	895.03	7530.9	--	1378.89

\$ COMPUTED BY SUBDIVIDING DAY.

GREAT MIAMI RIVER BASIN

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03261950 LORAMIE CREEK NEAR NEWPORT, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	374	77	78	9.7	76	2.0	207	74	41
2	354	72	69	8.6	65	1.5	232	68	43
3	240	57	37	6.6	40	.71	195	72	38
4	622	34.8	5 527	6.6	40	.71	102	63	17
5	764	99	204	6.6	41	.73	57	70	11
6	504	60	82	4.6	42	.52	36	63	6.1
7	324	54	47	3.5	42	.46	27	75	5.5
8	158	68	29	3.1	47	.39	21	84	4.3
9	112	66	20	4.6	60	.75	19	69	3.5
10	79	58	12	5.7	79	1.2	16	53	2.3
11	63	53	9.0	16	86	3.6	12	41	1.3
12	48	44	5.7	39	58	6.1	15	104	4.2
13	40	82	8.9	27	65	4.7	14	116	4.4
14	35	59	5.6	19	58	3.0	8.6	98	2.3
15	75	63	13	14	68	2.6	6.3	80	1.4
16	64	79	14	16	75	3.2	16	91	3.9
17	48	91	12	17	88	4.0	21	89	5.0
18	48	76	9.8	16	98	4.2	19	97	5.0
19	37	71	7.1	10	97	2.6	12	53	1.7
20	34	78	7.2	9.3	89	2.2	8.9	35	.84
21	35	90	8.5	8.2	78	1.7	4.6	28	.35
22	27	82	6.0	6.0	72	1.2	3.1	23	.19
23	22	76	4.5	45	83	1.0	2.7	17	.12
24	14	72	2.7	577	110	171	6.2	86	5 1.2
25	12	67	2.2	555	65	97	39	98	5 12
26	15	63	2.6	408	50	5 58	194	77	40
27	14	58	2.2	1220	267	879	313	92	78
28	10	54	1.5	1510	94	383	228	112	69
29	9.3	50	1.3	944	54	138	124	105	35
30	8.9	58	1.4	536	68	98	61	108	18
31	--	--	--	324	75	56	--	--	--
TOTAL	4190.2	--	1330.2	6376.1	--	1948.01	2027.4	--	456.10

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	31	92	7.7	31	160	5 15	1.7	48	.22
2	21	82	4.6	85	234	54	2.7	50	.35
3	15	75	3.0	51	201	28	2.5	47	.32
4	9.3	71	1.8	30	155	13	1.9	42	.22
5	6.3	65	1.1	48	152	20	1.5	42	.17
6	4.9	60	.79	24	139	9.0	1.9	42	.22
7	4.2	55	.62	14	127	4.8	1.7	40	.18
8	3.3	52	.46	110	233	5 166	1.6	41	.18
9	2.9	47	.37	887	397	5 951	1.2	40	.13
10	2.5	48	.32	658	146	259	5.5	58	.85
11	2.3	55	.34	366	138	136	4.3	47	.62
12	2.3	60	.37	178	122	59	4.9	37	.69
13	2.2	68	.40	83	103	23	3.3	38	.34
14	1.9	86	.44	43	87	10	2.7	41	.30
15	2.7	89	.65	25	75	5.1	2.3	40	.23
16	14	78	2.9	26	75	5.3	2.2	42	.25
17	41	80	8.9	80	141	5 38	2.7	51	.37
18	22	111	6.6	129	200	70	6.4	101	1.7
19	30	138	11	48	113	15	12	103	3.3
20	42	112	13	19	73	3.7	12	70	2.3
21	20	137	7.4	12	65	2.1	5.7	57	.83
22	12	137	4.4	8.2	66	1.5	3.9	54	.57
23	22	126	7.5	7.4	62	1.2	3.1	54	.45
24	115	222	5 147	6.9	68	.90	2.9	52	.41
25	548	548	811	10	109	2.9	3.1	53	.44
26	480	213	276	8.6	76	1.8	3.1	52	.44
27	273	171	126	5.2	61	.86	2.3	52	.32
28	161	177	77	3.1	57	.48	2.3	54	.36
29	86	170	39	2.0	53	.29	2.0	53	.29
30	36	165	16	1.9	52	.27	1.5	52	.21
31	16	120	5.2	1.6	48	.21	--	--	--
TOTAL	2029.8	--	1581.86	2999.9	--	1897.41	105.5	--	17.13

TOTAL DISCHARGE FOR PERIOD (CFS-DAYS)
TOTAL LOAD FOR PERIOD (TONS)52982.80
17832.17

S COMPUTED BY SUBDIVIDING DAY.

03263110 GREAT MIAMI RIVER NEAR TAYLORSVILLE DAM, AT TAYLORSVILLE, OHIO

LOCATION.--Lat 39°51'17", long 84°10'09", Montgomery County, at highway bridge on Little York Road, 0.8 mile downstream from Poplar Creek, 0.8 mile south of Taylorsville, 1.3 miles downstream from gaging station and 1.5 miles downstream from Taylorsville Dam.

DRAINAGE AREA.--1,149 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: November 1961 to July 1963, July 1966 to September 1968.

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

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DISE- CHARGE (CFS)	SILICA (SIU2)	IRON (FE)	MANG- NESE (MN)	CAL- CIUM (CA)	MAG- NESI- UM (MG)	SODIUM (NA)	POT- TAS- SIUM (K)	BICAR- BONATE (HC03)	CAP- BONATE (C03)	SULFATE (SO4)
OCT.												
03...	1130	1.1	--	.09	.00	--	--	--	--	299	0	80
10...	1415	1.0	--	.11	.03	--	--	--	--	298	0	80
17...	1800	1.12	--	.09	.12	--	--	--	--	308	0	80
24...	1315	1.14	--	.11	.03	--	--	--	--	324	0	90
31...	1215	1.41	--	.26	.13	--	--	--	--	296	0	92
NOV.												
07...	1315	4.1	--	.24	.08	95	33	--	--	268	0	127
15...	1100	234	6.1	.23	.03	95	33	21	3.2	296	0	115
DEC.												
12...	1115	6710	6.2	.75	.00	54	16	5.0	3.2	146	0	54
JAN.												
17...	1800	333	4.1	.21	.06	39	25	22	2.5	330	0	100
FEB.												
13...	1315	550	7.2	.09	.04	96	31	12	2.1	304	0	91
MAR.												
19...	1100	1150	6.0	.19	.03	74	24	12	2.8	220	0	78
APR.												
23...	0700	526	1.2	.38	.02	46	31	14	1.0	292	0	87
MAY												
14...	1420	644	4.2	.09	.05	46	24	15	2.2	302	0	84
JUNE												
11...	1330	488	.5	.04	.04	97	33	14	2.0	270	18	84
JULY												
01...	1800	532	--	.06	.02	--	--	--	--	246	0	74
09...	1000	197	--	.17	.06	--	--	--	--	242	12	92
16...	1430	1240	--	.11	.04	--	--	--	--	264	4	93
24...	1115	298	--	.12	.02	--	--	--	--	256	16	70
30...	1315	418	--	.20	.04	--	--	--	--	250	0	62
AUG.												
06...	1500	1.30	--	.17	.04	--	--	--	--	286	0	72
13...	1700	276	--	.19	.01	--	--	--	--	238	0	65
23...	1330	466	--	.12	.06	--	--	--	--	288	8	93
27...	1300	237	--	.07	.03	--	--	--	--	276	14	91
SEPT.												
04...	1700	169	--	.14	.02	--	--	--	--	272	14	78
11...	1315	159	--	.26	.04	--	--	--	--	318	0	81
17...	1310	151	--	.16	.04	--	--	--	--	282	18	76
24...	1045	140	--	.21	.05	--	--	--	--	290	16	77

DATE	AMMONIA (NH4)	NITRITE (NO2)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION	PHENOLS	METHY- LFINE BLUFF ACTIVE SUR- STANCE	TUR- BID- ITY	ODOR
OCT.								
03...	.30	.05	13.0	138	.007	.00	20	2
10...	.57	.10	5.4	51	.010	.11	15	2
17...	.37	.10	6.0	61	.012	.12	6.0	2
24...	.37	.10	13.0	37	.000	.10	7.0	4
31...	.30	.10	7.3	67	.000	.05	45	2
NOV.								
07...	.44	.05	10.0	92	.004	.09	20	2
15...	.44	.05	9.8	75	.000	.08	6.0	0
DEC.								
12...	.07	.05	10.0	92	.000	.04	132	0
JAN.								
17...	1.2	.05	12.0	86	.007	.20	7.0	2
FEB.								
13...	.57	.05	13.0	94	.000	.16	7.0	0
MAR.								
19...	.30	.05	11.0	92	.000	.08	20	4
APR.								
23...	.22	.05	7.0	72	.007	.09	7.0	2
MAY								
14...	.15	.10	9.2	98	.000	.06	6.0	4
JUNE								
11...	.00	.05	13.0	157	.001	.05	30	2
JULY								
01...	.15	.05	10.0	122	.000	.07	35	4
09...	.30	.05	11.0	131	.003	.27	35	2
16...	.07	.05	7.2	87	.001	.05	50	4
24...	.15	.05	8.6	125	.002	.07	40	2
30...	.07	.05	6.8	76	.004	.13	122	2
AUG.								
06...	.07	.05	7.4	70	.006	.19	40	2
13...	.07	.05	6.4	76	.000	.03	40	4
20...	.00	.05	8.4	172	.002	.04	35	0
27...	.22	.05	9.6	107	.000	.23	45	2
SEPT.								
04...	.20	.05	11.7	132	.000	.04	35	4
11...	.22	.05	8.5	90	.000	.15	40	2
17...	.07	.05	8.6	93	.001	.10	50	2
24...	.15	.05	10.4	120	.002	.10	50	2

03263110 GREAT MIAMI RIVER NEAR TAYLORSVILLE DAM, AT TAYLORSVILLE, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	TOTAL PHOS- PHORUS (PD4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHDS)	PH	TEM- PERA- TURE (DEG C)	COLOR
OCT.												
03...	42	--	6.0	3.6	442	--	345	101	729	7.8	19	--
10...	42	--	5.7	3.4	458	--	345	101	720	7.6	13	--
17...	40	--	8.0	2.8	452	--	330	77	734	7.7	17	--
24...	40	--	8.0	3.9	482	--	365	99	771	8.0	14	--
31...	38	--	3.7	3.4	460	--	335	92	722	8.0	12	--
NOV.												
07...	24	--	16	1.4	496	--	375	155	729	8.1	6	--
15...	28	.3	7.1	2.7	496	458	373	130	734	8.1	6	15
DEC.												
12...	14	.2	17	.52	262	242	201	81	404	7.9	7	50
JAN.												
17...	36	.5	10	2.2	506	478	391	120	781	8.0	2	5
FEB.												
13...	23	.2	14	1.7	430	428	367	118	683	8.1	2	5
MAR.												
19...	28	.3	18	.82	374	358	283	103	569	8.0	8	18
APR.												
23...	26	.5	7.8	.65	414	400	342	102	673	8.0	17	10
MAY												
14...	24	.4	5.5	.90	420	405	355	107	682	8.1	19	15
JUNE												
11...	24	.4	6.0	.95	402	403	353	101	658	8.7	25	15
JULY												
01...	20	--	19	1.2	386	--	308	106	600	8.0	26	--
09...	28	--	1.2	.76	396	--	308	89	605	8.7	25	--
16...	26	--	.0	1.9	378	--	319	96	636	8.3	25	--
24...	28	--	5.8	1.4	380	--	324	87	616	8.7	26	--
30...	16	--	8.1	.90	348	--	286	81	542	8.1	21	--
AUG.												
06...	20	--	7.1	1.5	400	--	320	85	605	8.2	26	--
13...	14	--	4.0	.82	326	--	276	81	529	7.9	21	--
20...	24	--	2.2	1.2	428	--	346	96	653	8.4	26	--
27...	28	--	1.5	1.9	420	--	360	110	647	8.6	21	--
SEPT.												
04...	30	--	3.0	1.9	412	--	336	89	661	8.6	22	--
11...	40	--	5.0	1.6	462	--	352	91	734	8.2	19	--
17...	40	--	.7	1.7	420	--	350	88	696	8.6	20	--
24...	36	--	1.7	2.9	414	--	346	82	700	8.6	23	--

DATE	TOTAL CHLOR- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	COBALT (CO)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
03...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
17...	.00	.01	.04	.00	.00	.01	.00	.00
24...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
NOV.								
07...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
DEC.								
12...	--	--	--	--	--	--	--	--
JAN.								
17...	--	--	--	--	--	--	--	--
FEB.								
13...	--	--	--	--	--	--	--	--
MAR.								
19...	--	--	--	--	--	--	--	--
APR.								
23...	--	--	--	--	--	--	--	--
MAY								
14...	--	--	--	--	--	--	--	--
JUNE								
11...	--	--	--	--	--	--	--	--
JULY								
01...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
AUG.								
06...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
27...	.00	.01	.03	.00	.01	.00	.01	.00
SEPT.								
04...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
17...	.01	.01	.01	.00	.01	.00	.00	.00
24...	--	--	--	--	--	--	--	--

GREAT MIAMI RIVER BASIN

03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO

LOCATION.--Lat 40°03'28", 84°21'22", in SW 1/4 sec.18, T.7 N., R.5 E., Miami County, at gaging station at highway bridge 0.8 mile northwest of Pleasant Hill and 2 miles downstream from Painter Creek.

DRAINAGE AREA.--503 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1964 to September 1966.

Sediment records: October 1963 to September 1968.

EXTREMES.--1967-68:

Sediment concentrations: Maximum daily, 559 mg/l Dec. 22; minimum daily, 5 mg/l on many days during October, February and March.

Sediment loads: Maximum daily, 8,080 tons May 27; minimum daily, 0.78 ton Nov. 15.

Period of record:

Sediment concentrations: Maximum daily, 1,300 mg/l Apr. 9, 1965; minimum daily, 1 mg/l on several days during January 1966.

Sediment loads: Maximum daily, 21,400 tons Apr. 21, 1964; minimum daily, 0.07 ton Aug. 21, 1965.

REMARKS.--Diurnal fluctuation caused by mills above station.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	34	52	4.8	95	7	1.8	64	6	1.0
2	32	52	4.5	139	15	5.6	232	42	5.64
3	33	28	2.5	155	18	7.5	4340	274	3210
4	34	18	1.7	124	14	4.7	3810	87	895
5	36	14	1.4	192	10	2.8	1720	45	209
6	49	13	1.7	84	7	1.6	1680	38	172
7	49	14	1.9	73	6	1.2	1440	32	124
8	51	15	2.1	64	6	1.0	1310	34	93
9	51	15	2.1	59	6	.96	688	30	56
10	49	14	1.9	54	6	.87	1960	172	5 1250
11	46	13	1.6	54	6	.87	4250	250	2870
12	42	13	1.5	52	6	.84	2680	108	781
13	40	12	1.3	54	6	.87	1590	62	266
14	38	12	1.2	52	6	.84	966	36	94
15	37	10	1.0	48	6	.78	840	22	50
16	36	9	.87	49	6	.79	658	11	20
17	49	9	1.2	52	6	.84	538	8	12
18	59	10	1.6	63	6	1.0	670	8	14
19	58	10	1.6	64	6	1.0	854	8	18
20	54	11	1.5	61	6	.99	640	8	14
21	46	10	1.2	63	6	1.0	938	43	5 218
22	48	10	1.3	59	6	.96	4740	559	7150
23	43	10	1.2	61	6	.99	2340	272	5 1880
24	43	9	1.0	59	6	.96	950	104	267
25	49	8	1.1	64	6	1.0	576	56	102
26	58	8	1.3	63	6	1.0	622	35	59
27	63	7	1.2	61	6	.99	436	27	32
28	58	6	1.1	59	6	.96	380	25	26
29	66	6	1.1	56	6	.91	315	23	20
30	64	5	.86	59	6	.96	288	21	16
31	77	5	1.0	--	--	--	260	19	13
TOTAL	1502	--	50.43	2103	--	46.58	42575	--	19998 0
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	192	16	8.3	2550	54	372	121	5	1.6
2	203	13	7.1	2700	78	569	121	5	1.6
3	220	12	7.1	2250	110	668	111	5	1.5
4	176	10	4.8	1170	42	133	111	5	1.5
5	150	10	4.0	834	22	50	117	5	1.6
6	170	10	4.6	684	14	26	117	5	1.6
7	147	10	4.0	592	9	14	113	5	1.6
8	128	10	3.5	502	7	9.5	106	5	1.4
9	144	10	3.9	445	5	6.6	113	5	1.5
10	150	10	4.0	345	5	4.7	117	5	1.6
11	142	10	3.8	284	5	3.8	115	5	1.6
12	136	10	3.7	292	5	3.9	117	5	1.6
13	139	10	3.8	260	5	3.5	113	5	1.5
14	144	9	3.5	248	5	3.3	111	5	1.5
15	144	9	3.5	233	5	3.1	115	5	1.6
16	128	8	2.8	224	5	3.0	138	5	1.9
17	123	8	2.7	200	5	2.7	496	13	17
18	123	8	2.7	167	5	2.3	604	28	46
19	123	8	2.7	189	5	2.5	526	22	31
20	128	8	2.8	188	5	2.5	460	15	19
21	173	13	6.1	148	5	2.0	520	15	21
22	390	36	38	156	5	2.1	719	28	54
23	728	59	116	151	5	2.0	684	16	30
24	544	39	57	146	5	2.0	634	12	21
25	305	29	24	133	5	1.8	1100	38	5 126
26	284	25	19	129	5	1.7	2830	175	1340
27	228	22	14	131	5	1.8	2220	95	560
28	360	39	45	126	5	1.7	1120	44	133
29	1660	165	5 789	119	5	1.6	719	21	41
30	5140	250	5 3470	--	--	--	532	16	23
31	5230	155	2190	--	--	--	490	17	5 24
TOTAL	18052	--	6851.4	15593	--	1899.5	15510	--	2520 1

S COMPUTED BY SUBDIVIDING DAY.

03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1530	150	620	136	8	2.9	826	53	118
2	1070	91	263	131	8	2.8	882	67	160
3	705	33	63	124	8	2.7	789	79	168
4	2460	413	S 3420	124	8	2.7	569	67	103
5	2750	289	S 2300	119	8	2.6	450	48	58
6	1180	76	242	113	8	2.4	375	47	48
7	796	38	82	109	7	2.1	324	52	45
8	604	29	47	106	7	2.0	284	47	46
9	455	20	25	119	7	2.2	257	42	29
10	380	15	15	126	7	2.4	236	37	24
11	332	12	11	176	8	3.8	215	33	10
12	796	10	8.0	355	16	15	215	29	17
13	268	9	6.5	276	22	16	221	29	17
14	264	10	7.1	218	19	11	185	27	13
15	320	19	16	191	17	8.8	170	25	11
16	288	24	19	209	14	7.9	257	56	S 57
17	260	20	14	280	12	9.1	485	156	204
18	257	17	12	245	15	9.9	284	152	117
19	239	15	9.7	206	15	8.3	218	76	45
20	233	13	8.2	185	13	6.5	182	50	25
21	236	11	7.0	167	12	5.4	159	47	20
22	212	10	5.7	157	12	5.1	143	44	17
23	203	10	5.5	520	50	S 112	136	41	15
24	197	10	5.3	4780	350	4520	141	37	14
25	185	9	4.5	4730	235	3000	490	87	S 143
26	173	9	4.2	2600	153	1070	1330	480	1720
27	165	9	4.0	6270	477	8080	903	296	722
28	151	9	3.7	7490	366	7400	594	198	318
29	138	9	3.4	3690	176	S 1860	305	137	144
30	136	9	3.3	1660	89	399	292	95	75
31	--	--	--	1110	64	192	--	--	--
TOTAL	16483	--	7235.1	36722	--	26764.6	12006	--	4504

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	232	65	41	164	58	26	72	30	5.8
2	194	55	29	375	110	111	80	35	7.6
3	173	50	23	268	88	64	72	30	5.8
4	156	46	19	181	83	41	67	25	4.5
5	140	42	16	178	84	40	64	25	4.5
6	131	39	14	179	79	36	64	25	4.3
7	122	36	12	140	69	26	60	24	4.0
8	115	34	11	151	60	24	59	24	3.9
9	109	33	9.7	819	S 248	614	56	25	3.8
10	105	30	8.5	700	219	414	83	35	7.8
11	98	29	7.7	606	196	321	91	40	9.8
12	94	28	7.1	430	146	158	83	38	8.4
13	102	28	7.7	260	108	76	74	37	7.4
14	92	27	6.7	294	84	46	67	35	6.3
15	104	28	7.9	167	64	29	61	34	5.6
16	325	74	65	208	76	43	58	33	5.2
17	325	177	155	246	69	46	63	32	5.4
18	178	86	41	264	79	56	77	37	6.6
19	243	93	61	305	78	64	109	31	8.4
20	365	154	152	225	52	32	94	30	7.6
21	194	98	51	164	43	19	84	29	4.6
22	135	63	23	131	40	14	71	28	5.4
23	120	51	17	113	35	11	64	27	4.7
24	153	56	22	102	30	8.3	60	25	4.0
25	360	131	S 168	92	25	6.2	60	25	4.0
26	516	259	361	89	25	5.9	58	25	3.9
27	288	189	147	84	25	5.7	58	25	3.9
28	204	110	61	80	25	5.4	56	25	3.8
29	176	93	64	75	25	5.1	58	25	3.9
30	143	67	26	72	25	4.9	54	25	3.6
31	115	53	16	70	25	4.7	--	--	--
TOTAL	5807	--	1630.3	7102	--	2357.2	2067	--	166.4

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL LOAD FOR YEAR (TONS)

175522

74023.61

S COMPUTED BY SUBDIVIDING DAY.

GREAT MIAMI RIVER BASIN

03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO--Continued

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE;
V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	LOAD TRANSPORT RATE (TONS PER DAY)	PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED	SUSPENDED SEDIMENT	METH- OD OF ANAL- YSIS
DEC 11 1967	1300		4480	235	2840	.002 .004 .008 .016 .031 .062 .125 .250 .500 1.00 2.00		YSIS
DEC 11....	1300		4480	235	2840	74 84 85 89 92 93 95 98 100	--	SBWC
JAN 31 1968	1210		5290	141	2010	34 53 74 83 84 86 95 97 100	--	SBN
MAY 28....	0750		8090	372	8130	74 84 89 96 98 99 100	--	SBWC
JUN 26....	0745		1360	490	1800	70 83 92 96 98 99 100	--	SBWC

03266000 STILLWATER RIVER AT ENGLEWOOD, OHIO

LOCATION.--Lat 39°52'10", long 84°16'57", in NW 1/4 sec.23, T.5 N., R.5 E., Montgomery County, at bridge on Interstate Highway 70, about 0.8 mile downstream from gaging station, about 1 mile downstream from Englewood Dam and 1.8 miles southeast of Englewood.

DRAINAGE AREA.--650 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1961 to July 1963, July 1966 to September 1968.

REMARKS.--Samples were collected weekly October, July to September and monthly November to June. Samples for iron and manganese were filtered near where collected.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE OCT.	TIME	DIS- CHARGE (CFS)	SILICA (SiO2)	IRON (FE)	MANG- NESE (MNI)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	POT- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
03...	1215	33	--	.04	.02	--	--	--	--	308	0	59
10...	1230	52	--	.10	.03	--	--	--	--	320	0	66
18...	0800	55	--	.15	.13	--	--	--	--	319	0	58
24...	1230	48	--	.19	.18	--	--	--	--	326	0	68
31...	1300	63	--	.10	.03	--	--	--	--	314	0	67
NOV.												
07...	1230	105	--	.14	.03	--	--	--	--	310	0	72
15...	1100	68	6.2	.12	.06	93	34	19	3.8	326	0	95
DEC.												
12...	1500	4120	6.9	--	.03	56	17	4.7	2.8	146	0	50
JAN.												
17...	1345	176	8.5	.07	.02	99	36	15	1.8	346	0	85
FEB.												
13...	1230	278	7.4	.10	.08	98	34	9.5	1.6	314	0	82
MAR.												
19...	1045	627	5.8	.13	.03	83	29	14	2.3	268	0	82
APR.												
23...	0600	272	.8	.06	.04	82	36	11	1.5	292	0	79
MAY												
14...	1345	368	4.9	.14	.03	82	32	12	1.9	288	0	71
JUNE												
11...	0930	311	7.4	.04	.04	89	34	9.5	1.7	306	2	72
JULY												
01...	1300	304	--	.42	.03	--	--	--	--	264	0	55
09...	1115	152	--	.22	.02	--	--	--	--	306	10	71
16...	1345	152	--	.08	.02	--	--	--	--	290	2	73
24...	1015	172	--	.17	.04	--	--	--	--	256	0	53
30...	1230	200	--	.06	.02	--	--	--	--	244	0	49
AUG.												
06...	1415	236	--	.09	.04	--	--	--	--	292	0	51
13...	1200	384	--	.43	.02	--	--	--	--	262	0	51
20...	1245	325	--	.27	.03	--	--	--	--	300	0	54
27...	1210	115	--	.00	.02	--	--	--	--	270	26	52
SEPT.												
04...	1615	96	--	.38	.05	--	--	--	--	312	14	71
11...	1230	109	--	.11	.44	--	--	--	--	318	4	59
17...	1220	86	--	.08	.08	--	--	--	--	318	70	70
24...	0915	82	--	.18	.04	--	--	--	--	316	2	73
DATE OCT.	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DUPLICATE AT 180 C	SOLVED SOLIDS (SUM OF TUEENTS)	HARD- NESS (CA, MG)	NON- HARD- NESS	SPECI- FIC HARD- NESS (MPCP- M405)	PH	TEMP- ERATURE (DEG C)	COLOR
03...	32	--	3.7	2.3	426	--	360	107	679	7.9	18	--
10...	33	--	2.0	2.0	418	--	335	72	695	7.7	14	--
18...	30	--	3.5	.88	408	--	340	79	690	7.8	14	--
24...	32	--	4.0	2.0	438	--	355	88	706	8.0	12	--
31...	32	--	.7	3.1	416	--	330	72	670	8.1	10	--
NOV.												
07...	34	--	3.0	1.8	446	--	330	76	689	8.2	6	--
15...	26	.2	5.5	1.4	486	444	372	105	722	8.2	5	19
DEC.												
12...	15	.2	26	.55	258	251	210	90	475	7.9	7	43
JAN.												
17...	26	.2	15	1.6	478	458	395	111	741	8.2	1	7
FEB.												
13...	23	.2	22	.50	434	432	385	127	591	8.2	1	5
MAR.												
19...	28	.3	16	.55	410	393	326	106	635	8.2	7	15
APR.												
23...	22	.3	10	.28	408	387	353	113	649	8.2	17	13
MAY												
14...	22	.3	20	.77	492	389	336	100	650	8.2	18	15
JUNE												
11...	18	.3	17	.43	402	401	362	108	659	8.4	24	15
JULY												
01...	14	--	22	.66	372	--	312	95	584	8.0	24	--
09...	20	--	12	.72	432	--	362	94	654	8.5	29	--
16...	20	--	3.2	.71	364	--	340	99	622	8.3	26	--
24...	18	--	10	.95	318	--	282	72	540	8.1	25	--
30...	14	--	11	.85	326	--	269	69	513	8.1	22	--
AUG.												
06...	18	--	10	1.4	392	--	319	79	597	8.2	25	--
13...	12	--	11	.58	348	--	298	83	542	8.1	20	--
20...	16	--	7.8	1.2	392	--	332	86	612	8.2	27	--
27...	20	--	2.7	.68	402	--	340	78	610	8.8	21	--
SEPT.												
04...	24	--	5.0	.85	410	--	368	88	676	8.5	21	--
11...	26	--	4.5	.72	418	--	360	92	670	8.3	18	--
17...	26	--	2.7	1.2	398	--	352	84	674	8.3	19	--
24...	26	--	3.5	1.4	386	--	352	89	651	8.3	21	--

03266000 STILLWATER RIVER AT ENGLEWOOD, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	AMMONIA (NH ₄)	NITRITE (NO ₂)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION	PHENOLS	METHY- LFNE BLUE ACTIVF SUB- STANCE	TJA- 810- ITY	DOOR
OCT.								
03...	.30	.05	12.0	125	.076	.07	27	4
10...	.30	.05	6.6	63	.007	.07	30	0
18...	.30	.05	6.0	58	.011	.07	35	2
24...	.44	.05	9.6	80	.090	.05	100	2
31...	.22	.05	9.2	81	.090	.05	15	2
NOV.								
07...	.07	.05	11.0	89	.073	.06	9.0	2
15...	.37	.05	11.0	85	.002	.06	9.0	2
DEC.								
12...	.22	.05	11.0	90	.004	.06	127	0
JAN.								
17...	.22	.05	13.0	92	.000	.11	7.0	0
FEB.								
13...	.22	.05	14.0	98	.000	.17	4.0	2
MAR.								
19...	.22	.05	11.0	90	.000	.08	20	4
APR.								
23...	.37	.05	8.0	82	.000	.05	20	2
MAY								
14...	.22	.10	8.8	92	.002	.07	20	4
JUNE								
11...	.00	.05	6.8	80	.001	.06	35	4
JULY								
01...	.07	.05	6.8	80	.001	.09	70	2
09...	.07	.05	9.0	107	.003	.07	50	2
16...	.07	.05	8.0	98	.000	.03	50	2
24...	.15	.05	5.4	64	.002	.04	80	0
30...	.15	.05	6.6	75	.004	.17	140	0
AUG.								
06...	.22	.05	6.8	81	.006	.07	70	0
13...	.15	.05	7.2	78	.000	.03	85	0
20...	.07	.05	6.2	76	.000	.22	70	0
27...	.15	.05	13.4	149	.000	.06	60	4
SEPT.								
04...	.07	.05	10.0	111	.000	.00	45	2
11...	.22	.05	7.4	78	.009	.04	50	0
17...	.22	.05	7.2	76	.017	.06	34	2
24...	.15	.05	6.1	68	.001	.05	56	0

03267800 MAD RIVER AT EAGLE CITY, OHIO

LOCATION.--Lat 39°58'36", long 83°49'21", in center sec.2, R.10, T.4, Clark County, at gaging station at bridge on Eagle City Road, 0.2 mile downstream from Moore Run, 0.7 mile east of Eagle City, and 2.4 miles south of Tremont City.

DRAINAGE AREA.--307 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1965 to September 1968.

Sediment records: October 1965 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 21.0°C July 25, Aug. 7, 20, 23; minimum, freezing point Jan. 5, 8.

Sediment concentrations: Maximum daily, 1,020 mg/l May 27; minimum daily, 3 mg/l Nov. 28.

Sediment loads: Maximum daily, 10,400 tons May 27; minimum daily, 1.2 tons Nov. 28.

Period of record:

Water temperatures: Maximum, 21.0°C July 2, 3, 1966, July 25, Aug. 7, 20, 23, 1968; minimum, freezing point

Jan. 24, 31, 1966, Feb. 25, 26, 1967, Jan. 5, 8, 1968.

Sediment concentrations: Maximum daily, 1,080 mg/l May 7, 1967; minimum daily, 1 mg/l Dec. 29, 1965.

Sediment loads: Maximum daily, 10,400 tons May 27, 1968; minimum daily, 0.31 ton Dec. 29, 1965.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0800 AND 1000)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	13.0	4.0	---	7.0	---	8.0	12.0	---	19.0	20.0	---
2	13.0	12.0	---	1.0	8.0	4.0	7.0	11.0	---	18.0	18.0	14.0
3	14.0	11.0	3.0	4.0	---	2.0	10.0	14.0	15.0	---	19.0	---
4	14.0	7.0	2.0	2.0	---	3.0	14.0	---	14.0	14.0	19.0	---
5	17.0	4.0	6.0	0	4.0	4.0	8.0	11.0	15.0	15.0	---	17.0
6	14.0	4.0	7.0	3.0	4.0	6.0	8.0	8.0	---	16.0	20.0	---
7	12.0	6.0	9.0	1.0	4.0	4.0	8.0	9.0	---	17.0	21.0	---
8	15.0	5.0	8.0	0	4.0	6.0	12.0	13.0	---	---	19.0	---
9	13.0	7.0	8.0	2.0	4.0	8.0	10.0	---	---	17.0	19.0	---
10	11.0	6.0	7.0	2.0	1.0	---	10.0	13.0	17.0	18.0	20.0	---
11	11.0	11.0	8.0	2.0	---	7.0	8.0	13.0	18.0	17.0	17.0	---
12	11.0	8.0	8.0	2.0	1.0	6.0	10.0	13.0	18.0	18.0	19.0	---
13	10.0	8.0	8.0	3.0	1.0	2.0	13.0	11.0	14.0	19.0	---	---
14	13.0	7.0	8.0	3.0	2.0	3.0	---	14.0	14.0	19.0	17.0	---
15	---	4.0	5.0	3.0	3.0	6.0	9.0	16.0	17.0	18.0	---	---
16	15.0	3.0	2.0	1.0	3.0	8.0	9.0	17.0	19.0	18.0	19.0	---
17	15.0	7.0	---	2.0	2.0	---	---	14.0	16.0	18.0	19.0	---
18	13.0	6.0	8.0	2.0	1.0	7.0	11.0	12.0	14.0	---	20.0	16.0
19	10.0	6.0	6.0	5.0	1.0	9.0	11.0	---	16.0	---	19.0	15.0
20	8.0	6.0	6.0	4.0	4.0	12.0	13.0	10.0	16.0	---	21.0	15.0
21	8.0	7.0	11.0	---	1.0	9.0	13.0	11.0	15.0	18.0	---	---
22	7.0	8.0	5.0	5.0	1.0	6.0	13.0	12.0	---	19.0	---	---
23	8.0	6.0	1.0	4.0	1.0	---	13.0	13.0	17.0	---	21.0	17.0
24	12.0	7.0	2.0	2.0	2.0	3.0	11.0	13.0	18.0	20.0	---	---
25	11.0	7.0	4.0	2.0	2.0	4.0	7.0	13.0	18.0	21.0	---	---
26	8.0	8.0	2.0	3.0	2.0	4.0	9.0	14.0	18.0	20.0	16.0	---
27	10.0	5.0	2.0	4.0	4.0	6.0	---	16.0	16.0	19.0	14.0	---
28	7.0	2.0	2.0	---	4.0	9.0	11.0	13.0	13.0	---	14.0	---
29	6.0	3.0	1.0	5.0	---	11.0	13.0	---	---	16.0	16.0	14.0
30	---	3.0	3.0	4.0	---	10.0	12.0	13.0	17.0	16.0	15.0	15.0
31	12.0	---	3.0	4.0	---	14.0	---	12.0	---	18.0	---	---
AVERAGE	11.5	6.5	5.0	2.5	3.0	6.5	10.5	12.5	---	---	---	---

GREAT MIAMI RIVER BASIN

03267800 MAD RIVER AT EAGLE CITY, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	109	19	5.6	138	31	5 13	143	5	1.9
2	98	17	4.5	189	82	42	188	21	515
3	100	15	4.0	168	37	17	892	438	S 1210
4	93	12	3.0	168	16	7.3	568	55	81
5	102	13	3.6	160	17	7.3	380	45	46
6	112	25	7.6	143	16	6.2	409	53	59
7	107	20	5.8	138	15	5.6	425	55	63
8	96	21	5.4	136	14	5.1	338	35	32
9	112	21	6.4	133	12	4.3	279	13	9.8
10	96	20	5.2	128	10	3.5	314	26	S 30
11	98	20	5.3	138	10	3.7	584	76	S 126
12	96	19	4.9	138	9	3.4	425	26	30
13	91	18	4.4	131	9	3.2	335	23	21
14	100	18	4.9	136	7	2.6	304	21	17
15	102	18	5.0	136	6	2.2	293	19	15
16	100	17	4.6	133	4	1.4	268	17	12
17	91	17	4.2	152	11	4.5	251	15	10
18	96	17	4.4	162	16	2.6	366	70	65
19	82	15	3.3	157	15	6.4	356	32	31
20	78	14	2.9	149	15	6.0	290	11	8.6
21	102	13	3.6	149	15	6.0	338	113	S 138
22	96	13	3.4	146	14	5.5	1230	785	S 2870
23	130	12	3.2	146	12	4.7	534	51	S 78
24	86	11	2.4	141	11	4.2	381	52	55
25	105	14	4.0	146	9	3.5	335	30	45
26	100	16	4.3	149	6	2.4	307	37	31
27	102	17	4.7	146	4	1.6	272	42	31
28	107	15	4.3	143	3	1.2	258	42	29
29	109	12	3.5	141	9	3.4	240	19	12
30	105	10	2.8	149	11	4.4	230	32	20
31	114	11	3.4	--	--	--	223	35	21
TOTAL	3079	--	134.6	4389	--	184.2	11726	--	5213.3

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	202	34	19	624	22	37	179	4	1.9
2	202	19	10	682	24	44	176	5	2.4
3	198	19	10	522	12	17	174	5	2.3
4	189	22	11	424	13	15	171	5	2.3
5	180	12	5.8	371	12	12	174	5	2.3
6	180	19	9.2	336	10	9.1	174	6	2.8
7	177	17	8.1	315	10	8.5	171	7	3.2
8	171	9	4.2	294	11	8.7	171	7	3.2
9	171	8	3.7	276	12	8.9	174	7	3.3
10	168	7	3.2	255	12	8.3	171	6	2.8
11	162	7	3.1	245	14	9.3	168	5	2.3
12	160	7	3.0	233	15	9.4	174	11	5.2
13	162	7	3.1	227	15	9.2	171	19	8.8
14	165	7	3.1	224	16	9.7	168	17	7.7
15	162	7	3.1	218	15	8.8	171	24	11
16	152	7	2.9	215	14	8.1	190	57	29
17	154	7	2.9	209	13	7.3	236	21	13
18	152	7	2.9	198	12	6.4	290	18	10
19	152	7	2.9	198	11	5.9	201	20	11
20	152	7	2.9	201	11	6.0	209	21	12
21	165	8	3.6	193	11	5.7	250	78	55
22	202	11	6.6	190	10	5.1	290	66	52
23	314	25	21	190	10	5.1	284	67	51
24	234	11	6.8	187	9	4.5	276	39	20
25	195	14	7.4	182	9	4.4	385	63	S 74
26	180	25	12	179	8	3.9	1100	423	S 1520
27	164	26	12	179	7	3.4	960	264	S 816
28	362	65	S 80	179	6	2.9	570	42	65
29	700	113	S 232	179	4	1.9	455	50	61
30	1480	523	S 2400	--	--	--	382	63	65
31	818	73	S 227	--	--	--	354	65	62
TOTAL	8225	--	3121.9	7928	--	285.5	8947	--	2988.5

S COMPUTED BY SUBDIVIDING DAY.

03267800 MAD RIVER AT EAGLE CITY, OHIO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	506	325	5 502	218	10	5.9	562	55	83
2	392	47	50	218	10	5.9	618	61	102
3	354	53	51	218	10	5.9	538	51	74
4	510	107	5 161	219	11	6.5	486	38	50
5	472	52	46	212	11	6.3	450	34	41
6	371	34	34	201	11	6.0	422	28	32
7	343	38	35	204	10	5.5	390	31	33
8	318	33	28	204	10	5.5	370	30	30
9	290	33	26	224	10	5.5	360	28	27
10	276	23	17	204	10	5.5	350	26	25
11	266	20	14	233	21	5 16	340	24	22
12	256	17	12	399	46	50	330	23	20
13	239	16	10	301	29	24	310	20	17
14	259	54	5 43	259	22	15	300	18	15
15	284	118	90	287	62	5 72	286	16	12
16	252	77	52	354	64	61	360	15	15
17	248	63	42	294	34	27	330	15	13
18	252	52	35	270	31	23	310	15	13
19	239	46	30	252	28	19	300	15	12
20	239	40	25	245	26	17	290	15	12
21	233	33	21	236	24	15	280	15	11
22	227	27	17	227	21	13	272	15	11
23	239	25	16	736	251	5 637	270	15	11
24	248	21	14	2099	569	5 3710	280	15	11
25	745	18	12	834	75	169	300	15	12
26	242	15	9.8	1180	360	5 3350	310	15	13
27	230	13	8.1	3780	1020	10400	300	15	12
28	221	12	7.2	1560	435	5 2070	286	15	12
29	218	12	7.1	935	90	227	270	15	11
30	218	11	6.5	734	61	121	260	15	11
31	--	--	--	622	60	101	--	--	--
TOTAL	8687	--	1442.7	17929	--	21195.5	10530	--	763

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	250	15	10	482	307	5 518	150	18	7.3
2	240	15	9.7	276	28	21	160	19	8.2
3	230	15	9.3	237	14	9.0	150	14	5.7
4	220	15	8.9	498	191	5 417	150	10	4.0
5	210	15	8.5	390	112	118	157	23	9.7
6	210	15	8.5	272	56	41	170	25	11
7	200	15	8.1	339	239	5 317	151	19	7.7
8	200	15	8.1	442	315	376	148	17	6.8
9	193	15	7.7	390	188	198	145	15	6.9
10	190	15	7.7	307	135	112	145	14	5.5
11	184	15	7.5	268	112	81	154	14	5.8
12	180	15	7.3	244	64	62	154	14	5.8
13	181	15	7.3	237	92	59	151	13	5.3
14	260	15	8.1	226	79	48	145	13	5.1
15	220	15	9.9	220	47	28	142	14	5.4
16	210	15	8.5	248	26	17	142	13	5.0
17	200	15	8.1	230	19	12	164	12	5.3
18	190	15	7.7	226	18	11	167	12	5.4
19	200	15	8.1	220	19	11	167	12	5.4
20	198	15	8.0	212	19	11	154	11	4.6
21	190	15	7.7	202	19	10	145	10	3.9
22	180	15	7.3	195	18	9.5	139	10	3.8
23	180	15	7.3	188	18	9.1	154	10	4.1
24	181	15	7.3	181	17	8.3	148	10	4.0
25	466	281	392	178	17	8.2	151	11	4.5
26	293	101	80	174	16	7.5	148	12	4.8
27	244	64	42	170	15	6.9	148	14	5.6
28	346	188	176	167	14	6.3	145	15	5.9
29	243	76	49	160	13	5.6	139	17	6.4
30	212	55	31	157	13	5.5	142	15	5.8
31	202	48	26	150	13	5.3	--	--	--
TOTAL	6837	--	991.6	7886	--	2549.2	4525	--	173.7

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL LOAD FOR YEAR (TONS)

100688

39043.7

S COMPUTED BY SUBDIVIDING DAY.

GREAT MIAMI RIVER BASIN

03267800 MAD RIVER AT EAGLE CITY, OHIO--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE;
V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED										METH- OD OF ANAL- YSIS
						.002	.004	.008	.014	.031	.062	.125	.250	.500	1.00	2.00
JAN 30 1968	1255		211	492	5780	23	35	44	57	80	73	78	84	97	100	-- SBWC
JAN 30.....	1640		193	591	3280	30	42	52	67	82	86	91	96	99	100	-- SBWC

03270000 MAD RIVER NEAR DAYTON, OHIO

LOCATION.--Lat 39°47'48", long 84°05'32", in SW 1/4 sec. 7, R. 8 T. 2, Greene County, at gaging station on left bank about 600 ft downstream from Huffman Dam, 2.5 miles downstream from Mud Run, and 6 miles northeast of Dayton, Montgomery County.

DRAINAGE AREA.--635 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1961 to July 1963, July 1966 to September 1968.

Water temperatures: June to September 1968.

REMARKS.--Samples for iron and manganese were filtered clear when collected. Samples were collected weekly October, July to September and monthly November to June. A continuous recorder was installed at this site June 18, 1968. Interruptions in the record were due to malfunctions of the instrument.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

CHEMICAL ANALYSES IN WELLBORES FOR OILFIELD MONITORING													
DATE OCT.	TIME	DIS- SOLVED (CFS)	SILICA (SiO2)	IRON (FE)	MANG- NESE (Mn)	CAL- CIUM (Ca)	MAG- NESI- UM (Mg)	SODIUM (Na)	POTAS- SIUM (K)	CHLOR- IDE (CL)	CAR- BONATE (CO3)	CAR- BONATE (CO3)	SULFATE (SO4)
13...	1315	194	--	1.8	1.4	--	--	--	--	--	334	4	98
14...	13	213	--	1.9	1.3	--	--	--	--	--	326	4	87
18...	4	221	--	1.1	1.2	--	--	--	--	--	324	4	92
24...	14	213	--	1.9	1.2	--	--	--	--	--	312	12	90
31...	14	251	--	1.2	1.2	--	--	--	--	--	292	4	78
NOV.													
17...	1415	266	--	1.8	1.6	--	--	--	--	--	346	4	176
19...	4	269	7.8	1.1	1.3	1.1	75	18	3.0	--	342	4	95
DEC.													
12...	1 15	92	8.4	--	1.9	87	27	12	3.4	268	4	83	
JAN.													
17...	15	310	6.6	1.2	1.8	90	38	22	2.6	346	4	97	
FEB.													
13...	1415	418	7.6	1.8	1.7	1 7	74	15	2.3	354	4	94	
MAR.													
19...	14	371	4.2	1.9	1.7	91	37	15	2.5	329	4	88	
APR.													
23...	0	448	3.1	1.3	1.6	9	75	15	2.2	324	4	91	
MAY													
14...	1514	447	7.6	1.9	1.8	32	34	15	2.5	327	4	98	
JUNE													
11...	15	588	7.3	1.8	1.6	177	37	12	2.6	326	8	90	
JULY													
61...	1415	464	--	1.8	1.4	--	--	--	--	--	334	4	87
9...	145	396	--	1.11	1.4	--	--	--	--	--	342	4	88
10...	153	366	--	1.17	1.3	--	--	--	--	--	330	2	84
24...	12	342	--	1.12	1.5	--	--	--	--	--	328	4	83
31...	14	401	--	1.19	1.5	--	--	--	--	--	330	4	84
AUG.													
6...	1615	584	--	1.8	1.5	--	--	--	--	--	318	4	76
13...	14	58	--	1.6	1.6	--	--	--	--	--	344	4	90
20...	1415	424	--	1.2	1.4	--	--	--	--	--	342	4	87
27...	1415	348	--	1.7	1.7	--	--	--	--	--	334	6	87
SEPT.													
6...	1514	324	--	1.2	1.5	--	--	--	--	--	336	4	85
11...	14	320	--	1.10	1.51	--	--	--	--	--	336	4	96
17...	14	486	--	1.15	1.5	--	--	--	--	--	218	4	56
24...	17	317	--	1.11	1.5	--	--	--	--	--	346	4	87

DATE	TIME	CHLOR- IDE (CL)	PHOS- PHORUS (P)	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS)	HARD- NESS (CA, MG)	NON- CARB- ONATE HARD- NESS	SPECI- FIC CAP- ACITY (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	COLOR
OCT.													
13...	20	--	--	11	2.3	462	--	390	116	726	8.2	19	--
14...	24	--	--	8.8	2.2	444	--	371	113	713	7.8	13	--
18...	28	--	--	1	2.7	462	--	345	110	736	7.8	14	--
24...	24	--	--	1	2.4	442	--	345	109	739	8.4	14	--
31...	24	--	--	7.2	2.0	307	--	340	100	644	7.9	12	--
NOV.													
7...	28	--	--	8.8	1.9	488	--	420	136	777	8.2	6	--
15...	28	1	--	8.5	2.8	49	468	306	115	752	8.4	15	--
DEC.													
12...	27	3	--	14	1.5	4 2	396	328	108	653	8.0	8	17
JAN.													
17...	30	1	--	8.4	2.2	494	485	473	110	784	8.2	3	5
FEB.													
13...	28	3	--	1	2.0	471	476	477	117	754	8.2	2	5
MAR.													
19...	28	4	--	9.7	1.4	47	447	377	108	695	8.2	11	7
APR.													
23...	20	3	--	8.3	1.2	444	432	373	107	727	8.2	17	10
MAY													
14...	24	3	--	14	1.4	454	438	371	107	718	8.2	18	10
JUNE													
11...	24	4	--	1	1.4	454	452	4 2	121	736	8.3	23	10
JULY													
11...	24	--	--	9.5	1.1	474	--	398	117	732	8.3	24	--
16...	22	--	--	8.3	1.3	478	--	386	117	716	8.1	22	--
16...	24	--	--	15	1.3	448	--	374	100	711	8.3	22	--
24...	25	--	--	8.8	1.4	416	--	368	99	692	8.2	23	--
31...	24	--	--	11	1.2	474	--	390	110	707	8.2	20	--
AUG.													
6...	24	--	--	11	1.6	452	--	384	95	674	8.1	25	--
13...	26	--	--	11	1.3	482	--	472	120	766	8.0	25	--
20...	24	--	--	8.5	1.4	484	--	390	110	727	8.2	25	--
27...	26	--	--	9.4	1.4	471	--	394	110	714	8.4	19	--
SEPT.													
6...	20	--	--	11	1.4	461	--	392	116	721	8.2	24	--
11...	24	--	--	11	1.4	464	--	394	118	732	8.0	16	--
17...	2	--	--	4.3	1.0	316	--	266	77	607	8.0	18	--
24...	24	--	--	9.4	2.4	434	--	398	116	724	8.1	20	--

03270000 MAD RIVER NEAR DAYTON, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	AMMONIA (NH4)	NITRITE (NO2)	DISS- OLVED OXYGEN	PFR- CENT SATUR- ATION	PHENOLS	METHY- LENE BLUE ACTIV- E SUB- STANCE	TURB- IDITY	ODOR
OCT.								
13...	.15	.15	13.1	138	.06	.08	9.1	2
14...	.7	.5	7.6	72	.06	.09	15	2
18...	.22	.15	5.4	52	.09	.10	11	2
24...	.7	.1	14.	137	.1	.07	4.1	2
31...	.01	.1	8.8	81	.06	.06	21	2
NOV.								
7...	.44	.10	10.0	98	.14	.08	3.1	2
16...	.37	.10	9.2	71	.01	.11	4.1	2
DEC.								
12...	.3	.5	9.	76	.01	.05	7	4
JAN.								
17...	.74	.5	14.1	14	.04	.09	9.1	4
FEB.								
13...	1.5	.5	14.1	111	.03	.23	2.5	1
MAR.								
19...	4.5	.15	11.	11	.01	.09	2.5	4
APR.								
23...	.22	.05	5.1	42	.01	.06	6.5	4
MAY								
14...	.3	.10	9.8	112	.01	.07	9.1	4
JUNE								
11...	.7	.10	9.2	116	.01	.08	21	2
JULY								
11...	.0	.5	9.4	111	.02	.06	6.1	2
19...	.7	.10	5.7	65	.04	.06	13	4
16...	.0	.05	9.2	114	.01	.05	17	2
24...	.07	.05	6.5	76	.01	.07	9.1	4
31...	.07	.1	4.5	92	.03	.08	4.1	2
AUG.								
6...	.32	.10	9.	88	.03	.06	6.1	1
13...	.15	.1	7.2	78	.01	.04	5	2
21...	.00	.10	8.5	111	.01	.09	21	2
27...	.15	.5	11.2	119	.01	.07	3.6	2
SEPT.								
6...	.0	.1	9.5	104	.02	.01	7.1	2
11...	.0	.5	3.2	42	.01	.11	9.1	2
17...	.22	.5	5.2	58	.25	.07	9.1	2
24...	.15	.5	6.1	65	.01	.07	21	1

DATE	TOTAL CHLOR- MINE (CL)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	CADMI- UM (CD)	ARSENIC (AS)	CAD- MIUM (CM)
OCT.								
13...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
18...	.1	.1	.04	.01	.01	.01	.01	.01
24...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
NOV.								
7...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
DEC.								
12...	--	--	--	--	--	--	--	--
JAN.								
17...	--	--	--	--	--	--	--	--
FEB.								
13...	--	--	--	--	--	--	--	--
MAR.								
19...	--	--	--	--	--	--	--	--
APR.								
23...	--	--	--	--	--	--	--	--
MAY								
14...	--	--	--	--	--	--	--	--
JUNE								
11...	--	--	--	--	--	--	--	--
JULY								
11...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
AUG.								
6...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
27...	.01	.1	.02	.01	.01	.01	.02	.01
SEPT.								
6...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
17...	.01	.01	.01	.01	.01	.01	.01	.01
24...	--	--	--	--	--	--	--	--

03270000 MAD RIVER NEAR DAYTON, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, JUNE TO SEPTEMBER 1968

JUNE										JULY							
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
11	--	--	--	--	--	--	--	--		760	730	8.3	8.0	--	--	25	22
12	--	--	--	--	--	--	--	--		770	690	8.2	7.9	--	--	25	22
13	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
14	--	--	--	--	--	--	--	--		740	710	8.3	7.7	--	--	25	23
15	--	--	--	--	--	--	--	--		740	690	8.3	7.9	--	--	24	22
16	--	--	--	--	--	--	--	--		730	700	8.5	8.0	--	--	24	22
17	--	--	--	--	--	--	--	--		730	690	8.6	8.1	--	--	26	22
18	720	680	8.3	8.1	9.0	6.7	24	23		760	710	8.6	8.2	--	--	26	23
19	730	710	8.1	8.0	--	--	23	22		750	670	8.4	8.0	--	--	28	24
20	--	--	--	--	--	--	--	--		730	650	8.4	7.9	--	--	27	23
21	--	--	--	--	--	--	--	--		730	710	8.5	7.9	--	--	26	23
22	--	--	--	--	--	--	--	--		750	710	8.4	8.0	--	--	26	23
23	--	--	--	--	--	--	--	--		740	670	8.3	8.0	--	--	27	23
24	--	--	--	--	--	--	--	--		720	700	8.1	7.9	--	--	25	24
25	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
26	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
27	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
28	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
29	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
30	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
31	--	--	--	--	--	--	--	--		780	740	8.0	7.8	--	--	22	21
AUGUST										SEPTEMBER							
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	780	420	7.9	7.5	--	--	23	22		810	740	--	--	--	--	20	19
2	580	490	7.7	7.6	--	--	22	21		800	730	--	--	--	--	21	18
3	--	--	--	--	--	--	--	--		830	780	--	--	--	--	22	18
4	--	--	--	--	--	--	--	--		810	780	--	--	--	--	21	19
5	--	--	--	--	--	--	--	--		810	540	--	--	--	--	21	19
6	710	550	--	--	--	--	27	23		780	550	--	--	--	--	22	19
7	800	690	--	--	--	--	26	24		--	--	--	--	--	--	--	--
8	700	420	8.3	7.1	--	--	24	23		--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
11	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
12	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
13	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
14	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
15	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
16	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
17	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
18	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
19	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
20	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
21	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
25	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
26	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
27	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
28	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
29	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--
30	810	730	8.3	7.1	--	--	22	19		--	--	--	--	--	--	--	--
31	820	720	--	--	--	--	22	18		--	--	--	--	--	--	--	--

GREAT MIAMI RIVER BASIN

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03271350 GREAT MIAMI RIVER AT WEST CARROLLTON, OHIO

LOCATION.--Lat 39°40'28", long 84°15'42", Montgomery County, at bridge on Farmersville-West Carrollton Road at West Carrollton.

DRAINAGE AREA.--2,647 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1965 to September 1968.

REMARKS.--Samples collected weekly October, July to September and monthly November to June. Samples for iron and manganese filtered clear when collected. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	SILICA (SiO2)	IRON (FE)	MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (Na)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
OCT.												
03...	1530	--	.11	.03	--	--	--	--	272	0	97	56
11...	0800	--	.10	.03	--	--	--	--	290	0	95	56
19...	1000	--	.09	.12	--	--	--	--	302	0	97	56
24...	1530	--	.09	.00	--	--	--	--	300	0	97	56
31...	1630	--	.15	.06	--	--	--	--	314	0	97	54
NOV.												
07...	1515	--	.15	.09	--	--	--	--	306	0	107	40
14...	1615	8.4	.13	.39	83	33	37	5.1	300	0	104	48
12...	1615	6.4	--	.03	56	17	7.1	3.1	154	0	55	17
JAN.												
18...	0845	8.7	.11	.04	93	35	38	3.3	334	0	99	56
FEB.												
13...	1515	7.6	.08	.05	95	31	19	2.5	318	0	90	33
MAR.												
20...	0845	4.4	.13	.03	82	27	21	3.0	262	0	85	34
APR.												
23...	1030	2.5	.07	.03	85	34	25	2.9	302	0	91	34
MAY												
15...	0845	5.8	.08	.05	85	35	27	3.0	304	0	84	36
JUNE												
11...	1630	3.7	.07	.08	86	33	20	2.7	288	0	83	37
JULY												
02...	0900	--	.08	.08	--	--	--	--	276	0	81	32
10...	0915	--	.09	.04	--	--	--	--	300	0	94	42
16...	1630	--	.09	.04	--	--	--	--	296	0	88	42
24...	0915	--	.23	.03	--	--	--	--	294	0	85	41
30...	1530	--	.03	.06	--	--	--	--	258	0	68	24
AUG.												
07...	1000	--	.10	.04	--	--	--	--	290	0	76	28
13...	1900	--	.14	.03	--	--	--	--	272	0	71	24
20...	1530	--	.04	.07	--	--	--	--	310	0	86	34
28...	0800	--	.09	.05	--	--	--	--	318	2	89	42
SEPT.												
05...	1030	--	.16	.05	--	--	--	--	304	0	92	48
11...	1500	--	.18	.49	--	--	--	--	292	0	97	46
18...	0915	--	.21	.08	--	--	--	--	232	0	70	38
24...	1130	--	.09	.06	--	--	--	--	320	0	95	48

DATE	AMMONIA (NH4)	NITRITE (NO2)	DISS- OLVED OXYGEN	PER- CENT SATU- RATION	PHENOLS	METHY- LENE BLUE ACTIVE SUR- STANCE	TUR- BID- ITY	COND
OCT.								
03...	2.5	.50	7.4	98	.008	.15	9.0	4
11...	2.4	.10	4.4	46	.008	.15	50	8
16...	2.7	.15	4.0	44	.010	.15	20	4
24...	3.0	.20	6.4	70	.001	.16	20	4
31...	3.0	.15	5.8	60	.004	.16	30	4
NOV.								
07...	1.7	.10	9.8	78	.013	.16	20	4
16...	2.7	.20	7.2	65	.001	.15	50	2
DEC.								
12...	.15	.05	11.0	93	.004	.08	200	2
JAN.								
18...	2.4	.05	11.0	96	.007	.11	20	8
FEB.								
13...	1.2	.05	12.0	89	.005	.40	25	4
MAR.								
20...	.81	.05	9.4	87	.000	.12	17	2
23...	.81	.05	7.4	94	.000	.17	28	4
MAY								
15...	.81	.10	6.4	73	.003	.09	13	8
JUNE								
11...	.15	.05	9.8	120	.000	.10	45	4
JULY								
02...	.74	.05	5.0	62	.002	.31	35	4
10...	1.1	.10	4.6	57	.004	.25	20	8
16...	.89	.10	5.0	63	.000	.13	50	4
24...	1.2	.05	4.4	56	.003	.29	15	4
30...	.37	.05	6.6	78	.003	.36	80	4
AUG.								
07...	.37	.05	5.6	71	.007	.20	60	4
13...	.50	.05	7.1	82	.001	.08	60	4
20...	.22	.05	8.6	110	.001	.25	40	4
28...	1.3	.10	5.0	57	.000	.17	40	4
SEPT.								
05...	1.9	.10	4.0	48	.003	.12	35	4
11...	2.0	.10	4.7	55	.000	.18	35	4
18...	1.3	.10	4.6	53	.014	.14	35	4
24...	2.4	.10	4.6	53	.005	.17	35	8

GREAT MIAMI RIVER BASIN

03271350 GREAT MIAMI RIVER AT WEST CARROLLTON, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (N3)	TOTAL PHOS- PHORUS (P04)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
OCT.											
03...	--	10	6.8	484	--	330	107	796	7.4	24	--
11...	--	6.5	9.0	502	--	335	97	797	7.4	18	--
18...	--	8.7	4.2	508	--	345	97	825	7.4	21	--
24...	--	11	7.8	512	--	350	104	838	7.5	20	--
31...	--	7.4	9.5	490	--	335	77	809	7.8	18	--
NOV.											
07...	--	8.0	4.5	504	--	365	114	781	8.1	11	--
14...	.4	9.0	5.5	506	485	343	97	780	7.9	13	20
DEC.											
12...	.3	20	.92	288	259	210	84	438	7.9	8	40
JAN.											
19...	.5	9.6	4.0	540	514	376	102	848	7.8	5	5
FEB.											
13...	.3	15	2.5	448	453	365	104	727	8.1	3	5
MAR.											
20...	.4	15	2.0	444	404	316	101	656	8.1	12	18
APR.											
23...	.6	7.3	1.6	458	433	352	104	739	7.8	22	12
MAY											
15...	.5	10	2.8	446	439	356	107	731	8.0	22	10
JUNE											
11...	.4	8.3	1.8	422	421	350	100	698	8.5	26	22
JULY											
02...	--	17	3.6	428	--	328	102	686	8.0	27	--
10...	--	5.3	3.6	462	--	345	92	746	8.1	27	--
16...	--	5.2	3.4	420	--	338	95	722	8.1	28	--
24...	--	6.3	4.0	420	--	374	83	710	8.1	28	--
30...	--	7.6	1.7	378	--	290	78	598	8.2	24	--
AUG.											
07...	--	8.6	3.0	416	--	318	80	652	8.2	28	--
13...	--	8.6	1.8	382	--	306	83	616	7.9	23	--
20...	--	5.5	2.6	470	--	360	96	717	8.4	29	--
28...	--	5.0	3.0	468	--	362	98	748	8.3	22	--
SEPT.											
05...	--	6.5	3.7	460	--	346	96	767	7.7	25	--
11...	--	6.2	2.4	462	--	328	88	741	7.8	24	--
18...	--	6.5	2.8	346	--	256	66	598	7.8	23	--
24...	--	7.0	5.6	464	--	352	90	786	8.0	23	--

DATE	TOTAL CHRO- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZNI)	COBALT (CO)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
03...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
18...	.04	.31	.15	.00	.01	--	.00	.00
24...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
NOV.								
07...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
DEC.								
12...	--	--	--	--	--	--	--	--
JAN.								
18...	--	--	--	--	--	--	--	--
FEB.								
13...	--	--	--	--	--	--	--	--
MAR.								
20...	--	--	--	--	--	--	--	--
APR.								
23...	--	--	--	--	--	--	--	--
MAY								
15...	--	--	--	--	--	--	--	--
JUNE								
11...	--	--	--	--	--	--	--	--
JULY								
02...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
AUG.								
07...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
28...	.02	.05	.03	.00	.02	.00	.01	.00
SEPT.								
05...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
18...	.02	.04	.02	.00	.04	.00	.01	.00
24...	--	--	--	--	--	--	--	--

03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO

LOCATION.--Lat 39°36'39", long 84°17'28", Montgomery County, at Chautauqua Road bridge about 2 miles south of Miamisburg, off Old U.S. Highway 25, and 2.6 miles downstream from gaging station at Miamisburg.

DRAINAGE AREA.--2,715 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1961 to September 1968.

Water temperatures: March 1964 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 980 micromhos Dec. 2; minimum daily, 320 micromhos May 24.

pH: Maximum daily, 8.7 July 6, 8; minimum daily, 7.5 July 20.

Dissolved oxygen: Maximum daily, 15.0 mg/l July 6-8; minimum daily, 1.1 mg/l Oct. 19.

Water temperatures: Maximum, 33.0°C Aug. 22-25; minimum, 4.0°C Dec. 27. Jan. 2.

Period of record:

Specific conductance: Maximum daily, 1,110 micromhos Dec. 29, 1966; minimum daily, 270 micromhos Apr. 22, 1964.

pH: Maximum daily, 9.0 June 8, 1964, Feb. 25, June 12, 1967; minimum daily, 6.8 July 6, 7, Nov. 4, 1965.

Dissolved oxygen: Maximum daily, 15.0 mg/l June 8, 1964, Nov. 26, 30, 1966, July 6-8, 1968; minimum daily, 0.0 mg/l on many days during 1964-66.

Water temperatures: Maximum, 37.0°C Aug. 16-18, 1965; minimum, 4.0°C Jan. 31, 1965, Jan. 30, 31, 1966, Dec. 27, 1967, Jan. 2, 1968.

REMARKS.--Continuous recorder is installed in the basement of O. H. Hutchings power station, 400 ft downstream from Chautauqua Road bridge, and takes water from channel under building. In addition to the continuous recorder, daily samples were collected by a local observer. Partial analyses were made on maximum specific conductance and minimum specific conductance of the samples collected for each month. Dissolved oxygen concentrations listed as 15.0 mg/l represent concentrations of 15.0 mg/l or greater, due to instrument limitations. Interruptions in the record were due to malfunctions of the instrument. Discharge records are given for gaging station at Miamisburg (drainage area 2,711 sq mi). Samples were collected at the bridge for pesticide analyses to determine the extent and magnitude of pesticide contamination in the stream.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFs)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)	FLUO- RIDE (F)
OCT...							
02...	0650	439	302	0	95	53	.6
NOV...							
16...	1300	719	308	0	97	50	.6
DEC...							
02...	0745	728	305	0	93	91	.6
23...	1515	14000	168	8	52	21	.3
JAN...							
16...	1330	1030	320	0	94	68	.5
31...	1310	17700	150	6	50	24	.3
FEB...							
01...	1330	15600	174	10	57	24	.3
23...	1245	1040	270	24	96	46	.5
MAR...							
15...	1245	944	294	0	120	64	.5
23...	1500	3610	146	0	42	26	.3
APR...							
03...	1345	3780	220	14	75	26	.4
30...	1500	1070	280	12	91	42	.6
MAY...							
07...	1330	1270	300	0	92	46	.4
24...	1345	23400	166	0	38	16	.3
JUNE...							
11...	1300	1850	236	0	71	34	.4
15...	1515	1450	304	0	88	38	.5
JULY...							
12...	1315	1030	278	0	90	41	.4
26...	1300	5230	176	0	44	16	.3
AUG...							
09...	1315	5500	214	0	53	22	.2
24...	1445	953	308	0	92	42	.5
SEPT...							
18...	1430	1490	216	0	66	35	.4
28...	1345	580	316	0	94	52	.5

DATE	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	pH
OCT...						
02...	12	488	346	98	805	7.9
NOV...						
16...	4.7	468	354	101	777	--
DEC...						
02...	14	562	347	96	896	--
23...	18	312	223	72	461	+
JAN...						
16...	16	594	382	120	841	8.1
31...	18	300	206	73	433	--
FEB...						
01...	24	318	270	111	487	--
23...	18	488	392	131	768	--
MAR...						
15...	14	482	350	109	770	--
23...	7.6	240	178	58	404	8.0
APR...						
03...	20	380	300	96	627	8.6
30...	14	426	346	96	768	8.5
MAY...						
07...	10	452	342	96	774	--
24...	18	234	190	54	399	--
JUNE...						
11...	13	386	274	80	598	8.1
15...	12	460	352	103	738	8.1
JULY...						
12...	13	462	333	105	756	--
26...	9.1	262	198	54	424	--
AUG...						
09...	9.5	346	245	70	514	7.7
24...	11	498	350	97	764	--
SEPT...						
18...	10	378	245	68	589	8.1
28...	7.5	538	350	90	811	8.2

GREAT MIAMI RIVER BASIN

03271600 GREAT MIAMI RIVER NEAR MIAMISSBURG, OHIO--Continued

DATE	ALDRIN	DDD	DDE	DDT	DI- ELDRIN	ENDRIN	HEPTA- CHLOR
OCT. 16-20							
NOV. 14-18	.00	.00	.00	.00	.01	.00	.00
APR. 24-29	.01	.00	.02	.07	.00	.00	.00
MAY 13-17	.00	.00	.03	.00	.00	.00	.00
JUNE 25-29	.00	.00	.04	.06	.00	.00	.00
JULY 24-29	.00	.00	.11	.00	.00	.00	.00
AUG. 08-14	.00	.00	.00	.00	.04	.00	.00
SEPT. 16-21	.00	.00	.00	.00	.06	.00	.00
	.00	.00	.00	.00	.00	.00	.00
DATE	HEPTA- CHLOR EPOXIDE	METH- OXY- CHLOR	LINDANE	CHLOR- DANE	MALA- THION	METHYL PARA- THION	PARA- THION
OCT. 16-20							
NOV. 14-18	.00	.00	.00	.00	.00	.00	.00
APR. 24-29	.00	.00	.00	.00	.00	.00	.00
MAY 13-17	.00	.00	.00	.00	.00	.00	.00
JUNE 25-29	.00	.00	.00	.00	.00	.00	.00
JULY 24-29	.00	.00	.00	.00	.00	.00	.00
AUG. 08-14	.00	.00	.00	.00	.00	.00	.00
SEPT. 16-21	.00	.00	.00	.00	.00	.00	.00

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER								NOVEMBER							
DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	8.1	8.1	4.6	3.9	--	--	--	--	6.1	7.9	--	--	--	--
2	--	--	8.1	7.8	4.9	2.8	--	--	730	650	6.0	7.8	5.2	4.9	--	--
3	--	--	8.1	7.9	4.2	3.2	--	--	720	660	6.0	7.8	5.5	5.1	21	19
4	--	--	8.0	7.6	4.6	3.2	--	--	700	740	8.0	7.9	6.8	5.3	19	17
5	--	--	8.0	7.6	3.8	2.6	--	--	730	700	8.0	8.0	7.3	6.6	17	15
6	--	--	7.9	7.8	--	--	--	--	790	720	8.1	7.9	7.9	7.2	17	16
7	--	--	8.0	7.8	--	--	--	--	780	740	8.1	7.9	7.8	7.1	18	16
8	--	--	8.1	7.8	3.4	2.9	--	--	780	750	8.2	8.0	7.8	7.0	19	17
9	--	--	8.1	7.7	4.2	3.1	--	--	780	740	6.2	8.0	7.2	6.6	18	17
10	--	--	--	--	--	--	--	--	780	750	8.2	8.1	6.8	6.4	19	18
11	--	--	--	--	--	--	--	--	780	740	8.1	8.0	7.5	6.5	21	19
12	790	740	--	--	5.2	4.0	23	21	770	730	8.1	8.0	6.7	6.1	21	20
13	790	740	--	--	4.9	3.7	24	22	760	700	8.1	8.0	6.3	5.7	20	16
14	800	750	--	--	6.5	4.0	25	23	790	740	8.1	8.0	6.2	5.5	19	18
15	600	780	--	--	4.7	3.6	24	23	800	770	8.0	7.9	6.4	5.4	18	17
16	810	750	--	--	5.1	3.3	26	23	800	780	8.1	7.9	6.4	5.8	17	16
17	--	--	--	--	--	--	--	--	800	770	8.1	8.0	6.4	5.6	19	16
18	800	760	--	--	3.8	2.4	24	23	810	760	6.1	8.0	6.5	5.8	18	17
19	810	790	--	--	4.2	1.1	23	22	--	--	--	--	--	--	--	--
20	810	750	--	--	2.0	1.3	22	20	760	720	6.2	8.1	8.0	7.8	16	15
21	800	770	--	--	2.8	1.7	21	20	760	700	8.1	8.0	7.9	7.3	15	10
22	810	790	--	--	3.6	2.8	21	19	740	700	8.0	7.8	7.4	6.7	13	10
23	820	780	8.2	8.1	4.7	3.7	22	21	750	710	8.0	7.7	7.4	6.4	12	11
24	810	790	8.2	8.1	5.3	4.1	23	22	750	700	8.0	7.6	7.0	6.7	12	10
25	820	780	8.2	8.0	4.5	3.3	22	19	780	720	7.9	7.8	7.0	6.0	10	10
26	780	760	8.1	8.0	4.2	3.6	22	20	780	740	7.9	7.7	6.9	6.2	10	10
27	790	750	8.1	7.9	4.3	3.3	22	20	770	740	8.1	7.9	7.4	6.5	12	10
28	800	730	8.1	8.0	5.2	3.7	21	19	760	760	6.1	7.9	7.3	6.7	10	9
29	800	760	8.1	8.0	4.2	3.4	20	19	770	770	6.1	7.9	7.3	6.5	10	9
30	800	760	8.1	7.9	4.3	3.4	23	19	800	650	6.2	7.7	7.0	6.6	9	8
31	780	700	8.2	8.0	4.2	3.5	22	21	--	--	--	--	--	--	--	--

03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO--Continued

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DECEMBER

JANUARY

DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	810	750	8.0	7.9	7.2	6.5	11	8	750	710	8.4	7.9	10.9	10.2	11	5
2	980	780	8.1	8.0	8.4	6.5	--	11	750	720	8.6	8.1	10.5	10.1	9	4
3	780	590	8.1	7.9	9.0	7.9	--	6	770	740	8.3	8.1	10.2	9.0	12	5
4	590	460	8.2	8.0	9.8	9.0	--	6	780	750	8.3	8.1	10.4	10.0	10	5
5	520	480	8.3	8.0	10.1	9.7	9	7	780	750	8.3	8.1	10.5	9.7	11	6
6	580	520	8.1	8.0	9.9	9.7	--	--	800	760	8.3	8.0	10.1	9.5	12	6
7	570	520	8.1	8.0	9.8	9.4	--	--	800	760	8.3	7.9	9.9	9.5	11	5
8	590	540	8.0	7.9	10.0	9.4	10	10	800	770	8.3	8.1	9.7	9.4	11	7
9	600	540	8.0	7.8	9.8	9.5	11	10	810	780	8.4	7.9	9.5	8.4	11	6
10	640	520	8.0	7.9	9.9	9.4	12	10	820	780	8.4	7.9	9.6	9.3	10	5
11	620	470	8.1	7.9	9.9	8.2	11	10	830	780	8.3	7.9	9.4	8.9	12	5
12	500	480	8.1	7.8	9.9	8.8	11	9	810	780	8.2	8.0	9.8	9.0	10	5
13	540	490	8.2	8.0	9.8	9.5	10	10	810	690	8.3	7.9	9.0	8.1	12	6
14	570	470	8.2	8.0	9.9	9.5	11	9	920	680	8.3	7.9	9.2	8.1	12	7
15	610	570	8.2	8.0	10.1	9.6	10	8	900	730	8.3	8.0	11.3	8.2	11	6
16	650	610	8.3	8.0	10.3	9.8	9	7	880	830	8.2	8.0	11.2	10.1	11	7
17	840	630	8.4	8.1	10.3	9.9	9	7	880	790	8.3	7.9	10.2	9.1	12	6
18	660	610	8.4	8.0	10.0	9.1	10	9	830	780	8.1	7.9	--	--	13	9
19	680	650	8.3	8.1	9.8	9.2	10	9	880	800	8.1	7.9	--	--	11	9
20	870	650	8.3	8.1	9.7	9.4	10	8	880	840	8.2	8.1	--	--	11	8
21	680	640	8.1	8.0	9.4	8.8	12	10	860	810	8.2	8.0	--	--	12	8
22	640	450	8.1	7.9	9.6	8.8	13	9	830	780	8.1	8.0	9.4	8.2	11	8
23	470	410	8.1	8.0	10.4	9.5	10	6	790	720	8.3	7.9	9.6	8.8	11	8
24	550	460	8.2	7.9	10.8	10.2	7	5	720	640	8.2	8.0	10.0	9.5	10	6
25	600	530	8.2	8.0	10.5	10.2	7	5	660	590	8.3	7.9	10.6	9.5	12	6
26	610	580	8.2	8.1	11.5	10.4	7	5	640	620	8.3	7.7	10.7	8.9	12	7
27	650	610	8.3	8.0	11.0	10.7	8	4	680	640	8.2	8.0	10.5	8.9	12	7
28	680	640	8.3	8.0	11.0	10.7	8	6	660	660	8.1	7.8	9.5	8.8	13	8
29	770	680	8.2	8.1	10.8	10.7	7	6	700	640	8.1	7.9	10.1	8.3	12	10
30	740	690	8.4	8.2	10.8	10.4	10	5	640	440	8.1	8.0	10.5	8.7	7	6
31	760	720	8.4	7.9	10.7	10.2	15	5	480	410	8.2	7.9	10.7	9.9	8	6

FEBRUARY

MARCH

DAY	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	500	440	8.1	8.0	10.7	10.2	9	6	750	730	8.3	8.0	10.1	9.3	9	7
2	520	480	8.1	7.9	10.3	10.0	9	7	770	740	8.2	8.0	9.8	9.3	11	7
3	540	500	8.1	7.9	10.9	10.1	9	7	740	770	8.2	7.8	10.6	9.6	9	6
4	570	530	8.2	7.9	11.4	10.3	9	7	740	710	8.2	7.8	10.3	9.3	9	6
5	600	540	8.2	8.0	11.5	11.0	8	6	760	730	8.2	7.9	9.8	8.8	11	7
6	630	580	8.2	7.9	11.2	10.6	8	6	770	740	8.2	8.0	9.8	7.5	11	10
7	650	600	8.2	7.9	10.6	10.2	9	7	760	740	8.2	7.9	9.7	7.0	12	10
8	660	620	8.1	8.0	10.7	10.4	8	7	760	740	8.2	8.0	9.4	7.2	13	10
9	660	630	8.3	8.0	10.7	9.5	12	6	760	740	8.2	8.0	8.6	6.7	15	12
10	690	640	8.2	7.8	10.4	9.7	11	6	770	760	8.2	8.0	8.4	5.5	15	13
11	710	660	8.2	7.8	10.6	9.9	11	6	770	740	8.2	7.9	10.2	6.6	14	12
12	740	680	8.1	7.8	10.7	10.3	15	6	750	630	8.2	7.9	9.6	6.8	12	9
13	740	690	8.0	7.8	10.6	10.0	15	5	780	690	8.3	8.0	9.8	7.2	11	8
14	730	700	8.1	7.8	10.8	10.0	15	5	830	770	8.4	7.8	10.2	8.6	12	8
15	730	700	8.2	7.9	10.4	9.5	11	6	830	750	8.3	8.0	9.7	7.8	13	10
16	740	710	8.3	8.0	10.4	9.4	12	6	780	780	8.2	7.9	8.5	7.1	14	12
17	760	720	8.3	8.0	10.1	9.2	11	6	800	760	8.2	7.8	9.4	7.1	15	12
18	760	720	8.3	7.9	10.2	9.6	15	6	770	690	8.2	7.8	9.9	8.0	14	12
19	750	720	8.2	7.9	10.4	8.9	12	6	710	670	8.3	7.8	9.7	8.3	14	12
20	750	720	8.3	8.0	9.2	8.6	10	6	730	640	8.3	7.8	8.5	7.5	15	13
21	780	730	8.2	8.0	9.7	9.1	9	5	680	550	8.2	7.9	8.4	7.3	15	12
22	780	750	8.3	7.9	9.9	9.3	10	5	660	440	8.2	7.8	10.1	7.9	15	9
23	740	720	8.2	7.9	9.8	9.3	10	5	740	370	8.6	8.0	11.3	10.1	11	8
24	780	750	8.2	7.9	9.8	9.2	12	6	600	620	8.6	7.9	10.2	8.4	11	8
25	780	750	8.2	7.9	10.2	9.4	11	6	760	650	8.5	8.0	9.8	8.5	11	7
26	760	750	8.2	7.9	10.2	9.8	10	6	670	600	8.5	8.0	9.7	8.8	11	9
27	790	750	8.2	8.0	10.1	9.1	10	7	610	520	8.3	8.1	9.8	8.3	13	9
28	770	750	8.3	7.9	10.0	9.1	10	7	590	520	8.4	8.0	9.8	7.5	14	10
29	770	740	8.2	7.9	9.6	8.8	9	7	610	570	8.2	8.0	7.5	6.5	16	13
30	--	--	--	--	--	--	--	--	640	600	8.2	8.1	6.9	6.1	16	14
31	--	--	--	--	--	--	--	--	660	620	8.2	8.0	6.4	5.8	16	15

SPECIFIC CONDUCTANCE, pH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL							MAY						
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN
1	680	630	8.4	7.9	6.1	5.6	15	13	790	720	8.4	8.0	8.1	4.9
2	630	610	8.4	8.2	--	--	14	12	800	760	8.4	8.0	7.9	4.4
3	650	620	8.4	8.1	8.8	8.4	14	13	790	740	8.4	8.0	7.3	4.2
4	660	620	8.2	8.1	8.4	8.1	15	14	790	750	8.4	8.1	7.6	4.3
5	660	540	8.2	8.1	8.7	8.4	14	11	780	760	8.5	8.1	8.0	4.6
6	590	540	8.4	8.2	9.0	8.7	12	10	780	760	8.5	8.1	9.4	5.0
7	640	590	8.4	8.2	9.1	8.7	13	11	780	770	8.4	8.1	8.4	4.9
8	670	620	8.3	8.1	8.7	8.2	15	13	780	760	8.3	8.1	6.6	4.1
9	690	650	8.3	8.1	8.8	8.3	16	14	780	720	8.3	7.9	5.9	3.9
10	710	670	8.2	8.0	8.4	7.8	16	15	740	680	7.9	7.8	5.3	4.0
11	710	690	8.2	8.0	7.9	7.5	16	15	720	540	8.1	7.8	6.4	4.8
12	--	--	--	--	--	--	--	--	660	580	8.1	7.9	6.8	6.4
13	--	--	--	--	--	--	--	--	700	630	8.1	8.0	7.2	6.6
14	--	--	--	--	--	--	--	--	720	690	8.1	8.0	6.6	6.0
15	--	--	--	--	--	--	--	--	730	680	8.2	8.0	6.2	5.7
16	--	--	--	--	--	--	--	--	710	650	8.1	8.0	6.7	5.7
17	--	--	--	--	--	--	--	--	710	660	8.1	8.0	6.6	6.2
18	--	--	--	--	--	--	--	--	720	680	8.2	8.0	6.9	6.1
19	--	--	--	--	--	--	--	--	740	700	8.2	8.1	8.0	5.9
20	--	--	--	--	--	--	--	--	740	710	8.2	8.1	8.0	7.2
21	--	--	--	--	--	--	--	--	750	720	8.2	8.1	7.7	6.7
22	--	--	--	--	--	--	--	--	770	730	8.3	8.0	7.7	6.3
23	--	--	--	--	--	--	--	--	770	400	8.2	8.0	7.8	6.3
24	--	--	--	--	--	--	--	--	470	320	8.0	7.9	8.1	7.8
25	750	730	8.5	8.1	8.2	6.3	16	15	560	460	8.0	8.0	8.3	8.1
26	760	640	8.4	8.1	7.6	6.0	17	15	570	500	8.1	7.9	8.3	7.9
27	770	730	8.4	7.9	7.7	5.7	19	15	530	500	8.1	8.0	8.3	7.9
28	780	740	8.5	8.0	9.2	5.7	20	16	500	480	8.0	7.9	8.3	8.1
29	760	730	8.5	8.1	10.5	6.1	21	17	520	490	8.1	7.9	8.5	8.3
30	780	750	8.5	8.1	8.3	5.2	21	19	620	520	8.1	8.0	8.4	7.9
31	--	--	--	--	--	--	--	--	630	570	8.1	8.0	8.4	7.8

DAY	JUNE							JULY						
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN		MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN	MAX	MIN
1	660	620	8.1	7.9	8.0	7.6	19	17	670	650	--	--	--	--
2	660	620	--	--	8.1	7.7	20	19	700	670	8.2	8.0	5.5	4.1
3	680	650	8.3	8.1	8.1	7.3	22	19	720	680	8.3	7.9	7.0	4.7
4	710	670	8.1	8.0	8.1	7.2	23	21	750	710	8.4	8.0	8.6	4.8
5	710	680	8.1	8.0	8.6	7.2	24	22	740	680	8.6	8.2	11.2	5.7
6	710	690	8.1	8.0	10.0	6.9	25	23	750	700	8.7	8.2	15.0	6.3
7	720	700	8.1	8.0	9.5	6.5	25	24	760	680	--	--	15.0	6.5
8	720	680	--	--	10.8	6.4	26	25	730	670	8.7	8.2	15.0	6.1
9	710	680	--	--	11.8	6.5	27	25	750	690	8.5	8.2	7.2	5.2
10	720	640	--	--	12.7	7.3	28	26	760	720	8.4	8.1	5.9	3.3
11	680	600	--	--	10.6	5.1	28	25	770	740	8.3	8.0	6.9	1.4
12	720	640	--	--	10.6	6.0	28	26	770	740	8.3	8.0	6.5	2.3
13	730	690	--	--	10.7	5.7	26	24	770	740	8.2	7.9	6.1	1.9
14	740	700	--	--	11.2	5.8	25	23	760	750	8.1	7.8	5.3	2.0
15	740	690	--	--	10.7	6.0	26	24	--	--	--	--	--	--
16	720	530	--	--	7.2	5.9	25	23	--	--	--	--	--	--
17	670	590	--	--	7.3	6.2	24	22	--	--	--	--	--	--
18	710	670	--	--	9.2	6.0	24	23	--	--	--	--	--	--
19	730	700	--	--	9.0	5.9	25	24	670	600	7.8	7.6	3.9	2.3
20	740	710	--	--	9.3	5.7	26	24	680	600	7.8	7.5	5.2	2.3
21	740	710	--	--	10.0	5.6	27	24	700	620	8.4	7.7	11.3	2.0
22	740	690	--	--	10.1	5.1	27	25	670	640	8.6	8.0	12.9	4.2
23	750	690	--	--	12.0	4.9	29	25	620	640	8.4	7.8	9.8	2.1
24	740	690	8.6	8.3	10.2	4.8	29	26	730	700	8.2	7.8	7.2	4.0
25	720	680	8.3	8.0	5.5	3.9	28	26	710	570	8.2	7.8	6.8	4.4
26	700	650	8.1	7.9	6.0	4.0	26	24	620	430	7.9	7.6	8.2	6.7
27	700	630	8.1	8.0	6.5	5.5	24	21	550	480	7.8	7.7	--	--
28	660	620	8.1	8.0	7.2	6.5	22	21	600	550	7.8	7.7	--	--
29	660	630	8.1	7.9	7.0	6.0	24	22	640	600	7.8	7.8	--	--
30	--	--	--	--	--	--	--	--	640	610	7.9	7.8	5.5	5.0
31	--	--	--	--	--	--	--	--	670	640	7.9	7.8	5.2	4.6

03271600 GREAT MIAMI RIVER NEAR MIAMISBURG, OHIO--Continued

SPECIFIC CONDUCTANCE, PH, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	AUGUST								SEPTEMBER							
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)			SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		pH	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		
	MAX	MIN		MAX	MIN	MAX	MIN		MAX	MIN		MAX	MIN	MAX	MIN	
1	690	620	7.9	7.8	5.3	4.6	28	26	810	780	8.1	8.0	4.4	2.6	28	25
2	630	560	7.9	7.8	5.6	5.1	27	25	810	750	8.1	8.0	5.5	3.1	26	25
3	660	590	8.0	7.7	5.6	4.8	27	26	750	710	8.2	7.8	5.8	2.7	27	25
4	--	--	--	--	--	--	--	--	810	750	--	--	5.9	2.7	27	25
5	--	--	--	--	--	--	--	--	810	770	--	--	4.0	2.2	27	26
6	680	640	8.1	7.9	6.0	5.0	29	27	770	620	--	--	6.5	3.0	27	26
7	700	660	8.0	7.9	6.2	5.1	30	28	740	600	--	--	5.0	3.1	27	24
8	710	600	8.0	7.9	6.9	5.7	29	28	790	730	--	--	--	--	27	25
9	600	510	7.9	7.8	6.1	5.8	27	26	750	720	--	--	--	--	27	25
10	620	560	7.9	7.8	5.9	5.7	27	26	780	730	--	--	3.8	3.0	25	24
11	620	590	8.0	7.9	6.0	5.2	26	25	780	690	--	--	3.6	2.3	25	23
12	640	600	7.9	7.8	5.9	5.7	25	24	770	740	--	--	3.9	2.5	25	22
13	780	530	8.0	7.9	6.6	5.0	26	25	800	770	--	--	4.0	2.9	25	23
14	690	660	8.0	7.9	5.5	5.0	27	25	810	790	--	--	5.0	3.0	26	24
15	710	680	8.0	7.9	5.3	4.8	28	26	820	800	--	--	5.4	2.8	26	25
16	720	690	8.0	7.9	5.2	4.5	29	27	810	780	--	--	5.8	3.8	26	25
17	750	720	8.1	7.9	5.6	4.2	30	28	790	750	--	--	5.5	3.9	26	25
18	750	710	8.2	8.0	6.0	4.4	30	27	760	570	--	--	4.4	3.5	26	23
19	740	710	8.3	8.0	6.3	4.4	31	26	670	600	8.0	7.9	4.4	3.8	23	22
20	740	720	8.4	8.0	6.4	4.1	32	29	720	620	8.3	7.9	5.4	3.3	25	22
21	740	710	8.3	8.0	5.7	3.9	32	30	740	720	8.3	8.0	5.1	3.7	26	23
22	750	720	8.2	7.9	5.6	3.4	33	30	760	740	8.1	8.0	4.7	2.8	27	25
23	770	740	8.1	7.9	6.1	4.0	33	30	760	740	8.3	8.0	5.1	2.7	27	26
24	780	760	8.1	7.9	5.0	3.4	33	31	770	720	8.2	8.0	5.1	2.6	28	27
25	780	750	8.1	7.9	4.9	2.9	33	30	800	710	8.3	7.9	3.7	2.3	28	27
26	750	730	8.1	7.9	4.8	3.0	30	27	810	790	8.1	7.8	4.0	2.4	27	25
27	750	740	8.3	8.0	4.5	3.5	27	25	810	780	8.1	7.9	4.6	1.9	26	25
28	770	750	8.4	8.0	5.2	3.5	27	24	810	790	8.2	7.7	4.5	--	25	24
29	770	750	8.4	8.1	5.7	3.6	27	25	830	810	8.1	7.8	--	--	25	24
30	790	780	8.2	8.1	6.3	3.0	27	25	820	800	8.1	7.9	--	--	25	24
31	610	780	8.2	8.0	6.2	3.3	28	25	--	--	--	--	--	--	--	--

03272010 TWIN CREEK AT GERMANTOWN, OHIO

LOCATION.--Lat 39°37'22", long 84°23'33", Montgomery County, at bridge on State Highway 725, 1 mile downstream from gaging station, approximately 0.1 mile west of Germantown.

DRAINAGE AREA.--275 sq mi.

PERIOD OF RECORD.--Chemical analyses: August 1967 to September 1968.

REMARKS.--Samples were collected weekly October and November, July to September, and monthly December to June. Samples for iron and manganese were filtered clear when collected. Records of discharge are given for gaging station near Germantown.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SiO2)	IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	PO-SPHATE (P)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
OCT.												
03...	1630	13	--	.02	.02	--	--	--	--	312	0	55
10...	1530	18	--	.06	.02	--	--	--	--	316	0	56
18...	1100	21	--	.04	.03	--	--	--	--	312	0	55
24...	1630	22	--	.02	.00	--	--	--	--	320	0	55
31...	1730	28	--	.07	.09	--	--	--	--	310	0	58
NOV.												
07...	1600	43	--	.05	.06	--	--	--	--	306	2	58
14...	1530	33	4.4	.06	.06	87	29	10	2.5	312	0	52
DEC.												
12...	1715	1090	7.6	--	.04	62	19	5.0	2.2	186	0	48
JAN.												
17...	1700	60	7.8	.02	.03	89	35	9.2	1.6	344	0	53
FEB.												
13...	1600	110	6.6	.04	.02	94	32	9.2	1.5	334	0	53
MAR.												
19...	1715	166	3.0	.04	.02	75	29	17	2.1	248	8	61
APR.												
23...	1145	102	3.3	.10	.00	73	34	8.8	1.5	288	0	58
MAY												
14...	1630	249	5.8	.05	.01	82	31	8.5	1.8	272	2	57
JUNE												
11...	1730	136	3.2	.02	.02	79	33	7.8	1.8	298	2	54
JULY												
02...	0950	92	--	.07	.02	--	--	--	--	294	4	54
10...	1000	54	--	.07	.03	--	--	--	--	280	0	54
16...	1730	65	--	.07	.03	--	--	--	--	270	2	53
23...	2000	130	--	.11	.03	--	--	--	--	182	0	34
30...	1700	57	--	.02	.02	--	--	--	--	294	4	52
AUG.												
06...	2030	174	--	.06	.02	--	--	--	--	292	4	47
13...	1630	315	--	.14	.02	--	--	--	--	298	0	44
20...	1630	87	--	.02	.03	--	--	--	--	320	4	52
28...	0900	43	--	.03	.04	--	--	--	--	320	0	54
SEPT.												
05...	0945	35	--	.07	.01	--	--	--	--	316	0	54
11...	1600	65	--	.07	.18	--	--	--	--	288	0	51
18...	1000	34	--	.11	.03	--	--	--	--	298	0	51
24...	1215	34	--	.04	.02	--	--	--	--	316	0	53

GREAT MIAMI RIVER BASIN

03272010 TWIN CREEK AT GERMANTOWN, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	TOTAL PHOSPHORUS (PPH)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA+MG)	NON-CARBONATE HARDNESS	SPECTROSCOPIC CONDUCTANCE (MICRO-MOS)	PH	TEMPERATURE (DEG C)	COLOR
OCT.												
03...	18	--	6.1	.10	366	--	345	89	616	8.0	18	--
10...	17	--	4.8	.20	376	--	325	86	617	8.0	12	--
18...	18	--	5.1	.17	364	--	320	64	608	8.0	14	--
24...	18	--	6.3	.21	366	--	350	87	630	8.1	13	--
31...	18	--	4.3	.25	348	--	320	65	605	8.1	12	--
NOV.												
07...	18	--	3.8	.27	370	--	325	71	619	8.3	6	--
14...	20	.1	5.3	3.8	394	377	336	80	623	8.2	6	10
DEC.												
12...	17	.3	2.0	.36	306	272	243	90	462	8.1	8	35
JAN.												
17...	18	.2	11	.33	436	404	366	84	672	8.2	1	10
FEB.												
13...	21	.1	17	.20	406	409	366	92	663	8.2	1	5
MAR.												
19...	36	.2	14	.11	198	359	306	89	603	8.4	13	5
APR.												
23...	20	.3	6.6	.04	366	348	322	86	598	8.2	19	5
MAY												
14...	22	.3	24	.14	396	368	332	106	625	8.3	18	15
JUNE												
11...	16	.5	12	.06	362	355	333	85	606	8.3	25	5
JULY												
02...	20	--	19	.14	412	--	332	74	619	8.3	23	--
10...	18	--	7.8	.06	362	--	308	78	573	8.1	22	--
16...	16	--	5.3	.05	320	--	300	75	554	8.3	25	--
23...	11	--	8.1	.36	248	--	200	51	392	8.0	25	--
30...	18	--	10	.12	388	--	122	74	538	8.3	22	--
AUG.												
06...	16	--	12	.32	392	--	314	68	579	8.3	26	--
13...	14	--	10	.28	364	--	314	70	562	8.2	20	--
20...	18	--	8.1	.08	404	--	350	81	620	8.3	26	--
28...	18	--	7.8	.05	384	--	340	78	616	8.1	11	--
SEPT.												
05...	16	--	8.3	.06	372	--	332	72	608	8.1	19	--
11...	16	--	6.6	.12	365	--	314	78	568	8.2	17	--
18...	18	--	5.8	.04	362	--	314	70	580	8.1	18	--
24...	18	--	6.3	.16	340	--	328	68	602	8.2	21	--

DATE	AMMONIA (NH4)	NITRITE (NO2)	DISSOLVED OXYGEN	PERCENT SATURATION	PHENOLS	METHYLENE BLUE ACTIVE SUBSTANCE	TURBIDITY	DOOR
OCT.								
03...	.30	.00	9.4	99	.006	.03	6.0	0
10...	.07	.00	8.8	81	.008	.05	9.0	0
18...	.00	.00	7.6	74	.010	.04	5.0	0
24...	.15	.05	10.0	95	.000	.03	2.0	0
31...	.07	.00	9.4	86	.000	.03	3.0	0
NOV.								
07...	.00	.00	12.0	98	.003	.04	6.0	0
14...	.07	.00	12.0	100	.001	.03	5.0	0
DEC.								
12...	.07	.05	11.0	93	.010	.06	104	0
JAN.								
17...	.15	.00	13.0	72	.000	.04	6.0	0
FEB.								
13...	.07	.05	13.0	92	.002	.10	6.0	0
MAR.								
19...	.00	.05	12.0	114	.000	.07	55	0
APR.								
23...	.07	.05	10.0	106	.001	.04	8.0	2
MAY								
14...	.00	.05	9.4	98	.000	.07	8.0	4
JUNE								
11...	.00	.05	11.0	132	.000	.04	6.0	0
JULY								
02...	.15	.05	7.0	80	.001	.10	9.0	2
10...	.00	.05	8.0	91	.003	.05	9.0	4
16...	.15	.05	10.4	125	.000	.03	20	2
23...	.07	.05	6.4	76	.000	.15	272	2
30...	.00	.05	9.2	104	.004	.29	24	0
AUG.								
06...	.00	.05	7.2	88	.003	.10	20	2
13...	.00	.05	8.0	87	.000	.02	50	2
20...	.00	.05	9.4	115	.000	.04	2.0	0
28...	.00	.05	7.8	87	.000	.02	3.6	2
SEPT.								
05...	.00	.05	7.4	79	.001	.00	3.8	0
11...	.15	.05	10.6	109	.000	.05	8.0	2
18...	.15	.05	7.9	83	.011	.04	9.0	0
24...	.15	.05	8.2	91	.001	.04	8.0	2

03272100 GREAT MIAMI RIVER AT MIDDLETOWN, OHIO

LOCATION.--Lat 39°32'31", long 84°21'27", Butler County, on left bank at County Park dock at Middletown, about 0.6 mile downstream from New York Central Railroad bridge and 0.3 mile downstream from Twin Creek.

DRAINAGE AREA.--3,134 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1963 to September 1968.

REMARKS.--Samples were collected weekly October, July to September, and monthly November to June. Samples for iron and manganese were filtered clear when collected. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	SILICA (SiO ₂)	IRON (Fe)	MANGANESE (Mn)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM (Na)	POTASSIUM (K)	BICARBONATE (HCO ₃)	CARBONATE (CO ₃)	SULFATE (SO ₄)	CHLORIDE (Cl)
OCT.												
04...	0900	--	.09	.06	--	--	--	--	300	0	94	58
11...	0930	--	.11	.06	--	--	--	--	282	0	92	53
18...	1145	--	.09	.12	--	--	--	--	310	0	96	56
24...	1730	--	.11	.03	--	--	--	--	318	0	95	60
NOV.												
01...	0936	--	.24	.17	--	--	--	--	320	0	97	58
07...	1700	--	.18	.11	--	--	--	--	314	0	98	36
14...	1445	7.0	.17	.12	81	28	30	4.1	276	0	91	40
JEC.												
13...	0930	5.7	--	.14	60	17	7.4	2.7	166	0	58	17
JAN.												
18...	0945	8.3	.08	.08	95	33	44	3.3	334	0	99	60
FEB.												
13...	1700	7.8	.14	.08	94	31	23	2.8	312	0	91	37
MAR.												
20...	0945	3.6	.13	.04	83	32	25	2.8	288	0	94	38
APR.												
23...	1230	1.4	.08	.05	85	34	22	2.4	302	0	87	36
MAY												
15...	0945	6.0	.10	.11	83	33	22	2.8	292	0	77	34
JUNE												
12...	1000	4.0	.04	.05	86	33	21	2.7	308	0	82	32
JULY												
02...	1040	--	.15	.04	--	--	--	--	280	0	76	30
10...	1100	--	.13	.03	--	--	--	--	306	0	92	44
17...	0900	--	.10	.05	--	--	--	--	296	0	90	44
23...	1800	--	.48	.13	--	--	--	--	238	0	70	31
31...	0900	--	.08	.05	--	--	--	--	258	0	69	24
AUG.												
07...	1115	--	.13	.06	--	--	--	--	284	0	72	16
13...	1730	--	.18	.08	--	--	--	--	268	0	68	24
21...	0900	--	.11	.05	--	--	--	--	322	0	88	34
28...	0950	--	.21	.04	--	--	--	--	316	0	90	42
SEPT.												
05...	1130	--	.23	.05	--	--	--	--	318	0	89	44
12...	0845	--	.27	3.2	--	--	--	--	310	0	90	50
18...	1100	--	.10	.07	--	--	--	--	302	0	91	48
24...	1300	--	.13	.06	--	--	--	--	320	0	97	46

DATE	AMMONIA (NH ₄)	NITRITE (NO ₂)	DISSOLVED OXYGEN	PERCENT SATURATION	PHENOLS	METHYLENE BLUE ACTIVE SUBSTANCE	TURBIDITY	DOOR
OCT.								
04...	1.4	.30	.1	1	.007	.15	9.0	4
11...	.96	.30	1.4	14	.010	.19	20	8
18...	1.0	.30	1.6	18	.008	.17	6.0	4
24...	.89	.25	2.8	30	.000	.15	15	8
NOV.								
01...	.96	.20	1.6	17	.001	.13	35	8
07...	.81	.15	7.2	65	.008	.11	20	8
14...	.52	.20	4.8	44	.004	.12	20	2
DEC.								
13...	.07	.05	10.0	84	.000	.07	110	0
JAN.								
18...	2.1	.10	8.8	72	.013	.11	40	4
FEB.								
13...	1.3	.05	11.0	84	.008	.36	25	8
MAR.								
20...	5.4	.10	6.0	57	.006	.17	20	4
APR.								
23...	.30	.10	6.2	70	.003	.10	25	8
MAY								
15...	.44	.15	5.0	56	.004	.08	25	4
JUNE								
12...	.07	.10	6.8	85	.002	.10	35	2
JULY								
02...	.15	.10	3.9	49	.000	.29	28	4
10...	.22	.10	2.8	34	.004	.24	35	4
17...	.67	.15	2.2	28	.000	.13	25	4
23...	.00	.05	7.1	93	.004	.14	224	4
31...	.15	.10	1.4	17	.005	.29	50	4
AUG.								
07...	.22	.05	3.8	49	.007	.27	50	4
13...	.37	.10	5.6	67	.000	.09	85	4
21...	.15	.05	2.4	32	.000	.21	30	4
28...	.67	.10	2.4	28	.003	.14	50	4
SEPT.								
05...	.81	.20	1.5	18	.001	.09	20	4
12...	1.2	.10	1.4	17	.000	.27	20	4
18...	1.2	.15	1.8	22	.012	.13	40	4
24...	.81	.15	1.4	18	.002	.11	12	8

GREAT MIAMI RIVER BASIN

03272100 GREAT MIAMI RIVER AT MIDDLETOWN, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 190 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC CON- DUCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
CCT.											
D4...	--	9.3	6.0	476	--	345	99	818	7.4	24	--
11...	--	6.0	5.0	478	--	325	94	776	7.4	17	--
18...	--	6.7	3.4	510	--	345	91	825	7.6	21	--
24...	--	6.3	5.4	512	--	360	99	846	7.6	20	--
NOV.											
D1...	--	6.1	5.8	514	--	345	82	824	7.7	18	--
07...	--	4.9	3.1	492	--	365	107	767	7.8	11	--
14...	.3	7.6	4.8	460	430	317	91	711	7.7	13	20
DEC.											
13...	.3	19	.88	298	271	220	84	462	7.9	8	35
JAN.											
18...	.6	6.3	3.9	548	522	373	99	860	7.5	7	20
FEB.											
13...	.3	15	2.4	460	459	362	106	737	7.9	4	10
MAR.											
20...	.5	8.5	1.7	462	437	339	103	697	8.0	13	15
APR.											
23...	.4	7.5	.95	448	425	352	104	728	7.7	22	10
MAY											
15...	.4	12	1.8	432	416	343	103	697	7.9	21	10
JUNE											
12...	.2	8.5	1.6	428	422	350	97	710	8.2	27	23
JULY											
07...	--	18	1.9	450	--	332	102	682	7.7	28	--
10...	--	5.8	3.3	474	--	348	97	754	8.0	27	--
17...	--	4.6	3.6	442	--	332	89	741	7.8	29	--
23...	--	6.0	1.6	346	--	274	79	576	8.1	30	--
31...	--	7.5	1.8	392	--	292	80	596	7.9	26	--
AUG.											
07...	--	6.0	2.0	424	--	312	79	640	8.0	29	--
13...	--	7.5	2.0	392	--	302	82	606	7.7	25	--
21...	--	5.3	2.8	482	--	362	98	729	8.1	31	--
28...	--	4.2	2.9	482	--	356	96	750	7.9	25	--
SEPT.											
05...	--	9.2	3.4	470	--	360	99	764	7.8	27	--
12...	--	5.0	2.2	480	--	348	94	770	7.6	25	--
18...	--	6.2	3.3	450	--	342	94	763	7.8	26	--
24...	--	6.4	6.3	454	--	352	90	763	7.8	29	--

DATE	TOTAL CHRO- MIUM (PPM)	NICKEL (PPM)	COPPER (PPM)	LEAD (PPB)	ZINC (PPM)	COBALT (PPB)	ARSENIC (PPB)	CAD- MIUM (PPB)
OCT.								
04...	.00	.01	.00	.00	.02	.00	.01	.00
11...	.00	.22	.02	.00	.01	--	.00	.00
18...	.01	.23	.03	.00	.01	.00	.00	.00
24...	.01	.30	.03	.00	.01	--	.00	.00
NOV.								
01...	--	.22	.02	.00	.01	--	.00	.00
07...	--	.14	.02	.00	.01	--	.02	--
14...	.02	.08	.04	.01	.04	.00	.00	.00
DEC.								
13...	--	--	--	--	--	--	--	--
JAN.								
19...	.02	.00	.07	.01	.07	.00	.00	.01
FEB.								
13...	--	--	--	--	--	--	--	--
MAR.								
20...	.01	.03	.02	.05	.20	.00	.00	.10
APR.								
23...	--	--	--	--	--	--	--	--
MAY								
15...	.01	.02	.02	.02	.03	.00	.00	.00
JUNE								
12...	--	--	--	--	--	--	--	--
JULY								
02...	--	--	--	--	--	--	--	--
10...	.01	.02	.01	.00	.01	.00	.01	.00
17...	--	--	--	--	--	--	--	--
23...	.01	.01	.01	.00	.00	.00	.02	.00
31...	--	--	--	--	--	--	--	--
AUG.								
07...	.01	.02	.01	.00	.02	.00	.01	.00
13...	.01	.02	.03	.00	.01	.01	.01	.00
21...	.01	.02	.03	.02	.01	.02	.01	.00
28...	.01	.03	.02	.01	.02	.00	.00	.00
SEPT.								
05...	.00	.01	.00	.00	.00	.00	.01	.00
12...	.01	.03	.02	.01	.04	.00	.01	.00
18...	.01	.04	.01	.02	.02	.00	.01	.00
24...	.01	.01	.01	.00	.01	--	.01	.00

03272400 GREAT MIAMI RIVER NEAR MIDDLETOWN, OHIO

LOCATION.--Lat 39°25'45", long 84°28'05", Butler County, at bridge on Liberty-Fairfield Road, southwest of Middletown, 0.7 mile upstream from Baltimore and Ohio Railroad bridge.

DRAINAGE AREA.--3,280 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1963 to September 1968.

REMARKS.--Samples were collected weekly October, July to September, and monthly November to June. Samples for iron and manganese were filtered clear when collected. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	SILICA (SiO ₂)	IRON (Fe)	MANG- NESE (Mn)	CAL- CIUM (Ca)	MAG- NESI- UM (Mg)	SULPH- URIC (Na)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (Cl)
OCT.												
04...	1045	--	.67	.10	--	--	--	--	276	C	167	60
11...	1745	--	.14	.09	--	--	--	--	179	C	172	58
18...	1245	--	.56	.22	--	--	--	--	234	C	165	60
25...	073	--	1.2	.13	--	--	--	--	217	C	191	64
NOV.												
01...	1015	--	.70	.20	--	--	--	--	262	C	134	58
08...	1113	--	1.4	.06	--	--	--	--	240	C	141	38
14...	1345	7...	1.4	.19	39	31	34	4.0	234	C	152	46
DEC.												
13...	1230	6.7	--	.06	60	17	7.2	2.7	162	C	62	10
JAN.												
18...	1445	9.2	.45	.14	96	33	61	3.1	302	C	126	74
FEB.												
14...	1130	7.4	1.3	.08	91	33	23	2.8	284	C	122	37
MAR.												
20...	1100	2.7	1.5	.09	75	37	25	2.7	266	C	106	38
APR.												
23...	1530	1.6	.20	.09	82	34	21	2.5	256	C	114	34
MAY												
15...	1045	5.7	.75	.11	91	32	22	2.8	258	C	98	32
JUNE												
12...	1100	4.0	.72	.10	73	27	20	2.7	232	C	92	30
JULY												
02...	1200	--	.97	.06	--	--	--	--	260	C	96	30
10...	1200	--	.42	.10	--	--	--	--	236	C	135	34
17...	1000	--	.62	.08	--	--	--	--	270	C	110	42
24...	1045	--	1.7	.08	--	--	--	--	258	C	93	36
31...	1000	--	.98	.06	--	--	--	--	224	C	95	28
AUG.												
07...	1215	--	.17	.06	--	--	--	--	244	C	90	30
14...	0930	--	.25	.08	--	--	--	--	260	C	86	24
21...	1000	--	.48	.08	--	--	--	--	208	C	104	34
28...	1100	--	.32	.14	--	--	--	--	288	C	116	46
SEPT.												
05...	1230	--	.60	.13	--	--	--	--	264	C	108	42
12...	0945	--	.97	1.0	--	--	--	--	284	C	115	46
19...	1200	--	1.0	.12	--	--	--	--	280	C	118	40
26...	1400	--	.53	.15	--	--	--	--	248	C	145	48

DATE	AMMONIA (NH ₄)	NITRITE (NO ₂)	DISS- OLVED OXYGEN	PER- CENT SATU- RATION	PHENOLS	METHY- LENE BLUE ACTIVE SUL- FON- STANF	TUR- BID- ITY	OTHER
OCT.								
04...	1.7	.15	1.4	21	.001	.18	36	4
11...	1.9	.15	2.8	23	.010	.17	70	8
18...	1.7	.10	2.8	3	.007	.17	70	8
25...	1.9	.10	2.4	24	.003	.16	45	8
NOV.								
01...	1.4	.20	3.2	33	.000	.13	60	8
08...	1.1	.05	6.6	58	.000	.12	65	8
14...	.81	.15	5.4	44	.004	.14	70	4
DEC.								
13...	.52	.05	11.0	90	.004	.03	150	4
JAN.								
14...	1.3	.05	2.6	75	.007	.13	100	4
FEB.								
14...	1.3	.05	10.1	76	.013	.09	70	8
MAR.								
20...	.44	.05	7.4	70	.000	.10	60	8
APR.								
23...	.37	.05	6.6	75	.009	.15	64	4
MAY								
15...	.67	.10	5.6	64	.000	.08	50	4
JUNE								
14...	.44	.05	5.7	62	.002	.10	60	4
JULY								
02...	.37	.10	5.0	62	.000	.19	50	4
10...	.15	.05	4.2	53	.004	.11	56	4
17...	.59	.10	3.0	37	.000	.18	40	4
24...	.27	.05	7.6	97	.004	.09	50	4
31...	.59	.05	4.4	52	.003	.15	61	4
AUG.								
07...	.37	.05	4.3	61	.005	.20	70	4
14...	.22	.05	5.0	53	.002	.06	90	4
21...	.37	.05	3.0	38	.000	.17	61	4
28...	.44	.10	4.4	50	.000	.07	45	4
SEPT.								
05...	.67	.05	3.6	42	.002	.10	45	4
12...	1.5	.15	3.4	37	.000	.22	25	4
19...	.97	.10	3.6	36	.007	.10	50	4
26...	.41	.10	4.4	43	.003	.15	35	8

GREAT MIAMI RIVER BASIN

03272400 GREAT MIAMI RIVER NEAR MIDDLETOWN, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (N/3)	TOTAL PHOS- PHORUS (PPH)	DIS- SOLVED SILICUS (PESI- DUE AT 18C C)	DIS- SOLVED SILICUS (SIM OF CONSTI- TUENTS)	HARD- NESS (CA, MG)	HAP- NESS	APNATE HAP- NESS	SPECI- FIC CAP- COND- UCTANCE (MICRO- MHFS)	PH	TEMP- ERATURE (DEG C)	COLOR
OCT.												
04....	--	7.7	.22	547	--	365	16A	54C	7.0	21	--	--
11....	--	7.2	.33	576	--	321	174	8C3	6.9	17	--	--
18....	--	8.3	.22	562	--	36C	16P	8A3	7.2	19	--	--
25....	--	9.8	.28	578	--	35C	17P	896	7.1	17	--	--
NOV.												
01....	--	6.8	.47	526	--	345	131	822	7.4	17	--	--
08....	--	6.3	.21	514	--	345	152	782	7.4	10	--	--
14....	.4	9.2	.17	52P	488	34A	154	788	7.2	12	47	--
DEC.												
15....	.3	19	.35	316	275	221	67	463	7.7	8	25	--
JAN.												
18....	.4	8.3	.28	592	549	373	125	918	7.4	5	25	--
FEB.												
14....	.7	14	.25	484	472	367	12C	74C	7.6	4	25	--
MAR.												
23....	.4	7.8	.20	456	425	330	121	691	7.6	13	15	--
APR.												
23....	.3	8.1	.12	457	422	345	127	716	7.4	22	15	--
MAY												
15....	.7	14	.14	436	411	374	122	692	7.6	22	25	--
JUNE												
12....	.4	7.9	.15	392	372	293	113	631	7.5	27	23	--
JULY												
12....	--	18	.26	458	--	322	127	681	7.5	27	--	--
19....	--	5.3	.20	476	--	341	146	721	7.4	28	--	--
17....	--	5.5	.46	464	--	338	117	741	7.6	29	--	--
23....	--	5.6	.40	411	--	312	111	650	7.9	30	--	--
31....	--	7.6	.17	412	--	294	111	611	7.5	25	--	--
AUG.												
27....	--	7.4	.29	442	--	316	113	629	7.6	28	--	--
14....	--	4.3	.31	421	--	311	117	611	7.4	24	--	--
21....	--	6.6	.41	496	--	366	123	732	7.7	29	--	--
23....	--	6.2	.29	491	--	341	131	76C	7.7	24	--	--
SEPT.												
15....	--	6.1	.40	452	--	336	119	721	7.5	24	--	--
12....	--	6.2	.67	512	--	351	127	775	7.5	22	--	--
18....	--	6.5	.26	494	--	357	127	791	7.5	25	--	--
24....	--	7.2	.16	491	--	356	153	779	7.4	28	--	--

DATE	TOTAL CHLORO- PHIL (CR)	NICKEL (41)	COPPER (CU)	LEAD (PPA)	ZINC (ZK)	CADMIUM (CD)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
04....	--	--	--	--	--	--	--	--
11....	--	--	--	--	--	--	--	--
18....	.11	.18	.16	.30	.63	--	.60	.60
25....	--	--	--	--	--	--	--	--
NOV.								
01....	--	--	--	--	--	--	--	--
08....	--	--	--	--	--	--	--	--
14....	--	--	--	--	--	--	--	--
DEC.								
15....	--	--	--	--	--	--	--	--
JAN.								
18....	--	--	--	--	--	--	--	--
FEB.								
14....	--	--	--	--	--	--	--	--
MAR.								
23....	--	--	--	--	--	--	--	--
APR.								
23....	--	--	--	--	--	--	--	--
MAY								
15....	--	--	--	--	--	--	--	--
JUNE								
12....	--	--	--	--	--	--	--	--
JULY								
12....	--	--	--	--	--	--	--	--
19....	--	--	--	--	--	--	--	--
17....	--	--	--	--	--	--	--	--
23....	--	--	--	--	--	--	--	--
31....	--	--	--	--	--	--	--	--
AUG.								
14....	--	--	--	--	--	--	--	--
21....	--	--	--	--	--	--	--	--
23....	.11	.72	.72	.1	.61	.70	.71	.60
SEPT.								
15....	--	--	--	--	--	--	--	--
12....	--	--	--	--	--	--	--	--
18....	.11	.72	.71	.1	.63	.61	.60	.60
24....	--	--	--	--	--	--	--	--

GREAT MIAMI RIVER BASIN

03274050 GREAT MIAMI RIVER NEAR HAMILTON, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA, MG)	NON- CAP- HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
OCT.												
04...	60	--	5.2	.50	554	--	345	173	850	7.2	21	--
11...	58	--	5.4	.72	544	--	330	146	830	7.2	17	--
18...	58	--	5.4	.42	578	--	350	165	891	7.4	19	--
25...	58	--	7.2	.46	540	--	365	181	856	7.3	14	--
NOV.												
01...	60	--	6.2	.32	556	--	345	166	856	7.3	17	--
08...	44	--	6.2	.35	508	--	345	120	782	7.7	9	--
14...	48	.4	7.7	.24	536	498	354	151	808	7.5	10	20
DEC.												
13...	20	.4	18	.47	300	278	233	98	463	7.8	9	25
JAN.												
18...	66	.3	9.3	.31	586	540	379	143	881	7.7	6	25
FEB.												
14...	34	.2	13	.28	456	449	357	124	726	7.7	3	10
MAR.												
20...	40	.4	7.1	.33	462	433	341	115	705	7.8	14	15
APR.												
23...	36	.3	7.1	.31	442	418	338	126	708	7.6	22	10
MAY												
15...	32	.4	13	.40	422	400	325	110	672	7.8	22	15
JUNE												
12...	30	.4	6.0	.66	412	394	328	103	667	8.0	27	15
JULY												
02...	30	--	19	.56	476	--	326	119	684	7.6	27	--
10...	40	--	4.5	.57	490	--	350	135	749	7.7	29	--
17...	40	--	8.3	.92	418	--	314	99	696	7.8	28	--
23...	28	--	6.8	.39	338	--	264	95	554	7.7	29	--
31...	28	--	5.7	.23	434	--	299	106	621	7.7	24	--
AUG.												
07...	28	--	10	.68	452	--	310	93	635	7.9	28	--
14...	24	--	9.1	.46	404	--	300	95	609	7.6	24	--
21...	34	--	8.0	.79	494	--	364	126	727	7.8	30	--
28...	42	--	6.4	.31	508	--	366	143	772	7.7	23	--
SEPT.												
05...	44	--	8.5	.46	488	--	352	137	759	7.5	24	--
12...	42	--	7.0	.99	458	--	330	97	726	7.7	21	--
18...	48	--	5.9	.35	514	--	340	137	783	7.5	23	--
24...	46	--	9.2	.88	456	--	344	123	760	7.6	27	--

DATE	TOTAL CHRO- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	CORALT (CD)	ARSENIC (AS)	CAD- MIUM (CD)
OCT.								
04...	.06	.00	.02	.00	.02	.00	.00	.00
11...	.00	.07	.03	.00	.02	.00	.00	.00
18...	.00	.08	.00	.00	.02	.00	.00	.00
25...	.01	.16	.01	.00	.05	.00	.00	.00
NOV.								
01...	--	.19	.01	.00	.07	--	.00	.00
08...	--	.13	.01	.00	.03	--	.01	.00
14...	.00	.07	.01	.00	.05	.00	.00	.00
DEC.								
13...	--	--	--	--	--	--	--	--
JAN.								
18...	--	--	--	--	--	--	--	--
FEB.								
14...	--	--	--	--	--	--	--	--
MAR.								
20...	.01	.00	.02	.03	.25	.00	.00	.00
APR.								
23...	--	--	--	--	--	--	--	--
MAY								
15...	.01	.01	.02	.02	.06	.00	.00	.00
JUNE								
12...	--	--	--	--	--	--	--	--
JULY								
02...	--	--	--	--	--	--	--	--
10...	.00	.01	.01	.00	.01	.00	.00	.00
17...	--	--	--	--	--	--	--	--
23...	.01	.01	.01	.00	.01	.00	.02	.00
31...	--	--	--	--	--	--	--	--
AUG.								
07...	.01	.01	.01	.00	.02	.00	.01	.00
14...	.61	.02	.03	.00	.02	.01	.01	.00
21...	.00	.02	.03	.01	.02	.00	.01	.00
28...	.00	.02	.02	.01	.02	.00	.00	.00
SEPT.								
05...	.00	.01	.01	.00	.06	.00	.01	.00
12...	.00	.02	.01	.00	.07	.00	.01	.00
18...	.00	.02	.01	.00	.04	.00	.00	.00
24...	.01	.01	.01	.00	.02	.00	.01	.00

GREAT MIAMI RIVER BASIN

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03274050 GREAT MIAMI RIVER NEAR HAMILTON, OHIO--Continued
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	AMMONIA (NH ₄)	NITRITE (NO ₂)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION	PHENOLS	MFTHV- LENE BLUE ACTIVE SUR- STANCE	TUP- 810- ITY	ODOR
OCT.								
04...	2.8	.10	2.6	29	.006	.15	25	8
11...	2.8	.15	2.8	28	.009	.19	60	8
18...	3.1	.15	3.0	32	.010	.06	20	8
25...	2.6	.15	3.0	29	.004	.20	55	8
NOV.								
01...	3.0	.15	3.2	33	.002	.16	50	8
08...	1.7	.10	7.8	68	.010	.15	50	8
14...	2.1	.15	5.6	51	.001	.12	50	4
DEC.								
13...	.37	.05	11.0	95	.004	.07	170	4
JAN.								
18...	2.5	.10	9.6	77	.024	.10	60	8
FEB.								
14...	1.7	.05	11.0	81	.015	.28	40	8
MAR.								
20...	.81	.05	7.6	74	.002	.12	40	8
APR.								
23...	.22	.05	9.2	93	.000	.11	33	4
MAY								
15...	.67	.10	6.2	70	.005	.09	40	8
JUNE								
12...	.22	.05	7.0	88	.002	.09	60	8
JULY								
02...	.59	.05	4.8	60	.002	.14	40	4
10...	.66	.10	5.0	64	.003	.16	40	8
17...	.74	.10	4.2	53	.002	.11	70	4
23...	.30	.05	4.2	54	.004	.16	200	2
31...	.59	.10	5.0	59	.005	.18	50	4
AUG.								
07...	.59	.05	5.4	68	.007	.20	50	4
14...	.44	.05	5.9	69	.002	.11	80	4
21...	.52	.10	4.6	60	.000	.19	41	8
28...	1.2	.15	4.6	53	.000	.17	25	4
SEPT.								
05...	1.1	.10	4.6	54	.002	.11	20	4
12...	1.6	.10	4.4	49	.003	.17	20	4
18...	1.5	.15	3.6	41	.014	.15	20	4
24...	1.2	.15	4.6	57	.003	.15	35	8

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO

LOCATION.--Lat 39°15'47", Long 84°40'00", Hamilton County, at Blue Rock Road bridge at New Baltimore about 6.5 miles downstream from Indian Creek and 14 miles downstream from gaging station at Hamilton, Butler County.

DRAINAGE AREA.--3,814 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1966 to September 1968.

Water temperatures: July 1966 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 930 micromhos Oct. 1, Nov. 3; minimum daily, 230 micromhos May 24.

Dissolved oxygen: Maximum daily, 12.4 mg/l Dec. 20; minimum daily, 1.9 mg/l July 20, Sept. 25.

Water temperatures: Maximum, 32.0°C Aug. 21, 23, 24; minimum, not determined.

Period of record:

Specific conductance (1967-68): Maximum daily, 930 micromhos Oct. 1, Nov. 3, 1967; minimum daily, 230 micromhos May 24, 1968.

Dissolved oxygen (1967-68): Maximum daily, 12.4 mg/l Dec. 20, 1967; minimum daily, 1.9 mg/l July 20, Sept. 25, 1968.

Water temperatures: Maximum, 32.0°C Aug. 21, 23, 24, 1968; minimum, not determined.

REMARKS.--In addition to the continuous recorder installed on right bank at Blue Rock Road bridge, twice-weekly samples were collected by a local observer. Partial analyses were made on the maximum specific conductance and the minimum specific conductance of the samples collected each month. Jan. 1-20, 23-31 no data recorded due to frozen intake. All other interruptions in the record were due to malfunctions of the instrument. Records of discharge are given for Great Miami River at Hamilton (drainage area 3,800 sq mi).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	BICAR- BONATE (HCO ₃)	CA-- BONATE (CO ₃)	SH FATE (SO ₄)	CHL-- BINE (Cl)	FLU-- PIDE (F)
OCT.							
02...	0920	504	232	0	175	64	.7
05...	0845	537	212	0	167	57	.7
NOV.							
06...	--	1190	234	0	109	47	.7
13...	0900	892	214	0	153	46	.6
DEC.							
01...	--	850	208	2	134	50	.5
05...	1140	14100	127	2	52	18	.3
JAN.							
19...	0900	1320	258	6	138	75	.5
20...	0900	1350	198	10	84	36	.5
FEB.							
09...	1115	3440	214	10	92	28	.3
25...	0900	1180	168	6	126	44	.5
MAR.							
06...	1000	1030	276	0	132	44	.5
25...	1400	5760	226	0	78	46	.3
APR.							
08...	1530	4590	226	0	69	22	.4
30...	0930	1280	222	12	125	30	.6
MAY							
08...	1530	1040	256	0	127	44	.5
27...	0930	31300	172	0	40	12	.2
JUNE							
03...	0930	7200	232	0	64	18	.3
14...	0900	1940	238	0	102	30	.4
JULY							
12...	1130	1140	238	0	128	40	.3
26...	0900	6030	212	0	72	16	.4
AUG.							
12...	1600	4440	218	8	65	18	.3
26...	--	979	274	0	126	40	.6
SEPT.							
22...	0900	1230	266	0	105	42	.5
30...	--	615	226	10	160	50	.6

GREAT MIAMI RIVER BASIN

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RESID- UE AT 18°C)	HARD- NESS (CA, MG)	NON- CAP- PONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHO)	PH
NOV.						
12...	13	596	370	180	912	7.5
09...	12	572	364	179	848	7.5
NOV.						
06...	8.9	438	378	116	727	7.5
12...	11	505	362	166	818	8.0
DEC.						
31...	20	530	366	177	786	8.0
75...	26	273	190	81	606	8.0
JAN.						
13...	11	594	372	160	896	8.0
20...	11	608	286	107	609	8.0
FEB.						
03...	22	418	382	140	634	8.0
26...	22	442	374	156	818	8.0
MAR.						
05...	19	510	374	148	832	7.5
75...	18	416	292	107	662	7.5
APR.						
08...	29	378	290	105	590	7.5
30...	17	456	336	124	754	8.0
MAY						
31...	22	464	368	138	780	8.0
75...	25	266	206	65	428	7.5
JUNE						
03...	18	360	280	90	556	7.5
16...	16	436	314	110	710	8.0
JULY						
12...	22	482	366	151	764	7.5
75...	1.6	288	230	56	473	7.5
AUG.						
12...	16	368	266	74	566	8.0
25...	21	514	338	113	770	7.5
SEPT.						
20...	10	472	318	100	730	7.5
30...	15	556	360	158	826	8.0

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER						NOVEMBER						DECEMBER					
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	930	920	7.5	5.6	20	16	860	810	4.8	2.4	17	16	800	760	6.8	6.3	8	7
2	920	900	6.9	3.9	22	18	860	770	5.2	4.3	17	16	--	--	--	--	--	--
3	920	880	7.6	4.8	23	19	930	780	5.2	4.7	17	16	--	--	--	--	--	--
4	890	830	7.1	4.3	24	21	870	710	--	--	16	14	--	--	--	--	--	--
5	840	820	5.9	4.3	24	22	720	670	--	--	14	12	800	410	12.0	11.3	4	3
6	860	790	5.0	3.5	23	21	760	700	6.8	--	12	11	860	600	11.3	8.9	6	4
7	860	700	6.5	3.4	21	18	780	740	7.2	6.4	11	10	830	570	--	--	8	6
8	860	760	6.4	3.7	22	20	770	720	7.8	7.1	11	9	570	520	7.7	6.7	8	7
9	860	800	5.1	3.6	20	18	820	770	8.1	7.0	11	10	--	--	--	--	8	7
10	870	840	5.1	4.0	18	17	830	800	7.6	5.5	13	11	570	560	9.0	7.4	9	8
11	890	840	5.2	4.5	17	16	830	790	5.5	4.8	13	13	570	510	--	--	9	8
12	840	810	5.8	3.4	18	15	820	790	5.8	5.1	15	13	550	480	10.0	7.2	9	8
13	820	790	5.6	3.2	18	15	830	810	6.0	5.7	14	12	560	520	9.5	8.3	9	8
14	870	820	5.2	3.1	20	16	830	810	6.0	5.7	12	11	520	470	13.5	8.5	8	8
15	860	830	5.8	3.2	21	17	830	800	6.4	5.7	11	9	560	520	11.7	10.9	8	6
16	860	840	5.1	3.2	21	19	810	780	6.3	5.6	9	9	600	560	10.9	8.6	8	4
17	870	845	4.5	3.0	21	18	810	780	5.7	5.0	11	9	--	--	--	--	--	--
18	900	850	5.6	3.1	20	18	810	800	5.6	4.9	11	11	700	590	--	--	10	8
19	920	890	5.8	3.7	18	15	810	800	6.2	5.5	11	10	680	660	--	--	9	7
20	890	860	7.6	4.3	17	15	800	790	6.3	6.0	11	10	720	680	12.4	--	10	7
21	900	850	8.3	4.9	17	14	790	780	6.4	6.0	11	10	720	660	9.5	8.7	12	10
22	880	860	8.5	5.1	17	14	790	760	6.4	5.8	11	11	660	510	10.9	8.6	10	4
23	890	870	8.9	5.5	18	14	770	730	6.4	5.6	11	10	530	420	9.8	--	6	3
24	910	850	8.2	4.0	19	16	740	710	6.3	5.7	10	9	--	--	--	--	--	--
25	860	850	5.7	3.5	17	14	750	710	6.1	5.7	11	10	--	--	--	--	--	--
26	880	850	7.6	3.5	15	13	800	750	--	--	11	10	--	--	--	--	--	--
27	880	860	5.8	4.1	14	13	750	730	8.0	7.1	11	9	--	--	--	--	--	--
28	890	880	6.9	4.5	13	12	740	720	8.8	7.7	9	7	--	--	--	--	--	--
29	910	890	7.2	4.3	12	10	790	740	8.1	6.8	7	7	--	--	--	--	--	--
30	890	880	6.7	3.6	15	12	810	760	7.0	6.7	7	7	--	--	--	--	--	--
31	880	840	4.7	2.8	16	13	--	--	--	--	--	--	--	--	--	--	--	--

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JANUARY						FEBRUARY						MARCH						
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	--	--	--	--	--	--	--	--	--	--	--	--	830	800	8.3	8.1	7	6	
2	--	--	--	--	--	--	--	--	--	--	--	--	850	830	8.9	8.3	7	6	
3	--	--	--	--	--	--	--	--	--	--	--	--	850	830	9.2	8.9	7	6	
4	--	--	--	--	--	--	--	--	--	--	--	--	840	820	9.3	8.5	8	6	
5	--	--	--	--	--	--	--	--	--	--	--	--	840	810	9.6	8.8	8	7	
6	--	--	--	--	--	--	--	--	--	--	--	--	840	810	8.8	8.0	8	8	
7	--	--	--	--	--	--	590	540	12.0	11.3	10	5	840	810	8.2	7.5	9	8	
8	--	--	--	--	--	--	580	560	11.5	10.8	8	6	830	810	8.0	7.0	11	8	
9	--	--	--	--	--	--	630	580	10.9	9.7	6	4	850	820	8.0	7.3	13	11	
10	--	--	--	--	--	--	--	--	--	--	--	--	840	820	7.9	7.2	13	12	
11	--	--	--	--	--	--	--	--	--	--	--	--	840	770	8.2	7.6	13	11	
12	--	--	--	--	--	--	--	--	--	--	--	--	860	810	8.7	8.0	12	8	
13	--	--	--	--	--	--	--	--	--	--	--	--	840	820	8.8	8.3	8	7	
14	--	--	--	--	--	--	--	--	--	--	--	--	850	810	9.5	8.8	9	7	
15	--	--	--	--	--	--	--	--	--	--	--	--	870	830	8.8	8.2	10	8	
16	--	--	--	--	--	--	--	--	--	--	--	--	890	840	8.3	7.2	12	10	
17	--	--	--	--	--	--	790	770	--	--	--	--	870	850	7.4	6.7	13	10	
18	--	--	--	--	--	--	800	790	--	--	--	5	3	820	810	8.1	6.9	13	11
19	--	--	--	--	--	--	820	800	--	--	--	5	3	830	790	7.7	7.0	15	12
20	--	--	--	--	--	--	840	800	10.6	10.2	5	4	790	750	7.8	7.2	14	14	
21	760	750	9.0	8.5	8	7	820	800	10.9	10.3	4	3	830	740	8.1	7.6	14	12	
22	760	730	9.2	8.2	8	4	830	800	10.5	10.0	4	3	750	730	8.5	7.9	12	7	
23	--	--	--	--	--	--	850	830	10.1	9.5	6	3	840	740	11.2	8.5	7	6	
24	--	--	--	--	--	--	860	840	9.9	9.0	6	4	850	640	12.0	11.2	7	5	
25	--	--	--	--	--	--	840	800	9.8	9.4	7	5	670	--	12.2	11.6	8	6	
26	--	--	--	--	--	--	830	810	9.9	8.6	7	5	--	--	11.6	11.1	9	7	
27	--	--	--	--	--	--	830	810	9.0	8.4	7	6	580	460	11.4	9.9	10	8	
28	--	--	--	--	--	--	830	800	8.9	8.4	7	6	460	440	9.9	9.5	12	9	
29	--	--	--	--	--	--	830	810	8.4	7.7	7	6	470	460	9.5	8.5	14	12	
30	--	--	--	--	--	--	--	--	--	--	--	--	460	450	8.5	8.0	16	14	
31	--	--	--	--	--	--	--	--	--	--	--	--	450	440	8.2	8.0	16	14	
DAY	APRIL						MAY						JUNE						
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	460	440	9.1	8.2	15	13	760	740	8.7	6.7	21	18	610	560	6.9	5.3	17	17	
2	480	460	9.1	8.1	14	13	760	740	7.7	6.4	21	18	560	350	6.0	5.5	19	17	
3	490	470	8.1	7.5	13	13	770	730	7.0	5.4	22	20	580	510	5.6	5.3	21	18	
4	530	490	8.9	8.1	14	13	760	730	7.8	5.6	21	20	620	580	5.5	5.2	22	19	
5	590	530	9.5	8.9	13	10	780	760	7.5	5.7	21	18	650	620	5.5	5.0	23	21	
6	610	590	10.0	8.9	11	8	790	770	8.4	6.3	19	17	660	650	5.1	4.8	24	22	
7	610	570	10.2	9.6	12	10	780	--	9.2	6.1	19	17	680	660	4.9	4.5	24	22	
8	620	590	9.6	8.9	13	12	800	780	9.8	6.5	20	18	690	670	--	--	--	23	
9	660	620	8.9	7.8	15	13	780	700	7.0	6.0	20	18	710	670	--	--	--	26	
10	670	660	8.7	8.4	16	14	760	700	6.2	6.0	19	18	700	690	--	--	--	26	
11	690	670	8.7	7.5	16	14	740	420	6.9	5.5	19	16	690	670	9.4	6.4	27	25	
12	710	680	8.7	7.2	17	14	520	490	8.0	5.6	16	16	700	640	8.4	6.2	27	25	
13	720	700	7.7	6.2	18	16	600	520	8.0	7.8	17	15	700	640	8.3	5.6	25	23	
14	720	710	7.4	6.1	17	16	650	570	8.4	7.6	19	17	730	700	9.6	7.8	24	22	
15	720	680	8.1	6.2	17	15	670	640	7.6	6.5	21	17	780	670	9.1	6.4	24	22	
16	760	710	8.6	6.7	17	15	680	510	7.6	6.4	22	19	760	650	7.0	5.5	23	23	
17	740	700	7.4	6.2	17	16	590	510	7.9	7.3	19	18	650	560	7.6	6.6	23	22	
18	740	700	7.5	5.6	18	16	620	590	7.8	7.3	19	17	610	530	6.6	5.8	24	22	
19	730	720	8.4	6.5	19	17	660	620	7.9	7.2	19	17	610	590	7.9	6.6	24	23	
20	750	710	7.4	5.9	20	18	680	660	7.5	7.2	17	16	630	610	7.3	6.2	25	23	
21	730	710	8.0	5.7	21	19	700	680	7.8	6.9	18	17	670	630	8.6	6.3	24	23	
22	730	700	8.4	5.8	21	19	710	680	7.4	6.5	19	17	690	660	7.8	6.2	25	23	
23	700	650	6.5	4.9	21	18	710	280	7.9	6.6	19	14	730	660	6.2	4.3	27	24	
24	720	650	5.7	5.0	18	16	360	230	8.2	7.4	16	14	750	700	--	--	--	27	
25	730	670	7.3	5.7	16	14	370	290	8.6	7.7	16	15	--	--	--	--	--	--	
26	750	710	7.0	6.2	17	14	--	--	9.0	6.6	18	16	--	--	--	--	--	--	
27	740	720	7.1	6.1	18	14	--	--	--	--	--	--	--	--	--	--	--	--	
28	760	740	7.3	6.0	18	16	--	--	--	--	--	--	--	--	--	--	--	--	
29	750	730	7.4	5.7	19	17	--	--	--	--	--	--	--	--	--	--	--	--	
30	770	740	9.0	6.4	19	17	530	500	7.4	6.5	17	15	--	--	--	--	--	--	
31	--	--	--	--	--	--	610	520	7.2	6.5	18	15	--	--	--	--	--	--	

GREAT MIAMI RIVER BASIN

03274600 GREAT MIAMI RIVER AT NEW BALTIMORE, OHIO--Continued

SPECIFIC CONDUCTANCE, DISSOLVED OXYGEN, AND WATER TEMPERATURES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JULY			AUGUST			SEPTEMBER		
	SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)		DISSOLVED OXYGEN (MG/L)	TEMPERATURE (°C)		SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C)	DISSOLVED OXYGEN (MG/L)		TEMPERATURE (°C)
	MAX	MIN		MAX	MIN		MAX	MIN	
1	--	--	--	--	--	590	550	4.4	3.9
2	--	--	--	--	--	630	590	4.6	4.4
3	--	--	--	--	--	620	580	4.2	3.9
4	--	--	--	--	--	630	500	4.9	4.0
5	--	--	--	--	--	510	420	5.0	4.4
6	--	--	--	--	--	610	450	5.4	5.0
7	--	--	--	--	--	650	610	5.9	4.5
8	--	--	--	--	--	660	640	6.4	4.9
9	--	--	--	--	--	640	410	--	--
10	--	--	--	--	--	600	510	--	--
11	--	--	--	--	--	--	--	--	--
12	770	660	4.8	3.3	30	27	--	--	--
13	740	720	5.5	4.8	30	28	--	--	--
14	740	690	4.8	3.3	29	28	--	--	--
15	740	650	4.2	3.0	28	24	600	570	5.9
16	700	680	4.4	2.9	29	27	610	590	6.2
17	720	610	4.1	3.0	29	27	--	--	--
18	710	660	5.2	3.0	31	29	--	--	--
19	670	600	4.6	2.6	31	28	710	700	5.8
20	630	590	2.9	1.9	30	28	710	700	6.6
21	670	630	--	--	30	28	710	700	5.9
22	730	610	--	--	31	28	740	710	6.0
23	650	580	--	--	31	29	730	720	4.2
24	620	590	--	--	29	29	760	720	5.0
25	600	410	--	--	29	24	760	740	5.6
26	520	440	--	--	30	26	780	750	4.5
27	--	--	--	--	--	--	770	760	4.4
28	--	--	--	--	--	--	780	760	5.4
29	--	--	--	--	--	--	770	750	5.7
30	590	550	3.3	2.6	29	25	780	760	--
31	550	470	4.4	3.3	29	24	790	770	4.5

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 mile southeast of Elizabethtown, 0.9 mile downstream from Whitewater River, and 5.4 miles upstream from mouth.

DRAINAGE AREA.--5,356 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1956 to September 1968.

Water temperatures: October 1956 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 943 micromhos Oct. 3; minimum daily, 350 micromhos May 24.

Water temperatures: Maximum, 31.0°C Aug. 21; minimum, 1.0°C Jan. 5, 8, 9, Feb. 12.

Period of record:

Specific conductance: Maximum daily, 1,090 micromhos Jan. 6, 1964; minimum daily, 296 micromhos Jan. 28, 1962.

Water temperatures: Maximum, 32.0°C July 23-27, Aug. 3, 1966; minimum, freezing point on several days during winter periods of most years.

REMARKS.--Samples for iron and manganese were filtered clear when collected. Daily samples were collected at this station and samples were selected for analysis as follows: (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 samples each month to further define the quality of water. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	IRON (FE)	MANGANESE (MN)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
UCT.									
03...	--	--	--	240	0	169	62	.7	31
09...	--	--	--	196	0	149	52	.8	21
17...	1130	.10	.10	--	--	--	--	--	--
21...	--	--	--	234	0	168	60	.8	16
NOV.									
02...	--	--	--	224	0	161	58	.7	11
06...	--	--	--	220	0	106	43	.6	7.9
14...	1045	.52	.16	--	--	--	--	--	--
17...	--	--	--	216	0	155	44	.6	5.0
DEC.									
02...	--	--	--	234	0	139	54	.4	10
10...	--	--	--	702	0	80	73	.2	25
19...	1515	.37	.05	--	--	--	--	--	--
24...	--	--	--	164	0	53	13	.2	18
JAN.									
06...	--	--	--	296	0	106	36	.3	19
16...	1115	.42	.13	--	--	--	--	--	--
18...	--	--	--	286	0	136	62	.4	15
31...	--	--	--	168	0	48	21	.2	20
FEB.									
01...	--	--	--	152	0	47	13	.2	17
13...	--	--	--	228	12	102	32	.3	11
21...	1445	.61	.09	--	--	--	--	--	--
28...	--	--	--	246	8	138	43	.4	16
MAR.									
07...	--	--	--	228	14	128	40	.5	19
17...	--	--	--	214	8	133	68	.6	8.2
18...	1515	.70	.14	--	--	--	--	--	--
29...	--	--	--	172	6	68	22	.3	26

03276600 GREAT MIAMI RIVER AT ELIZABETHTOWN, OHIO--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	IRON (FE)	MANGANESE (MN)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
APR.									
06...		--	--	195	0	66	18	.3	25
22...	1100	.20	.04	--	--	--	--	--	--
24...		--	--	236	0	100	32	.4	8.2
30...		--	--	266	0	120	38	.5	7.0
MAY									
08...	1415	.09	.13	207	0	133	42	.5	18
22...		--	--	220	0	61	18	.3	20
24...		--	--	152	0	28	8.0	.3	17
JUNE									
02...		--	--	208	0	56	16	.3	8.8
10...	1530	.06	.04	--	--	--	--	--	--
15...		--	--	284	0	96	28	.3	5.6
27...		--	--	254	0	88	30	.3	7.6
JULY									
13...		--	--	254	0	110	34	.4	19
15...		--	--	226	16	101	34	.4	11
23...	1400	.15	.05	--	--	--	--	--	--
28...		--	--	190	0	61	18	.3	14
AUG.									
03...		--	--	230	12	97	30	.4	14
05...		--	--	160	4	47	14	.3	10
12...	1500	.15	.02	--	--	--	--	--	--
26...		--	--	264	0	130	39	.6	22
SEPT.									
11...		--	--	188	8	87	36	.4	18
17...	1500	.18	.12	--	--	--	--	--	--
20...		--	--	244	0	121	46	.4	17
30...		--	--	228	12	147	48	.5	19

DATE	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC CONO- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	DISS- OLVED OXYGEN	PER- CENT SATUR- ATION
OCT.									
03...	.54	628	374	177	943	7.6	21	--	--
08...	.54	514	314	153	792	7.1	20	--	--
17...	--	--	--	--	--	--	--	4.8	50
21...	.41	592	360	168	894	7.4	14	--	--
NOV.									
02...	1.1	578	350	166	878	7.2	16	--	--
06...	.86	474	290	110	702	8.0	11	--	--
14...	--	--	--	--	--	--	--	7.2	65
17...	.36	470	338	161	782	8.2	10	--	--
DEC.									
02...	1.0	494	344	152	830	7.6	7	--	--
10...	.87	334	277	111	538	7.4	8	--	--
19...	--	--	--	--	--	--	--	11.0	92
24...	.92	248	209	74	440	7.3	4	--	--
JAN.									
06...	.80	466	372	129	801	7.6	2	--	--
16...	--	--	--	--	--	--	--	11.0	78
18...	.38	522	366	131	898	7.3	4	--	--
31...	.90	260	208	70	464	7.3	4	--	--
FEB.									
01...	.68	276	200	75	420	8.1	6	--	--
13...	.91	442	239	32	718	8.6	2	--	--
21...	--	--	--	--	--	--	--	10.0	74
28...	.39	522	369	154	820	8.4	6	--	--
MAR.									
07...	.30	506	352	141	780	8.6	8	--	--
17...	.30	522	335	146	847	8.5	12	--	--
18...	--	--	--	--	--	--	--	8.2	69
24...	.42	366	254	103	518	8.5	14	--	--
APR.									
06...	1.1	336	260	100	524	7.7	12	--	--
22...	--	--	--	--	--	--	--	11.0	122
24...	.78	408	307	113	685	7.9	16	--	--
30...	.51	448	348	130	757	7.4	20	--	--
MAY									
08...	.34	428	314	144	773	7.8	20	11.0	120
22...	.72	312	262	82	521	8.0	17	--	--
24...	.66	190	164	40	350	8.0	16	--	--
JUNE									
02...	.76	332	245	74	503	7.9	19	--	--
10...	--	--	--	--	--	--	26	11.0	134
15...	.90	464	349	116	713	7.3	25	--	--
27...	1.0	446	310	102	655	7.8	23	--	--
JULY									
13...	.48	432	326	118	714	8.1	27	--	--
15...	.47	404	320	108	687	8.5	26	--	--
23...	--	--	--	--	--	--	--	8.6	109
28...	.46	292	226	70	480	7.5	26	--	--
AUG.									
03...	.90	394	304	95	645	8.5	27	--	--
05...	.72	244	192	54	405	8.4	27	--	--
12...	--	--	--	--	--	--	24	6.2	73
26...	.46	496	360	143	780	7.7	27	--	--
SEPT.									
11...	.88	398	267	99	601	8.3	20	--	--
17...	--	--	--	--	--	--	23	5.6	64
20...	.65	454	330	130	761	7.5	22	--	--
30...	.74	540	355	148	816	8.5	23	--	--

GREAT MIAMI RIVER BASIN

03276600 GREAT MIAMI RIVER AT ELIZABETHTOWN, OHIO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	926	874	817	745	420	806	608	754	581	664	412	785
2.....	910	874	830	745	444	812	624	754	553	670	636	775
3.....	943	850	849	759	489	803	645	762	591	677	645	774
4.....	912	811	821	769	528	766	550	755	636	678	578	756
5.....	905	746	445	766	526	784	583	771	554	686	495	766
6.....	860	702	480	801	565	810	524	755	591	709	491	758
7.....	879	768	515	807	590	780	532	763	675	691	674	745
8.....	792	771	535	837	636	780	558	773	628	--	622	780
9.....	846	824	566	825	634	810	621	738	694	712	428	792
10.....	868	830	588	801	573	784	535	741	675	706	470	635
11.....	892	826	591	718	668	816	675	623	693	703	515	691
12.....	926	817	490	855	712	745	661	511	655	700	516	694
13.....	883	820	465	849	718	828	676	543	648	714	541	729
14.....	872	802	518	847	692	767	692	591	685	710	583	756
15.....	877	834	552	812	747	757	656	650	713	687	612	778
16.....	856	775	598	853	727	824	696	645	697	680	632	780
17.....	872	782	631	882	757	847	656	525	606	673	664	783
18.....	875	797	646	898	784	812	714	605	560	693	678	794
19.....	901	819	619	895	750	810	724	687	631	686	606	759
20.....	921	794	546	831	906	777	734	659	648	683	692	761
21.....	894	774	550	876	787	648	724	699	684	654	712	687
22.....	992	826	531	816	712	630	720	521	703	645	702	707
23.....	890	773	457	784	796	651	689	425	480	610	725	724
24.....	901	731	440	768	817	672	685	360	672	559	747	767
25.....	901	746	585	725	777	698	680	402	690	549	--	739
26.....	892	722	560	694	817	582	717	435	678	566	780	697
27.....	881	739	603	871	801	593	721	435	655	499	774	790
28.....	866	725	650	671	820	524	731	608	664	480	767	802
29.....	917	759	677	694	786	518	748	449	639	500	774	807
30.....	901	750	680	581	--	502	757	485	641	580	762	816
31.....	898	--	699	466	--	491	--	517	--	586	700	--
AVERAGE	887	786	551	775	649	731	665	604	647	645	634	751

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	16.0	6.0	2.0	6.0	6.0	15.0	20.0	17.0	27.0	25.0	23.0
2	21.0	16.0	7.0	2.0	6.0	6.0	14.0	21.0	19.0	26.0	27.0	24.0
3	21.0	16.0	6.0	3.0	6.0	6.0	13.0	21.0	20.0	26.0	27.0	25.0
4	22.0	13.0	4.0	2.0	5.0	7.0	13.0	21.0	22.0	23.0	28.0	24.0
5	22.0	12.0	4.0	1.0	4.0	7.0	12.0	20.0	22.0	27.0	27.0	23.0
6	21.0	11.0	4.0	2.0	6.0	8.0	12.0	18.0	24.0	27.0	28.0	23.0
7	21.0	9.0	6.0	2.0	6.0	8.0	11.0	19.0	24.0	27.0	28.0	24.0
8	20.0	9.0	8.0	1.0	6.0	9.0	13.0	19.0	26.0	--	28.0	24.0
9	18.0	10.0	8.0	1.0	4.0	12.0	14.0	18.0	27.0	27.0	28.0	23.0
10	16.0	11.0	8.0	2.0	3.0	12.0	14.0	19.0	28.0	27.0	27.0	22.0
11	16.0	12.0	9.0	3.0	2.0	11.0	15.0	18.0	28.0	28.0	26.0	20.0
12	16.0	13.0	9.0	3.0	1.0	9.0	16.0	17.0	27.0	27.0	24.0	21.0
13	16.0	12.0	8.0	4.0	2.0	8.0	16.0	18.0	24.0	27.0	25.0	23.0
14	17.0	10.0	8.0	4.0	3.0	7.0	15.0	20.0	24.0	29.0	24.0	22.0
15	19.0	6.0	8.0	4.0	4.0	9.0	16.0	22.0	25.0	26.0	25.0	22.0
16	18.0	9.0	6.0	3.0	4.0	10.0	17.0	22.0	24.0	26.0	25.0	23.0
17	18.0	10.0	6.0	3.0	3.0	12.0	17.0	19.0	24.0	29.0	28.0	23.0
18	17.0	9.0	7.0	4.0	4.0	13.0	21.0	18.0	24.0	29.0	29.0	22.0
19	16.0	9.0	8.0	6.0	4.0	13.0	19.0	17.0	24.0	28.0	30.0	23.0
20	16.0	9.0	8.0	6.0	4.0	14.0	20.0	17.0	25.0	29.0	30.0	22.0
21	14.0	10.0	9.0	7.0	2.0	12.0	20.0	19.0	25.0	28.0	31.0	23.0
22	15.0	11.0	9.0	7.0	3.0	10.0	21.0	17.0	25.0	24.0	30.0	22.0
23	15.0	9.0	6.0	6.0	4.0	7.0	20.0	17.0	26.0	24.0	30.0	23.0
24	17.0	10.0	4.0	4.0	6.0	7.0	16.0	16.0	26.0	29.0	30.0	23.0
25	14.0	10.0	4.0	3.0	6.0	7.0	16.0	17.0	26.0	27.0	--	24.0
26	13.0	11.0	3.0	4.0	6.0	7.0	16.0	17.0	26.0	28.0	27.0	24.0
27	13.0	8.0	3.0	5.0	6.0	9.0	17.0	23.0	27.0	27.0	26.0	24.0
28	11.0	7.0	3.0	7.0	6.0	10.0	18.0	16.0	22.0	26.0	25.0	24.0
29	13.0	7.0	4.0	7.0	6.0	14.0	19.0	16.0	24.0	26.0	24.0	23.0
30	13.0	6.0	4.0	6.0	--	13.0	20.0	16.0	26.0	26.0	24.0	23.0
31	14.0	--	4.0	4.0	--	15.0	--	17.0	--	25.0	25.0	--
AVERAGE	17.0	10.5	6.0	4.0	4.5	9.5	16.0	18.5	24.0	27.0	27.0	23.0

03277200 OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.

LOCATION.--Lat 38°46'27", long 84°57'39", Gallatin County, about 1,000 ft upstream from dam, 0.7 mile upstream from Stevens Creek, 1.4 miles downstream from Craigs Creek, 3.3 miles west of Warsaw, and at mile 531.3.

DRAINAGE AREA.--83,170 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1959 to September 1968.

Water temperatures: October 1959 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 613 micromhos Oct. 12; minimum daily, 230 micromhos June 1.

Water temperatures: Maximum, 29.0°C Aug. 7, 8, 23-26; minimum, 1.0°C Feb. 23.

Period of record:

Specific conductance: Maximum daily, 810 micromhos Oct. 21, 1962; minimum daily, 167 micromhos Mar. 3, 1962.

Water temperatures: Maximum, 31.0°C July 14, 1962; minimum, freezing point on many days during winter periods.

REMARKS.--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) a composite analysis each month to determine heavy metals. Samples for iron and manganese filtered clear when collected. Samples were also collected at this station for pesticide analyses to determine the extent and magnitude of pesticide contamination in the stream. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)	FLUO- RIDE (F)
OCT.							
12...	.20	.26	34	0	148	66	.5
23...	.09	.51	44	0	143	53	.6
30...	.15	.40	42	0	86	37	.4
NOV.							
11...	.13	.18	54	0	103	30	.3
17...	.24	.31	58	0	88	29	.2
24...	.21	.21	52	0	104	51	.2
DEC.							
02...	.30	.26	44	0	94	38	.5
11...	.28	.17	52	0	60	20	.3
25...	.95	.25	72	0	63	19	.3
JAN.							
04...	.26	.23	60	0	63	20	.3
16...	.78	.26	58	0	72	26	.3
25...	.51	.40	60	0	82	30	.3
FEB.							
08...	.14	.17	52	0	64	19	.2
13...	.11	.15	46	0	63	40	.2
26...	.62	.27	70	0	78	32	.2
MAR.							
02...	.36	.42	66	0	77	27	.1
14...	—	—	62	0	92	38	.1
17...	1.6	.42	28	0	61	16	.1
APR.							
01...	.14	.11	62	0	67	22	.2
09...	.25	.03	52	0	47	14	.2
30...	.08	.12	78	0	73	22	.2
MAY							
03...	.07	.11	72	0	84	28	.3
19...	.06	.09	70	0	113	34	.4
31...	.12	.07	56	0	48	10	.2
JUNE							
01...	.36	.05	58	0	50	7.0	.2
14...	.09	.05	70	0	84	18	.3
29...	.71	.04	97	0	91	25	.3
JULY							
07...	.16	.03	100	0	85	24	.3
14...	.17	.02	106	0	93	30	.2
30...	.42	.09	108	0	108	36	.3
AUG.							
02...	.44	.16	85	0	96	36	.3
17...	.54	.08	86	0	117	62	.4
22...	.53	.15	84	0	86	38	.3
SEPT.							
06...	.15	.19	84	0	77	28	.3
11...	.19	.12	88	0	91	34	.4
30...	.09	.14	88	0	101	40	.3

OHIO RIVER MAIN STEM

03277200 OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

		TOTAL PHOS- PHORUS (P04)		DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)		HARD- NESS (CA,MG)		NON- CAR- BONATE HARD- NESS		SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)		PH	
DATE		NITRATE (N03)											
OCT.													
12...		8.2		.16		444		180		152		613	
23...		4.6		.42		424		176		140		567	
30...		7.0		.21		300		125		91		394	
NOV.													
11...		5.8		.23		278		142		98		427	
17...		3.8		.24		212		130		82		381	
24...		3.6		.20		282		152		110		474	
DEC.													
02...		4.2		.11		268		136		100		426	
11...		3.6		.13		212		118		76		294	
25...		4.8		.18		206		126		67		326	
JAN.													
04...		3.6		.18		182		112		63		307	
16...		3.6		.33		200		119		72		345	
25...		3.8		.30		242		133		84		389	
FEB.													
08...		4.8		.15		172		112		70		292	
13...		4.0		.18		212		124		86		358	
26...		5.0		.31		234		150		92		393	
MAR.													
02...		5.8		.31		248		146		92		384	
14...		5.3		.20		258		144		93		438	
17...		4.3		.16		144		70		47		241	
APR.													
01...		6.8		.15		216		132		81		326	
09...		4.5		.13		150		98		56		242	
30...		5.2		.22		252		147		83		365	
MAY													
03...		6.1		.20		263		148		89		394	
19...		7.2		.21		303		174		117		473	
31...		4.7		.18		165		96		50		235	
JUNE													
01...		3.8		.11		136		98		50		230	
14...		3.6		.25		226		153		96		360	
29...		3.9		.21		262		207		128		431	
JULY													
07...		3.7		.25		272		172		90		425	
14...		3.6		.27		306		186		99		470	
30...		2.8		.42		312		198		110		514	
AUG.													
02...		6.5		.39		284		186		117		486	
17...		6.5		.31		348		204		134		594	
22...		4.5		.32		272		160		91		443	
SEPT.													
06...		7.2		.40		256		148		79		401	
16...		6.8		.39		266		166		94		453	
30...		8.4		.48		294		180		108		497	

	TOTAL CHRO- MIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	COBALT (CO)	ARSENIC (AS)	CAD- MIUM (CD)
DATE								
OCT- 01-31	.00	.00	.00	.00	.01	.00	.00	.00
NOV. 01-30	.00	.00	.01	.01	.30	.00	.00	.00
DEC. 01-31	.00	.00	.01	.01	.01	.00	.00	.00
JAN. 01-31	.00	.00	.02	.02	.03	.00	.00	.00
FEB. 01-29	.00	.01	.01	.00	.01	.00	.00	.00
MAR. 01-31	.00	.00	.01	.00	.01	.00	.00	.00
APR. 01-30	.00	.01	.01	.01	.01	.00	.00	.00
MAY 01-31	--	--	--	--	--	--	--	--
JUNE 01-30	.00	.00	.01	.00	.03	.00	.01	.00
JULY 01-31	.00	.00	.01	.00	.01	.00	.01	.00
AUG. 01-31	.00	.00	.01	.00	.01	.00	.00	.00
SEPT. 01-30	.00	.01	.01	.01	.02	.00	.01	.00

PESTICIDE ANALYSES IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

[illegible]

03277200 OHIO RIVER AT MARKLAND DAM, NEAR WARSAW, KY.--Continued

RADIOISOTOPES IN WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

Units of measurement: Uranium, micrograms per liter of water; radium, as radium-226, in picocuries per liter of water; gross beta radiation as strontium-90-yttrium-90, in picocuries per liter of water; gross alpha radiation, as micrograms of uranium equivalent per liter of water; tritium as tritium units (approximately equal to 3.2 picocuries per liter). A picocurie is one millionth of the amount of radioactivity represented by a microcurie, which is the quantity of radiation represented by one millionth of a gram of radium-226. A picocurie of radium results in 2.22 disintegrations per minute. A tritium unit is equal to one tritium atom in 10^{15} protium (ordinary hydrogen) atoms.

DATE	DISSOLVED				TRITIUM T.U.	DISSOLVED SOLIDS mg/l	SUSPENDED		SUSPENDED SOLIDS mg/l
	URANIUM μg/l	RADIUM pc/l	GROSS α μg/l	GROSS β pc/l			GROSS α μg/l	GROSS β pc/l	
OCT. 16...	< .4	< .1	4.0	9.4	246	420	.7	1.2	9
NOV. 14...	--	--	--	--	234	--	--	--	--
DEC. 19...	--	--	--	--	184	--	--	--	--
JAN. 16...	--	--	--	--	193	--	--	--	--
FEB. 21...	--	--	--	--	197	--	--	--	--
MAR. 18...	--	--	--	--	175	--	--	--	--
APR. 22...	< .4	< .1	3.1	5.2	238	220	.5	1.2	5
MAY 8...	--	--	--	--	187	--	--	--	--
JUNE 10...	--	--	--	--	209	--	--	--	--
JULY 23...	--	--	--	--	226	--	--	--	--
AUG. 12...	--	--	--	--	202	--	--	--	--
SEPT. 17...	.3	.06	1.7	4.9	197	300	1.5	1.4	20

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY BETWEEN 1600 AND 1800)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	555	406	425	315	302	384	329	375	230	438	504	---
2.....	495	429	426	312	302	384	329	375	258	447	486	442
3.....	481	435	369	309	344	384	323	394	276	444	477	436
4.....	472	418	369	307	338	--	--	410	287	444	515	--
5.....	481	--	358	320	326	--	302	421	291	433	501	409
6.....	497	--	332	338	317	411	276	423	291	--	454	401
7.....	513	--	312	345	294	419	276	398	308	425	547	418
8.....	527	412	312	348	292	424	262	398	--	430	536	418
9.....	--	417	299	329	307	428	242	410	--	438	478	442
10.....	564	435	299	326	320	430	248	415	--	449	456	452
11.....	598	427	294	329	332	430	264	397	--	455	526	453
12.....	613	418	309	351	--	--	283	365	331	466	525	436
13.....	610	--	332	365	358	428	292	350	350	--	539	430
14.....	602	--	342	348	358	438	--	360	360	470	539	442
15.....	604	396	348	335	361	410	312	388	360	468	570	444
16.....	536	388	332	345	--	--	317	411	360	472	587	--
17.....	610	381	326	366	381	241	323	407	--	472	594	457
18.....	612	--	312	358	378	258	335	441	382	477	571	460
19.....	611	383	307	345	--	260	344	473	400	484	508	457
20.....	604	--	318	345	--	275	464	402	490	482	457	--
21.....	--	--	323	348	376	--	348	456	404	--	471	470
22.....	580	438	345	358	378	--	348	430	--	505	443	466
23.....	567	451	348	369	378	313	354	456	404	491	445	462
24.....	--	474	335	372	377	324	348	325	416	486	451	464
25.....	--	464	326	389	368	343	361	303	416	511	460	462
26.....	506	463	3518	358	383	293	348	422	--	466	401	--
27.....	465	436	304	342	--	305	341	308	425	--	454	472
28.....	424	437	302	326	381	--	--	244	430	491	461	482
29.....	--	416	309	312	379	--	361	243	431	460	461	--
30.....	394	--	418	320	--	300	365	246	--	514	456	497
31.....	--	--	--	332	--	321	--	235	--	511	451	--
AVERAGE	540	--	331	342	350	--	316	373	--	468	499	449

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY BETWEEN 1600 AND 1800)

AY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	14.0	8.0	---	4.0	---	11.0	17.0	17.0	26.0	28.0	---
2	22.0	16.0	8.0	4.0	4.0	2.0	11.0	18.0	17.0	25.0	28.0	---
3	22.0	15.0	8.0	4.0	5.0	3.0	12.0	18.0	17.0	25.0	27.0	27.0
4	20.0	15.0	7.0	4.0	6.0	---	---	18.0	18.0	25.0	27.0	---
5	20.0	---	7.0	2.0	6.0	---	12.0	19.0	18.0	24.0	27.0	27.0
6	21.0	---	7.0	4.0	5.0	3.0	12.0	19.0	17.0	25.0	28.0	---
7	21.0	---	7.0	3.0	5.0	4.0	13.0	19.0	18.0	24.0	29.0	---
8	21.0	13.0	7.0	2.0	5.0	4.0	13.0	18.0	---	27.0	29.0	26.0
9	---	12.0	6.0	2.0	4.0	4.0	12.0	18.0	---	27.0	28.0	27.0
10	21.0	12.0	7.0	2.0	4.0	4.0	13.0	18.0	---	26.0	28.0	25.0
11	21.0	13.0	7.0	2.0	3.0	6.0	13.0	18.0	---	26.0	28.0	19.0
12	19.0	12.0	7.0	2.0	---	---	13.0	18.0	22.0	26.0	27.0	21.0
13	19.0	---	7.0	2.0	3.0	5.0	14.0	18.0	23.0	---	27.0	24.0
14	19.0	---	7.0	2.0	3.0	5.0	---	18.0	23.0	26.0	28.0	24.0
15	21.0	11.0	7.0	2.0	6.0	6.0	13.0	19.0	22.0	27.0	29.0	24.0
16	21.0	11.0	7.0	2.0	3.0	---	13.0	20.0	23.0	28.0	29.0	---
17	20.0	11.0	7.0	2.0	2.0	9.0	13.0	20.0	---	27.0	28.0	24.0
18	21.0	---	7.0	2.0	2.0	7.0	14.0	20.0	23.0	27.0	28.0	24.0
19	20.0	11.0	7.0	2.0	---	8.0	14.0	22.0	29.0	28.0	28.0	23.0
20	19.0	---	8.0	2.0	---	8.0	16.0	19.0	25.0	28.0	28.0	23.0
21	---	---	8.0	2.0	3.0	---	17.0	19.0	24.0	---	28.0	24.0
22	19.0	9.0	8.0	2.0	2.0	---	17.0	19.0	---	28.0	---	23.0
23	17.0	7.0	7.0	2.0	1.0	8.0	17.0	18.0	26.0	27.0	29.0	25.0
24	---	9.0	7.0	2.0	2.0	8.0	17.0	17.0	26.0	28.0	29.0	25.0
25	---	9.0	7.0	2.0	3.0	7.0	17.0	17.0	26.0	28.0	29.0	25.0
26	17.0	9.0	6.0	2.0	2.0	8.0	17.0	17.0	26.0	---	29.0	23.0
27	17.0	9.0	6.0	2.0	---	8.0	17.0	17.0	24.0	---	28.0	---
28	17.0	9.0	6.0	2.0	---	8.0	17.0	17.0	24.0	---	28.0	---
29	---	8.0	6.0	2.0	3.0	---	17.0	17.0	25.0	28.0	28.0	---
30	15.0	8.0	6.0	---	---	9.0	17.0	17.0	---	27.0	28.0	23.0
31	---	---	---	3.0	---	9.0	---	17.0	---	28.0	28.0	---
TH	19.5	---	7.0	2.5	3.5	---	14.5	18.0	---	26.5	28.0	---

KENTUCKY RIVER BASIN

03277450 CARR FORK NEAR SASSAFRAS, KY.

LOCATION.--Lat 37°13'52", long 83°02'10", Knott County, temperature recorder at gaging station on left bank, 0.3 mile downstream from bridge on State Highway 1089 and Sassafras Creek, 0.5 mile downstream from Carr Fork Dam (under construction) and 1.3 miles northeast of Sassafras.

DRAINAGE AREA.--60.6 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1966 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 31.0°C Aug. 7, 9; minimum, freezing point on several days during December to March.

Period of record:

Water temperatures: Maximum, 31.0°C Aug. 7, 9, 1968; minimum, freezing point on several days during December 1967 to March 1968.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	13.0	11.0	6.0	6.0	0.0	0.0	9.0	7.0	2.0	0.0
2	---	---	13.0	12.0	7.0	4.0	2.0	0.0	9.0	4.0	4.0	0.0
3	---	---	13.0	11.0	7.0	6.0	4.0	---	---	---	---	---
4	---	---	12.0	8.0	6.0	4.0	---	---	---	---	7.0	1.0
5	---	---	8.0	6.0	6.0	4.0	---	---	---	---	7.0	2.0
6	---	---	6.0	4.0	7.0	4.0	---	---	---	---	6.0	4.0
7	---	---	4.0	3.0	11.0	7.0	---	---	---	---	8.0	3.0
8	---	---	7.0	3.0	11.0	9.0	---	---	---	---	8.0	3.0
9	---	---	6.0	2.0	9.0	7.0	---	---	---	---	10.0	6.0
10	18.0	14.0	9.0	5.0	9.0	7.0	---	---	---	---	11.0	8.0
11	14.0	12.0	11.0	8.0	11.0	9.0	---	---	---	---	9.0	7.0
12	17.0	16.0	14.0	10.0	11.0	8.0	---	---	---	---	9.0	7.0
13	17.0	16.0	11.0	9.0	8.0	6.0	---	---	---	---	8.0	4.0
14	18.0	12.0	10.0	8.0	7.0	6.0	---	---	---	---	7.0	2.0
15	19.0	13.0	8.0	5.0	7.0	6.0	---	---	1.0	1.0	9.0	4.0
16	19.0	13.0	6.0	3.0	6.0	2.0	---	---	1.0	1.0	9.0	7.0
17	16.0	13.0	6.0	4.0	3.0	1.0	---	---	2.0	1.0	10.0	6.0
18	14.0	13.0	9.0	6.0	9.0	3.0	---	---	1.0	1.0	10.0	6.0
19	14.0	11.0	7.0	4.0	11.0	9.0	---	---	1.0	1.0	12.0	7.0
20	13.0	10.0	6.0	4.0	10.0	9.0	---	---	1.0	1.0	14.0	5.0
21	13.0	10.0	8.0	6.0	12.0	9.0	---	---	2.0	1.0	14.0	12.0
22	13.0	9.0	9.0	7.0	12.0	7.0	---	---	1.0	1.0	14.0	9.0
23	13.0	9.0	6.0	4.0	7.0	2.0	---	---	2.0	1.0	14.0	22.0
24	14.0	10.0	7.0	4.0	4.0	2.0	---	---	2.0	1.0	9.0	4.0
25	13.0	12.0	9.0	7.0	6.0	3.0	---	---	3.0	1.0	11.0	4.0
26	12.0	10.0	9.0	6.0	6.0	3.0	1.0	1.0	3.0	1.0	12.0	6.0
27	11.0	9.0	7.0	6.0	3.0	1.0	3.0	0.0	2.0	1.0	13.0	7.0
28	10.0	8.0	6.0	1.0	2.0	0.0	5.0	3.0	1.0	1.0	13.0	9.0
29	10.0	7.0	2.0	1.0	1.0	1.0	6.0	3.0	1.0	0.0	14.0	11.0
30	9.0	7.0	7.0	2.0	1.0	0.0	7.0	6.0	---	---	15.0	12.0
31	11.0	9.0	---	---	0.0	6.0	8.0	7.0	---	---	15.0	13.0
MONTH	---	---	---	1.0	12.0	0.0	---	---	---	---	15.0	0.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	9.0	18.0	10.0	18.0	16.0	29.0	21.0	24.0	23.0	24.0	22.0
2	10.0	6.0	19.0	13.0	19.0	17.0	30.0	22.0	26.0	23.0	24.0	22.0
3	12.0	9.0	20.0	14.0	19.0	18.0	30.0	23.0	27.0	24.0	28.0	22.0
4	12.0	11.0	19.0	17.0	21.0	18.0	24.0	21.0	26.0	24.0	23.0	23.0
5	11.0	8.0	17.0	13.0	22.0	18.0	26.0	20.0	27.0	23.0	23.0	22.0
6	13.0	7.0	16.0	11.0	23.0	19.0	27.0	21.0	29.0	26.0	24.0	22.0
7	14.0	6.0	16.0	12.0	23.0	21.0	28.0	20.0	31.0	27.0	24.0	22.0
8	14.0	11.0	18.0	14.0	22.0	20.0	29.0	21.0	30.0	27.0	26.0	22.0
9	13.0	11.0	18.0	16.0	23.0	21.0	28.0	22.0	31.0	27.0	24.0	22.0
10	13.0	11.0	17.0	16.0	26.0	23.0	27.0	22.0	28.0	26.0	23.0	21.0
11	14.0	11.0	18.0	17.0	27.0	23.0	27.0	22.0	26.0	22.0	22.0	21.0
12	16.0	9.0	19.0	17.0	28.0	24.0	29.0	22.0	24.0	21.0	21.0	20.0
13	15.0	11.0	21.0	19.0	27.0	21.0	28.0	22.0	26.0	23.0	21.0	20.0
14	17.0	13.0	20.0	14.0	24.0	19.0	27.0	22.0	24.0	22.0	22.0	19.0
15	17.0	13.0	19.0	14.0	24.0	19.0	26.0	22.0	24.0	21.0	23.0	20.0
16	15.0	10.0	19.0	16.0	27.0	20.0	26.0	21.0	27.0	23.0	23.0	21.0
17	15.0	12.0	18.0	16.0	25.0	18.0	27.0	23.0	28.0	24.0	22.0	21.0
18	17.0	12.0	18.0	16.0	21.0	19.0	29.0	23.0	27.0	23.0	22.0	20.0
19	18.0	15.0	17.0	14.0	24.0	20.0	26.0	23.0	27.0	25.0	21.0	20.0
20	19.0	16.0	16.0	13.0	26.0	21.0	27.0	23.0	28.0	27.0	22.0	21.0
21	15.0	17.0	16.0	13.0	26.0	20.0	27.0	23.0	28.0	27.0	23.0	22.0
22	19.0	16.0	17.0	13.0	26.0	21.0	28.0	23.0	29.0	27.0	24.0	23.0
23	19.0	17.0	19.0	16.0	26.0	22.0	27.0	23.0	29.0	28.0	25.0	23.0
24	18.0	16.0	19.0	17.0	29.0	23.0	29.0	23.0	29.0	28.0	26.0	22.0
25	16.0	12.0	21.0	17.0	25.0	22.0	28.0	24.0	26.0	27.0	24.0	22.0
26	14.0	12.0	22.0	20.0	26.0	22.0	27.0	23.0	28.0	26.0	23.0	21.0
27	14.0	13.0	22.0	17.0	27.0	22.0	23.0	22.0	26.0	23.0	23.0	20.0
28	16.0	11.0	19.0	16.0	24.0	18.0	23.0	23.0	22.0	22.0	22.0	19.0
29	16.0	11.0	19.0	16.0	23.0	19.0	24.0	22.0	23.0	21.0	22.0	18.0
30	16.0	10.0	18.0	15.0	26.0	19.0	24.0	22.0	24.0	21.0	22.0	18.0
31	---	---	18.0	14.0	---	---	26.0	22.0	24.0	21.0	---	---
MONTH	19.0	6.0	22.0	10.0	29.0	16.0	30.0	20.0	31.0	21.0	26.0	18.0

03277500 NORTH FORK KENTUCKY RIVER AT HAZARD, KY.

LOCATION.--Lat 37°14'45", long 83°11'00", Perry County, at Woodland Park bridge at eastern limits of Hazard, 150 ft upstream from city waterworks dam, 300 ft downstream from gaging station, and 4.0 miles upstream from Lotts Creek.

DRAINAGE AREA.--466 sq mi.

PERIOD OF RECORD.--Chemical analyses: November 1949 to August 1950, August 1957 to September 1959 (periodic); October 1962 to September 1968.
Water temperatures: October 1949 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 740 micromhos Sept. 29; minimum daily, 127 micromhos Mar. 17.
Water temperatures: Maximum, 33.0°C Aug. 9, 22; minimum, freezing point on several days during January to March.

Period of record:

Specific conductance (1962-68): Maximum daily, 1,720 micromhos Dec. 19, 20, 1962; minimum daily, 118 micromhos Dec. 13, 1966.

Water temperatures: Maximum, 34.0°C Aug. 1, 1953; minimum, freezing point on many days during winter periods.

REMARKS.--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, and (2) minimum daily specific conductance for each month. Temperature recorder at gaging station 300 ft upstream from sampling site. Small diversion by city of Hazard waterworks and electric plant above station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE OCT.	DIS- CHARGE (CFD)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RES- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE NESS	SPFCI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- SPATIAL (DFG C)
19....	179	132	0	218	13	.4	448	234	126	666	7.5	13
29....	54	60	0	117	6.0	.6	242	132	83	366	7.3	11
NOV.												
03....	1360	25	0	55	3.0	2.2	136	68	47	184	7.2	10
23....	254	44	0	144	10	28	332	171	135	457	7.7	6
DEC.												
11....	693	58	0	145	30	.8	294	57	9	513	7.2	8
19....	3400	16	0	48	3.0	1.6	74	48	35	130	6.8	7
JAN.												
05....	2530	28	0	110	8.0	1.3	174	114	91	323	7.1	0
15....	1250	24	0	60	3.5	.8	104	66	46	188	6.9	1
FEB.												
01....	506	33	0	83	2.0	1.7	160	93	66	256	7.6	4
28....	92	61	0	145	5.0	1.5	246	153	103	431	7.2	0
MAR.												
01....	102	64	0	139	6.0	.8	268	152	100	430	7.2	0
17....	1320	16	0	39	3.0	2.0	70	46	33	127	6.4	6
APR.												
23....	371	26	0	56	3.0	1.2	116	63	42	178	7.1	17
25....	326	60	0	107	4.5	.5	230	122	73	330	7.9	17
MAY												
15....	2540	34	0	55	2.5	2.3	97	69	41	165	7.6	10
25....	630	52	0	128	4.0	2.5	226	134	92	378	7.8	17
JUNE												
09....	209	36	0	58	3.0	2.1	124	73	44	204	6.6	22
26....	92	100	0	204	10	.4	388	208	126	602	7.2	26
JULY												
13....	43	4	0	334	6.0	1.8	522	288	285	726	6.0	26
25....	54	50	0	95	2.0	1.8	216	108	67	305	7.4	27
AUG.												
01....	124	42	0	237	8.0	2.0	414	214	180	582	7.3	26
18....	830	28	0	78	4.0	2.8	172	86	63	240	7.3	23
SEPT.												
01....	39	88	0	189	10	.6	390	204	132	556	7.6	21
29....	21	124	0	248	16	.2	516	248	147	740	7.2	21
SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968												
DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	595	383	188	318	256	430	271	166	220	609	582	556
2.....	594	356	186	318	263	429	271	318	265	646	582	558
3.....	534	184	186	320	276	385	179	166	--	643	488	557
4.....	530	206	207	320	276	419	188	167	212	678	493	563
5.....	--	227	206	323	313	384	188	321	308	642	497	564
6.....	--	236	207	318	305	--	180	318	321	683	491	588
7.....	--	257	209	318	316	385	223	261	209	642	285	588
8.....	--	265	237	210	316	384	229	333	205	640	489	564
9.....	--	279	239	211	316	383	227	313	204	607	492	631
10.....	565	298	239	210	306	415	232	313	437	642	458	628
11.....	568	305	513	220	307	235	247	313	400	610	421	630
12.....	575	254	216	226	--	232	247	370	399	610	460	631
13.....	582	353	293	229	--	129	240	259	464	726	379	594
14.....	618	342	215	230	368	234	229	366	444	623	377	593
15.....	624	356	215	188	362	234	288	165	398	619	379	673
16.....	639	359	215	190	385	211	290	185	442	458	359	672
17.....	641	378	216	204	383	127	298	195	531	432	356	673
18.....	648	382	267	188	383	197	295	257	537	588	240	594
19.....	666	392	130	203	406	191	318	263	434	423	240	734
20.....	631	394	160	205	398	191	333	298	487	381	314	736
21.....	589	424	134	188	398	384	336	300	538	575	314	736
22.....	583	444	185	208	397	191	290	186	488	609	342	610
23.....	544	457	193	258	400	190	178	333	539	444	342	610
24.....	523	349	166	238	425	155	342	333	598	622	377	608
25.....	501	346	220	283	423	157	339	378	598	305	426	614
26.....	427	293	216	227	420	157	339	376	602	588	426	665
27.....	414	277	233	258	421	224	333	210	554	423	376	665
28.....	399	279	197	246	431	172	333	214	602	608	505	667
29.....	366	286	199	258	431	274	333	215	602	502	--	740
30.....	393	281	207	239	--	224	321	318	--	503	--	738
31.....	387	--	310	283	--	223	--	247	--	581	--	--
AVERAGE	543	323	219	246	358	263	271	272	429	569	410	632

KENTUCKY RIVER BASIN

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03286200 DIX RIVER AT DIX DAM, NEAR BURGIN, KY.--Continued
TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.0	4.0	7.0	7.0	7.0	7.0	10.0	9.0	11.0	11.0	12.0	12.0
2	4.0	4.0	7.0	7.0	7.0	7.0	11.0	9.0	11.0	11.0	12.0	12.0
3	4.0	4.0	7.0	7.0	7.0	7.0	11.0	11.0	12.0	11.0	12.0	12.0
4	4.0	4.0	8.0	7.0	8.0	7.0	11.0	11.0	12.0	12.0	12.0	12.0
5	4.0	4.0	8.0	8.0	8.0	8.0	11.0	11.0	12.0	11.0	12.0	12.0
6	4.0	4.0	8.0	8.0	8.0	8.0	11.0	11.0	12.0	11.0	12.0	12.0
7	4.0	4.0	8.0	8.0	9.0	8.0	11.0	11.0	11.0	11.0	12.0	12.0
8	4.0	4.0	8.0	8.0	9.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
9	4.0	4.0	8.0	8.0	9.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
10	4.0	4.0	8.0	8.0	9.0	8.0	11.0	11.0	11.0	11.0	12.0	12.0
11	4.0	4.0	9.0	9.0	9.0	9.0	12.0	11.0	12.0	11.0	12.0	12.0
12	4.0	4.0	9.0	9.0	10.0	9.0	11.0	11.0	12.0	12.0	12.0	12.0
13	4.0	4.0	9.0	9.0	10.0	10.0	11.0	11.0	12.0	12.0	12.0	12.0
14	5.0	4.0	9.0	8.0	10.0	10.0	11.0	11.0	12.0	11.0	12.0	12.0
15	5.0	5.0	8.0	8.0	10.0	10.0	12.0	11.0	11.0	10.0	12.0	12.0
16	5.0	5.0	8.0	8.0	10.0	10.0	12.0	11.0	10.0	10.0	12.0	12.0
17	5.0	5.0	8.0	8.0	10.0	9.0	11.0	11.0	10.0	10.0	12.0	12.0
18	5.0	5.0	8.0	8.0	11.0	9.0	11.0	11.0	10.0	10.0	12.0	12.0
19	5.0	5.0	8.0	8.0	9.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
20	5.0	5.0	8.0	8.0	10.0	9.0	11.0	10.0	11.0	11.0	12.0	12.0
21	5.0	5.0	8.0	8.0	9.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
22	5.0	5.0	8.0	8.0	9.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
23	5.0	5.0	8.0	8.0	10.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
24	5.0	5.0	8.0	8.0	10.0	9.0	11.0	11.0	11.0	11.0	12.0	12.0
25	5.0	5.0	8.0	8.0	11.0	10.0	11.0	11.0	12.0	11.0	12.0	12.0
26	5.0	5.0	8.0	7.0	11.0	9.0	11.0	11.0	12.0	12.0	12.0	12.0
27	5.0	5.0	7.0	7.0	9.0	9.0	12.0	11.0	12.0	12.0	12.0	12.0
28	6.0	5.0	7.0	7.0	9.0	9.0	12.0	12.0	12.0	12.0	12.0	12.0
29	6.0	6.0	7.0	7.0	10.0	9.0	12.0	12.0	12.0	12.0	12.0	12.0
30	6.0	6.0	7.0	7.0	10.0	9.0	11.0	11.0	12.0	12.0	12.0	12.0
31	---	---	7.0	7.0	---	---	11.0	11.0	12.0	12.0	---	---
MONTH	6.0	4.0	9.0	6.0	11.0	7.0	12.0	9.0	12.0	10.0	12.0	12.0

03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.

LOCATION.--Lat 36°12'06", long 84°52'54", Franklin County, at gaging station at Broadway Street bridge at Frankfort, 300 ft upstream from Benson Creek, 0.9 mile upstream from lock 4 and at mile 65.9.

DRAINAGE AREA.--5,412 sq mi (including that of Benson Creek), of which about 120 sq mi does not contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: October 1949 to September 1968.

Water temperatures: October 1949 to September 1968.

Sediment records: October 1952 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 536 micromhos Nov. 21; minimum daily, 121 micromhos Mar. 15.

Water temperatures: Maximum, 29.0°C July 10, 11, Aug. 7-11; minimum, 1.0°C Jan. 7-18.

Sediment concentrations: Maximum daily, 1,270 mg/l Mar. 14; minimum daily, 3 mg/l Sept. 24, 26.

Sediment loads: Maximum daily, 177,000 tons Mar. 14; minimum daily, 2.8 tons Sept. 26.

Period of record:

Specific conductance (1949-68): Maximum daily, 635 micromhos July 26, 1965; minimum daily, 71 micromhos

Dec. 30, 1961.

Water temperatures: Maximum, 31.0°C July 22, 1957; minimum, freezing point on several days during January and February 1961.

Sediment concentrations: Maximum daily, 2,420 mg/l Jan. 31, 1956; minimum daily, 1 mg/l on many days during 1952-56, 1962, 1964.

Sediment loads: Maximum daily, 420,000 tons Feb. 28, 1962; minimum daily, 0.53 ton Nov. 17, 1953.

REMARKS.--Daily samples were collected for maximum and minimum specific conductance for each month. Flow partly regulated by Buckhorn Reservoir, Herrington Lake and hydroelectric plant at lock 7.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	BICAP- BONATE (MCD3)	CAR- BONATE (C03)	SULFATE (S04)	CHLO- RIDE (CL)	NITRATE (ND3)	OIS- SOLVED SOLIDS (PFS)- DUE AT 180 C	HARD- NESS (CA, MG)	NON- CAR- BONATE NESS	SPECI- FIC COND- UCTANCE (MICR0- MHMS)	PH	TEMP- ERATURE (F0G C)
OCT.												
24...	350	126	0	25	5.0	2.4	202	125	22	268	7.3	16
31...	1290	100	0	30	12	1.1	184	107	25	253	7.2	14
NOV.												
21...	1130	96	0	53	87	.2	324	160	81	534	7.1	9
29...	3880	68	0	41	10	.8	180	92	36	234	7.1	7
DEC.												
02...	19700	84	0	32	59	1.9	236	128	59	400	7.1	6
27...	12700	42	0	22	6.0	1.3	74	54	20	132	7.2	6
JAN.												
02...	4050	56	0	27	6.0	1.3	100	52	6	175	7.0	3
25...	14100	100	0	33	13	2.3	164	118	36	276	7.3	3
FEB.												
01...	6760	89	1	32	8.0	3.1	146	110	35	252	9.3	6
12...	3040	100	2	35	9.0	3.2	176	123	38	280	8.3	7
MAR.												
13...	43900	92	0	36	14	3.7	172	118	42	281	6.9	6
15...	53000	34	0	21	4.0	3.3	86	48	20	121	6.9	7
APR.												
08...	30900	52	0	22	5.5	2.0	96	63	20	149	7.2	12
29...	4840	84	0	33	6.0	2.0	154	104	35	240	7.2	14
MAY												
25...	3600	45	0	25	6.0	1.4	96	58	21	147	7.4	19
30...	13100	103	0	26	12	4.8	154	112	28	257	7.4	16
JUNE												
13...	1570	86	0	41	7.0	1.5	142	107	36	240	7.1	23
24...	1130	84	0	26	6.0	.7	126	93	24	217	7.3	26
JULY												
13...	654	86	0	24	7.0	1.6	136	95	24	221	7.7	27
22...	1850	104	0	25	8.0	2.2	148	110	25	250	7.7	28
AUG.												
15...	29100	92	0	59	40	2.9	266	142	66	415	6.9	24
19...	4550	72	0	30	8.0	2.4	150	87	28	215	7.5	25
SEPT.												
02...	855	80	0	21	10	2.7	152	89	24	218	7.0	24
16...	393	92	0	26	10	2.9	148	102	26	238	7.1	23

KENTUCKY RIVER BASIN

03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 1200 AND 1500)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	266	247	256	177	252	268	200	239	235	236	--	219
2.....	264	259	400	175	256	270	196	235	235	239	--	218
3.....	264	257	247	189	236	270	184	234	244	239	--	223
4.....	264	259	231	194	255	266	191	221	233	239	--	223
5.....	264	333	--	206	255	266	200	220	236	236	256	222
6.....	266	413	212	185	255	266	--	219	236	236	254	224
7.....	--	485	--	180	263	--	--	223	239	234	257	226
8.....	264	474	205	174	265	266	140	210	241	233	259	228
9.....	260	436	214	226	276	270	157	--	241	233	261	--
10.....	258	501	260	193	276	270	182	212	241	233	257	228
11.....	262	531	193	--	277	270	183	--	239	234	256	231
12.....	262	--	186	276	264	280	--	249	247	227	263	234
13.....	262	--	196	214	274	281	190	202	249	221	277	235
14.....	257	--	211	199	272	264	195	187	249	222	293	238
15.....	258	--	210	197	272	121	198	184	244	233	415	237
16.....	--	--	225	181	274	128	203	206	236	233	284	238
17.....	260	--	--	178	274	208	189	230	244	233	264	238
18.....	264	--	223	--	--	202	212	199	222	238	222	231
19.....	266	--	221	176	274	205	212	252	218	236	215	235
20.....	264	--	214	179	274	184	212	231	217	239	263	234
21.....	266	536	219	188	265	193	221	185	219	250	--	235
22.....	262	480	224	199	267	203	230	172	218	250	256	231
23.....	264	349	200	--	264	218	228	159	218	--	236	228
24.....	268	242	187	262	--	197	228	155	217	--	219	226
25.....	266	330	190	276	264	156	231	147	218	--	222	223
26.....	264	302	145	262	268	169	238	170	222	--	220	228
27.....	264	242	132	276	270	--	237	232	222	--	222	--
28.....	--	236	137	272	270	199	235	228	218	--	218	--
29.....	262	234	172	274	271	206	240	253	225	--	219	--
30.....	--	259	167	256	--	206	238	257	233	--	220	--
31.....	253	--	174	248	--	198	--	255	--	--	219	--
AVERAGE	262	--	207	210	267	224	206	209	231	--	251	229

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

		DAY																															AVER- AGE
MONTH		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	
OCTOBER....	MAXIMUM	19	19	19	20	20	18	--	18	17	15	16	16	16	13	17	--	--	17	17	16	16	15	14	14	14	14	14	13	13	13	13	--
	MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	16	16	15	14	14	14	14	14	13	13	13	13	13
NOVEMBER....	MAXIMUM	13	13	13	13	12	12	12	12	12	12	12	12	12	12	11	11	11	11	11	11	10	16	17	17	17	17	17	17	17	17	17	17
	MINIMUM	13	13	13	12	12	12	12	12	12	12	12	12	12	12	11	11	11	11	11	11	10	16	17	17	17	17	17	17	17	17	17	17
DECEMBER....	MAXIMUM	8	8	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	MINIMUM	8	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
JANUARY....	MAXIMUM	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	
	MINIMUM	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	
FEBRUARY....	MAXIMUM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	
	MINIMUM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	
MARCH.....	MAXIMUM	3	3	3	3	3	4	4	4	4	4	4	4	5	6	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	
	MINIMUM	3	3	3	3	3	3	4	4	4	4	4	4	4	5	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	
APRIL.....	MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	MINIMUM	8	9	9	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	13	13	13	13	14	14	14	14	14	14	14	
MAY.....	MAXIMUM	14	14	16	17	17	17	18	18	18	17	17	17	17	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
	MINIMUM	14	14	16	17	17	17	18	18	18	17	17	17	17	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
JUNE.....	MAXIMUM	17	17	17	18	18	19	19	19	20	21	22	22	23	23	23	24	25	25	25	25	26	26	26	26	26	26	26	26	26	26	26	
	MINIMUM	17	17	17	18	18	19	19	20	21	22	22	23	23	23	23	24	25	25	25	26	26	26	26	26	26	26	26	26	26	26	26	
JULY.....	MAXIMUM	26	27	26	26	27	27	27	26	26	29	28	28	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
	MINIMUM	25	26	25	25	25	26	26	26	26	27	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
AUGUST....	MAXIMUM	27	28	28	28	28	29	29	29	29	28	28	28	27	27	27	27	27	27	27	27	27	27	26	26	26	27	27	27	26	25	25	
	MINIMUM	27	27	27	27	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	26	26	26	26	26	26	26	26	26	26	
SEPTEMBER..	MAXIMUM	24	24	26	25	24	24	24	25	24	24	23	24	24	24	24	24	23	23	23	22	22	23	24	24	24	24	24	24	22	22	22	
	MINIMUM	24	24	24	24	24	24	24	24	24	23	24	23	22	22	22	22	22	22	22	22	22	22	22	23	23	23	23	23	23	23	23	

KENTUCKY RIVER BASIN

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03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	880	10	24	1240	8	27	19700	230	12700
2	1080	10	29	2410	0	59	19700	265	14100
3	980	7	17	5650	18	275	22600	260	15900
4	785	7	15	10700	60	1730	18900	275	16000
5	458	0	11	10900	58	1710	19300	275	14300
6	1080	0	26	7120	33	634	17600	135	6420
7	880	9	10	4740	16	206	11900	165	5300
8	510	0	12	3690	12	119	8740	180	4270
9	510	6	4.3	7040	12	100	4890	143	2630
10	636	7	12	2620	12	82	4290	97	1380
11	880	10	24	2200	0	53	6580	66	1170
12	600	0	13	1370	0	33	8740	84	2030
13	471	7	4.2	1290	0	31	11400	122	3770
14	380	4	6.2	1340	0	20	11300	90	3020
15	350	6	5.3	1210	8	26	9460	75	1920
16	310	5	4.2	1130	8	24	8160	52	1150
17	300	5	5.1	1210	8	24	7290	36	705
18	390	6	6.7	804	7	15	6750	30	568
19	330	5	4.5	980	7	19	7200	26	505
20	432	6	7.0	804	7	15	13800	37	1380
21	280	7	5.3	1130	6	18	19000	100	5130
22	240	0	5.8	795	5	11	21400	109	4300
23	330	9	7.1	1570	7	30	23700	125	8000
24	350	5	4.7	1570	7	30	26700	263	19000
25	638	7	12	3040	7	57	25200	446	30300
26	1000	0	24	4800	0	117	19600	300	15900
27	1130	0	27	4890	13	242	12700	222	7610
28	1400	10	38	5880	12	191	10600	214	6180
29	1340	10	36	3830	15	157	8880	201	4870
30	1290	0	28	9730	60	2220	7020	135	3320
31	1290	8	28	--	--	--	4890	155	2050
TOTAL	21510	--	474.1	103733	--	9286	421100	--	215358

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	4420	143	1710	6750	13	237	960	8	20
2	4050	130	1420	6620	14	250	980	0	24
3	3920	95	1010	6490	15	263	1020	10	28
4	4130	93	591	6120	15	247	1110	8	24
5	5840	42	775	5700	14	215	960	7	18
6	16000	70	3020	5230	16	226	960	7	18
7	16800	120	5440	4630	17	213	960	7	18
8	12400	45	2850	4340	15	176	1340	11	40
9	9350	62	1570	3720	14	161	1080	10	29
10	7720	40	861	3600	18	175	1180	0	29
11	6450	40	697	3440	18	167	1970	23	122
12	6230	49	1140	3060	16	131	1800	181	12600
13	5700	117	1800	2620	13	48	43000	1090	120000
14	6140	113	1870	2170	13	76	61500	1270	177000
15	6050	00	1670	1540	13	54	53000	1000	156000
16	6340	70	1360	1850	15	75	44400	090	119000
17	6490	59	1030	1460	14	63	35600	670	44100
18	6140	39	667	1720	10	46	22800	420	25600
19	5050	22	301	1460	10	39	19600	755	13500
20	4500	19	231	1540	10	42	16400	175	7750
21	5230	15	212	1140	11	34	20300	145	8060
22	8740	17	401	1400	11	42	31200	182	15300
23	14400	55	2140	960	10	26	42600	290	33400
24	16000	50	2160	980	10	26	45000	290	35200
25	14100	36	1370	1130	0	27	45600	275	33900
26	10600	34	973	990	10	26	35500	185	17900
27	8590	34	789	920	10	25	22500	155	9420
28	7480	25	505	980	10	26	17100	120	5420
29	6620	16	340	1030	8	25	14800	100	4000
30	7200	17	330	--	--	--	10200	88	3070
31	7150	13	251	--	--	--	11900	66	2120
TOTAL	250950	--	30395	93670	--	3201	605900	--	956110

KENTUCKY RIVER BASIN

03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	13000	44	1440	6710	12	217	12100	85	2780
2	19200	44	2280	10300	18	401	10700	65	1890
3	24700	68	4440	9700	22	576	9360	65	1140
4	33700	218	32400	7340	19	377	8070	30	650
5	44500	1040	153000	5830	10	157	6900	24	441
6	53700	700	101000	4770	7	89	5620	27	410
7	44600	392	51200	4250	7	80	4000	23	248
8	36000	315	26000	3900	7	72	3980	23	187
9	18900	228	11600	3780	8	71	2440	25	155
10	18600	160	3040	2810	8	61	2700	17	101
11	16300	136	4900	2790	8	58	2060	14	77
12	12600	104	3440	3030	9	73	1650	11	50
13	10400	67	1740	3040	10	82	1570	12	51
14	9170	39	956	2810	11	83	1160	12	38
15	8930	29	601	3070	17	138	1210	10	33
16	8650	24	549	11500	47	1460	1060	10	29
17	8990	30	696	14200	67	2570	1060	10	28
18	8110	23	504	10300	49	1360	1510	10	41
19	7560	19	388	7020	32	407	1230	10	33
20	7200	19	360	4890	20	264	1400	10	38
21	6940	15	277	3830	16	164	1400	11	42
22	6350	12	206	3000	16	130	1310	12	42
23	5700	12	185	2990	22	172	1600	18	82
24	4920	12	109	4250	57	654	1130	18	55
25	4830	11	173	3600	31	301	1000	60	249
26	5620	10	152	12600	76	3700	983	49	130
27	5280	9	128	42300	542	65200	1600	18	78
28	4890	9	119	35000	532	40300	1210	17	56
29	4940	14	170	18200	240	11400	1310	28	60
30	5750	13	202	13100	161	5600	1310	20	71
31	--	--	--	11600	112	3510	--	--	--
TOTAL	468940	--	409436	271540	--	150017	91173	--	9316

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	690	13	34	1880	25	127	718	36	70
2	1310	11	39	1430	20	77	855	40	92
3	1240	14	44	1570	20	45	512	33	46
4	1270	14	56	1690	17	78	528	32	46
5	950	15	39	2140	17	98	496	30	30
6	923	17	38	1400	15	57	955	28	72
7	428	15	21	1650	15	618	618	23	38
8	453	15	10	1870	13	64	577	23	33
9	546	13	19	1480	13	62	535	22	32
10	340	11	11	2070	97	699	452	20	24
11	484	9	10	4560	56	805	471	17	22
12	485	10	18	3600	30	292	350	19	17
13	654	12	21	4640	56	1080	528	22	31
14	952	13	33	16100	206	8870	280	14	11
15	1690	230	1050	29100	535	42000	300	10	8.1
16	1940	110	576	27500	485	29500	393	12	13
17	2120	34	193	15400	315	13300	393	10	11
18	1510	27	110	7680	205	4420	488	10	13
19	1630	26	119	4550	210	2580	1070	19	55
20	1730	25	83	3900	130	1330	370	13	13
21	1430	25	97	3640	145	1430	260	9	5.8
22	1850	25	125	2810	152	1150	320	9	7.8
23	1940	24	124	2640	148	975	582	4	6.3
24	1260	23	92	2270	130	807	804	3	6.5
25	1480	24	96	1140	93	796	823	5	11
26	1090	23	67	638	70	177	350	3	2.8
27	1240	23	77	804	47	102	900	4	5.7
28	1400	27	83	862	42	95	350	4	3.8
29	1010	22	113	804	30	85	556	5	7.6
30	2340	25	158	551	37	55	486	5	6.5
31	2550	25	172	728	35	69	--	--	--
TOTAL	39640	--	3723	146527	--	110802	16244	--	753.0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL LOAD FOR YEAR (TONS)

2520827

1806870.0

KENTUCKY RIVER BASIN

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03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

PARTICLE-SIZE ANALYSES OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER;
P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCEN- TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	SUSPENDED SEDIMENT PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED										METH- OD OF ANAL- YSIS	
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00		2.00
Y 27 1968	1715			641		34	42	54	68	83	91	96	99	100	--	--	SBWC
Y 27.....	1715			641		13	22	36	54	78	83	94	98	100	--	--	SBN

03291500 EAGLE CREEK AT GLENCOE, KY.

LOCATION.--Lat 38°42'18", long 84°49'26", Gallatin County, at gaging station on left bank 600 ft upstream from bridge on U.S. Highway 127, 0.6 mile south of Glencoe, 5.8 miles downstream from Tenmile Creek, and 22 miles upstream from mouth.

DRAINAGE AREA.--437 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1949 to September 1968.

Sediment records: November 1961 to September 1968 (discontinued).

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C on many days during June to August; minimum, freezing point Jan. 4.

Sediment concentrations: Maximum daily, 2,210 mg/l May 27; minimum daily, 4 mg/l Feb. 28, 29.

Sediment loads: Maximum daily, 85,600 tons May 24; minimum daily, 0.02 ton Oct. 22-24.

Period of record:

Water temperatures: Maximum, 34.0°C Sept. 1, 2, 1953; minimum, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 3,890 mg/l Mar. 29, 1965; minimum daily, no flow on many days during 1963-66.

Sediment loads: Maximum daily, 231,000 tons Mar. 5, 1964; minimum daily, 0 tons on many days during 1963-66.

REMARKS.--Sediment samples are collected at bridge on U.S. Highway 127, 600 ft downstream from gage.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENT AT APPROXIMATELY 0800 AND 1900)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	14.0	16.0	10.0	10.0	4.0	4.0	---	3.0	6.0	7.0	---	3.0
2	14.0	16.0	---	10.0	4.0	5.0	---	3.0	6.0	6.0	---	3.0
3	16.0	17.0	9.0	10.0	4.0	6.0	---	3.0	---	6.0	2.0	2.0
4	16.0	18.0	8.0	8.0	---	5.0	0.0	0.0	4.0	6.0	2.0	2.0
5	17.0	18.0	7.0	7.0	4.0	6.0	---	3.0	4.0	5.0	2.0	2.0
6	17.0	18.0	6.0	7.0	4.0	6.0	---	3.0	4.0	5.0	2.0	2.0
7	16.0	18.0	6.0	7.0	4.0	6.0	---	3.0	4.0	6.0	2.0	2.0
8	16.0	17.0	6.0	8.0	5.0	6.0	---	3.0	3.0	4.0	2.0	3.0
9	16.0	16.0	7.0	8.0	5.0	7.0	---	3.0	3.0	3.0	3.0	4.0
10	14.0	14.0	7.0	9.0	6.0	7.0	---	3.0	3.0	3.0	4.0	4.0
11	13.0	14.0	8.0	8.0	6.0	7.0	---	3.0	3.0	3.0	---	---
12	13.0	13.0	7.0	9.0	---	7.0	---	3.0	3.0	3.0	---	---
13	12.0	13.0	8.0	8.0	6.0	6.0	---	3.0	3.0	3.0	4.0	4.0
14	12.0	13.0	7.0	7.0	---	7.0	---	3.0	3.0	3.0	3.0	4.0
15	12.0	14.0	6.0	7.0	6.0	6.0	---	4.0	3.0	3.0	4.0	4.0
16	14.0	17.0	5.0	6.0	4.0	5.0	---	3.0	3.0	3.0	4.0	7.0
17	16.0	17.0	4.0	6.0	4.0	4.0	---	3.0	3.0	3.0	5.0	8.0
18	16.0	16.0	5.0	8.0	6.0	6.0	---	3.0	---	3.0	6.0	8.0
19	14.0	14.0	6.0	7.0	6.0	6.0	---	3.0	---	3.0	7.0	8.0
20	12.0	12.0	5.0	6.0	5.0	7.0	---	3.0	---	2.0	7.0	8.0
21	11.0	12.0	4.0	4.0	7.0	8.0	4.0	4.0	---	3.0	7.0	9.0
22	10.0	11.0	4.0	5.0	7.0	7.0	4.0	4.0	---	2.0	8.0	7.0
23	10.0	12.0	4.0	5.0	4.0	4.0	4.0	4.0	---	2.0	6.0	4.0
24	11.0	13.0	4.0	6.0	4.0	4.0	4.0	4.0	---	2.0	3.0	4.0
25	11.0	11.0	5.0	6.0	4.0	4.0	4.0	4.0	---	2.0	3.0	4.0
26	9.0	11.0	---	5.0	4.0	4.0	4.0	4.0	---	2.0	---	7.0
27	10.0	10.0	4.0	4.0	4.0	4.0	4.0	4.0	---	2.0	6.0	9.0
28	---	9.0	4.0	4.0	4.0	4.0	4.0	5.0	---	2.0	9.0	11.0
29	---	9.0	3.0	4.0	4.0	4.0	4.0	5.0	---	2.0	11.0	13.0
30	8.0	10.0	4.0	4.0	4.0	4.0	5.0	7.0	---	---	12.0	14.0
31	9.0	11.0	---	---	4.0	4.0	6.0	7.0	---	---	13.0	14.0

KENTUCKY RIVER BASIN

03291500 EAGLE CREEK AT GLENCOE, KY.--Continued
TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENT AT APPROXIMATELY 0800 AND 1900)

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	13.0	14.0	16.0	19.0	14.0	18.0	27.0	29.0	24.0	26.0	20.0	22.0
2	11.0	13.0	17.0	20.0	17.0	19.0	27.0	28.0	23.0	---	21.0	22.0
3	12.0	13.0	18.0	19.0	18.0	21.0	27.0	28.0	---	---	21.0	22.0
4	12.0	13.0	17.0	19.0	20.0	22.0	27.0	29.0	---	---	21.0	22.0
5	11.0	12.0	16.0	18.0	20.0	23.0	27.0	29.0	26.0	28.0	21.0	21.0
6	10.0	12.0	16.0	19.0	21.0	23.0	27.0	29.0	27.0	28.0	20.0	21.0
7	10.0	12.0	18.0	19.0	22.0	24.0	27.0	29.0	27.0	28.0	20.0	21.0
8	12.0	14.0	18.0	20.0	23.0	27.0	27.0	28.0	27.0	28.0	20.0	21.0
9	13.0	13.0	19.0	20.0	26.0	28.0	27.0	29.0	27.0	27.0	20.0	20.0
10	12.0	14.0	18.0	20.0	27.0	29.0	27.0	29.0	27.0	27.0	---	20.0
11	13.0	14.0	18.0	20.0	27.0	29.0	28.0	29.0	26.0	27.0	19.0	20.0
12	13.0	15.0	---	19.0	27.0	29.0	28.0	29.0	24.0	27.0	21.0	20.0
13	14.0	16.0	18.0	19.0	27.0	28.0	28.0	28.0	24.0	26.0	19.0	20.0
14	14.0	16.0	19.0	21.0	26.0	27.0	27.0	28.0	24.0	27.0	19.0	20.0
15	13.0	14.0	19.0	22.0	25.0	27.0	27.0	29.0	27.0	28.0	19.0	20.0
16	13.0	14.0	20.0	22.0	24.0	26.0	28.0	29.0	27.0	28.0	19.0	21.0
17	13.0	16.0	20.0	22.0	24.0	26.0	28.0	29.0	27.0	28.0	20.0	21.0
18	13.0	16.0	20.0	22.0	25.0	27.0	28.0	29.0	28.0	29.0	20.0	21.0
19	14.0	16.0	---	21.0	24.0	26.0	28.0	29.0	28.0	28.0	20.0	21.0
20	14.0	17.0	20.0	20.0	23.0	26.0	27.0	28.0	28.0	29.0	20.0	21.0
21	---	17.0	19.0	21.0	24.0	27.0	27.0	28.0	28.0	29.0	21.0	22.0
22	16.0	19.0	20.0	21.0	26.0	28.0	27.0	28.0	28.0	29.0	21.0	22.0
23	19.0	19.0	20.0	21.0	27.0	28.0	27.0	28.0	28.0	29.0	21.0	22.0
24	18.0	18.0	20.0	22.0	26.0	28.0	27.0	28.0	28.0	28.0	24.0	22.0
25	17.0	18.0	20.0	21.0	26.0	27.0	27.0	28.0	27.0	27.0	21.0	21.0
26	17.0	18.0	---	22.0	26.0	27.0	27.0	28.0	26.0	27.0	20.0	21.0
27	15.0	17.0	18.0	19.0	22.0	28.0	26.0	27.0	26.0	26.0	20.0	21.0
28	16.0	18.0	17.0	18.0	26.0	28.0	---	27.0	---	---	20.0	21.0
29	16.0	18.0	16.0	17.0	27.0	29.0	26.0	26.0	22.0	23.0	20.0	21.0
30	16.0	18.0	16.0	17.0	28.0	29.0	23.0	27.0	21.0	22.0	20.0	20.0
31	---	---	14.0	16.0	---	---	26.0	26.0	20.0	21.0	---	---

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	3.6	22	.21	4.0	10	.11	4200	512	6100
2	3.2	19	.15	1510	214	1010	1600	373	2590
3	3.7	14	.12	1420	111	426	4570	595	6230
4	2.8	10	.07	242	58	38	1500	256	1120
5	2.4	6	.04	117	32	10	478	119	154
6	2.7	11	.07	67	26	4.7	269	88	64
7	1.7	12	.06	41	23	2.5	207	77	42
8	1.5	12	.05	27	19	1.4	167	73	33
9	1.9	15	.08	20	16	.86	135	70	26
10	1.8	16	.08	15	17	.69	120	69	24
11	1.8	15	.07	15	32	1.3	189	114	58
12	1.6	13	.06	401	196	347	189	90	46
13	1.4	12	.05	606	142	274	211	75	43
14	1.6	9	.04	161	40	15	299	56	45
15	1.6	6	.03	93	20	4.4	809	136	297
16	1.4	7	.03	64	19	3.3	654	111	196
17	1.4	12	.05	58	21	3.3	394	107	114
18	1.4	15	.06	52	25	3.5	305	100	82
19	1.3	12	.04	50	23	3.1	673	112	274
20	1.0	10	.03	46	27	3.4	517	84	117
21	.95	10	.03	54	33	4.8	354	114	128
22	.90	9	.02	109	56	27	6620	778	13900
23	.90	8	.02	335	71	64	2900	152	1630
24	1.1	8	.02	163	44	19	654	124	212
25	1.6	10	.04	163	45	20	317	103	88
26	1.7	10	.05	211	52	30	226	90	55
27	1.7	10	.05	149	56	21	135	61	22
28	1.8	11	.05	105	63	18	99	50	13
29	4.6	10	.12	87	51	12	79	43	9.2
30	4.0	7	.08	3660	708	9030	56	36	5.4
31	3.6	7	.07	---	---	---	47	28	3.6
TOTAL	61.65	---	1.95	10015.0	---	11398.46	29047	---	33621.2

KENTUCKY RIVER BASIN

185

03291500 EAGLE CREEK AT GLENCOE, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	34	20	1.8	1000	258	777	13	5	.18
2	38	20	2.1	1710	184	850	13	7	.25
3	37	26	2.6	1730	199	930	13	12	.42
4	37	37	3.7	543	118	173	13	20	.70
5	43	37	4.3	253	75	51	13	13	.46
6	43	36	4.2	151	67	27	15	23	.93
7	40	22	2.4	198	52	15	16	30	1.3
8	40	27	2.9	87	40	9.4	16	25	1.1
9	34	24	2.7	71	30	5.8	16	22	.95
10	34	26	2.4	56	31	4.7	17	23	1.1
11	32	26	2.2	50	28	3.8	883	469	1110
12	32	40	3.5	39	25	2.6	4670	1310	15300
13	30	32	2.6	35	22	2.1	3360	828	9030
14	30	38	3.1	30	22	1.8	858	250	579
15	30	30	2.4	28	23	1.7	494	195	260
16	30	25	2.0	26	22	1.5	579	153	239
17	19	32	1.6	23	18	1.1	1550	236	988
18	19	33	1.7	21	20	1.1	844	145	330
19	19	24	1.2	19	22	1.1	462	112	140
20	21	37	2.1	19	17	.87	429	150	174
21	173	53	34	18	20	.97	8060	1980	43100
22	2120	188	1020	16	22	.95	7880	720	15300
23	2620	66	467	15	16	.65	4650	310	3850
24	2080	50	281	15	15	.61	2480	140	937
25	900	47	114	13	14	.49	3840	210	2180
26	498	45	60	12	8	.26	4230	100	1140
27	248	52	35	12	6	.19	2260	82	500
28	155	37	15	12	4	.13	1020	57	157
29	163	45	20	12	4	.13	599	45	73
30	2720	915	9720	--	--	--	455	4.8	59
31	3970	935	10600	--	--	--	494	175	698
TOTAL	16289	--	22417.5	6123	--	2864.95	50242	--	96191.39
DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	5320	1310	20100	113	29	8.8	488	55	72
2	1790	430	2780	106	26	7.4	429	38	44
3	711	105	202	99	24	6.4	455	80	98
4	9640	1470	47300	92	25	6.2	390	77	81
5	9160	823	21600	84	25	5.7	233	69	43
6	1580	144	700	75	27	5.5	152	54	22
7	725	98	102	73	27	5.3	130	39	14
8	520	71	100	69	27	5.0	118	38	12
9	373	45	46	93	32	8.0	104	35	9.8
10	293	45	36	181	55	27	82	25	5.5
11	233	44	28	1040	513	4520	71	25	4.8
12	185	46	23	1510	182	871	60	21	3.4
13	161	50	22	429	44	51	50	21	2.8
14	192	95	77	233	35	22	41	25	2.8
15	1980	649	3470	161	33	14	34	20	1.8
16	921	127	344	123	33	11	31	19	1.6
17	379	61	62	101	27	7.4	25	32	2.2
18	282	56	43	108	27	7.9	24	37	2.4
19	217	49	29	166	25	11	21	30	1.7
20	529	73	104	277	24	19	17	25	1.1
21	474	35	45	143	25	9.7	16	24	1.0
22	203	35	27	90	25	6.7	14	24	.91
23	638	65	196	2070	561	6590	14	24	.91
24	886	57	136	1370	2180	8560	65	73	15
25	442	48	57	4890	682	9530	154	92	38
26	277	44	33	3230	848	10100	38	62	6.4
27	223	30	18	7780	2210	46400	24	35	2.3
28	212	23	13	2240	495	3670	17	42	1.9
29	156	21	8.8	1650	187	833	14	34	1.3
30	125	25	8.4	1810	212	1040	12	35	1.1
31	--	--	--	914	130	321	--	--	--
TOTAL	38922	--	97300.2	44559	--	169719.0	3323	--	494.72

KENTUCKY RIVER BASIN

03291500 EAGLE CREEK AT GLENCOE, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	1.0	30	.81	1270	573	2290	2.1	16	.09
2	9.0	34	.91	300	225	182	1.7	15	.07
3	8.4	45	1.1	130	135	47	1.7	19	.09
4	7.4	35	.70	94	80	20	1.1	20	.06
5	7.4	35	.70	60	90	15	1.1	20	.06
6	4.6	32	.57	20	97	5.2	4.8	34	.44
7	5.7	31	.48	8.3	82	1.8	9.2	60	1.5
8	5.2	33	.46	12	92	3.0	.98	61	.16
9	4.8	30	.39	604	204	383	7.0	63	.12
10	4.8	30	.49	1320	261	940	13	42	1.5
11	4.1	30	.33	1380	696	2820	19	19	.97
12	3.4	31	.28	449	585	709	8.8	25	.59
13	3.1	35	.29	116	325	102	6.1	27	.44
14	3.1	37	.31	570	225	622	4.5	29	.35
15	5.2	31	.44	661	267	535	3.8	25	.26
16	29	47	3.7	152	114	47	3.1	21	.18
17	113	72	22	101	57	16	3.1	23	.19
18	64	30	5.2	46	42	6.4	4.1	26	.29
19	37	20	2.0	12	35	3.0	3.8	26	.27
20	23	20	1.2	15	60	2.4	3.8	18	.18
21	15	22	.89	8.8	28	.67	4.1	10	.11
22	13	24	.94	7.0	33	.62	3.1	26	.22
23	11	25	.74	6.6	33	.59	3.1	20	.17
24	9.9	25	.67	6.1	28	.46	3.1	11	.09
25	9.9	25	.67	5.7	31	.48	2.4	18	.12
26	165	114	182	4.1	34	.38	2.4	16	.10
27	417	310	726	3.1	35	.29	2.1	16	.09
28	375	193	222	2.8	34	.26	1.3	19	.07
29	95	88	23	3.1	33	.28	1.1	20	.06
30	47	85	11	2.1	25	.14	1.1	20	.06
31	1430	499	4630	1.4	18	.07	--	--	--
TOTAL	3345.3	--	5840.07	7401.1	--	8744.04	120.28	--	8.90
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)									209448.33
TOTAL LOAD FOR YEAR (TONS)									448602.78

SALT RIVER BASIN

03298500 SALT RIVER AT SHEPHERDSVILLE, KY.

LOCATION.--Lat 37°59'06, long 85°43'03, Bullitt County, at gaging station at bridge on State Highway 61 at Shepherdsville, 500 ft downstream from Louisville and Nashville Railroad bridge and 2.5 miles downstream from Floyds Fork.

DRAINAGE AREA.--1,197 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1949 to September 1950, October 1952 to September 1959, November 1963 to September 1968.

Water temperatures: October 1949 to September 1968, unpublished.

Sediment records: October 1952 to September 1961.

REMARKS.--Samples for iron and manganese filtered clear when collected.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	IRON (FE)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLOR- IDE (CL)	NITRATE (NO3)
JAN.							
02...	514	.10	246	6	38	10	7.4
FEB.							
05...	2100	--	--	--	--	--	--
MAR.							
11...	490	--	--	--	--	--	--
MAY							
27...	15400	.67	128	0	20	4.0	7.8
JUNE							
14...	155	--	--	--	--	--	--
JULY							
22...	112	.06	146	0	24	6.0	4.0
AUG.							
27...	59	--	--	--	--	--	--
DATE	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	
JAN.							
02...	336	269	57	507	8.4	1	
FEB.							
05...	--	--	--	430	--	4	
MAR.							
11...	--	--	--	494	--	8	
MAY							
27...	178	131	26	264	7.2	18	
JUNE							
14...	--	--	--	456	--	21	
JULY							
22...	181	144	24	309	7.5	28	
AUG.							
27...	--	--	--	390	--	22	

SALT RIVER BASIN

187

03301500 ROLLING FORK NEAR BOSTON, KY.

LOCATION.--Lat 37°46'02", long 85°42'14", Nelson County, at gaging station at bridge on U.S. Highway 62 and State Highway 61, 0.4 mile downstream from Beech Fork and 2.3 miles southwest of Boston.

DRAINAGE AREA.--1,299 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1952.

Water temperatures: October 1949 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C July 4; minimum, freezing point on many days during January to March.

Period of record:

Water temperatures: Maximum, 30.5°C July 4, 1950, June 22, 25, 28, 1954; minimum, freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENT AT APPROXIMATELY 0730 AND 1800)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	---	13.0	13.0	13.0	6.0	6.0	---	---	7.0	8.0	---	---
2	14.0	14.0	13.0	12.0	7.0	7.0	0.0	1.0	7.0	7.0	---	---
3	14.0	16.0	11.0	11.0	7.0	7.0	1.0	1.0	6.0	6.0	---	---
4	16.0	17.0	10.0	9.0	7.0	7.0	1.0	0.0	---	6.0	---	---
5	18.0	18.0	---	8.0	6.0	6.0	0.0	1.0	5.0	5.0	0.0	2.0
6	18.0	17.0	7.0	7.0	6.0	6.0	1.0	1.0	5.0	5.0	0.0	0.0
7	16.0	17.0	7.0	7.0	6.0	8.0	---	1.0	5.0	4.0	0.0	0.0
8	---	16.0	6.0	7.0	6.0	7.0	1.0	1.0	4.0	3.0	0.0	1.0
9	16.0	16.0	7.0	7.0	7.0	7.0	1.0	0.0	3.0	3.0	0.0	1.0
10	16.0	13.0	7.0	7.0	---	7.0	0.0	0.0	2.0	1.0	---	4.0
11	10.0	9.0	8.0	8.0	8.0	8.0	0.0	0.0	---	0.0	4.0	4.0
12	9.0	9.0	---	9.0	7.0	7.0	0.0	0.0	0.0	0.0	3.0	2.0
13	9.0	11.0	8.0	8.0	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0
14	11.0	11.0	8.0	7.0	7.0	7.0	---	0.0	0.0	0.0	0.0	0.0
15	---	16.0	7.0	4.0	7.0	6.0	---	0.0	0.0	1.0	0.0	0.0
16	16.0	16.0	3.0	4.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	1.0
17	15.0	15.0	4.0	3.0	---	7.0	0.0	0.0	0.0	0.0	---	4.0
18	15.0	15.0	3.0	4.0	7.0	7.0	0.0	0.0	---	0.0	4.0	4.0
19	16.0	14.0	---	7.0	6.0	7.0	1.0	2.0	0.0	1.0	4.0	6.0
20	11.0	11.0	6.0	7.0	6.0	6.0	2.0	2.0	0.0	0.0	6.0	6.0
21	11.0	12.0	6.0	7.0	7.0	7.0	---	1.0	0.0	0.0	6.0	5.0
22	---	13.0	7.0	7.0	5.0	4.0	1.0	1.0	0.0	0.0	4.0	4.0
23	12.0	13.0	6.0	7.0	4.0	3.0	2.0	2.0	0.0	0.0	3.0	3.0
24	13.0	13.0	7.0	7.0	---	3.0	1.0	0.0	0.0	0.0	---	3.0
25	13.0	12.0	8.0	8.0	4.0	3.0	0.0	1.0	---	1.0	3.0	2.0
26	11.0	12.0	---	8.0	3.0	4.0	0.0	1.0	0.0	1.0	1.0	1.0
27	12.0	14.0	7.0	4.0	3.0	3.0	1.0	2.0	1.0	0.0	0.0	2.0
28	15.0	15.0	9.0	2.0	2.0	2.0	---	7.0	0.0	0.0	2.0	2.0
29	---	11.0	1.0	4.0	1.0	1.0	7.0	7.0	---	---	2.0	2.0
30	10.0	12.0	6.0	5.0	1.0	1.0	7.0	7.0	---	---	2.0	2.0
31	12.0	13.0	---	---	---	---	7.0	7.0	---	---	---	2.0

DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	3.0	4.0	17.0	17.0	17.0	17.0	26.0	26.0	24.0	24.0	---	26.0
2	6.0	7.0	17.0	17.0	---	17.0	26.0	27.0	24.0	24.0	26.0	26.0
3	8.0	9.0	17.0	17.0	17.0	18.0	---	28.0	24.0	24.0	24.0	24.0
4	10.0	12.0	17.0	17.0	18.0	18.0	29.0	29.0	---	26.0	24.0	23.0
5	12.0	12.0	---	16.0	18.0	18.0	28.0	28.0	24.0	24.0	22.0	22.0
6	12.0	12.0	16.0	16.0	18.0	18.0	27.0	28.0	24.0	24.0	22.0	22.0
7	---	10.0	16.0	16.0	17.0	18.0	---	28.0	24.0	---	22.0	23.0
8	10.0	11.0	16.0	16.0	18.0	19.0	27.0	27.0	---	---	---	23.0
9	11.0	12.0	16.0	16.0	---	20.0	24.0	24.0	---	---	22.0	21.0
10	12.0	12.0	16.0	16.0	21.0	22.0	24.0	24.0	---	---	21.0	20.0
11	11.0	11.0	16.0	16.0	22.0	22.0	24.0	24.0	---	---	21.0	21.0
12	11.0	12.0	---	18.0	22.0	22.0	24.0	24.0	---	---	21.0	21.0
13	13.0	13.0	18.0	17.0	21.0	21.0	24.0	24.0	---	---	20.0	21.0
14	---	13.0	17.0	18.0	21.0	21.0	---	26.0	---	---	21.0	21.0
15	12.0	11.0	18.0	17.0	21.0	21.0	26.0	26.0	---	---	---	21.0
16	11.0	14.0	17.0	18.0	---	21.0	24.0	26.0	---	---	21.0	21.0
17	12.0	13.0	19.0	19.0	21.0	21.0	24.0	26.0	---	28.0	21.0	21.0
18	14.0	16.0	19.0	18.0	21.0	21.0	26.0	26.0	---	28.0	22.0	21.0
19	16.0	16.0	---	17.0	21.0	21.0	26.0	26.0	27.0	27.0	21.0	21.0
20	17.0	17.0	17.0	17.0	22.0	22.0	26.0	26.0	26.0	26.0	21.0	21.0
21	---	18.0	17.0	16.0	22.0	22.0	---	26.0	27.0	27.0	21.0	22.0
22	21.0	20.0	14.0	16.0	22.0	23.0	26.0	27.0	27.0	27.0	---	22.0
23	20.0	20.0	17.0	17.0	---	24.0	26.0	26.0	27.0	26.0	22.0	22.0
24	18.0	17.0	17.0	18.0	25.0	26.0	24.0	26.0	27.0	27.0	22.0	21.0
25	16.0	---	18.0	18.0	26.0	26.0	26.0	26.0	---	26.0	22.0	21.0
26	16.0	16.0	---	18.0	26.0	26.0	24.0	26.0	26.0	26.0	21.0	21.0
27	16.0	16.0	17.0	18.0	24.0	24.0	24.0	24.0	26.0	26.0	21.0	21.0
28	---	17.0	18.0	18.0	23.0	24.0	---	24.0	26.0	26.0	21.0	21.0
29	17.0	17.0	17.0	17.0	24.0	24.0	24.0	24.0	26.0	26.0	---	19.0
30	17.0	17.0	17.0	17.0	---	26.0	24.0	24.0	26.0	26.0	18.0	19.0
31	---	---	17.0	17.0	---	---	24.0	24.0	26.0	27.0	---	---

GREEN RIVER BASIN

03306000 GREEN RIVER NEAR CAMPBELLVILLE, KY.

LOCATION.--Lat 37°14'25", long 85°20'25", Taylor County, temperature recorder at gaging station on right bank at bridge on State Highway 55, 0.6 mile downstream from Green River Dam, 0.7 mile upstream from Pinch Creek and 6.9 miles south of Campbellsville.

DRAINAGE AREA.--682 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1963 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 22.0°C Aug. 20-28; minimum, 1.0°C on several days during January.

Period of record:

Water temperatures: Maximum, 31.0°C Aug. 3-5, 1964; minimum, freezing point on many days during 1963-66.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	21.0	19.0	13.0	13.0	8.0	7.0	3.0	3.0	5.0	4.0	4.0	4.0
2	19.0	19.0	13.0	13.0	7.0	7.0	3.0	1.0	5.0	5.0	4.0	4.0
3	19.0	19.0	13.0	13.0	7.0	7.0	1.0	1.0	6.0	5.0	4.0	4.0
4	19.0	19.0	13.0	13.0	7.0	7.0	1.0	1.0	6.0	6.0	4.0	4.0
5	19.0	18.0	13.0	13.0	7.0	6.0	1.0	1.0	6.0	6.0	4.0	4.0
6	19.0	18.0	13.0	12.0	6.0	6.0	2.0	1.0	6.0	6.0	4.0	4.0
7	19.0	19.0	12.0	11.0	6.0	6.0	2.0	2.0	6.0	6.0	4.0	4.0
8	19.0	19.0	11.0	11.0	6.0	6.0	2.0	1.0	6.0	6.0	4.0	4.0
9	19.0	18.0	11.0	10.0	7.0	6.0	1.0	1.0	6.0	6.0	6.0	4.0
10	18.0	18.0	10.0	10.0	7.0	7.0	1.0	1.0	6.0	5.0	6.0	6.0
11	18.0	18.0	10.0	10.0	8.0	7.0	1.0	1.0	5.0	4.0	7.0	6.0
12	18.0	18.0	10.0	10.0	8.0	8.0	2.0	1.0	4.0	4.0	7.0	7.0
13	18.0	17.0	10.0	10.0	8.0	7.0	2.0	2.0	4.0	4.0	7.0	6.0
14	17.0	17.0	10.0	10.0	7.0	7.0	2.0	2.0	4.0	4.0	6.0	6.0
15	17.0	17.0	10.0	10.0	7.0	7.0	2.0	1.0	4.0	4.0	6.0	5.0
16	17.0	17.0	10.0	10.0	7.0	7.0	1.0	1.0	4.0	4.0	6.0	6.0
17	17.0	17.0	10.0	9.0	7.0	7.0	2.0	1.0	4.0	4.0	7.0	6.0
18	17.0	17.0	9.0	9.0	7.0	6.0	2.0	2.0	4.0	4.0	8.0	7.0
19	17.0	17.0	9.0	9.0	6.0	6.0	2.0	2.0	4.0	4.0	7.0	7.0
20	17.0	16.0	9.0	9.0	6.0	6.0	2.0	2.0	4.0	4.0	9.0	7.0
21	16.0	16.0	9.0	9.0	6.0	6.0	2.0	2.0	4.0	4.0	11.0	9.0
22	16.0	15.0	9.0	9.0	6.0	6.0	2.0	2.0	4.0	4.0	11.0	11.0
23	15.0	14.0	9.0	9.0	6.0	6.0	2.0	2.0	4.0	4.0	11.0	11.0
24	14.0	14.0	9.0	9.0	6.0	6.0	2.0	2.0	4.0	4.0	11.0	10.0
25	14.0	14.0	9.0	9.0	4.0	4.0	2.0	2.0	4.0	4.0	10.0	10.0
26	14.0	14.0	9.0	8.0	4.0	4.0	2.0	2.0	4.0	4.0	10.0	10.0
27	14.0	14.0	8.0	8.0	4.0	4.0	2.0	2.0	4.0	4.0	10.0	10.0
28	14.0	14.0	8.0	8.0	3.0	3.0	2.0	2.0	4.0	4.0	11.0	10.0
29	14.0	13.0	8.0	8.0	3.0	3.0	3.0	3.0	4.0	4.0	11.0	11.0
30	13.0	13.0	8.0	8.0	3.0	3.0	3.0	3.0	---	---	12.0	12.0
31	13.0	13.0	---	---	3.0	3.0	4.0	3.0	---	---	13.0	12.0
MONTH	21.0	13.0	13.0	8.0	8.0	3.0	4.0	1.0	6.0	4.0	13.0	4.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	13.0	17.0	17.0	16.0	16.0	19.0	18.0	21.0	21.0	21.0	21.0
2	14.0	13.0	17.0	17.0	16.0	15.0	19.0	19.0	21.0	21.0	21.0	20.0
3	14.0	14.0	17.0	17.0	15.0	15.0	19.0	19.0	21.0	21.0	20.0	20.0
4	14.0	14.0	18.0	17.0	16.0	15.0	19.0	19.0	21.0	21.0	21.0	20.0
5	14.0	14.0	18.0	18.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
6	14.0	14.0	18.0	18.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
7	14.0	14.0	18.0	18.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
8	14.0	14.0	18.0	18.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
9	14.0	14.0	18.0	18.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
10	14.0	14.0	18.0	17.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
11	14.0	14.0	17.0	17.0	16.0	16.0	19.0	19.0	21.0	21.0	21.0	21.0
12	15.0	14.0	17.0	17.0	16.0	16.0	20.0	19.0	21.0	21.0	21.0	21.0
13	15.0	15.0	17.0	17.0	17.0	16.0	20.0	20.0	21.0	21.0	21.0	21.0
14	16.0	15.0	17.0	17.0	17.0	17.0	20.0	19.0	21.0	21.0	21.0	21.0
15	16.0	16.0	18.0	17.0	17.0	17.0	19.0	19.0	21.0	21.0	21.0	21.0
16	16.0	16.0	18.0	18.0	17.0	17.0	20.0	19.0	21.0	21.0	21.0	21.0
17	16.0	16.0	19.0	18.0	17.0	17.0	20.0	20.0	21.0	21.0	21.0	21.0
18	16.0	16.0	19.0	18.0	17.0	17.0	21.0	20.0	21.0	21.0	21.0	21.0
19	16.0	16.0	19.0	18.0	17.0	17.0	21.0	21.0	21.0	21.0	21.0	21.0
20	17.0	16.0	18.0	17.0	18.0	17.0	21.0	21.0	22.0	21.0	21.0	21.0
21	17.0	17.0	17.0	16.0	18.0	17.0	21.0	21.0	22.0	22.0	21.0	21.0
22	18.0	17.0	16.0	16.0	18.0	17.0	21.0	21.0	22.0	21.0	21.0	21.0
23	18.0	18.0	16.0	16.0	18.0	18.0	21.0	21.0	22.0	22.0	21.0	21.0
24	18.0	18.0	16.0	16.0	18.0	18.0	21.0	21.0	22.0	22.0	21.0	21.0
25	18.0	17.0	16.0	16.0	18.0	18.0	21.0	21.0	22.0	22.0	21.0	21.0
26	17.0	17.0	16.0	16.0	19.0	18.0	21.0	21.0	22.0	22.0	21.0	21.0
27	17.0	17.0	16.0	16.0	18.0	18.0	21.0	21.0	22.0	22.0	21.0	21.0
28	17.0	16.0	16.0	16.0	18.0	18.0	21.0	21.0	22.0	21.0	20.0	20.0
29	16.0	16.0	16.0	16.0	18.0	18.0	21.0	21.0	21.0	21.0	20.0	20.0
30	17.0	16.0	16.0	16.0	18.0	18.0	21.0	21.0	21.0	21.0	20.0	20.0
31	---	---	16.0	16.0	---	---	21.0	21.0	21.0	21.0	---	---
MONTH	18.0	13.0	19.0	16.0	18.0	15.0	21.0	18.0	22.0	21.0	21.0	20.0

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LOCATION.--Lat 37°14'43", long 85°28'47", Green County, at auxiliary gaging station at Sardins Ford bridge on State Highway 487, 1.4 miles east of Greensburg and 2 miles upstream from gaging station.

PERIOD OF RECORD.--Chemical analyses: October 1959 to September 1968.

REMARKS.--Samples for iron and manganese filtered clear when collected. Records of discharge are given for gaging station at Greensburg.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	D15- CHARGE (CFS)	IRON (FE)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	NITRATE (NO3)
OCT. 24...	250	--	--	--	--	--	--
OCT. 05...	4320	--	50	0	16	6.0	3.8
JAN. 04...	762	--	--	--	--	--	--
FEB. 07...	904	--	--	--	--	--	--
MAR. 15...	5270	1.1	36	0	15	3.0	3.6
APR. 24...	874	--	--	--	--	--	--
JUNE 12...	336	--	--	--	--	--	--
JULY 23...	102	2.22	81	0	16	4.0	9
AUG. 28...	29	--	--	--	--	--	--

DATE	DIS-SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI-FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
OCT. 24...	--	--	--	169	--	14
DEC 05...	93	58	17	137	7.1	4
JAN. 04...	--	--	--	165	--	1
FEB. 07...	--	--	--	160	--	4
MAR. 15...	77	44	14	98	7.8	6
APR. 24...	--	--	--	151	--	14
JUNE 12...	--	--	--	173	--	21
JULY 23...	107	82	16	176	7.5	29
AUG. 28...	--	--	--	150	--	21

LOCATION.--Lat 37°13'35", long 85°40'40", Hart County, at bridge on State Highway 88, 1.2 miles east of Monroe and 6.3 miles upstream from mouth.

PERIOD OF RECORD.--Chemical analyses: December 1960 to September 1968.

REMARKS.--Samples for iron and manganese filtered clear when collected. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

[illegible]

GREEN RIVER BASIN

03307800 LITTLE BARREN RIVER NEAR MONROE, KY.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR	TEMPERATURE (DEG C)
OCT.										
23...	154	.2	.8	499	246	95	873	7.5	10	14
NOV.										
09...	--	--	--	--	--	--	368	--	--	--
JAN.										
04...	13	--	.8	177	132	32	310	8.5	--	3
FEB.										
07...	--	--	--	--	--	--	430	--	--	4
MAR.										
15...	--	--	--	--	--	--	346	--	--	8
APR.										
24...	--	--	--	--	--	--	414	--	--	17
JUNE										
13...	36	--	2.6	250	184	41	426	8.0	--	21
JULY										
23...	53	--	2.8	255	142	57	439	7.2	--	26
AUG.										
29...	--	--	--	--	--	--	400	--	--	21

03308500 GREEN RIVER AT MUNFORDVILLE, KY.

LOCATION.--Lat 37°16'05", long 85°53'10", Hart County, at gaging station at bridge on U.S. Highway 31W at Munfordville.

DRAINAGE AREA.--1,673 sq mi, of which about 180 sq mi does not contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: October 1949 to September 1968.

Water temperatures: October 1950 to September 1968.

Sediment records: April 1951 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 668 micromhos Sept. 30; minimum daily, 134 micromhos Apr. 5.

Water temperatures: Maximum, 26.0°C on several days during August; minimum, 1.0°C on many days during January and February.

Sediment concentrations: Maximum daily, 1,130 mg/l May 26; minimum daily, 1 mg/l Nov. 16, 17, Feb. 18-22.

Sediment loads: Maximum daily, 58,000 tons Apr. 6; minimum daily, 1.6 tons Nov. 17.

Period of record:

Specific conductance: Maximum daily, 9,420 micromhos Oct. 10, 1959; minimum daily, 59 micromhos Mar. 25, 1952.

Water temperatures: Maximum, 28.0°C July 20, 1957; minimum, freezing point on many days during 1957-66.

Sediment concentrations: Maximum daily, 3,180 mg/l June 14, 1952; minimum daily, 1 mg/l on many days during 1952-57, 1960-64, 1966-68.

Sediment loads: Maximum daily, 157,000 tons Mar. 1, 1962; minimum daily, 0.22 (revised) ton Oct. 4-7, 1963.

REMARKS.--Daily samples were collected for maximum and minimum specific conductance for each month.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01...	511	144	0	22	60	.9	320	164	46	468	8.1	13
29...	675	140	0	20	26	.6	222	135	20	329	7.4	11
NOV.												
23...	722	164	0	27	53	.3	256	172	37	461	7.8	8
29...	1130	112	0	23	17	.6	162	118	26	265	7.4	--
DEC.												
01...	7140	108	0	18	23	2.9	162	118	29	293	7.1	--
06...	6450	88	0	15	8.0	2.2	96	88	16	195	7.5	--
JAN.												
21...	2120	130	0	19	22	1.2	162	134	27	326	7.8	4
25...	4880	92	0	18	10	1.8	112	96	21	222	7.6	3
FEB.												
05...	2730	114	2	18	12	2.5	158	118	21	266	8.4	6
28...	638	134	4	19	31	2.5	220	146	29	365	8.4	3
MAR.												
09...	530	134	4	21	29	1.0	206	143	26	365	8.3	9
16...	7270	68	0	16	7.0	2.1	108	70	14	161	8.1	5
APR.												
05...	28200	60	0	9.2	3.0	3.0	76	60	11	134	7.1	11
30...	1300	128	0	18	20	1.2	174	126	21	304	7.7	16
MAY												
13...	1300	144	0	21	28	1.9	194	142	24	356	7.9	18
27...	20200	84	0	11	4.0	4.4	114	79	10	168	8.0	17
JUNE												
01...	8940	84	0	14	6.5	2.5	100	81	12	180	7.3	18
29...	420	156	0	17	33	1.4	224	151	23	385	7.5	22
JULY												
27...	447	123	0	14	17	3.4	166	114	13	280	7.9	27
31...	507	140	0	20	45	3.2	258	138	24	417	8.0	23
AUG.												
03...	421	132	0	14	19	3.1	186	126	18	310	7.8	23
19...	310	150	0	20	46	2.3	260	150	27	426	7.6	24
SEPT.												
01...	130	160	0	14	32	1.6	226	154	23	390	7.4	20
30...	129	168	0	19	111	1.5	384	186	48	668	8.0	17

GREEN RIVER BASIN

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03308500 GREEN RIVER AT MUFORDVILLE, KY.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT AT APPROXIMATELY 0700)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	468	333	293	--	285	357	195	311	180	370	319	390
2.....	423	336	289	--	287	364	217	303	--	370	318	402
3.....	429	363	221	287	294	353	212	308	189	335	310	405
4.....	387	321	198	297	290	353	223	306	192	335	313	397
5.....	389	324	209	264	366	357	134	334	209	383	362	407
6.....	372	271	195	264	268	350	155	334	211	385	342	409
7.....	364	275	211	256	268	350	--	310	234	390	348	409
8.....	362	281	211	255	283	360	153	321	237	391	--	434
9.....	379	281	262	253	287	365	149	313	293	382	--	435
10.....	379	295	264	278	304	353	150	336	--	386	348	416
11.....	410	293	262	278	307	--	154	336	293	395	355	416
12.....	413	313	284	280	290	331	154	333	308	390	342	407
13.....	428	310	284	283	304	--	--	356	308	404	394	408
14.....	430	330	--	294	309	--	--	356	318	410	389	426
15.....	433	346	--	297	305	164	173	245	316	--	--	418
16.....	434	349	--	285	332	161	196	224	321	--	422	427
17.....	434	349	--	290	329	206	192	199	330	--	--	420
18.....	444	349	--	294	338	190	217	198	330	--	419	421
19.....	442	346	--	294	338	195	217	228	349	--	426	439
20.....	335	310	--	323	338	196	228	275	349	--	416	439
21.....	338	356	--	326	341	210	235	277	356	--	398	442
22.....	--	359	--	264	348	222	235	275	352	--	372	441
23.....	338	461	--	260	348	189	243	293	352	351	369	440
24.....	338	459	--	260	348	186	251	290	356	326	365	441
25.....	386	442	--	222	348	192	276	305	363	324	373	447
26.....	385	279	--	223	358	187	274	192	363	284	375	554
27.....	383	281	--	223	361	186	287	168	376	280	380	556
28.....	384	267	223	246	365	188	287	169	377	391	375	638
29.....	329	265	--	249	365	186	302	175	385	390	382	639
30.....	329	279	--	276	--	187	304	182	--	389	386	668
31.....	329	--	--	272	--	187	--	180	--	417	389	--
AVERAGE	390	327	--	272	326	254	215	272	305	--	369	453

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT AT APPROXIMATELY 0700)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	11.0	---	1.0	9.0	4.0	12.0	16.0	18.0	23.0	23.0	20.0
2	14.0	12.0	---	1.0	8.0	4.0	12.0	17.0	18.0	23.0	23.0	19.0
3	14.0	11.0	---	2.0	7.0	4.0	13.0	18.0	18.0	22.0	23.0	21.0
4	16.0	10.0	7.0	1.0	6.0	4.0	13.0	18.0	18.0	21.0	24.0	20.0
5	16.0	8.0	7.0	1.0	6.0	5.0	11.0	16.0	18.0	21.0	24.0	20.0
6	18.0	7.0	---	1.0	6.0	4.0	11.0	14.0	19.0	21.0	24.0	20.0
7	16.0	7.0	---	1.0	4.0	5.0	12.0	14.0	20.0	21.0	26.0	19.0
8	18.0	7.0	---	1.0	5.0	7.0	13.0	16.0	21.0	22.0	25.0	20.0
9	16.0	5.0	---	1.0	4.0	9.0	13.0	17.0	21.0	21.0	25.0	20.0
10	14.0	8.0	---	1.0	3.0	9.0	12.0	17.0	21.0	22.0	25.0	19.0
11	13.0	8.0	---	1.0	2.0	9.0	13.0	17.0	22.0	22.0	26.0	20.0
12	12.0	8.0	---	2.0	1.0	8.0	13.0	18.0	22.0	22.0	23.0	20.0
13	12.0	9.0	---	2.0	1.0	5.0	13.0	18.0	21.0	22.0	23.0	19.0
14	14.0	8.0	---	1.0	1.0	6.0	---	18.0	21.0	23.0	24.0	19.0
15	14.0	7.0	---	2.0	1.0	6.0	13.0	19.0	21.0	24.0	24.0	18.0
16	16.0	7.0	---	1.0	2.0	5.0	14.0	19.0	22.0	24.0	24.0	18.0
17	17.0	8.0	---	1.0	3.0	8.0	14.0	19.0	21.0	23.0	24.0	18.0
18	14.0	8.0	---	1.0	3.0	9.0	15.0	18.0	21.0	23.0	24.0	19.0
19	14.0	7.0	---	2.0	3.0	10.0	16.0	18.0	21.0	23.0	24.0	18.0
20	13.0	6.0	---	2.0	3.0	11.0	17.0	18.0	20.0	---	25.0	18.0
21	13.0	7.0	---	4.0	1.0	11.0	17.0	17.0	20.0	---	26.0	16.0
22	13.0	8.0	---	4.0	1.0	9.0	18.0	17.0	21.0	---	26.0	19.0
23	13.0	8.0	---	3.0	1.0	7.0	18.0	18.0	23.0	21.0	26.0	19.0
24	13.0	7.0	---	3.0	1.0	6.0	17.0	18.0	23.0	---	26.0	20.0
25	12.0	7.0	---	3.0	4.0	8.0	17.0	19.0	23.0	---	26.0	21.0
26	11.0	---	---	3.0	3.0	7.0	16.0	18.0	23.0	23.0	24.0	20.0
27	11.0	---	---	3.0	3.0	8.0	16.0	17.0	22.0	22.0	23.0	18.0
28	11.0	---	3.0	4.0	3.0	10.0	16.0	17.0	20.0	23.0	22.0	17.0
29	11.0	---	---	6.0	2.0	11.0	15.0	17.0	22.0	24.0	21.0	17.0
30	11.0	---	---	7.0	---	12.0	16.0	17.0	---	24.0	21.0	17.0
31	11.0	---	---	7.0	---	13.0	---	17.0	---	23.0	20.0	---
AVERAGE	13.5	8.0	---	2.5	3.5	7.5	14.5	17.5	20.5	22.5	24.0	19.0

GREEN RIVER BASIN

03308500 GREEN RIVER AT MUNFORDVILLE, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	511	10	14	585	13	21	7140	506	9750
2	441	10	12	844	17	30	6330	457	7910
3	459	10	12	1510	37	151	11700	342	10500
4	445	9	11	1610	26	113	11200	130	4200
5	415	10	11	1740	20	94	7920	80	1710
6	398	10	10	1740	17	80	6450	73	1270
7	365	10	9.0	1450	12	47	5440	50	774
8	345	8	7.6	1210	9	29	4470	43	519
9	316	10	8.5	1070	8	23	3450	41	382
10	304	10	8.2	956	7	18	2630	40	284
11	301	10	8.1	876	7	17	2800	52	303
12	301	7	5.7	813	7	15	5010	85	1150
13	308	7	5.9	749	6	12	3700	75	760
14	351	7	5.7	754	4	8.1	1070	60	407
15	297	5	4.0	695	2	3.4	2890	45	351
16	293	5	4.0	613	1	1.7	3000	37	300
17	301	5	4.1	591	1	1.6	2960	31	249
18	323	4	3.5	553	2	3.0	3040	30	246
19	377	5	5.1	516	2	2.8	4740	74	906
20	487	5	6.6	497	2	2.6	4470	66	797
21	553	5	9.0	473	3	3.8	4770	74	1000
22	605	7	11	501	4	5.4	8040	322	6990
23	572	7	11	722	9	18	6930	336	9010
24	534	11	16	1030	15	42	7770	191	4010
25	656	55	99	1230	27	90	6640	56	1000
26	1050	59	169	1540	26	108	5670	33	505
27	897	9	22	1410	20	76	4640	16	200
28	744	7	14	1320	8	28	3690	10	100
29	675	6	11	1130	6	18	2920	9	71
30	633	4	10	2960	300	2770	2310	6	37
31	591	8	13	--	--	--	1070	6	37
TOTAL	14809	--	541.7	31650	--	3841.8	160760	--	66143
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1920	5	25	2010	10	54	619	4	6.7
2	1640	4	18	2190	26	153	675	4	6.5
3	1610	4	17	2750	22	163	591	3	4.8
4	2400	37	240	2890	18	140	577	3	4.7
5	3050	20	165	2730	15	111	563	4	6.1
6	2890	15	117	2490	12	81	548	4	5.0
7	2930	9	71	2260	8	49	544	2	2.9
8	2600	10	70	2050	6	33	534	2	2.0
9	2456	10	66	1840	4	20	530	6	8.6
10	2300	7	43	1670	4	18	558	14	71
11	2100	5	34	1510	4	16	696	25	47
12	2030	5	32	1340	4	14	3640	555	6880
13	1950	5	31	1210	4	13	11100	400	12000
14	1990	4	32	1120	3	8.1	10000	215	6900
15	1990	5	27	1070	2	5.8	7730	300	6240
16	1870	5	25	1040	2	5.4	7270	355	5000
17	1720	5	23	949	2	5.3	8500	203	4560
18	1590	5	21	934	1	2.5	8050	123	2670
19	1580	5	21	887	1	2.4	6960	99	1840
20	1730	4	19	839	1	2.3	6130	120	1990
21	2120	13	74	829	1	2.2	7720	339	7070
22	2070	42	368	791	1	2.1	12800	229	7910
23	4050	57	623	701	2	3.4	18900	178	6080
24	4750	47	603	631	2	3.7	19500	98	5140
25	4830	33	435	671	2	3.6	16390	91	4000
26	4450	27	325	657	2	3.5	14900	79	3180
27	3760	26	264	642	2	3.5	13600	65	2390
28	3120	19	160	638	3	5.2	10900	75	2210
29	2540	14	96	633	3	5.1	8820	73	1740
30	2200	13	77	--	--	--	7620	73	1560
31	2040	10	55	--	--	--	6750	70	1280
TOTAL	79140	--	4157	40061	--	930.7	213565	--	92737.1

GREEN RIVER BASIN

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03308500 GREEN RIVER AT MUNFORDVILLE, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	6700	54	977	1240	13	44	8940	145	3500
2	6670	75	1350	1140	12	38	8170	124	2740
3	8060	64	1050	1090	13	38	8870	107	2540
4	11400	75	2700	1010	13	35	7400	114	2740
5	28200	770	5560	908	12	32	5840	94	1480
6	36400	590	58000	918	11	27	4660	74	956
7	29000	143	11200	858	8	19	3610	64	624
8	20500	252	14000	837	6	13	2770	56	404
9	16000	261	11300	827	8	18	7120	34	195
10	13700	224	8290	808	10	24	1610	23	100
11	11300	183	5580	905	12	20	1240	22	80
12	9810	157	4140	1130	72	229	1160	20	63
13	8610	136	3140	1300	64	225	1040	19	53
14	7400	100	2000	2160	120	1240	950	18	46
15	7330	76	1500	6880	468	8500	883	17	41
16	5940	62	1170	4560	217	2670	906	16	35
17	5000	52	828	3830	139	1440	761	15	31
18	5200	53	744	3000	132	1070	736	14	28
19	4550	58	714	2570	115	708	696	13	24
20	3790	71	727	2030	72	389	642	12	21
21	3410	61	562	1630	43	189	578	11	17
22	2930	56	443	1410	43	164	533	10	14
23	2510	54	366	1220	35	115	488	10	13
24	2150	48	279	1090	27	70	453	10	12
25	1940	34	180	9320	214	2380	431	9	10
26	1700	23	106	9720	1130	31300	421	8	9.1
27	1540	17	71	20200	400	21800	415	11	19
28	1440	14	54	24300	145	6380	424	12	14
29	1370	14	52	23900	112	6320	420	11	12
30	1300	14	40	15200	116	4760	399	10	11
31	--	--	--	11800	142	4520	--	--	--
TOTAL	265980	--	211521	148994	--	98075	67566	--	15385.1

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	374	11	11	449	42	51	130	14	5.6
2	360	15	15	424	36	41	127	14	4.5
3	428	25	29	421	38	43	127	20	6.0
4	420	21	24	400	41	44	129	23	8.0
5	388	21	22	335	24	22	135	19	6.6
6	336	21	19	315	21	18	136	17	6.2
7	298	21	17	250	19	15	294	42	33
8	275	20	15	287	26	20	340	37	34
9	250	21	15	302	30	24	267	38	27
10	250	20	14	276	25	10	242	36	24
11	246	15	10	489	75	90	368	50	47
12	240	15	9.7	524	92	131	290	38	30
13	231	15	9.4	424	87	100	254	40	27
14	243	12	7.0	375	59	60	237	33	21
15	257	15	10	444	41	49	216	28	17
16	278	28	21	474	36	41	103	31	16
17	264	23	16	398	34	37	183	29	14
18	250	10	13	346	33	31	198	33	18
19	278	16	12	310	30	25	208	28	14
20	288	13	10	279	26	20	202	25	14
21	277	13	9.7	261	26	18	183	33	16
22	264	17	12	268	25	17	177	27	13
23	557	47	100	260	24	16	172	26	14
24	613	77	78	225	23	14	167	26	12
25	359	52	50	205	22	12	155	25	10
26	300	56	45	183	23	11	145	19	7.4
27	447	66	83	159	22	10	138	21	7.8
28	810	102	223	157	19	9.1	135	20	7.3
29	842	81	184	145	18	7.1	132	19	6.8
30	599	92	149	139	17	6.4	129	19	6.6
31	502	75	102	134	17	6.2	--	--	--
TOTAL	11545	--	1335.7	9621	--	1015.8	5789	--	473.7

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

TOTAL LOAD FOR YEAR (TONS)

1049411

406157.6

GREEN RIVER BASIN

03308500 GREEN RIVER AT MUNFORDVILLE, KY.--Continued

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHOD OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECONTANTION; N, IN NATIVE WATER;
P, PIPE; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- ERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE												METH- OD OF ANAL- YSIS
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED												
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00		
MAY 26 1968	0700			1240		35	46	61	81	95	97	99	100	--	--	--	SBWC	

03309000 GREEN RIVER AT MAMMOTH CAVE, KY.

LOCATION.--Lat 37°10'46", long 86°06'46" (revised), Edmonson County, at Mammoth Cave Ferry crossing, 350 ft upstream from stage station, which is 0.2 mile downstream from Echo River and 0.8 mile southwest of Mammoth Cave.

DRAINAGE AREA.--1,983 sq mi, of which 444 sq mi does not contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: September 1959 to September 1968.

Water temperatures: October 1959 to June 1961.

REMARKS.--Samples for iron and manganese filtered clear when collected. No discharge records available.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	IRON (FE)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA+MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC CON- DUCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
NOV. 01...	.10	142	0	20	25	3.7	199	146	30	339	7.7	13
DEC. 12...	--	--	--	--	--	--	--	--	--	277	--	11
JAN. 10...	.07	112	2	18	15	3.3	158	122	27	262	8.3	3
FEB. 13...	--	--	--	--	--	--	--	--	--	304	--	6
MAR. 21...	--	--	--	--	--	--	--	--	--	233	--	12
APR. 30...	--	--	--	--	--	--	--	--	--	303	--	12
MAY 27...	--	--	--	--	--	--	--	--	--	179	--	18
JULY 17...	--	--	--	--	--	--	--	--	--	440	--	22
AUG. 28...	.21	164	0	21	28	1.6	225	160	26	393	7.9	19

03311000 NOLIN RIVER AT KYROCK, KY.

LOCATION.--Lat 37°16'27", long 86°15'03", Edmonson County, at gaging station on right bank 470 ft downstream from Dismal Creek, 0.3 mile downstream from Nolin River Dam, 1.2 miles upstream from Pigeon Creek, 0.9 mile northeast of Kyrock, and 7.5 miles upstream from mouth.

DRAINAGE AREA.--707 sq mi (including that of Dismal Creek), of which about 223 sq mi does not contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1968.

Water temperatures: October 1949 to September 1950, September 1962, unpublished; October 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C Aug. 23-26; minimum, 2.0°C Mar. 2-5.

Period of record:

Water temperatures: Maximum, 25.5°C Aug. 20-23, 1965, Aug. 27 to Sept. 1, 1966; minimum, 1.0°C Dec. 19-21, 1962, Jan. 31 to Feb. 6, 1963.

REMARKS.--Samples for iron and manganese filtered clear when collected. Flow regulated by Nolin River Reservoir.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SiO2)	IRON (FE)	MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	POT- AS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
OCT. 03...	272	7.0	.38	.05	52	4.8	2.8	1.4	168	0	12
NOV. 07...	1930	--	.03	.02	--	--	--	--	122	0	11
DEC. 05...	2370	--	--	--	--	--	--	--	--	--	--
JAN. 07...	596	--	.36	.21	--	--	--	--	116	4	26
FEB. 01...	869	--	--	--	--	--	--	--	--	--	--
MAR. 05...	330	--	--	--	--	--	--	--	--	--	--
APR. 02...	3400	--	--	--	--	--	--	--	--	--	--
MAY 03...	479	--	--	--	--	--	--	--	--	--	--
JUNE 11...	5200	--	.08	.02	--	--	--	--	126	0	13
JULY 24...	262	--	--	--	--	--	--	--	--	--	--
SEPT. 30...	270	--	.27	.06	--	--	--	--	134	0	14

GREEN RIVER BASIN

03318010 ROUGH RIVER AT ROUGH RIVER DAM, NEAR FALLS OF ROUGH, KY.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.0	22.0	16.0	16.0	8.0	8.0	5.0	3.0	6.0	5.0	6.0	6.0
2	23.0	23.0	16.0	16.0	8.0	7.0	3.0	3.0	7.0	6.0	6.0	6.0
3	24.0	23.0	16.0	15.0	7.0	6.0	3.0	3.0	7.0	7.0	7.0	6.0
4	24.0	23.0	15.0	14.0	7.0	6.0	3.0	2.0	7.0	7.0	---	---
5	24.0	22.0	14.0	14.0	6.0	6.0	4.0	2.0	8.0	7.0	---	---
6	22.0	22.0	14.0	13.0	6.0	6.0	3.0	2.0	9.0	8.0	---	---
7	22.0	22.0	13.0	12.0	6.0	6.0	4.0	3.0	9.0	7.0	7.0	7.0
8	22.0	22.0	12.0	12.0	6.0	6.0	5.0	3.0	7.0	6.0	7.0	6.0
9	22.0	22.0	12.0	12.0	7.0	6.0	3.0	3.0	7.0	6.0	7.0	7.0
10	22.0	21.0	12.0	12.0	7.0	6.0	3.0	3.0	7.0	6.0	7.0	7.0
11	21.0	21.0	12.0	12.0	7.0	7.0	4.0	3.0	6.0	6.0	7.0	6.0
12	21.0	21.0	12.0	12.0	7.0	7.0	3.0	3.0	7.0	6.0	7.0	6.0
13	21.0	21.0	12.0	12.0	7.0	7.0	3.0	3.0	6.0	6.0	7.0	7.0
14	21.0	21.0	12.0	11.0	7.0	6.0	4.0	3.0	6.0	6.0	7.0	7.0
15	21.0	21.0	11.0	11.0	6.0	6.0	4.0	4.0	7.0	6.0	7.0	7.0
16	21.0	21.0	11.0	11.0	7.0	6.0	5.0	4.0	6.0	6.0	7.0	7.0
17	21.0	21.0	11.0	10.0	6.0	6.0	6.0	4.0	7.0	6.0	8.0	7.0
18	21.0	21.0	10.0	10.0	6.0	6.0	5.0	4.0	7.0	5.0	8.0	8.0
19	21.0	20.0	10.0	10.0	6.0	6.0	5.0	4.0	7.0	5.0	8.0	8.0
20	20.0	20.0	10.0	10.0	7.0	6.0	5.0	4.0	7.0	5.0	8.0	8.0
21	20.0	19.0	10.0	10.0	7.0	7.0	5.0	4.0	6.0	5.0	9.0	8.0
22	19.0	19.0	10.0	10.0	7.0	7.0	5.0	4.0	7.0	5.0	9.0	9.0
23	19.0	19.0	10.0	9.0	7.0	6.0	4.0	4.0	5.0	5.0	9.0	9.0
24	19.0	18.0	9.0	9.0	6.0	6.0	6.0	4.0	6.0	5.0	9.0	8.0
25	18.0	18.0	9.0	9.0	6.0	6.0	6.0	4.0	6.0	5.0	8.0	8.0
26	18.0	18.0	9.0	8.0	6.0	6.0	5.0	4.0	6.0	5.0	8.0	8.0
27	18.0	17.0	9.0	8.0	6.0	6.0	4.0	4.0	5.0	5.0	9.0	8.0
28	17.0	17.0	9.0	8.0	6.0	4.0	4.0	4.0	6.0	5.0	9.0	8.0
29	17.0	16.0	8.0	8.0	4.0	4.0	4.0	4.0	6.0	5.0	8.0	8.0
30	16.0	16.0	8.0	8.0	4.0	3.0	4.0	4.0	---	---	9.0	6.0
31	16.0	16.0	---	---	4.0	3.0	5.0	4.0	---	---	10.0	9.0
MONTH	24.0	16.0	16.0	8.0	8.0	3.0	6.0	2.0	9.0	5.0	10.0	6.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.0	9.0	11.0	11.0	---	---	19.0	18.0	18.0	18.0	19.0	18.0
2	11.0	10.0	11.0	11.0	---	---	18.0	18.0	18.0	18.0	18.0	18.0
3	11.0	11.0	11.0	11.0	---	---	18.0	18.0	18.0	18.0	18.0	18.0
4	12.0	9.0	11.0	11.0	---	---	18.0	18.0	18.0	18.0	18.0	18.0
5	9.0	9.0	11.0	11.0	---	---	18.0	18.0	18.0	18.0	18.0	18.0
6	9.0	9.0	11.0	11.0	---	---	18.0	18.0	18.0	18.0	19.0	18.0
7	9.0	9.0	11.0	11.0	---	---	18.0	18.0	18.0	18.0	19.0	18.0
8	9.0	9.0	---	---	---	---	18.0	18.0	18.0	18.0	19.0	18.0
9	9.0	9.0	---	---	---	---	18.0	18.0	18.0	18.0	19.0	18.0
10	9.0	9.0	---	---	---	---	18.0	18.0	18.0	18.0	18.0	18.0
11	---	---	---	---	---	---	18.0	18.0	18.0	18.0	19.0	18.0
12	---	---	---	---	---	---	18.0	18.0	18.0	18.0	18.0	18.0
13	---	---	---	---	17.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0
14	---	---	---	---	17.0	17.0	19.0	18.0	18.0	18.0	18.0	18.0
15	---	---	---	---	17.0	17.0	19.0	18.0	18.0	18.0	18.0	18.0
16	---	---	---	---	17.0	17.0	19.0	18.0	18.0	18.0	18.0	18.0
17	---	---	---	---	17.0	17.0	19.0	18.0	18.0	18.0	18.0	18.0
18	---	---	---	---	18.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0
19	---	---	---	---	18.0	18.0	19.0	18.0	18.0	18.0	18.0	18.0
20	---	---	---	---	18.0	18.0	19.0	18.0	18.0	18.0	18.0	18.0
21	---	---	---	---	18.0	18.0	19.0	18.0	18.0	18.0	18.0	18.0
22	---	---	---	---	18.0	18.0	19.0	18.0	18.0	18.0	18.0	18.0
23	---	---	---	---	18.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0
24	---	---	---	---	17.0	17.0	18.0	18.0	19.0	18.0	18.0	18.0
25	---	---	---	---	17.0	17.0	18.0	18.0	19.0	18.0	18.0	18.0
26	---	---	---	---	17.0	17.0	18.0	18.0	18.0	18.0	18.0	17.0
27	---	---	---	---	17.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0
28	---	---	---	---	18.0	17.0	18.0	18.0	18.0	18.0	18.0	18.0
29	---	---	---	---	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
30	11.0	11.0	---	---	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
31	---	---	---	---	---	---	18.0	18.0	18.0	18.0	---	---
MONTH	---	---	---	---	---	---	19.0	18.0	19.0	18.0	19.0	17.0

GREEN RIVER BASIN

199

03319500 ROUGH RIVER AT DUNDEE, KY.

LOCATION.--Lat 37°33'46", long 86°46'16", Ohio County, at auxiliary gaging station at bridge on State Highway 69 at Dundee, 5.6 miles downstream from gaging station near Dundee, 7.1 miles downstream from Caney Creek, and at mile 56.9.

DRAINAGE AREA.--770 sq mi, of which about 122 sq mi does not contribute directly to surface runoff.

PERIOD OF RECORD.--Water temperatures: October 1949 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C July 20; minimum, freezing point on several days during January to March.

Period of record:

Water temperatures: Maximum, 31.5°C Aug. 3, 1955; minimum, freezing point on many days during winter periods.

REMARKS.--Records of discharge are given for gaging station near Dundee. Flow regulated by Rough River Reservoir.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENTS AT APPROXIMATELY 0800 AND 1600)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	19.0	---	---	---	5.0	6.0	1.0	1.0	7.0	6.0	0.0	1.0
2	---	---	---	---	7.0	7.0	1.0	2.0	6.0	8.0	1.0	1.0
3	20.0	---	---	---	7.0	7.0	1.0	2.0	8.0	8.0	1.0	1.0
4	---	---	---	---	6.0	6.0	1.0	2.0	6.0	6.0	1.0	2.0
5	---	---	---	---	4.0	5.0	1.0	1.0	4.0	6.0	1.0	1.0
6	---	---	---	---	6.0	7.0	1.0	1.0	4.0	6.0	1.0	1.0
7	---	---	---	---	7.0	8.0	0.0	0.0	6.0	6.0	1.0	4.0
8	---	---	---	---	6.0	7.0	0.0	0.0	6.0	6.0	3.0	4.0
9	---	---	---	12.0	7.0	7.0	2.0	2.0	4.0	6.0	6.0	6.0
10	---	---	10.0	12.0	8.0	8.0	0.0	0.0	5.0	5.0	7.0	7.0
11	---	---	12.0	12.0	8.0	8.0	0.0	0.0	4.0	4.0	7.0	7.0
12	---	---	12.0	12.0	8.0	9.0	1.0	1.0	3.0	3.0	6.0	4.0
13	---	---	11.0	12.0	8.0	8.0	1.0	1.0	2.0	3.0	1.0	3.0
14	---	---	11.0	11.0	8.0	7.0	0.0	1.0	1.0	2.0	4.0	---
15	---	---	9.0	11.0	7.0	7.0	1.0	1.0	1.0	1.0	4.0	5.0
16	---	---	9.0	11.0	6.0	7.0	1.0	2.0	1.0	2.0	6.0	7.0
17	---	---	11.0	11.0	7.0	7.0	1.0	2.0	1.0	0.0	6.0	7.0
18	---	---	10.0	11.0	7.0	7.0	1.0	1.0	1.0	2.0	7.0	10.0
19	---	---	9.0	10.0	7.0	8.0	2.0	1.0	0.0	1.0	7.0	10.0
20	---	---	9.0	9.0	7.0	8.0	---	1.0	1.0	1.0	7.0	10.0
21	---	---	9.0	10.0	11.0	12.0	2.0	0.0	1.0	1.0	9.0	8.0
22	---	---	11.0	9.0	9.0	8.0	0.0	0.0	1.0	1.0	4.0	9.0
23	---	---	9.0	9.0	4.0	6.0	0.0	1.0	0.0	1.0	0.0	1.0
24	---	---	9.0	9.0	4.0	6.0	0.0	0.0	0.0	1.0	2.0	3.0
25	---	---	8.0	9.0	6.0	6.0	1.0	2.0	1.0	1.0	1.0	7.0
26	---	---	9.0	9.0	5.0	6.0	1.0	0.0	1.0	1.0	6.0	8.0
27	---	---	8.0	8.0	5.0	5.0	0.0	0.0	0.0	1.0	10.0	12.0
28	---	---	7.0	6.0	5.0	4.0	3.0	1.0	1.0	1.0	10.0	13.0
29	---	---	7.0	7.0	4.0	4.0	4.0	6.0	0.0	1.0	12.0	14.0
30	---	---	6.0	6.0	3.0	3.0	6.0	7.0	---	---	13.0	14.0
31	---	---	---	---	2.0	2.0	6.0	6.0	---	---	12.0	13.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	10.0	9.0	14.0	---	16.0	17.0	22.0	23.0	---	21.0	20.0	22.0
2	9.0	10.0	16.0	17.0	17.0	18.0	23.0	24.0	20.0	23.0	20.0	22.0
3	10.0	11.0	17.0	17.0	17.0	18.0	21.0	24.0	20.0	21.0	20.0	23.0
4	11.0	12.0	16.0	17.0	18.0	21.0	19.0	22.0	21.0	22.0	19.0	22.0
5	11.0	10.0	15.0	16.0	18.0	19.0	20.0	24.0	21.0	21.0	20.0	21.0
6	9.0	10.0	16.0	16.0	17.0	17.0	21.0	26.0	22.0	25.0	21.0	22.0
7	9.0	10.0	16.0	16.0	16.0	17.0	22.0	25.0	22.0	24.0	18.0	23.0
8	12.0	12.0	14.0	16.0	16.0	17.0	24.0	21.0	23.0	24.0	18.0	21.0
9	11.0	12.0	14.0	17.0	16.0	18.0	21.0	24.0	23.0	22.0	21.0	21.0
10	11.0	12.0	16.0	16.0	16.0	18.0	21.0	24.0	23.0	24.0	18.0	20.0
11	11.0	13.0	14.0	16.0	16.0	17.0	22.0	24.0	23.0	25.0	17.0	19.0
12	12.0	14.0	16.0	16.0	16.0	17.0	23.0	25.0	22.0	26.0	17.0	19.0
13	12.0	12.0	14.0	16.0	16.0	17.0	22.0	27.0	22.0	26.0	18.0	20.0
14	12.0	12.0	14.0	16.0	15.0	---	24.0	26.0	21.0	23.0	18.0	21.0
15	10.0	12.0	16.0	18.0	16.0	17.0	24.0	27.0	21.0	24.0	18.0	20.0
16	10.0	12.0	17.0	18.0	17.0	18.0	23.0	26.0	26.0	23.0	18.0	18.0
17	11.0	12.0	17.0	18.0	16.0	17.0	23.0	26.0	20.0	23.0	17.0	18.0
18	13.0	13.0	16.0	17.0	16.0	18.0	24.0	27.0	20.0	22.0	17.0	19.0
19	13.0	13.0	14.0	14.0	16.0	18.0	24.0	27.0	20.0	22.0	17.0	18.0
20	12.0	13.0	13.0	14.0	16.0	17.0	24.0	28.0	19.0	---	17.0	---
21	13.0	14.0	14.0	14.0	16.0	19.0	26.0	26.0	21.0	23.0	18.0	21.0
22	13.0	13.0	14.0	14.0	17.0	18.0	24.0	27.0	22.0	25.0	20.0	20.0
23	12.0	12.0	13.0	15.0	19.0	18.0	24.0	27.0	22.0	26.0	18.0	20.0
24	12.0	13.0	14.0	14.0	18.0	20.0	25.0	27.0	24.0	27.0	19.0	20.0
25	13.0	13.0	16.0	17.0	19.0	21.0	26.0	26.0	22.0	26.0	---	---
26	13.0	14.0	16.0	16.0	21.0	21.0	23.0	24.0	22.0	22.0	---	---
27	13.0	13.0	17.0	17.0	18.0	19.0	23.0	24.0	21.0	23.0	---	---
28	13.0	14.0	16.0	17.0	18.0	22.0	23.0	---	21.0	22.0	---	---
29	13.0	14.0	16.0	17.0	20.0	22.0	24.0	22.0	20.0	21.0	---	---
30	13.0	14.0	16.0	16.0	21.0	22.0	21.0	23.0	21.0	21.0	---	---
31	---	---	15.0	16.0	---	---	20.0	21.0	19.0	21.0	---	---

WABASH RIVER BASIN

201

03323500 WABASH RIVER AT HUNTINGTON, IND.

LOCATION.--Lat 40°51'20", long 85°29'53", Huntington County, temperature recorder at gaging station on right bank at the Huntington Water and Light Co. Plant, 2 miles south of courthouse in Huntington, 3.2 miles upstream from mouth of Little River, and at mile 409.

DRAINAGE AREA.--710 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1963 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum not recorded; minimum, 1.0°C Dec. 25-27, Jan. 23-30.

Period of record:

Water temperatures: Maximum, 32.0°C July 27, 1964; minimum, freezing point on several days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																																AVER-
MONTH	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	AGE	
OCTOBER																																	
MAXIMUM	--	16	17	19	18	17	14	13	13	11	11	11	12	13	13	13	13	11	10	9	9	10	11	11	9	8	8	7	8	9	11		
MINIMUM	11	13	15	16	17	14	12	13	11	11	10	9	10	10	12	13	13	11	10	9	8	9	10	11	9	8	8	7	7	8	10		
NOVEMBER																																	
MAXIMUM	9	9	9	9	6	6	6	6	6	6	7	7	7	6	4	4	4	4	5	4	5	4	4	4	4	4	4	4	3	2	2	--	5
MINIMUM	9	9	9	6	6	6	5	5	6	6	7	7	7	6	4	3	3	4	4	4	4	4	4	4	4	4	4	4	3	2	2	--	4
DECEMBER																																	
MAXIMUM	2	2	2	2	2	2	3	4	4	4	4	4	4	4	4	3	2	3	3	4	4	7	7	6	3	2	1	1	--	--	--	3	
MINIMUM	2	2	2	2	2	2	2	3	4	4	4	4	4	4	4	3	2	2	2	3	3	4	6	3	2	1	1	1	--	--	--	2	
JANUARY																																	
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	2	2	4	1	2	2	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	1	1	1	1	2	--
FEBRUARY																																	
MAXIMUM	3	4	4	3	3	3	3	3	3	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	--	3	
MINIMUM	2	3	3	3	3	3	3	3	2	2	4	4	4	4	4	4	4	3	4	4	3	3	4	4	3	3	3	3	3	2	--	3	
MARCH																																	
MAXIMUM	3	3	4	3	3	3	3	4	6	6	7	6	4	4	5	7	7	6	7	8	8	7	4	5	6	7	9	11	13	12		6	
MINIMUM	2	2	3	2	2	2	2	4	6	5	3	3	3	3	4	5	5	5	6	7	7	7	4	4	3	4	6	7	9	11	12	12	4
APRIL																																	
MAXIMUM	12	12	11	12	12	11	11	12	12	12	12	14	15	15	14	14	14	14	14	15	17	17	19	20	18	14	13	16	17	18	17	--	14
MINIMUM	11	11	11	11	11	10	10	11	12	12	12	12	14	14	13	14	14	14	14	14	15	16	17	18	14	13	13	15	16	17	--	13	
MAY																																	
MAXIMUM	19	19	19	18	18	18	19	19	21	19	18	17	19	21	22	21	16	16	14	15	16	16	16	16	16	16	16	16	16	16	16	17	17
MINIMUM	16	17	18	17	16	16	16	17	18	18	17	16	17	19	21	16	15	14	14	14	14	15	16	15	15	15	15	15	16	16	16	16	
JUNE																																	
MAXIMUM	17	18	18	17	19	20	22	23	24	26	26	24	21	22	22	22	21	22	22	23	24	25	24	23	20	20	19	18	19	--	21		
MINIMUM	17	17	16	17	17	18	20	22	22	23	24	21	20	19	20	19	20	19	19	19	20	21	22	23	20	20	19	18	18	17	--	19	
JULY																																	
MAXIMUM	20	21	20	21	21	22	23	24	24	24	23	24	25	26	26	26	26	26	26	26	26	26	26	26	24	24	24	23	23	22	22	23	
MINIMUM	19	20	19	19	19	20	20	22	22	22	22	23	24	24	25	25	24	24	24	24	24	24	24	24	24	24	23	22	21	21	21	22	
AUGUST																																	
MAXIMUM	23	23	23	22	22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	21	22	22	--
MINIMUM	21	21	22	21	21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	19	19	19	--
SEPTEMBER																																	
MAXIMUM	22	22	23	23	22	21	21	23	22	22	19	19	20	21	22	22	22	20	18	21	22	22	23	23	22	19	18	18	18	18	--	20	
MINIMUM	21	19	20	21	21	19	19	19	21	19	18	16	17	18	19	20	20	18	17	17	19	21	21	22	19	17	16	17	16	16	--	18	

WABASH RIVER BASIN

03335500 WABASH RIVER AT LAFAYETTE, IND.

LOCATION.--Lat 40°25'19", long 86°53'49", Tippecanoe County, temperature recorder at gaging station on right bank 20 ft downstream from Brown Street Bridge in Lafayette, 5.1 miles downstream from Wildcat Creek and at mile 311.9.

DRAINAGE AREA.--7,247 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1954 to September 1964, August 1967 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 25.0°C (recorded) July 16-31; minimum, freezing point Jan. 2-20.

Period of record:

Water temperatures: Maximum, 32.0°C July 30, 31, 1954; minimum, freezing point on many days during winter periods.

REMARKS.--Some regulation at low stages caused by powerplants above station.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

MONTH	DAY																																	AVER- AGE
	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			
OCTOBER																																		
MAXIMUM	17	19	20	21	21	20	19	18	17	16	14	14	14	15	16	16	16	16	14	14	14	13	14	14	14	13	12	12	11	12	12	15		
MINIMUM	16	17	19	20	20	19	18	17	16	14	14	13	14	14	15	16	16	14	14	14	13	13	14	13	12	12	11	11	11	12	14			
NOVEMBER																																		
MAXIMUM	13	13	12	12	11	9	9	8	9	9	10	10	9	9	8	8	8	8	8	8	8	7	7	7	7	8	8	7	6	5	--	8		
MINIMUM	12	12	12	11	9	9	8	8	8	9	9	10	9	9	8	8	8	8	8	8	7	7	7	7	7	7	6	5	5	--	8			
DECEMBER																																		
MAXIMUM	5	5	5	4	4	5	5	5	5	5	5	5	6	6	6	4	4	4	4	4	4	6	6	6	4	3	3	2	1	1	1	4		
MINIMUM	5	5	4	4	4	4	5	5	5	5	5	5	5	6	4	4	4	4	4	4	4	6	4	3	3	2	1	1	1	1	1	3		
JANUARY																																		
MAXIMUM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	--		
MINIMUM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	--		
FEBRUARY																																		
MAXIMUM	3	4	4	4	3	3	3	3	3	3	2	1	1	1	1	2	2	1	1	1	1	1	1	1	2	2	2	2	2	--	--	2		
MINIMUM	2	3	4	3	3	3	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	--	--	1	
MARCH																																		
MAXIMUM	2	2	2	3	4	5	5	5	6	6	6	6	3	4	4	6	7	7	8	8	8	7	6	6	7	8	9	11	12	12	12	6		
MINIMUM	2	2	2	2	3	4	4	5	5	6	5	3	3	3	4	4	6	7	7	8	7	6	5	5	6	7	8	9	11	12	12	5		
APRIL																																		
MAXIMUM	12	12	11	12	12	11	10	11	11	11	11	11	11	12	12	12	12	12	12	12	12	13	13	13	14	14	13	12	12	12	13	13	--	12
MINIMUM	11	11	11	11	11	10	10	10	11	11	11	11	11	11	12	12	12	12	12	12	12	12	13	13	13	13	12	12	12	12	13	--	11	
MAY																																		
MAXIMUM	13	14	14	14	14	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MINIMUM	13	13	14	14	13	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JUNE																																		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
JULY																																		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	--	
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	25	25	25	25	25	25	24	24	25	25	25	25	25	25	25	24	--	
AUGUST																																		
MAXIMUM	24	24	23	23	23	23	24	24	24	24	24	24	23	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	23	22	22	21	23	
MINIMUM	24	23	23	23	23	23	24	24	24	24	24	23	23	23	23	23	23	23	23	23	23	23	23	23	23	24	24	23	22	22	21	21	23	
SEPTEMBER																																		
MAXIMUM	21	21	21	21	21	21	21	21	21	21	21	20	19	19	19	19	19	19	19	19	19	19	19	19	20	20	20	19	19	19	--	19		
MINIMUM	21	21	21	21	21	21	21	21	21	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	20	20	19	19	19	--	19		

WABASH RIVER BASIN

203

03340800 BIG RACCOON CREEK NEAR FINCASTLE, IND.

LOCATION.--Lat 39°48'45", long 86°57'14", in SW 1/4 sec. 22, T. 16 N., R. 5 W., Putnam County, at gaging station at county road bridge, 8,350 feet upstream from Ramp Creek and 3.1 miles northwest of Fincastle.

DRAINAGE AREA.--132 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1965 to September 1968.

Sediment records: August 1959 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 30.0°C Aug. 10, 13, 15; minimum, freezing point Jan. 11-20.

Sediment concentrations: Maximum daily, 15,000 mg/l Dec. 22; minimum daily, 2 mg/l Jan. 11-20.

Sediment loads: Maximum daily, 295,000 tons Dec. 22; minimum daily, 0.05 ton Oct. 3.

Period of record:

Water temperatures: Maximum, 31.0°C July 18, 1968; minimum, freezing point on many days during winter periods.

Sediment concentrations: Maximum daily, 19,100 mg/l Mar. 21, 1982; minimum daily, 2 mg/l on several days during 1965, 1967 and 1968.

Sediment loads: Maximum daily, 295,000 tons Dec. 22, 1967; minimum daily, 0.03 ton Sept. 15, 1964.

REMARKS.--Flow affected by ice Jan. 2-19, Feb. 11-23. Daily loads were computed by subdivision on Oct. 18, 17, Dec. 1, 3, 10-12, 21-23, Jan. 21, 22, 29, 31, Feb. 1, 3, Apr. 3-5, 20, May 9, 15-17, 23, June 22, 24-26, Aug. 4, 10, 11, 17-19.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 1600 AND 1900)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	4.0	1.0	4.0	3.0	---	---	---	---	---	---
2	18.0	---	---	1.0	---	4.0	6.0	---	---	---	---	20.0
3	18.0	---	6.0	1.0	---	3.0	---	---	---	---	---	---
4	21.0	12.0	---	1.0	---	4.0	13.0	---	22.0	---	---	20.0
5	21.0	12.0	4.0	1.0	4.0	4.0	---	---	17.0	---	29.0	---
6	21.0	13.0	3.0	1.0	3.0	4.0	---	---	16.0	---	---	---
7	21.0	12.0	3.0	1.0	3.0	4.0	---	---	18.0	---	---	21.0
8	---	12.0	4.0	1.0	3.0	4.0	---	---	---	26.0	29.0	---
9	20.0	---	4.0	1.0	4.0	---	---	---	---	---	---	23.0
10	21.0	---	---	1.0	3.0	---	---	---	21.0	---	30.0	---
11	21.0	12.0	---	0.0	4.0	---	---	---	21.0	---	---	---
12	20.0	---	---	0.0	4.0	---	---	---	22.0	---	---	---
13	18.0	11.0	7.0	0.0	5.0	---	---	---	---	---	30.0	---
14	---	---	4.0	0.0	4.0	---	---	---	19.0	---	---	---
15	---	11.0	3.0	0.0	4.0	---	---	---	21.0	---	30.0	---
16	16.0	9.0	3.0	0.0	3.0	---	---	14.0	---	---	---	---
17	---	9.0	3.0	0.0	4.0	---	---	11.0	23.0	---	27.0	---
18	15.0	9.0	4.0	0.0	4.0	---	---	---	24.0	---	---	---
19	14.0	---	4.0	0.0	4.0	---	---	---	26.0	---	---	17.0
20	16.0	6.0	---	0.0	3.0	---	---	---	---	---	---	---
21	14.0	7.0	---	3.0	3.0	---	---	---	---	---	---	---
22	15.0	7.0	---	---	3.0	---	---	---	22.0	---	---	---
23	16.0	---	3.0	3.0	3.0	---	---	---	---	---	---	---
24	14.0	6.0	4.0	3.0	3.0	---	---	14.0	24.0	---	---	20.0
25	13.0	6.0	---	3.0	---	---	---	---	---	---	---	---
26	13.0	---	---	2.0	---	---	---	---	---	---	25.0	21.0
27	12.0	5.0	---	---	---	---	---	11.0	---	---	---	---
28	13.0	4.0	1.0	---	---	---	---	16.0	---	---	21.0	---
29	13.0	4.0	---	4.0	---	---	---	---	---	---	---	---
30	13.0	5.0	---	5.0	---	---	---	16.0	---	---	---	---
31	13.0	---	---	6.0	---	---	---	16.0	---	---	---	---
AVERAGE	16.5	---	---	1.5	---	---	---	---	---	---	---	---

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP- PERA- TURE (C)	DISCHARGE (CFS)	CONCENT- RATION (MG/L)	LOAD TRANSPORT RATE (TONS PER DAY)	SUSPENDED SEDIMENT											METH- OD OF ANAL- YSIS
						PERCENT FINER THAN THE SIZE (IN MILLIMETERS)	INDICATED										
DEC 22 1967	0800		7220	20600	402000	9	18	27	40	59	72	85	99	100	--	--	SBWC
JUN 24 1968	1800		288	9660	7510	31	47	64	86	96	100	--	--	--	--	--	SBWC
AUG 10.....	1800		884	8660	20700	32	63	74	93	98	100	--	--	--	--	--	SBWC

WABASH RIVER BASIN

03340800 BIG RACCOON CREEK NEAR PINCASTLE, IND.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	3.4	8	.07	12	7	.23	17	26	1.2
2	3.4	7	.06	14	8	.30	338	3190	7510
3	3.3	6	.05	20	9	.49	1970	7730	39000
4	3.4	13	.12	61	10	1.6	799	1530	3530
5	3.7	9	.09	70	112	21	513	830	1190
6	5.1	8	.11	50	98	13	410	690	764
7	8.0	12	.26	37	59	5.9	355	429	411
8	6.3	36	.81	29	58	4.5	268	266	192
9	7.8	41	.86	24	56	3.6	210	198	112
10	6.6	34	.61	21	6	.34	298	179	170
11	5.9	33	.53	20	4	.22	640	492	650
12	5.5	32	.48	20	7	.38	1710	2930	15100
13	5.8	30	.47	19	10	.51	637	278	478
14	6.5	128	2.2	17	8	.37	493	235	313
15	7.6	152	2.9	16	18	.78	440	185	220
16	10	312	9.2	15	23	.93	295	153	122
17	42	466	49	15	11	.45	240	182	118
18	74	478	96	16	7	.39	475	243	312
19	42	458	52	15	7	.28	413	283	316
20	22	160	9.5	15	12	.49	283	208	159
21	14	82	3.1	15	14	.57	3000	13000	20400
22	11	65	1.9	16	6	.26	5690	15000	29500
23	9.2	21	.52	18	5	.24	808	1220	3070
24	8.8	8	.19	19	21	1.1	443	700	837
25	11	16	.48	20	26	1.4	338	314	287
26	12	12	.39	19	13	.67	252	227	154
27	15	7	.28	17	26	1.2	182	199	98
28	15	13	.53	15	37	1.5	150	40	16
29	13	13	.46	14	37	1.4	121	7	2.3
30	11	7	.21	15	37	1.5	110	7	2.1
31	11	6	.18	--	--	--	100	8	2.2
TOTAL	404.7	--	233.56	674	--	65.51	21998	--	574396.8

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	80	8	1.7	997	975	3660	41	8	.89
2	74	8	1.6	2590	7620	53300	43	7	.81
3	68	8	1.5	930	2830	7370	38	6	.62
4	63	22	3.7	523	1086	1530	39	5	.53
5	58	19	3.0	392	1660	1760	40	7	.76
6	55	22	3.3	306	1540	1270	42	7	.79
7	51	17	2.3	262	1070	757	40	3	.32
8	50	8	1.1	223	990	596	39	6	.63
9	52	7	.98	190	372	191	43	37	4.3
10	54	3	.44	127	38	13	46	50	6.2
11	48	2	.26	110	18	5.3	43	46	5.3
12	45	2	.24	90	20	4.9	42	36	4.1
13	47	2	.25	80	60	13	40	30	3.2
14	48	2	.26	70	86	16	39	30	3.2
15	45	2	.24	66	82	15	43	30	3.5
16	40	2	.22	61	51	8.4	105	141	40
17	35	2	.19	57	33	5.1	223	561	350
18	33	2	.18	54	52	7.6	182	467	200
19	33	2	.18	52	45	6.3	151	294	120
20	57	2	.31	50	20	2.7	204	508	280
21	329	87	115	48	13	1.7	231	609	380
22	516	145	212	46	8	.99	233	620	370
23	540	229	334	45	5	.61	193	461	240
24	284	202	155	44	4	.48	182	427	210
25	200	211	114	44	6	.71	343	134	124
26	145	158	62	43	13	1.5	267	82	59
27	131	174	62	44	17	2.0	183	85	42
28	402	141	153	44	10	1.2	137	83	31
29	820	900	2720	43	10	1.2	113	84	24
30	2180	4250	25000	--	--	--	97	78	40
31	1000	1570	4460	--	--	--	140	78	24
TOTAL	7583	--	33408.95	7631	--	70541.69	3602	--	2574.15

03340800 BIG RACCOON CREEK NEAR FINCASTLE, IND.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	267	78	56	47	68	8.6	309	336	280
2	191	76	39	45	18	2.2	330	427	386
3	187	121	67	43	23	2.7	263	292	207
4	2370	7750	55100	42	24	2.7	243	237	155
5	816	340C	8260	39	23	2.4	184	358	178
6	455	100C	1230	37	36	3.6	148	384	153
7	325	450	395	36	83	8.1	128	308	106
8	233	364	229	35	30	2.8	114	208	64
9	159	312	134	66	192	39	104	67	19
10	125	273	92	69	266	50	95	20	5.1
11	107	248	72	78	243	51	88	22	5.2
12	96	228	59	94	346	88	79	38	8.1
13	87	215	51	72	74	14	71	57	11
14	91	207	51	64	32	5.5	64	50	8.6
15	99	202	54	256	1480	2760	62	36	5.6
16	81	191	42	682	2630	5130	76	15	3.1
17	82	184	41	290	753	641	70	10	1.9
18	82	169	37	195	129	68	56	7	1.1
19	74	115	23	153	83	34	49	6	.79
20	117	205	75	144	68	26	43	15	1.7
21	136	318	117	125	57	19	38	87	8.9
22	96	166	43	107	51	15	128	971	623
23	84	52	12	1580	2780	14600	128	1000	346
24	75	18	3.6	3050	6140	50600	169	3360	2310
25	66	14	2.5	1050	165C	4680	551	6750	11800
26	60	18	2.9	694	1100	2060	394	1050	1210
27	57	26	4.0	757	920	1880	220	426	253
28	52	20	2.8	535	1420	2050	159	308	132
29	50	90	12	644	2150	2580	119	210	67
30	49	115	15	415	800	896	95	113	29
31	--	--	--	324	337	295	--	--	--
TOTAL	6769	--	66921.8	11568	--	88614.6	4577	--	18372.49

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	76	44	9.0	18	172	8.4	15	27	1.1
2	64	119	21	14	126	4.8	14	28	1.1
3	53	73	10	13	73	2.6	13	51	1.8
4	47	38	4.8	109	1150	478	12	98	3.2
5	42	34	3.9	102	823	227	12	132	4.3
6	38	50	5.1	50	224	30	12	143	4.6
7	34	63	5.8	28	48	3.6	11	145	4.3
8	31	24	5.4	24	25	1.6	11	111	3.3
9	28	52	3.9	20	24	1.3	10	35	.94
10	26	32	2.2	368	3200	6870	10	37	1.0
11	25	27	1.8	309	1480	1390	10	55	1.5
12	24	25	1.6	143	400	154	9.9	36	.96
13	23	25	1.6	84	160	36	9.8	33	.87
14	20	25	1.4	57	78	12	9.6	36	.93
15	21	25	1.4	43	45	5.2	9.4	28	.71
16	20	25	1.4	36	35	3.4	9.0	27	.66
17	18	25	1.2	91	468	272	9.6	37	.96
18	18	25	1.2	261	1730	1280	12	53	1.7
19	17	25	1.1	143	623	268	14	76	2.6
20	15	25	1.0	80	352	76	14	79	3.6
21	14	25	.94	53	299	43	12	73	2.4
22	12	25	.81	40	253	27	11	60	1.8
23	12	25	.81	31	193	16	11	44	1.3
24	11	25	.74	25	127	8.6	9.7	28	.73
25	11	25	.74	22	61	3.6	9.9	32	.66
26	11	25	.74	18	20	.97	9.7	62	1.6
27	15	100	4.0	16	7	.30	8.9	78	1.9
28	15	264	11	15	13	.53	8.4	75	1.7
29	13	215	7.5	14	19	.72	7.9	63	1.3
30	11	209	6.2	13	22	.77	7.7	55	1.1
31	15	196	7.9	13	24	.84	--	--	--
TOTAL	780	--	126.18	2253	--	11226.23	323.5	--	54.22

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)

68163.2

TOTAL LOAD FOR YEAR (TONS)

866536.18

WABASH RIVER BASIN

03341910 WABASH RIVER AT HUTSONVILLE, ILL.

LOCATION.--Lat 39°08'03", long 87°39'30", Crawford County, at intake line to Ohio River Valley Water Sanitation Commission (ORSANCO) monitor station at Central Illinois Public Service Co. in Hutsonville.

DRAINAGE AREA.--12,600 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: November 1964 to December 1965, October 1967 to September 1968.
Water temperatures: November 1964 to December 1965, October 1967 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 712 micromhos Dec. 1; minimum daily, 233 micromhos Jan. 30.
Water temperatures: Maximum, 30.0°C July 22-24, 27; minimum, 1.0°C Dec. 28 to Jan. 2, Jan. 4-12, Feb. 11-16, 20.

Period of record:

Specific conductance: Maximum daily, 784 micromhos Jan. 24, 1965; minimum daily, 233 micromhos Jan. 30, 1968.
Water temperatures: Maximum, 31.0°C Aug. 19, 1965; minimum, 1.0°C Jan. 29, 30, Feb. 2, 1965, Dec. 28-31, 1967, Jan. 1, 2, 4-12, Feb. 11-16, 20, 1968.

REMARKS.--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. Samples for iron and manganese were filtered clear when collected. Records of discharge are given for Wabash River at Riverton, Ind. (drainage area 13,100 sq mi approximately).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	IRON (PPM)	MAN- GANESE (PPM)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)
OCT.								
08...	0700	1970	.52	.25	242	12	90	26
19...	0710	2980	.24	.02	243	0	102	27
24...	0730	2520	.54	.18	248	0	83	22
NOV.								
02...	0815	2440	.10	.03	260	0	84	28
15...	0800	2790	.21	.03	274	0	93	29
27...	0800	2730	.16	.04	282	0	95	27
DEC.								
01...	0820	2690	.16	.10	270	0	106	32
12...	0800	22600	.43	.08	168	0	69	16
23...	0830	43200	--	--	90	0	35	6.5
JAN.								
08...	0800	9560	.80	.04	240	0	85	18
21...	0800	7240	.32	.10	276	0	103	21
30...	0800	30900	.96	.14	84	0	28	6.0
FEB.								
02...	0800	49600	.84	.07	106	1	37	9.0
16...	0815	38600	.64	.03	156	6	56	13
28...	0830	8300	.24	.07	258	10	93	19
MAR.								
01...	0830	7860	.44	.07	172	10	90	18
10...	0830	6640	.42	.07	278	4	99	20
20...	0800	14700	.53	.04	174	10	74	20
APR.								
04...	0800	21000	--	--	100	0	35	9.0
15...	0830	13800	.64	.07	228	0	79	16
29...	0825	7510	.15	.04	230	17	86	20
MAY.								
06...	0825	5820	.04	.03	248	0	89	19
13...	0815	7400	.21	.04	190	10	90	19
24...	0845	42400	--	--	92	0	29	8.0
JUNE								
06...	0800	23800	.20	.03	220	0	65	16
24...	0800	7560	.20	.02	256	0	81	20
27...	0800	12700	.34	.04	176	4	65	14
JULY								
14...	0800	6610	.36	.06	226	0	75	18
23...	0800	4780	.08	.06	256	0	77	20
28...	--	9460	.38	.15	191	0	66	16
AUG.								
07...	0800	24600	--	.11	116	0	30	6.0
12...	0930	10300	--	.16	228	0	63	16
30...	0800	4390	.24	.06	272	0	72	20
SEPT.								
07...	0800	3570	.06	.03	236	0	79	20
16...	0835	3050	.26	.06	212	0	81	20
25...	0800	4130	.20	.02	262	0	85	22

WABASH RIVER BASIN

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03341910 WABASH RIVER AT HUTSONVILLE, ILL.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO ₃)	TOTAL PHOS- PHORUS (PO ₄)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	pH
OCT.								
08...	.4	1.6	.90	430	288	69	637	8.4
19...	.4	2.4	.60	398	276	76	628	8.0
24...	.4	4.2	1.1	372	273	70	595	8.2
NOV.								
02...	.4	3.0	.56	412	300	86	640	7.6
15...	.4	3.6	.50	444	330	105	686	8.1
27...	.4	2.8	.47	452	344	113	705	8.2
DEC.								
01...	.4	8.0	.72	426	336	115	712	8.0
12...	.3	24	.64	306	232	94	479	7.9
23...	.2	9.2	.34	136	116	42	255	7.4
JAN.								
08...	.0	12	.33	380	300	103	614	7.5
21...	.1	7.4	.26	428	342	116	701	7.4
30...	.0	8.0	.58	128	102	33	233	7.5
FEB.								
02...	.1	14	.51	200	144	57	302	8.3
16...	.2	19	.40	280	230	92	442	8.5
28...	.2	9.4	.42	422	338	110	664	8.5
MAR.								
01...	.2	9.9	.18	360	269	111	602	8.6
10...	.2	6.7	.34	438	342	107	684	8.3
20...	.3	11	.58	342	252	92	514	8.6
APR.								
04...	.3	8.5	.63	182	129	47	281	8.2
15...	.2	12	.48	360	300	113	574	7.9
29...	.4	6.8	.44	392	324	107	644	8.7
MAY								
06...	.3	11	.43	401	310	107	614	7.6
13...	.3	8.8	.34	366	276	104	551	8.5
24...	.3	16	.40	187	120	44	263	8.0
JUNE								
06...	.3	27	.28	360	279	98	542	7.7
24...	.3	20	.36	392	313	103	610	7.9
27...	.3	17	.31	302	235	84	476	8.3
JULY								
14...	.3	10	.50	342	275	90	557	7.2
23...	.3	8.0	.50	368	303	92	611	8.2
28...	.3	8.2	.50	286	227	71	480	7.2
AUG.								
07...	.2	9.5	.64	166	136	41	274	7.6
12...	.3	12	.62	322	262	74	512	8.1
30...	.3	8.0	.63	388	306	82	612	8.0
SEPT.								
07...	.2	6.5	.46	346	276	82	575	7.7
16...	.2	5.1	.42	320	256	82	545	7.3
25...	.3	6.4	.68	388	304	89	631	7.2

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT USUALLY AT 0800)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	7.0	1.0	---	6.0	13.0	17.0	19.0	24.0	25.0	24.0
2	---	13.0	7.0	1.0	7.0	5.0	13.0	18.0	18.0	24.0	25.0	23.0
3	20.0	13.0	6.0	4.0	5.0	4.0	13.0	20.0	22.0	24.0	24.0	23.0
4	23.0	12.0	6.0	1.0	4.0	4.0	13.0	19.0	22.0	24.0	25.0	24.0
5	24.0	11.0	5.0	1.0	4.0	6.0	13.0	19.0	22.0	24.0	26.0	24.0
6	23.0	10.0	6.0	1.0	4.0	7.0	12.0	18.0	22.0	24.0	24.0	23.0
7	22.0	9.0	6.0	1.0	4.0	8.0	12.0	17.0	22.0	25.0	27.0	24.0
8	22.0	8.0	6.0	1.0	3.0	9.0	13.0	19.0	23.0	26.0	27.0	24.0
9	18.0	8.0	7.0	1.0	3.0	10.0	13.0	19.0	24.0	26.0	27.0	24.0
10	17.0	10.0	7.0	1.0	2.0	11.0	14.0	19.0	25.0	27.0	28.0	24.0
11	16.0	11.0	7.0	1.0	1.0	11.0	14.0	19.0	26.0	27.0	27.0	23.0
12	16.0	11.0	4.0	1.0	1.0	9.0	15.0	18.0	27.0	27.0	26.0	22.0
13	17.0	12.0	8.0	3.0	1.0	7.0	16.0	18.0	26.0	27.0	26.0	23.0
14	18.0	10.0	---	3.0	1.0	8.0	16.0	18.0	24.0	27.0	---	23.0
15	18.0	10.0	9.0	3.0	1.0	9.0	16.0	21.0	23.0	27.0	26.0	24.0
16	19.0	9.0	8.0	3.0	1.0	10.0	16.0	22.0	23.0	27.0	27.0	24.0
17	19.0	10.0	7.0	3.0	2.0	8.0	16.0	22.0	23.0	28.0	28.0	23.0
18	18.0	10.0	8.0	4.0	2.0	9.0	16.0	19.0	22.0	28.0	29.0	23.0
19	16.0	9.0	6.0	4.0	2.0	11.0	16.0	17.0	23.0	28.0	28.0	22.0
20	---	9.0	6.0	4.0	1.0	11.0	16.0	18.0	23.0	29.0	28.0	21.0
21	18.0	11.0	---	6.0	2.0	9.0	17.0	17.0	24.0	29.0	28.0	22.0
22	18.0	8.0	10.0	4.0	2.0	11.0	17.0	17.0	26.0	30.0	28.0	23.0
23	17.0	8.0	7.0	5.0	3.0	8.0	18.0	17.0	25.0	30.0	29.0	24.0
24	16.0	8.0	6.0	3.0	4.0	8.0	18.0	16.0	27.0	30.0	29.0	24.0
25	16.0	7.0	4.0	3.0	4.0	7.0	18.0	16.0	27.0	28.0	28.0	23.0
26	13.0	8.0	2.0	3.0	4.0	8.0	16.0	16.0	26.0	28.0	29.0	22.0
27	14.0	7.0	---	3.0	---	10.0	16.0	16.0	24.0	30.0	27.0	22.0
28	13.0	6.0	1.0	3.0	6.0	11.0	16.0	16.0	23.0	27.0	26.0	22.0
29	13.0	6.0	1.0	3.0	6.0	13.0	16.0	16.0	23.0	27.0	26.0	22.0
30	14.0	5.0	1.0	6.0	---	13.0	16.0	16.0	23.0	27.0	25.0	22.0
31	---	---	1.0	4.0	---	14.0	---	17.0	---	26.0	24.0	---
AVERAGE	17.5	9.5	5.5	2.5	3.0	9.0	15.0	18.0	23.5	27.0	26.5	23.0

WABASH RIVER BASIN

03351000 WHITE RIVER NEAR NORA, IND.

LOCATION.--Lat 39°54'35", long 86°06'20", Marion County, temperature recorder at gaging station on downstream side of center pier of bridge on State Highway 100, 2 miles east of Nora, 14 miles upstream from Fall Creek, and at mile 253.4.

DRAINAGE AREA.--1,219 sq mi (revised).

PERIOD OF RECORD.--Water temperatures: June 1954 to May 1960, October 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 24; minimum, freezing point Jan. 5-21, 25-27.

Period of record:

Water temperatures: Maximum, 32.0°C July 14, 1954; minimum, freezing point on many days during winter periods.

REMARKS.--Flow regulated by powerplant above station.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																																	AVER- AGE
MONTH	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			
OCTOBER																																		
MAXIMUM	13	15	16	17	17	17	17	16	16	14	13	12	12	12	13	14	14	14	13	13	12	12	11	11	12	11	10	10	9	9	10	13		
MINIMUM	13	13	15	16	17	17	16	16	14	13	12	12	12	12	13	14	13	13	12	12	11	11	11	11	10	10	9	9	9	9	10	12		
NOVEMBER																																		
MAXIMUM	10	10	10	10	9	8	7	7	7	7	8	8	8	8	7	7	6	7	7	6	6	6	6	6	6	6	6	6	6	4	3	--	7	
MINIMUM	10	10	10	9	8	7	7	6	6	7	7	8	8	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	4	3	3	--	6	
DECEMBER																																		
MAXIMUM	3	3	3	3	4	4	6	6	6	6	6	6	6	6	6	6	5	4	5	5	7	8	7	5	3	3	3	3	2	2	2	2	4	
MINIMUM	3	3	3	3	3	4	4	6	6	6	6	6	6	6	6	6	5	4	4	5	5	7	5	3	3	3	3	2	2	2	2	1	4	
JANUARY																																		
MAXIMUM	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	2	2	--	
MINIMUM	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	2	2	--	--	
FEBRUARY																																		
MAXIMUM	3	3	3	3	2	2	3	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	--	--	1	
MINIMUM	2	3	3	3	2	2	2	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	--	--	--	1	
MARCH																																		
MAXIMUM	3	3	3	3	4	4	5	6	6	6	6	6	4	3	4	5	6	6	6	7	7	7	6	5	4	6	8	9	10	11	11	5		
MINIMUM	3	3	3	3	3	4	4	5	6	6	6	6	4	3	3	3	4	5	5	6	6	7	7	6	5	4	4	6	8	9	10	11	5	
APRIL																																		
MAXIMUM	11	11	10	10	10	9	8	10	11	11	11	11	11	12	12	12	12	11	12	13	14	15	16	16	13	12	12	12	13	13	--	--	11	
MINIMUM	11	10	10	9	9	8	8	8	10	11	11	11	11	12	12	12	11	11	11	11	11	11	12	13	14	15	13	12	12	12	13	13	--	11
MAY																																		
MAXIMUM	16	16	16	16	16	15	16	16	16	16	17	17	16	17	18	19	19	19	19	18	17	17	17	17	16	15	15	15	14	14	14	15	16	
MINIMUM	14	15	16	16	15	14	15	16	16	16	16	16	16	17	18	19	19	18	17	16	16	17	17	16	15	15	14	14	14	14	14	15	16	
JUNE																																		
MAXIMUM	16	16	17	18	19	20	21	22	23	23	25	25	24	23	22	22	22	22	22	23	23	23	23	23	23	22	23	22	21	19	19	21	--	21
MINIMUM	15	15	16	17	18	19	20	21	22	23	23	24	22	22	22	22	22	21	22	23	23	22	23	23	21	21	22	21	19	18	18	--	20	
JULY																																		
MAXIMUM	22	22	22	21	21	21	21	21	22	22	22	23	23	23	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	23	22	22	22	
MINIMUM	21	22	21	21	21	21	21	21	22	22	22	23	23	23	24	24	24	24	24	24	24	24	24	24	23	23	23	23	23	22	22	22	22	
AUGUST																																		
MAXIMUM	22	22	22	22	23	24	24	24	24	24	23	22	21	22	22	23	23	23	23	24	26	26	26	26	26	26	24	22	22	22	22	22	22	23
MINIMUM	22	22	22	22	22	23	24	24	24	23	22	21	21	21	22	22	23	23	23	24	25	26	26	26	26	24	24	22	22	22	22	22	22	
SEPTEMBER																																		
MAXIMUM	22	22	22	22	22	22	21	21	21	21	21	21	19	19	20	20	21	21	21	20	19	21	22	22	22	22	20	20	20	19	--	--	20	
MINIMUM	22	21	21	22	22	22	21	21	21	21	21	19	19	19	19	20	21	21	21	20	19	19	21	22	22	22	20	20	20	19	19	--	20	

WABASH RIVER BASIN

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03365500 EAST FORK WHITE RIVER AT SEYMOUR, IND.

LOCATION.--Lat 38°58'57", long 85°53'57", Jackson County, at gaging station on left bank 1,700 ft downstream from highway bridge, 1 mile north of Seymour, 9.6 miles downstream from Sand Creek and at mile 219.2.

DRAINAGE AREA.--2,341 sq mi (revised).

PERIOD OF RECORD.--Water temperatures: October 1954 to September 1968.
Sediment records: July 1966 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C July 21-25, Aug. 21-25; minimum, freezing point Jan. 7-12, 26.
Sediment concentrations: Maximum daily, 1,200 mg/l May 25, June 25, 1968; minimum daily, 9 mg/l Oct. 6, Nov. 13, Mar. 1, 2.
Sediment loads: Maximum daily, 179,000 tons May 25; minimum daily, 5 tons Oct. 6.

Period of record:

Water temperatures: Maximum, 31.0°C July 13, 14, 1966; minimum, freezing point on many days during winter periods. Maximum temperature known, 32.0°C July 19, 1954.
Sediment concentrations: Maximum daily, 1,200 mg/l May 25, June 25, 1968; minimum daily, 4 mg/l Nov. 5, 1966.
Sediment loads: Maximum daily, 179,000 tons May 25, 1968; minimum daily, 3 tons Nov. 5, 1966.

REMARKS.--Regulation at low flow by pumping plant 1,200 ft upstream from recorder. Sediment samples collected at highway bridge, 1,700 ft upstream from gaging station. Intermittent operation of dredge upstream is believed to affect low-water loads. Sediment loads were computed from subdivided days on Dec. 2, 3, 22, 23, Jan. 30, Apr. 4, May 11, 16, 17, 23, June 16, 24, July 25.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY

		DAY																															AVER- AGE		
MONTH		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			
OCTOBER																																			
MAXIMUM		16	17	18	19	20	19	18	17	16	15	13	12	12	13	14	14	14	14	13	12	12	12	12	13	13	12	11	10	9	10	11	13		
MINIMUM		14	16	17	18	19	18	17	16	15	13	12	12	12	12	13	14	14	14	13	12	12	12	12	12	12	11	10	9	9	9	10			
NOVEMBER																																			
MAXIMUM		11	11	11	11	9	7	7	6	6	6	7	8	9	9	8	7	7	7	7	7	7	7	7	7	6	6	6	7	6	5	4	--	7	
MINIMUM		11	11	11	9	7	7	7	6	6	6	6	7	8	8	7	7	6	6	7	7	7	7	7	7	6	6	6	6	5	4	4	--	6	
DECEMBER																																			
MAXIMUM		4	4	5	4	5	6	7	7	7	7	7	7	7	7	7	6	5	6	6	7	8	8	5	4	3	3	2	2	2	2	2	5		
MINIMUM		4	4	4	4	4	4	5	6	7	7	7	7	7	7	7	6	4	4	5	6	6	6	5	4	3	3	2	2	2	2	2	4		
JANUARY																																			
MAXIMUM		2	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	2	3	3	3	1	
MINIMUM		1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	1	1	1	0	1	1	2	3	3	1
FEBRUARY																																			
MAXIMUM		5	5	5	4	4	3	3	3	3	3	3	2	2	1	1	2	2	2	2	2	2	2	2	1	1	2	2	3	3	3	--	--	2	
MINIMUM		3	5	4	4	3	3	3	3	3	3	2	2	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	2	2	3	3	--	2	
MARCH																																			
MAXIMUM		3	3	3	3	4	5	5	6	7	7	7	7	6	5	5	7	8	8	9	10	10	9	7	6	6	7	9	11	12	13	13	7		
MINIMUM		3	3	3	3	3	4	4	5	6	7	7	7	6	4	4	5	5	7	8	8	9	9	7	6	5	5	6	7	9	11	12	13	6	
APRIL																																			
MAXIMUM		13	12	11	12	12	10	9	9	11	12	12	12	13	14	14	13	13	13	13	14	16	17	17	18	17	16	14	14	15	16	16	--	13	
MINIMUM		12	11	11	11	10	9	9	9	11	12	12	12	13	13	13	13	13	12	13	14	15	16	17	17	16	14	14	13	14	15	14	--	12	
MAY																																			
MAXIMUM		17	18	18	18	17	16	16	16	16	16	16	15	15	17	18	19	19	17	17	16	14	14	15	15	16	16	16	16	16	14	15	15	16	
MINIMUM		16	17	17	17	16	15	16	16	16	16	15	14	14	15	17	18	17	17	16	14	14	14	14	14	16	16	16	16	16	14	14	14	15	
JUNE																																			
MAXIMUM		16	17	18	19	19	20	21	21	22	23	23	23	23	22	21	21	21	21	21	21	22	22	22	22	22	22	22	22	20	21	22	--	21	
MINIMUM		15	16	17	18	19	19	20	21	21	22	23	23	23	21	21	21	21	21	21	21	21	21	21	21	21	22	22	22	20	19	19	21	--	20
JULY																																			
MAXIMUM		23	23	23	22	22	22	22	22	23	23	24	24	24	24	24	25	26	26	27	27	27	27	27	27	27	27	27	26	24	24	23	24	24	
MINIMUM		22	23	22	22	21	21	22	22	22	22	23	23	24	24	24	24	24	24	24	24	25	25	25	26	26	27	27	27	26	24	24	24	23	23
AUGUST																																			
MAXIMUM		22	22	22	22	23	24	24	24	24	24	24	23	22	22	22	22	22	22	22	24	25	25	26	26	27	27	27	27	26	24	22	22	22	23
MINIMUM		22	22	22	22	22	23	24	24	24	24	24	23	22	22	22	22	22	22	22	24	25	25	26	26	27	27	27	26	24	22	22	21	21	23
SEPTEMBER																																			
MAXIMUM		22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	20	19	19	--	21	
MINIMUM		22	21	22	22	22	21	21	21	22	20	19	19	19	20	20	21	21	21	21	21	20	20	21	22	22	22	22	22	20	19	19	19	--	20

WABASH RIVER BASIN

03365500 EAST FORK WHITE RIVER AT SEYMOUR, IND.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	211	15	9	326	14	12	659	45	80
2	212	15	9	338	14	13	940	112	460
3	213	15	9	360	16	16	5080	775	11000
4	211	14	8	450	16	19	6220	265	4450
5	215	12	7	483	10	13	5980	144	2330
6	230	9	5	473	10	13	4680	93	1180
7	221	10	6	466	14	18	3560	68	654
8	236	12	8	440	11	13	2980	56	451
9	254	15	10	417	11	12	2580	48	334
10	255	16	11	396	15	16	2280	46	283
11	254	18	12	397	13	14	3150	84	714
12	257	18	12	395	10	11	5230	148	2090
13	254	17	12	375	9	9	6490	152	2660
14	260	15	11	380	15	15	5990	100	1620
15	250	14	9	371	20	20	5420	80	1170
16	249	13	9	367	22	22	4750	56	718
17	291	14	11	367	23	23	3900	40	421
18	317	14	12	363	26	25	3960	67	716
19	315	15	13	358	30	29	4410	67	798
20	344	16	15	358	34	33	4030	62	675
21	342	16	15	370	40	40	3600	86	836
22	313	17	14	374	46	46	7130	443	9590
23	296	17	14	372	52	52	11200	486	14500
24	298	16	13	370	53	53	9380	213	5390
25	311	16	13	377	55	56	6110	132	2180
26	292	15	12	378	56	57	4510	75	913
27	296	15	12	380	56	57	3870	83	867
28	309	14	12	378	57	58	3210	84	728
29	300	13	11	371	56	56	2740	75	555
30	295	12	10	486	54	71	2410	86	560
31	306	13	11	--	--	--	2190	90	532
TOTAL	8397	--	335	11736	--	892	138639	--	69455
DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1920	78	404	15500	198	8290	1160	9	28
2	1700	70	321	17800	152	7300	1140	9	28
3	1690	60	274	21100	193	11000	1120	10	30
4	1640	68	301	21500	250	14500	1080	21	61
5	1400	71	268	19800	136	7270	1060	20	57
6	1370	71	263	12200	86	2830	1050	34	96
7	1320	60	214	7160	76	1470	1040	40	112
8	1130	49	150	5610	59	894	1040	30	84
9	1180	41	130	4660	42	528	1020	28	77
10	1200	37	120	3930	33	350	1020	27	74
11	1160	32	100	3270	37	327	1040	24	67
12	1130	26	80	2800	24	181	1080	33	96
13	1120	25	76	2550	32	220	1100	35	104
14	1100	15	45	2340	26	164	1060	36	103
15	1090	11	32	2150	20	116	1060	32	92
16	1070	28	81	2020	30	164	1240	32	107
17	995	33	89	1910	24	124	1770	32	153
18	984	67	178	1760	25	119	2130	32	184
19	984	37	98	1610	20	87	2150	28	163
20	965	52	135	1420	21	81	2100	57	323
21	978	33	87	1280	15	52	3020	174	1420
22	1530	58	240	1300	21	74	4120	67	745
23	2380	53	341	1380	24	89	4150	57	639
24	2600	52	365	1350	12	44	3920	58	614
25	2320	48	301	1320	18	64	5450	229	3370
26	2010	21	114	1260	20	68	6470	118	2060
27	1800	18	87	1240	12	40	6370	82	1410
28	1640	15	66	1220	11	36	5380	65	944
29	2140	50	289	1200	12	39	4180	58	655
30	5000	295	4400	--	--	--	3700	107	1070
31	12100	298	9740	--	--	--	3510	80	758
TOTAL	59646	--	17389	162640	--	56521	75730	--	15724

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SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	5400	258	3760	1210	81	265	8790	98	2330
2	4690	120	1520	1160	57	179	8000	130	2810
3	4780	118	1520	1120	40	121	7320	134	2650
4	6650	483	9580	1080	52	152	6490	108	1890
5	12100	400	13100	1030	47	131	5730	94	1450
6	10700	240	6930	985	76	202	4630	95	1190
7	9820	122	3230	949	46	118	3840	102	1060
8	5760	89	1620	924	55	132	3300	96	855
9	4920	90	1200	1080	54	157	2880	92	715
10	3840	92	954	1250	55	186	2540	107	734
11	3190	85	732	1950	125	750	2290	112	629
12	2780	84	648	1600	140	650	4090	84	474
13	2470	55	367	5360	145	2100	1890	86	439
14	2290	90	556	3800	132	1350	1710	97	448
15	2710	108	790	2880	136	1060	1590	80	343
16	2790	93	701	2870	190	1500	1780	113	699
17	2480	81	542	5110	469	6670	4170	496	5580
18	2270	57	349	4610	214	2660	3720	382	3840
19	2130	47	270	3950	106	1130	2630	306	2170
20	2150	38	221	3240	94	822	2110	153	872
21	2650	76	544	2720	78	573	1790	128	619
22	2400	77	499	2380	112	720	1580	102	435
23	2070	82	458	3480	153	1700	1490	160	644
24	1850	85	425	28300	781	59700	2420	354	3000
25	1680	103	467	55200	1200	179000	6080	1200	19700
26	1550	99	414	44500	871	105000	5800	600	9400
27	1470	76	302	32600	355	31200	4430	278	3330
28	1390	67	251	25400	248	17000	3260	211	1860
29	1320	77	274	18700	162	8180	2530	176	1200
30	1250	63	213	15500	88	5360	2090	157	886
31	--	--	--	11400	107	3290	--	--	--
TOTAL	112550	--	52277	290758	--	437978	108970	--	72315
	JULY			AUGUST			SEPTEMBER		
1	1790	152	735	2300	239	1480	731	66	130
2	1580	164	700	7820	504	10600	728	62	122
3	1430	158	610	10600	130	3720	709	58	111
4	1220	148	527	5320	122	1720	695	62	116
5	1230	145	482	3650	165	1630	690	62	116
6	1150	142	460	2850	122	939	674	55	100
7	1090	118	330	2410	122	799	658	62	110
8	1050	73	207	2490	107	807	637	82	99
9	1020	71	196	2400	160	1040	621	41	69
10	987	60	160	2680	173	1250	597	46	74
11	1000	67	181	3990	135	1450	585	44	69
12	982	73	194	5110	191	2640	569	51	78
13	944	64	163	4520	112	1370	553	52	78
14	996	84	226	2960	114	911	545	31	46
15	898	103	250	2410	112	729	529	31	44
16	943	82	209	2070	112	626	521	33	46
17	957	77	199	1870	105	530	513	30	42
18	866	90	210	1910	142	732	509	30	41
19	1100	105	312	1800	175	850	525	29	41
20	1400	208	786	1580	107	456	529	38	54
21	1530	171	706	1410	74	282	533	28	40
22	1290	123	428	1280	63	218	529	30	43
23	1220	156	514	1180	52	166	525	45	64
24	2140	188	1090	1090	50	147	505	46	63
25	2240	222	1490	1040	43	121	497	43	58
26	7810	1150	24200	975	48	126	489	43	57
27	8200	459	10200	914	53	131	481	53	69
28	5150	225	3130	857	62	143	481	65	84
29	3430	172	1500	815	64	141	473	60	72
30	2430	150	984	778	61	128	461	50	62
31	1920	170	881	752	58	118	--	--	--
TOTAL	60093	--	52260	81831	--	35930	17092	--	21930
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)									1128082
TOTAL LOAD FOR YEAR (TONS)									835002

TRADEWATER RIVER BASIN

03383000 TRADEWATER RIVER AT OLNEY, KY.

LOCATION.--Lat 37°13'26", long 87°46'53", Hopkins County, at gaging station at highway bridge at Olney, 1.1 miles upstream from Cave Creek, 5.1 miles downstream from Flynn Creek and 9.5 miles northeast of Princeton.

DRAINAGE AREA.--255 sq mi, of which about 9.0 sq mi does not contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: October 1949 to August 1950, October 1951 to September 1968.

Water temperatures: October 1951 to September 1968.

Sediment records: October 1952 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum, 1,650 micromhos Oct. 23, 24; minimum daily, 114 micromhos Mar. 22.

Water temperatures: Maximum, 28.0°C Aug. 22-24; minimum, freezing point on many days during January and February.

Sediment concentrations: Maximum daily, 377 mg/l Mar. 21; minimum daily, 0 mg/l Sept. 8-10, 28-30.

Sediment loads: Maximum daily, 1,710 tons Mar. 21; minimum daily, 0 tons Aug. 26 to Sept. 4, Sept. 8-10, 28-30.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	OIS- CHARGE (CFS)	DIS- SOLVED ALUM- INIUM (AL)	DIS- SOLVED IRON (FE)	DISS- OLVED MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
OCT.								
19...	91	5.2	.02	13	2	0	578	6.0
24...	11	19	.31	21	0	0	952	5.0
NOV.								
04...	29	13	.18	15	0	0	640	5.0
22...	35	.5	.01	.47	2	0	99	3.0
DEC.								
01...	676	1.7	.01	5.3	2	0	237	4.0
12...	1060	.3	.08	.02	30	0	37	2.0
JAN.								
07...	93	.1	.01	4.7	8	0	229	4.0
24...	943	0	.01	.47	15	0	80	6.0
FEB.								
04...	1810	.2	.62	.01	14	0	43	1.0
26...	49	.1	.02	5.8	4	0	288	3.0
MAR.								
07...	40	.9	0	5.8	3	0	306	7.0
22...	1950	.4	.15	.01	20	0	32	3.0
APR.								
05...	2220	.2	.09	0	20	0	51	2.5
28...	147	.1	0	3.2	8	0	233	5.0
MAY								
19...	90	.1	0	5.0	8	0	320	5.0
15...	1310	.1	.02	0	20	0	69	3.0
JUNE								
03...	846	.1	.03	.02	14	0	97	2.5
30...	9.5	.1	.04	5.5	12	0	308	4.5
JULY								
10...	313	8.0	.08	10	0	0	614	6.0
11...	160	0	.04	.03	12	0	109	2.0
AUG.								
01...	26	.8	.02	7.2	0	0	310	5.0
11...	8.6	22	.26	15	0	0	796	6.0
SEPT.								
02...	.15	5.8	.16	11	0	0	469	4.0
22...	17	0	.01	2.0	12	0	166	4.0

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT AT APPROXIMATELY 0700)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	1040	1010	506	390	300	541	229	549	350	653	659	886
2.....	1060	1040	243	410	180	566	186	551	--	640	762	888
3.....	1050	1070	268	439	130	564	191	554	252	645	1050	878
4.....	1060	1170	150	453	134	585	212	--	281	662	1130	866
5.....	1070	809	169	454	154	631	156	562	314	667	1200	844
6.....	1080	714	218	471	189	629	163	600	314	670	1140	773
7.....	1070	700	272	511	238	636	166	602	338	678	1190	664
8.....	1090	770	260	460	227	590	170	624	344	681	1270	643
9.....	1090	774	254	440	256	556	212	604	364	696	1330	615
10.....	1110	827	304	450	295	599	274	662	375	1120	1360	574
11.....	1120	910	274	460	321	598	282	629	388	269	1360	542
12.....	1120	1040	138	460	345	538	298	672	415	284	1360	499
13.....	1140	700	235	420	366	351	330	273	434	293	1340	472
14.....	1140	714	281	440	377	174	382	237	446	326	1200	449
15.....	1150	846	258	460	386	309	388	198	439	355	1140	436
16.....	1140	750	276	440	408	274	392	279	454	384	1070	424
17.....	1130	597	264	450	395	272	345	214	462	398	1080	413
18.....	1230	560	217	440	408	294	256	267	484	402	1180	406
19.....	966	587	144	430	466	309	184	259	516	401	1180	402
20.....	1030	617	178	410	492	307	239	290	506	403	1200	404
21.....	1060	597	266	390	502	137	298	305	529	401	1360	407
22.....	1350	251	219	376	521	114	288	313	561	407	1240	398
23.....	1570	587	183	249	520	136	--	336	575	416	1090	400
24.....	1610	597	240	238	497	148	327	375	602	440	1000	582
25.....	1550	597	255	249	532	167	355	387	612	452	1030	726
26.....	1580	628	270	274	605	191	423	391	615	464	958	745
27.....	1270	587	297	277	589	193	407	402	622	547	954	748
28.....	992	674	320	302	532	192	507	305	626	591	937	729
29.....	1130	674	335	332	554	204	464	402	629	447	932	728
30.....	1050	674	342	329	--	262	--	330	634	515	927	722
31.....	1010	--	369	280	--	261	--	336	--	724	920	--
AVERAGE	1160	735	259	393	376	365	290	407	464	510	1110	609

TRADEWATER RIVER BASIN

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03383000 TRADEWATER RIVER AT OLNEY, KY.--Continued

Period of record:

Specific conductance: Maximum daily, 2,480 micromhos Dec. 3, 1965; minimum daily, 51 micromhos Mar. 23, 1952.
 Water temperatures: Maximum, 30.5°C July 28, 29, 1952; minimum, freezing point on many days during winter periods.

Sediment concentrations (1952-68): Maximum daily, 764 mg/l June 5, 1954; minimum daily, no flow on many days during 1952-57, 1960, 1963-64, 1966.

Sediment loads (1952-68): Maximum daily, 5,100 tons Mar. 10, 1964; minimum daily, 0 tons on many days during 1952-58, 1960-61, 1963-64, 1966, 1968.

REMARKS.--Values reported for iron and manganese are in solution when analyzed. Total acidity values determined to pH 7.0. 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, and (2) minimum daily specific conductance for each month. A conductance monitor was in operation at this location from July 14, 1966 to February 16, 1968 and the data from this monitor are included with the records for this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	DIS- SOLVED SOLIDS (PESI- DUCE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	TOTAL ACIDITY AS H+	SPECI- FIC CON- DUCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
OCT.								
19...	1.1	822	504	502	--	966	4.6	13
24...	.4	1440	824	824	3.0	1617	3.7	13
NOV.								
04...	.2	984	560	560	2.2	1170	3.7	10
22...	1.2	182	96	94	--	251	4.7	7
DEC.								
01...	1.6	390	230	228	--	506	4.8	4
12...	1.2	100	56	31	--	138	6.6	9
JAN.								
07...	1.4	336	239	232	--	511	6.9	0
24...	1.5	156	92	80	--	238	7.3	1
FEB.								
04...	1.2	68	52	41	--	134	7.2	7
24...	.5	430	294	291	--	605	6.4	1
MAR.								
07...	.2	472	298	295	.2	636	5.0	4
22...	2.0	88	44	28	--	114	7.2	4
APR.								
05...	1.1	108	62	46	--	156	7.3	14
28...	.7	362	238	232	.1	507	6.2	16
MAY								
10...	.8	504	330	323	--	662	7.3	17
15...	1.1	134	81	64	--	198	7.2	19
JUNE								
03...	1.2	158	106	94	.1	252	6.8	19
30...	.3	452	315	305	.1	634	6.4	23
JULY								
10...	1.2	890	575	575	1.0	1120	4.1	22
11...	.4	164	114	104	--	269	7.6	21
AUG.								
01...	.6	450	300	300	.2	659	4.4	26
11...	.4	1160	650	650	2.5	1360	3.8	26
SEPT.								
02...	.6	670	445	445	.8	888	4.0	21
22...	.2	248	170	160	--	398	7.5	19

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), OCTOBER 1967 TO FEBRUARY 1968

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
1.....	1090	1040	1080	1010	540	300	390	330	320	240	--	--
2.....	1100	1050	1090	1040	300	240	410	350	260	130	--	--
3.....	1100	1050	1130	1070	280	130	440	360	130	110	--	--
4.....	1120	1060	1200	930	170	130	450	400	150	130	--	--
5.....	1120	1070	930	750	190	170	450	400	170	150	--	--
6.....	1120	1080	750	710	260	190	470	420	220	170	--	--
7.....	1130	1070	760	700	270	260	510	420	240	220	--	--
8.....	1140	1090	780	760	280	260	460	450	240	230	--	--
9.....	1150	1090	800	770	300	280	450	430	270	240	--	--
10.....	1150	1110	880	800	300	280	460	430	310	270	--	--
11.....	1160	1120	940	850	330	180	470	460	320	300	--	--
12.....	1170	1120	1120	780	200	140	470	460	350	320	--	--
13.....	1180	1140	800	670	270	200	460	410	370	350	--	--
14.....	1180	1140	800	710	280	270	460	410	380	360	--	--
15.....	1190	1150	950	800	270	260	460	450	390	360	--	--
16.....	1200	1140	950	620	280	260	450	440	410	360	--	--
17.....	1200	1110	620	560	260	240	460	440	--	--	--	--
18.....	1200	1160	560	560	240	210	460	440	--	--	--	--
19.....	1160	960	590	560	210	140	440	420	--	--	--	--
20.....	1100	990	620	580	250	150	420	390	--	--	--	--
21.....	1300	1000	600	600	270	230	390	380	--	--	--	--
22.....	1550	1300	600	250	230	210	380	240	--	--	--	--
23.....	1650	1500	600	590	210	180	250	190	--	--	--	--
24.....	1650	1600	600	600	250	210	240	200	--	--	--	--
25.....	1600	1550	610	600	260	250	250	220	--	--	--	--
26.....	1600	1550	560	610	270	250	270	230	--	--	--	--
27.....	1550	770	670	590	300	270	310	270	--	--	--	--
28.....	1160	770	670	670	320	300	330	300	--	--	--	--
29.....	1160	1120	670	670	340	310	330	320	--	--	--	--
30.....	1120	1050	670	230	340	310	330	310	--	--	--	--
31.....	1080	1010	--	--	370	340	310	280	--	--	--	--
AVERAGE	1250	1130	792	688	278	230	400	362	--	--	--	--

TRADEWATER RIVER BASIN

03383000 TRADEWATER RIVER AT OLNEY, KY.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENT AT APPROXIMATELY 0700 AND 1700)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	14.0	15.0	12.0	12.0	4.0	5.0	1.0	1.0	7.0	9.0	1.0	2.0
2	15.0	15.0	12.0	12.0	6.0	4.0	1.0	1.0	8.0	9.0	2.0	3.0
3	14.0	15.0	12.0	12.0	7.0	7.0	1.0	1.0	7.0	8.0	2.0	3.0
4	14.0	16.0	10.0	10.0	4.0	6.0	0.0	1.0	7.0	7.0	1.0	2.0
5	15.0	17.0	8.0	8.0	6.0	6.0	0.0	0.0	6.0	7.0	3.0	4.0
6	16.0	16.0	7.0	8.0	7.0	7.0	0.0	0.0	6.0	6.0	4.0	4.0
7	16.0	17.0	6.0	7.0	7.0	8.0	0.0	0.0	6.0	5.0	4.0	4.0
8	16.0	17.0	6.0	6.0	7.0	7.0	0.0	---	4.0	4.0	4.0	5.0
9	16.0	16.0	6.0	7.0	7.0	8.0	0.0	---	3.0	3.0	7.0	7.0
10	14.0	14.0	6.0	7.0	8.0	8.0	0.0	---	3.0	3.0	8.0	8.0
11	14.0	14.0	7.0	9.0	9.0	9.0	0.0	---	2.0	1.0	7.0	8.0
12	13.0	13.0	9.0	10.0	9.0	10.0	0.0	---	1.0	1.0	7.0	4.0
13	13.0	14.0	9.0	9.0	9.0	11.0	0.0	---	1.0	1.0	4.0	5.0
14	13.0	14.0	8.0	8.0	9.0	9.0	0.0	---	1.0	1.0	4.0	5.0
15	14.0	15.0	7.0	8.0	8.0	8.0	0.0	---	0.0	2.0	4.0	6.0
16	14.0	14.0	7.0	7.0	6.0	6.0	0.0	---	1.0	2.0	6.0	7.0
17	14.0	15.0	7.0	8.0	6.0	6.0	0.0	---	1.0	2.0	7.0	8.0
18	13.0	14.0	8.0	8.0	7.0	8.0	0.0	---	1.0	1.0	8.0	9.0
19	13.0	14.0	7.0	8.0	7.0	8.0	0.0	---	0.0	1.0	9.0	9.0
20	13.0	14.0	7.0	7.0	8.0	8.0	0.0	---	1.0	1.0	11.0	12.0
21	12.0	13.0	7.0	7.0	9.0	10.0	0.0	1.0	1.0	1.0	8.0	7.0
22	11.0	12.0	7.0	8.0	9.0	9.0	0.0	1.0	0.0	1.0	4.0	4.0
23	11.0	12.0	7.0	7.0	7.0	7.0	2.0	2.0	1.0	1.0	2.0	3.0
24	13.0	13.0	7.0	7.0	5.0	5.0	1.0	2.0	0.0	1.0	3.0	5.0
25	12.0	12.0	6.0	7.0	4.0	5.0	1.0	1.0	1.0	1.0	4.0	7.0
26	11.0	12.0	6.0	7.0	4.0	4.0	1.0	2.0	1.0	1.0	7.0	9.0
27	11.0	12.0	6.0	7.0	2.0	1.0	2.0	3.0	1.0	1.0	8.0	11.0
28	10.0	11.0	4.0	5.0	1.0	1.0	4.0	5.0	1.0	1.0	11.0	12.0
29	11.0	12.0	4.0	4.0	1.0	1.0	5.0	6.0	1.0	2.0	13.0	14.0
30	11.0	12.0	5.0	4.0	1.0	1.0	6.0	7.0	---	---	14.0	16.0
31	12.0	13.0	---	---	1.0	1.0	4.0	6.0	---	---	16.0	16.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	13.0	13.0	17.0	18.0	18.0	19.0	24.0	26.0	26.0	26.0	21.0	22.0
2	12.0	12.0	18.0	19.0	18.0	19.0	23.0	24.0	23.0	24.0	21.0	22.0
3	12.0	13.0	18.0	19.0	19.0	21.0	23.0	24.0	24.0	26.0	21.0	22.0
4	13.0	14.0	19.0	19.0	20.0	21.0	22.0	23.0	24.0	26.0	22.0	22.0
5	14.0	12.0	17.0	18.0	21.0	21.0	22.0	23.0	25.0	26.0	22.0	22.0
6	11.0	12.0	16.0	17.0	21.0	22.0	22.0	23.0	26.0	27.0	21.0	22.0
7	11.0	12.0	16.0	17.0	21.0	22.0	23.0	22.0	26.0	27.0	21.0	22.0
8	12.0	12.0	16.0	17.0	22.0	23.0	22.0	23.0	26.0	27.0	21.0	22.0
9	12.0	13.0	17.0	17.0	24.0	24.0	22.0	23.0	26.0	27.0	21.0	21.0
10	13.0	13.0	17.0	17.0	23.0	24.0	22.0	21.0	27.0	27.0	21.0	21.0
11	13.0	14.0	17.0	17.0	24.0	25.0	21.0	22.0	26.0	26.0	19.0	20.0
12	13.0	14.0	17.0	17.0	24.0	25.0	22.0	22.0	24.0	26.0	19.0	19.0
13	14.0	15.0	17.0	18.0	23.0	24.0	22.0	23.0	24.0	26.0	18.0	19.0
14	14.0	15.0	19.0	18.0	24.0	24.0	23.0	24.0	24.0	25.0	18.0	19.0
15	13.0	14.0	19.0	20.0	23.0	24.0	24.0	24.0	24.0	25.0	18.0	19.0
16	13.0	14.0	21.0	20.0	23.0	24.0	24.0	25.0	24.0	26.0	19.0	19.0
17	13.0	14.0	20.0	19.0	22.0	23.0	24.0	26.0	26.0	27.0	19.0	20.0
18	14.0	16.0	18.0	18.0	22.0	24.0	25.0	26.0	26.0	26.0	19.0	20.0
19	16.0	16.0	17.0	17.0	23.0	24.0	25.0	26.0	26.0	27.0	19.0	19.0
20	16.0	17.0	16.0	17.0	23.0	24.0	26.0	26.0	26.0	27.0	19.0	21.0
21	17.0	17.0	16.0	16.0	23.0	24.0	26.0	27.0	27.0	27.0	19.0	21.0
22	17.0	18.0	16.0	16.0	23.0	24.0	26.0	27.0	27.0	28.0	19.0	21.0
23	17.0	18.0	16.0	17.0	24.0	26.0	26.0	27.0	27.0	28.0	19.0	21.0
24	18.0	18.0	18.0	18.0	24.0	25.0	26.0	27.0	27.0	28.0	19.0	21.0
25	14.0	16.0	17.0	18.0	25.0	26.0	26.0	27.0	27.0	27.0	19.0	20.0
26	15.0	16.0	18.0	19.0	24.0	24.0	26.0	26.0	26.0	26.0	19.0	19.0
27	14.0	16.0	18.0	19.0	23.0	23.0	25.0	26.0	22.0	23.0	18.0	19.0
28	16.0	16.0	18.0	18.0	21.0	23.0	25.0	26.0	22.0	22.0	18.0	19.0
29	15.0	16.0	17.0	18.0	22.0	24.0	25.0	25.0	22.0	23.0	18.0	19.0
30	16.0	17.0	17.0	18.0	23.0	24.0	24.0	25.0	22.0	23.0	18.0	19.0
31	---	---	17.0	17.0	---	---	24.0	26.0	21.0	22.0	---	---

TRADEWATER RIVER BASIN

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03383000 TRADEWATER RIVER AT OLNEY, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	2.7	3	.02	14	5	.27	676	47	86
2	3.0	5	.04	17	5	.23	1010	46	123
3	2.2	5	.03	22	5	.30	1360	88	312
4	2.5	6	.04	29	5	.30	1420	67	257
5	2.0	7	.04	30	6	.40	1400	52	197
6	3.1	7	.06	31	5	.42	1430	27	104
7	2.2	7	.04	29	5	.39	1250	15	51
8	1.8	8	.04	26	5	.35	896	15	36
9	1.8	8	.04	26	6	.32	547	13	19
10	1.7	9	.04	22	5	.30	507	15	21
11	2.6	9	.06	23	6	.53	874	54	127
12	3.4	9	.08	26	7	1.46	1060	77	220
13	3.9	9	.09	150	7	2.8	1060	30	96
14	5.0	8	.11	143	6	2.3	998	24	66
15	4.8	8	.10	101	6	1.6	910	21	52
16	5.3	7	.10	74	6	1.2	840	22	50
17	47	7	.89	50	6	.96	767	25	52
18	104	7	2.0	53	5	.72	1240	51	171
19	91	7	1.7	52	5	.70	1340	42	152
20	52	8	1.1	43	5	.58	1270	24	82
21	28	8	.60	38	4	.41	1260	24	82
22	18	7	.34	35	4	.38	1380	47	175
23	13	7	.25	34	4	.37	1350	48	176
24	11	8	.24	35	4	.38	1130	30	119
25	13	9	.32	35	5	.49	858	24	56
26	32	10	.96	33	5	.45	585	17	27
27	57	9	1.4	29	5	.39	420	17	10
28	50	7	.94	24	10	.70	295	10	8.0
29	31	6	.50	24	30	1.9	214	7	6.0
30	22	6	.30	226	44	27	175	7	3.3
31	18	5	.24	--	--	--	153	7	2.0
TOTAL	635.0	--	12.61	1554	--	48.78	28675	--	2934.2

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS)
1	137	7	2.6	637	45	77	50	2	.27
2	122	7	2.3	1440	178	692	47	2	.25
3	122	7	2.3	1710	104	680	45	2	.24
4	119	7	2.2	1810	64	313	44	1	.12
5	102	7	1.9	2010	47	255	42	1	.11
6	102	7	1.9	1970	22	117	41	1	.11
7	93	7	1.8	1580	11	47	40	1	.11
8	89	6	1.4	1090	10	29	38	1	.10
9	83	6	1.3	657	8	14	37	1	.10
10	79	6	1.2	476	6	5.7	47	3	.39
11	80	6	1.3	277	5	3.7	73	8	1.7
12	78	6	1.3	187	5	2.5	554	146	242
13	79	6	1.3	145	5	2.0	926	210	547
14	88	6	1.4	127	5	1.7	978	125	320
15	100	6	1.4	113	5	1.6	971	34	80
16	103	5	1.4	110	5	1.5	694	22	41
17	106	5	1.4	103	6	1.4	498	17	23
18	104	6	1.7	95	4	1.0	401	5	6.4
19	114	6	2.9	84	6	.91	308	3	2.5
20	157	15	6.8	78	4	.84	412	122	136
21	311	25	21	76	4	.82	1680	377	1710
22	682	55	98	70	4	.75	1950	118	621
23	914	66	163	150	3	.49	2060	63	350
24	943	36	92	57	3	.45	2300	44	273
25	713	22	42	53	3	.43	2420	20	131
26	401	18	21	49	3	.40	2470	11	72
27	386	11	11	60	3	.40	2270	10	41
28	325	9	7.9	47	3	.40	2060	8	44
29	304	7	5.7	51	2	.28	1900	7	34
30	354	27	26	--	--	--	1680	5	23
31	548	48	71	--	--	--	1500	10	40
TOTAL	8023	--	601.4	15156	--	2051.29	28536	--	4781.30

TRADEWATER RIVER BASIN

03383000 TRADEWATER RIVER AT OLNEY, KY.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

APRIL				MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	1520	29	119	95	6	1.5	130	5	1.8
2	1510	32	130	83	6	1.3	311	41	40
3	1470	25	99	76	6	1.2	846	76	174
4	2080	47	264	59	6	1.1	700	21	41
5	2220	72	432	51	6	.99	458	9	11
6	2070	50	279	54	7	1.0	291	5	2.0
7	2090	42	257	57	7	.91	164	6	2.7
8	2090	28	157	41	7	.77	111	8	2.4
9	1850	14	70	52	7	.98	90	9	2.2
10	1500	8	32	90	10	2.4	78	10	2.1
11	1080	8	23	417	48	67	69	10	1.9
12	429	8	14	878	67	159	10	1.4	
13	194	7	7.4	939	40	124	47	10	1.7
14	294	6	4.8	1289	71	245	38	13	1.3
15	304	8	6.6	1310	39	138	31	16	1.3
16	374	20	20	1270	28	96	26	19	1.3
17	529	30	43	1280	40	138	26	23	1.6
18	903	82	200	1110	31	93	30	23	1.9
19	925	73	182	826	16	36	30	23	1.9
20	948	38	97	530	9	13	27	22	1.6
21	835	24	54	360	3	2.9	22	22	1.3
22	580	16	25	254	3	2.1	18	20	.97
23	395	10	11	181	3	1.5	16	20	.86
24	315	9	7.7	147	3	1.2	13	17	.60
25	274	9	6.7	131	3	1.1	11	14	.48
26	211	8	4.6	273	23	19	7.2	16	.29
27	173	6	2.8	308	12	10	8.4	14	.32
28	147	6	2.4	254	0	6.4	8.9	13	.31
29	128	6	2.1	210	6	3.4	10	17	.32
30	109	6	1.8	159	6	2.6	9.5	11	.28
31	--	--	--	154	5	2.1	--	--	--
TOTAL	27947	--	2534.9	12955	--	1173.55	3716.0	--	3025.3
JULY				AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
1	9.4	10	.23	26	12	.84	.17	2	0
2	8.3	11	.25	29	10	.78	.15	2	0
3	7.5	12	.24	31	8	.67	.14	2	0
4	6.0	12	.19	29	6	.47	.57	2	0
5	6.9	13	.17	22	5	.30	2.4	1	.01
6	4.5	13	.16	19	5	.26	19	1	.05
7	6.1	13	.21	15	5	.20	7.2	1	.02
8	6.9	16	.30	18	6	.18	.7	0	0
9	70	52	11	11	5	.15	.7	0	0
10	313	110	93	9.8	5	.13	6.8	0	0
11	160	80	38	8.6	6	.14	5.4	1	.01
12	72	80	18	5.5	10	.15	5.1	1	.01
13	45	67	8.1	33	20	2.6	4.8	1	.01
14	29	56	4.4	38	27	2.8	3.5	1	.01
15	27	42	2.5	24	23	1.6	3.1	1	.01
16	17	37	1.7	17	17	.78	3.2	1	.01
17	15	31	1.3	15	12	.52	2.7	1	.01
18	9.8	26	.69	23	5	.31	3.4	2	.02
19	8.5	21	.48	23	1	.06	5.0	2	.03
20	8.6	18	.42	17	1	.05	8.4	2	.07
21	6.0	15	.24	13	2	.07	16	3	.13
22	9.0	10	.24	9.7	2	.05	17	3	.14
23	22	15	.90	7.7	2	.04	17	3	.14
24	16	12	.62	3.3	2	.02	16	3	.13
25	15	10	.40	1.3	2	.01	10	2	.05
26	48	9	1.2	.01	2	0	8.1	2	.04
27	51	9	1.2	.54	2	0	8.7	1	.02
28	51	10	1.4	.24	2	0	6.2	0	0
29	51	13	1.9	.17	2	0	6.1	0	0
30	42	12	1.6	.17	2	0	2.4	0	0
31	29	12	.84	.19	2	0	--	--	--
TOTAL	1162.5	--	109.57	447.12	--	13.08	192.03	--	.92
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)								128998.65	
TOTAL LOAD FOR YEAR (TONS)								14645.22	

CUMBERLAND RIVER BASIN

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03402000 YELLOW CREEK NEAR MIDDLESBORO, KY.

LOCATION.--Lat 36°39'02", long 83°42'04", Bell County, at gaging station on right bank on U.S. Highway 25E, 0.4 mile upstream from Low Ash Hollow, 3 miles north of Middlesboro and 6.0 miles upstream from Clear Fork.

DRAINAGE AREA.--58.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: May 1964 to September 1968.

Water temperatures: October 1949 to September 1963, unpublished; October 1963 to September 1968.

REMARKS.--Samples for iron and manganese filtered clear when collected. Water-temperature measurements generally are made one day each week, twice a day, at approximately 1100 and 1800. Occasional regulation from Fern Lake.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SiO ₂)	IRON (FE)	MAN- GANESE (Mn)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	RICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)
OCT.											
02...	19	7.1	.88	.58	51	17	33	3.2	110	0	134
NOV.											
02...	712	--	--	--	--	--	--	--	--	--	--
DEC.											
05...	185	--	.18	.22	--	--	--	--	34	0	54
JAN.											
27...	153	--	--	--	--	--	--	--	--	--	--
31...	74	--	--	--	--	--	--	--	--	--	--
MAR.											
14...	239	--	--	--	--	--	--	--	--	--	--
APR.											
23...	69	--	1.0	.37	--	--	--	--	76	0	97
MAY											
27...	54	--	--	--	--	--	--	--	--	--	--
JULY											
01...	9.7	--	1.2	.41	--	--	--	--	126	0	160
25...	8.5	--	--	--	--	--	--	--	--	--	--
SEPT.											
06...	23	--	1.0	.43	--	--	--	--	116	0	164

DATE	CHLO- RIDE (CL)	FLUO- RIDE (F)	NITRATE (NO ₃)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA.MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)
OCT.										
02...	29	.2	7.0	351	197	107	546	7.0	20	16
NOV.										
02...	--	--	--	--	--	--	160	--	--	12
DEC.										
05...	11	--	2.6	130	79	51	215	6.7	--	6
JAN.										
22...	--	--	--	--	--	--	267	--	--	7
31...	--	--	--	--	--	--	518	--	--	9
MAR.										
14...	--	--	--	--	--	--	203	--	--	8
APR.										
23...	3?	--	4.3	276	148	86	443	7.9	--	18
MAY										
27...	--	--	--	--	--	--	423	--	--	21
JULY										
01...	14	--	6.0	371	236	133	569	7.2	--	27
25...	--	--	--	--	--	--	600	--	--	28
SEPT.										
06...	18	--	2.0	383	226	131	602	7.1	--	22

CUMBERLAND RIVER BASIN

03403500 CUMBERLAND RIVER AT BARBOURVILLE, KY.

LOCATION.--Lat 36°51'45", Long 83°53'13", Knox County, at gaging station at bridge on State Highway 11 at Barbourville, 0.4 mile upstream from Richland Creek.

DRAINAGE AREA.--960 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1949 to August 1950.

Water temperatures: October 1949 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 31.0°C June 26, Aug. 20; minimum, 1.0°C on several days during January and February.

Period of record:

Water temperatures: Maximum, 33.0°C June 28, 1952; minimum, freezing point on many days during 1950-51, 1953-56, 1958-60, 1962-67.

REMARKS.--Diversion above station by city of Barbourville for municipal water supply.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENTS AT APPROXIMATELY 0800 AND 1700)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	13.0	14.0	11.0	12.0	6.0	7.0	3.0	3.0	4.0	6.0	2.0	3.0
2	13.0	16.0	13.0	13.0	6.0	6.0	2.0	3.0	4.0	4.0	3.0	5.0
3	14.0	17.0	12.0	12.0	6.0	7.0	4.0	4.0	4.0	7.0	4.0	6.0
4	14.0	18.0	9.0	10.0	6.0	6.0	5.0	---	6.0	7.0	3.0	5.0
5	16.0	19.0	7.3	8.0	5.0	7.0	---	---	5.0	7.0	4.0	5.0
6	17.0	19.0	7.0	8.0	6.0	7.0	---	---	4.0	7.0	4.0	3.0
7	18.0	19.0	6.0	8.0	6.0	8.0	---	---	4.0	6.0	3.0	4.0
8	19.0	21.0	5.0	7.0	7.0	8.0	---	---	4.0	6.0	3.0	6.0
9	17.0	19.0	4.0	8.0	7.0	9.0	---	---	4.0	3.0	4.0	6.0
10	16.0	17.0	5.0	8.0	9.0	9.0	3.0	4.0	3.0	3.0	6.0	9.0
11	16.0	17.0	6.0	8.0	8.0	9.0	2.0	4.0	2.0	2.0	7.0	5.0
12	14.0	16.0	8.0	11.0	7.0	10.0	3.0	4.0	1.0	1.0	7.0	10.0
13	13.0	17.0	9.0	10.0	8.0	9.0	3.0	4.0	1.0	1.0	---	7.0
14	15.0	18.0	8.0	10.0	8.0	9.0	2.0	3.0	---	---	5.0	7.0
15	17.0	19.0	7.0	8.0	8.0	9.0	2.0	3.0	---	---	6.0	7.0
16	17.0	18.0	6.0	9.0	6.0	7.0	1.0	2.0	---	---	6.0	7.0
17	17.0	18.0	7.0	8.0	4.0	5.0	1.0	2.0	---	---	7.0	9.0
18	16.0	17.0	6.0	7.0	6.0	8.0	1.0	3.0	---	2.0	7.0	10.0
19	15.0	16.0	6.0	7.0	9.0	11.0	2.0	3.0	1.0	2.0	9.0	12.0
20	14.0	14.0	5.0	7.0	9.0	12.0	2.0	3.0	2.0	2.0	11.0	12.0
21	13.0	14.0	6.0	7.0	11.0	12.0	4.0	6.0	2.0	2.0	11.0	---
22	11.0	12.0	6.0	8.0	11.0	10.0	4.0	6.0	2.0	2.0	---	10.0
23	12.0	13.0	8.0	8.0	8.0	7.0	4.0	3.0	2.0	2.0	8.0	7.0
24	12.0	14.0	6.0	7.0	6.0	---	2.0	2.0	2.0	2.0	8.0	10.0
25	13.0	14.0	5.0	7.0	---	---	2.0	3.0	2.0	3.0	8.0	9.0
26	12.0	12.0	6.0	8.0	5.0	5.0	2.0	3.0	2.0	3.0	7.0	11.0
27	12.0	12.0	6.0	7.0	4.0	4.0	2.0	2.0	2.0	3.0	9.0	12.0
28	10.0	11.0	6.0	6.0	3.0	3.0	4.0	6.0	2.0	3.0	10.0	13.0
29	11.0	14.0	4.0	6.0	2.0	3.0	4.0	---	3.0	2.0	11.0	13.0
30	9.0	11.0	6.0	7.0	2.0	3.0	---	4.0	---	---	12.0	14.0
31	10.0	12.0	---	---	3.0	3.0	3.0	6.0	---	---	13.0	14.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	11.0	12.0	14.0	16.0	18.0	21.0	26.0	29.0	24.0	26.0	22.0	23.0
2	10.0	11.0	16.0	18.0	17.0	19.0	27.0	28.0	29.0	26.0	22.0	23.0
3	11.0	12.0	17.0	18.0	18.0	20.0	26.0	29.0	24.0	25.0	21.0	23.0
4	11.0	11.0	17.0	19.0	18.0	22.0	24.0	26.0	25.0	26.0	21.0	23.0
5	10.0	11.0	17.0	17.0	19.0	22.0	23.0	26.0	24.0	27.0	20.0	23.0
6	10.0	11.0	16.0	17.0	17.0	23.0	24.0	26.0	26.0	28.0	21.0	24.0
7	11.0	13.0	16.0	17.0	21.0	24.0	26.0	28.0	26.0	28.0	22.0	24.0
8	12.0	13.0	16.0	17.0	22.0	25.0	26.0	27.0	26.0	29.0	22.0	25.0
9	12.0	13.0	16.0	18.0	21.0	23.0	24.0	27.0	27.0	30.0	22.0	23.0
10	13.0	14.0	17.0	18.0	20.0	23.0	26.0	28.0	27.0	28.0	21.0	22.0
11	12.0	13.0	17.0	18.0	21.0	27.0	26.0	28.0	26.0	27.0	20.0	22.0
12	12.0	14.0	17.0	19.0	22.0	27.0	26.0	29.0	26.0	27.0	19.0	21.0
13	12.0	16.0	17.0	21.0	23.0	26.0	26.0	30.0	26.0	26.0	20.0	22.0
14	15.0	17.0	20.0	22.0	23.0	26.0	26.0	28.0	24.0	26.0	21.0	22.0
15	16.0	17.0	19.0	21.0	23.0	26.0	25.0	27.0	24.0	27.0	20.0	23.0
16	15.0	17.0	---	21.0	24.0	26.0	25.0	27.0	26.0	28.0	21.0	22.0
17	13.0	16.0	18.0	20.0	23.0	24.0	24.0	27.0	26.0	28.0	21.0	22.0
18	14.0	17.0	18.0	20.0	21.0	26.0	24.0	28.0	27.0	28.0	21.0	22.0
19	16.0	17.0	17.0	18.0	23.0	26.0	26.0	27.0	26.0	28.0	20.0	22.0
20	15.0	17.0	16.0	18.0	24.0	26.0	28.0	28.0	26.0	31.0	21.0	23.0
21	16.0	18.0	16.0	18.0	24.0	29.0	28.0	29.0	27.0	30.0	21.0	23.0
22	16.0	18.0	16.0	18.0	24.0	28.0	26.0	28.0	30.0	30.0	22.0	24.0
23	16.0	17.0	16.0	18.0	26.0	28.0	28.0	29.0	28.0	30.0	21.0	23.0
24	17.0	17.0	17.0	19.0	26.0	27.0	27.0	29.0	28.0	30.0	22.0	24.0
25	15.0	17.0	18.0	22.0	25.0	27.0	26.0	27.0	28.0	29.0	22.0	23.0
26	16.0	16.0	---	---	24.0	31.0	25.0	27.0	24.0	27.0	21.0	23.0
27	14.0	16.0	---	21.0	24.0	24.0	27.0	27.0	23.0	26.0	21.0	23.0
28	16.0	17.0	19.0	21.0	22.0	26.0	27.0	27.0	21.0	24.0	22.0	22.0
29	14.0	14.0	18.0	20.0	23.0	28.0	25.0	27.0	20.0	22.0	19.0	21.0
30	13.0	14.0	16.0	18.0	27.0	29.0	24.0	25.0	21.0	24.0	18.0	19.0
31	---	---	16.0	19.0	---	---	24.0	26.0	23.0	24.0	---	---

03414110 CUMBERLAND RIVER NEAR BURKESVILLE, KY.

LOCATION.--Lat 36°44'46", long 85°22'21", Cumberland County, at Neelys Ferry on State Highway 61, 0.5 mile downstream from Raft Creek, 3.2 miles south of Burkesville and about 37 miles downstream from gaging station near Rowena.

DRAINAGE AREA.--6,050 sq mi.

PERIOD OF RECORD.--Chemical analyses: January 1952 to September 1954.

Water temperatures: October 1949 to September 1951 (at Burkesville); January 1952 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 23.0°C July 15-29; minimum, 8.0°C on many days during February to May.

Period of record:

Water temperatures: Maximum, 29.0°C July 30, 1956; minimum, 1.0°C Feb. 2-4, 1951, Jan. 22, 1956.

REMARKS.--Samples for iron filtered clear when collected. No discharge records available. Flow regulated by Lake Cumberland.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	SILICA (SiO ₂)	IRON (Fe)	MANGANESE (Mn)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM (Na)	PO-TAS-SIUM (K)	BICARBONATE (HCO ₃)	CARBONATE (CO ₃)	SULFATE (SO ₄)
OCT. 02...	6.6	.09	.07	16	4.5	4.8	1.1	52	0	22
NOV. 03...	--	.06	--	--	--	--	--	46	0	22
MAR. 04...	--	.06	.06	--	--	--	--	54	0	23
JULY 01...	--	.04	.01	--	--	--	--	50	0	21
DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO ₃)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	HARDNESS (CA+MG)	NON-CARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH	COLOR	TEMPERATURE (DEG C)
OCT. 02...	4.0	.1	1.9	91	58	15	143	7.1	5	17
NOV. 03...	4.0	--	1.4	87	58	20	136	7.1	--	13
MAR. 04...	4.0	--	1.0	85	62	18	148	7.7	--	7
JULY 01...	4.0	--	1.9	85	58	17	144	7.5	--	26

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(TWICE-DAILY MEASUREMENTS AT APPROXIMATELY 0700 AND 1500)

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	16.0	16.0	14.0	14.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0
2	16.0	16.0	14.0	14.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0
3	16.0	16.0	14.0	14.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0
4	16.0	16.0	14.0	14.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0
5	16.0	16.0	14.0	14.0	14.0	14.0	11.0	11.0	9.0	9.0	8.0	8.0
6	16.0	16.0	14.0	14.0	13.0	13.0	11.0	11.0	9.0	9.0	8.0	8.0
7	16.0	16.0	14.0	14.0	13.0	13.0	11.0	11.0	9.0	9.0	9.0	9.0
8	16.0	16.0	14.0	14.0	13.0	13.0	11.0	11.0	8.0	8.0	9.0	9.0
9	16.0	16.0	14.0	14.0	13.0	13.0	11.0	11.0	8.0	8.0	9.0	9.0
10	16.0	16.0	14.0	14.0	13.0	13.0	10.0	10.0	8.0	8.0	9.0	9.0
11	16.0	16.0	14.0	14.0	13.0	13.0	10.0	10.0	8.0	8.0	9.0	9.0
12	16.0	16.0	14.0	14.0	13.0	13.0	10.0	10.0	8.0	8.0	9.0	9.0
13	16.0	16.0	14.0	14.0	12.0	12.0	10.0	10.0	8.0	8.0	8.0	8.0
14	16.0	16.0	14.0	14.0	12.0	12.0	10.0	10.0	8.0	8.0	8.0	8.0
15	16.0	16.0	14.0	14.0	12.0	12.0	10.0	10.0	8.0	8.0	8.0	8.0
16	16.0	16.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
17	16.0	16.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
18	16.0	16.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
19	15.0	15.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
20	15.0	15.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
21	15.0	15.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
22	15.0	15.0	13.0	13.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
23	15.0	15.0	13.0	13.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
24	15.0	15.0	13.0	13.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
25	15.0	15.0	13.0	13.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	8.0
26	14.0	14.0	13.0	13.0	12.0	12.0	9.0	9.0	8.0	8.0	8.0	9.0
27	14.0	14.0	13.0	13.0	12.0	12.0	9.0	9.0	8.0	8.0	9.0	9.0
28	14.0	14.0	13.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	9.0	9.0
29	14.0	14.0	14.0	14.0	12.0	12.0	9.0	9.0	8.0	8.0	9.0	9.0
30	14.0	14.0	14.0	14.0	12.0	12.0	9.0	9.0	---	---	9.0	9.0
31	14.0	14.0	---	---	12.0	12.0	9.0	9.0	---	---	9.0	9.0

TENNESSEE RIVER BASIN

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03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, N.C.
(Hydrologic bench-mark station)

LOCATION.--Lat 35°40'02", long 83°04'23", Haywood County, at gaging station on left bank 20 ft downstream from bridge on State Highway 284, 500 ft upstream from Little Cataloochee Creek, and 2 miles north of Cataloochee.

DRAINAGE AREA.--49.2 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1962 to September 1968.
Water temperatures: October 1962 to September 1967.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SD4)	CHLO- RIDE (CL)
OCT.												
03...	1100	53	8.5	.01	1.3	.4	1.3	.3	7	0	1.0	.1
03...	1100	53	--	--	--	--	--	--	--	--	--	--
23...	1135	46	8.4	.01	1.4	.3	1.4	.4	7	0	1.0	1.8
23...	1135	46	--	--	--	--	--	--	--	--	--	--
NOV.												
01...	1100	65	8.1	.01	1.0	.4	.9	.4	8	0	.8	.4
01...	1100	65	--	--	--	--	--	--	--	--	--	--
DEC.												
06...	1030	167	6.6	.00	1.1	.2	.8	.5	5	0	.8	.6
06...	1030	167	--	--	--	--	--	--	--	--	--	--
JAN.												
03...	1130	163	7.3	.00	.8	.4	.9	.6	6	0	.6	.6
03...	1130	163	--	--	--	--	--	--	--	--	--	--
FEB.												
01...	1030	114	7.1	.00	.8	.3	.9	.5	6	0	.8	.8
01...	1030	114	--	--	--	--	--	--	--	--	--	--
MAR.												
05...	1125	64	8.0	.01	.7	.3	1.0	.4	6	0	.8	.6
05...	1125	64	--	--	--	--	--	--	--	--	--	--
APR.												
03...	1030	174	6.7	.01	.7	.2	.9	.4	5	0	1.0	.9
03...	1030	174	--	--	--	--	--	--	--	--	--	--
MAY												
07...	1230	81	7.9	.02	.8	.2	1.0	.4	6	0	.8	.9
07...	1230	81	--	--	--	--	--	--	--	--	--	--
JUNE												
05...	1205	72	8.1	.03	.5	.2	1.2	.2	6	0	.4	.9
05...	1205	72	--	--	--	--	--	--	--	--	--	--
13...	1035	113	7.6	.02	.4	.2	1.1	.2	6	0	.4	.6
13...	1035	113	--	--	--	--	--	--	--	--	--	--
JULY												
05...	1000	53	8.6	--	.5	.3	1.7	.6	6	0	.4	.6
05...	1000	53	--	--	--	--	--	--	--	--	--	--
AUG.												
07...	0930	49	8.3	--	.5	.3	1.3	.6	8	0	.4	.8
07...	0930	49	--	--	--	--	--	--	--	--	--	--
SEPT.												
05...	1145	38	8.8	--	1.0	.3	1.3	.4	8	0	.4	1.0
05...	1145	38	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	COLOR
OCT.												
03...	.1	.4	.00	15	.02	2.17	5	0	.3	15	6.0	10
03...	--	--	--	--	--	--	--	--	--	15	--	--
23...	.0	.2	.00	17	.02	2.11	4	0	.3	15	6.8	10
23...	--	--	--	--	--	--	--	--	--	14	7.0	--
NOV.												
01...	.0	.1	--	24	.03	4.27	4	0	.2	15	6.4	5
01...	--	--	--	--	--	--	--	--	--	16	7.1	--
DEC.												
06...	.0	.2	--	--	--	--	4	0	--	13	6.2	0
06...	--	--	--	--	--	--	--	--	--	12	7.4	--
JAN.												
03...	.0	.2	--	15	--	--	4	0	--	13	6.0	3
03...	--	--	--	--	--	--	--	--	--	14	7.4	--
FEB.												
01...	.0	.4	.01	15	.02	4.62	3	0	.2	13	6.4	3
01...	--	--	--	--	--	--	--	--	--	14	7.2	--
MAR.												
05...	.1	.0	--	17	.02	2.95	2	0	.3	14	5.7	3
05...	--	--	--	--	--	--	--	--	--	14	7.8	--
APR.												
03...	.2	.1	--	15	.02	7.05	2	0	.2	13	5.8	5
03...	--	--	--	--	--	--	--	--	--	--	7.4	--
MAY												
07...	.0	.0	--	15	.02	3.30	2	0	.3	14	5.7	5
07...	--	--	--	--	--	--	--	--	--	16	7.4	--
JUNE												
05...	.0	.6	--	17	.02	3.30	2	0	.4	15	6.8	5
05...	--	--	--	--	--	--	--	--	--	18	8.0	--
13...	.0	.7	--	15	.02	4.58	2	0	.4	15	6.0	4
13...	--	--	--	--	--	--	--	--	--	16	--	--
JULY												
05...	.0	.4	--	19	.03	2.72	2	0	.5	19	5.5	5
05...	--	--	--	--	--	--	--	--	--	17	6.8	--
AUG.												
07...	.0	.2	--	19	.03	2.51	2	0	.4	16	6.7	7
07...	--	--	--	--	--	--	--	--	--	18	7.1	--
SEPT.												
05...	.1	.3	.01	20	.03	2.05	4	0	.3	15	5.9	5
05...	--	--	--	--	--	--	--	--	--	17	9.0	--

TENNESSEE RIVER BASIN

03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, N.C.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ALKALINITY AS CaCO ₃	DISSOLVED OXYGEN	TEMPERATURE (DEG C)	PHOSPHATE (PO ₄)	TOTAL IRON (FE)	COLIFORM (COLONIES PER 100 ML)	BIOCHEMICAL OXYGEN DEMAND	SUSPENDED SEDIMENT
OCT.								
03...	6	--	9	.00	--	--	--	--
03...	--	11.0	9	--	--	--	--	--
23...	6	--	8	.00	--	--	.2	--
23...	--	11.0	8	--	--	12	--	--
NOV.								
01...	6	--	10	.00	--	--	.0	--
01...	--	11.0	10	--	--	30	--	--
DEC.								
06...	4	--	5	.03	--	--	.5	--
06...	--	8.0	5	--	--	8	--	--
JAN.								
03...	5	--	6	.01	--	--	.9	--
03...	--	11.0	6	--	--	12	--	--
FEB.								
01...	5	--	5	.01	--	--	.5	--
01...	--	11.0	5	--	--	4	--	--
MAR.								
05...	5	--	0	.00	--	--	--	3
05...	--	13.0	0	--	--	2	--	--
APR.								
03...	4	--	7	.01	--	--	.6	8
03...	--	11.0	7	--	--	14	--	--
MAY								
07	5	--	7	.00	--	--	.4	5
07	--	12.0	7	--	--	22	--	--
JUNE								
05...	5	--	12	.00	--	--	.5	--
05...	--	10.0	12	--	--	30	--	--
13...	5	--	13	.00	--	--	--	--
13...	--	10.0	13	--	--	38	--	--
JULY								
05...	5	--	14	.00	.08	--	1.0	--
05...	--	9.0	14	--	--	66	--	--
AUG.								
07...	7	--	17	.00	.08	--	.4	--
07...	--	9.5	17	--	--	18	--	--
SEPT.								
05...	7	--	14	.01	.04	--	.6	--
05...	--	--	14	--	--	--	--	--

TRACE ELEMENTS, MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	LITHIUM (LI)	TOTAL CHROMIUM (CR)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)	TOTAL ALUMINUM (AL)	TOTAL MANGANESE (MN)	STRONTIUM (SR)
NOV. 1, 1967	.00	.00	.00	.00	.00	.00	--	--	--
FEB. 1, 1968	.00	.00	.00	.00	.00	.00	.1	.00	.00

DETERMINATIONS OF PESTICIDES IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ALDRIN	DDD	DDE	DDT	DIEL- DRIN	ENDRIN	HEPTA- CHLOR EP- CHLOR OXIDE	2,4-D	2,4,5-T	SILVEX
OCT. 3, 1967	.00	.00	.00	.00	.00	.00	.00	.00	--	--
JUNE 13, 1968	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	URANIUM (UG/L)	RADIUM (PC/L)	GROSS ALPHA (UG U/L)	GROSS BETA (PC/L)
OCT. 3, 1967	<0.4	<0.1	<0.6	<0.4

03473000 SOUTH FORK HOLSTON RIVER AT VESTAL, VA.

LOCATION.--36°39'06", long 81°50'39", Washington County, at gaging station on right bank 500 ft upstream from bridge /on U.S. Highway 58 at Vestal, 0.7 mile downstream from Laurel Creek, 3.2 miles northwest of Damascus, 4.9 miles upstream from Middle Fork Holston River, and at mile 77.2.

DRAINAGE AREA.--301 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1949 to September 1950.

Water temperatures: October 1949 to September 1950, October 1967 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 22; minimum, freezing point on Jan. 8 and Feb. 13.

Period of record:

Water temperatures: Maximum, 27.0°C Aug. 22, 1968; minimum, freezing point on Jan. 8, Feb. 13, 1968.

REMARKS.--Records furnished by Tennessee Valley Authority.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY

DAY																																AVFP- ARF	
MONTH	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		
OCTOBER																																	
MAXIMUM	--	--	--	17	17	16	17	17	16	16	15	14	14	15	15	17	16	15	11	11	12	11	12	13	12	11	9	9	9	10	11	13	
MINIMUM	--	--	--	13	13	14	13	14	15	14	13	12	11	11	13	13	14	11	9	7	8	8	9	10	11	8	8	8	12	7	9	11	
NOVEMBER	12	12	11	11	8	8	6	6	6	6	8	10	12	11	9	8	6	6	8	7	6	8	10	9	8	9	8	7	4	7	--	8	
MAXIMUM	11	10	8	8	6	4	3	3	3	6	7	9	9	8	6	3	4	6	6	4	6	7	7	6	8	6	7	4	10	4	--	6	
MINIMUM	8	7	7	6	6	6	8	9	8	8	9	9	6	7	8	6	4	7	10	11	11	11	8	4	6	6	4	4	4	20	4	7	
DECEMBER	6	6	6	5	4	4	6	8	7	8	8	6	5	5	6	3	2	4	8	9	9	8	4	3	4	4	3	4	3	2	3	5	
JANUARY																																	
MAXIMUM	4	5	6	6	3	5	5	2	3	4	4	3	3	3	2	3	3	3	4	4	7	6	7	5	4	3	5	7	7	8	8	4	
MINIMUM	3	3	5	3	2	3	1	0	2	3	3	2	3	2	1	1	1	1	2	2	4	4	5	5	3	2	2	3	4	5	7	7	
FEBRUARY																																	
MAXIMUM	8	8	6	6	6	5	5	5	4	3	2	2	2	2	2	4	3	2	2	3	3	2	2	4	4	4	4	5	4	--	--	4	
MINIMUM	6	6	4	4	3	3	3	4	3	2	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	3	2	--	--	
MARCH																																	
MAXIMUM	2	6	6	5	6	5	8	8	9	8	9	9	7	6	7	8	9	9	9	12	13	14	13	7	9	11	12	13	15	14		9	
MINIMUM	1	1	2	1	2	4	3	3	5	7	6	7	4	2	4	7	7	6	6	8	10	11	6	3	4	6	7	9	10	11	12	6	
APRIL																																	
MAXIMUM	13	8	9	12	12	13	12	11	11	13	13	15	14	15	14	13	15	16	18	19	18	17	16	13	13	13	14	17	14	--	--	13	
MINIMUM	8	7	7	9	9	8	9	11	10	10	9	8	10	12	12	9	10	12	13	13	15	14	15	11	9	9	11	11	11	10	--	10	
MAY																																	
MAXIMUM	17	17	18	16	15	16	16	16	17	18	17	18	21	19	19	19	18	16	17	16	14	17	18	19	22	21	18	15	15	14	16	17	
MINIMUM	11	13	13	14	12	11	11	12	13	15	16	16	16	16	15	16	16	14	13	13	12	11	13	16	16	18	15	13	12	13	13	13	
JUNE																																	
MAXIMUM	17	16	18	19	20	20	18	19	19	21	22	21	20	20	22	22	21	21	21	21	22	22	22	24	23	23	24	22	21	23	25	--	21
MINIMUM	13	16	16	15	16	16	17	17	18	17	18	17	16	16	18	18	17	18	18	17	19	19	19	20	19	21	20	18	17	19	--	--	17
JULY																																	
MAXIMUM	26	26	23	23	23	24	24	24	22	22	23	23	24	24	24	24	25	26	24	25	26	26	26	26	26	26	26	26	25	24	23	26	24
MINIMUM	21	22	20	18	19	19	19	21	20	20	20	21	20	21	21	21	21	22	22	21	21	22	22	21	22	22	22	22	21	21	21	21	21
AUGUST																																	
MAXIMUM	23	24	23	23	25	26	26	26	26	24	22	23	23	22	23	23	24	26	26	26	26	27	26	25	25	25	24	24	21	21	21	21	24
MINIMUM	21	21	21	21	21	22	22	22	22	21	21	19	19	20	21	21	21	21	21	22	22	22	22	23	23	22	21	19	17	17	17	17	20
SEPTEMBER																																	
MAXIMUM	20	20	21	21	19	20	20	20	20	19	19	18	18	18	19	18	19	18	18	20	20	20	19	19	19	18	18	17	17	17	--	--	19
MINIMUM	18	16	17	16	18	18	16	17	17	18	16	14	13	14	15	16	16	17	16	16	17	17	17	16	16	16	17	15	14	14	--	--	16

TENNESSEE RIVER BASIN

03490000 NORTH FORK HOLSTON RIVER NEAR GATE CITY, VA.

LOCATION.--Lat 36°36'31", long 82°34'05", Scott County, at gaging station on left bank 75 ft upstream from bridge on U.S. Highway 23, 1.6 miles downstream from Big Maccasin Creek, 2.1 miles southeast of Gate City and at mile 8.8.

DRAINAGE AREA.--672 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1949 to September 1951.

Water temperatures: October 1949 to September 1951, October 1967 to September 1968.

EXTREMES.--1967-68:

Water temperature: Maximum, 31.0°C July 24 and on several days during August; minimum, 1.0°C on several days during January and February.

Period of record:

Water temperatures: Maximum, 31.0°C July 24 and on several days during August, 1968; minimum, freezing point on several days during November 1950.

REMARKS.--Records furnished by Tennessee Valley Authority.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

MONTH	DAY																															AVER- AGE	
	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		
OCTOBER																																	
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
NOVEMBER																																	
MAXIMUM	13	13	13	13	10	8	7	7	7	8	9	11	11	10	9	7	7	6	7	6	7	9	9	8	9	9	7	6	6	--	--	8	
MINIMUM	12	12	11	10	8	7	6	5	4	6	7	9	9	9	7	6	6	7	6	5	6	7	7	7	8	7	7	5	4	6	--	7	
DECEMBER																																	
MAXIMUM	7	7	7	7	6	5	6	7	8	8	9	7	8	7	7	6	6	7	9	11	12	12	9	6	4	4	4	4	4	3	3	7	
MINIMUM	6	5	7	6	4	4	5	6	6	8	8	8	7	7	6	4	4	4	7	9	11	9	6	4	4	4	4	3	3	3	2	6	
JANUARY																																	
MAXIMUM	3	4	6	6	5	3	3	2	2	3	4	4	4	4	3	3	3	3	4	6	7	7	7	7	5	4	4	6	6	8	9	4	
MINIMUM	2	3	4	5	3	3	2	1	1	2	3	4	3	3	2	2	2	2	4	5	7	5	4	5	3	3	3	4	4	6	8	3	
FEBRUARY																																	
MAXIMUM	9	9	9	8	7	6	6	6	6	4	3	2	2	2	2	2	2	2	2	3	2	2	3	4	4	4	5	4	--	--	4	3	
MINIMUM	8	9	7	6	5	4	4	5	4	3	2	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	2	3	2	--	--	3	
MARCH																																	
MAXIMUM	4	7	7	6	6	5	7	7	9	10	11	11	12	7	7	8	9	9	10	12	14	16	14	9	9	11	12	13	14	16	16	9	
MINIMUM	2	3	4	3	2	3	3	4	6	9	9	9	13	7	5	6	7	7	8	8	9	11	13	9	7	7	7	8	11	12	13	14	7
APRIL																																	
MAXIMUM	16	14	12	12	12	12	13	13	13	13	14	15	16	16	17	17	16	18	19	20	21	21	19	17	15	14	14	15	13	--	--	15	
MINIMUM	14	12	11	11	10	9	11	12	12	12	11	11	12	14	14	13	13	14	16	17	19	17	17	13	13	17	12	12	13	--	--	13	
MAY																																	
MAXIMUM	--	--	--	--	--	--	16	17	18	18	19	18	19	22	21	21	19	19	18	18	--	--	--	--	24	22	21	17	--	--	--	--	
MINIMUM	--	--	--	--	--	--	13	13	14	15	16	17	17	18	18	18	17	17	16	16	--	--	--	--	19	19	18	14	--	--	--	--	
JUNE																																	
MAXIMUM	--	--	--	--	--	24	24	23	23	24	25	26	25	26	26	26	24	26	26	27	27	27	28	25	26	26	26	25	26	28	--	26	
MINIMUM	--	--	--	--	--	21	21	22	21	22	22	23	23	22	22	22	23	22	22	23	23	23	24	24	23	24	23	24	23	22	22	23	22
JULY																																	
MAXIMUM	29	28	28	26	27	27	27	27	26	26	27	28	28	29	30	29	28	28	29	30	29	29	29	30	31	31	29	29	28	28	27	28	
MINIMUM	24	26	24	23	23	23	24	24	24	24	24	24	26	25	26	26	26	26	27	27	26	26	27	27	27	27	27	27	27	26	24	25	
AUGUST																																	
MAXIMUM	26	27	28	27	29	29	29	29	29	27	27	27	27	27	28	29	29	30	31	31	31	31	29	29	29	29	28	26	23	23	24	28	
MINIMUM	25	24	25	26	26	27	27	27	27	26	26	24	24	25	26	26	27	27	28	28	27	28	28	27	28	27	26	23	21	21	22	25	
SEPTEMBER																																	
MAXIMUM	23	23	23	23	22	23	23	23	23	21	20	20	21	22	22	22	21	21	22	23	23	23	23	23	22	22	21	21	20	20	--	22	
MINIMUM	22	21	21	22	21	21	21	21	21	20	19	19	18	18	18	19	19	20	20	19	20	21	22	21	21	21	21	21	20	19	18	18	19

TENNESSEE RIVER BASIN

229

03491300 BEECH CREEK AT KEPLER, TENN.

LOCATION.--Lat 36°24'06", long 82°53'09", Hawkins County, at gaging station at Kepler, 150 ft off Burem Road, 5.9 miles east of intersection of U.S. Highway 11W and Burem Road and 6.6 miles upstream from mouth.

DRAINAGE AREA.--47.0 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1965 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C Aug. 22, 23; minimum, 1.0°C Feb. 19-28, Mar. 1.

Period of record:

Water temperatures: Maximum, 28.0°C July 27, 1966; Aug. 22, 23, 1968; minimum, freezing point Dec. 8, 27-30, 1965, Jan. 26 to Feb. 6, 1966.

REMARKS.--Missing record July 3 to Aug. 4.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

		DAY																															AVER-	
MONTH		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	AGE	
OCTOBER																																		
MAXIMUM		17	18	16	18	18	18	18	19	18	18	16	16	16	17	17	14	18	16	16	13	13	13	13	13	13	12	11	10	10	11	11	15	
MINIMUM		12	13	13	13	14	16	17	16	17	16	14	13	11	13	14	15	15	13	11	9	10	9	9	9	10	12	10	9	8	7	7	10	12
NOVEMBER																																		
MAXIMUM		12	12	12	11	9	7	6	7	7	9	9	12	11	9	9	7	7	9	8	6	7	9	9	8	9	9	9	8	4	7	--	9	
MINIMUM		11	12	11	9	7	6	4	4	4	6	7	9	8	8	6	4	5	6	6	4	5	6	7	8	7	8	7	8	4	4	--	7	
DECEMBER																																		
MAXIMUM		8	8	7	7	6	6	7	8	9	9	10	10	8	8	8	8	6	9	10	11	11	12	9	7	7	7	6	5	6	5	5	8	
MINIMUM		7	6	7	6	5	5	6	7	8	9	9	8	7	7	8	6	4	5	9	10	11	9	7	5	6	6	4	5	4	5	4	7	
JANUARY																																		
MAXIMUM		6	6	7	7	6	4	5	4	3	4	5	5	5	4	4	4	3	4	4	4	4	6	7	7	4	3	3	4	6	7	8	5	
MINIMUM		4	6	6	6	4	4	4	2	3	3	4	4	4	5	4	3	3	2	2	3	3	4	6	6	4	4	4	4	4	6	7	4	
FEBRUARY																																		
MAXIMUM		8	8	7	6	4	4	4	4	4	4	3	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	2	--	--	3	
MINIMUM		7	7	6	4	4	4	3	3	4	4	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	--	--	
MARCH																																		
MAXIMUM		2	3	4	3	4	3	6	6	7	7	9	9	9	7	7	8	9	9	10	11	12	12	12	8	8	9	11	12	13	14	14	8	
MINIMUM		1	2	3	2	2	3	3	3	5	7	7	8	7	4	6	7	8	7	8	8	11	12	7	6	6	7	9	11	12	13	13	7	
APRIL																																		
MAXIMUM		14	13	12	13	14	12	13	14	13	13	13	13	13	14	16	16	16	14	14	13	13	16	17	18	18	18	17	17	15	14	16	--	15
MINIMUM		13	11	11	12	13	11	11	11	13	13	12	11	11	12	14	14	12	13	13	13	15	17	17	16	17	14	12	12	12	13	--	13	
MAY																																		
MAXIMUM		17	18	18	18	17	16	15	16	17	17	17	18	18	20	20	20	20	19	18	18	17	17	18	20	21	20	20	19	18	18	17	18	
MINIMUM		14	16	16	17	15	13	13	14	16	17	17	17	17	18	19	19	19	18	17	16	15	17	18	20	19	19	18	17	17	17	17	17	
JUNE																																		
MAXIMUM		19	19	20	20	21	21	21	21	21	21	22	22	21	21	21	21	22	21	21	22	22	22	22	22	23	22	22	22	22	22	22	--	21
MINIMUM		17	19	18	19	19	19	20	20	21	21	21	21	21	20	20	19	20	20	20	20	20	21	19	19	21	21	22	22	22	22	20	--	20
JULY																																		
MAXIMUM		22	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM		20	22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUGUST																																		
MAXIMUM		--	--	--	--	23	24	24	26	24	24	24	23	23	24	23	24	25	26	26	26	27	28	29	27	25	25	22	22	22	22	22	24	
MINIMUM		--	--	--	--	22	23	23	23	23	24	23	22	22	22	22	23	23	23	23	24	24	24	24	24	24	22	21	19	17	17	17	18	
SEPTEMBER																																		
MAXIMUM		20	22	23	19	19	22	22	23	22	19	19	19	21	21	21	20	21	19	18	21	23	24	24	24	24	22	19	21	20	22	20	--	21
MINIMUM		19	18	18	18	19	19	18	18	18	19	18	17	15	16	16	17	17	18	18	18	18	18	18	18	18	18	18	16	16	16	15	--	18

TENNESSEE RIVER BASIN

03491500 HOLSTON RIVER NEAR ROGERSVILLE, TENN.

LOCATION.--Lat 36°22'17", long 83°00'12", Hawkins County, temperature recorder 0.2 mile downstream from former gaging station, 0.2 mile upstream from Southern Railroad bridge, 0.5 mile upstream from new bridge on State Highways 66 and 70, 3 miles south of Rogersville, and at mile 104.0.

DRAINAGE AREA.--3,035 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1966 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C July 2, 22; minimum, 4.0°C Dec. 16, 17, 24-27, 31, Feb. 21, 22.

Period of record:

Water temperatures: Maximum, 29.0°C July 2, 22, 1968; minimum recorded, 3.0°C Feb. 26, 1967.

REMARKS.--Records furnished by Tennessee Valley Authority..

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																															AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	23	22	22	22	22	20	19	21	23	22	25	24	26	23	25	22	22	22	21	24	22	22	21	19	19	16	15	17	14	13	14	21
MINIMUM	20	21	21	19	19	17	17	17	18	19	19	22	20	21	21	20	20	19	19	19	19	19	18	15	14	14	14	13	13	12	12	18
NOVEMBER																																
MAXIMUM	16	17	19	22	19	22	22	19	19	19	19	17	12	11	11	14	16	15	14	13	10	9	9	13	13	12	11	12	17	11	--	15
MINIMUM	12	13	17	16	16	17	19	16	17	16	11	11	10	10	10	14	12	13	10	9	8	7	9	8	8	9	9	11	11	11	--	12
DECEMBER																																
MAXIMUM	16	12	14	11	9	8	7	6	7	6	7	7	9	8	8	7	6	5	7	13	12	12	8	7	4	4	6	6	6	6	6	8
MINIMUM	11	9	11	9	7	7	7	7	6	6	6	6	5	7	7	6	4	4	5	7	11	11	8	6	4	4	4	4	5	5	6	4
JANUARY																																
MAXIMUM	7	7	7	7	7	7	7	6	6	6	6	6	6	5	5	6	6	6	5	6	7	8	7	8	7	6	5	6	6	7	8	7
MINIMUM	7	7	7	7	7	7	6	5	6	6	6	6	5	5	5	6	6	5	5	5	6	7	8	7	6	6	6	6	6	7	8	6
FEBRUARY																																
MAXIMUM	9	9	9	8	8	8	8	8	8	7	7	6	6	7	6	6	6	6	5	6	6	5	7	7	7	9	8	9	9	--	--	7
MINIMUM	8	9	8	8	8	8	8	8	7	7	6	6	6	6	6	6	6	6	6	6	4	4	5	6	6	5	7	8	8	--	--	7
MARCH																																
MAXIMUM	9	11	11	12	13	12	14	14	13	13	12	12	9	8	8	9	11	11	11	12	14	13	10	9	11	12	13	14	16	16	12	12
MINIMUM	7	8	8	8	9	11	11	11	11	11	11	12	9	8	8	8	9	11	11	11	12	10	9	9	9	10	12	13	14	14	10	10
APRIL																																
MAXIMUM	17	17	16	12	12	12	12	13	14	14	14	13	14	14	18	17	17	17	17	18	21	22	24	20	18	16	15	16	15	16	--	16
MINIMUM	16	16	12	12	12	11	11	12	13	13	13	12	13	14	16	16	15	15	16	18	20	21	20	18	16	15	15	15	14	15	--	15
MAY																																
MAXIMUM	16	17	17	18	18	19	17	19	19	20	20	24	22	22	20	19	19	19	18	19	22	22	22	22	26	23	21	21	21	17	18	70
MINIMUM	15	15	16	17	17	17	16	16	17	18	18	19	20	21	19	19	19	17	17	17	18	18	20	19	21	21	18	17	17	17	18	18
JUNE																																
MAXIMUM	18	18	22	23	24	26	23	23	21	27	27	26	25	24	23	23	25	25	24	25	26	25	28	28	22	24	26	27	28	--	24	
MINIMUM	17	17	17	19	19	20	19	18	18	21	22	23	20	19	20	20	22	20	20	21	19	21	20	21	23	19	18	20	21	21	22	--
JULY																																
MAXIMUM	28	29	27	23	25	25	26	26	24	24	21	21	22	26	26	25	27	22	22	22	27	29	27	26	23	22	22	22	28	28	25	25
MINIMUM	23	24	21	20	21	23	23	23	22	20	19	20	19	19	22	23	20	21	21	19	21	21	24	22	22	21	21	20	20	22	22	20
AUGUST																																
MAXIMUM	21	21	21	21	22	24	23	22	22	22	19	21	23	24	23	22	22	22	26	25	22	22	21	21	21	26	24	23	23	23	23	20
MINIMUM	20	20	20	19	21	20	21	20	19	19	19	19	22	21	21	21	19	20	21	21	20	19	19	19	19	20	20	22	21	21	21	21
SEPTEMBER																																
MAXIMUM	23	25	28	27	24	23	21	23	26	24	23	23	24	26	24	27	28	27	27	25	27	27	28	27	24	22	23	24	25	23	--	25
MINIMUM	22	22	22	22	22	21	20	19	22	20	22	21	20	22	22	23	24	24	23	21	24	24	23	21	20	19	19	19	22	21	--	22

03497300 LITTLE RIVER ABOVE TOWNSEND, TENN.
(Hydrologic bench-mark station)

LOCATION.--Lat 35°39'52", long 83°42'41", Blount County, at gaging station on left bank along State Highway 73 in Great Smoky Mountains National Park, 0.3 mile upstream from Rush Branch, 0.4 mile southwest of Park entrance, 2.2 miles southeast of Townsend and at mile 35.3.

DRAINAGE AREA.--106 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

Water temperatures: October 1963 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 24.0°C Aug. 10, 23, 26; minimum, 1.0°C Jan. 8, Feb. 18-20, 22-27.

Period of record:

Water temperatures: Maximum, 26.0°C June 23, 1964; minimum, freezing point Feb. 3-6, 1965.

REMARKS.--Pesticide analyses: A sample taken on June 24, 1968, was analyzed for the following pesticides: Aldrin, DDD, DDE, DDT, Dieldrin, Endrin, Heptachlor, Heptachlor Epoxide, Lindane, 2-4-D, 2-4-5-T, and Silvex. In each case, concentration was determined to be 0.00 micrograms per liter.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	OILS- CHARGE (CFS)	SILICA (LS102)	DIS- SOLVED IRON (FE)	MANG- NESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
OCT.												
12...	96	.0	.05	.02	1.7	.5	1.0	.7	9	0	1.0	.6
NOV.												
20...	A119	5.6	.01	.03	1.8	.1	1.2	.5	10	0	.8	.5
DEC.												
12...	523	4.6	.10	.03	1.4	.0	1.0	.5	4	0	1.2	.6
JAN.												
17...	350	5.3	.02	.00	1.2	.0	.9	.4	8	0	1.2	.7
FEB.												
05...	312	4.7	.02	.03	1.4	.0	.7	.5	6	0	1.2	.6
MAR.												
18...	496	5.3	.02	.00	1.2	.4	1.4	.5	10	0	2.1	.4
APR.												
16...	325	5.2	.00	.03	1.0	.4	1.1	.5	3	0	1.8	2.1
MAY												
08...	138	4.4	.01	.00	1.0	.3	1.0	.5	6	0	2.2	.3
JUNE												
24...	111	5.7	.03	.03	1.3	.5	1.1	.4	9	0	2.1	.3
JULY												
23...	49	3.8	.02	.00	2.1	.6	1.0	.6	12	0	1.1	.7
AUG.												
26...	454	5.6	.03	.01	2.0	.6	1.0	.6	11	0	2.2	.2
SEPT.												
30...	45	5.5	.06	.01	2.2	.6	1.1	.6	12	0	2.2	.3

A DAILY MEAN DISCHARGE.

TENNESSEE RIVER BASIN

03518300 LITTLE TENNESSEE RIVER BELOW CHILHOWEE DAM, TENN.

LOCATION.--Lat 35°32'48", long 84°03'50", Blount County, temperature recorder at gaging station on right bank on U.S. Highway 129 at Tallassee, 100 ft upstream from Cochran Creek, 0.8 mile downstream from Chilhowee Dam, 20 miles south of Maryville, and at mile 32.8.

DRAINAGE AREA.--1,987 sq mi, including Cochran Creek.

PERIOD OF RECORD.--Water temperatures: October 1963 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 21.0°C Oct. 14, 15, Sept. 21, 22, 29, 30; minimum, 4.0°C Feb. 12, 22, 24-26.

Period of record:

Water temperatures: Maximum, 28.0°C Aug. 29, 1964; minimum, 3.0°C Feb. 6, 1966.

REMARKS.--Recorder stopped Jan. 11 to Feb. 7 (range in temperature 10.0°C to 6.0°C). Records furnished by Tennessee Valley Authority.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY

DAY																																	AVER-
MONTH	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	AGE	
OCTOBER																																	
MAXIMUM	19	19	19	19	20	20	20	20	19	20	20	20	20	21	21	19	19	19	19	18	19	19	19	19	19	19	19	18	18	18	18	19	
MINIMUM	18	18	18	18	18	19	19	19	19	19	19	18	18	18	18	18	19	18	17	18	17	18	17	17	17	17	17	17	17	17	17	18	
NOVEMBER																																	
MAXIMUM	18	18	17	17	17	17	16	16	16	16	16	16	16	16	15	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	--	15	
MINIMUM	19	17	17	17	16	15	16	14	14	14	15	15	15	14	14	14	14	14	13	13	13	13	13	13	13	13	13	12	12	--	--	14	
DECEMBER																																	
MAXIMUM	13	13	13	13	13	12	13	13	13	13	13	13	13	13	12	12	12	12	12	12	12	12	12	12	12	12	11	11	11	11	11	11	
MINIMUM	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	12	
JANUARY																																	
MAXIMUM	11	11	11	11	11	11	11	10	10	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MINIMUM	11	11	11	11	11	11	10	10	10	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
FEBRUARY																																	
MAXIMUM	--	--	--	--	--	--	--	7	8	7	7	7	7	7	8	7	7	7	7	7	7	7	6	7	7	9	8	7	7	7	--	7	
MINIMUM	--	--	--	--	--	--	--	7	7	6	5	4	5	5	6	5	5	5	5	5	5	6	6	4	5	4	4	4	6	6	--	5	
MARCH																																	
MAXIMUM	8	9	9	9	9	8	11	11	9	11	11	12	11	12	17	11	13	14	16	14	14	14	12	14	14	16	16	14	14	16	13	12	
MINIMUM	6	5	6	6	6	6	7	8	8	9	8	8	7	7	8	9	9	9	10	10	9	9	9	9	9	10	10	11	11	12	12	8	
APRIL																																	
MAXIMUM	14	13	16	15	14	17	14	14	14	14	17	16	17	15	17	16	16	17	16	17	18	18	18	17	18	19	17	18	16	18	--	16	
MINIMUM	12	11	12	13	12	12	12	13	13	12	12	12	12	12	12	11	12	13	13	13	13	13	13	13	12	12	13	13	14	14	14	--	13
MAY																																	
MAXIMUM	19	19	19	16	17	17	17	17	18	17	16	18	18	17	19	18	17	17	18	17	18	17	18	18	19	19	19	17	18	17	17	18	
MINIMUM	13	13	14	13	13	12	12	13	13	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	14	15	15	15	15	14	14	
JUNE																																	
MAXIMUM	19	19	19	19	19	17	16	18	18	19	18	18	18	18	19	16	18	17	18	17	18	18	16	16	16	16	16	16	16	15	18	--	18
MINIMUM	14	16	16	15	15	15	15	15	15	15	15	15	15	14	13	14	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	--	14
JULY																																	
MAXIMUM	15	16	14	16	16	14	16	13	14	14	14	14	14	14	16	13	14	14	14	14	14	16	13	13	14	14	14	13	16	15	13	13	
MINIMUM	13	13	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	13	13	13	
AUGUST																																	
MAXIMUM	15	13	16	17	16	16	16	18	16	17	18	16	16	16	15	15	16	18	16	16	16	16	16	16	16	17	16	19	17	17	18	18	14
MINIMUM	13	13	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	15	15	16	16	16	14	14	16	16	16
SEPTEMBER																																	
MAXIMUM	20	19	19	18	18	18	19	20	18	19	18	19	20	20	20	19	19	18	20	19	21	21	20	20	19	19	20	20	21	21	--	19	
MINIMUM	16	16	17	17	17	17	16	16	16	17	16	16	16	16	16	16	17	17	17	17	17	17	17	17	17	18	18	18	17	17	--	17	

TENNESSEE RIVER BASIN

233

03518500 TELlico RIVER AT TELlico PLAINS, TENN.

LOCATION.--Lat 35°21'42", long 84°16'44", Monroe County, temperature recorder at gaging station on right bank 200 ft upstream from bridge on Tellico Plains-Rafter Road, 0.4 mile downstream from Laurel Creek, 0.8 mile east of Tellico Plains, and at mile 28.2.

DRAINAGE AREA.--118 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1964 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C July 1, 2, Aug. 8, 9, 17, 18, 20-24; minimum, 1.0°C Feb. 11-16, 18-20, 22-26, Mar. 1, 2.

Period of record:

Water temperatures: Maximum, 31.0°C July 31, Aug. 2, 1964; minimum, freezing point on many days during winter periods.

REMARKS.--Recorder stopped July 15 to Aug. 7 (range in temperature 30.0°C to 21.0°C). Records furnished by Tennessee Valley Authority.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

MONTH	DAY																															AVER- AGE
	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	
OCTOBER																																
MAXIMUM	15	16	18	19	19	19	20	20	19	17	17	16	15	16	17	17	18	18	15	14	13	13	13	15	15	13	12	12	11	11	13	14
MINIMUM	13	14	15	15	16	16	17	18	17	16	15	14	13	14	15	16	17	15	14	12	12	12	12	13	13	12	12	11	10	10	11	14
NOVEMBER																																
MAXIMUM	14	14	13	12	11	9	8	7	7	8	9	11	11	11	10	9	8	8	8	8	8	11	11	10	11	10	11	10	7	9	--	10
MINIMUM	13	13	11	11	9	8	7	7	6	7	8	9	11	10	9	8	8	8	8	8	8	8	9	9	10	9	9	7	6	6	--	9
DECEMBER																																
MAXIMUM	8	8	9	8	7	8	10	11	12	13	14	13	12	11	11	11	9	13	14	14	16	16	9	6	7	8	6	7	7	6	7	10
MINIMUM	8	8	8	7	7	7	8	10	11	12	13	12	10	10	10	11	9	8	8	13	13	14	9	6	4	4	4	6	5	5	6	9
JANUARY																																
MAXIMUM	7	8	9	9	7	8	8	4	6	8	8	8	9	7	6	3	4	4	4	5	6	9	8	9	8	4	4	5	6	8	9	12
MINIMUM	6	6	8	5	4	4	4	2	3	6	8	7	6	4	3	3	3	3	3	3	4	6	8	8	4	3	2	3	4	6	7	9
FEBRUARY																																
MAXIMUM	11	11	8	6	7	7	6	4	6	4	4	4	2	2	1	2	5	4	3	2	4	5	3	2	3	4	5	4	4	3	--	5
MINIMUM	10	8	6	4	4	4	4	4	4	4	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	3	2	--	3
MARCH																																
MAXIMUM	5	7	7	7	7	6	9	10	10	13	12	13	11	7	9	11	12	11	12	15	16	16	12	9	9	12	13	13	14	17	15	7
MINIMUM	1	1	3	2	2	3	3	4	7	9	9	11	6	4	6	8	8	8	8	10	13	12	7	5	6	7	9	11	12	13	13	7
APRIL																																
MAXIMUM	14	13	14	16	15	14	15	14	15	14	15	16	15	16	16	18	17	17	19	19	21	21	21	21	20	18	18	17	18	16	19	--
MINIMUM	13	11	11	14	12	11	12	14	13	13	12	11	12	14	14	12	13	14	16	17	17	17	18	16	13	13	14	14	14	13	--	14
MAY																																
MAXIMUM	20	22	22	18	18	19	19	21	20	19	20	19	22	21	23	20	18	19	19	18	18	18	19	22	24	24	21	22	21	20	19	21
MINIMUM	14	16	17	17	15	13	13	14	17	17	17	18	18	18	18	18	17	17	16	15	14	13	16	19	18	19	19	18	17	16	16	16
JUNE																																
MAXIMUM	23	22	24	25	26	26	23	21	21	21	23	24	24	24	25	26	23	25	26	27	26	27	28	28	27	25	26	27	28	--	25	
MINIMUM	17	19	19	19	20	20	21	19	18	17	19	21	20	18	19	20	20	19	21	20	21	21	23	23	23	22	22	19	19	21	--	20
JULY																																
MAXIMUM	29	29	26	26	26	28	28	26	24	24	26	26	26	27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	22	24	23	21	21	22	22	22	22	22	22	22	22	22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUGUST																																
MAXIMUM	--	--	--	--	--	--	--	29	29	28	27	28	27	27	26	28	29	29	28	29	29	29	29	29	29	28	27	26	25	24	24	23
MINIMUM	--	--	--	--	--	--	--	24	24	24	24	23	23	24	23	24	24	24	25	24	25	25	25	25	25	24	24	22	21	20	20	--
SEPTEMBER																																
MAXIMUM	24	24	25	24	23	24	24	23	23	24	22	22	22	22	22	22	22	22	22	23	24	24	24	23	23	22	22	22	22	21	--	23
MINIMUM	21	20	20	22	22	21	19	19	21	21	19	18	17	18	19	19	20	20	19	20	20	20	21	21	21	21	21	19	19	19	18	--

TENNESSEE RIVER BASIN

03535000 BULLRUN CREEK NEAR HALLS CROSSROADS, TENN.

LOCATION.--Lat 36°06'52", long 63°59'16", Knox County, temperature recorder at gaging station on left bank on downstream side of bridge on U.S. Highway 441, 2.1 miles downstream from Smith Branch and 4.0 miles northwest of Halls Crossroads.

DRAINAGE AREA.--66.5 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1966 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 7-10; minimum, 2.0°C Jan. 8, 9, Feb. 12-18, 19, 20, 22-27.

Period of record:

Water temperatures: Maximum, 27.0°C Aug. 7-10, 1968; minimum, 1.0°C Dec. 26-28, 1966, Feb. 9, 1967.

TEMPERATURE (°C) OF WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																																	AVER- AGE
MONTH	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			
OCTOBER																																		
MAXIMUM	14	15	16	17	18	19	21	21	19	17	16	15	16	17	18	18	19	17	15	13	13	13	13	13	13	13	12	12	11	10	11	15		
MINIMUM	13	14	15	16	17	18	19	21	19	17	16	15	14	16	17	18	17	15	13	13	12	12	12	12	12	12	12	11	9	9	10	14		
NOVEMBER																																		
MAXIMUM	13	13	13	12	11	9	7	6	6	7	8	11	11	9	8	6	6	7	6	7	8	9	9	9	9	9	9	8	6	7	--	0		
MINIMUM	11	13	12	11	9	7	6	6	5	6	7	8	9	9	8	6	6	6	5	5	5	7	8	9	8	8	8	8	6	4	--	7		
DECEMBER																																		
MAXIMUM	8	8	8	8	7	8	9	10	9	10	11	11	9	8	8	6	9	10	11	12	9	7	7	7	7	7	7	7	4	4	4	8		
MINIMUM	7	7	8	7	6	7	8	9	9	9	10	9	8	8	6	6	6	6	9	10	11	8	7	6	6	7	4	4	4	4	3	4	7	
JANUARY																																		
MAXIMUM	4	4	5	5	4	4	4	3	3	3	5	6	5	4	4	4	3	3	3	3	3	3	6	6	6	4	3	3	4	5	6	8	4	
MINIMUM	4	4	4	4	3	3	3	2	2	3	3	5	5	4	3	3	3	3	3	3	3	3	5	6	4	4	3	3	3	4	6	4	4	
FEBRUARY																																		
MAXIMUM	8	8	8	6	4	4	5	4	5	4	5	4	3	2	2	2	3	3	3	3	3	3	3	2	2	2	3	3	3	3	--	--	4	
MINIMUM	8	8	6	4	3	4	4	4	4	4	4	3	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	3	3	3	--	--	3	
MARCH																																		
MAXIMUM	3	4	5	5	4	4	4	6	7	8	8	9	9	7	7	8	9	10	12	13	13	11	8	9	11	12	13	13	16	16	0			
MINIMUM	3	3	4	4	4	4	4	4	6	7	8	8	6	5	6	7	8	9	10	12	11	8	6	7	9	10	12	13	13	16	8			
APRIL																																		
MAXIMUM	16	15	13	14	14	13	14	14	14	14	14	14	14	16	16	15	14	16	17	19	19	19	20	19	17	15	15	16	17	--	16			
MINIMUM	14	13	13	13	13	13	11	13	14	14	14	14	12	13	14	14	16	17	18	18	19	17	13	14	15	15	16	16	14	--	14			
MAY																																		
MAXIMUM	17	17	18	18	18	16	15	17	17	17	18	19	20	20	21	21	19	19	18	16	16	17	19	21	23	23	23	23	21	21	27	--	21	
MINIMUM	16	17	17	18	16	14	14	15	17	17	17	18	19	20	19	21	19	18	16	16	14	15	17	19	21	18	18	16	16	16	17			
JUNE																																		
MAXIMUM	17	17	18	18	19	19	19	20	20	22	22	22	22	21	20	20	20	20	21	21	21	22	23	23	23	23	23	23	21	21	27	--	21	
MINIMUM	16	17	17	18	18	19	19	19	20	20	20	22	21	19	20	20	20	20	20	20	20	21	21	21	22	23	23	23	21	20	20	21	--	20
JULY																																		
MAXIMUM	23	24	24	23	22	22	22	22	22	22	23	23	23	23	24	24	24	24	24	24	24	25	24	25	25	25	25	24	24	24	23	23	23	
MINIMUM	22	23	23	22	21	21	22	22	22	22	22	23	23	23	23	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	23	23	23	
AUGUST																																		
MAXIMUM	23	24	24	25	25	26	27	27	27	27	26	26	24	24	24	24	24	24	24	26	26	26	26	26	26	26	26	26	23	21	19	18	24	
MINIMUM	23	23	24	24	24	25	26	26	27	26	26	24	24	24	24	24	24	24	24	24	24	25	25	26	26	26	26	26	23	21	19	18	24	
SEPTEMBER																																		
MAXIMUM	18	18	18	18	18	18	18	18	18	18	17	16	16	16	16	16	16	16	16	16	17	18	18	18	18	18	18	18	16	16	16	--	17	
MINIMUM	17	18	18	18	18	18	17	17	18	17	16	16	15	16	16	16	16	16	16	16	17	18	18	18	18	18	18	18	16	16	15	14	--	17

03538250 EAST FORK POPLAR CREEK NEAR OAK RIDGE, TENN.

LOCATION.--Lat 35°57'58", long 84°21'30", at gaging station near left bank on county road bridge 0.3 mile north of State Highway 95, 1.7 miles upstream from Bear Creek and 2.8 miles southwest of intersection of State Highway 95 and Anderson County line in Oak Ridge.

DRAINAGE AREA.--19.5 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1961 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 24, 25; minimum, 2.0°C Feb. 19.

Period of record:

Water temperatures: Maximum, 27.0°C July 13-15, 1966, Aug. 24, 25, 1968; minimum, 1.0°C Feb. 3, 4, 1965.

REMARKS.--Temperature recorder stopped Oct. 1-9, range in temperature 13.0°C to 20.0°C; Jan. 24-29, range in temperature 6.0°C to 9.0°C; Apr. 1, 2, range in temperature 12.0°C to 14.0°C; Apr. 20 to May 6, range in temperature 13.0°C to 14.0°C. Miscellaneous chemical analyses furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CF5)	SILICA (5102)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	SULFATE (SO4)
JAN.									
03...	83	5.2	.05	42	9.5	6.8	1.5	121	27
MAR.									
07...	A25	1.9	.02	44	6.2	11	3.0	127	24
MAY									
07...	26	5.9	.03	44	8.3	12	2.7	131	37
SEPT.									
17...	18	7.7	.05	43	7.7	17	3.7	132	35
			DIS- SOLVED SOLIDS RESI- DUE AT 18°C	HARD- NESS (CA,MG)	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR	
JAN.									
03...	5.0	8.0	160	128	272	7.2	9	5	
MAR.									
07...	9.5	14	179	136	295	7.7	8	5	
MAY									
07...	9.5	15	191	145	335	7.2	14	5	
SEPT.									
17...	12	14	221	138	360	7.0	19	5	

A DAILY MEAN DISCHARGE.

TENNESSEE RIVER BASIN

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03538250 EAST FORK POPLAR CREEK NEAR OAK RIDGE, TENN.--Continued
 TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
 (CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)
 DAY

	DAY																															AVEP- AGE		
MONTH	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			
OCTOBER																																		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	17	16	16	16	17	18	18	18	16	14	14	14	14	14	14	14	14	13	13	12	12	14	--	
MINIMUM	--	--	--	--	--	--	--	--	--	--	16	15	15	14	16	17	18	18	16	14	13	13	12	13	14	14	12	12	12	11	11	12	--	
NOVEMBER	14	14	13	13	11	10	9	9	10	11	12	13	13	12	11	9	9	10	9	9	10	11	12	11	11	11	11	10	7	8	--	11		
MAXIMUM	14	13	12	11	10	9	8	8	8	9	11	12	12	11	9	8	8	9	8	8	9	10	11	10	10	10	9	10	7	6	7	--	10	
MINIMUM	9	9	9	9	8	10	12	12	12	13	13	13	11	11	12	11	9	10	12	12	13	13	10	8	7	8	9	9	8	8	8	8	10	
DECEMBER	8	9	9	7	7	8	10	12	12	12	12	12	11	10	11	11	9	8	9	10	12	12	10	8	7	8	9	8	8	8	7	8	9	
MAXIMUM	8	9	9	9	8	8	8	7	7	7	8	8	8	8	7	7	7	7	7	7	8	8	9	9	10	--	--	--	--	--	11	11	8	
MINIMUM	8	8	8	8	7	7	7	6	6	6	7	8	8	7	7	7	7	7	7	7	8	9	9	--	--	--	--	--	--	--	9	11	8	
JANUARY	11	11	10	8	8	8	8	8	7	7	6	5	4	4	5	6	6	6	4	6	6	5	4	4	5	4	5	6	7	7	--	6		
MAXIMUM	11	10	8	7	7	7	7	7	7	6	5	3	3	3	4	5	6	4	2	4	4	3	3	3	4	4	5	6	7	--	5			
MINIMUM	7	7	8	7	7	7	10	11	11	13	13	13	12	10	11	11	11	12	12	14	14	14	11	10	11	12	13	14	14	16	14	11		
MARCH	6	6	7	5	5	7	7	8	10	11	12	11	9	8	9	11	10	11	11	10	11	11	9	8	9	11	11	13	14	13	15	10		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
APRIL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MAY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
JUNE	19	20	20	20	20	21	21	21	21	21	22	23	23	22	21	22	23	22	21	22	22	22	22	23	23	23	23	20	21	22	--	22		
MAXIMUM	19	19	18	18	19	19	21	21	21	21	21	22	22	22	20	21	22	21	21	21	21	21	21	21	21	22	22	20	19	17	21	--		
MINIMUM	23	23	23	23	23	23	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AUGUST	23	23	23	23	23	23	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MAXIMUM	23	22	22	22	22	23	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MINIMUM	21	22	21	22	22	22	21	22	22	21	20	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	19	19	20	--	21	
SEPTEMBER	20	21	20	21	22	22	21	20	21	21	20	19	18	19	19	20	21	20	21	20	20	21	21	21	21	21	21	21	19	18	18	10	--	20
MAXIMUM	21	22	21	22	22	22	21	22	22	21	20	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	19	18	18	10	--	
MINIMUM	20	21	20	21	22	22	21	20	21	21	20	19	18	19	19	20	21	20	21	20	20	21	21	21	21	21	21	21	19	18	18	10	--	

03540100 CRAB ORCHARD CREEK NEAR DEERMONT, TENN.

LOCATION.--Lat 36°00'40", long 84°36'44", Morgan County, at gaging station on county road bridge 0.15 mile above Smith Branch, 1.9 miles southwest of Deermont and 2.9 miles upstream from mouth.

DRAINAGE AREA.--33.7 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1966 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C June 30, July 1, 18, 19, 26, 27, Aug. 6, 8, 10, 24; minimum, 1.0°C Feb. 12-16, 20, 22-28, Mar. 1, 2.

Period of record:

Water temperatures: Maximum, 28.0°C June 30, July 1, 18, 19, 26, 27, Aug. 6, 8, 10, 24, 1968; minimum, 1.0°C Dec. 25-28, 1966, Feb. 26, 27, 1967, Feb. 12-16, 19, 20, 22-28, Mar. 1, 2, 1968.

REMARKS.--Miscellaneous chemical analyses furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (%O2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	8ICAR- BONATE (HCO3)	SULFATE (SO4)
JAN. 11...	A540	3.1	.08	2.5	1.0	.5	.6	2	8.4
MAR. 26...	113	2.3	.07	1.9	1.5	.4	.7	2	8.4
MAY 24...	12	4.8	.00	4.3	2.4	.6	.8	1	20
DATE	CHLOR- IDE (CL)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR	
JAN. 11...	1.5	.1	21	10	36	5.0	7	5	
MAR. 26...	1.5	.2	21	10	36	4.7	--	2	
MAY 24...	1.5	.0	30	20	62	4.8	--	5	

A DISCHARGE AT TIME OF SAMPLING.

TENNESSEE RIVER BASIN

03540100 CRAB ORCHARD CREEK NEAR DEERMONT, TENN.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

MONTH	DAY																																AVER- AGE
	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		
OCTOBER																																	
MAXIMUM	13	15	16	18	18	19	19	19	18	15	14	15	14	16	16	18	18	16	16	13	12	11	11	11	11	12	12	11	11	11	11	12	
MINIMUM	11	12	13	13	14	16	17	17	14	12	11	11	9	12	13	13	14	13	12	11	10	9	9	11	12	11	11	9	9	9	11	12	
NOVEMBER																																	
MAXIMUM	13	13	13	14	12	10	8	8	8	9	9	11	11	11	9	8	7	6	6	6	6	7	7	7	7	7	7	6	4	6	--	9	
MINIMUM	12	13	13	12	10	8	8	7	7	8	9	9	11	9	8	7	6	5	4	5	6	6	6	7	7	6	6	4	4	4	--	8	
DECEMBER																																	
MAXIMUM	7	7	8	8	7	7	8	8	9	10	11	11	9	9	9	9	7	9	11	11	12	12	9	7	7	7	6	5	5	5	5	8	
MINIMUM	6	7	7	7	6	6	7	8	8	9	10	9	8	8	9	7	6	7	10	11	11	9	7	6	6	6	4	4	5	4	4	7	
JANUARY																																	
MAXIMUM	5	6	7	7	7	6	6	7	8	9	6	7	7	7	6	4	4	4	3	3	4	6	6	6	6	6	4	3	4	4	6	8	
MINIMUM	5	5	5	7	5	5	4	3	3	4	6	7	6	4	4	4	3	3	3	3	4	6	6	4	3	2	3	3	4	6	7	4	
FEBRUARY																																	
MAXIMUM	8	8	7	6	4	4	4	4	4	4	3	2	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	2	--	--	3	
MINIMUM	6	7	6	4	4	3	4	4	4	3	2	1	1	1	1	1	2	2	1	1	2	1	1	1	1	1	1	1	1	2	--	2	
MARCH																																	
MAXIMUM	2	3	3	3	3	3	4	4	6	7	9	9	8	6	7	7	8	8	10	10	10	10	7	6	7	8	9	10	11	12	12	7	
MINIMUM	1	1	2	2	2	3	2	3	4	6	7	8	6	6	7	7	7	7	8	10	10	7	6	5	6	6	7	9	10	11	12	6	
APRIL																																	
MAXIMUM	13	12	10	11	12	11	12	12	13	13	13	14	14	14	14	14	13	14	16	16	16	17	19	19	20	19	17	16	16	16	--	13	
MINIMUM	11	10	10	10	10	9	10	12	12	12	11	11	12	14	13	12	13	14	15	15	16	16	17	18	17	16	14	13	15	14	15	--	15
MAY																																	
MAXIMUM	18	18	19	18	18	16	17	18	18	19	19	21	21	21	23	23	22	22	21	19	19	19	22	22	24	24	21	20	18	17	18	20	
MINIMUM	15	16	17	18	16	14	15	17	18	18	18	19	19	20	21	22	20	20	19	18	17	16	18	19	19	19	17	16	17	17	16	18	
JUNE																																	
MAXIMUM	19	19	19	20	21	22	22	20	22	23	24	24	23	23	23	23	23	23	24	24	24	24	25	26	26	26	24	23	24	27	28	23	
MINIMUM	17	18	18	18	18	19	20	20	20	20	21	22	21	18	19	18	21	19	20	21	20	21	27	27	23	23	23	21	19	20	21	20	
JULY																																	
MAXIMUM	28	27	24	24	26	26	26	25	23	26	27	27	24	24	26	26	27	27	28	28	27	27	27	27	27	27	27	28	28	26	25	24	26
MINIMUM	22	23	22	20	19	20	20	21	22	21	21	22	22	22	22	21	22	22	24	23	22	22	22	22	22	22	23	24	22	23	21	22	
AUGUST																																	
MAXIMUM	26	24	25	26	27	28	27	28	27	28	26	26	23	24	24	24	26	27	27	27	27	27	27	27	28	27	24	23	22	23	24	27	
MINIMUM	23	22	22	22	22	22	23	23	23	23	23	20	22	22	22	22	21	22	21	23	22	22	22	22	23	22	19	17	16	15	17	16	21
SEPTEMBER																																	
MAXIMUM	22	24	26	21	20	24	24	24	24	23	18	23	24	26	26	22	21	18	18	20	22	22	22	22	22	20	19	20	20	21	--	27	
MINIMUM	18	18	15	18	19	17	14	16	17	18	16	12	11	11	12	16	17	16	16	16	17	18	17	17	17	17	16	13	13	13	13	--	16

03571000 SEQUATCHIE RIVER NEAR WHITWELL, TENN.

LOCATION.--Lat 35°12'22", long 85°29'48", Marion County, temperature recorder at gaging station on right bank 15 ft downstream from highway bridge, 1.5 miles east of Whitwell, 3 miles upstream from bridge on State Highway 27, 4.5 miles downstream from Griffith Creek and at mile 25.1.

DRAINAGE AREA.--402 sq mi (includes 17.8 sq mi in Grassy, Swaggerty, and Little Coves).

PERIOD OF RECORD.--Water temperatures: March 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 26.0°C Aug. 19-26; minimum, 6.0°C Feb. 12-15, 22-26.

Period of record:

Water temperatures: Maximum, 26.0°C on several days during July to September 1962, July 14-16, 29, 1966, Aug. 19-26, 1968; minimum, 2.0°C Dec. 23, 24, 1963, Jan. 1-3, 1964, Jan. 31, Feb. 1, 1966.

REMARKS.--Recorder pen failed to mark Aug. 1, 2, 8-12; thermograph out of water Sept. 12-15, 21-30.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																																AVER-
MONTH	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	AGE	
OCTOBER																																	
MAXIMUM	15	16	16	17	17	17	18	18	18	16	16	14	15	16	16	16	16	15	14	13	13	13	14	14	13	13	13	13	12	12	15		
MINIMUM	15	15	16	16	17	17	17	18	18	16	16	14	14	14	15	16	16	16	15	14	13	13	13	14	14	13	13	13	12	12	15		
NOVEMBER																																	
MAXIMUM	13	13	13	13	12	11	10	9	9	9	10	11	12	12	12	11	10	9	9	9	9	10	10	10	10	10	10	10	9	9	--	10	
MINIMUM	12	13	13	12	11	10	9	9	9	9	10	11	12	11	11	10	10	10	10	9	9	9	9	10	10	10	10	10	9	8	--	10	
DECEMBER																																	
MAXIMUM	9	9	9	9	9	9	10	11	11	12	12	12	11	11	11	11	12	12	13	13	14	12	9	9	9	9	9	9	8	8	8	10	
MINIMUM	9	9	9	9	9	9	9	10	11	11	12	12	11	11	11	10	10	10	12	12	13	12	12	9	8	8	9	9	9	8	8	10	
JANUARY																																	
MAXIMUM	8	8	9	9	9	8	8	7	7	7	7	7	7	7	7	7	7	8	8	9	10	10	9	8	8	9	9	9	9	10	11	8	
MINIMUM	8	8	8	9	8	8	7	7	7	7	7	7	7	7	7	7	7	7	8	8	9	9	9	8	8	8	8	9	9	10	8		
FEBRUARY																																	
MAXIMUM	12	12	12	11	10	9	9	8	8	8	8	7	6	6	7	7	8	8	8	7	7	7	6	6	7	7	7	7	7	--	8		
MINIMUM	11	12	11	10	9	9	8	8	8	8	7	6	6	6	6	7	7	8	7	7	7	7	6	6	6	6	6	7	7	--	8		
MARCH																																	
MAXIMUM	7	8	9	9	9	9	11	11	13	13	12	11	9	9	11	11	12	12	13	13	11	9	9	9	11	12	12	13	14	14	11		
MINIMUM	7	7	8	8	8	9	9	11	11	13	12	11	9	9	11	11	12	12	13	13	11	9	9	9	9	11	12	12	13	14	10		
APRIL																																	
MAXIMUM	14	14	13	12	12	12	13	13	13	13	13	14	14	14	14	14	16	16	17	17	17	17	17	17	17	17	16	16	16	16	--	15	
MINIMUM	14	13	12	12	12	12	13	13	13	13	13	14	14	14	14	14	16	16	17	17	17	17	17	17	17	16	16	16	16	16	--	15	
MAY																																	
MAXIMUM	16	17	17	17	17	16	16	16	16	16	17	18	18	18	18	18	18	18	17	16	16	17	18	19	19	19	19	19	19	18	17	17	
MINIMUM	15	16	17	17	17	16	16	16	16	16	16	17	18	18	18	18	17	16	16	16	17	18	19	19	19	19	19	19	18	17	17		
JUNE																																	
MAXIMUM	18	19	19	20	20	21	21	21	21	21	22	22	22	21	21	21	22	22	22	22	22	22	23	23	23	23	23	22	22	23	--	21	
MINIMUM	18	18	19	19	20	20	21	20	21	21	21	21	21	21	21	21	21	22	22	22	22	22	22	22	22	22	23	22	22	22	--	21	
JULY																																	
MAXIMUM	23	23	23	23	22	22	22	22	22	22	22	23	23	23	23	23	24	24	24	24	24	24	24	24	25	25	25	25	25	26	24	24	
MINIMUM	23	23	23	22	22	22	22	22	22	22	22	22	22	22	22	22	23	24	24	24	24	24	24	24	24	24	24	25	25	24	24	24	
AUGUST																																	
MAXIMUM	--	--	24	25	25	25	--	--	--	--	--	--	--	24	24	24	24	25	25	26	26	26	26	26	26	26	26	26	23	22	22	--	
MINIMUM	--	--	24	24	24	24	24	--	--	--	--	--	--	24	24	24	24	24	25	25	25	25	25	25	25	25	24	23	22	21	21	20	
SEPTEMBER																																	
MAXIMUM	22	22	23	23	23	23	23	23	23	22	21	--	--	--	--	--	21	21	21	20	19	--	--	--	--	--	--	--	--	--	--	--	
MINIMUM	21	21	21	22	22	22	21	21	21	21	20	--	--	--	--	--	20	20	19	19	--	--	--	--	--	--	--	--	--	--	--	--	

TENNESSEE RIVER BASIN

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03572900 TOWN CREEK NEAR GERALDINE, ALA.

LOCATION.--Lat 34°22'42", long 85°59'25", in SE 1/4 sec. 34, T. 7 S., R. 6 E., De Kalb County, temperature recorder at gaging station at bridge on State Highway 75, 1,600 ft downstream from Reedy Creek, 4,500 ft upstream from Traylor Branch, 2 miles north northeast of Geraldine, and 15 miles northeast of Albertville.

DRAINAGE AREA.--141 sq mi.

PERIOD OF RECORD.--Water temperatures: April to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 31.0°C Aug. 22-24.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFD)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH
JAN. 04...	1060	5	0	2.6	15	8	42	6.6
FEB. 19...	95	28	0	3.2	15	0	45	6.9
JUNE 10...	29	8	0	3.2	10	3	36	6.6

TEMPERATURE (°C) OF WATER, APRIL TO SEPTEMBER 1968

(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
CAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	17.0	13.0	20.0	17.0	---	---	28.0	24.0	---	---
2	---	---	19.0	14.0	22.0	19.0	---	---	27.0	24.0	---	---
3	---	---	18.0	14.0	23.0	19.0	---	---	27.0	23.0	27.0	19.0
4	---	---	17.0	15.0	23.0	19.0	---	---	28.0	24.0	27.0	22.0
5	---	---	17.0	13.0	24.0	20.0	---	---	28.0	24.0	26.0	23.0
6	---	---	17.0	12.0	24.0	20.0	27.0	22.0	29.0	24.0	27.0	23.0
7	---	---	17.0	12.0	23.0	20.0	26.0	21.0	29.0	25.0	26.0	20.0
8	---	---	17.0	15.0	24.0	20.0	24.0	22.0	30.0	25.0	27.0	21.0
9	---	---	19.0	16.0	26.0	21.0	23.0	22.0	29.0	26.0	27.0	21.0
10	---	---	18.0	16.0	27.0	23.0	23.0	21.0	29.0	25.0	26.0	---
11	---	---	18.0	17.0	27.0	23.0	24.0	21.0	28.0	25.0	---	16.0
12	---	---	19.0	17.0	28.0	23.0	24.0	22.0	28.0	24.0	22.0	14.0
13	---	---	19.0	17.0	28.0	22.0	24.0	22.0	27.0	24.0	---	---
14	---	---	18.0	17.0	27.0	21.0	26.0	22.0	28.0	24.0	---	---
15	---	---	18.0	17.0	27.0	21.0	25.0	23.0	---	25.0	---	---
16	---	---	18.0	17.0	28.0	23.0	24.0	23.0	---	---	---	---
17	16.0	13.0	17.0	16.0	27.0	24.0	24.0	22.0	---	---	---	---
18	17.0	15.0	17.0	16.0	28.0	23.0	26.0	22.0	---	---	---	---
19	17.0	16.0	17.0	16.0	27.0	24.0	24.0	21.0	---	---	---	---
20	17.0	16.0	17.0	14.0	---	23.0	26.0	23.0	---	---	---	---
21	17.0	15.0	16.0	14.0	---	23.0	26.0	23.0	---	---	---	---
22	17.0	16.0	16.0	13.0	---	24.0	27.0	24.0	31.0	26.0	---	---
23	18.0	16.0	18.0	14.0	---	25.0	27.0	24.0	31.0	26.0	---	---
24	19.0	15.0	19.0	16.0	---	24.0	28.0	24.0	31.0	26.0	---	---
25	17.0	13.0	21.0	18.0	---	25.0	27.0	24.0	30.0	26.0	---	---
26	17.0	13.0	20.0	18.0	---	25.0	29.0	24.0	---	---	---	---
27	17.0	14.0	19.0	17.0	---	---	29.0	26.0	---	---	---	---
28	16.0	14.0	18.0	17.0	---	---	29.0	26.0	---	---	---	---
29	15.0	14.0	19.0	16.0	---	---	29.0	23.0	---	---	---	---
30	16.0	13.0	19.0	16.0	---	---	26.0	23.0	---	---	---	---
31	---	---	19.0	16.0	---	---	27.0	23.0	---	---	---	---
MONTH	---	---	21.0	12.0	---	17.0	29.0	21.0	---	---	---	---

TENNESSEE RIVER BASIN

03584000 RICHLAND CREEK NEAR PULASKI, TENN.

LOCATION.--Lat 35°12'51", long 87°06'05", Giles County, at gaging station on right bank 1,200 ft upstream from bridge on U.S. Highway 64, 1 mile downstream from Weakley Creek, 4 miles west of Pulaski and at mile 30.1.

DRAINAGE AREA.--366 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1964 to September 1967, March to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 27.0°C Aug. 8, 9; minimum, 4.0°C Mar. 23.

Period of record:

Water temperatures: Maximum, 27.0°C July 14, 1966, Aug. 8, 9, 1968; minimum, 2.0°C Jan. 29, 1966.

REMARKS.--Records furnished by Tennessee Valley Authority.

TEMPERATURE (°C) OF WATER, MARCH TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

		DAY																															AVER- AGE	
MONTH		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		
MARCH																																		
MAXIMUM		--	--	--	--	--	--	--	--	--	--	--	12	11	10	11	13	13	13	15	15	12	9	13	12	13	14	16	17	18	18	--	--	
MINIMUM		--	--	--	--	--	--	--	--	--	--	--	11	8	8	9	11	11	11	12	13	12	7	4	6	8	10	12	13	13	14	15	--	
APRIL																																		
MAXIMUM		15	14	14	16	16	14	15	16	15	16	17	16	16	18	18	17	18	20	21	21	19	17	18	18	18	18	17	17	18	17	--	17	
MINIMUM		13	12	12	14	13	11	12	15	14	14	13	13	14	16	15	13	15	17	19	19	17	14	14	14	14	15	15	13	16	16	14	--	14
MAY																																		
MAXIMUM		18	19	20	19	18	16	17	17	17	18	18	18	20	19	21	21	20	17	17	16	16	16	16	18	20	21	20	19	18	18	19	19	
MINIMUM		14	16	17	18	16	13	13	16	16	16	17	17	17	18	18	16	16	16	14	14	13	15	17	19	19	17	16	16	16	16	--	16	
JUNE																																		
MAXIMUM		20	20	21	21	21	21	22	22	22	23	23	23	23	22	22	22	22	22	22	22	22	22	23	23	24	24	23	22	22	23	24	--	22
MINIMUM		17	18	18	19	19	19	19	20	20	21	21	21	21	19	19	20	21	21	21	21	21	21	21	21	21	22	23	22	20	20	21	--	20
JULY																																		
MAXIMUM		24	24	24	23	22	22	22	22	22	23	23	22	22	23	23	22	23	24	23	22	23	23	24	23	24	24	25	26	26	24	24	24	23
MINIMUM		22	23	22	21	21	20	20	21	21	21	21	22	21	20	22	22	22	22	22	21	21	22	22	22	23	23	24	24	24	23	23	--	27
AUGUST																																		
MAXIMUM		25	24	25	26	26	26	26	27	27	26	26	25	25	25	25	26	26	26	26	26	26	26	26	26	26	26	25	23	22	22	21	21	25
MINIMUM		24	23	23	24	24	24	24	24	24	24	24	23	23	23	23	24	24	24	24	24	24	24	24	24	24	24	24	23	21	19	19	19	23
SEPTEMBER																																		
MAXIMUM		22	22	22	22	22	22	21	21	21	20	19	19	20	20	20	21	21	19	20	21	21	22	21	21	20	19	19	19	19	19	--	21	
MINIMUM		19	19	19	21	21	21	19	19	20	19	18	17	17	17	18	19	19	18	18	19	19	20	20	20	20	19	19	17	17	17	--	19	

03591800 BEAR CREEK NEAR HACKLEBURG, ALA.

LOCATION.--Lat 34°17'01", long 87°46'26", in SW¼ sec. 11, T. 9 S., R. 12 W., Marion County, temperature recorder at gaging station on right bank downstream side of bridge on Alabama Highway 172, 2 miles upstream from Bluff Creek and 3.5 miles east of Hackleburg.

DRAINAGE AREA.--143 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1965 to September 1967.

Water temperatures: March 1965 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C on several days during June, July and Aug.; minimum, 1.0°C Mar. 1.

Period of record:

Water temperatures: Maximum, 31.0°C July 13-16, 1966; minimum, freezing point Jan. 29 to Feb. 1, 1966.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	OIS- CHARGE (CF S)	BICAR- RONATE (HCO ₃)	CAR- BONATE (CO ₃)	CHLO- RIDE (CL)	HARO- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH
NOV.								
OR...	78	12	0	2.4	14	4	36	7.1
APR.								
OS...	553	6	0	1.8	10	5	25	6.8
JUNE								
19...	46	10	0	1.6	10	2	36	6.7

03591800 BEAR CREEK NEAR HACKLEBURG, ALA.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	13.0	14.0	13.0	9.0	8.0	7.0	6.0	12.0	11.0	4.0	1.0
2	17.0	14.0	13.0	12.0	10.0	9.0	7.0	6.0	12.0	11.0	6.0	3.0
3	17.0	14.0	12.0	11.0	10.0	9.0	8.0	7.0	11.0	8.0	7.0	5.0
4	17.0	15.0	11.0	9.0	8.0	7.0	9.0	8.0	8.0	7.0	7.0	4.0
5	18.0	16.0	9.0	7.0	8.0	7.0	8.0	7.0	7.0	6.0	7.0	4.0
6	18.0	17.0	8.0	6.0	9.0	8.0	7.0	7.0	7.0	6.0	8.0	6.0
7	19.0	17.0	7.0	6.0	11.0	9.0	8.0	6.0	7.0	5.0	9.0	6.0
8	18.0	18.0	7.0	5.0	12.0	11.0	6.0	5.0	5.0	4.0	10.0	7.0
9	18.0	16.0	7.0	4.0	13.0	12.0	6.0	6.0	4.0	3.0	11.0	9.0
10	16.0	13.0	8.0	6.0	13.0	13.0	7.0	6.0	4.0	3.0	13.0	11.0
11	14.0	13.0	9.0	7.0	14.0	13.0	8.0	7.0	4.0	3.0	13.0	12.0
12	14.0	13.0	12.0	9.0	13.0	11.0	8.0	7.0	4.0	2.0	12.0	11.0
13	15.0	13.0	12.0	10.0	11.0	10.0	7.0	6.0	3.0	2.0	11.0	9.0
14	17.0	14.0	12.0	10.0	12.0	11.0	6.0	4.0	3.0	2.0	9.0	8.0
15	17.0	15.0	10.0	8.0	13.0	11.0	5.0	4.0	3.0	3.0	9.0	8.0
16	18.0	17.0	9.0	7.0	11.0	9.0	6.0	4.0	4.0	3.0	11.0	5.0
17	18.0	16.0	9.0	7.0	13.0	9.0	5.0	4.0	6.0	4.0	11.0	9.0
18	16.0	14.0	8.0	7.0	14.0	13.0	6.0	4.0	6.0	4.0	11.0	10.0
19	14.0	13.0	7.0	6.0	14.0	14.0	6.0	4.0	5.0	3.0	12.0	10.0
20	13.0	12.0	8.0	6.0	14.0	14.0	7.0	5.0	6.0	4.0	13.0	12.0
21	14.0	12.0	9.0	7.0	15.0	14.0	7.0	6.0	6.0	4.0	14.0	13.0
22	14.0	12.0	12.0	9.0	16.0	13.0	8.0	7.0	4.0	3.0	13.0	9.0
23	14.0	11.0	12.0	11.0	13.0	10.0	8.0	8.0	4.0	2.0	9.0	7.0
24	15.0	14.0	12.0	11.0	11.0	9.0	8.0	6.0	4.0	2.0	8.0	6.0
25	14.0	13.0	12.0	11.0	9.0	8.0	6.0	4.0	4.0	3.0	10.0	8.0
26	13.0	12.0	11.0	10.0	9.0	8.0	5.0	3.0	4.0	4.0	11.0	9.0
27	13.0	12.0	11.0	9.0	8.0	7.0	6.0	4.0	5.0	4.0	12.0	10.0
28	12.0	11.0	9.0	8.0	7.0	6.0	7.0	6.0	4.0	3.0	13.0	12.0
29	12.0	11.0	8.0	7.0	6.0	6.0	8.0	7.0	4.0	3.0	14.0	12.0
30	13.0	12.0	9.0	7.0	6.0	6.0	9.0	8.0	---	---	15.0	13.0
31	14.0	13.0	---	---	7.0	6.0	12.0	9.0	---	---	16.0	15.0
MCATH	19.0	11.0	14.0	4.0	16.0	6.0	12.0	3.0	12.0	2.0	16.0	1.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	14.0	17.0	14.0	22.0	19.0	29.0	24.0	29.0	24.0	23.0	21.0
2	14.0	12.0	18.0	16.0	22.0	20.0	24.0	23.0	27.0	26.0	23.0	21.0
3	13.0	12.0	18.0	16.0	23.0	20.0	23.0	22.0	28.0	24.0	23.0	21.0
4	14.0	13.0	18.0	17.0	24.0	20.0	25.0	20.0	28.0	25.0	25.0	22.0
5	13.0	13.0	18.0	16.0	24.0	21.0	25.0	21.0	27.0	25.0	24.0	23.0
6	13.0	11.0	18.0	14.0	24.0	21.0	23.0	21.0	26.0	24.0	25.0	22.0
7	13.0	12.0	18.0	14.0	24.0	21.0	23.0	21.0	27.0	24.0	23.0	20.0
8	14.0	13.0	18.0	16.0	24.0	21.0	23.0	22.0	28.0	24.0	24.0	21.0
9	14.0	13.0	20.0	18.0	26.0	22.0	24.0	23.0	29.0	25.0	24.0	21.0
10	14.0	13.0	19.0	18.0	26.0	23.0	24.0	22.0	29.0	26.0	23.0	21.0
11	14.0	13.0	18.0	18.0	26.0	23.0	26.0	23.0	28.0	26.0	22.0	19.0
12	14.0	13.0	18.0	17.0	27.0	24.0	26.0	23.0	28.0	25.0	21.0	17.0
13	15.0	14.0	17.0	17.0	27.0	23.0	26.0	23.0	28.0	26.0	21.0	17.0
14	16.0	15.0	18.0	17.0	26.0	21.0	26.0	23.0	28.0	26.0	22.0	18.0
15	17.0	15.0	18.0	18.0	26.0	22.0	26.0	24.0	28.0	26.0	22.0	19.0
16	16.0	14.0	18.0	18.0	26.0	22.0	27.0	23.0	28.0	26.0	22.0	21.0
17	17.0	15.0	18.0	17.0	26.0	24.0	27.0	25.0	29.0	26.0	22.0	20.0
18	19.0	17.0	18.0	17.0	27.0	24.0	26.0	24.0	28.0	26.0	21.0	21.0
19	19.0	14.0	18.0	16.0	26.0	24.0	27.0	23.0	29.0	26.0	20.0	18.0
20	20.0	15.0	17.0	16.0	27.0	24.0	26.0	24.0	28.0	26.0	21.0	19.0
21	19.0	18.0	17.0	15.0	26.0	24.0	27.0	24.0	28.0	26.0	22.0	20.0
22	18.0	17.0	17.0	16.0	27.0	24.0	27.0	26.0	28.0	26.0	23.0	21.0
23	18.0	17.0	15.0	16.0	27.0	25.0	28.0	25.0	29.0	26.0	23.0	21.0
24	19.0	17.0	21.0	18.0	27.0	24.0	29.0	26.0	29.0	26.0	22.0	20.0
25	18.0	16.0	22.0	19.0	29.0	26.0	29.0	26.0	28.0	26.0	22.0	20.0
26	19.0	16.0	22.0	21.0	27.0	26.0	29.0	26.0	28.0	24.0	22.0	20.0
27	17.0	17.0	21.0	19.0	26.0	22.0	29.0	26.0	27.0	22.0	21.0	18.0
28	18.0	16.0	20.0	18.0	26.0	21.0	29.0	27.0	24.0	21.0	21.0	18.0
29	18.0	16.0	20.0	18.0	28.0	22.0	28.0	25.0	24.0	21.0	21.0	18.0
30	17.0	15.0	20.0	17.0	28.0	24.0	27.0	25.0	23.0	21.0	21.0	18.0
31	---	---	21.0	18.0	---	---	28.0	25.0	23.0	20.0	---	---
MONTH	20.0	11.0	22.0	14.0	29.0	19.0	29.0	20.0	29.0	20.0	25.0	17.0

TENNESSEE RIVER BASIN

03592200 CEDAR CREEK NEAR PLEASANT SITE, ALA.

LOCATION.--Lat 34°32'56", long 88°01'09", in SW 1/4 sec. 9, T. 6 S., R. 14 W., Franklin County, temperature recorder at gaging station on left bank on downstream side of pier of highway bridge, 2.6 miles east of Pleasant Site and 4.3 miles upstream from Little Bear Creek.

DRAINAGE AREA.--189 sq mi.

PERIOD OF RECORD.--Water temperatures: January 1963 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 29.0°C July 27, 28, Aug. 9, 10, 21, 23, 24; minimum, 2.0°C Feb. 12, 14, 23, 24, Mar. 1.

Period of record:

Water temperatures: Maximum, 32.0°C July 14, 15, 1966; minimum, freezing point on several days during winter periods.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER OF WATER										NON-CARBONATE HARDNESS		SPECIFIC CONDUCTANCE (MICRO-MHOS)		PH	
DATE		DIS-CHARGE (CFS)	BICARBONATE (HCO3)	CARBONATE (CO3)	CHLORIDE (CL)	HARDNESS (CA, MG)									
OCT. 11...		32	174	0	7.0	145	2		319		B.2				
NOV. 02...		86	166	4	8.8	139	0		326		B.4				
JAN. 10...		6400	51	0	1.4	48	6		100		7.6				
TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968 (CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)															
DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH				
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN			
1	16.0	13.0	15.0	14.0	10.0	8.0	7.0	6.0	14.0	13.0	7.0	2.0			
2	16.0	14.0	14.0	13.0	11.0	10.0	9.0	6.0	14.0	12.0	9.0	6.0			
3	18.0	16.0	13.0	11.0	11.0	9.0	9.0	8.0	12.0	8.0	11.0	9.0			
4	19.0	16.0	11.0	9.0	9.0	7.0	9.0	8.0	9.0	8.0	9.0	7.0			
5	19.0	17.0	9.0	8.0	9.0	7.0	8.0	7.0	9.0	7.0	9.0	7.0			
6	15.0	17.0	8.0	6.0	11.0	9.0	7.0	6.0	8.0	7.0	12.0	9.0			
7	20.0	18.0	8.0	6.0	13.0	11.0	6.0	6.0	8.0	6.0	12.0	9.0			
8	19.0	19.0	8.0	6.0	13.0	12.0	7.0	4.0	6.0	4.0	13.0	10.0			
9	19.0	17.0	8.0	6.0	14.0	13.0	7.0	6.0	6.0	3.0	14.0	13.0			
10	17.0	14.0	9.0	7.0	14.0	13.0	6.0	6.0	6.0	4.0	17.0	14.0			
11	14.0	12.0	12.0	9.0	14.0	13.0	8.0	6.0	6.0	4.0	17.0	13.0			
12	15.0	12.0	14.0	12.0	13.0	11.0	8.0	8.0	4.0	2.0	14.0	13.0			
13	15.0	13.0	13.0	11.0	13.0	11.0	8.0	6.0	4.0	3.0	13.0	11.0			
14	18.0	14.0	13.0	11.0	14.0	13.0	6.0	5.0	4.0	2.0	12.0	9.0			
15	19.0	16.0	11.0	9.0	14.0	11.0	6.0	5.0	5.0	3.0	13.0	10.0			
16	15.0	18.0	9.0	7.0	11.0	9.0	6.0	6.0	7.0	4.0	15.0	13.0			
17	19.0	17.0	9.0	7.0	13.0	9.0	6.0	4.0	7.0	6.0	15.0	12.0			
18	17.0	15.0	9.0	8.0	14.0	13.0	7.0	5.0	7.0	6.0	15.0	13.0			
19	15.0	13.0	9.0	6.0	15.0	14.0	7.0	5.0	6.0	3.0	18.0	14.0			
20	14.0	12.0	8.0	7.0	16.0	14.0	8.0	6.0	7.0	5.0	18.0	17.0			
21	14.0	12.0	11.0	8.0	16.0	15.0	9.0	7.0	7.0	4.0	18.0	14.0			
22	14.0	12.0	13.0	11.0	15.0	11.0	9.0	8.0	4.0	3.0	14.0	8.0			
23	15.0	12.0	12.0	11.0	11.0	8.0	9.0	8.0	4.0	2.0	9.0	8.0			
24	16.0	14.0	13.0	11.0	8.0	7.0	8.0	6.0	4.0	2.0	12.0	7.0			
25	16.0	14.0	12.0	10.0	8.0	6.0	6.0	4.0	4.0	4.0	14.0	9.0			
26	14.0	12.0	12.0	9.0	9.0	7.0	6.0	4.0	4.0	4.0	15.0	11.0			
27	15.0	13.0	11.0	9.0	7.0	6.0	7.0	6.0	6.0	4.0	16.0	12.0			
28	13.0	11.0	9.0	7.0	6.0	6.0	9.0	7.0	4.0	3.0	17.0	14.0			
29	12.0	11.0	7.0	7.0	6.0	5.0	11.0	9.0	4.0	3.0	18.0	15.0			
30	14.0	13.0	10.0	7.0	6.0	5.0	12.0	11.0	---	---	19.0	16.0			
31	15.0	14.0	---	---	7.0	6.0	13.0	11.0	---	---	19.0	18.0			
MONTH	20.0	11.0	15.0	6.0	16.0	5.0	13.0	4.0	14.0	2.0	19.0	2.0			
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER				
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN			
1	16.0	17.0	20.0	17.0	24.0	21.0	27.0	25.0	28.0	26.0	24.0	20.0			
2	17.0	15.0	21.0	18.0	24.0	23.0	28.0	24.0	28.0	26.0	23.0	20.0			
3	18.0	14.0	21.0	19.0	23.0	21.0	26.0	24.0	27.0	24.0	23.0	21.0			
4	18.0	17.0	22.0	19.0	23.0	20.0	24.0	22.0	28.0	25.0	24.0	22.0			
5	17.0	15.0	20.0	18.0	23.0	21.0	24.0	21.0	27.0	24.0	25.0	23.0			
6	17.0	13.0	19.0	16.0	24.0	21.0	24.0	22.0	27.0	24.0	24.0	22.0			
7	17.0	13.0	19.0	16.0	24.0	21.0	24.0	23.0	28.0	25.0	24.0	22.0			
8	17.0	16.0	21.0	19.0	24.0	22.0	24.0	23.0	28.0	26.0	24.0	22.0			
9	16.0	16.0	22.0	20.0	25.0	22.0	25.0	23.0	29.0	26.0	23.0	21.0			
10	18.0	15.0	22.0	21.0	26.0	23.0	26.0	23.0	29.0	26.0	23.0	21.0			
11	19.0	14.0	21.0	21.0	27.0	24.0	26.0	24.0	28.0	27.0	21.0	19.0			
12	18.0	14.0	21.0	20.0	27.0	24.0	26.0	24.0	28.0	25.0	22.0	18.0			
13	18.0	16.0	21.0	19.0	26.0	23.0	25.0	23.0	28.0	26.0	22.0	17.0			
14	19.0	17.0	21.0	20.0	25.0	22.0	26.0	24.0	27.0	25.0	22.0	18.0			
15	19.0	17.0	22.0	21.0	25.0	22.0	26.0	24.0	27.0	25.0	22.0	19.0			
16	19.0	16.0	22.0	21.0	26.0	23.0	27.0	24.0	27.0	25.0	21.0	21.0			
17	20.0	18.0	22.0	20.0	26.0	23.0	27.0	24.0	27.0	25.0	21.0	21.0			
18	22.0	19.0	21.0	19.0	26.0	23.0	26.0	23.0	28.0	26.0	22.0	21.0			
19	22.0	21.0	21.0	18.0	26.0	24.0	25.0	23.0	28.0	26.0	22.0	19.0			
20	22.0	21.0	20.0	17.0	26.0	24.0	26.0	24.0	27.0	26.0	21.0	19.0			
21	22.0	19.0	19.0	17.0	26.0	24.0	27.0	24.0	29.0	25.0	23.0	21.0			
22	22.0	19.0	20.0	18.0	26.0	24.0	28.0	25.0	28.0	26.0	24.0	21.0			
23	21.0	18.0	22.0	19.0	26.0	24.0	28.0	24.0	29.0	26.0	24.0	21.0			
24	21.0	18.0	23.0	21.0	26.0	24.0	27.0	26.0	29.0	26.0	24.0	21.0			
25	19.0	16.0	24.0	22.0	27.0	24.0	28.0	26.0	29.0	26.0	22.0	21.0			
26	20.0	17.0	24.0	22.0	27.0	25.0	28.0	26.0	29.0	26.0	22.0	20.0			
27	20.0	17.0	24.0	22.0	27.0	25.0	28.0	26.0	29.0	26.0	22.0	18.0			
28	20.0	19.0	23.0	21.0	26.0	22.0	29.0	26.0	26.0	23.0	22.0	18.0			
29	21.0	19.0	22.0	20.0	24.0	21.0	29.0	27.0	24.0	21.0	22.0	18.0			
30	21.0	18.0	22.0	19.0	25.0	22.0	28.0	26.0	24.0	21.0	21.0	18.0			
31	20.0	16.0	27.0	19.0	27.0	23.0	27.0	25.0	23.0	20.0	22.0	18.0			
MONTH	22.0	13.0	24.0	16.0	27.0	20.0	29.0	21.0	29.0	19.0	25.0	17.0			

03592300 LITTLE BEAR CREEK NEAR HALLTOWN, ALA.

LOCATION.--Lat 34°29'19", long 88°02'07", in NW¼ sec. 5, T. 7 S., R. 14 W., Franklin County, temperature recorder at gaging station near right bank on downstream side of pier of highway bridge, 2.7 miles northeast of Halltown, and 4.2 miles upstream from Cedar Creek.

DRAINAGE AREA.--78.2 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C July 25-28; minimum, 1.0°C Feb. 14, 24.

Period of record:

Water temperatures: Maximum, 29.0°C July 29, 1966; minimum, freezing point on many days during winter periods.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	DATE	DIS- CHARGE (CFS)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH		
	OCT. 11....	24	86	0	1.2	71	0	156	7.4		
	NOV. 07....	52	90	0	1.2	75	1	164	8.2		
	TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968 (CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)										
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1	17.0	14.0	16.0	14.0	10.0	8.0	8.0	7.0	13.0	11.0	8.0
2	18.0	15.0	14.0	13.0	12.0	10.0	8.0	7.0	13.0	11.0	8.0
3	19.0	16.0	13.0	12.0	11.0	9.0	10.0	8.0	11.0	8.0	9.0
4	20.0	16.0	13.0	11.0	9.0	8.0	10.0	9.0	9.0	7.0	8.0
5	20.0	16.0	11.0	8.0	9.0	7.0	9.0	9.0	8.0	6.0	8.0
6	21.0	17.0	9.0	6.0	11.0	9.0	8.0	6.0	8.0	6.0	10.0
7	21.0	18.0	9.0	6.0	12.0	11.0	8.0	7.0	7.0	5.0	11.0
8	19.0	18.0	9.0	5.0	13.0	12.0	7.0	6.0	5.0	4.0	11.0
9	19.0	16.0	9.0	5.0	14.0	12.0	7.0	6.0	5.0	2.0	12.0
10	17.0	14.0	10.0	7.0	14.0	14.0	7.0	7.0	6.0	3.0	14.0
11	16.0	13.0	12.0	8.0	14.0	12.0	9.0	7.0	6.0	4.0	13.0
12	16.0	13.0	13.0	11.0	12.0	11.0	9.0	8.0	4.0	2.0	12.0
13	17.0	13.0	13.0	10.0	12.0	11.0	8.0	6.0	4.0	2.0	11.0
14	18.0	14.0	13.0	11.0	13.0	12.0	6.0	4.0	4.0	1.0	9.0
15	19.0	15.0	12.0	9.0	13.0	11.0	6.0	5.0	4.0	2.0	10.0
16	19.0	17.0	10.0	8.0	11.0	9.0	7.0	6.0	6.0	2.0	12.0
17	18.0	16.0	9.0	8.0	13.0	9.0	6.0	4.0	7.0	4.0	12.0
18	17.0	16.0	10.0	8.0	14.0	13.0	7.0	6.0	7.0	4.0	13.0
19	16.0	13.0	9.0	6.0	14.0	14.0	7.0	5.0	8.0	2.0	14.0
20	15.0	12.0	9.0	7.0	16.0	14.0	8.0	6.0	7.0	3.0	15.0
21	16.0	12.0	11.0	8.0	16.0	14.0	9.0	7.0	6.0	4.0	14.0
22	15.0	12.0	12.0	10.0	14.0	11.0	8.0	8.0	4.0	2.0	13.0
23	16.0	12.0	12.0	11.0	11.0	8.0	9.0	8.0	4.0	2.0	7.0
24	16.0	15.0	12.0	11.0	9.0	7.0	8.0	6.0	5.0	1.0	9.0
25	16.0	14.0	12.0	9.0	5.0	8.0	6.0	4.0	4.0	2.0	11.0
26	15.0	13.0	12.0	9.0	9.0	8.0	6.0	4.0	4.0	3.0	12.0
27	16.0	13.0	11.0	8.0	8.0	6.0	7.0	6.0	5.0	4.0	13.0
28	14.0	11.0	8.0	8.0	7.0	6.0	9.0	7.0	4.0	4.0	14.0
29	14.0	12.0	8.0	7.0	6.0	6.0	11.0	8.0	5.0	3.0	16.0
30	15.0	13.0	10.0	8.0	7.0	6.0	13.0	10.0	7.0	5.0	13.0
31	16.0	15.0	---	---	8.0	7.0	13.0	11.0	---	---	16.0
MONTH	21.0	11.0	16.0	5.0	16.0	6.0	13.0	4.0	14.0	1.0	16.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1	16.0	14.0	18.0	15.0	---	---	---	---	26.0	24.0	23.0
2	15.0	13.0	19.0	16.0	---	---	26.0	23.0	27.0	23.0	18.0
3	16.0	13.0	19.0	17.0	---	---	24.0	22.0	27.0	23.0	19.0
4	16.0	14.0	20.0	18.0	---	---	24.0	20.0	27.0	24.0	21.0
5	14.0	13.0	19.0	16.0	---	---	24.0	27.0	26.0	23.0	22.0
6	14.0	12.0	18.0	14.0	---	---	23.0	20.0	26.0	23.0	21.0
7	14.0	12.0	19.0	14.0	---	---	23.0	20.0	26.0	23.0	19.0
8	14.0	14.0	19.0	16.0	---	---	23.0	21.0	27.0	23.0	19.0
9	14.0	14.0	21.0	17.0	---	---	24.0	21.0	27.0	23.0	21.0
10	16.0	13.0	20.0	19.0	---	---	25.0	21.0	27.0	24.0	20.0
11	16.0	12.0	19.0	18.0	---	---	24.0	21.0	27.0	24.0	18.0
12	16.0	13.0	---	---	---	---	24.0	21.0	27.0	23.0	16.0
13	16.0	14.0	---	---	---	---	26.0	21.0	27.0	24.0	16.0
14	17.0	16.0	---	---	---	---	26.0	22.0	26.0	24.0	16.0
15	16.0	15.0	---	---	---	---	26.0	22.0	27.0	24.0	16.0
16	17.0	13.0	---	---	---	---	27.0	22.0	27.0	24.0	20.0
17	17.0	16.0	---	---	---	---	27.0	22.0	27.0	23.0	20.0
18	20.0	17.0	---	---	---	---	25.0	22.0	27.0	23.0	18.0
19	21.0	18.0	---	---	---	---	25.0	22.0	27.0	24.0	18.0
20	21.0	19.0	---	---	---	---	25.0	21.0	27.0	23.0	19.0
21	19.0	17.0	---	---	---	---	26.0	22.0	27.0	23.0	---
22	18.0	17.0	---	---	---	---	26.0	23.0	27.0	23.0	---
23	19.0	17.0	---	---	---	---	27.0	23.0	27.0	24.0	---
24	19.0	16.0	---	---	---	---	27.0	23.0	27.0	23.0	---
25	19.0	14.0	---	---	---	---	28.0	23.0	27.0	24.0	---
26	19.0	14.0	---	---	---	---	28.0	23.0	26.0	22.0	---
27	18.0	16.0	---	---	---	---	28.0	24.0	24.0	21.0	---
28	18.0	16.0	---	---	---	---	28.0	24.0	23.0	19.0	---
29	18.0	17.0	---	---	---	---	26.0	24.0	23.0	19.0	---
30	17.0	14.0	---	---	---	---	27.0	23.0	22.0	19.0	---
31	---	---	---	---	---	---	27.0	23.0	22.0	18.0	---
MONTH	21.0	12.0	---	---	---	---	28.0	20.0	27.0	18.0	---

TENNESSEE RIVER BASIN

03592500 BEAR CREEK AT BISHOP, ALA.

LOCATION.--Lat 34°39'21", long 88°07'21", in SE 1/4 sec. 5, T.5S., R. 15 W., Colbert County, temperature recorder at gaging station on left bank 20 ft upstream from highway bridge, 0.5 mile downstream from Cedar Creek, 0.8 mile southwest of Bishop and at mile 27.3.

DRAINAGE AREA.--867 sq mi.

PERIOD OF RECORD.--Water temperatures: February 1962 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 30.0°C Aug. 24; minimum, 2.0°C Jan. 8, 9.

Period of record:

Water temperatures: Maximum, 31.0°C July 14-16, 1966; minimum, freezing point Dec. 26, 27, 1963, Jan. 1-3, 1964.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIC- CHARGE (CF3)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHQS)	PH
OCT. 02...	220	58	0	3.8	55	7	117	7.5
NOV. 02...	710	92	0	3.8	75	0	169	7.2
JAN. 02...	2060	62	0	3.0	60	9	133	7.2
FEB. 02...	1010	59	0	3.4	55	7	117	7.4

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	14.0	14.0	14.0	9.0	9.0	6.0	6.0	11.0	9.0	5.0	4.0
2	17.0	16.0	14.0	13.0	10.0	9.0	6.0	6.0	12.0	11.0	6.0	4.0
3	17.0	17.0	13.0	12.0	10.0	9.0	8.0	6.0	11.0	9.0	7.0	6.0
4	19.0	17.0	12.0	11.0	9.0	8.0	9.0	7.0	9.0	8.0	8.0	6.0
5	18.0	17.0	10.0	9.0	9.0	8.0	7.0	6.0	8.0	8.0	8.0	6.0
6	18.0	18.0	9.0	9.0	9.0	8.0	6.0	5.0	8.0	7.0	9.0	7.0
7	19.0	18.0	9.0	9.0	10.0	9.0	5.0	3.0	7.0	6.0	9.0	8.0
8	19.0	19.0	8.0	7.0	11.0	10.0	3.0	2.0	6.0	4.0	11.0	8.0
9	19.0	18.0	8.0	7.0	12.0	11.0	4.0	2.0	5.0	4.0	11.0	10.0
10	18.0	17.0	9.0	7.0	14.0	12.0	5.0	4.0	5.0	4.0	12.0	11.0
11	17.0	16.0	10.0	8.0	14.0	14.0	6.0	5.0	5.0	4.0	12.0	12.0
12	16.0	15.0	12.0	10.0	14.0	12.0	5.0	5.0	4.0	3.0	12.0	11.0
13	15.0	15.0	12.0	11.0	12.0	12.0	5.0	3.0	3.0	3.0	11.0	9.0
14	12.0	15.0	12.0	12.0	13.0	12.0	3.0	3.0	3.0	3.0	10.0	9.0
15	13.0	16.0	12.0	11.0	13.0	12.0	4.0	3.0	3.0	3.0	10.0	9.0
16	18.0	17.0	11.0	10.0	12.0	11.0	4.0	4.0	4.0	3.0	11.0	9.0
17	19.0	17.0	10.0	9.0	11.0	11.0	4.0	4.0	5.0	4.0	12.0	11.0
18	17.0	17.0	10.0	9.0	14.0	11.0	4.0	4.0	6.0	4.0	12.0	11.0
19	17.0	15.0	9.0	9.0	14.0	14.0	5.0	4.0	5.0	4.0	14.0	12.0
20	16.0	14.0	9.0	9.0	15.0	14.0	6.0	5.0	6.0	4.0	14.0	14.0
21	14.0	14.0	9.0	9.0	16.0	15.0	7.0	6.0	6.0	4.0	15.0	13.0
22	14.0	14.0	12.0	9.0	16.0	14.0	6.0	6.0	3.0	3.0	13.0	7.0
23	14.0	13.0	12.0	11.0	14.0	10.0	7.0	7.0	4.0	3.0	8.0	7.0
24	16.0	14.0	11.0	11.0	10.0	8.0	7.0	6.0	4.0	3.0	8.0	6.0
25	16.0	15.0	11.0	11.0	8.0	8.0	6.0	4.0	4.0	3.0	9.0	8.0
26	15.0	14.0	11.0	11.0	8.0	8.0	5.0	4.0	4.0	3.0	11.0	9.0
27	14.0	14.0	11.0	11.0	8.0	8.0	6.0	4.0	4.0	4.0	12.0	11.0
28	14.0	13.0	11.0	9.0	7.0	6.0	7.0	6.0	4.0	3.0	13.0	12.0
29	14.0	13.0	9.0	8.0	6.0	6.0	7.0	7.0	4.0	3.0	14.0	13.0
30	14.0	13.0	9.0	8.0	6.0	6.0	9.0	7.0	---	---	16.0	14.0
31	14.0	13.0	---	---	6.0	6.0	9.0	9.0	---	---	16.0	16.0
MONTH	19.0	13.0	14.0	7.0	16.0	6.0	9.0	2.0	12.0	3.0	16.0	3.0
DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	15.0	19.0	17.0	21.0	20.0	27.0	24.0	27.0	26.0	24.0	22.0
2	15.0	14.0	18.0	17.0	21.0	21.0	26.0	24.0	28.0	26.0	24.0	22.0
3	15.0	13.0	18.0	15.0	21.0	21.0	26.0	25.0	27.0	26.0	24.0	22.0
4	16.0	14.0	18.0	18.0	22.0	21.0	25.0	24.0	27.0	25.0	24.0	22.0
5	16.0	14.0	18.0	18.0	22.0	21.0	25.0	24.0	27.0	26.0	24.0	22.0
6	14.0	13.0	19.0	17.0	23.0	21.0	25.0	24.0	27.0	26.0	25.0	23.0
7	14.0	13.0	18.0	17.0	23.0	22.0	24.0	24.0	27.0	26.0	24.0	22.0
8	14.0	14.0	18.0	17.0	24.0	23.0	24.0	24.0	28.0	26.0	24.0	22.0
9	14.0	14.0	19.0	18.0	24.0	22.0	25.0	24.0	29.0	27.0	24.0	22.0
10	15.0	14.0	19.0	19.0	25.0	23.0	26.0	24.0	28.0	27.0	24.0	22.0
11	15.0	14.0	19.0	19.0	25.0	24.0	26.0	24.0	28.0	27.0	22.0	21.0
12	16.0	14.0	19.0	19.0	25.0	24.0	26.0	25.0	29.0	26.0	23.0	20.0
13	16.0	15.0	19.0	18.0	25.0	24.0	26.0	25.0	29.0	26.0	23.0	20.0
14	16.0	15.0	19.0	19.0	25.0	23.0	26.0	25.0	27.0	26.0	23.0	19.0
15	17.0	16.0	21.0	19.0	24.0	23.0	26.0	25.0	27.0	26.0	22.0	20.0
16	17.0	16.0	21.0	21.0	25.0	24.0	27.0	25.0	27.0	26.0	21.0	20.0
17	17.0	16.0	21.0	21.0	25.0	24.0	26.0	26.0	27.0	26.0	21.0	20.0
18	18.0	17.0	20.0	19.0	25.0	24.0	26.0	25.0	28.0	27.0	22.0	21.0
19	19.0	18.0	19.0	19.0	25.0	24.0	26.0	24.0	29.0	27.0	22.0	20.0
20	19.0	19.0	19.0	19.0	25.0	24.0	26.0	25.0	28.0	27.0	21.0	20.0
21	14.0	18.0	18.0	17.0	26.0	24.0	27.0	25.0	28.0	27.0	22.0	21.0
22	18.0	18.0	19.0	17.0	26.0	25.0	27.0	26.0	29.0	27.0	22.0	21.0
23	19.0	18.0	19.0	17.0	25.0	25.0	27.0	26.0	29.0	27.0	22.0	21.0
24	19.0	18.0	19.0	19.0	26.0	24.0	28.0	26.0	29.0	27.0	22.0	22.0
25	18.0	17.0	21.0	20.0	26.0	25.0	28.0	27.0	29.0	27.0	21.0	20.0
26	19.0	17.0	21.0	21.0	26.0	25.0	28.0	27.0	27.0	26.0	22.0	21.0
27	18.0	17.0	21.0	21.0	25.0	24.0	29.0	27.0	26.0	25.0	22.0	21.0
28	19.0	17.0	21.0	19.0	24.0	23.0	29.0	27.0	26.0	24.0	22.0	20.0
29	19.0	18.0	20.0	19.0	24.0	23.0	27.0	27.0	24.0	23.0	21.0	20.0
30	18.0	17.0	20.0	19.0	26.0	24.0	27.0	26.0	23.0	22.0	22.0	20.0
31	---	---	21.0	19.0	---	---	28.0	26.0	24.0	22.0	---	---
MONTH	16.0	13.0	21.0	17.0	26.0	20.0	29.0	24.0	30.0	22.0	25.0	19.0

03604000 BUFFALO RIVER NEAR FLAT WOODS, TENN.
(Hydrologic bench-mark station)

LOCATION.--Lat 35°29'45", long 87°49'58", Perry County, temperature recorder at gaging station on right bank 0.5 mile downstream from Little Opossum Creek and bridge on State Highway 13, 1.3 miles north of Flat Woods, 3.9 miles upstream from Sinking Creek and at mile 58.7.

DRAINAGE AREA.--447 sq mi.

PERIOD OF RECORD.--Water temperatures: June 1964 to September 1968.

EXTREMES.--1967-68:

Water temperatures: Maximum, 28.0°C July 1, 27, 28, Aug. 9, 10, 18, 19, 22-24; minimum, 3.0°C Feb. 16, 23, 24.

Period of record:

Water temperatures: Maximum, 31.0°C July 13-15, 1966; minimum, 1.0°C Feb. 3, 1965, Jan. 31, Feb. 1, 1966.

REMARKS.--Pesticide analyses: A sample taken on Oct. 23, 1967, was analyzed for the following pesticides: Aldrin, DDD, DDE, DDT, Dieldrin, Endrin, Heptachlor, Heptachlor Epoxide, and Lindane. In each case, concentration was determined to be 0.00 micrograms per liter. Temperature recorder stopped Oct. 1-9 (range in temperature 23.0°C to 14.0°C). Thermograph record furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CCO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)
OCT.												
23...	217	.2	.93	.24	18	2.5	1.3	1.3	60	0	4.6	1.6
NOV.												
12...	234	4.1	.46	.08	21	2.2	1.4	.8	61	0	13	1.5
DEC.												
11...	3720	5.7	.24	.08	10	1.2	1.7	1.3	32	0	5.4	1.5
JAN.												
31...	560	4.3	.07	.03	12	1.5	1.4	.6	41	0	3.8	1.4
FEB.												
16...	466	3.6	.04	.03	13	1.5	1.3	.5	43	0	3.6	1.6
MAR.												
26...	2560	2.9	.06	.02	9.7	1.5	1.0	.7	29	0	5.4	1.6
APR.												
19...	660	2.2	.06	.00	10	1.9	1.0	.6	41	0	2.5	.7
MAY												
31...	469	4.7	3.8	.04	12	2.4	1.3	.9	46	0	3.1	1.8
JUNE												
06...	375	4.1	.03	.01	13	2.6	1.2	.7	50	0	2.7	1.4
JULY												
31...	202	5.9	--	--	16	2.1	1.0	.7	58	0	2.7	1.3
AUG.												
22...	218	5.6	.18	.04	16	2.1	1.1	.7	59	0	2.5	1.3
SEPT.												
24...	1179	6.5	.10	.01	17	2.1	1.2	.7	60	0	6.0	1.0

A DAILY MEAN DISCHARGE.

DATE	FLUC- TIDE (F)	NITRATE (NO ₃)	PHOS- PHATE (PO ₄)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHMS)	PH	TEMP- ERATURE (DEG C)	COLOR
OCT.											
23...	.0	.0	--	66	58	55	6	110	7.7	13	4
NOV.											
12...	.0	.0	--	62	74	62	12	98	7.4	--	2
DEC.											
11...	.0	.1	--	43	43	30	4	66	6.8	12	3
JAN.											
31...	.2	.3	--	48	46	36	2	79	7.2	--	1
FEB.											
16...	.0	.0	--	50	46	38	3	80	7.1	4	5
MAR.											
26...	.0	.5	.04	40	38	30	6	63	7.0	--	3
APR.											
19...	.0	.2	.04	40	40	33	0	77	7.1	18	4
MAY											
31...	.0	.4	.04	65	53	40	2	138	7.4	18	1
JUNE											
06...	.1	.4	.04	65	51	43	2	92	7.5	22	1
JULY											
31...	.1	.5	.05	64	59	48	1	107	7.6	24	1
AUG.											
22...	.1	.4	.04	65	59	48	0	102	7.7	28	1
SEPT.											
24...	.1	.1	.03	66	64	51	2	102	7.7	22	8

RADIOISOTOPES IN WATER

(Units of measurement: Uranium, micrograms per liter of water; radium, as radium-226, in picocuries per liter of water; gross beta radiation as strontium-90-yttrium-90, in picocuries per liter of water; gross alpha radiation, as micrograms of uranium equivalent per liter of water. A picocurie is one millionth of the amount of radioactivity represented by a microcurie, which is the quantity of radiation represented by one millionth of a gram of radium-226. A picocurie of radium results in 2.22 disintegrations per minute.)

DATE	DISSOLVED				TOTAL DISSOLVED SOLIDS		SUSPENDED		SUSPENDED SEDIMENTS MG/L
	URANIUM UG/L	RADIUM PC/L	GROSS β PC/L	GROSS α MG/L	MG/L	PC/L	GROSS β PC/L	GROSS α UG/L	
OCT 23 1967	<.4	<.1	2.5	.6	15	.7	<.4		2
MAR 26 1968	.4	.1	1.0	.4	41	1.1	.5		14
SEPT 24.....	.4	.03	1.5	1.7	60	.6	.5		5

TENNESSEE RIVER BASIN

03604000 BUFFALO RIVER NEAR FLAT WOODS, TENN.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

	DAY																																
MONTH	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	AVER- AGE	
OCTOBER																																	
MAXIMUM	--	--	--	--	--	--	--	--	--	--	17	16	16	16	17	18	18	17	16	14	15	14	14	16	15	14	14	13	13	13	14	--	
MINIMUM	--	--	--	--	--	--	--	--	--	--	15	14	13	13	15	16	17	17	16	14	13	13	13	14	14	13	13	12	12	13	13	--	
NOVEMBER																																	
MAXIMUM	15	14	13	11	10	9	8	8	8	9	10	12	12	10	9	8	8	8	8	7	8	9	11	11	11	11	11	10	9	8	8	--	
MINIMUM	14	13	11	10	9	8	7	7	7	7	9	10	11	10	9	8	8	8	7	8	9	10	10	10	10	9	9	8	7	7	--	9	
DECEMBER																																	
MAXIMUM	8	10	9	9	9	11	12	12	13	14	14	14	13	13	13	11	11	13	13	13	14	14	12	9	9	9	9	8	7	6	6	6	11
MINIMUM	8	8	9	8	8	9	11	11	12	13	13	12	12	12	11	10	11	13	11	12	13	12	9	8	8	8	7	6	6	6	6	6	10
JANUARY																																	
MAXIMUM	6	6	7	8	7	7	7	6	6	7	7	7	7	6	5	6	6	6	6	7	8	8	9	8	7	6	7	9	11	11	12	7	
MINIMUM	6	6	6	7	6	7	6	7	6	4	5	6	6	6	5	4	5	4	4	5	6	7	8	8	7	6	5	6	7	9	10	11	6
FEBRUARY																																	
MAXIMUM	13	13	12	10	9	9	8	7	7	7	6	5	4	4	4	5	6	6	6	6	6	6	5	4	5	4	4	4	6	5	--	7	
MINIMUM	12	12	10	9	8	8	7	6	6	6	6	4	4	4	4	3	5	6	5	6	5	5	4	3	4	4	4	4	4	--	--	6	
MARCH																																	
MAXIMUM	6	7	8	8	8	9	9	11	11	12	12	11	10	9	10	12	12	13	14	14	14	12	7	7	9	11	13	13	15	16	16	11	
MINIMUM	4	5	7	6	7	7	7	8	10	11	11	10	9	8	8	10	11	11	12	14	12	7	6	6	7	9	11	12	13	14	15	9	
APRIL																																	
MAXIMUM	15	14	13	14	14	13	13	13	13	14	15	14	14	15	16	16	16	18	18	19	19	19	18	18	18	17	19	19	18	18	17	--	16
MINIMUM	14	12	12	13	12	11	12	13	13	13	13	13	14	14	16	16	16	16	17	17	17	17	17	17	17	16	17	17	17	17	--	15	
MAY																																	
MAXIMUM	18	19	19	19	18	18	18	18	19	19	19	19	19	19	21	18	18	16	18	18	17	17	17	16	18	21	22	21	19	20	20	21	19
MINIMUM	16	17	18	18	17	16	16	17	17	18	18	18	18	19	19	18	18	17	17	17	17	16	16	16	16	18	19	20	19	18	17	18	18
JUNE																																	
MAXIMUM	22	22	23	23	24	24	24	25	25	26	27	27	26	25	25	26	24	25	25	26	26	26	26	26	26	25	24	24	24	26	27	--	25
MINIMUM	19	21	21	21	22	22	22	22	23	23	24	24	24	23	23	23	23	23	23	23	23	23	24	24	23	24	23	22	22	23	--	23	
JULY																																	
MAXIMUM	28	27	26	25	25	24	24	24	23	25	26	26	26	26	26	26	26	27	27	27	27	27	26	27	25	26	27	27	28	28	27	25	26
MINIMUM	25	26	25	24	23	23	23	23	23	23	24	24	24	23	23	24	24	25	24	24	24	24	24	24	23	24	24	25	26	26	25	24	24
AUGUST																																	
MAXIMUM	26	25	26	27	27	27	27	28	28	27	27	26	27	27	26	27	28	27	28	28	27	27	28	28	27	27	27	26	23	23	22	22	24
MINIMUM	25	24	24	24	26	25	24	25	25	26	26	24	24	24	24	24	24	25	25	25	25	26	26	26	25	26	24	23	21	21	21	21	24
SEPTEMBER																																	
MAXIMUM	22	22	22	24	24	24	24	23	22	22	21	21	21	21	21	21	22	22	22	22	23	24	23	22	22	22	21	21	21	21	--	22	
MINIMUM	21	21	21	21	23	23	22	22	21	21	19	19	19	19	19	19	20	21	21	20	20	21	22	22	22	21	20	20	19	19	--	21	

03609500 TENNESSEE RIVER AT KENTUCKY DAM, NEAR PADUCAH, KY.

LOCATION.--Lat 37°00'54", long 88°16'12", Livingston County, at tailrace of powerplant at Kentucky Dam at Gilbertsville, 3,500 ft upstream from base gaging station, 3.0 miles upstream from Shadie Creek, and 16 miles east of Paducah.

DRAINAGE AREA.--40,200 sq mi, approximately (at Gilbertsville).

PERIOD OF RECORD.--Chemical analyses: October 1949 to August 1950, October 1951 to September 1954, October 1956 to September 1962, October 1967 to September 1968.
Water temperatures: October 1949 to September 1968, unpublished.

REMARKS.--Samples for iron and manganese filtered clear when collected. Flow almost completely regulated. Barkley-Kentucky Canal diverts water from or to Lake Barkley in Cumberland River basin.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SI02)	IRON (FE)	MANG-NESE (MNG)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PHOS- PHORUS (P)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
OCT. 14....	46700	--	--	--	--	--	--	--	--	--	--
NOV. 29....	55200	8.3	.14	.04	26	3.9	7.4	1.1	76	0	15
JAN. 23....	55500	--	--	--	--	--	--	--	--	--	--
FEB. 25....	41000	--	--	--	--	--	--	--	--	--	--
APR. 11....	55500	--	.29	.03	--	--	--	--	62	0	13
MAY 17....	113000	--	.42	.14	--	--	--	--	66	0	10
JUNE 14....	48500	--	--	--	--	--	--	--	--	--	--
JULY 22....	49900	--	.24	.05	--	--	--	--	69	0	16
SEPT. 25....	17400	--	--	--	--	--	--	--	--	--	--
DATE	CALCIUM (CL)	FLUORINE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C)	HARD- NESS (CA.MG)	NOM- CAR- BONATE HARD- NESS	SPECIFIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	
OCT. 14....	--	--	--	--	--	--	175	--	--	18	
NOV. 29....	15	.2	1.5	114	81	19	209	7.5	8	10	
JAN. 23....	--	--	--	--	--	--	148	--	--	6	
FEB. 25....	--	--	--	--	--	--	154	--	--	3	
APR. 11....	4.0	--	2.8	91	61	10	137	7.7	--	13	
MAY 17....	6.5	--	1.7	94	50	6	151	7.9	--	20	
JUNE 13....	--	--	--	--	--	--	163	--	--	24	
JULY 22....	7.5	--	.6	92	56	0	162	7.4	--	26	
SEPT. 25....	--	--	--	--	--	--	160	--	--	24	

LOCATION.--Lat 37°08'51", long 88°44'27", Massac County, temperature recorder at gaging station at Paducah and Illinois Railroad Bridge at Metropolis, 9.5 miles downstream from Tennessee River, and 37 miles upstream from mouth.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1953.

water temperatures: March 1954 to September 1968.

EXTREMES. --1967-68:

Water temperatures: Maximum, 29.0°C on many days during July and August; minimum, 1.0°C Feb. 22, 23.

Period of record:

Water temperatures: Maximum, 31.0°C Aug. 3-6, 1955; minimum, freezing point during February 1958, January and February 1963.

REMARKS.--Recorder stopped Mar. 30-31; range 9.0°C to 11.0°C. Flow partly regulated by many dams and reservoirs.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(CONTINUOUS ETHYL ALCOHOL-ACTUATED THERMOGRAPH)

[illegible]

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.

LOCATION.--Lat 37°12'11", long 89°02'30", Pulaski County, about 1,500 ft upstream from dam, lock and dam 53 near Grand Chain, 1.4 miles downstream from Bledsoe Creek, 18.5 miles downstream from gaging station at Metropolis, and 27.7 miles downstream from Tennessee River.

DRAINAGE AREA.--203,100 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1954 to September 1968.

Water temperatures: October 1954 to September 1968.

EXTREMES.--1967-68:

Specific conductance: Maximum daily, 529 micromhos Nov. 5; minimum daily, 262 micromhos Mar. 22.

Water temperatures: Maximum, 30.0°C Aug. 25, 26, 30, 31; minimum, 1.0°C Jan. 10, 11.

Period of record:

Specific conductance: Maximum daily, 684 micromhos Nov. 16, 1962; minimum daily, 170 micromhos Feb. 9, 1957.

Water temperatures: Maximum, 31.0°C July 15, 1964; minimum, freezing point on many days during winter periods.

REMARKS.--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) a composite analysis each month for the determination of arsenic (As). Samples for iron and manganese were filtered clear when collected. Records of discharge are given for gaging station at Metropolis (drainage area 203,000 sq mi approximately). Flow partly regulated by many dams and reservoirs.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	IRON (FE)	MAN- GANESE (MN)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)	FLUO- RIDE (F)
OCT.								
01-31	--	--	--	--	--	--	--	--
09...	110000	.12	.05	82	0	107	41	.3
17...	108000	.40	.11	80	0	50	19	.3
24...	125000	.13	.03	85	0	78	30	.3
NOV.								
01-30	--	--	--	--	--	--	--	--
05...	180000	.16	.09	72	0	116	48	.4
12...	155000	.04	.05	74	0	60	25	.3
30...	211000	.21	.02	78	0	84	29	.4
DEC.								
01-31	--	--	--	--	--	--	--	--
01...	226000	.51	.12	76	0	77	26	.3
20...	521000	.64	.13	88	0	58	16	.2
29...	607000	.26	.04	92	0	49	14	.2
JAN.								
01-31	--	--	--	--	--	--	--	--
01...	500000	.40	.06	100	0	62	12	.0
12...	454000	.20	.05	108	0	61	20	.2
26...	302000	.18	.12	108	0	75	24	.4
FEB.								
01-29	--	--	--	--	--	--	--	--
03...	427000	.34	.06	72	0	49	16	.1
09...	584000	.22	.07	76	0	55	21	.2
24...	137000	.11	.12	133	0	63	24	.2
MAR.								
01-31	--	--	--	--	--	--	--	--
02...	119000	.30	.20	121	0	56	24	.1
16...	395000	.69	.10	117	0	79	32	.2
22...	554000	1.4	.09	54	0	55	18	.2
APR.								
01-30	--	--	--	--	--	--	--	--
06...	670000	1.0	.06	82	0	54	14	.2
13...	626000	1.5	.07	87	0	46	12	.2
28...	247000	.52	.06	112	0	64	16	.2
MAY								
01-31	--	--	--	--	--	--	--	--
02...	184000	.29	.11	120	0	64	18	.2
13...	218000	.56	.11	76	0	45	12	.1
25...	337000	.79	.09	94	0	89	28	.3
JUNE								
04...	688000	.27	.06	84	0	39	10	.2
19...	196000	.30	.19	136	4	63	14	.3
25...	144000	.22	.12	114	0	52	14	.4
JULY								
01-31	--	--	--	--	--	--	--	--
11...	110000	.14	.01	112	0	47	16	.2
15...	98300	.13	.02	128	0	57	16	.4
29...	118000	.29	.04	130	0	77	24	.3
AUG.								
01-31	--	--	--	--	--	--	--	--
14...	188000	.25	.05	112	0	70	24	.3
21...	153000	.18	.02	124	0	85	32	.4
30...	58700	.23	.06	104	0	47	20	.3
SEPT.								
01-30	--	--	--	--	--	--	--	--
03...	69200	.12	.12	100	0	41	18	.3
10...	70300	.14	.08	124	0	60	28	.3
23...	50800	.10	.06	102	0	53	26	.3

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.--Continued
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	TOTAL PHOS- PHORUS (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180°C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPE- CIFIC CONDUCT- ANCE (MICRO- MHOS)	PH	ARSENIC (AS)
OCT.								
01-31	--	--	--	--	--	--	--	.00
09...	2.6	.19	330	169	146	499	7.2	--
17...	2.7	.30	214	110	86	296	7.2	--
24...	3.1	.22	266	139	116	389	7.0	--
NOV.								
01-30	--	--	--	--	--	--	--	.00
05...	4.3	.11	318	176	117	529	7.4	--
12...	3.2	.19	220	121	60	336	7.5	--
30...	4.5	.33	256	146	82	400	7.5	--
DEC.								
01-31	--	--	--	--	--	--	--	.00
01...	6.2	.42	214	140	78	388	7.2	--
20...	8.6	.31	190	136	64	332	7.5	--
29...	7.1	.27	164	128	52	302	7.5	--
JAN.								
01-31	--	--	--	--	--	--	--	.00
01...	5.2	.38	210	133	51	315	7.4	--
12...	3.8	.26	240	154	66	374	7.5	--
26...	4.4	.28	288	165	76	434	7.6	--
FEB.								
01-29	--	--	--	--	--	--	--	.00
03...	4.5	.27	178	114	55	285	8.1	--
09...	5.7	.27	192	128	66	326	8.0	--
24...	5.7	.24	264	184	75	427	8.1	--
MAR.								
01-31	--	--	--	--	--	--	--	.00
02...	4.0	.27	260	166	67	390	7.8	--
16...	5.4	.49	312	168	72	462	8.1	--
22...	4.3	.36	190	93	49	262	8.0	--
APR.								
01-30	--	--	--	--	--	--	--	.00
06...	4.2	.26	186	123	56	297	8.1	--
13...	4.5	.25	162	119	48	274	8.2	--
28...	3.8	.18	222	157	65	365	7.8	--
MAY								
01-31	--	--	--	--	--	--	--	.01
02...	4.4	.18	248	152	54	382	8.2	--
13...	4.4	.19	173	110	48	274	8.0	--
25...	8.8	.14	279	174	97	445	7.4	--
JUNE								
04...	7.8	.10	180	108	39	264	7.5	--
19...	7.6	.17	274	189	71	406	8.3	--
25...	6.6	.12	214	150	56	340	7.6	.00
JULY								
01-31	--	--	--	--	--	--	--	.00
11...	4.4	.23	218	142	50	325	7.5	--
15...	2.9	.19	240	166	61	376	7.3	--
29...	2.3	.20	276	188	82	450	7.1	--
AUG.								
01-31	--	--	--	--	--	--	--	.00
14...	5.8	.36	244	166	74	409	7.2	--
21...	7.0	.34	302	192	90	485	7.2	--
30...	3.8	.32	194	135	50	330	7.6	--
SEPT.								
01-30	--	--	--	--	--	--	--	.01
03...	2.5	.23	180	130	48	310	7.3	--
10...	4.0	.23	226	166	64	413	7.7	--
23...	2.5	.23	204	142	58	369	7.6	--

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
 (ONCE-DAILY MEASUREMENT BETWEEN 0400 AND 0700)

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1.....	301	473	388	315	348	400	304	376	311	372	421	329
2.....	334	474	315	315	309	390	302	382	296	375	346	315
3.....	386	478	302	323	285	396	309	389	270	381	379	310
4.....	404	481	315	329	287	401	281	393	264	401	393	332
5.....	422	529	371	335	307	399	285	393	268	389	401	345
6.....	452	--	379	355	290	369	297	408	274	391	381	372
7.....	445	458	373	358	307	374	302	403	272	389	376	376
8.....	492	431	332	376	299	382	299	398	282	383	381	392
9.....	499	439	332	383	326	390	299	362	295	400	401	--
10.....	460	424	338	379	326	400	292	381	305	376	395	413
11.....	450	389	332	377	320	408	285	352	318	325	406	391
12.....	432	336	345	374	315	424	281	306	336	360	438	348
13.....	378	356	355	362	315	458	274	274	339	382	423	380
14.....	380	375	355	368	315	461	283	336	352	390	409	396
15.....	357	367	329	345	315	447	283	339	356	376	446	404
16.....	346	374	--	362	332	462	292	366	369	343	454	408
17.....	293	380	335	366	351	444	297	385	--	337	455	384
18.....	308	373	362	363	368	426	285	392	385	364	473	384
19.....	360	381	302	388	385	423	294	379	406	--	460	397
20.....	370	374	332	405	403	411	309	385	393	375	447	374
21.....	311	--	351	404	403	375	297	378	387	406	485	362
22.....	340	359	338	400	--	242	315	363	374	413	454	373
23.....	390	367	345	393	423	265	320	382	388	334	389	369
24.....	389	369	348	404	427	273	292	383	378	347	412	348
25.....	371	373	348	434	380	277	309	445	340	364	427	351
26.....	374	420	348	429	420	280	329	386	337	370	401	355
27.....	385	422	315	426	393	280	326	409	360	377	416	369
28.....	401	393	307	422	400	277	365	444	370	360	412	358
29.....	440	422	302	395	409	313	358	428	371	450	346	342
30.....	423	400	309	370	--	318	361	356	353	448	330	315
31.....	462	--	312	345	--	305	--	311	--	404	349	--
AVERAGE	392	407	335	373	348	370	304	376	336	379	411	365

OHIO RIVER MAIN STEM

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT BETWEEN 0400 AND 0700)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	14.0	11.0	4.0	6.0	3.0	---	14.0	19.0	26.0	27.0	---
2	21.0	13.0	10.0	4.0	9.0	3.0	7.0	18.0	19.0	26.0	27.0	---
3	21.0	14.0	10.0	4.0	7.0	3.0	7.0	19.0	19.0	26.0	27.0	---
4	21.0	12.0	9.0	3.0	7.0	3.0	7.0	20.0	19.0	26.0	28.0	---
5	21.0	12.0	9.0	3.0	7.0	3.0	7.0	19.0	21.0	25.0	27.0	---
6	21.0	---	8.0	3.0	7.0	3.0	8.0	17.0	21.0	24.0	27.0	---
7	21.0	12.0	9.0	3.0	7.0	3.0	8.0	18.0	20.0	26.0	27.0	---
8	21.0	12.0	9.0	2.0	7.0	6.0	10.0	19.0	21.0	26.0	29.0	---
9	21.0	11.0	9.0	2.0	5.0	5.0	12.0	19.0	20.0	26.0	29.0	---
10	19.0	12.0	9.0	1.0	5.0	6.0	12.0	19.0	21.0	27.0	29.0	---
11	19.0	12.0	9.0	1.0	4.0	7.0	13.0	19.0	21.0	27.0	28.0	---
12	19.0	12.0	9.0	2.0	4.0	7.0	13.0	21.0	20.0	26.0	27.0	---
13	19.0	11.0	8.0	2.0	---	7.0	12.0	19.0	21.0	27.0	27.0	---
14	19.0	12.0	8.0	2.0	4.0	7.0	14.0	20.0	21.0	27.0	27.0	---
15	19.0	12.0	8.0	2.0	4.0	6.0	14.0	19.0	21.0	27.0	27.0	---
16	19.0	11.0	---	3.0	3.0	6.0	14.0	20.0	20.0	27.0	27.0	---
17	---	12.0	7.0	3.0	3.0	7.0	15.0	21.0	---	27.0	27.0	---
18	19.0	11.0	7.0	3.0	3.0	6.0	16.0	20.0	21.0	27.0	27.0	---
19	17.0	11.0	7.0	3.0	4.0	7.0	16.0	19.0	21.0	---	27.0	---
20	18.0	11.0	7.0	3.0	3.0	8.0	16.0	18.0	21.0	28.0	---	---
21	18.0	---	10.0	4.0	3.0	8.0	17.0	22.0	25.0	28.0	---	17.0
22	18.0	12.0	9.0	4.0	---	7.0	17.0	19.0	26.0	28.0	---	18.0
23	19.0	12.0	9.0	4.0	2.0	7.0	17.0	19.0	27.0	28.0	---	13.0
24	18.0	11.0	7.0	4.0	2.0	7.0	16.0	20.0	21.0	28.0	---	13.0
25	15.0	10.0	7.0	4.0	3.0	7.0	16.0	20.0	21.0	29.0	30.0	13.0
26	13.0	11.0	6.0	4.0	3.0	6.0	17.0	20.0	21.0	29.0	30.0	13.0
27	13.0	11.0	6.0	4.0	3.0	7.0	17.0	20.0	21.0	29.0	29.0	---
28	15.0	10.0	7.0	4.0	4.0	7.0	16.0	19.0	24.0	---	29.0	---
29	12.0	10.0	6.0	5.0	3.0	7.0	17.0	19.0	24.0	27.0	29.0	14.0
30	13.0	10.0	6.0	6.0	---	7.0	17.0	19.0	24.0	27.0	30.0	13.0
31	13.0	---	6.0	6.0	---	7.0	---	16.0	---	27.0	30.0	---
AVERAGE	18.0	11.5	8.0	3.5	4.5	6.0	13.5	19.0	21.5	27.0	28.0	---

KANAWHA RIVER BASIN

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, N.C.

LOCATION.--Lat 36°23'40", long 81°24'27", Ashe County, at gaging station on right bank 600 ft upstream from bridge on State Highways 16 and 88, 0.2 mile downstream from Bear Creek, and 4 miles southwest of Jefferson.

DRAINAGE AREA.--207 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1949 to September 1950, October 1967 to September 1968,
Water temperatures: October 1949 to September 1950.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HC03)	CAR- BONATE (C03)	SULFATE (S04)	CHLO- RIDE (CL)
MAY												
28...	0900	705	8.7	.00	2.9	1.3	1.6	.9	13	0	2.0	2.2
28...A	0900	705	--	--	--	--	--	--	--	--	--	--
AUG.												
27...	1545	150	8.2	.01	3.6	.6	2.8	1.1	18	0	1.2	2.2
27...A	1545	150	--	--	--	--	--	--	--	--	--	--

DATE	FLUC- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (ITONS PER AC-FT)	DIS- SOLVED SOLIDS (ITONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
MAY												
28...	.0	2.0	.03	39	.05	74	12	2	.2	39	6.2	10
28...A	--	--	--	--	--	--	--	--	--	--	6.7	--
AUG.												
27...	.1	.8	.00	26	.04	10	12	0	.4	39	6.4	5
27...A	--	--	--	--	--	--	--	--	--	--	8.8	--

DATE	ALKA- LINITY AS CAC03	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
28...	11	.03	--	13
28...A	--	--	P.7	13
AUG.				
27...	15	.00	--	23
27...A	--	--	9.1	23
A FIELD DETERMINATION.				

03162500 NORTH FORK NEW RIVER AT CRUMPLER, N.C.

LOCATION.--Lat 36°31'04", long 81°23'18", Ashe County, at bridge on State Highway 16 at Crumpler, and 6 miles up-
stream from South Fork.

DRAINAGE AREA.--277 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HC03)	CAR- BONATE (C03)	SULFATE (S04)	CHLO- RIDE (CL)
JUNE												
25...	1500	317	11	.02	3.5	1.7	3.3	.9	21	0	1.6	3.0
SEPT.												
24...	1530	89	12	.00	5.3	1.4	6.0	1.1	18	C	4.0	7.6
24...A	1530	89	--	--	--	--	--	--	--	--	--	--

DATE	FLUC- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (ITONS PER AC-FT)	DIS- SOLVED SOLIDS (ITONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
JUNE												
25...	.2	2.8	.00	32	.04	27	16	0	.4	50	7.0	5
SEPT.												
24...	.0	6.0	.00	56	.08	13	19	4	.6	71	6.5	5
24...A	--	--	--	--	--	--	--	--	--	75	6.5	--

DATE	ALKA- LINITY AS CAC03	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
JUNE				
25...	17	.06	--	23
SEPT.				
24...	15	.06	--	23
24...A	--	--	7.0	23
A FIELD DETERMINATION.				

KANAWHA RIVER BASIN

03162850 NEW RIVER AT AMELIA, N.C.

LOCATION.--Lat 36°33'08", long 81°11'00", Alleghany County, at bridge on Secondary Road 1345, 0.8 mile downstream from Rock Creek, and 1.3 miles northeast of Amelia.

DRAINAGE AREA.--820 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLD- RIDE (CL)
JUNE 25...	1100	1020	10	.01	3.4	1.3	2.5	.8	16	0	2.4	2.2
SEPT. 24...	1200	500	9.6	.00	3.4	1.6	3.7	1.3	18	0	2.4	4.0
24...A	1200	500	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
JUNE 25...	.1	.9	.01	37	.05	102	14	0	.3	42	6.6	5
SEPT. 24...	.0	.8	.00	38	.05	51	15	0	.4	48	6.7	5
24...A	--	--	--	--	--	--	--	--	--	50	7.0	--

DATE	ALKA- LINITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
JUNE 25...	13	.00	--	23
SEPT. 24...	15	.11	--	21
24...A	--	--	6.0	21

A FIELD DETERMINATION.

TENNESSEE RIVER BASIN

03439000 FRENCH BROAD RIVER AT ROSMAN, N.C.

LOCATION.--Lat 35°08'32", long 82°49'28", Transylvania County, at gaging station on left bank at upstream side of bridge on U.S. Highway 178 at Rosman, 1 mile upstream from East Fork, and at mile 216.4.

DRAINAGE AREA.--67.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1957 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLD- RIDE (CL)
MAY 22...	1215	165	7.8	.00	.9	.3	1.0	.3	6	C	.4	.9
22...A	1215	165	--	--	--	--	--	--	--	--	--	--
AUG. 15...	1130	124	7.2	.02	1.1	.2	1.2	.7	6	C	.4	.4
15...A	1130	124	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
MAY 22...	.0	.3	.01	15	.02	6.68	3	0	.2	15	6.2	0
22...A	--	--	--	--	--	--	--	--	--	--	6.6	--
AUG. 15...	.0	.3	.02	17	.02	5.69	3	0	.3	16	5.6	10
15...A	--	--	--	--	--	--	--	--	--	--	6.9	--

DATE	ALKA- LINITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY 22...	5	.00	--	14
22...A	--	--	10.0	14
AUG. 15...	5	.06	--	20
15...A	--	--	8.6	20

A FIELD DETERMINATION.

03443000 FRENCH BROAD RIVER AT BLANTYRE, N.C.

251

LOCATION.--Lat 35°17'56", long 82°37'27", Transylvania County, at gaging station on left bank 40 ft upstream from bridge on Secondary Road 1503, 700 ft east of railroad at Blantyre, 3.5 miles downstream from Little River, and at mile 183.7.

DRAINAGE AREA.--296 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1953, October 1957 to September 1968.
Water temperatures: October 1952 to September 1953.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SIC2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SC4)	CHLC- RIDE (CL)
MAY												
22...	1405	--	8.7	.05	4.6	.8	22	1.0	26	C	31	4.8
22...A	1405	--	--	--	--	--	--	--	--	--	--	--
AUG.												
19...	1605	501	9.8	.03	7.1	.7	18	.5	14	C	38	6.8
19...A	1605	501	--	--	--	--	--	--	--	--	--	--

DATE	FLUC- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHCS)	PH	CCLCR
MAY												
22...	.1	.8	.04	94	.13	--	14	0	2.5	134	6.1	EC
22...A	--	--	--	--	--	--	--	--	--	--	6.0	--
AUG.												
19...	.1	.6	.00	86	.12	116	20	9	1.7	126	6.2	10
19...A	--	--	--	--	--	--	--	--	--	--	6.6	--

DATE	ALKA- LINITY AS CaCO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
22...	21	.05	6.0	16
22...A	--	--	6.0	16
AUG.				
19...	11	.00	--	22
19...A	--	--	4.6	22

A FIELD DETERMINATION.

03448500 HOMINY CREEK AT CANDLER, N.C.

LOCATION.--Lat 35°32'28", long 82°40'35", Buncombe County, at gaging station 0.1 downstream from Pole Creek, 0.4 mile downstream from bridge on State Highway 112, and 1.0 mile east of Candler.

DRAINAGE AREA.--79.8 sq mi.

PERIOD OF RECORD.--Chemical analyses, October 1967 to September 1968.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SIC2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SC4)
APR.											
01...	0950	151	7.5	.56	4.7	.0	2.8	2.0	16	0	4.4
JUNE											
03...	0920	78	11	.76	6.3	.3	2.7	1.7	21	0	3.8
AUG.											
01...	0850	53	11	.61	4.7	.5	3.2	1.7	22	C	4.2

DATE	CHLC- RIDE (CL)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AC- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHCS)	PH	CCLCR
APR.											
01...	2.5	1.3	32	.04	13.0	14	1	.4	47	6.7	5
JUNE											
03...	2.5	1.0	41	.06	8.63	16	0	.3	48	6.7	5
AUG.											
01...	2.0	.8	37	.05	5.25	14	0	.4	50	6.7	5

DATE	ALKA- LINITY AS CaCO3	TEMP- ERATURE (DEG C)
APR.		
01...	13	9
JUNE		
03...	17	13
AUG.		
01...	18	18

TENNESSEE RIVER BASIN

03451500 FRENCH BROAD RIVER AT ASHEVILLE, N.C.

LOCATION.--Lat 35°36'32", long 82°34'41", Buncombe County, at gaging station on right bank at downstream side of Pearson Bridge at Asheville, 2.3 miles downstream from Southern Railway Station, 3.2 miles downstream from Swannanoa River, and at mile 145.8.

DRAINAGE AREA.--945 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1951, October 1956 to September 1968.
Water temperatures: October 1950 to September 1951.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HC03)	CAR- BONATE (C03)	SULFATE (SO4)	CHLD- RIDE (CL)
MAY												
22...	1530	1420	9.6	.05	3.4	1.1	22	1.0	23	0	36	3.2
22... A	1530	1420	--	--	--	--	--	--	--	--	--	--
AUG.												
21...	1500	1390	9.8	.05	5.0	1.3	16	2.2	0	0	46	4.0
DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
MAY												
22...	.0	.8	.06	86	.12	330	13	0	2.7	135	6.3	20
22... A	--	--	--	--	--	--	--	--	--	--	6.7	--
AUG.												
21...	.2	1.7	.61	82	.11	308	18	18	1.6	145	4.1	10

DATE	ALKA- LITY AS CAC03	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
22...	19	.05	6.8	18
22... A	--	--	6.8	18
AUG.				
21...	0	.03	4.6	26

A FIELD DETERMINATION.

03454512 FRENCH BROAD RIVER AT U.S. HIGHWAY 25, AT HOT SPRINGS, N.C.

LOCATION.--Lat 35°53'41", long 82°49'23", Madison County at bridge on U.S. Highway 25 at Hot Springs and 0.2 mile up-stream from Silver Mine Creek.

DRAINAGE AREA.--1,565 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HC03)	CAR- BONATE (C03)	SULFATE (SO4)	CHL- RIDE (CL)
JUNE												
27...	1030	2320	5.7	.04	3.3	.7	15	1.7	23	0	15	4.6
27... A	1030	2320	--	--	--	--	--	--	--	--	--	--
AUG.												
09...	1200	1220	10	.00	5.6	1.7	14	2.0	20	0	31	6.0
09... A	1200	1220	--	--	--	--	--	--	--	--	--	--
22...	1545	1140	10	.01	5.1	1.7	17	1.0	19	0	27	5.6
22... A	1545	1140	--	--	--	--	--	--	--	--	--	--
DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
JUNE												
27...	.2	1.2	.02	73	.10	457	11	0	2.0	100	6.2	15
27... A	--	--	--	--	--	--	--	--	--	57	7.6	--
AUG.												
09...	.1	1.2	.16	81	.11	267	21	4	1.3	118	7.0	5
09... A	--	--	--	--	--	--	--	--	--	140	7.5	--
22...	.1	1.7	.16	79	.11	243	20	4	1.7	115	6.4	10
22... A	--	--	--	--	--	--	--	--	--	--	7.5	--

DATE	ALKA- LITY AS CAC03	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
JUNE				
27...	19	.06	--	23
27... A	--	--	8.0	23
AUG.				
09...	16	.20	--	29
09... A	--	--	8.0	29
22...	16	.00	--	29
22... A	--	--	7.2	29

A FIELD DETERMINATION.

TENNESSEE RIVER BASIN

253

03457000 PIGEON RIVER AT CANTON, N.C.

LOCATION.--Lat 35°31'30", long 82°50'28", Haywood County, at gaging station on left bank 100 ft upstream from small tributary, 200 ft downstream from Pigeon Street bridge, 0.5 mile upstream from U.S. Highways 19 and 23 at Canton, and at mile 64.1.

DRAINAGE AREA.--133 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1957 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
MAY												
16...	0940	297	6.3	.04	1.9	.4	1.1	.6	9	0	.4	.8
16...A	0940	297	--	--	--	--	--	--	--	--	--	--
AUG.												
23...	0930	124	7.4	.02	1.7	.5	1.5	.8	10	0	1.6	1.0
23...A	0930	124	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
MAY												
16...	.1	.6	.00	22	.03	17.6	6	0	.2	21	6.6	10
16...A	--	--	--	--	--	--	--	--	--	--	5.6	--
AUG.												
23...	.1	.4	.00	19	.03	6.36	6	0	.3	23	6.4	5
23...A	--	--	--	--	--	--	--	--	--	--	7.1	--

DATE	ALKA- LINITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
16...	7	.01	--	16
16...A	--	--	8.4	16
AUG.				
23...	8	.02	--	22
23...A	--	--	7.6	22
A FIELD DETERMINATION.				

03459620 PIGEON RIVER AT HEPCO, N.C.

LOCATION.--Lat 35°39'53", long 82°59'30", Haywood County, at bridge on Secondary Road 1346 at Hepco, and 0.1 mile up-stream from Fines Creek.

DRAINAGE AREA.--356 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
MAY												
16...	1615	756	6.4	.06	16	1.2	32	1.8	46	0	14	41
16...A	1615	756	--	--	--	--	--	--	--	--	--	--
AUG.												
23...	1555	335	--	--	--	--	88	3.2	61	0	23	180
23...A	1555	335	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
MAY												
16...	.2	.4	.00	171	.23	349	45	8	2.1	256	6.8	80
16...A	--	--	--	--	--	--	--	--	--	--	6.7	--
AUG.												
23...	.2	1.0	.08	448	.61	405	149	99	3.1	694	6.7	80
23...A	--	--	--	--	--	--	--	--	--	--	7.4	--

DATE	ALKA- LINITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
16...	38	.20	--	23
16...A	--	--	7.4	23
AUG.				
23...	50	.06	--	27
23...A	--	--	6.3	27
A FIELD DETERMINATION.				

TENNESSEE RIVER BASIN

03460766 PIGEON RIVER AT WATERVILLE, N.C.

LOCATION.--Lat 35°46'32", long 83°06'01", Haywood County, at tailrace of Carolina Power and Light Co. powerplant, upstream from Big Creek, and at Waterville.

DRAINAGE AREA.--536 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1957 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)
JUNE												
27...	1435	1420	9.4	.26	23	1.1	28	1.6	35	0	16	56
27...A	1435	1420	--	.26	--	--	--	--	--	--	--	--
SEPT.												
11...	1340	943	10	.09	44	1.8	72	3.4	62	0	33	133
11...A	1340	943	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO ₃)	ORTHO- PHOS- PHATE (PO ₄)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
JUNE												
27...	.2	.9	--	191	.26	732	63	34	1.5	274	6.5	45
27...A	--	--	--	--	--	--	--	--	--	300	7.1	--
SEPT.												
11...	.2	.5	.00	369	.50	940	118	66	2.9	581	6.6	100
11...A	--	--	--	--	--	--	--	--	--	--	7.2	--

DATE	ALKA- LINITY AS CaCO ₃	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
JUNE				
27...	29	--	8.0	--
27...A	--	--	8.0	--
SEPT.				
11...	51	.18	--	21
11...A	--	--	6.0	21

A FIELD DETERMINATION.

03462000 NORTH TOB RIVER AT ALTOPASS, N.C.

LOCATION.--Lat 35°53'59", long 82°01'50", Mitchell County, 0.1 mile upstream from Rose Creek, and 1.0 mile northwest of Altopass.

DRAINAGE AREA.--104 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1948 to September 1949, October 1967 to September 1968.
Water temperatures: October 1948 to September 1949.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)
JUNE												
25...	1545	143	9.9	.04	1.9	1.2	2.0	.7	13	0	1.8	1.0
25...A	1545	143	--	--	--	--	--	--	--	--	--	--
JULY												
30...	1315	69	10	.00	3.2	.9	2.2	.6	15	0	2.8	1.0
30...A	1315	69	--	--	--	--	--	--	--	--	--	--
SEPT.												
10...	1110	144	9.7	.02	2.9	1.1	2.2	.7	14	0	3.2	1.6
10...A	1110	144	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO ₃)	ORTHO- PHOS- PHATE (PO ₄)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
JUNE												
25...	.2	.2	--	30	.04	11.6	10	0	.3	29	9.2	5
25...A	--	--	--	--	--	--	--	--	--	34	8.4	--
JULY												
30...	.1	.5	.02	27	.04	5.03	12	0	.3	35	6.8	5
30...A	--	--	--	--	--	--	--	--	--	--	7.8	--
SEPT.												
10...	.0	.6	.00	29	.04	11.3	12	0	.3	35	6.2	5
10...A	--	--	--	--	--	--	--	--	--	40	7.1	--

DATE	ALKA- LINITY AS CaCO ₃	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
JUNE				
25...	11	.02	--	22
25...A	--	--	9.0	22
JULY				
30...	12	.04	--	21
30...A	--	--	3.0	21
SEPT.				
10...	11	.06	--	17
10...A	--	--	8.0	17

A FIELD DETERMINATION.

TENNESSEE RIVER BASIN

255

03463786 NORTH TOE RIVER AT HUNTDAL, N.C.

LOCATION.--Lat 36°01'35", long 82°19'16", Mitchell County, at bridge on State Highway 26 at Hunt Dale and 0.5 mile upstream from Cane River.

DRAINAGE AREA.--442 sq mi.

RECORDS AVAILABLE.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SiO2)	DIS-SOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICARBONATE (HCO3)	CARBONATE (CC3)	SULFATE (SC4)	CHLORIDE (CL)
JUNE												
26...	1045	494	11	.00	4.2	1.6	1.8	.8	17	0	5.2	1.4
26...A	1045	494	--	--	--	--	--	--	--	--	--	--
JULY												
30...	1000	284	11	.03	3.5	1.9	2.4	.8	20	0	2.6	1.7
30...A	1000	284	--	--	--	--	--	--	--	--	--	--
SEPT.												
10...	1040	252	10	.00	4.8	1.3	2.9	.9	21	0	3.6	1.8
10...A	1040	252	--	--	--	--	--	--	--	--	--	--
DATE	TIME	FLUORIDE (F)	NITRATE (NO3)	ORTHOPHOSPHATE (PO4)	DIS-SOLVED SILICATES (RESIDUE AT 180 C)	DIS-SOLVED SILICATES (TDS PER AC-FT)	DIS-SOLVED SILICATES (TDS PER DAY)	NON-CARBONATE HARDNESS (CA, MG)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHCS)	PH	COLOR
JUNE												
26...	.6	.4	.01	--	.05	46	17	3	.2	40	6.3	5
26...A	--	--	--	--	--	--	--	--	--	36	9.0	--
JULY												
30...	.7	.5	.01	43	.06	33	17	1	.3	45	6.4	5
30...A	--	--	--	--	--	--	--	--	--	--	8.2	--
SEPT.												
10...	.7	.1	.00	36	.05	74	17	0	.3	48	6.6	5
10...A	--	--	--	--	--	--	--	--	--	53	8.0	--

DATE	ALKALINITY AS CaCO3	METHYLENE BLUE ACTIVE SUBSTANCE	DIS-SOLVED OXYGEN	TEMPERATURE (DEG C)
JUNE				
26...	14	.08	--	--
26...A	--	--	9.0	--
JULY				
30...	16	.04	--	22
30...A	--	--	4.0	22
SEPT.				
10...	17	.13	--	20
10...A	--	--	10.0	20

A FIELD DETERMINATION.

03464000 CANE RIVER NEAR SIOUX, N.C.

LOCATION.--Lat 36°00'52", long 82°19'40", Yancey County, at gaging station on right bank on Secondary Road 1417, 1.3 miles upstream from mouth, and 1.5 miles east of Sioux.

DRAINAGE AREA.--157 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1951 to September 1952, October 1967 to September 1968.
Water temperatures: October 1951 to September 1952.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SiO2)	DIS-SOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICARBONATE (HCO3)	CARBONATE (CC3)	SULFATE (SC4)	CHLORIDE (CL)
MAY												
27...	1052	357	10	.00	2.5	1.1	1.9	1.1	17	0	2.0	1.3
27...A	1052	357	--	--	--	--	--	--	--	--	--	--
AUG.												
27...	1015	94	11	.02	4.0	1.3	3.0	.6	22	0	2.0	1.6
27...A	1015	94	--	--	--	--	--	--	--	--	--	--
DATE	TIME	FLUORIDE (F)	NITRATE (NO3)	ORTHOPHOSPHATE (PO4)	DIS-SOLVED SILICATES (RESIDUE AT 180 C)	DIS-SOLVED SILICATES (TDS PER AC-FT)	DIS-SOLVED SILICATES (TDS PER DAY)	NON-CARBONATE HARDNESS (CA, MG)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHCS)	PH	COLOR
MAY												
27...	.0	2.0	.13	39	.05	37.6	12	0	.3	42	6.1	5
27...A	--	--	--	--	--	--	--	--	--	--	6.8	--
AUG.												
27...	.2	.2	.00	34	.05	8.63	16	0	.3	45	6.4	5
27...A	--	--	--	--	--	--	--	--	--	--	7.6	--

DATE	ALKALINITY AS CaCO3	METHYLENE BLUE ACTIVE SUBSTANCE	DIS-SOLVED OXYGEN	TEMPERATURE (DEG C)
MAY				
27...	14	.05	--	17
27...A	--	--	8.3	17
AUG.				
27...	18	.00	--	19
27...A	--	--	8.3	19

A FIELD DETERMINATION.

TENNESSEE RIVER BASIN

03464500 NOLICHUCKY RIVER AT POPLAR, N.C.

LOCATION.--Lat 36°04'29", long 82°20'41", Mitchell County, at Poplar, and 0.7 mile upstream from Hollow Poplar Creek.
DRAINAGE AREA.--608 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SF4)	CHLO- RIDE (CL)
JUNE												
25...	1145	770	10	.09	3.8	1.4	2.3	1.6	21	0	3.6	2.0
25...A	1145	770	--	--	--	--	--	--	--	--	--	--
JULY												
30...	1130	377	12	.02	3.7	1.7	2.5	.8	20	0	2.4	1.8
30...A	1130	377	--	--	--	--	--	--	--	--	--	--
SEPT.												
10...	1350	327	10	.00	4.3	1.4	3.1	1.0	21	0	2.4	2.0
10...A	1350	327	--	--	--	--	--	--	--	--	--	--

DATE	FLUC- RIDE (F)	NITRATE (NO3)	ORTHO- PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TCAS AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC CONC- ENTRANCE (MICRO- MGCS)	PH	COLLR
JUNE												
25...	.4	.8	.03	.45	.06	.93	15	0	.3	47	6.6	20
25...A	--	--	--	--	--	--	--	--	--	48	6.4	--
JULY												
30...	.5	.3	.01	.37	.05	.37	16	0	.3	44	6.4	5
30...A	--	--	--	--	--	--	--	--	--	50	6.2	--
SEPT.												
10...	.4	.2	.00	.37	.05	.32	16	0	.3	48	7.8	5
10...A	--	--	--	--	--	--	--	--	--	46	7.6	--

DATE	ALKAL- LITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
JUNE				
25...	17	.08	--	23
25...A	--	--	10.0	23
JULY				
30...	16	.04	--	22
30...A	--	--	4.5	22
SEPT.				
10...	17	.16	--	24
10...A	--	--	9.0	24

A FIELD DETERMINATION.

03479000 WATAUGA RIVER NEAR SUGAR GROVE, N.C.

LOCATION.--Lat 36°14'18", long 81°49'22", Watauga County, at gaging station on right bank 250 ft upstream from bridge on Secondary Road 1121, 300 ft downstream from Cove Creek, and 2.3 miles southwest of Sugar Grove, and at mile 64.4.

DRAINAGE AREA.--90.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1953, October 1967 to September 1968.

Water temperatures: October 1952 to September 1953.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SF4)	CHLO- RIDE (CL)
MAY												
27...	1545	260	7.1	.00	2.3	1.8	1.6	.9	12	0	2.8	2.6
27...A	1545	260	--	--	--	--	--	--	--	--	--	--
AUG.												
27...	1450	28	8.6	.02	4.6	2.0	3.0	.8	27	0	2.0	2.6
27...A	1450	28	--	--	--	--	--	--	--	--	--	--

DATE	FLUC- RIDE (F)	NITRATE (NO3)	ORTHO- PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC CONC- ENTRANCE (MICRO- MGCS)	PH	COLLR
MAY												
27...	.1	.1	.01	.33	.04	23.2	14	4	.2	37	6.0	10
27...A	--	--	--	--	--	--	--	--	--	--	6.4	--
AUG.												
27...	.1	.2	.14	.34	.05	2.57	20	0	.3	52	6.6	5
27...A	--	--	--	--	--	--	--	--	--	--	8.6	--

DATE	ALKAL- LITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
27...	10	.07	--	17
27...A	--	--	8.8	17
AUG.				
27...	22	.00	--	24
27...A	--	--	9.4	24

A FIELD DETERMINATION.

03481000 ELK RIVER NEAR ELK PARK, N.C.

LOCATION.--Lat 36°11'01", long 81°57'45", Avery County, 0.3 mile downstream from Skalley Creek and 2.0 miles north-east of Elk Park.

DRAINAGE AREA.--42.0 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SI02)	DIS-SOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICARBONATE (HC03)	CARBONATE (CC3)	SULFATE (SC4)	CHLORIDE (CL)
JUNE												
26...	1430	39	11	.02	3.0	1.1	2.8	.8	16	0	.8	2.8
26...A	1430	39	--	--	--	--	--	--	--	--	--	--
JULY												
30...	1550	21	24	.04	--	--	3.3	.7	19	0	.8	4.2
30...A	1550	21	--	--	--	--	--	--	--	--	--	--
SEPT.												
10...	1330	28	11	.01	3.5	1.1	3.7	1.0	19	0	1.6	3.6
10...A	1330	28	--	--	--	--	--	--	--	--	--	--

DATE	FLUORIDE (F)	NITRATE (NO3)	CRTHO PHOS-PHATE (PO4)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C)	DIS-SOLVED SOLIDS (ITONS PER AC-FT)	DIS-SOLVED SOLIDS (ITONS PER DAY)	HARDNESS (CA,MG)	NON-CARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHCS)	PH	COLOR
JUNE												
26...	.2	.8	.03	36	.05	3.79	12	0	.4	40	7.2	10
26...A	--	--	--	--	--	--	--	--	--	44	7.6	--
JULY												
30...	.1	1.5	.12	45	.06	2.55	--	--	--	44	6.8	5
30...A	--	--	--	--	--	--	--	--	--	42	7.6	--
SEPT.												
10...	.0	.3	.00	35	.05	2.65	14	0	.4	45	5.9	5
10...A	--	--	--	--	--	--	--	--	--	53	7.7	--

DATE	ALKALINITY AS CAC03	METHYLENE BLUE ACTIVE SUBSTANCE	DIS-SOLVED OXYGEN	TEMPERATURE (DEG C)
JUNE				
26...	13	.07	--	23
26...A	--	--	9.0	23
JULY				
30...	16	.01	--	--
30...A	--	--	3.0	--
SEPT.				
10...	16	.07	--	18
10...A	--	--	8.0	18

A FIELD DETERMINATION.

03500000 LITTLE TENNESSEE RIVER NEAR PRENTISS, N.C.

LOCATION.--Lat 35°08'57", long 83°22'46", Macon County, at gaging station on left bank 600 ft upstream from Owensby Branch, 0.5 mile upstream from Cartoogechaye Creek, 2 miles north of Prentiss, and at mile 119.5.

DRAINAGE AREA.--140 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1953, October 1967 to September 1968.

Water temperatures: October 1952 to September 1953.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SI02)	DIS-SOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICARBONATE (HC03)	CARBONATE (CC3)	SULFATE (SC4)	CHLORIDE (CL)
MAY												
21...	1645	340	8.8	.00	1.6	.2	1.4	.4	8	0	1.4	1.0
21...A	1645	340	--	--	--	--	--	--	--	--	--	--
AUG.												
29...	1300	111	9.5	.02	1.9	.5	2.9	.2	10	0	3.6	1.4
29...A	1300	111	--	--	--	--	--	--	--	--	--	--

DATE	FLUORIDE (F)	NITRATE (NO3)	CRTHO PHOS-PHATE (PO4)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C)	DIS-SOLVED SOLIDS (ITONS PER AC-FT)	DIS-SOLVED SOLIDS (ITONS PER DAY)	HARDNESS (CA,MG)	NON-CARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICRO-MHCS)	PH	COLOR
MAY												
21...	.1	.3	.00	16	.02	14.7	5	0	.3	21	6.1	5
21...A	--	--	--	--	--	--	--	--	--	--	6.5	--
AUG.												
29...	.1	1.3	.03	25	.03	7.49	7	0	.5	21	5.5	5
29...A	--	--	--	--	--	--	--	--	--	--	6.7	--

DATE	ALKALINITY AS CAC03	METHYLENE BLUE ACTIVE SUBSTANCE	DIS-SOLVED OXYGEN	TEMPERATURE (DEG C)
MAY				
21...	7	.00	--	16
21...A	--	--	8.7	16
AUG.				
29...	8	.01	--	19
29...A	--	--	7.0	19

A FIELD DETERMINATION.

TENNESSEE RIVER BASIN

03500240 CARTOOGECAYE CREEK NEAR FRANKLIN, N.C.

LOCATION.--Lat 35°09'31", long 83°23'39", Macon County, at gaging station on downstream side of bridge on Secondary Road 1152, 0.1 mile downstream from unnamed creek, 1.8 miles south of Franklin, and 1.9 miles upstream from mouth.

DRAINAGE AREA.--57.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SI(2))	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SC4)	
JAN. 18...	1200	213	8.9	.13	2.3	.6	1.5	.7	12	C	.C	
MAR. 07...	1415	89	8.9	.05	3.5	.1	1.5	.7	13	0	1.6	
MAY 08...	1115	102	8.9	.20	2.9	.7	1.5	.9	14	0	1.2	
JULY 22...	1200	55	11	.10	3.3	.5	1.8	1.1	16	C	1.2	
SEPT. 10...	1045	50	9.0	.18	3.3	.5	1.8	1.1	15	C	2.C	
DATE	TIME	CHLO- RIDE (CL)	NITRATE (NO3)	DIS- SOLVED SCLIDS (RESIDUE AT 180 C)	DIS- SOLVED SOLIDS ITONS PER AC-FT)	LIS- SOLVED SOLIDS ITCONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
JAN. 18...	1.0	.6	--	--	--	8	C	.2	24	6.6	5	
MAR. 07...	1.0	.1	27	.04	6.45	9	0	.2	26	6.7	5	
MAY 08...	1.0	.2	26	.04	7.16	10	0	.2	30	7.1	5	
JULY 22...	1.0	.1	28	.04	4.16	10	0	.2	44	6.5	5	
SEPT. 10...	1.5	.3	31	.04	4.18	10	0	.2	33	6.8	5	

ALKA-
LINIT
AS
CAGD3

TEMP-
ERATURE
(DEG C)

DATE	ALKA- LINIT AS CAGD3	TEMP- ERATURE (DEG C)
JAN. 18...	10	3
MAR. 07...	11	8
MAY 08...	11	12
JULY 22...	13	21
SEPT. 10...	12	18

03501000 CULLASAJA RIVER AT CULLASAJA, N.C.

LOCATION.--Lat 35°09'59", long 83°19'25", Macon County, at gaging station on right bank at Cullasaja, 150 ft upstream from bridge on U.S. Highway 64, 1.4 miles downstream from Ellijay Creek, and 4.1 miles upstream from mouth.

DRAINAGE AREA.--86.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1954 to September 1956, October 1967 to September 1968.

REMARKS.--Records furnished by Tennessee Valley Authority.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	CIS- CHARGE (CFS)	SILICA (SI(2))	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SC4)	
NOV. 06...	1430	238	6.0	.06	1.9	.1	1.2	.6	8	0	1.0	
JAN. 18...	1415	329	6.2	.06	2.3	.0	1.3	.0	5	0	1.6	
MAR. 07...	1545	133	4.2	.05	2.5	.1	1.5	.5	10	0	1.6	
MAY 08...	1245	173	6.7	.04	1.9	.3	1.2	.7	8	0	2.0	
JULY 05...	1640	104	7.4	.12	2.5	.0	1.4	.7	10	0	1.2	
SEPT. 10...	1200	75	4.7	.11	1.9	.6	1.6	1.1	12	0	1.6	
DATE	TIME	CHLO- RIDE (CL)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	LIS- SOLVED SOLIDS (TCNS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR
NOV. 06...	1.0	.0	--	--	--	5	0	.2	17	6.6	5	
JAN. 18...	1.5	.1	15	.02	13.3	5	1	.2	18	6.7	5	
MAR. 07...	1.0	.1	20	.03	7.18	6	0	.3	20	6.5	5	
MAY 08...	1.0	.0	15	.02	7.01	6	0	.2	21	6.7	5	
JULY 05...	1.0	.2	13	.02	3.65	6	0	.2	23	6.6	5	
SEPT. 10...	1.0	.1	20	.03	4.05	7	0	.3	27	6.5	5	

03501000 CULLASAJA RIVER AT CULLASAJA, N.C.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ALKA- LITY AS CACO3	TEMP- ERATURE (DEG C)
NOV.		
06...	7	6
JAN.		
18...	4	4
MAR.		
07...	8	7
MAY		
08...	7	12
JULY		
05...	8	17
SEPT.		
10...	10	18

03503000 LITTLE TENNESSEE RIVER AT NEEDMORE, N.C.

LOCATION.--Lat 35°20'11", long 83°31'39", Swain County, at gaging station on left bank 0.8 mile downstream from DeHart Creek, 0.8 mile north of Needmore, 2.4 miles downstream from Brush Creek, 6.3 miles downstream from Tellico Creek, and at mile 92.9.

DRAINAGE AREA.--436 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SC4)	CHLO- RIDE (CL)
MAY												
21...	1530	921	8.9	.00	1.5	.5	1.2	.5	9	C	1.0	1.4
21...	1530	921	--	--	--	--	--	--	--	--	--	--
AUG.												
14...	1040	348	8.3	.02	1.9	.6	1.9	.3	12	C	1.2	1.4
14...	1040	348	--	--	--	--	--	--	--	--	--	--

DATE	FLUC- UIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	CIS- SOLVED SOLIDS (RESI- 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SCLIDS (TONS DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHCS)	PH	CELCP
MAY												
21...	.0	.3	.00	13	.02	32	6	0	.2	15	6.3	5
21...	--	--	--	--	--	--	--	--	--	--	7.2	--
AUG.												
14...	.1	.2	.00	20	.03	18	8	0	.3	26	6.5	5
14...	--	--	--	--	--	--	--	--	--	--	7.3	--

DATE	ALKA- LITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
21...	7	.00	--	18
21...	--	--	9.7	13
AUG.				
14...	10	.04	--	24
14...	--	--	8.1	24

A FIELD DETERMINATION.

03504000 NANTAHALA RIVER NEAR RAINBOW SPRINGS, N.C.

LOCATION.--Lat 35°07'35", long 83°37'11", Macon County, at gaging station on right bank on Nantahala Forest Service Road, 300 ft upstream from Roaring Fork, 0.2 mile downstream from Buck Creek, 5 miles downstream from town of Rainbow Springs, and at mile 34.3.

DRAINAGE AREA.--51.9 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SC4)
JAN.											
11...	1500	654	4.6	.02	1.7	.0	.7	.0	6	0	1.2
MAR.											
08...	1100	104	5.5	.00	2.1	.5	.9	.5	9	C	1.6
MAY											
14...	1500	309	4.8	.07	2.1	.3	.5	.7	8	0	1.2
JULY											
11...	1200	85	6.5	.04	2.1	.0	.8	.7	8	0	.6
SEPT.											
20...	1410	115	5.7	.07	1.7	.1	.8	.6	5	C	2.0

TENNESSEE RIVER BASIN

03504000 NANTAHALA RIVER NEAR RAINBOW SPRINGS, N.C.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORO- RICE (CL)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	CLLCP
JAN. 11...	.5	.0	8	.01	14.1	4	0	.1	13	6.6	5
MAR. 08...	.5	.0	14	.02	3.93	7	0	.1	15	6.7	5
MAY 14...	1.5	.2	15	.02	12.5	6	0	.2	16	6.4	10
JULY 11...	1.0	.1	5	.01	2.07	5	0	.2	18	6.5	10
SEPT. 20...	1.5	.2	14	.02	4.35	4	0	.2	15	6.5	15

DATE ALKA-
LITY
AS
CACO3 TEMP-
ERATURE
(DEG C)

JAN. 11...	5	6
MAR. 08...	7	3
MAY 14...	7	13
JULY 11...	7	17
SEPT. 20...	4	15

03505500 NANTAHALA RIVER AT NANTAHALA, N. C.

LOCATION.--Lat 35°17'55", long 83°39'22", Swain County, at gaging station on left bank on U.S. Highway 19, 1.0 mile northeast of Nantahala, 2.3 miles downstream from Rowlin Creek, 2.8 miles downstream from Nantahala Dam powerhouse, and at mile 10.8.

DRAINAGE AREA.--144 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SD2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SO4)	CHLOR- IDE (CL)
MAY 21...	1145	662	6.1	.00	1.3	.6	.8	.3	6	0	.8	.8
21...A	1145	662	--	--	--	--	--	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	CRTHC PHOS- PHATE (PC4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	CLLCP
MAY 21...	.0	.2	.10	14	.02	25	6	1	.1	15	6.3	C
21...A	--	--	--	--	--	--	--	--	--	--	6.3	--

DATE ALKA-
LITY
AS
CACO3 METHY-
LENE
BLUE
ACTIVE
SUB-
STANCE DIS-
SOLVED
OXYGEN TEMP-
ERATURE
(DEG C)

MAY 21...	5	.02	--	10
21...A	--	--	11.0	10

A FIELD DETERMINATION.

03517533 LITTLE TENNESSEE RIVER AT TAPOCO, N.C.

LOCATION.--Lat 35°27'01", long 83°56'31", Graham County, at bridge on U.S. Highway 129, 0.2 mile downstream from Cheoah River, and 0.4 mile north of Tapoco.

DRAINAGE AREA.--1,823 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SD2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SO4)	CHLOR- IDE (CL)
MAY 21...	1325	2880	7.1	.00	1.6	.5	1.5	.5	7	0	2.4	1.0
21...A	1325	2880	--	--	--	--	--	--	--	--	--	--
AUG. 14...	1500	7930	6.4	.02	1.6	.3	1.4	.5	5	0	2.8	1.4
14...A	1500	7930	--	--	--	--	--	--	--	--	--	--

A FIELD DETERMINATION.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

[illegible]

TENNESSEE RIVER BASIN

03548500 HIWASSEE RIVER ABOVE MURPHY, N.C.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUD- RIDE (F)	NITRATE (NO3)	CRTHO PHOS- PHATE (PC4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHCS)	PH	COLOR
MAY												
20...	.0	.3	.02	18	.02	95	6	0	.2	15	6.0	5
20... A	--	--	--	--	--	--	--	--	--	--	6.1	--
AUG.												
13...	.0	.5	.00	18	.02	10	7	0	.2	22	6.3	5
13... A	--	--	--	--	--	--	--	--	--	--	6.9	--

METHY- LENE BLUE				
DATE	ALKA- LITY AS CAC03	DIS- SOLVED SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
20...	6	.00	--	17
20... A	--	--	9.8	17
AUG.				
13...	8	.00	--	20
13... A	--	--	9.4	20
A FIELD DETERMINATION.				

03550000 VALLEY RIVER AT TOMOTLA, N.C.

LOCATION.--Lat 35°08'20", long 83°58'50", Cherokee County, at gaging station on right bank 15 ft downstream from bridge on Secondary Road 1373 at Tomotla, 0.2 mile upstream from Rogers Creek, 4.7 miles northeast of Murphy, and at mile 6.4.

DRAINAGE AREA.--104 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1953, October 1967 to September 1968.

Water temperatures: October 1952 to September 1953, October 1961 to September 1967.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	SILICA (SIC2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC2)	SULFATE (SO4)	CHLO- RIDE (CL)
MAY												
21...	1025	249	7.0	.00	3.5	1.2	1.1	.4	14	0	1.2	1.6
21... A	1025	249	--	--	--	--	--	--	--	--	--	--
AUG.												
13...	1625	94	6.7	.02	5.9	1.0	1.5	.8	24	0	2.0	.6
13... A	1625	94	--	--	--	--	--	--	--	--	--	--

DATE	FLUD- RIDE (F)	NITRATE (NO3)	CRTHO PHOS- PHATE (PD4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHCS)	PH	COLOR
MAY												
21...	.0	.6	.00	22	.03	14.8	14	3	.1	32	6.3	5
21... A	--	--	--	--	--	--	--	--	--	--	6.3	--
AUG.												
13...	.1	.1	.00	27	.04	6.85	19	0	.2	45	6.5	5
13... A	--	--	--	--	--	--	--	--	--	--	7.1	--

METHY- LENE BLUE				
DATE	ALKA- LITY AS CAC03	DIS- SOLVED SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
21...	11	--	--	13
21... A	--	--	9.8	13
AUG.				
13...	20	.00	--	23
13... A	--	--	8.1	23
A FIELD DETERMINATION.				

TENNESSEE RIVER BASIN

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03555500 HIWASSEE RIVER AT APALACHIA DAM, N.C.

LOCATION.--Lat 35°10'04", long 84°17'49", Cherokee County, at Apalachia Dam, and 0.1 mile upstream from North Carolina-Tennessee State Line, and at mile 66.0.

DRAINAGE AREA.--1,018 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CF5)	SILICA (SIO2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PG- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CC3)	SULFATE (SC4)	CHL- RIDE (CL)
MAY												
20...	1530	2500	7.1	.00	1.6	.7	1.2	.5	10	0	1.0	1.3
20...	1530	2500	--	--	--	--	--	--	--	--	--	--
AUG.												
13...	0955	2450	6.7	.01	1.7	.5	1.2	.4	9	0	1.6	1.4
13...	0955	2450	--	--	--	--	--	--	--	--	--	--

DATE	FLUD- RIDE (F)	NITRATE (NO3)	ERTHC PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SCLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- M-CM)	PH	COLOR
MAY												
20...	.0	.3	.01	16	.02	108	7	0	.2	21	6.1	0
20...	--	--	--	--	--	--	--	--	--	--	6.2	--
AUG.												
13...	.0	.1	.00	15	.02	99	6	0	.2	23	6.1	5
13...	--	--	--	--	--	--	--	--	--	--	6.7	--

DATE	ALKA- LINITY AS CACO3	METHY- LENE BLUE ACTIVE SUB- STANCE	DIS- SOLVED OXYGEN	TEMP- ERATURE (DEG C)
MAY				
20...	8	--	--	19
20...	--	--	10.0	19
AUG.				
13...	7	.00	--	24
13...	--	--	8.7	24
A FIELD DETERMINATION.				

ANALYSES OF SAMPLES COLLECTED AT LOW FLOW ON STREAMS IN THE OHIO RIVER BASIN IN OHIO
 CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	TIME	DIS- CHARGE (CFS)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
MUSKINGUM RIVER BASIN												
SEP.. 1968 24...	1045	73	175	0	96	2140	4280	1640	1520	6610	7.0	17
03116000 TUSCARAWAS RIVER AT CLINTON OHIO (LAT 40 55 39 LONG 81 37 59)												
SEP.. 1968 04...	0935	12	168	0	116	112	644	244	107	888	7.0	15
03117000 TUSCARAWAS RIVER AT MASSILLON OHIO (LAT 40 46 17 LONG 81 31 25)												
SEP.. 1968 24...	1415	123	142	0	120	1360	2830	1790	963	4540	7.2	17
03117500 SANDY CREEK AT WAYNESBURG, OHIO (LAT 40 40 22 LONG 81 15 38)												
SEP.. 1968 30...	1515	26	170	0	109	14	216	244	107	545	7.8	16
03118000 MIDDLE BRANCH NIMISHILLEEN CREEK AT CANTON OHIO (LAT 40 57 30 LONG 81 21 20)												
SEP.. 1968 30...	1220	4.5	244	6	125	36	476	342	132	717	8.3	16
03119700 CUNDITCH CREEK AT JEWETT, OHIO (LAT 40 21 55 LONG 81 30 15)												
AUG.. 1968 30...	0935	442	176	0	668	20	1240	832	688	1440	7.7	15
03120500 MCQUINE CR BL LEESVILLE DAM NR LEESVILLE OHIO (LAT 40 24 09 LONG 81 11 49)												
SEP.. 1968 27...	1650	1.7	60	0	18	7.0	108	71	22	164	7.0	15
03121500 INDIAN FORK BL ATHOOD DAM NR NEW CUMBERLAND OHIO (LAT 40 31 30 LONG 81 17 20)												
SEP.. 1968 27...	1330	3.3	69	0	32	14	176	92	36	270	7.8	16
03122500 TUSCARAWAS RIVER BL DUNN DAM NR DUNN OHIO (LAT 40 31 49 LONG 81 25 51)												
SEP.. 1968 25...	1410	624	120	0	178	1470	3120	1250	1150	4870	6.9	17
03123000 SUGAR CREEK AR BEACH CITY DAM AT BEACH CITY OHIO (LAT 40 39 25 LONG 81 34 40)												
SEP.. 1968 03...	1310	24	214	0	77	34	360	251	75	576	7.7	15
03124000 SUGAR CREEK BL BEACH CITY DAM NR BEACH CITY OHIO (LAT 40 39 10 LONG 81 33 20)												
SEP.. 1968 03...	0925	83	82	0	508	29	896	595	528	1110	7.0	17
03124500 SUGAR CREEK AT STRASBURG, OHIO (LAT 40 35 12 LONG 81 31 29)												
SEP.. 1968 25...	0920	82	70	0	434	25	758	524	466	1020	7.1	17
03126000 STILLWATER CREEK AT PIEDMONT OHIO (LAT 40 11 40 LONG 81 12 50)												
SEP.. 1968 25...	1300	10	160	0	506	16	910	630	499	1190	7.3	19
03127000 STILLWATER CREEK AT TIPPECANOE OHIO (LAT 40 16 11 LONG 81 17 27)												
SEP.. 1968 25...	1510	50	143	0	323	10	618	452	335	861	7.4	18
03128500 LITTLE STILLWATER CREEK BL DAM AT TAPPAN OHIO (LAT 40 21 30 LONG 81 13 50)												
SEP.. 1968 27...	0850	1.6	132	0	172	9.0	382	296	188	586	8.2	16
03129000 TUSCARAWAS RIVER AT NEWCOMERTOWN, OHIO (LAT 40 15 40 LONG 81 36 35)												
SEP.. 1968 17...	1810	410	112	0	231	700	1810	710	618	2770	7.9	21
03130000 BLACK FORK BL CHARLES MILL DAM AR MIFELIN OHIO (LAT 40 44 07 LONG 82 21 48)												
AUG.. 1968 30...	1210	14	158	0	71	20	272	200	70	460	7.4	23
03130500 TOUBY RUN AT MANSFIELD, OHIO (LAT 40 45 55 LONG 82 32 35)												
SEP.. 1968 11...	1.30	2.3	162	0	72	68	366	212	70	614	7.2	16
03132000 CLEAR FORK AT RUTLER, OHIO (LAT 40 35 35 LONG 82 25 20)												
AUG.. 1968 29...	1400	30	230	6	34	14	262	234	36	467	8.4	18
03133500 CLEAR FORK, NR. PENRYSVILLE, OHIO (LAT 40 37 10 LONG 82 19 25)												
AUG.. 1968 30...	1415	30	160	0	22	11	184	158	27	338	7.4	22

ANALYSES OF SAMPLES COLLECTED AT LOW FLOW ON STREAMS IN THE OHIO RIVER BASIN IN OHIO
 CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS- CHARGE (CFS)	CAK- HYATE (MG/03)	CAK- BONATE (C/03)	SULFATE (534)	CHLO- RINE (CL)	NIS- SCLVFO SFLIDS (PRES- DUE AT 180 C)	HARD- NESS (F&MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
MUSKINGUM RIVER BASIN--CONTINUED												
03135000 LAKE FORK NEAR MOHICANVILLE, OHIO (LAT 40 43 20 LONG 082 09 20)												
AUG.. 1968 29...	1145	24	246	0	81	40	390	276	74	657	7.8	15
03136000 MOHICAN RIVER AT GREER OHIO (LAT 40 30 55 LONG 082 11 48)												
SEP.. 1968 17...	1210	147	193	0	103	26	378	265	107	592	8.0	20
03136400 N. BRANCH KOKOSING RIVER NR FREDERICKTOWN OHIO (LAT 40 30 10 LONG 082 34 15)												
SEP.. 1968 06...	1530	7.1	144	0	44	13	206	172	54	351	8.2	21
03136500 KOKOSING RIVER AT MOUNT VERNON OHIO (LAT 40 24 25 LONG 082 30 00)												
SEP.. 1968 11...	1210	37	280	0	50	16	330	260	56	520	8.1	17
03136900 JELLOWAY CREEK AT HOWARD, OHIO (LAT 40 24 25 LONG 082 19 15)												
SEP.. 1968 11...	1415	9.6	174	0	22	15	204	162	20	375	8.0	17
03137000 KOKOSING RIVER AT MILLWOM, OHIO (LAT 40 23 55 LONG 082 17 10)												
SEP.. 1968 05...	1500	84	224	6	46	22	300	240	46	405	8.4	21
03138500 WALHUNDING RIVER BL MOHAWK DAM AT NELLIF OHIO (LAT 40 20 26 LONG 082 03 49)												
SEP.. 1968 17...	1310	263	202	0	78	24	330	250	84	545	8.0	19
03139000 KILLBUCK CREEK AT KILLBUCK, OHIO (LAT 40 29 43 LONG 081 59 10)												
SEP.. 1968 17...	1130	52	212	6	59	28	318	236	52	552	8.4	16
03140000 MILL CREEK NEAR CUSHOCTON, OHIO (LAT 40 21 50 LONG 081 51 40)												
SEP.. 1968 17...	1400	64	116	0	45	15	190	126	31	338	7.5	17
03140500 MUSKINGUM RIVER NR CUSHOCTON, OHIO (LAT 40 14 55 LONG 081 52 22)												
SEP.. 1968 03...	1515	1120	60	0	210	760	1760	654	605	2880	6.6	23
03143500 MILLS CREEK BELOW DAM AT MILLS CREEK OHIO (LAT 40 00 40 LONG 081 50 45)												
SEP.. 1968 17...	1445	77	104	0	158	22	358	234	149	566	7.5	21
03144000 WAKATOMIKA CREEK, NEAR FRAZEYSBURG OHIO (LAT 40 07 57 LONG 082 08 53)												
SEP.. 1968 10...	1700	13	126	0	19	46	--	138	35	376	7.7	20
03147900 TIMBER RUN NEAR ZANESVILLE, OHIO (LAT 39 56 55 LONG 082 02 50)												
SEP.. 1968 09...	1030	115	148	0	45	112	426	212	91	737	7.4	18
03148300 MOXAMALA CREEK AT ROSEVILLE, OHIO (LAT 39 48 40 LONG 082 04 10)												
SEP.. 1968 09...	1530	13	0	0	1840	46	2630	1310	1310	3290	2.8	22
03148400 MOXAMALA CREEK AT ROBERTS, OHIO (LAT 39 51 20 LONG 082 03 25)												
SEP.. 1968 09...	1640	14	0	0	1720	40	2460	1260	1260	3150	2.8	21
03148600 MOXAMALA CREEK NEAR ZANESVILLE OHIO (LAT 39 53 45 LONG 082 00 20)												
SEP.. 1968 12...	1930	25	0	0	1300	59	1900	1060	1060	2510	3.0	18
03149500 SALT CREEK NEAR CHANDLERSVILLE, OHIO (LAT 39 54 31 LONG 081 51 36)												
SEP.. 1968 12...	1145	2.4	124	0	45	16	214	142	40	438	8.2	19
03150000 MUSKINGUM RIVER AT MCCONNELLSVILLE, OHIO (LAT 39 39 40 LONG 081 51 00)												
SEP.. 1968 16...	1315	1180	124	0	207	290	950	454	352	1530	7.2	24
SCIOTO RIVER BASIN												
03228300 BIG WALNUT CREEK AT SUNBURY OHIO (LAT 40 14 10 LONG 082 51 05)												
SEP.. 1968 10...	0950	1.5	208	10	72	28	346	258	70	565	8.5	19
03228500 BIG WALNUT CREEK AT CENTRAL COLLEGE OHIO (LAT 40 06 13 LONG 082 53 03)												
SEP.. 1968 11...	1640	104	116	0	47	16	224	152	57	342	7.7	19
03230400 BIG DARBY CREEK AT DARRYDALE, OHIO (LAT 39 50 55 LONG 083 11 20)												
SEP.. 1968 05...	1610	34	312	0	73	22	414	338	82	665	7.9	--

ANALYSES OF SAMPLES COLLECTED AT LOW FLOW ON STREAMS IN THE OHIO RIVER BASIN IN OHIO
CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	TIME	DIS-CHARGE (CFS)	CAR-BO-NATE (MG/03)	CAR-BO-NATE (MG/03)	SULFATE (SO4)	CHLO-ROIDE (CL)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	HARD-NESS (CA,MG)	MIN-CAR-BO-NATE HARD-NESS	SPECI-FIC CON-DUCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
LITTLE MIAMI RIVER BASIN												
03240000 LITTLE MIAMI RIVER, NR. OLDTOWN, OHIO (LAT 39 44 55 LONG 083 55 50)												
SEP., 1968 11...	1210	27	308	6	73	22	386	350	87	675	8.4	--
03240500 NORTH FORK MASSIES CREEK, AT CEDARVILLE, OHIO (LAT 39 45 25 LONG 083 47 25)												
SEP., 1968 12...	0950	2.4	352	0	76	16	360	378	89	698	8.1	--
03241000 SOUTH FORK MASSIES CREEK, NR. CEDARVILLE, OHIO (LAT 39 44 20 LONG 083 45 50)												
SEP., 1968 12...	1115	.44	328	0	66	16	376	350	80	651	7.9	--
03241500 MASSIES CREEK AT WILBERFORCE, OHIO (LAT 39 43 20 LONG 083 52 55)												
SEP., 1968 12...	1255	7.4	310	10	68	24	384	350	79	688	8.4	--
03242050 LITTLE MIAMI RIVER NR. SPRING VALLEY, OHIO (LAT 39 35 00 LONG 084 01 49)												
SEP., 1968 13...	1420	117	346	0	57	44	444	356	72	773	8.0	--
03242150 CAESAR CREEK NR. XENIA, OHIO (LAT 39 37 35 LONG 083 54 09)												
SEP., 1968 13...	1305	1.5	262	0	42	18	256	264	49	503	8.2	--
03242200 ANDERSON FORK NR NORTH BURLINGTON OHIO (LAT 39 33 59 LONG 083 54 10)												
SEP., 1968 13...	1105	1.6	300	0	66	24	334	328	82	639	8.0	--
GREAT MIAMI RIVER BASIN												
03264000 GREENVILLE CREEK NR. BRADFORD, OHIO (LAT 40 06 08 LONG 084 25 49)												
SEP., 1968 18...	0920	40	332	0	76	20	400	348	76	691	7.9	19
03265000 STILLWATER RIVER AT PLEASANT HILL, OHIO (LAT 40 03 28 LONG 084 21 22)												
SEP., 1968 03...	0915	77	338	0	78	20	398	354	76	701	8.1	19
03267500 MAD RIVER AT TREMONT CITY OHIO (LAT 40 00 25 LONG 083 49 24)												
SEP., 1968 05...	1140	149	356	0	85	16	436	398	106	739	8.1	--
03267600 CHAPMAN CREEK AT TREMONT CITY, OHIO (LAT 40 00 38 LONG 083 50 09)												
SEP., 1968 06...	1105	3.8	330	0	47	12	330	322	51	612	8.1	--
03267700 MOORE RUN NR. EAGLE CITY, OHIO (LAT 39 59 24 LONG 083 49 03)												
SEP., 1968 06...	0950	13	360	0	89	18	488	390	94	755	7.8	--
03267800 MAD RIVER AT EAGLE CITY, OHIO (LAT 39 58 36 LONG 083 49 21)												
SEP., 1968 05...	1400	155	356	0	86	16	430	396	104	730	8.2	--
03267900 MAD RIVER (ST. PAULS PIKE) AT EAGLE CITY OHIO (LAT 39 57 51 LONG 083 49 54)												
SEP., 1968 06...	1315	188	366	0	85	16	418	384	100	718	8.0	--
03267950 BUCK CREEK, NR. NEW MODREFIELD, OHIO (LAT 40 00 38 LONG 083 41 56)												
SEP., 1968 06...	0920	20	354	0	65	14	394	376	86	703	8.0	--
03267960 E. FORK BUCK CREEK NR. NEW MODREFIELD, OHIO (LAT 40 00 22 LONG 083 41 37)												
SEP., 1968 06...	0905	22	354	0	94	12	462	404	114	730	8.0	--
03271300 HOLES CREEK, NR. KETTERING, OHIO (LAT 39 39 15 LONG 084 11 45)												
AUG., 1968 30...	1010	2.0	284	0	56	50	414	316	83	700	7.9	17
03271400 BEAR CREEK AT ELLERTON, OHIO (LAT 39 40 25 LONG 084 18 35)												
AUG., 1968 26...	1525	3.3	352	0	74	28	436	366	77	732	8.2	21
03271700 CLEAR CREEK AT FRANKLIN, OHIO (LAT 39 33 06 LONG 084 18 18)												
AUG., 1968 26...	1250	4.6	328	0	56	30	376	332	67	682	8.1	22
03272300 DICKS CREEK NR. EXCELLON, OHIO (LAT 39 28 25 LONG 084 23 50)												
SEP., 1968 03...	1010	6.9	176	0	174	60	516	304	160	853	8.0	26

PESTICIDE ANALYSES OF STREAMS IN THE OHIO RIVER BASIN IN OHIO
PESTICIDE ANALYSES. IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	ALDRIN	DDT	DDE	DDT	DI- FLORIN	ENDRIN	HEPTA- CHLOR
03144600 MUSKINGUM RIVER AT ZANESVILLE,AT BOAT DOCK AT ZANESVILLE MUNICIPAL WATER PLANT(LAT 39 57 41LONG 081 59 39)							
MAY 10-14	.00	.00	.00	.00	.00	.00	.00
JUNE 26-30	.00	.00	.00	.00	.00	.00	.00
JULY 09-13	.00	.00	.00	.00	.00	.00	.00
AUG. 17-21	.00	.00	.00	.00	.00	.00	.00
SEPT. 19-23	.00	.00	.00	.00	.00	.00	.00

03149000 MUSKINGUM RIVER BELOW ZANESVILLE, AT BRIDGE ON STATE HIGHWAY 60 (LAT 39 52 48 LONG 081 58 46)

OCT.							
24-28	.00	.00	.00	.00	.00	.00	.77
NOV.							
03-07	.00	.00	.00	.00	.00	.70	.77
APR.							
25-30	.00	.00	.00	.00	.00	.00	.00
MAY							
10-14	.03	.00	.70	.00	.00	.00	.73
JUNE							
26-30	.00	.00	.70	.00	.00	.70	.77
JULY							
14-20	.00	.00	.77	.00	.70	.00	.77
AUG.							
17-21	.00	.00	.00	.00	.00	.00	.77
SEPT.							
19-24	.00	.00	.00	.70	.00	.00	.00

03222010 SCIOTO RIVER AT COLUMBUS, AT RAW WATER INTAKE TO CITY OF COLUMBUS,
DUBLIN ROAD WATER TREATMENT PLANT (LAT 39 58 05 LONG 083 02 06)

UCT.							
17-21	.00	.00	.00	.01	.00	.00	.00
NDV.							
11-15	.00	.00	.00	.00	.00	.00	.00
APR.							
26-30	.00	.00	.00	.00	.00	.00	.00
MAY							
14-18	.00	.00	.00	.00	.00	.00	.00
JUNE							
17-21	.00	.00	.00	.00	.01	.00	.00
JULY							
24-28	.00	.00	.00	.01	.00	.00	.00
AUG.							
04-08	.00	.00	.00	.00	.00	.00	.00
SEPT.							
20-24	.00	.00	.00	.00	.00	.00	.00

03270010 MAD RIVER AT DAYTON, AT MAN-MADE CHANNEL OF MAD RIVER,
JUST EAST OF HARSHMAN ROAD (LAT 39 47 22 LONG 084 06 42)

APR.							
72-26	.00	.00	.02	.07	.00	.00	.00
MAY							
10-14	.00	.00	.01	.04	.00	.00	.00
JUNE							
25-29	.00	.00	.00	.00	.02	.00	.00
JULY							
24-28	.00	.00	.00	.00	.04	.00	.00
AUG.							
9-12	.00	.00	.00	.00	.01	.00	.00
SEPT.							
16-20	.00	.00	.00	.00	.01	.00	.00

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN NEW YORK
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SIO ₂)	DIS- SOLVED (FE)	DIS- SOLVED MAN- GAN- ESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)
ALLEGHENY RIVER BASIN													
03011025 LITTLE VALLEY CREEK AT LITTLE VALLEY, N. Y. (LAT 42 15 22 LONG 078 48 18).													
AUG. 14...	1.0	2.6	.85	.17	27	3.3	3.8	.8	--	78	--	15	5.0
A TIME OF COLLECTION 1430.													

PESTICIDE ANALYSES OF STREAMS IN THE OHIO RIVER BASIN IN OHIO

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PESTICIDE ANALYSES, IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

03144600 MUSKINGUM RIVER AT ZANESVILLE AT BOAT DOCK AT ZANESVILLE MUNICIPAL WATER PLANT (LAT 39 57 41 LONG 081 59 39)

DATE	HEPTA- CHLOR EPOXIDE	METH- NXY- CHLOR	LINDANE	CHLOR- DANE	MALA- THION	METHYL PARA- THION	PARA- THION
MAY							
10-14	.00	.00	.00	.00	.00	.00	.00
JUNE							
26-30	.00	.00	.00	.00	.00	.00	.00
JULY							
09-13	.00	.00	.00	.00	.00	.00	.00
AUG.							
17-21	.00	.00	.00	.00	.00	.00	.00
SEPT.							
19-23	.00	.00	.00	.00	.00	.00	.00

03149000 MUSKINGUM RIVER BELOW ZANESVILLE, AT BRIDGE ON STATE HIGHWAY 60 (LAT 39 52 48 LONG 081 58 46)

DATE	HEPTA- CHLOR EPOXIDE	METH- NXY- CHLOR	LINDANE	CHLOR- DANE	MALA- THION	METHYL PARA- THION	PARA- THION
OCT.							
24-28	.00	.00	.00	.00	.00	.00	.00
NOV.							
03-07	.00	.00	.00	.00	.00	.00	.00
APR.							
25-30	.00	.00	.00	.00	.00	.00	.00
MAY							
10-14	.00	.00	.00	.00	.00	.00	.00
JUNE							
26-30	.00	.00	.00	.00	.00	.00	.00
JULY							
16-20	.00	.00	.26	.00	.00	.00	.00
AUG.							
17-21	.00	.00	.00	.00	.00	.00	.00
SEPT.							
19-24	.00	.00	.00	.00	.00	.00	.00

03222010 SCIOTO RIVER AT COLUMBUS, AT RAW WATER INTAKE TO CITY OF COLUMBUS,
DUBLIN ROAD WATER TREATMENT PLANT (LAT 39 58 05 LONG 083 02 06)

DATE	HEPTA- CHLOR EPOXIDE	METH- NXY- CHLOR	LINDANE	CHLOR- DANE	MALA- THION	METHYL PARA- THION	PARA- THION
OCT.							
17-21	.00	.00	.00	.00	.00	.00	.00
NOV.							
11-15	.00	.00	.00	.00	.00	.00	.00
APR.							
26-30	.00	.00	.00	.00	.00	.00	.00
MAY							
14-18	.00	.00	.00	.00	.00	.00	.00
JUNE							
17-21	.00	.00	.00	.00	.00	.00	.00
JULY							
24-28	.00	.00	.00	.00	.00	.00	.00
AUG.							
04-08	.00	.00	.00	.00	.00	.00	.00
SEPT.							
20-24	.00	.00	.00	.00	.00	.00	.00

03270010 MAD RIVER AT DAYTON, AT MAD-MADE CHANNEL OF MAD RIVER,
JUST EAST OF HARSHMAN ROAD (LAT 39 47 22 LONG 084 06 42)

DATE	HEPTA- CHLOR EPOXIDE	METH- NXY- CHLOR	LINDANE	CHLOR- DANE	MALA- THION	METHYL PARA- THION	PARA- THION
APR.							
22-26	.00	.00	.00	.00	.00	.00	.00
MAY							
10-14	.00	.00	.00	.00	.00	.00	.00
JUNE							
25-29	.00	.00	.00	.00	.00	.00	.00
JULY							
24-28	.00	.00	.00	.00	.00	.00	.00
AUG.							
08-12	.00	.00	.00	.00	.00	.00	.00
SEPT.							
16-20	.00	.00	.00	.00	.00	.00	.00

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN NEW YORK

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	PHOS- PHATE (PO4)	ACIDITY AS H+	ALUM- INUM (AL)	LEAD (PB)	ZINC (ZN)
ALLEGHENY RIVER BASIN														
03011025 LITTLE VALLEY CREEK AT LITTLE VALLEY, N. Y. (LAT 42 15 22 LONG 078 48 16)														
AUG. 14...B	.2	.4	97	81	17	171	7.5	3	25	--	--	--	--	--

B DISSOLVED SOLIDS CALCULATED FROM DETERMINED CONSTITUENTS, 96.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN PENNSYLVANIA

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN GANESE (MN)	CAL- CIUM (CA)	MAG- NE SIUM (MG)	SODIUM (NA)	PO- TA- SIUM- (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
POTATO CREEK BASIN													
03009000 POTATO CREEK AT BETULA (LAT 41 40 15 LONG 078 23 11)													
MAY 01... SEPT. 04...	23.8 2.25	-- --	-- --	-- --	5.5 9.0	2.1 2.5	-- --	-- --	5.1 2.3	9 18	0 0	19 19	3.5 2.0
OHIO RIVER MAIN STEM													
03010500 ALLEGHENY RIVER AT ELDRD (LAT 41 57 50 LONG 078 23 10)													
JUNE 20...	A538	3.1	.00	.00	11	2.2	8.0	.9	--	22	0	15	16
OSWAYO CREEK BASIN													
03010650 OSWAYO CREEK AT CONEVILLE (LAT 41 54 29 LONG 078 03 26)													
MAY 01... SEPT. 04...	23.9 3.55	-- --	-- --	-- --	8.2 10	2.3 2.8	-- --	-- --	3.9 1.8	27 30	0 0	12 11	3.0 3.0
KINZUA CREEK BASIN													
03011800 KINZUA CREEK NEAR GUFFEY (LAT 41 45 59 LONG 078 43 08)													
MAY 01... SEPT. 04...	A25 A11	-- --	-- --	-- --	55 161	8.4 24	-- --	-- --	139 388	32 59	0 0	15 11	306 910
BROKENSTRAW CREEK BASIN													
03015500 BROKENSTRAW CREEK AT YOUNGVILLE (LAT 41 51 10 LONG 079 19 05)													
JUNE 19...	123	2.8	C.29	D.00	30	5.8	4.5	1.0	--	102	0	16	7.5
EAST HICKORY CREEK BASIN													
03015800 EAST HICKORY CREEK AT ENDEAVOR (LAT 41 36 17 LONG 079 22 27)													
APR. 30... SEPT. 05...	B20.9 B2.0	-- --	-- --	-- --	4.0 5.0	1.6 2.0	-- --	-- --	3.2 6.4	11 28	0 0	11 5.8	2.0 4.0
TIONESTA CREEK BASIN													
03017500 TIONESTA CREEK AT LYNCH (LAT 41 36 05 LONG 079 03 00)													
JUNE 20...	153	3.4	C.33	D.00	7.0	2.2	6.0	1.0	--	22	0	11	9.0
OIL CREEK BASIN													
03020420 FIVEMILE CREEK NEAR BUELLS CORNERS (LAT 41 47 02 LONG 079 41 09)													
DEC. 06... APR. 30... SEPT. 05...	B31.1 B6.05 B1.28	-- -- --	-- -- --	-- -- --	13 18 21	2.8 3.5 5.0	-- -- --	-- -- --	5.3 2.5 9.0	36 61 94	0 0 0	17 11 11	5.5 2.5 2.5
03020450 CALDWELL CREEK NEAR TITUSVILLE (LAT 41 41 09 LONG 079 34 30)													
DEC. 06... APR. 30... SEPT. 05...	B78.6 B17.1 B3.93	-- -- --	-- -- --	-- -- --	8.0 13 19	2.2 3.3 5.2	-- -- --	-- -- --	9.7 13 20	14 38 65	0 0 0	12 12 8.4	18 22 36
03020500 OIL CREEK AT ROUSEVILLE (LAT 41 28 55 LONG 079 41 40)													
JUNE 18...	158	3.1	C.24	D.00	23	5.6	10	1.3	--	74	0	19	18
FRENCH CREEK BASIN													
03024000 FRENCH CREEK AT UTICA (LAT 41 26 15 LONG 079 57 20)													
DEC. 07... JAN. 24... MAR. 14... APR. 24... JUNE 18... JULY 10... AUG. 15... SEPT. 12...	3540 1350 2330 745 378 262 111 322	-- -- -- 2.9 1.7 -- -- -- -- --	-- -- -- -- C.23 -- -- -- -- --	-- -- -- -- D.00 -- -- -- -- --	22 28 19 32 36 35 48 41	4.8 5.3 3.8 5.8 7.5 7.0 8.4 7.9	-- -- -- 7.5 7.7 -- -- -- --	-- -- -- 1.3 1.4 -- -- -- --	6.7 9.7 8.7 -- -- 13 8.3 10	60 78 50 98 118 120 136 127	0 0 0 0 0 0 0 0	22 24 19 24 24 24 31 30	11 16 13 12 14 15 19 15
A DAILY MEAN DISCHARGE. C TOTAL IRON.													
B DISCHARGE AT TIME OF SAMPLING. D TOTAL MANGANESE.													

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	PHOS- PHATE (PO4)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)
POTATO CREEK BASIN														
03009000 POTATO CREEK AT BETULA (LAT 41 40 15 LONG 078 23 11)														
MAY 01...	--	.5	--	22	15	73	6.4	2	8	--	--	--	--	--
SEPT. 04...	--	.3	--	33	18	84	7.1	2	19	--	--	--	--	--
OHIO RIVER MAIN STEM														
03010500 ALLEGHENY RIVER AT ELDRD (LAT 41 57 50 LONG 078 23 10)														
JUNE 20...	.1	1.4	74	37	19	125	7.4	15	16	--	--	--	--	--
OSWAYO CREEK BASIN														
03010650 OSWAYO CREEK AT CONEVILLE (LAT 41 54 29 LONG 078 03 26)														
MAY 01...	--	.0	--	30	8	78	7.2	3	10	--	--	--	--	--
SEPT. 04...	--	.8	--	37	12	90	7.6	2	18	--	--	--	--	--
KINZUA CREEK BASIN														
03011800 KINZUA CREEK NEAR GUFFEY (LAT 41 45 59 LONG 078 43 08)														
MAY 01...	--	.1	--	172	146	1090	6.8	6	7	--	--	--	--	--
SEPT. 04...	--	1.2	--	500	452	2810	7.9	4	19	--	--	--	--	--
BROKENSTRAW CREEK BASIN														
03015500 BROKENSTRAW CREEK AT YOUNGVILLE (LAT 41 51 10 LONG 079 19 05)														
JUNE 19...	.3	1.7	121	99	16	219	7.7	20	16	--	--	--	--	--
EAST HICKORY CREEK BASIN														
03015800 EAST HICKORY CREEK AT ENDEAVOR (LAT 41 36 17 LONG 078 22 27)														
APR. 30...	--	.0	--	17	8	51	6.6	3	13	--	--	--	--	--
SEPT. 05...	--	.2	--	21	0	74	7.5	7	19	--	--	--	--	--
TIONESTA CREEK BASIN														
03017500 TIONESTA CREEK AT LYNCH (LAT 41 36 05 LONG 079 03 00)														
JUNE 20...	.0	.6	49	27	9	93	7.2	1	15	--	--	--	--	--
OIL CREEK BASIN														
03020420 FIVEMILE CREEK NEAR BUELLS CORNERS (LAT 41 47 02 LONG 079 41 09)														
DEC. 06...	--	.6	--	44	15	115	7.1	3	2	--	--	--	--	--
APR. 30...	--	.1	--	60	10	135	7.1	3	9	--	--	--	--	--
SEPT. 05...	--	.4	--	73	0	123	8.1	5	18	--	--	--	--	--
03020450 CALDWELL CREEK NEAR TITUSVILLE (LAT 41 41 09 LONG 079 34 30)														
DEC. 06...	--	.6	--	29	18	120	6.6	3	--	--	--	--	--	--
APR. 30...	--	.2	--	46	15	153	6.8	6	11	--	--	--	--	--
SEPT. 05...	--	.2	--	69	16	228	7.8	8	18	--	--	--	--	--
03020500 OIL CREEK AT ROUSEVILLE (LAT 41 28 55 LONG 079 41 40)														
JUNE 18...	.1	1.2	120	81	20	207	7.6	15	21	--	--	--	--	--
FRENCH CREEK BASIN														
03024000 FRENCH CREEK AT UTICA (LAT 41 26 15 LONG 079 57 20)														
DEC. 07...	--	1.7	--	75	26	173	7.7	4	4	--	--	--	--	--
JAN. 24...	--	1.9	--	92	28	230	7.9	6	--	--	--	--	--	--
MAR. 14...	--	3.2	--	63	22	171	7.4	2	1	--	--	--	--	--
APR. 24...	.0	1.4	145	104	24	242	8.1	2	14	--	--	--	--	--
JUNE 18...	.1	1.0	168	121	25	276	7.6	20	20	--	--	--	--	--
JULY 10...	--	.8	--	117	18	273	7.6	2	25	--	--	--	--	--
AUG. 15...	--	1.6	--	155	44	334	8.2	1	--	--	--	--	--	--
SEPT. 12...	--	1.4	--	135	31	307	8.2	7	21	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN PENNSYLVANIA
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
FRENCH CREEK BASIN--CONTINUED													
03024200 WEST BRANCH SUGAR CREEK NEAR BRADLEYTOWN (LAT 41 34 31 LONG 079 51 54)													
APR. 29...	5.05	--	--	--	15	3.3	--	--	6.4	50	0	17	4.0
SEPT. 06...	8.27	--	--	--	18	5.0	--	--	4.1	67	0	12	3.5
03025000 SUGAR CREEK AT SUGARCREEK (LAT 41 25 45 LONG 079 52 45)													
JUNE 18...	A91	3.1	C.18	D.00	21	4.5	4.1	.9	--	68	0	16	7.0
EAST SANDY CREEK BASIN													
03025800 EAST SANDY CREEK AT VAN (LAT 41 19 03 LONG 079 39 22)													
APR. 30...	33.6	--	--	--	11	5.6	--	--	11	13	0	30	16
SEPT. 09...	11.8	--	--	--	15	7.0	--	--	26	22	0	68	24
SANDY CREEK BASIN													
03025900 SANDY CREEK NEAR SHEAKLEYVILLE (LAT 41 25 51 LONG 080 10 02)													
APR. 29...	13.2	--	--	--	26	5.3	--	--	9.0	88	0	24	6.0
SEPT. 09...	4.48	--	--	--	27	6.0	--	--	9.9	71	0	40	8.5
REDBANK CREEK BASIN													
03031800 MILL CREEK AT ALLENS MILLS (LAT 41 12 01 LONG 078 54 23)													
MAY 03...	5.18	--	--	--	24	5.3	--	--	6.2	39	0	51	7.5
SEPT. 04...	.45	--	--	--	31	8.0	--	--	15	70	0	70	8.0
03032500 REDBANK CREEK AT ST. CHARLES (LAT 40 59 40 LONG 079 23 40)													
JUNE 17...	A694	4.1	C.52	D1.1	22	9.0	10	1.8	--	6	0	87	16
CROOKED CREEK BASIN													
03038000 CROOKED CREEK AT IDAHO (LAT 40 39 15 LONG 079 21 00)													
JUNE 17...	A84	6.9	C4.2	D1.1	45	16	39	3.2	--	0	0	260	18
KISKIMINETAS RIVER BASIN													
03039800 CLEAR SHADE CREEK AT OGLETOWN (LAT 40 12 15 LONG 078 42 18)													
MAY 03...	7.32	--	--	--	5.6	.8	--	--	.5	11	0	7.4	1.5
SEPT. 06...	1.35	--	--	--	7.0	1.2	--	--	3.2	23	0	5.8	2.0
BUFFALO CREEK BASIN													
03048800 PATTERSON CREEK NEAR WORTHINGTON (LAT 40 52 40 LONG 079 38 26)													
APR. 30...	14.9	--	--	--	12	4.2	--	--	5.1	26	0	28	5.5
SEPT. 04...	1.05	--	--	--	29	7.6	--	--	14	63	0	56	17
CHARTIERS RUN BASIN													
03049600 CHARTIERS RUN NEAR LEECHBURG (LAT 40 36 00 LONG 079 41 08)													
APR. 30...	3.81	--	--	--	22	8.2	--	--	16	54	0	45	22
PINE CREEK BASIN													
03049700 NORTH FORK PINE CREEK NEAR WEXFORD (LAT 40 37 09 LONG 080 01 36)													
APR. 30...	7.16	--	--	--	25	8.2	--	--	23	46	0	46	42
MONONGAHELA RIVER BASIN													
03071700 CHEAT RIVER AT POINT MARION (LAT 39 44 31 LONG 079 53 59)													
JULY 02...	--	--	--	--	14	4.2	--	--	--	0	0	135	2.0
03072000 DUNKARD CREEK AT SHANNOPIN (LAT 39 45 30 LONG 079 58 20)													
JULY 02...	A21	--	--	--	108	36	--	--	--	0	0	704	35
03072500 MONONGAHELA RIVER AT GREENSBORO (LAT 39 47 15 LONG 079 55 15)													
JULY 01...	A1410	10	.36	1.4	60	16	31	2.0	--	0	0	335	10
03072590 GEORGES CREEK AT SMITHFIELD (LAT 39 47 46 LONG 079 47 46)													
JULY 02...	A.73	--	--	--	20	4.2	--	--	11	34	0	49	6.5

A DAILY MEAN DISCHARGE.

C TOTAL IRON.
D TOTAL MANGANESE.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND. UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	PHOS- PHATE (PO4)	TOTAL ACIDITY AS H+	ALUM- INUM (AL)	LEAD (PB)	ZINC (ZN)
FRENCH CREEK BASIN--CONTINUED														
			03024200	WEST BRANCH SUGAR CREEK NEAR BRADLEYTOWN (LAT 41 34 31 LONG 079 51 54)										
APR. 29...	--	1.0	--	51	10	132	7.0	6	17	--	--	--	--	--
SEPT. 06...	--	2.4	--	66	11	154	7.9	5	17	--	--	--	--	--
			03025000	SUGAR CREEK AT SUGARCREEK (LAT 41 25 45 LONG 079 52 45)										
JUNE 18...	.1	1.2	94	71	16	166	7.7	15	18	--	--	--	--	--
EAST SANDY CREEK BASIN														
			03025800	EAST SANDY CREEK AT VAN (LAT 41 19 03 LONG 079 39 22)										
APR. 30...	--	12	--	51	40	196	6.6	4	9	--	--	--	--	--
SEPT. 09...	--	.8	--	67	49	314	7.5	2	14	--	--	--	--	--
SANDY CREEK BASIN														
			03025900	SANDY CREEK NEAR SHEAKLEYVILLE (LAT 41 25 51 LONG 080 10 02)										
APR. 29...	--	1.2	--	87	15	206	7.2	4	--	--	--	--	--	--
SEPT. 09...	--	2.7	--	92	34	233	8.1	46	18	--	--	--	--	--
REDBANK CREEK BASIN														
			03031800	MILL CREEK AT ALLENS MILLS (LAT 41 12 01 LONG 078 54 23)										
MAY 03...	--	.0	--	82	50	199	6.7	3	9	--	--	--	--	--
SEPT. 04...	--	1.0	--	111	53	276	8.1	9	17	--	--	--	--	--
			03032500	REDBANK CREEK AT ST. CHARLES (LAT 40 59 40 LONG 079 23 40)										
JUNE 17...	.3	1.4	166	92	87	271	6.3	15	19	--	--	--	--	--
CROOKED CREEK BASIN														
			03038000	CROOKED CREEK AT IDAHO (LAT 40 39 15 LONG 079 21 00)										
JUNE 17...	.3	.8	408	179	179	607	3.6	25	--	--	1.1	1.4	--	--
KISKIMINETAS RIVER BASIN														
			03039800	CLEAR SHADE CREEK AT OGLETOWN (LAT 40 12 15 LONG 078 42 18)										
MAY 03...	--	.3	--	18	9	43	6.5	3	14	--	--	--	--	--
SEPT. 06...	--	1.8	--	23	4	56	7.0	4	18	--	--	--	--	--
BUFFALO CREEK BASIN														
			03048800	PATTERSON CREEK NEAR WORTHINGTON (LAT 40 52 40 LONG 079 38 26)										
APR. 30...	--	.3	--	48	26	127	8.0	2	11	--	--	--	--	--
SEPT. 04...	--	1.5	--	104	53	268	8.0	3	22	--	--	--	--	--
CHARTIERS RUN BASIN														
			03049600	CHARTIERS RUN NEAR LEECHBURG (LAT 40 36 00 LONG 079 41 08)										
APR. 30...	--	1.0	--	89	44	263	7.6	2	11	--	--	--	--	--
PINE CREEK BASIN														
			03049700	NORTH FORK PINE CREEK NEAR WEXFORD (LAT 40 37 09 LONG 080 01 36)										
APR. 30...	--	.4	--	96	59	318	7.6	2	10	--	--	--	--	--
MONONGAHELA RIVER BASIN														
			03071700	CHEAT RIVER AT POINT MARION (LAT 39 44 31 LONG 079 53 59)										
JULY 02...	--	.0	--	53	53	310	3.6	5	24	--	.8	--	--	--
			03072000	DUNKARD CREEK AT SHANNOPIN (LAT 39 45 30 LONG 079 58 20)										
JULY 02...	--	.2	--	418	418	1390	3.5	10	26	--	2.3	--	--	--
			03072500	MONONGAHELA RIVER AT GREENSBORO (LAT 39 47 15 LONG 079 55 15)										
JULY 01...	.3	.2	521	216	216	855	3.3	5	26	--	2.6	6.5	--	--
			03072590	GEORGES CREEK AT SMITHFIELD (LAT 39 47 46 LONG 079 47 48)										
JULY 02...	--	3.8	--	68	40	198	7.0	4	23	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN PENNSYLVANIA
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM- (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
MONONGAHELA RIVER BASIN--CONTINUED													
03072850 SOUTH FORK TENMILE CREEK NEAR ROGERSVILLE (LAT 39 53 00 LONG 080 18 59)													
MAY 01...	9.44	--	--	--	27	4.8	--	--	17	88	0	31	14
03073000 SOUTH FORK TENMILE CREEK AT JEFFERSON (LAT 39 55 25 LONG 080 04 25)													
JUNE 17...	A47	3.3	.00	.00	42	8.0	21	2.5	--	130	0	53	20
JULY 01...	A14	5.2	.00	.00	44	8.2	30	3.2	--	148	0	52	29
03074300 LICK RUN AT HOPWOOD (LAT 39 52 04 LONG 079 41 40)													
JULY 02...	A.41	--	--	--	23	5.0	--	--	30	44	0	27	56
SEPT. 06...	1.4	--	--	--	35	6.0	--	--	42	68	0	25	86
03074500 REDSTONE CREEK AT WALTERSBURG (LAT 39 58 45 LONG 079 45 50)													
JULY 02...	A28	14	.80	6.0	275	120	175	7.5	--	0	0	1560	28
03075000 MONONGAHELA RIVER AT CHARLEROI (LAT 40 08 30 LONG 079 53 35)													
JULY 02...	A1640	--	--	--	44	15	--	--	0	0	0	285	8.0
03077500 YOUGHIOGHENY RIVER AT YOUGHIOGHENY RIVER DAM (LAT 39 48 20 LONG 079 21 50)													
JULY 10...	688	6.5	.00	.00	6.5	1.5	1.5	1.0	--	9	0	14	3.4
03078700 ELKLICK CREEK AT SUMMIT MILLS (LAT 39 48 41 LONG 079 04 01)													
MAY 05...	A13.9	--	--	--	8.7	2.1	--	--	1.4	13	0	17	3.5
03078800 COXES CREEK NEAR ROCKWOOD (LAT 39 57 26 LONG 079 06 13)													
MAY 03...	B17.8	--	--	--	29	6.8	--	--	19	29	0	74	26
SEPT. 05...	B8.57	--	--	--	43	9.7	--	--	43	46	0	111	48
03079000 CASSELMAN RIVER AT MARKLETON (LAT 39 51 35 LONG 079 13 40)													
JULY 10...	72	7.4	.11	2.1	62	21	5.5	2.0	--	0	0	256	12
03080000 LAUREL HILL CREEK AT URSINA (LAT 39 49 15 LONG 079 19 15)													
JULY 10...	21	2.4	.01	.00	10	2.5	2.5	.9	--	22	0	17	5.4
03081000 YOUGHIOGHENY RIVER BELOW CONFLUENCE (LAT 39 49 40 LONG 079 22 25)													
JULY 10...	707	--	--	--	6.0	1.2	--	--	3.7	10	0	15	2.0
03081200 DRAKE RUN NEAR CONFLUENCE (LAT 39 51 39 LONG 079 21 50)													
MAY 01...	B7.70	--	--	--	10	1.8	--	--	10	26	0	13	14
SEPT. 05...	B.15	--	--	--	8.0	1.9	--	--	17	4	0	7.1	36
03082100 INDIAN CREEK NEAR MELCROFT (LAT 40 03 37 LONG 079 21 53)													
MAY 01...	B32.7	--	--	--	11	2.0	--	--	11	30	0	15	14
SEPT. 06...	B12.1	--	--	--	16	2.6	--	--	13	35	0	14	24
03082200 POPLAR RUN NEAR NORMALVILLE (LAT 40 01 00 LONG 079 25 30)													
JULY 08...	.23	9.3	.01	1.2	20	7.5	1.0	1.1	--	0	0	88	2.0
03083000 GREEN LICK RUN AT GREEN LICK RESERVOIR (LAT 40 06 20 LONG 079 30 05)													
JULY 08...	.14	8.6	.02	.00	16	2.9	1.5	1.2	--	45	0	16	2.5
03083200 SEWICKLEY CREEK TRIBUTARY NEAR NEW STANTON (LAT 40 12 42 LONG 079 39 27)													
MAY 01...	B2.60	--	--	--	27	6.7	--	--	17	69	0	42	22
SEPT. 04...	B.06	--	--	--	41	8.0	--	--	35	56	0	116	28
03083500 YOUGHIOGHENY RIVER AT SUTERVILLE (LAT 40 14 25 LONG 079 48 25)													
JULY 02...	900	--	--	--	25	8.0	--	--	16	6	0	113	5.0
03084000 ABERS CREEK NEAR MURRYSVILLE (LAT 40 27 01 LONG 079 42 50)													
JULY 02...	.93	--	--	--	66	12	--	--	31	187	0	75	44
18...	.42	12	.00	.00	70	12	30	4.5	--	185	6	95	46
03085000 MONONGAHELA RIVER AT BRADDOCK (LAT 40 23 30 LONG 079 51 30)													
JAN. 21...	6050	--	--	--	28	7.5	--	--	27	15	0	108	22
FEB. 15...	5600	--	--	--	22	7.2	--	--	18	4	0	103	9.5

A DAILY MEAN DISCHARGE.
B DISCHARGE AT TIME OF SAMPLING.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	DIM- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	PHOS- PHATE (PO4)	TOTAL ACIDITY AS H+	ALUM- INUM (AL)	LEAD (PB)	ZINC (ZN)
MONONGAHELA RIVER BASIN--CONTINUED														
03072850 SOUTH FORK TENMILE CREEK NEAR ROGERSVILLE (LAT 39 53 00 LONG 080 18 59)														
MAY 01...	--	.2	--	87	15	248	8.0	5	14	--	--	--	--	--
03073000 SOUTH FORK TENMILE AT JEFFERSON (LAT 39 55 25 LONG 080 04 25)														
JUNE 17...	.1	1.9	219	138	32	380	7.7	25	19	--	--	--	--	--
JULY 01...	.3	1.4	245	144	22	420	7.9	3	28	--	--	--	--	--
03074300 LICK RUN AT HOPWOOD (LAT 39 52 04 LONG 079 41 40)														
JULY 02...	--	1.0	--	78	42	314	7.1	3	20	--	--	--	--	--
SEPT. 06...	--	1.4	--	112	57	444	7.5	6	18	--	--	--	--	--
03074500 REDSTONE CREEK AT WALTERSBURG (LAT 39 58 45 LONG 079 45 50)														
JULY 02...	.3	.4	2460	1180	1180	2920	3.2	5	21	--	2.0	.6	--	--
03075000 MONONGAHELA RIVER AT CHARLEROI (LAT 40 08 30 LONG 079 53 35)														
JULY 02...	--	1.0	--	172	172	588	4.2	2	25	--	1.0	--	--	--
03077500 YOUGHIOGHENY RIVER AT YOUGHIOGHENY RIVER DAM (LAT 39 48 20 LONG 079 21 50)														
JULY 10...	.1	2.5	55	22	15	68	6.6	2	20	--	--	--	--	--
03078700 ELKLICK CREEK AT SUMMIT MILLS (LAT 39 48 41 LONG 079 04 01)														
MAY 03...	--	.3	--	30	20	74	6.6	3	13	--	--	--	--	--
03078800 COXES CREEK NEAR ROCKWOOD (LAT 39 57 28 LONG 079 06 13)														
MAY 03...	--	5.5	--	101	77	309	6.6	3	14	--	--	--	--	--
SEPT. 05...	--	24	--	148	110	500	7.6	12	19	--	--	--	--	--
03079000 CASSELMAN RIVER AT MARKLETON (LAT 39 51 35 LONG 079 13 40)														
JULY 10...	.3	.7	428	241	241	659	3.6	2	25	--	1.0	--	--	--
03080000 LAUREL HILL CREEK AT URSINA (LAT 39 49 15 LONG 079 19 15)														
JULY 10...	.1	.3	63	36	18	86	7.2	4	25	--	--	--	--	--
03081011 YOUGHIOGHENY RIVER BELOW CONFLUENCE (LAT 39 49 40 LONG 079 22 25)														
JULY 10...	--	1.9	--	20	12	61	6.6	2	21	--	--	--	--	--
03081200 DRAKE RUN NEAR CONFLUENCE (LAT 39 51 39 LONG 079 21 50)														
MAY 01...	--	.6	--	33	11	113	7.1	2	13	--	--	--	--	--
SEPT. 05...	--	.2	--	28	25	156	6.2	4	18	--	--	--	--	--
03082100 INDIAN CREEK NEAR MELCROFT (LAT 40 03 37 LONG 079 21 53)														
MAY 01...	--	.4	--	36	11	127	7.6	2	13	--	--	--	--	--
SEPT. 06...	--	2.2	--	51	22	171	7.0	6	--	--	--	--	--	--
03082200 POPLAR RUN NEAR NORMALVILLE (LAT 40 01 00 LONG 079 25 30)														
JULY 06...	.1	.4	142	81	81	219	4.4	2	22	--	.2	--	--	--
03083000 GREEN LICK RUN AT GREEN LICK RESERVOIR (LAT 40 06 20 LONG 079 30 05)														
JULY 06...	.1	1.0	80	52	15	115	7.5	3	17	--	--	--	--	--
03083200 SEWICKLEY CREEK TRIBUTARY NEAR NEW STANTON (LAT 40 12 42 LONG 079 39 27)														
MAY 01...	--	.6	--	95	39	270	6.9	3	11	--	--	--	--	--
SEPT. 04...	--	5.6	--	135	90	426	7.9	3	18	--	--	--	--	--
03083500 YOUGHIOGHENY RIVER AT SUTERVILLE (LAT 40 14 25 LONG 079 48 25)														
JULY 02...	--	1.4	--	96	91	291	6.4	2	25	--	--	--	--	--
03084000 ABERS CREEK NEAR MURRYSVILLE (LAT 40 27 01 LONG 079 42 50)														
JULY 02...	--	6.3	--	214	77	587	7.5	5	25	--	--	--	--	--
18...	.6	2.2	367	224	89	590	6.5	5	22	--	--	--	--	--
03085000 MONONGAHELA RIVER AT BRADDOCK (LAT 40 23 30 LONG 079 51 30)														
JAN. 21...	--	4.2	--	101	89	353	7.0	2	0	--	--	--	--	--
FEB. 15...	--	.4	--	85	81	283	5.6	2	3	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN PENNSYLVANIA
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SIO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM- (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
MONONGAHELA RIVER BASIN--CONTINUED													
03085000 MONONGAHELA RIVER AT BRADDOCK (LAT 40 23 30 LONG 079 51 30)--Continued													
MAR. 08...	3440	--	--	--	38	11	--	--	49	2	0	203	20
28...	19100	--	--	--	18	6.0	--	--	17	8	0	81	8.5
MAY 03...	4200	--	--	--	37	11	--	--	34	7	0	179	12
JULY 02...	2420	--	--	--	48	14	--	--	--	0	0	244	12
17...	2030	8.9	.00	1.1	53	15	38	4.2	--	1	0	249	18
SEPT. 19...	2260	--	--	--	62	16	--	--	62	0	0	324	10
OHIO RIVER MAIN STEM													
03086000 OHIO RIVER AT SEWICKLEY (LAT 40 31 50 LONG 080 11 20)													
NOV. 09...	23400	--	--	--	21	5.5	--	--	13	38	0	46	17
DEC. 28...													
LEFT	22500	--	--	--	23	6.9	--	--	15	21	0	73	16
RIGHT	22500	--	--	--	21	6.4	--	--	19	24	0	73	17
MAR. 05...	7520	--	--	--	30	9.5	--	--	36	14	0	136	24
APR. 11...	34800	5.8	.02	.00	22	6.1	11	1.7	--	15	0	70	12
MAY 25...	161000	5.8	.27	.00	22	5.1	6.8	1.5	--	12	0	68	7.5
JULY 12...	8100	4.1	.00	.00	32	9.5	27	3.4	--	17	0	129	20
AUG. 19...	7820	--	--	--	64	17	--	--	--	0	0	281	26
BEAVER RIVER BASIN													
03102800 BIG RUN NEAR SHENANGO (LAT 41 22 26 LONG 080 25 53)													
APR. 29...	B6.55	--	--	--	26	6.0	--	--	13	79	0	35	11
SEPT. 06...	B6.55	--	--	--	28	7.0	--	--	13	95	0	29	12
03106100 WOLF CREEK NEAR GROVE CITY (LAT 41 14 50 LONG 080 03 40)													
APR. 29...	B2.88	--	--	--	25	5.4	--	--	11	84	0	25	9.0
SEPT. 09...	B.47	--	--	--	44	8.2	--	--	17	125	0	50	18
03106300 MUDDY CREEK NEAR PORTERSVILLE (LAT 40 57 47 LONG 080 07 41)													
AUG. 15...	6.8	--	--	--	56	20	--	--	12	25	0	189	22
SEPT. 10...	13	--	--	--	65	26	--	--	21	24	0	259	18
03106500 SLIPPERY ROCK CREEK AT WURTEMBERG (LAT 40 53 00 LONG 080 13 55)													
JUNE 18...	440	5.8	.03	.00	42	15	6.5	2.0	--	40	0	120	12
RACCOON CREEK BASIN													
03107800 SERVICE CREEK NEAR SHIPPINGPORT (LAT 40 34 12 LONG 080 24 07)													
APR. 30...	B1.80	--	--	--	28	8.5	--	--	9.9	74	0	51	9.0
SEPT. 04...	B.01	--	--	--	47	11	--	--	26	134	9	45	33
BUFFALO CREEK BASIN													
03111200 DUNKLE HUN NEAR CLAYSVILLE (LAT 40 12 00 LONG 080 26 27)													
MAY 01...	B3.50	--	--	--	52	9.5	--	--	14	150	0	61	9.0
SEPT. 04...	B.09	--	--	--	52	9.0	--	--	11	131	0	67	9.0
WHEELING CREEK BASIN (PENNSYLVANIA-WEST VIRGINIA)													
03111600 ROBISON RUN AT WEST FINLEY (LAT 40 00 08 LONG 080 26 23)													
MAY 01...	B9.88	--	--	--	38	5.1	--	--	8.5	112	0	38	2.0
DATE	DIS- CHARGE (CFS)	SILICA (SIO2)	DIS- SOLVED IRON (FE)	DIS- SOLVED MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM- (K)	SODIUM PLUS POTAS- SIUM (NA K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
FISH CREEK BASIN													
03114100 PENNSYLVANIA FORK FISH CREEK AT DEEP VALLEY (LAT 39 45 18 LONG 080 28 13)													
MAY 01...	9.08	--	--	--	18	4.2	--	--	11	60	0	27	5.5

B DISCHARGE AT TIME OF SAMPLING.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	PHOS- PHATE (PO4)	TOTAL ACIDITY AS H+	ALUM- INUM (AL)	LEAD (PB)	ZINC (ZN)
MONONGAHELA RIVER BASIN--CONTINUED														
03085000 MONONGAHELA RIVER AT BRADDOCK (LAT 40 23 30 LONG 079 51 30)--Continued														
MAR. 06...	--	7.2	--	140	139	488	4.7	1	7	--	--	--	--	--
28...	--	2.9	--	70	63	235	6.7	2	12	--	--	--	--	--
MAY 03...	--	2.3	--	138	132	438	6.4	15	20	--	--	--	--	--
JULY 02...	--	3.3	--	178	178	536	4.3	3	29	--	--	--	--	--
17...	.4	6.2	444	194	193	624	4.8	5	32	--	.0	.5	--	--
SEPT. 19...	--	5.6	--	221	221	733	4.5	3	19	--	--	--	--	--

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY (LAT 40 31 50 LONG 080 11 20)														
NOV. 09...	--	1.4	--	75	44	226	7.0	8	2	--	--	--	--	--
DEC. 28...	--	3.9	--	86	69	268	6.2	4	--	--	--	--	--	--
LEFT RIGHT	--	.8	--	79	60	253	6.5	4	2	--	--	--	--	--
MAR. 05...	--	6.1	--	114	103	388	6.4	2	5	--	--	--	--	--
APR. 11...	.1	2.7	143	80	68	238	7.1	1	12	--	--	--	--	.15
MAY 25...	.2	3.3	136	76	66	216	6.9	20	14	--	--	--	--	--
JULY 12...	.3	4.1	252	119	105	409	6.8	20	26	--	--	--	--	--
AUG. 19...	--	6.0	--	230	230	667	4.3	1	25	--	.2	--	--	--

BEAVER RIVER BASIN

03102800 BIG RUN NEAR SHENANGO (LAT 41 22 26 LONG 080 25 53)														
APR. 29...	--	1.0	--	90	25	234	7.1	6	15	--	--	--	--	--
SEPT. 06...	--	1.8	--	99	21	248	8.1	15	21	--	--	--	--	--
03106100 WOLF CREEK NEAR GROVE CITY (LAT 41 14 50 LONG 080 03 40)														
APR. 29...	--	1.0	--	85	16	208	7.2	12	10	--	--	--	--	--
SEPT. 09...	--	.7	--	144	41	300	8.2	12	21	--	--	--	--	--
03106300 MUDDY CREEK NEAR PORTERSVILLE (LAT 40 57 47 LONG 080 07 41)														
AUG. 15...	--	1.0	--	222	202	487	7.4	2	--	--	--	--	--	--
SEPT. 10...	--	.6	--	269	250	609	6.9	4	18	--	--	--	--	--
03106500 SLIPPERY ROCK CREEK AT WURTEMBERG (LAT 40 53 00 LONG 080 13 55)														
JUNE 18...	.3	1.9	230	167	134	361	7.2	32	16	--	--	--	--	--

RACCOON CREEK BASIN

03107800 SERVICE CREEK NEAR SHIPPINGPORT (LAT 40 34 12 LONG 080 24 07)														
APR. 30...	--	.6	--	105	45	260	7.5	3	5	--	--	--	--	--
SEPT. 04...	--	.8	--	163	53	421	8.4	6	--	--	--	--	--	--

BUFFALO CREEK BASIN

03111200 DUNKLE RUN NEAR CLAYSVILLE (LAT 40 12 00 LONG 080 26 27)														
MAY 01...	--	1.2	--	169	46	484	8.1	2	9	--	--	--	--	--
SEPT. 04...	--	.5	--	167	59	352	8.2	4	18	--	--	--	--	--

WHEELING CREEK BASIN (PENNSYLVANIA-WEST VIRGINIA)

03111600 ROBISON RUN AT WEST FINLEY (LAT 40 00 08 LONG 080 28 23)														
MAY 01...	--	.2	--	116	24	262	8.0	2	14	--	--	--	--	--

DATE	FLUO- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)	PHOS- PHATE (PO4)	NICKEL (NI)	COPPER (CU)	LEAD (PB)	ZINC (ZN)
------	----------------------	------------------	--	--------------------------	---	---	----	-------	-----------------------------	-------------------------	----------------	----------------	--------------	--------------

FISH CREEK BASIN

03114100 PENNSYLVANIA FORK FISH CREEK AT DEEP VALLEY (LAT 39 45 18 LONG 080 28 13)														
MAY 01...	--	.4	--	63	14	174	7.4	3	15	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN VIRGINIA

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	SULFATE (SO4)	CHLOR- IDE (CL)
KANAWHA RIVER BASIN										
03165000 CHESTNUT CREEK AT GALAX VA (LAT 36 38 45 LONG 080 55 10)										
MAR., 1968 26...	58	7.5	.09	2.4	1.3	1.4	.8	16	.4	2.2
03167000 REED CREEK AT GRAMM'S FORGE VA (LAT 36 56 20 LONG 080 53 15)										
MAR., 1968 26...	316	4.9	.08	33	10	2.3	1.6	135	16	5.5
03167500 BIG KEEL ISLAND CREEK NEAR ALLISONIA VA (LAT 36 53 20 LONG 080 43 40)										
MAR., 1968 26...	463	8.3	.07	3.2	1.2	1.4	.8	16	2.2	2.2
03168500 PEAK CREEK AT PULASKI VA (LAT 37 02 50 LONG 080 46 35)										
MAR., 1968 26...	--	5.0	.29	17	6.0	2.1	.8	69	12	3.5
03170000 LITTLE RIVER AT GRAYSONTON VA (LAT 37 02 15 LONG 080 33 26)										
MAR., 1968 26...	302	9.4	.10	5.0	2.0	1.8	1.2	23	2.8	2.8
03171500 NEW RIVER AT EGGLESTON VA (LAT 37 17 22 LONG 080 37 01)										
MAR., 1968 26...	3600	6.5	.12	13	4.0	2.3	1.2	47	11	3.4
03173000 WALKER CREEK AT BANE VA (LAT 37 16 05 LONG 080 42 35)										
MAR., 1968 26...	462	4.3	.00	23	8.0	1.1	.8	103	5.4	2.4
03175500 WOLF CREEK NEAR NARROWS VA (LAT 37 18 20 LONG 080 51 00)										
MAR., 1968 26...	453	3.0	.05	16	3.5	.9	.8	62	3.2	2.4
TENNESSEE RIVER BASIN										
03471500 SF HOLSTON RIVER AT RIVERSIDE NR CHILHOWIE VA (LAT 36 45 37 LONG 081 37 53) A										
OCT., 1967 03...	--	5.1	.02	19	6.3	1.7	1.3	87	2.0	2.5
DEC. 06...	--	4.0	.05	9.2	3.9	1.0	2.0	43	2.8	2.0
FEB., 1968 07...	--	4.1	.02	14	4.7	1.2	1.1	60	4.4	2.0
APR. 08...	--	3.1	.06	13	4.0	1.0	1.1	58	2.8	2.0
JUNE 05...	--	5.0	.02	1.8	4.6	1.0	1.2	70	2.8	2.0
03474000 MIDDLE FORK HOLSTON RIVER AT SEVENMILE FORD VA (LAT 36 48 26 LONG 081 37 20) A										
OCT., 1967 03...	--	5.2	.06	32	13	2.4	2.1	138	13	3.5
DEC. 05...	--	4.3	.10	20	5.9	2.0	2.7	76	13	4.0
FEB., 1968 07...	--	5.0	.06	28	11	2.0	1.3	116	14	5.0
APR. 08...	--	3.2	.06	28	7.8	1.7	1.1	101	10	4.5
JUNE 05...	--	4.7	.02	31	9.7	2.0	1.4	115	12	4.0
03489850 COVE CREEK NEAR HILTON VA (LAT 36 39 08 LONG 082 21 53) A										
OCT., 1967 05...	--	3.9	.02	52	13	3.2	--	200	13	5.0
DEC. 04...	--	5.4	.07	41	6.1	2.3	2.7	138	15	3.5
FEB., 1968 06...	--	3.1	.03	44	9.7	2.2	1.3	164	12	4.5
APR. 04...	--	3.0	.05	44	6.1	2.0	1.1	139	12	3.5
JUNE 03...	--	4.9	.01	44	10	3.0	2.3	165	12	4.5
AUG. 06...	--	4.8	.01	52	16	2.1	2.2	210	11	5.0
03527000 CLINCH RIVER AT SPEERS FERRY VA (LAT 36 38 55 LONG 082 45 02)										
MAY., 1968 03...	1720	4.3	.04	30	8.3	3.0	.8	111	18	2.6
JUNE 03...	1350	5.7	.01	32	7.2	3.7	1.6	114	18	3.6
JULY 11...	226	2.1	.04	36	12	6.7	2.3	152	22	5.4
AUG. 05...	770	5.4	.07	38	10	4.8	2.7	146	22	5.6
SEP. 03...	170	3.0	.02	41	13	8.5	2.3	163	32	6.0
03527500 NORTH FORK CLINCH RIVER AT DUFFIELD VA (LAT 36 42 40 LONG 082 47 40) A										
APR., 1968 18...	--	4.1	.22	20	2.7	1.2	.9	56	10	2.0
MAY 27...	--	5.0	.36	20	1.1	1.2	1.3	52	11	1.5
JULY 03...	--	4.4	.47	36	5.6	1.7	.9	114	13	2.0
SEP. 19...	--	4.9	.23	40	5.6	2.3	1.7	132	15	2.5

A CHEMICAL ANALYSES FURNISHED BY THE TENNESSEE VALLEY AUTHORITY.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN VIRGINIA

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CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 18° C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
KANAWHA RIVER BASIN										
03165000 CHESTNUT CREEK AT GALAX VA (LAT 36 38 45 LONG 80 55 10)										
MAR., 1968 26...	.7	1.1	.04	30	12	0	34	7.1	13	8
03167000 REED CREEK AT GRAHAM'S FORGE VA (LAT 36 50 20 LONG 80 53 15)										
MAR., 1968 26...	.3	2.8	.10	152	120	7	245	8.6	11	5
03167500 BIG REED ISLAND CREEK NEAR ALLISONIA VA (LAT 36 53 20 LONG 80 43 40)										
MAR., 1968 26...	.0	1.1	.02	31	13	0	37	7.0	10	10
03168500 PEAK CREEK AT PULASKI VA (LAT 37 02 50 LONG 80 46 35)										
MAR., 1968 26...	.4	1.2	.03	80	66	9	142	7.9	11	12
03170000 LITTLE RIVER AT GRAYSONTON VA (LAT 37 02 15 LONG 80 33 25)										
MAR., 1968 26...	.1	1.4	.03	48	20	1	57	7.1	8	8
03171500 NEW RIVER AT EGGLESTON VA (LAT 37 17 22 LONG 80 37 01)										
MAR., 1968 26...	.0	4.7	.08	65	48	9	114	7.4	8	15
03173000 WALKER CREEK AT BANE VA (LAT 37 16 05 LONG 80 42 35)										
MAR., 1968 26...	.1	1.9	.02	100	91	7	175	7.9	6	3
03175500 WOLF CREEK NEAR NARROWS VA (LAT 37 18 20 LONG 80 51 00)										
MAR., 1968 26...	.1	1.6	.01	67	56	4	112	7.7	7	5
TENNESSEE RIVER BASIN										
03471500 SF HOLSTON RIVER AT RIVERSIDE NR CHILHOWIE VA (LAT 36 45 37 LONG 81 37 53)										
OCT., 1967 03...	--	1.4	--	83	73	2	140	8.0	11	5
DEC. 06...	--	1.7	--	41	39	4	85	7.5	5	5
FEB., 1968 07...	--	1.9	--	79	56	7	112	7.8	4	5
APR. 08...	--	1.1	--	46	50	2	108	7.7	10	5
JUNE 05...	--	1.1	--	71	64	7	127	7.8	14	5
03474000 MIDDLE FORK HOLSTON RIVER AT SEVENMILE FORD VA (LAT 36 48 26 LONG 81 37 20)										
OCT., 1967 03...	--	2.6	--	133	132	10	242	7.9	12	5
DEC. 05...	--	1.6	--	103	79	16	168	7.3	6	5
FEB., 1968 07...	--	4.0	--	119	116	21	208	7.9	6	5
APR. 08...	--	2.1	--	143	101	18	200	7.5	12	5
JUNE 05...	--	2.7	--	126	118	20	223	7.5	19	5
03489850 COVE CREEK NEAR HILTON VA (LAT 36 39 08 LONG 82 21 53)										
OCT., 1967 05...	--	.9	--	192	183	13	330	7.7	19	5
DEC. 04...	--	3.5	--	147	128	15	270	7.8	8	5
FEB., 1968 06...	--	2.8	--	153	150	15	280	8.2	8	5
APR. 04...	--	1.3	--	116	134	20	241	7.9	14	5
JUNE 03...	--	1.4	--	160	152	17	290	9.0	20	5
AUG. 06...	--	1.3	--	150	194	22	362	8.0	22	5
03527000 CLINCH RIVER AT SPEERS FERRY VA (LAT 36 38 55 LONG 82 45 02)										
MAY, 1968 06...	.0	2.3	.03	122	108	17	215	8.0	20	5
JUNE 03...	.1	3.2	.04	131	108	14	220	7.9	18	3
JULY 11...	.1	.8	.06	162	140	15	305	8.0	25	3
AUG. 05...	.0	4.4	.04	167	137	13	315	7.6	20	25
SEP. 03...	.1	1.0	.03	190	155	22	330	8.2	21	5
03527500 NORTH FORK CLINCH RIVER AT DUFFIELD VA (LAT 36 42 40 LONG 82 47 45)										
APR., 1968 18...	--	.6	--	--	61	13	123	7.6	16	5
MAY 27...	--	1.1	--	68	55	12	115	7.5	17	5
JULY 03...	--	1.5	--	116	112	18	210	7.8	21	5
SEP. 16...	--	.9	--	144	124	16	230	7.5	19	5

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE NITRATE (NUS) DIS-SOLVED SOLIDS (RESIDUE AT 180 C) HARDNESS (CA;MG) NON-CARBONATE HARDNESS SPECIFIC CONDUCTANCE (MICRO-MHUS) PH TEMPERATURE (DEG C)

BIG SANDY RIVER BASIN

03215000 BIG SANDY RIVER AT LOUISA, KY. (LAT 38 10 16 LONG 86 38 05)
 DEC., 1967
 12... 1.5 103 50 29 153 6.9 --
 JAN., 1968
 20... 1.8 97 60 40 171 7.2 2
 APR... -- -- -- -- 208 -- 15
 10... -- -- -- -- 200 7.1 21
 MAY
 16... 2.9 153 80 50 200 7.1 21
 JULY
 31... .7 318 140 52 508 7.9 20

DATE FLOW-RATE (F) NITRATE (NUS) TOTAL PHOSPHORUS (PPH) DIS-SOLVED SOLIDS (RESIDUE AT 180 C) HARDNESS (CA;MG) NON-CARBONATE HARDNESS SPECIFIC CONDUCTANCE (MICRO-MHUS) PH CULUR DIS-SOLVED OXYGEN METHYLENE BLUE ACTIVE SUBSTANCE TEMPERATURE (DEG C)

KENTUCKY RIVER BASIN

03284090 DAUGHMAN FURK AT GENTRY ROAD NEAR ATHENS, KY. (LAT 37 57 04 LONG 86 26 23)

DEC., 1967
 03... .2 10 .80 233 199 41 377 7.7 3 -- .03 9
 MAR., 1968
 22... .3 14 1.0 167 134 29 200 7.5 5 -- .00 --
 MAY
 09... -- -- -- -- -- 340 -- -- 10.5 -- 16
 JULY
 09... -- -- -- -- -- 360 -- -- 13.3 -- 22

03284100 BOONE C. AT GRIMES MILL RD. NR GOLUST GROVE, KY. (LAT 37 55 03 LONG 86 26 28)

DEC., 1967
 03... .2 1.1 1.2 208 240 48 464 8.1 5 -- .00 13
 DEC... .4 10 1.2 244 195 41 369 8.1 3 -- .04 6
 MAR., 1968
 22... .3 10 .98 169 132 29 272 7.9 18 -- .00 6
 MAY
 09... -- -- -- -- -- 350 -- -- 9.4 -- 16
 JULY
 09... -- -- -- -- -- 380 -- -- 11.6 -- 23

03287600 N. ELKHORN C. AT BRYAN STATION RD AT MUNKUSE, KY (LAT 38 04 35 LONG 86 24 48)

DEC., 1967
 07... .3 8.4 .51 216 201 42 381 7.7 3 -- .04 9
 MAR., 1968
 22... .2 11 .60 151 113 31 245 7.3 10 -- .00 6
 MAY
 09... -- -- -- -- -- 330 -- -- 8.9 -- 17
 JULY
 09... -- -- -- -- -- 390 -- -- 7.8 -- 24

03287620 N ELKHORN C UNNAMED TR AT MUIK STA RD NR MUIK KY (LAT 38 05 21 LONG 86 21 41)

DEC., 1967
 07... .3 9.5 .81 252 192 39 378 7.8 5 -- .03 11
 MAR., 1968
 22... .3 13 .84 152 105 30 228 7.3 10 -- .00 --
 MAY
 09... -- -- -- -- -- 420 -- -- 12.5 -- 19
 JULY
 09... -- -- -- -- -- 410 -- -- 7.4 -- 23

03287700 N ELKHORN C AT HUFFMAN MILL RD NR MATTOXTOWN, KY (LAT 38 09 10 LONG 86 26 28)

DEC., 1967
 07... .3 14 .73 243 207 46 406 7.8 3 -- .04 9
 MAR., 1968
 22... .2 11 .88 154 112 30 244 7.6 20 -- .00 7
 MAY
 09... -- -- -- -- -- 400 -- -- 8.3 -- 16
 JULY
 09... -- -- -- -- -- 420 -- -- 6.6 -- 22

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

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CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLOW- RIVE (cfs)	NITRATE (mg/l)	TOTAL PHOS- PHORUS (mg/l)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 L)	HARD- NESS (Ca, Mg)	NUN- CAM- BONATE HARD- NESS	SPECI- FIC CON- DUCTANCE MICRO- MHOS	PH	COLOR	DISS- OLVED OXYGEN	METHY- LENE BLUE ACTIVE SUB- STANCE	TEMP- ERATURE (deg F)
KENTUCKY RIVER BASIN--CONTINUED												
03287800 GOOSE CREEK AT MT. HURKB RD NR NEWTOWN, KY. (LAT 38 11 36 LONG 084 26 48)												
DEC., 1967	42	16	.70	217	179	42	350	7.7	3	--	.04	9
MAR., 1968	42	16	.84	139	98	26	214	7.3	25	--	.00	7
MAY	--	--	--	--	--	--	325	--	--	7.8	--	17
JULY	--	--	--	--	--	--	330	--	--	5.0	--	23
09...	--	--	--	--	--	--	330	--	--	5.0	--	23
03288200 CANE RUN AT BECKE ROAD NEAR DUNELAIL, KY. (LAT 38 08 19 LONG 084 31 02)												
DEC., 1967	44	17	1.0	289	240	81	480	7.8	6	--	.05	16
MAR., 1968	47	17	1.4	225	164	56	360	7.3	5	--	.00	7
22...	47	17	1.4	225	164	56	360	7.3	5	--	.00	7
03288500 CAVE CREEK NEAR FUKI SPRING, KY. (LAT 38 01 15 LONG 084 35 36)												
MAY, 1968	42	15	1.2	165	157	50	280	7.8	6	--	.03	--
26...	42	15	1.2	165	157	50	280	7.8	6	--	.03	--
03289000 SOUTH ELKHORN CREEK AT FUKI SPRING, KY. (LAT 38 02 35 LONG 084 37 35)												
APR., 1968	42	.4	.11	117	53	10	147	9.5	15	--	.00	--
10...	42	.4	.11	117	53	10	147	9.5	15	--	.00	--
03289100 STEELES RUN AT OLD FRANKFORT RD. AT FAYWOOD, KY. (LAT 38 06 13 LONG 084 37 40)												
DEC., 1967	44	14	1.5	238	182	41	341	7.9	3	--	.04	16
09...	44	14	1.5	238	182	41	341	7.9	3	--	.04	16
MAR., 1968	43	16	1.2	170	133	33	276	7.5	3	--	.00	7
22...	43	16	1.2	170	133	33	276	7.5	3	--	.00	7
MAY	--	--	--	--	--	--	350	--	--	11.4	--	16
09...	--	--	--	--	--	--	370	--	--	9.9	--	23
JULY	--	--	--	--	--	--	370	--	--	9.9	--	23
09...	--	--	--	--	--	--	370	--	--	9.9	--	23
03289200 TOWN BRANCH AT YARNALLTON RD. AT YARNALLTON, KY. (LAT 38 06 13 LONG 084 35 17)												
DEC., 1967	149	18	4.6	351	240	73	585	7.4	6	--	.12	12
09...	149	18	4.6	351	240	73	585	7.4	6	--	.12	12
MAR., 1968	44	4.4	2.1	226	166	45	389	7.3	5	--	.00	7
22...	44	4.4	2.1	226	166	45	389	7.3	5	--	.00	7
MAY	--	--	--	--	--	--	800	--	--	1.2	--	17
09...	--	--	--	--	--	--	710	--	--	2.7	--	23
JULY	--	--	--	--	--	--	710	--	--	2.7	--	23
10...	--	--	--	--	--	--	710	--	--	1.7	--	23

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	HARDNESS (CA+MG)	NON-CARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH	COLOR	TEMPERATURE (DEG C)
GREEN RIVER BASIN										
03309100 WET PRONG BUFFALO CREEK NR MAMMOTH CAVE KY (LAT 37 13 47 LONG 086 10 24)										
NOV., 1967	--	--	--	--	--	--	93	--	--	10
DEC., 1967	--	--	--	--	--	--	93	--	--	10
JAN., 1968	2.0	.1	.6	48	39	2	86	8.3	5	3
AUG., 1968	3.0	--	1.7	55	32	2	73	7.3	--	18
03310600 GUG CREEK NEAR MAMMOTH CAVE, KENTUCKY (LAT 37 16 47 LONG 086 07 05)										
NOV., 1967	--	--	--	--	--	--	132	--	--	12
DEC., 1967	--	--	--	--	--	--	132	--	--	12
JAN., 1968	1.5	.1	.8	70	54	7	118	8.0	5	2
JULY 17, 1968	--	--	--	--	--	--	125	--	--	21
AUG., 1968	2.0	--	1.0	80	59	4	125	7.9	--	16
03311100 BYLEW CREEK NEAR MAMMOTH CAVE, KY. (LAT 37 15 40 LONG 086 13 07)										
NOV., 1967	--	--	--	--	--	--	124	--	--	12
DEC., 1967	--	--	--	--	--	--	124	--	--	12
JAN., 1968	1.5	.1	.3	62	42	8	98	7.7	5	1
AUG., 1968	5.0	--	3.2	133	100	4	209	8.1	--	19
03311600 BEAVER DAM CREEK AT RHODA, KY. (LAT 37 09 18 LONG 086 13 35)										
NOV., 1967	4.0	.2	1.8	134	96	7	203	8.4	10	13
DEC., 1967	4.0	--	3.6	104	38	0	142	8.7	--	4
JULY 17, 1968	--	--	--	--	--	--	230	--	--	23
AUG., 1968	5.0	--	4.2	139	110	7	231	7.7	--	19
03313570 BAYS FORK AT CLAYPOOL KENTUCKY (LAT 36 54 15 LONG 086 14 06)										
SEP., 1968	21	.2	2.3	277	214	62	473	7.7	5	18
NOV., 1968	--	--	--	--	--	--	400	7.2	--	--
03313590 UNNAMED NON-CONTRIB. STREAM AT GREENHILL, KY. (LAT 36 53 47 LONG 086 18 28)										
MAR., 1968	3.5	.1	3.8	68	50	7	121	7.1	8	12
JUNE 04, 1968	5.0	.1	6.4	68	38	6	94	7.1	28	22
03314000 DRAKES CREEK NEAR ALVATON, KY. (LAT 36 53 43 LONG 086 22 50)										
MAR., 1968	1.5	.1	5.8	187	149	28	328	7.9	2	7
03314595 UNNAMED NON-CONTRIB STREAM AT THREE SPRINGS KY (LAT 36 55 01 LONG 086 26 15)										
SEP., 1968	4.0	--	3.5	56	29	3	74	6.8	--	19
03314610 JENNINGS CREEK NEAR LOST RIVER, KY. (LAT 36 58 16 LONG 086 29 10)										
MAR., 1968	15	.2	8.5	280	216	14	482	8.0	5	8
JUNE 02, 1968	6.5	.2	7.7	241	207	18	400	7.9	5	16
SEP., 1968	22	--	2.7	354	244	20	556	7.7	--	18
03314650 JENNINGS C AT US 231 AT BOWLING GREEN, KY. (LAT 36 59 22 LONG 086 29 33)										
MAR., 1968	16	.1	7.1	276	229	27	472	8.2	2	12
JUNE 02, 1968	5.5	.1	8.1	203	174	18	353	7.7	7	14
SEP., 1968	18	.5	5.1	305	238	28	499	7.9	5	17
NOV., 1968	--	--	--	--	--	--	465	6.9	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (LPS)	SILICA (SiO ₂)	IRON (FE)	MANG- ANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	LAR- BONATE (CO ₃)	SULFATE (SO ₄)
GREEN RIVER BASIN--CONTINUED											
03314680 JENNINGS C BL LCST R OUTLET AT BOWLING GREEN, KY (LAT 36 59 44 LONG 86 28 55)											
JUNE, 1968	--	9.7	.18	.02	.55	5.1	2.4	1.0	179	0	6.2
OCT., 1968	--	9.3	.11	.06	.72	7.4	4.3	1.3	234	0	12
03314700 JENNINGS C AT BARREN R RD NR BOWLING GREEN, KY. (LAT 37 00 34 LONG 86 28 18)											
MAY, 1968	--	9.7	.14	.04	.66	7.3	4.8	1.0	214	0	11
03319600 RUGG RIVER AT HARTFORD, KY. (LAT 37 27 10 LONG 86 54 38)											
OCT., 1967	--	--	--	--	--	--	--	--	--	--	--
NOV., 1967	--	--	--	--	--	--	--	--	--	--	--
DEC., 1967	--	--	--	--	--	--	--	--	--	--	--
JAN., 1968	--	--	.56	.04	--	--	--	--	32	0	18
FEB., 1968	--	--	.29	.04	--	--	--	--	66	0	21
MAR., 1968	--	--	--	--	--	--	--	--	--	--	--
APR., 1968	--	--	--	--	--	--	--	--	--	--	--
MAY, 1968	--	--	.09	.01	--	--	--	--	108	0	15
03321100 PGND RIVER NEAR SACRAMENTO, KY. (LAT 37 23 41 LONG 87 18 19)											
OCT., 1967	--	15	7.1	11	166	81	55	5.4	0	0	888
NOV., 1967	--	--	--	--	--	--	--	--	--	--	--
DEC., 1967	--	--	--	--	--	--	--	--	--	--	--
JAN., 1968	--	--	2.6	2.4	--	--	--	--	0	0	160
FEB., 1968	--	--	--	--	--	--	--	--	--	--	--
MAR., 1968	--	--	--	--	--	--	--	--	--	--	--
APR., 1968	--	--	.99	7.6	--	--	--	--	0	0	552
MAY, 1968	--	--	2.6	1.2	--	--	--	--	0	0	936
JUN., 1968	--	--	--	--	--	--	--	--	--	--	--
JULY, 1968	--	--	--	--	--	--	--	--	--	--	--
AUG., 1968	--	--	--	--	--	--	--	--	--	--	--
03321500 GREEN RIVER AT L AND D 1 AT SPOTTSVILLE, KY. (LAT 37 51 30 LONG 87 24 35)											
NOV., 1967	--	--	--	--	--	--	--	--	--	--	--
DEC., 1967	--	--	.80	.42	--	--	--	--	76	0	48
JAN., 1968	--	--	.32	.24	--	--	--	--	76	0	46
FEB., 1968	--	--	.07	.39	--	--	--	--	78	0	61
MAR., 1968	--	--	.03	.55	--	--	--	--	86	0	85

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

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CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	UN- SOLVED SOLIDS (RESIDUE AT 180 C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC LUND- ULTRANCE (MICRO- MHUS)	PH	COLOR	TEMP- ERATURE (DEG C)
GREEN RIVER BASIN--CONTINUED										
03314680 JENNINGS C BL LUST R OUTLET AT BOWLING GREEN, KY. (LAT 36 59 44 LONG 86 28 55)										
JUNE, 1968										
UG...	4.0	.2	9.7	176	158	11	314	7.6	4	15
SEP.										
11...	6.0	.2	10	242	210	18	401	7.7	3	16
03314700 JENNINGS C AT BARREN R RD NR BOWLING GREEN, KY. (LAT 37 00 34 LONG 86 28 18)										
MAR., 1968										
UG...	7.0	.2	12	221	195	19	382	7.9	2	11
03319600 ROUGH RIVER AT HARTFORD, KY. (LAT 37 27 10 LONG 86 54 38)										
ULT., 1967										
UG...	--	--	--	--	--	--	236	--	--	19
NOV...	--	--	--	--	--	--	264	--	--	12
OV...	--	--	--	--	--	--		--	--	
UG...	4.5	--	1.3	83	41	15	115	6.4	--	6
APR., 1968										
UG...	6.0	--	1.9	103	71	17	164	7.7	--	12
MAY										
UG...	--	--	--	--	--	--	197	--	--	17
JUNE										
13...	4.0	--	2.3	140	106	17	215	7.5	--	19
03321100 PLNU RIVER NEAR SACRAMENTO, KY. (LAT 37 23 41 LONG 87 18 19)										
OCT., 1967										
UG...	26	1.4	.4	1350	733	733	1810	3.3	5	16
UGL...	--	--	--	--	--	--	554	--	--	6
UG...										
FEB., 1968										
UG...	8.0	--	1.0	262	172	172	395	4.5	--	9
MAR.										
UG...	--	--	--	--	--	--	1590	--	--	3
MAY										
UG...	7.0	--	.7	896	542	542	1130	4.6	--	20
JULY										
UG...	17	--	.2	1360	552	552	1780	3.3	--	26
AUG.										
UG...	--	--	--	--	--	--	1500	--	--	27
03321500 GREEN RIVER AT L AND D 1 AT SPOTTSVILLE, KY. (LAT 37 51 30 LONG 87 24 35)										
NOV., 1967										
UG...	--	--	--	--	--	--	314	--	--	12
FEB., 1968										
UG...	9.0	--	2.0	153	112	50	248	8.1	--	7
MAR.										
UG...	9.0	--	3.2	142	108	46	238	7.7	--	9
MAY										
UG...	9.0	--	3.1	161	132	68	290	7.6	--	19
AUG.										
UG...	14	--	2.2	224	154	84	372	7.2	--	28

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN KENTUCKY

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CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLOU- RIDE (F)	NITRATE (NO3)	DIS- SOLVED SULFIDS (RESI- DUE AT 180 C)	MAKU- NESS (LA, MG)	NON- LAK- BONATE MAKU- NESS	TOTAL ACTIVITY AS M+	SPECI- FIC CUMU- LATIVE (MICRO- MHGS)	PH	COLOR	TEMP- ERATURE (DEG C)
CUMBERLAND RIVER BASIN											
03404000 CUMBERLAND RIVER AT WILLIAMSBURG, KY. (LAT 36 44 38 LONG 084 09 30)											
OCT., 1967											
1c...	9.0	.3	1.4	191	93	31	--	314	7.1	10	16
NOV...											
10...	0.0	--	1.2	127	04	26	--	199	7.7	--	6
DEC...											
08...	2.0	--	.9	66	40	19	--	123	6.9	--	9
JAN., 1968											
12...	--	--	--	--	--	--	--	125	--	--	1
MAR...											
02...	--	--	--	--	--	--	--	279	--	--	6
APR...											
10...	--	--	--	--	--	--	--	133	--	--	14
JULY											
01...	11	--	.8	157	96	16	--	340	7.6	--	25
23...	10	--	1.0	215	93	13	--	356	7.4	--	27
SEP...											
02...	--	--	--	--	--	--	--	340	--	--	23
03407100 LANE BRANCH NEAR PARKERS LAKE, KY. (LAT 36 52 03 LONG 084 26 57)											
OCT., 1967											
30...	3.0	--	.1	226	100	100	1.0	422	3.5	--	8
DEC...											
01...	--	--	--	--	--	--	--	162	--	--	0
JAN., 1968											
10...	4.0	--	.2	114	60	60	1.4	238	3.9	--	2
FEB...											
20...	--	--	--	--	--	--	--	556	--	--	6
MAR...											
20...	--	--	--	--	--	--	--	231	--	--	11
APR...											
23...	3.0	--	.1	96	50	50	.7	192	4.1	--	12
JULY											
24...	--	--	--	--	--	--	--	380	--	--	25
AUG...											
23...	2.0	--	.1	178	82	82	.8	351	3.0	--	24
SEP...											
23...	--	--	--	--	--	--	--	300	--	--	19
03438220 CUMBERLAND RIVER NEAR GRANU RIVERS, KY. (LAT 37 01 15 LONG 088 13 23)											
NOV., 1967											
30...	12	.2	1.6	123	85	23	--	201	8.0	5	5
JAN., 1968											
29...	0.0	--	.9	99	60	13	--	177	8.3	--	6
FEB...											
29...	3.0	--	2.1	116	100	21	--	204	7.8	--	3
MAY...											
17...	4.0	--	2.1	94	73	17	--	164	7.9	--	19
JULY											
19...	4.0	--	1.6	126	96	10	--	211	7.7	--	27
SEP...											
13...	--	--	--	--	--	--	--	140	--	--	24

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	MAN- GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)	CHLO- RIDE (CL)
CUMBERLAND RIVER BASIN												
03420400 MUD CREEK NEAR SUMMITVILLE (LAT 35 37 23 LONG 086 00 00)												
JUNE 13...	1.2	6.3	.14	.00	34	6.0	.8	.5	126	0	3.8	2.7
03426800 EAST FORK STONES RIVER AT WOODBURY (LAT 35 49 41 LONG 086 04 36)												
NOV. 15...	12	4.8	.04	.04	50	7.4	1.5	.9	176	0	14	2.1
03426850 CARSON FORK AT BURT (LAT 35 46 29 LONG 086 07 56)												
NOV. 15...	4.3	4.3	.02	.02	51	6.0	1.3	.9	172	0	11	1.8
03426880 BRAWLEY'S FORK NEAR READYVILLE (LAT 35 48 06 LONG 086 09 04)												
NOV. 15...	8.6	2.9	.02	.01	56	5.9	1.4	1.0	188	0	12	2.2
03426900 EAST FORK STONES RIVER BELOW READYVILLE (LAT 35 50 16 LONG 086 11 21)												
NOV. 15...	30	2.0	.06	.04	60	6.9	2.3	1.2	200	0	14	3.0
03426920 MCKNIGHT BRANCH NEAR HALLS HILL (LAT 35 52 01 LONG 086 11 57)												
NOV. 15...	.15	5.6	.02	.04	91	5.1	1.3	.7	276	0	14	2.1
03426960 CRIPPLE CREEK NEAR SHARPSVILLE (LAT 35 52 27 LONG 086 16 05)												
NOV. 15...	4.6	4.1	.02	.02	86	6.3	1.8	1.0	262	0	18	3.2
03427000 BRADLEY CREEK AT LASCASSAS (LAT 35 55 39 LONG 086 17 25)												
OCT. 23...	.13	1.3	.02	.00	63	5.7	1.8	1.3	202	0	17	3.5
03427500 EAST FORK STONES RIVER NEAR LASCASSAS (LAT 35 55 07 LONG 086 20 01)												
MAR. 05...	75	2.1	.00	.02	55	6.0	1.9	.7	181	0	14	3.2
APR. 02...	441	1.2	.49	.06	66	5.5	1.5	.7	210	0	13	2.5
MAY 06...	157	4.4	.00	.02	65	5.7	1.5	.9	207	0	12	2.3
JUNE 11...	84	2.6	.03	.01	60	5.3	1.5	.7	192	0	11	3.0
03427700 BUSHMAN CREEK NEAR MURFREESBORO (LAT 35 53 44 LONG 086 20 53)												
OCT. 23...	.70	6.8	.05	.02	77	6.1	2.7	1.7	245	0	13	3.4
03427800 WEST FORK STONES RIVER AT BARFIELD (LAT 35 47 13 LONG 086 25 20)												
OCT. 23...	3.0	6.4	.05	.03	76	5.3	1.8	1.5	240	0	13	3.9
03427900 MIDDLE FORK STONES RIVER NEAR MURFREESBORO (LAT 35 48 15 LONG 086 23 52)												
OCT. 23...	3.5	6.0	.02	.03	77	6.1	2.2	1.3	252	0	9.9	3.6
03428000 WEST FORK STONES RIVER NEAR MURFREESBORO (LAT 35 49 20 LONG 086 25 03)												
FEB. 05...	167	5.9	.03	.02	75	4.8	1.5	.9	236	0	12	3.0
MAR. 04...	31	6.6	.00	.01	63	5.6	1.8	.7	203	0	13	3.7
APR. 03...	520	4.6	.06	.02	68	5.1	1.5	.8	219	0	12	3.0
MAY 07...	61	5.4	.00	.02	63	5.0	1.5	.6	203	0	10	3.1
JUNE 11...	28	4.6	.70	.02	63	4.2	1.5	.5	198	0	8.5	3.3
03428300 SNAIL SHELL CAVE SPRING NEAR ROCKVALE (LAT 35 46 57 LONG 086 32 11)												
APR. 12...	11	4.5	.00	.00	84	4.3	1.0	.6	264	0	15	1.5
03428301 OVERALL SPRING NEAR ROCKVALE (LAT 35 48 10 LONG 086 81 20)												
APR. 12...	41	3.7	.00	.00	59	4.8	1.0	.6	182	0	14	3.2
03428400 OVERALL CREEK NEAR MURFREESBORO (LAT 35 54 22 LONG 086 27 41)												
NOV. 15...	11	6.4	.02	.02	91	5.3	1.6	.9	284	0	11	2.7
03428500 WEST FORK STONES RIVER NEAR SMYRNA (LAT 35 56 25 LONG 086 27 54)												
OCT. 23...	46	5.4	.01	.00	77	6.1	14	2.9	229	0	19	17
03435030 RED RIVER NEAR PORTLAND (LAT 36 33 24 LONG 086 34 14)												
JUNE 12...	8.2	8.3	4.9	.01	26	7.0	2.0	.9	100	0	12	3.3

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO- RIDE (F)	NITRATE (NO3)	PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR	ZINC (ZN)
CUMBERLAND RIVER BASIN												
03420400 MUD CREEK NEAR SUMMITVILLE (LAT 35 37 23 LONG 086 00 00)												
JUNE 13...	.0	2.1	--	109	118	110	6	217	7.9	19	2	--
03426800 EAST FORK STONES RIVER AT WOODBURY (LAT 35 49 41 LONG 086 04 36)												
NOV. 15...	.0	.0	.00	168	167	156	14	300	7.8	11	2	.01
03426850 CARSON FORK AT BURT (LAT 35 46 29 LONG 086 07 56)												
NOV. 15...	.0	.0	.05	163	161	152	10	295	7.7	11	3	.01
03426880 BRAWLEYS FORK NEAR READYVILLE (LAT 35 48 06 LONG 088 09 04)												
NOV. 15...	.0	.0	.08	174	174	164	10	315	8.2	11	3	.01
03426900 EAST FORK STONES RIVER BELOW READYVILLE (LAT 35 50 16 LONG 086 11 21)												
NOV. 15...	.1	.2	.30	185	188	178	14	342	8.0	9	3	.01
03426920 MCKNIGHT BRANCH NEAR HALLS HILL (LAT 35 52 01 LONG 086 11 57)												
NOV. 15...	.0	.9	.01	253	256	248	22	440	8.0	13	3	.01
03426960 CRIPPLE CREEK NEAR SHARPSVILLE (LAT 35 52 27 LONG 086 16 05)												
NOV. 15...	.1	1.2	.30	247	251	241	26	433	8.1	10	3	.00
03427000 BRADLEY CREEK AT LASCASSAS (LAT 35 55 39 LONG 086 17 25)												
OCT. 23...	.1	.0	.00	196	193	181	15	342	8.0	19	11	.01
03427500 EAST FORK STONES RIVER NEAR LASCASSAS (LAT 35 55 07 LONG 086 20 01)												
MAR. 05...	.0	.5	--	182	172	162	13	313	8.1	6	5	--
APR. 02...	.0	1.0	--	203	195	187	15	354	7.6	--	4	--
MAY 06...	.0	.6	--	187	194	184	14	341	7.6	--	4	--
JUNE 11...	.1	.7	--	182	179	172	14	321	8.0	--	3	--
03427700 BUSHMAN CREEK NEAR MURFREESBORO (LAT 35 53 44 LONG 086 20 53)												
OCT. 23...	.0	.0	.00	238	231	217	16	409	8.0	18	4	.01
03427800 WEST FORK STONES RIVER AT BARFIELD (LAT 35 47 13 LONG 086 25 20)												
OCT. 23...	.0	.0	.00	226	226	212	15	392	8.0	17	4	.01
03427900 MIDDLE FORK STONES RIVER NEAR MURFREESBORO (LAT 35 48 15 LONG 086 23 52)												
OCT. 23...	.0	.1	.06	232	230	217	10	406	8.0	14	5	.01
03428000 WEST FORK STONES RIVER NEAR MURFREESBORO (LAT 35 49 20 LONG 086 25 03)												
FEB. 05...	.0	.4	--	231	220	207	13	390	7.9	10	5	--
MAR. 04...	.2	.0	--	197	194	180	14	352	8.0	8	3	--
APR. 03...	.1	1.0	--	208	204	191	11	366	7.8	--	6	--
MAY 07...	.0	.2	--	191	189	178	11	343	7.8	--	4	--
JUNE 11...	.1	1.7	--	186	186	174	12	336	7.9	--	4	--
03428300 SNAIL SHELL CAVE SPRING NEAR ROCKVALE (LAT 35 46 57 LONG 086 32 11)												
APR. 12...	.1	.1	--	247	241	227	10	--	7.7	--	5	--
03428301 OVERALL SPRING NEAR ROCKVALE (LAT 35 48 10 LONG 086 81 20)												
APR. 12...	.1	.0	--	173	176	167	18	--	7.5	--	5	--
03428400 OVERALL CREEK NEAR MURFREESBORO (LAT 35 54 22 LONG 086 27 41)												
NOV. 15...	.0	1.4	.00	261	260	249	16	453	8.1	9	3	.01
03428500 WEST FORK STONES RIVER NEAR SMYRNA (LAT 35 56 25 LONG 086 27 54)												
OCT. 23...	.2	3.8	4.9	272	263	217	30	462	7.4	14	5	.01
03435030 RED RIVER NEAR PORTLAND (LAT 36 33 24 LONG 086 34 14)												
JUNE 12...	.1	1.8	--	125	116	94	12	--	7.9	--	3	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SI02)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
TENNESSEE RIVER BASIN										
03461180 COSBY CREEK NEAR BLUFFTON (LAT 35 45 47 LONG 083 12 38)										
SEPT. 24...	3.2	7.3	.01	1.3	.5	1.3	.2	5	0	1.8
03469100 LITTLE PIGEON RIVER NEAR PITTMAN CENTER (LAT 35 44 20 LONG 083 24 59)										
SEPT. 25...	44	7.9	.01	1.2	.5	.9	.3	6	0	2.2
03469225 WEST PRONG LITTLE PIGEON RIVER NEAR MOUNT LE CONTE (LAT 35 38 14 LONG 083 29 34)										
SEPT. 25...	14	4.0	.00	1.6	.7	.6	.2	3	0	3.2
03469290 DUDLEY CREEK NEAR GATLINBURG (LAT 35 43 48 LONG 083 27 02)										
SEPT. 25...	.74	13	.02	2.0	.6	2.2	.4	15	0	.2
03469400 WEST PRONG LITTLE PIGEON RIVER AT GATLINBURG (LAT 35 44 01 LONG 083 31 13)A										
SEPT. 08...	74	6.9	--	4.9	.3	2.0	.7	15	--	3.0
FEB. 01...	146	4.9	.02	3.7	.0	1.5	.7	10	--	2.0
MAY 06...	75	6.5	.04	5.1	.3	1.7	.7	15	--	2.0
AUG. 01...	71	4.8	.05	5.1	.5	2.0	1.0	15	--	4.0
03469500 WEST PRONG LITTLE PIGEON RIVER NEAR PIGEON FORGE (LAT 35 48 21 LONG 083 34 28)A										
APR. 01...	--	2.5	.16	3.5	.4	1.0	.5	10	--	5.0
JUNE 10...	--	5.1	.11	5.3	.3	1.7	1.0	15	--	3.2
AUG. 26...	--	5.2	.07	9.9	.6	3.5	1.5	30	--	5.2
03470000 LITTLE PIGEON RIVER AT SEVIERVILLE (LAT 35 53 52 LONG 083 34 32)A										
FEB. 01...	604	6.3	.04	10	1.2	2.0	.7	33	--	5.0
APR. 02...	1440	3.9	.09	9.3	.3	1.4	.7	25	--	5.8
JUNE 03...	1560	4.1	1.7	21	1.2	1.4	2.0	61	--	6.8
AUG. 20...	307	5.2	.15	13	1.7	2.5	1.2	47	--	5.0
03485500 DOE RIVER AT ELIZABETHTON (LAT 36 20 40 LONG 082 12 37)A										
OCT. 04...	86	7.9	.06	11	2.2	2.7	1.7	47	--	2.8
FEB. 07...	205	10	.04	8.1	1.2	1.8	1.1	26	--	3.6
APR. 03...	680	5.5	.15	5.7	.3	1.7	1.1	19	--	5.2
JUNE 05...	184	8.0	.12	10	.1	1.8	1.4	30	--	2.4
AUG. 06...	139	8.6	.42	9.2	1.7	2.0	1.5	37	--	3.4
03486000 WATAUGA RIVER AT ELIZABETHTON (LAT 36 21 21 LONG 082 13 26)A										
OCT. 04...	181	6.3	.03	10	2.7	2.4	1.3	45	--	4.8
FEB. 07...	3040	7.1	.04	9.3	1.1	2.0	1.1	31	--	4.4
APR. 03...	3170	5.6	.13	5.7	.9	1.7	1.1	23	--	5.0
JUNE 04...	416	9.4	.11	9.7	.6	1.7	1.3	30	--	5.2
AUG. 06...	257	6.5	.17	11	.9	2.1	1.5	37	--	3.2
03486500 BRUSH CREEK AT JOHNSON CITY (LAT 36 19 22 LONG 082 20 59)A										
JAN. 08...	--	7.5	.08	71	10	8.5	3.9	239	--	21
FEB. 19...	--	6.2	.03	75	12	6.0	3.0	256	--	19
APR. 22...	--	4.5	.16	72	9.0	6.0	2.6	229	--	11
MAY 13...	--	6.4	.15	62	8.6	5.0	2.7	196	--	23
JULY 01...	--	8.0	.06	71	8.3	7.1	2.9	236	--	10
SEPT. 03...	--	9.5	.06	68	10	15	4.1	242	--	14
03491800 POOR VALLEY CREEK NEAR MOORESBURG (LAT 36 23 24 LONG 083 12 59)A										
FEB. 06...	32	5.7	.14	10	1.1	2.4	1.1	25	--	12
MAY 02...	64	5.7	.22	7.7	1.5	1.5	1.2	22	--	9.8
AUG. 12...	43	7.1	.38	13	.7	2.3	1.9	34	--	13

A ANALYSES FURNISHED BY TENNESSEE VALLEY AUTHORITY.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
TENNESSEE RIVER BASIN												
03461180 COSBY CREEK NEAR BLUFFTON (LAT 35 45 47 LONG 083 12 38)												
SEPT. 24...	.8	.0	.3	.00	22	15	5	1	18	5.6	--	5
03469100 LITTLE PIGEON RIVER NEAR PITTMAN CENTER (LAT 35 44 20 LONG 083 24 59)												
SEPT. 25...	.7	.1	.3	.00	24	17	5	0	17	5.5	--	--
03469225 WEST PRONG LITTLE PIGEON RIVER NEAR MOUNT LE CONTE (LAT 35 38 14 LONG 083 29 34)												
SEPT. 25...	1.0	.1	1.4	.00	21	14	7	4	20	5.8	--	5
03469290 DUDLEY CREEK NEAR GATLINBURG (LAT 35 43 48 LONG 083 27 02)												
SEPT. 25...	.7	.2	.3	--	27	27	8	0	--	6.1	--	10
03469400 WEST PRONG LITTLE PIGEON RIVER AT GATLINBURG (LAT 35 44 01 LONG 083 31 13)A												
SEPT. 06...	1.5	--	2.1	--	22	--	13	--	38	6.8	16	5
FEB. 01...	2.5	--	.7	--	26	--	9	--	27	6.7	--	5
MAY 06...	2.0	--	1.5	--	26	--	14	--	42	6.7	13	5
AUG. 01...	2.0	--	2.7	--	38	--	15	--	49	6.7	19	5
03469500 WEST PRONG LITTLE PIGEON RIVER NEAR PIGEON FORGE (LAT 35 48 21 LONG 083 34 28)A												
APR. 01...	1.0	--	1.8	--	22	--	12	--	35	6.4	11	5
JUNE 10...	1.0	--	1.5	--	39	--	14	--	41	6.8	21	5
AUG. 26...	4.0	--	1.9	--	54	--	27	--	80	6.7	--	5
03470000 LITTLE PIGEON RIVER AT SEVIERVILLE (LAT 35 53 52 LONG 083 34 52)A												
FEB. 01...	2.0	--	.7	--	33	--	31	--	72	7.4	6	5
APR. 02...	1.0	--	.8	--	39	--	24	--	57	7.3	11	5
JUNE 03...	1.5	--	2.4	--	80	--	57	--	125	7.4	21	10
AUG. 20...	1.5	--	1.8	--	62	--	39	--	95	7.3	25	5
03485500 DOE RIVER AT ELIZABETHTON (LAT 36 20 40 LONG 082 12 37)A												
OCT. 04...	1.0	--	.7	--	45	--	36	--	82	7.3	13	5
FEB. 07...	2.0	--	1.2	--	33	--	25	--	53	7.5	2	5
APR. 03...	1.0	--	1.2	--	35	--	18	--	46	7.0	10	5
JUNE 05...	1.5	--	.8	--	47	--	25	--	64	6.9	15	5
AUG. 06...	1.0	--	1.2	--	51	--	30	--	73	7.6	22	5
03486000 WATAUGA RIVER AT ELIZABETHTON (LAT 36 21 21 LONG 082 13 26)A												
OCT. 04...	1.0	--	.6	--	52	--	36	--	82	7.1	13	5
FEB. 07...	1.5	--	1.1	--	25	--	28	--	63	7.4	3	5
APR. 03...	1.0	--	1.3	--	37	--	20	--	51	6.9	11	5
JUNE 04...	1.0	--	.8	--	46	--	26	--	62	6.9	17	5
AUG. 06...	2.0	--	1.0	--	55	--	30	--	78	7.0	15	5
03486500 BRUSH CREEK AT JOHNSON CITY (LAT 36 19 22 LONG 082 20 59)A												
JAN. 06...	8.5	--	7.2	--	275	--	218	--	432	8.1	7	5
FEB. 19...	7.5	--	5.5	--	259	--	234	--	428	8.0	3	5
APR. 22...	7.0	--	4.0	--	--	--	216	--	380	8.5	19	5
MAY 13...	6.0	--	4.1	--	215	--	189	--	370	7.5	19	5
JULY 01...	8.0	--	3.3	--	226	--	160	--	420	8.2	25	5
SEPT. 03...	20	--	3.1	--	270	--	210	--	440	8.0	23	5
03491800 POOR VALLEY CREEK NEAR MOORESBURG (LAT 36 23 24 LONG 083 12 59)A												
FEB. 06...	2.5	--	.3	--	35	--	30	--	75	7.1	2	5
MAY 02...	2.0	--	.0	--	38	--	25	--	66	6.8	19	5
AUG. 12...	1.5	--	.1	--	69	--	35	--	92	6.8	20	5

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	
TENNESSEE RIVER BASIN--CONTINUED											
03594180 HARDIN CREEK AT CLIFTON JUNCTION (LAT 35 18 26 LONG 087 57 14)A											
JAN. 17...	--	5.4	.03	25	2.5	1.4	.6	71	--	11	
MAR. 13...	--	5.4	.05	21	.5	.9	.9	51	--	10	
MAY 21...	--	5.1	.02	29	2.4	1.3	1.0	85	--	10	
SEPT. 23...	--	8.2	.03	31	1.8	1.7	1.3	91	--	8.0	
03596000 DUCK RIVER BELOW MANCHESTER (LAT 35 28 15 LONG 086 07 18)A											
DEC. 12...	330	4.6	.12	11	1.5	1.0	.9	35	--	3.2	
JAN. 18...	256	4.5	.02	13	1.1	1.4	.6	37	--	2.0	
MAR. 21...	174	3.9	.02	15	.1	1.2	1.0	39	--	3.8	
AUG. 13...	29	2.8	.21	23	2.9	2.5	1.5	77	--	4.6	
SEPT. 09...	23	5.1	.14	25	2.8	3.0	1.1	84	--	4.2	
03604100 COON CREEK NEAR HOHENWALD (LAT 35 36 23 LONG 087 42 43)A											
DEC. 13...	30	5.6	.04	5.5	1.0	1.0	.9	18	--	2.8	
JAN. 18...	15	5.5	.02	9.5	.4	1.1	.4	25	--	5.4	
FEB. 20...	6.4	5.3	.01	11	.9	1.3	.7	35	--	3.2	
MAR. 29...	21	3.9	.02	7.1	.4	1.0	.5	18	--	5.4	
APR. 11...	22	5.4	.10	6.9	.9	1.0	.7	21	--	4.6	
MAY 21...	12	7.1	.01	9.7	.3	.8	.8	26	--	5.5	
JUNE 14...	4.3	6.3	.00	14	.1	1.2	.5	42	--	1.4	
03604500 BUFFALO RIVER NEAR LOBELVILLE (LAT 35 48 46 LONG 087 47 51)A											
DEC. 12...	4620	5.7	.13	12	1.7	1.2	2.0	38	--	8.4	
JAN. 31...	994	4.0	.03	16	1.6	1.5	.7	46	--	4.8	
MAR. 20...	1140	4.4	.12	16	1.5	.9	.7	47	--	4.8	
AUG. 26...	315	6.5	.06	22	.6	1.5	1.1	67	--	2.4	
DATE	MEAN DIS CHARGE (CFS)	SILICA (SiO2)	DIS- SOLVED IRON (FE)	MAN GANESE (MN)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)
03606500 BIG SANDY RIVER AT BRUCETON (LAT 36 02 19 LONG 088 13 42)A											
FEB. 09...	135	7.8	.30	--	2.5	1.0	2.5	1.1	13	--	4.4
MAR. 08...	88	7.6	.46	--	2.3	1.0	2.4	1.0	12	--	2.4
MAY 02...	94	8.5	.10	--	3.7	1.0	2.3	.8	17	--	2.8
JUNE 05...	90	12	.35	--	4.3	.4	2.0	1.1	16	--	1.8
JULY 05...	46	9.9	.49	--	3.3	.9	2.0	.8	16	--	1.6
AUG. 06...	51	1.0	.19	--	2.9	.2	2.0	1.6	14	--	1.8

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
TENNESSEE RIVER BASIN--CONTINUED												
03594180 HARDIN CREEK AT CLIFTON JUNCTION (LAT 35 18 26 LONG 087 57 14)A												
JAN. 17...	2.5	--	.8	--	85	--	69	--	140	7.2	2	5
MAR. 13...	2.0	--	.4	--	--	--	55	--	114	7.5	--	5
MAY 21...	1.5	--	.8	--	100	--	84	--	168	7.3	18	5
SEPT. 23...	3.5	--	.4	--	109	--	84	--	178	7.5	22	5
03596000 DUCK RIVER BELOW MANCHESTER (LAT 35 28 15 LONG 086 07 18)A												
DEC. 12...	2.0	--	.8	--	66	--	30	--	75	7.5	11	20
JAN. 18...	2.5	--	2.5	--	36	--	36	--	82	6.9	5	5
MAR. 21...	2.0	--	1.5	--	44	--	37	--	81	7.4	14	5
AUG. 13...	3.5	--	2.8	--	95	--	70	--	152	7.4	24	5
SEPT. 09...	4.0	--	2.8	--	97	--	73	--	150	7.1	23	5
03604100 COON CREEK NEAR HOHENWALD (LAT 35 36 23 LONG 087 42 43)A												
DEC. 13...	1.0	--	.0	--	42	--	17	--	44	7.2	13	10
JAN. 18...	1.5	--	.0	--	22	--	25	--	57	7.5	--	5
FEB. 20...	1.0	--	.0	--	50	--	31	--	67	7.5	6	5
MAR. 29...	1.5	--	.0	--	25	--	19	--	42	6.8	16	5
APR. 17...	1.5	--	.0	--	36	--	20	--	51	6.9	--	5
MAY 21...	1.5	--	.0	--	31	--	25	--	52	7.0	18	5
JUNE 14...	1.5	--	.0	--	46	--	36	--	80	7.2	21	5
03604500 BUFFALO RIVER NEAR LOBELVILLE (LAT 35 48 46 LONG 087 47 51)A												
DEC. 12...	1.5	--	.7	--	41	--	38	--	82	7.5	10	10
JAN. 31...	2.0	--	.9	--	46	--	47	--	96	7.3	11	5
MAR. 20...	2.0	--	.2	--	61	--	45	--	92	7.6	13	5
AUG. 26...	2.5	--	.7	--	74	--	56	--	117	7.0	21	5
DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
03606500 BIG SANDY RIVER AT BRUCETON (LAT 36 02 19 LONG 088 13 42)A												
FEB. 09...	3.0	--	.5	--	33	--	12	--	37	6.7	--	30
MAR. 08...	2.0	--	.4	--	27	--	10	--	33	6.5	9	5
MAY 02...	2.0	--	.3	--	29	--	13	--	43	8.5	16	15
JUNE 05...	2.0	--	.8	--	26	--	12	--	38	6.5	19	15
JULY 05...	2.0	--	.9	--	22	--	12	--	37	6.7	17	15
AUG. 06...	2.0	--	.3	--	32	--	8	--	35	6.7	24	15

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CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)
TENNESSEE RIVER BASIN--CONTINUED										
03496200 FIRST CREEK ABOVE POWERS AVENUE AT KNOXVILLE (LAT 36 00 35 LONG 083 55 17)A										
JAN. 02...	42	5.8	.13	50	20	3.9	1.5	172	--	12
MAR. 05...	17	3.2	.06	58	13	4.5	1.3	217	--	8.9
MAY 08...	14	5.6	.24	59	13	4.0	1.5	219	--	9.4
03497000 TENNESSEE RIVER AT KNOXVILLE (LAT 35 57 17 LONG 083 51 42)A										
OCT. 06...	16500	1.3	.05	41	5.8	21	1.9	91	--	19
DEC. 13...	11000	6.2	.28	27	4.3	13	3.0	74	--	24
FEB. 06...	22000	4.5	.10	30	5.4	10	1.6	88	--	17
APR. 18...	500	6.2	.15	29	4.4	9.3	1.7	84	--	18
03497180 LITTLE RIVER AT ELKMONT (LAT 35 39 17 LONG 083 34 50)										
SEPT. 24...	24	6.0	.01	1.3	.4	.8	.5	8	0	2.4
03497240 LYNN CAMP PRONG NEAR BLANKET MOUNTAIN (LAT 35 37 00 LONG 083 40 07)										
SEPT. 25...	4.6	6.9	.03	1.0	.3	1.0	.4	6	0	2.2
03497270 MIDDLE PRONG LITTLE RIVER AT WALKER FIELDS NEAR TOWNSEND (LAT 35 38 29 LONG 083 41 24)										
AUG. 05...	A total coliform count of 224 colonies per 100 ml was determined from a sample taken Aug. 5, 1968									
SEPT. 25...	7.0	6.6	.00	1.6	.6	1.0	.4	8	0	.8
03498500 LITTLE RIVER NEAR MARYVILLE (LAT 35 47 10 LONG 083 53 04)A										
FEB. 01...	555	5.0	.00	14	1.8	1.5	.7	49	--	3.2
APR. 02...	1340	3.6	.08	9.5	1.0	1.0	.7	33	--	2.8
JUNE 04...	307	6.9	.10	18	1.8	1.2	.8	58	--	6.0
03517800 PARSON BRANCH NEAR CALDERWOOD (LAT 35 29 28 LONG 083 56 03)										
SEPT. 25...	.70	10	.03	4.0	.8	1.6	.7	21	0	.8
03518100 ABRAMS CREEK BELOW CADES COVE (LAT 35 35 35 LONG 083 50 42)										
AUG. 05...	A total coliform count of 148 colonies per 100 ml was determined from a sample taken Aug. 5, 1968									
SEPT. 24...	5.4	8.1	.01	19	8.3	1.2	.6	95	0	2.8
03518110 FORGE CREEK NEAR CADES COVE (LAT 35 33 47 LONG 083 50 50)										
SEPT. 24...	2.8	7.1	.06	1.0	.3	1.0	.4	8	0	1.2
03527600 NORTH FORK CLINCH RIVER NEAR KYLES FORD (LAT 36 35 25 LONG 082 59 50)A										
FEB. 06...	104	4.4	.07	30	6.6	1.7	1.1	109	--	5.8
MAY 02...	--	3.4	.10	25	4.9	1.2	1.2	85	--	9.4
03528200 BIG SYCAMORE CREEK NEAR SPRINGDALE (LAT 36 27 00 LONG 083 26 21)A										
FEB. 05...	32	3.4	.04	19	1.6	1.7	1.1	54	--	10
MAY 02...	40	4.8	.09	17	2.6	1.2	1.2	51	--	16
AUG. 12...	18	5.9	.16	24	4.9	2.5	1.8	83	--	14
03534200 HINDS CREEK NEAR CLINTON (LAT 36 08 45 LONG 084 04 34)A										
JAN. 04...	--	6.4	.10	22	4.1	1.5	1.5	74	--	13
APR. 05...	--	4.3	.08	27	5.7	1.6	1.3	100	--	11
03535200 BEAVER CREEK NEAR POWELL (LAT 36 01 06 LONG 084 03 06)A										
FEB. 05...	57	5.2	.00	40	12	2.6	1.5	140	--	21
MAY 09...	40	5.5	.22	47	10	3.5	1.9	162	--	11
03539800 OBED RIVER NEAR LANCING (LAT 36 04 53 LONG 084 40 15)A										
JAN. 11...	10200	2.4	.07	3.3	.4	.7	.9	6	--	5.4
MAR. 26...	2110	2.8	.01	2.9	.5	.9	1.0	6	--	4.4
MAY 23...	474	2.9	.00	3.5	.1	1.0	1.3	8	--	3.6

A ANALYSES FURNISHED BY TENNESSEE VALLEY AUTHORITY.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	ORTHO PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA,MG)	NON CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)	COLOR
TENNESSEE RIVER BASIN--CONTINUED												
03496200 FIRST CREEK ABOVE POWERS AVENUE AT KNOXVILLE (LAT 36 00 35 LONG 083 55 17)A												
AN. 02...	7.0	--	4.2	--	177	--	159	--	312	7.4	9	5
MAR. 05...	7.5	--	1.3	--	204	--	198	--	355	7.8	5	10
MAY 08...	7.0	--	2.6	--	193	--	201	--	370	7.4	--	5
03497000 TENNESSEE RIVER AT KNOXVILLE (LAT 35 57 17 LONG 083 51 42)A												
OCT. 06...	54	--	2.0	--	203	--	127	--	350	7.4	21	5
DEC. 13...	19	--	.5	--	152	--	84	--	240	7.2	9	15
FEB. 06...	20	--	4.1	--	149	--	96	--	245	7.7	5	5
APR. 18...	12	--	3.8	--	--	--	90	--	180	7.4	--	5
03497180 LITTLE RIVER AT ELK MONT (LAT 35 39 17 LONG 083 34 50)												
SEPT. 24...	.1	.0	.3	--	21	16	4	0	--	6.9	--	6
03497240 LYNN CAMP PRONG NEAR BLANKET MOUNTAIN (LAT 35 37 00 LONG 083 40 07)												
SEPT. 25...	.7	.0	.4	.00	18	16	4	0	15	5.5	--	5
03497270 MIDDLE PRONG LITTLE RIVER AT WALKER FIELDS NEAR TOWNSEND (LAT 35 38 29 LONG 083 41 24)												
AUG. 05...	--	--	--	--	--	--	--	--	--	--	--	--
SEPT. 25...	.6	.1	1.3	.00	22	17	6	0	20	5.9	--	15
03498500 LITTLE RIVER NEAR MARTVILLE (LAT 35 47 10 LONG 083 53 04)A												
FEB. 01...	1.0	--	.2	--	42	--	42	--	89	7.3	9	5
APR. 02...	.5	--	1.2	--	32	--	28	--	61	7.4	10	5
JUNE 04...	1.0	--	.9	--	59	--	54	--	109	7.2	20	5
03517800 PARSON BRANCH NEAR CALDERWOOD (LAT 35 29 28 LONG 083 56 03)												
SEPT. 25...	1.3	.0	.3	--	38	30	14	0	--	6.2	--	10
03518100 ABRAMS CREEK BELOW CADES COVE (LAT 35 35 35 LONG 083 50 42)												
AUG. 05...	--	--	--	--	--	--	--	--	--	--	--	--
SEPT. 24...	1.3	.1	.9	.00	92	89	81	2	161	6.8	--	5
03518110 FORGE CREEK NEAR CADES COVE (LAT 35 33 47 LONG 083 50 50)												
SEPT. 24...	1.1	.1	.3	--	28	17	4	0	--	5.6	--	15
03527600 NORTH FORK CLINCH RIVER NEAR KYLES FORD (LAT 36 35 25 LONG 082 59 50)A												
FEB. 06...	2.5	--	1.1	--	103	--	102	--	192	7.8	4	5
MAY 02...	1.0	--	1.2	--	88	--	82	--	160	7.6	14	5
03528200 BIG SYCAMORE CREEK NEAR SPRINGDALE (LAT 36 27 00 LONG 083 26 21)A												
FEB. 05...	1.5	--	.3	--	75	--	54	--	115	7.5	4	5
MAY 02...	1.0	--	.0	--	--	--	54	--	110	7.3	13	5
AUG. 12...	2.0	--	.7	--	103	--	79	--	175	7.9	--	5
03534200 HINDS CREEK NEAR CLINTON (LAT 36 08 45 LONG 084 04 34)A												
JAN. 04...	1.5	--	.8	--	90	--	71	--	145	7.7	9	5
APR. 05...	1.5	--	.6	--	83	--	90	--	178	7.6	12	5
03535200 BEAVER CREEK NEAR POWELL (LAT 36 01 06 LONG 084 03 06)A												
FEB. 05...	3.5	--	12	--	153	--	149	--	282	7.0	8	5
MAY 09...	6.0	--	9.5	--	142	--	158	--	320	7.6	17	5
03539800 OBED RIVER NEAR LANICING (LAT 36 04 53 LONG 084 40 15)A												
JAN. 11...	1.5	--	.7	--	28	--	10	--	29	6.8	4	10
MAR. 26...	2.0	--	.4	--	23	--	9	--	25	6.5	9	5
MAY 23...	1.5	--	.0	--	17	--	9	--	28	6.3	17	5

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS- CHARGE (CFS)	SILICA (SiO ₂)	DIS- SOLVED IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TA- SIUM (K)	BICAR- BONATE (HCO ₃)	CAR- BONATE (CO ₃)	SULFATE (SO ₄)
TENNESSEE RIVER BASIN--CONTINUED										
03539860 CROOKED FORK NEAR WARTBURG (LAT 36 05 05 LONG 084 33 18)A										
JAN. 09...	195	5.0	.54	9.3	3.2	3.0	.6	6	--	33
MAR. 26...	132	4.9	.44	9.0	4.4	3.5	.9	4	--	38
MAY 22...	34	7.1	.31	19	7.3	6.3	1.7	26	--	68
JULY 29...	3.1	7.0	.09	45	26	19	3.7	2	--	249
03566050 SOUTH MOUSE CREEK AT CLEVELAND (LAT 35 12 03 LONG 084 51 10)A										
OCT. 11...	9.1	6.9	.14	52	10	20	2.7	180	--	50
JAN. 30...	24	5.8	.04	40	10	8.8	2.1	157	--	15
APR. 25...	16	6.4	.06	50	8.1	20	1.9	162	--	47
03566150 ROGERS CREEK NEAR LAMONTVILLE (LAT 35 23 04 LONG 084 47 37)A										
OCT. 11...	19	4.7	.09	30	8.1	2.7	3.3	125	--	9.8
JAN. 25...	59	5.8	.06	22	6.3	1.8	1.3	90	--	6.6
APR. 25...	35	5.2	.12	31	6.1	1.4	1.4	118	--	4.2
JULY 26...	15	7.7	.09	36	9.0	1.7	2.0	150	--	6.0
03566290 SALE CREEK AT GRAYSVILLE (LAT 35 26 30 LONG 085 04 46)A										
JAN. 03...	35	4.4	.02	17	1.0	1.3	.6	49	--	5.6
MAR. 08...	3.5	3.7	.06	31	1.3	1.5	1.0	91	--	8.4
JULY 02...	.86	5.4	.06	46	4.1	1.8	1.6	145	--	4.4
03566400 SODDY CREEK AT SODDY (LAT 35 18 05 LONG 085 09 56)A										
JAN. 03...	147	3.2	.00	2.1	.6	.7	.0	2	--	5.6
APR. 25...	40	3.2	.15	2.9	1.0	.6	.7	4	--	9.0
JULY 02...	1.0	4.1	.06	10	1.7	1.8	1.1	9	--	28
03568000 TENNESSEE RIVER AT CHATTANOOGA (LAT 35 05 12 LONG 085 16 43)A										
MAR. 18...	34000	4.5	.22	24	3.0	6.8	1.1	69	--	15
SEPT. 16...	14000	3.1	.02	26	4.4	12	1.5	72	--	20
03571850 TENNESSEE RIVER AT SOUTH PITTSBURG (LAT 35 00 41 LONG 085 41 51)A										
MAR. 05...	9500	4.5	.00	24	3.4	6.3	1.5	71	--	15
AUG. 26...	39600	3.1	.03	27	4.4	11	1.9	79	--	17
SEPT. 03...	42000	1.7	.18	26	4.1	12	1.5	74	--	19
03583400 BIG CREEK NEAR RIVERSBURG (LAT 35 16 31 LONG 087 03 30)A										
OCT. 31...	33	5.4	.03	38	4.1	1.7	1.3	128	--	8.2
DEC. 20...	507	6.7	.04	26	2.3	1.3	1.3	75	--	6.0
APR. 11...	320	5.1	.03	27	2.3	1.2	.9	77	--	9.0
MAY 31...	131	5.3	.04	29	2.4	1.2	1.0	86	--	6.8
AUG. 29...	12	6.5	.10	36	2.4	1.2	1.4	116	--	5.2
03588000 SHOAL CREEK AT LAWRENCEBURG (LAT 35 14 31 LONG 087 21 14)A										
DEC. 21...	136	5.0	.04	17	.7	1.7	1.3	46	--	4.6
FEB. 27...	56	2.9	.02	21	2.4	1.6	1.0	66	--	2.8
APR. 18...	106	4.2	.05	19	1.0	1.3	.9	52	--	3.8
JUNE 17...	56	6.5	.03	23	.7	1.4	1.3	64	--	3.4
AUG. 19...	34	5.8	.02	23	1.8	3.4	1.0	78	--	2.4
03593500 TENNESSEE RIVER AT SAVANNAH (LAT 35 13 29 LONG 088 15 36)A										
MAR. 05...	21300	4.1	.02	23	3.4	4.0	1.5	69	--	11
APR. 12...	40600	2.9	.05	22	3.2	3.0	1.2	66	--	10
JUNE 07...	45000	1.5	.00	24	1.8	3.5	1.3	65	--	10
AUG. 07...	65400	3.2	.22	19	3.5	6.8	1.5	59	--	14

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN TENNESSEE
 CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	ORTHO- PHOS- PHATE (PO4)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC- COND- UCTANCE (MICRO- MHS)	PH	TEMP- ERATURE (DEG C)	COLOR
TENNESSEE RIVER BASIN--CONTINUED												
03539860 CROOKED FORK NEAR WARTBURG (LAT 36 05 05 LONG 084 33 18)A												
JAN. 09...	2.0	--	.7	--	52	--	36	--	106	6.2	3	5
MAR. 26...	2.0	--	.4	--	77	--	40	--	111	6.5	10	5
MAY 22...	2.5	--	.8	--	119	--	77	--	195	6.5	15	5
JULY 29...	8.0	--	.5	--	409	--	222	--	530	4.8	24	5
03566050 SOUTH MOUSE CREEK AT CLEVELAND (LAT 35 12 03 LONG 084 51 10)A												
OCT. 11...	6.5	--	4.0	--	259	--	170	--	390	7.8	12	5
JAN. 30...	7.5	--	3.7	--	167	--	144	--	302	7.2	12	5
APR. 25...	7.5	--	7.7	--	292	--	158	--	392	8.2	17	5
03566150 ROGERS CREEK NEAR LAMONTVILLE (LAT 35 23 04 LONG 084 47 37)A												
OCT. 11...	2.5	--	.4	--	131	--	108	--	210	7.8	14	10
JAN. 25...	2.0	--	.4	--	95	--	82	--	159	7.7	6	5
APR. 25...	2.0	--	.2	--	--	--	102	--	187	8.1	8	5
JULY 26...	2.0	--	.8	--	138	--	128	--	248	7.4	26	5
03566290 SALE CREEK AT GRAYSVILLE (LAT 35 26 30 LONG 085 04 46)A												
JAN. 03...	2.5	--	1.2	--	47	--	47	--	109	7.2	8	5
MAR. 08...	2.5	--	.4	--	85	--	84	--	152	7.5	8	5
JULY 02...	3.0	--	1.6	--	130	--	132	--	260	7.8	21	5
03566400 SODDY CREEK AT SODDY (LAT 35 18 05 LONG 085 09 56)A												
JAN. 03...	1.5	--	.2	--	13	--	8	--	26	6.2	7	5
APR. 25...	.5	--	.0	--	--	--	11	--	32	6.3	11	5
JULY 02...	1.0	--	.0	--	44	--	32	--	94	6.3	23	5
03568000 TENNESSEE RIVER AT CHATTANOOGA (LAT 35 05 12 LONG 085 16 43)A												
MAR. 16...	9.0	--	2.4	--	109	--	74	--	173	7.8	11	5
SEPT. 16...	23	--	1.2	--	144	--	82	--	220	7.5	23	5
03571850 TENNESSEE RIVER AT SOUTH PITTSBURG (LAT 35 00 41 LONG 085 41 51)A												
MAR. 05...	8.5	--	2.1	--	99	--	75	--	160	7.2	6	5
AUG. 26...	20	--	2.0	--	140	--	85	--	225	7.2	26	5
SEPT. 03...	23	--	1.4	--	139	--	83	--	220	7.1	26	5
03583400 BIG CREEK NEAR RIVERSBURG (LAT 35 16 31 LONG 087 03 30)A												
OCT. 31...	1.5	--	.7	--	125	--	112	--	207	7.7	13	5
DEC. 20...	2.5	--	3.0	--	88	--	75	--	160	7.4	13	5
APR. 11...	2.5	--	1.7	--	78	--	78	--	160	7.4	11	5
MAY 31...	2.0	--	1.2	--	92	--	82	--	166	7.3	17	5
AUG. 29...	2.0	--	.4	--	107	--	100	--	187	7.4	20	5
03588000 SHOAL CREEK AT LAWRENCEBURG (LAT 35 14 31 LONG 087 21 14)A												
DEC. 21...	3.0	--	2.9	--	62	--	45	--	105	7.4	15	5
FEB. 27...	3.0	--	4.7	--	76	--	63	--	130	7.8	9	5
APR. 18...	3.0	--	3.1	--	--	--	50	--	109	7.7	18	5
JUNE 17...	3.0	--	3.7	--	67	--	59	--	115	7.0	20	5
AUG. 19...	4.0	--	3.3	--	90	--	65	--	152	7.4	22	5
03593500 TENNESSEE RIVER AT SAVANNAH (LAT 35 13 29 LONG 088 15 36)A												
MAR. 05...	6.5	--	2.4	--	88	--	72	--	150	7.3	5	5
APR. 12...	6.0	--	2.1	--	74	--	64	--	160	7.3	13	5
JUNE 07...	6.0	--	1.7	--	83	--	66	--	150	6.9	26	5
AUG. 07...	8.5	--	1.0	--	85	--	61	--	167	7.2	29	5

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN ALABAMA

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)		
03573000 SHORT CREEK NEAR ALBERTVILLE, ALA. (LAT 34 18 05 LONG 086 10 53)											
OCT., 1967											
09...	253	14	0	6.2	18	7	61	7.3	20		
JAN., 1968											
03...	426	13	0	4.2	15	4	54	6.5	14		
FEB.											
19...	92	10	0	4.4	15	7	57	6.3	3		
MAR.											
27...	190	10	0	5.0	19	11	57	6.9	10		
APR.											
30...	268	12	0	4.8	14	4	51	6.2	14		
JUNE											
10...	164	16	0	5.8	19	6	70	7.0	22		
03573430 BIG SPRING CREEK NEAR BROOKSVILLE, ALA. (LAT 34 13 08 LONG 086 24 30)											
OCT., 1967											
24...	2.4	99	0	2.6	90	9	172	7.6	14		
03574500 PAINT ROCK RIVER NEAR WOODVILLE, ALA. (LAT 34 37 27 LONG 086 18 23)											
NOV., 1967											
02...	3160	148	0	.2	118	0	270	7.5	13		
DEC.											
01...	1830	154	0	.4	122	0	279	7.7	11		
JAN., 1968											
02...	1180	147	0	.4	125	0	250	7.9	6		
MAR.											
01...	151	144	0	.8	130	12	255	7.8	5		
APR.											
02...	1190	154	0	.6	115	0	249	7.9	13		
JULY											
02...	37	158	0	.8	142	12	271	7.5	26		
AUG.											
01...	44	150	0	2.4	126	3	252	7.3	27		
SEP.											
03...	14	164	0	1.2	121	0	275	8.1	23		
03575000 FLINT RIVER NEAR CHASE, ALA. (LAT 34 49 08 LONG 086 28 52)											
OCT., 1967											
12...	166	70	0	2.0	69	12	130	7.6	16		
NOV.											
08...	334	26	19	2.4	58	5	123	8.8	9		
JAN.											
24...	663	55	0	.8	52	7	104	7.1	6		
MAR.											
04...	278	60	0	.6	59	10	122	7.3	8		
APR.											
12...	716	60	0	.8	56	12	116	7.7	15		
MAY											
17...	460	48	0	1.0	46	7	97	7.0	18		
JUNE											
24...	169	68	0	1.4	62	6	126	7.2	24		
03575500 TENNESSEE RIVER AT WHITESBURG, ALA. (LAT 34 34 27 LONG 086 32 42)											
DATE	DIS- CHARGE (CFS)	SILICA (SiO2)	TOTAL IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	POT- AS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
DEC.											
01...	54500	3.3	.08	26	3.6	6.5	1.5	78	0	13	12
JAN.											
02...	114000	--	--	--	--	--	--	62	0	--	13
FEB.											
05...	--	4.9	.06	19	5.7	4.2	1.1	70	--	11	6.0
MAY											
03...	--	.9	.16	24	2.8	4.2	1.2	68	--	9.4	6.5
JULY											
01...	--	2.5	.03	22	2.4	5.9	1.4	63	--	13	8.0
DATE	NITRATE (NO3)	DIS- SOLVED SOLIDS (RES)- DUE AT 130 C)	DIS- SOLVED SOLIDS (TONS PER DAY)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)
DEC.											
01...	1.9	111	16300	.15	80	16	.3	190	7.4	10	10
JAN.											
02...	--	--	--	--	75	24	--	173	7.3	--	8
FEB.											
05...	2.1	91	--	.12	71	14	.2	155	7.5	5	3
MAY											
03...	1.2	86	--	.12	70	14	.2	158	7.1	5	21
JULY											
01...	.8	100	--	.14	65	13	.3	160	7.1	5	26

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN ALABAMA

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CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA+MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
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TENNESSEE RIVER BASIN--CONTINUED

03576100 INDIAN CREEK NEAR MADISON, ALA. (LAT 34 41 50 LONG 086 42 00)

OCT., 1967									
11...	51	86	0	3.2	79	8	157	7.8	13
NOV.									
17...	56	85	0	2.8	75	5	160	7.8	9
DEC.									
07...	115	104	0	2.4	88	3	192	7.8	13
APR., 1968									
02...	153	12	0	2.2	16	6	38	7.1	13
MAY									
13...	60	75	0	2.0	68	7	139	7.4	18
JUNE									
25...	30	85	0	1.8	74	4	150	7.4	24

03576105 HUNTSVILLE SPRING AT HUNTSVILLE, ALA. (LAT 34 43 46 LONG 086 35 12)

OCT., 1967									
12...	10	161	0	4.2	146	14	290	7.6	16
NOV.									
16...	8.6	176	0	4.0	108	0	329	8.1	16
DEC.									
07...	18	180	0	3.6	140	0	342	7.7	16
JAN., 1968									
24...	25	162	0	2.4	142	21	285	8.0	16
MAR.									
04...	12	156	0	3.6	144	16	291	7.4	16
JUNE									
24...	7.8	158	0	4.4	142	12	282	7.5	16

03576148 COTACO CREEK AT FLORETTE, ALA. (LAT 34 24 49 LONG 086 41 16)

OCT., 1967									
12...	36	96	0	3.8	85	6	174	7.7	13
NOV.									
16...	76	77	0	10	78	15	179	7.7	9
DEC.									
07...	641	65	0	2.6	56	3	124	7.4	11
19...	2460	52	0	.8	45	2	104	7.1	15
JAN., 1968									
24...	321	58	0	1.6	58	10	118	7.5	6
MAR.									
04...	77	84	0	2.4	72	3	158	7.4	8
APR.									
11...	306	69	0	3.0	64	7	130	7.9	14
MAY									
17...	1000	61	0	.4	55	5	113	7.5	18
JUNE									
24...	11	103	0	1.6	90	6	178	7.4	23

03576250 LIMESTONE CREEK NEAR ATHENS, ALA. (LAT 34 45 06 LONG 086 49 24)

DATE	DIS- CHARGE (CFS)	SILICA (SI02)	TOTAL IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	SULFATE (SO4)	CHLO- RIDE (CL)
OCT.											
06...	39	--	--	--	--	--	--	40	0	--	2.6
NOV.											
17...	65	4.6	.08	12	1.1	1.3	.6	37	0	1.6	3.5
DEC.											
18...	9540	--	--	--	--	--	--	16	0	--	.0
19...	1800	--	--	--	--	--	--	18	0	--	1.0
JAN.											
24...	--	3.8	.07	8.5	.6	1.5	1.1	22	--	3.2	3.5
MAR.											
05...	72	3.8	.06	11	.3	1.3	1.0	26	0	4.8	3.0
APR.											
12...	--	3.4	.10	7.5	1.0	1.2	.7	23	--	3.6	3.0
MAY											
17...	539	4.1	.32	8.3	.6	1.2	1.2	21	--	4.0	2.5
JUNE											
25...	34	5.7	.06	14	.3	1.0	.8	36	0	2.8	3.0
JULY											
01...	--	4.8	.06	14	.1	1.4	1.0	39	--	3.2	2.0
AUG.											
06...	--	4.4	.12	10	1.2	1.0	1.7	33	--	3.2	2.0

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN ALABAMA

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DIS- SOLVED SOLIDS (TONS PER DAY)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	COLOR	TEMP- ERATURE (DEG C)
TENNESSEE RIVER BASIN--CONTINUED 03576250 LIMESTONE CREEK NEAR ATHENS, ALA.--CONTINUED											
OCT. 06...	--	--	--	--	38	5	--	83	7.5	--	17
NOV. 17...	1.2	53	9.30	.07	32	2	.1	74	7.2	5	9
DEC. 18...	--	--	--	--	12	0	--	29	6.9	--	13
19...	--	--	--	--	18	3	--	51	6.8	--	14
JAN. 24...	2.8	32	--	.04	24	6	.1	57	7.4	5	7
MAR. 05...	1.9	40	7.79	.05	28	7	.1	63	7.4	5	8
APR. 12...	1.8	37	--	.05	25	6	.1	61	6.9	5	16
MAY 17...	1.4	33	--	.05	23	6	.1	57	6.7	20	19
JUNE 25...	2.8	39	3.61	.05	36	6	.1	79	7.3	5	24
JULY 01...	2.8	63	--	.09	36	4	.1	84	7.1	5	24
AUG. 06...	2.1	53	--	.07	30	3	.1	78	6.7	5	24

DATE	DIS- CHARGE (CF5)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
03576350 PINEY CREEK NEAR REUNION, ALA. (LAT 34 53 23 LONG 086 52 30)									
OCT., 1967 24...	2.8	32	0	2.6	36	10	68	7.1	15

03576390 PINEY CREEK AT ATHENS, ALA. (LAT 34 49 43 LONG 086 53 41)									
OCT., 1967 24...	5.9	34	0	2.4	39	11	74	7.2	13

03576400 PINEY CREEK NEAR ATHENS, ALA. (LAT 34 48 10 LONG 086 53 00)									
OCT., 1967 06...	9.2	34	0	2.8	31	3	66	7.3	17
23...	15	32	0	2.0	36	10	70	7.2	14
NOV. 17...	24	32	0	3.2	28	2	66	7.2	8
DEC. 05...	154	18	0	2.4	18	3	51	6.9	7
18...	4060	14	0	.4	12	1	28	7.0	14
19...	833	24	0	.8	28	8	45	6.5	14
MAR., 1968 05...	25	24	0	3.0	24	4	62	6.9	7
APR. 11...	155	18	0	2.4	21	6	50	7.2	15
MAY 17...	319	18	0	1.6	20	5	49	6.7	18
JUNE 25...	12	30	0	2.2	28	3	65	7.0	24

03576500 FLINT CREEK NEAR FALKVILLE, ALA. (LAT 34 22 23 LONG 086 56 01)									
OCT., 1967 09...	172	54	0	5.2	46	2	121	7.4	14
NOV. 20...	39	74	0	3.4	71	10	157	7.5	8
DEC. 06...	300	52	0	2.8	50	7	115	7.7	11
19...	1450	38	0	1.0	36	5	88	7.1	14
JAN., 1968 25...	124	57	0	3.0	55	8	118	7.6	6
MAR. 06...	41	77	0	3.2	70	7	152	7.5	7
APR. 12...	105	62	0	2.4	64	13	127	7.9	16
MAY, 1968 16...	522	42	0	1.0	45	11	89	6.8	19
JUNE 25...	5.0	100	0	3.6	88	6	184	7.5	23

03576810 ELAM CREEK NEAR WREN, ALA. (LAT 34 24 57 LONG 087 16 10)									
NOV., 1967 08...	3.9	156	0	2.8	128	0	280	7.5	8

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS- CHARGE (CFS)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLO- RIDE (CL)	HARD- NESS (CA,MG)	NIN- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE IDEG C)
TENNESSEE RIVER BASIN--CONTINUED									
03577000 WEST FLINT CREEK NEAR OAKVILLE, ALA. (LAT 34 28 35 LONG 087 08 30)									
DEC., 1967									
06... 193	132	0	3.4	122	14	253	7.7	9	
22... 1330	80	0	1.8	72	6	160	7.5	12	
MAR., 1968									
06... 50	164	0	3.4	130	0	289	8.0	10	
APR.									
12... 160	132	0	3.4	111	3	229	8.2	15	
MAY									
16... 920	84	0	1.8	76	7	152	7.4	19	
03577194 SWAN CREEK NEAR PINEY CHAPEL, ALA. (LAT 34 49 55 LONG 086 57 05)									
OCT., 1967									
24... 1.8	62	0	2.8	58	7	122	7.5	14	
03577202 SWAN CR.(NR. ATHENS) AT US. HWY. 72 CROSSING, ALA. (LAT 34 47 05 LONG 086 56 53)									
OCT., 1967									
24... 3.0	60	0	4.0	58	9	126	7.2	14	
03577220 TOWN CREEK NEAR ATHENS, ALA. (LAT 34 46 58 LONG 086 57 23)									
OCT., 1967									
24... .63	88	0	7.8	82	10	189	7.9	14	
03584545 RAGSDALE CR (NR PETTUSVILLE) AT CO. RD. CROSSING, ALA. (LAT 34 58 33 LONG 086 55 16)									
OCT., 1967									
24... 2.4	66	0	2.8	69	15	130	7.7	16	
FEB., 1968									
27... 4.5	70	0	1.6	69	12	140	8.2	7	
03585225 SULPHUR CREEK NEAR ELKMONT, ALA. (LAT 34 54 36 LONG 086 59 18)									
OCT., 1967									
24... 2.9	122	0	3.4	115	15	237	7.9	16	
03585300 SUGAR CREEK NEAR GOODSPRINGS, ALA. (LAT 34 56 40 LONG 087 09 20)									
OCT., 1967									
06... 64	70	0	.8	61	4	124	7.6	18	
NOV.									
01... 127	70	0	1.8	62	5	134	7.7	13	
DEC.									
05... 408	50	0	1.4	50	9	108	7.1	8	
JAN., 1968									
04... 857	40	0	1.2	39	6	88	7.1	1	
MAR.									
05... 107	56	0	1.0	52	6	108	8.2	8	
APR.									
11... 644	40	0	1.2	41	8	82	7.5	14	
MAY									
13... 354	50	0	1.4	46	5	96	7.0	17	
JUNE									
07... 138	56	0	.6	50	4	103	7.3	21	
JULY									
01... 63	60	0	.2	54	5	110	7.2	24	
SEP.									
20... 81	52	0	.4	48	5	93	6.9	18	
03586500 BIG NANCE CREEK AT COURTLAND, ALA. (LAT 34 40 12 LONG 087 19 02)									
OCT., 1967									
09... 18	174	0	5.8	140	0	314	7.9	16	
NOV.									
08... 64	116	11	5.6	126	13	266	8.5	8	
DEC.									
05... 330	88	0	3.8	82	10	184	7.4	8	
19... 7780	24	0	.4	22	2	54	7.0	15	
JAN., 1968									
23... 232	115	0	3.8	105	11	223	7.9	8	
MAR.									
06... 66	116	0	4.2	115	20	240	7.7	9	
APR.									
10... 574	86	0	3.0	82	11	174	7.1	14	
MAY, 1968									
13... 2100	44	0	1.8	48	12	98	6.9	19	
JUNE									
21... 29	140	0	4.2	120	5	249	7.6	21	
SEP.									
20... 17	62	0	.6	50	0	113	6.9	18	

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN ALABAMA

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	SILICA (SI02)	TOTAL IRON (FE)	CAL- CIUM (CA)	MAG- NE- SIUM (MG)	SODIUM (NA)	PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	SULFATE (SO4)	CHLC- RIDE (CL)
TENNESSEE RIVER BASIN--CONTINUED									
03589500 TENNESSEE RIVER AT FLORENCE, ALA. (LAT 34 47 13 LONG 087 40 12)									
DEC. 09...	3.9	.07	22	3.9	6.7	2.5	66	1.5	13
FEB. 07...	6.0	.05	24	3.2	43	1.6	65	11	8.0
MAR. 28...	3.0	.07	29	2.6	6.2	1.3	81	12	8.0
JULY 01...	3.1	.07	24	3.4	6.2	1.7	67	15	8.0
DATE	NITRATE (NO3)	DIS- SOLVED SOLIDS (RESI- DUE AT 100 C)	DIS- SOLVED SOLIDS (TONS AC-FY)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
DEC. 09...	.9	91	.12	71	17	.3	180	7.5	5 11
FEB. 02...	5.1	109	.15	73	20	2.2	165	7.1	5 8
MAR. 28...	5.9	114	.16	84	19	.3	192	7.2	5 18
JULY 01...	.4	88	.12	73	18	.3	180	7.0	5 27
DATE	DIS- CHARGE (CF5)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	CHLOR- IDE (CL)	HARD- NESS (CA,MG)	NON- CAR- BONATE HARD- NESS	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH	TEMP- ERATURE (DEG C)
03590500 TUSCUMBIA SPRING AT TUSCUMBIA, ALA. (LAT 34 43 45 LONG 087 42 15)									
OCT., 1967 12...	44	191	0	8.2	149	0	371	7.5	16
03592000 BEAR CREEK NEAR RED BAY, ALA. (LAT 34 26 39 LONG 088 06 55)									
OCT., 1967 11...	82	26	0	1.8	22	1	61	6.9	13
NOV. 02...	--	28	0	3.0	25	2	64	7.2	--
JAN., 1968 11...	3460	8	0	.6	9	4	25	6.9	--

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE OF COLLECTION	TIME	WATER DISCHARGE (CFS)	SEDIMENT CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS PER DAY)	DATE OF COLLECTION	TIME	WATER DISCHARGE (CFS)	SEDIMENT CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS PER DAY)
GREAT MIAMI RIVER BASIN									
03275000 WHITEWATER RIVER NEAR ALPINE, IND. (LAT 39 34 23 LONG 085 09 27)									
July 8, 1968	1225	306	18	15	Sept. 4....	1525	209	8	4.5
July 24.....	1915	374	78	79					
03275600 EAST FORK WHITEWATER RIVER AT ABINGTON, IND. (LAT 39 43 57 LONG 084 57 35)									
Oct. 30, 1967	1340	34	4	.37	Apr. 8.....	1440	258	32	22
Dec. 12....	1620	854	86	198	May 1.....	0930	80	10	2.2
Jan. 17, 1968	1520	80	5	1.1	June 17....	1750	320	56	48
Jan. 30.....	1245	3090	752	6270	July 8.....	1025	87	18	4.2
Jan. 31.....	1325	891	182	438	July 25....	1600	536	727	1050
Feb. 21.....	1240	70	8	1.5	Sept. 5.....	1415	78	7	1.5
03276000 EAST FORK WHITEWATER RIVER AT BROOKVILLE, IND. (LAT 39 26 02 LONG 085 00 12)									
Oct. 31, 1967	1440	60	13	2.1	Mar. 29.....	0955	558	86	130
Dec. 14.....	1145	882	85	202	May 2.....	1025	171	12	5.5
Jan. 16, 1968	1600	168	6	2.7	June 20....	1005	306	99	82
Feb. 20.....	1555	194	10	5.2					
BLUE RIVER BASIN									
03303000 BLUE RIVER NEAR WHITE CLOUD, IND. (LAT 38 14 04 LONG 086 13 38)									
July 9, 1968	0848	78	12	2.5					
ANDERSON RIVER BASIN									
03303300 MIDDLE FORK ANDERSON RIVER AT BRISTOW, IND. (LAT 38 08 19 LONG 086 43 16)									
Nov. 13, 1967	1045	20	21	1.1	Apr. 18....	0930	96	26	6.7
Dec. 13.....	0920	69	29	5.4	May 14.....	1205	46	18	2.2
Jan. 22, 1968	1050	83	27	6.1	July 1.....	0915	.45	3	0
Feb. 19.....	1200	41	24	2.7	July 31....	0930	.19	8	0
Mar. 28.....	0930	102	30	8.3	Sept. 11....	1050	.80	5	.01
WABASH RIVER BASIN									
03323000 WABASH RIVER AT BLUFFTON, IND. (LAT 40 44 30 LONG 085 10 19)									
July 11, 1968	1610	43	54	6.2					
Aug. 19.....	1500	331	270	241					
03324300 SALAMONIE RIVER NEAR WARREN, IND. (LAT 40 42 45 LONG 085 27 13)									
Oct. 2, 1967	1005	10	28	.76	Mar. 18....	0945	1330	176	632
Oct. 7.....	1645	15	36	1.5	May 13.....	0915	98	94	25
Oct. 30.....	0955	20	88	4.8	June 10....	0925	78	46	9.7
Nov. 10.....	1610	20	8	.43	July 8.....	1000	48	80	10
Nov. 27.....	1040	32	42	3.6	July 15....	1000	175	128	60
Dec. 9.....	1415	405	10	11	Aug. 19....	0920	311	226	190
Feb. 8, 1968	0700	396	50	53					
03328500 EEL RIVER NEAR LOGANSPOUT, IND. (LAT 40 46 55 LONG 086 15 50)									
July 10, 1968	1725	442	40	48					
03331500 TIPPECANOE RIVER NEAR ORA, IND. (LAT 41 09 26 LONG 086 33 49)									
July 10, 1968	1520	1190	42	135					
July 11.....	1500	1130	58	177					
03335000 WILDCAT CREEK NEAR LAFAYETTE, IND. (LAT 40 26 26 LONG 086 49 46)									
July 10, 1968	0745	178	29	14					
Aug. 23.....	1240	200	66	36					
03335500 WABASH RIVER AT LAFAYETTE, IND. (LAT 40 25 19 LONG 086 53 49)									
Oct. 4, 1967	1125	1190	36	116	Mar. 25....	1125	9280	29	727
Nov. 14.....	0820	1840	56	278	June 12....	1300	3400	113	1040
Feb. 2, 1968	1430	58100	148	23200					
03340000 SUGAR CREEK NEAR BYRON, IND. (LAT 39 55 52 LONG 087 07 33)									
July 9, 1968	1755	148	38	15					
03347000 WHITE RIVER AT MUNCIE, IND. (LAT 40 12 15 LONG 085 23 14)									
Jan. 5, 1968	1540	64	70	12	May 18....	0805	172	56	26
Feb. 5.....	1500	526	14	20	June 13....	1110	118	48	15
Feb. 28.....	1400	82	6	1.3	July 10....	0815	37	17	1.7
Mar. 20.....	1035	225	46	28	Aug. 21....	1300	113	49	15
03348500 WHITE RIVER NEAR NOBLESVILLE, IND. (LAT 40 07 46 LONG 085 57 46)									
July 11, 1968	1005	256	36	25					

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE OF COLLECTION	TIME	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS PER DAY)	DATE OF COLLECTION	TIME	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS PER DAY)
WABASH RIVER BASIN--Continued									
03351500 FALL CREEK NEAR FORTVILLE, IND. (LAT 39 57 15 LONG 085 52 05)									
Oct. 31, 1967	1400	38	32	3.3	Feb. 28....	0945	96	66	17
Nov. 30.....	1430	43	14	1.6	Mar. 28....	1520	261	58	41
Jan. 2, 1968	1045	113	11	3.4	Apr. 29....	1530	97	68	18
Jan. 31.....	1120	1780	117	562					
03354000 WHITE RIVER NEAR CENTERTON, IND. (LAT 39 30 02 LONG 086 24 24)									
Oct. 2, 1967	1100	288	13	10	Apr. 1.....	1340	4730	518	6620
Nov. 1.....	1030	508	14	19	May 1.....	1040	1100	34	101
Dec. 27.....	1030	4080	102	1120	May 31.....	0910	6960	143	2690
Feb. 1, 1968	1218	15100	132	5380	July 1.....	1300	1630	74	326
Mar. 1.....	0935	905	24	59					
03361500 BIG BLUE RIVER AT SHELBYVILLE, IND. (LAT 39 31 45 LONG 085 46 55)									
July 8, 1968	1530	156	14	5.9					
Aug. 22.....	1022	216	76	44					
03362500 SUGAR CREEK NEAR EDINBURG, IND. (LAT 39 21 39 LONG 085 59 51)									
July 8, 1968	1740	118	61	19					
Aug. 27.....	1130	128	82	28					
03366500 MUSCATATUCK RIVER NEAR DEPUTY, IND. (LAT 38 48 15 LONG 085 40 26)									
July 8, 1968	2030	5.8	14	.22	Sept. 4....	1050	7.8	20	.42
July 29.....	1205	115	94	29					
03368000 BRUSH CREEK NEAR NEBRASKA, IND. (LAT 39 04 13 LONG 085 29 10)									
Nov. 13, 1967	1210	.27	34	.02	Mar. 25....	1700	164	150	66
Dec. 11.....	1155	14	35	1.3	May 7.....	1705	.82	24	.05
Jan. 16, 1968	1250	.82	19	.04	July 19....	0915	.57	28	.04
Feb. 19.....	1330	.92	38	.09					
03376500 PATOKA RIVER NEAR PRINCETON, IND. (LAT 38 23 30 LONG 087 32 55)									
Oct. 12, 1967	1350	23	5	.31	Mar. 25....	1345	2480	69	462
Nov. 15.....	1220	450	115	140	Apr. 18....	1345	2880	42	327
Dec. 14.....	1015	2280	86	529	May 20.....	1230	493	172	229
Jan. 29, 1968	1100	1410	49	187	June 27....	0940	158	10	4.3
Feb. 6.....	1515	3150	132	1120					

RECORDS AVAILABLE FOR WATER TEMPERATURES

Unpublished records of water temperature have been collected for several years on 14 streams in the Ohio River basin in Kentucky. Water temperatures were measured one day each week, once or twice a day. These records are available in files of the District Office of the U.S. Geological Survey, Water Resources Division, Louisville, Ky.

Stations in the Ohio River basin for which water-temperature records are available

Station number	Station name	Drainage area (sq mi)	Records available (water years)
LITTLE SANDY RIVER BASIN			
03216500	Little Sandy River at Grayson, Ky.....	400	1950-68
KENTUCKY RIVER BASIN			
03280000	North Fork Kentucky River at Jackson, Ky.....	1101	1949-68
03281000	Middle Fork Kentucky River at Tallega, Ky.....	537	1949-68
03281500	South Fork Kentucky River at Booneville, Ky.....	722	1949-68
03284500	Kentucky River at lock 8, near Camp Nelson, Ky.....	4528	1949-62; 1965-68
03285000	Dix River near Danville, Ky.....	318	1949-68
SALT RIVER BASIN			
03298500	Salt River at Shepherdsville, Ky.....	1197	1949-52; 1963-68
CUMBERLAND RIVER BASIN			
03401000	Cumberland River near Harlan, Ky.....	374	1950-68
03402000	Yellow Creek near Middlesboro, Ky.....	58.2	1949-68
03404500	Cumberland River at Cumberland Falls, Ky.....	1977	1949-68
03405000	Laurel River at Corbin, Ky.....	201	1950-68
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