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Water Resources Data North Dakota Water Year 1981

Volume 1. Hudson Bay Basin

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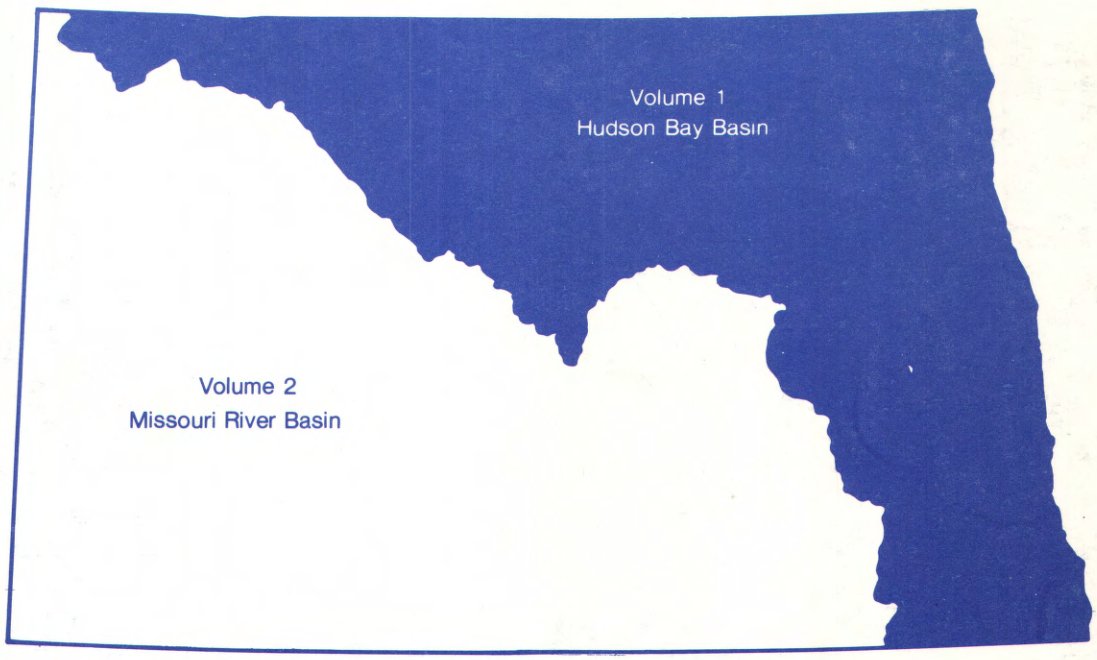

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-81-1
Prepared in cooperation with the State of North Dakota
and with other agencies

CALENDAR FOR WATER YEAR 1981

1980

OCTOBER

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1981

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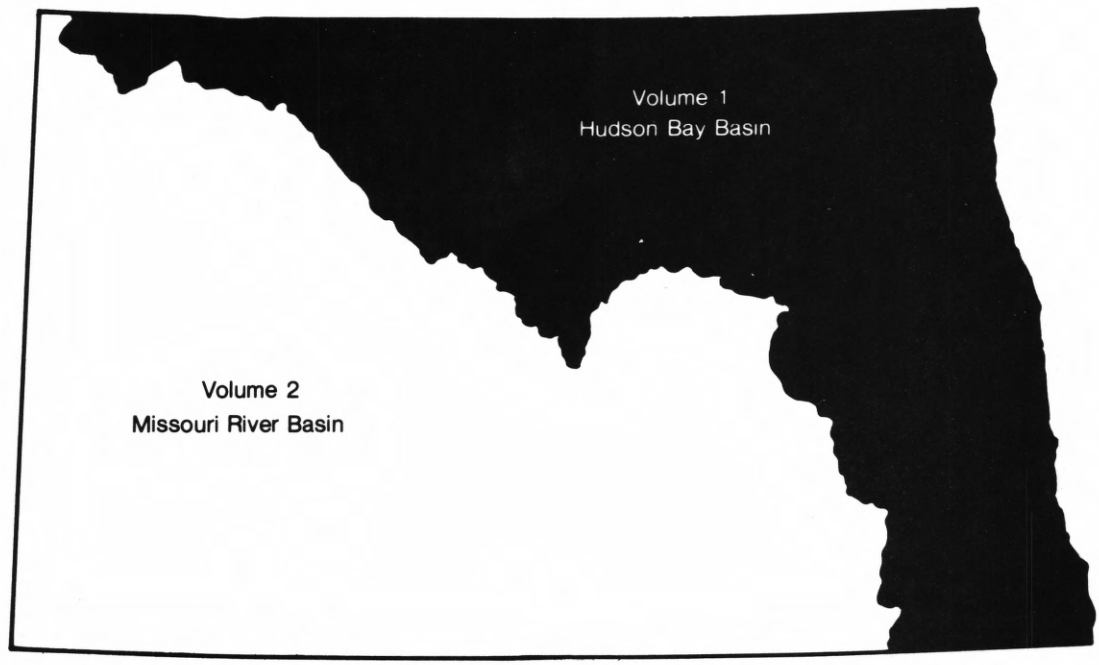
Water Resources Data North Dakota Water Year 1981

Volume 1. Hudson Bay Basin



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-81-1
Prepared in cooperation with the State of North Dakota
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in North Dakota write to
District Chief, Water Resources Division
U.S. Geological Survey
821 East Interstate Avenue
Bismarck, North Dakota 58501-1199

1982

PREFACE

This report was prepared by personnel of the North Dakota District of the Water Resources Division of the U.S. Geological Survey under the supervision of L. Grady Moore, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region. It was done in cooperation with the State of North Dakota and with other agencies.

This report is one of a series issued by State. General direction for the series is by Philip Cohen, Chief Hydrologist, U.S. Geological Survey, and Robert J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for North Dakota area in two volumes as follows:

Volume 1. Hudson Bay Basin

Volume 2. Missouri River Basin

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Water resources data for the 1981 water year for North Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. Volume 1 of this report contains 67 gaging stations; stage only records for 6 gaging stations; stage and contents for 4 lakes and reservoirs; water quality for 24 gaging stations; 10 partial-record stations, 14 lakes, 26 wells, and water levels for 19 observation wells. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in North Dakota.

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GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letter after station name designates type of data:
(d) discharge, (c) chemical, (b) biological,
(m) microbiological, (t) water temperature, (s) sediment]

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WATER RESOURCES DATA FOR NORTH DAKOTA, 1981

Volume 1: Hudson Bay Basin

INTRODUCTION

Water-resources data for the 1981 water year for North Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains discharge records for 67 gaging stations; stage only records for 6 gaging stations; stage and contents for 4 lakes and reservoirs; water quality for 24 gaging stations, 10 partial record stations, 14 lakes, 26 wells, and water levels for 19 observation wells. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements and analyses. These data together with the data in Volume 2 represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, local and Federal agencies in North Dakota.

Records of discharge and stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Arlington, VA 22304.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report ND-81-1". These water-data reports are for sale, in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (701) 255-4011, ext. 601.

COOPERATION

The U.S. Geological Survey and organizations of the State of North Dakota have had cooperative agreements for the systematic collection of streamflow records since 1903, for ground-water levels since 1937, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

North Dakota State Water Commission, Vernon Fahy, Chief Engineer

North Dakota State Health Department, M. A. K. Lommen, M.D., State Health Officer

Oliver County Board of Commissioners, John Weber, Chairman

Assistance in the form of funds or services was given by other Federal agencies:

Corps of Engineers, U.S. Army
International Joint Commission, U.S. Department of State
Bureau of Land Management, U.S. Department of the Interior
Fish and Wildlife Service, U.S. Department of the Interior
Surveillance and Analysis Division, U.S. Environmental Protection Agency
Soil Conservation Service, U.S. Department of Agriculture
Bureau of Reclamation, U.S. Department of the Interior
Other Federal agencies of the U.S. Department of Interior for the development of the Missouri River basin.

Certain stations are maintained under agreement with Canada and the records are obtained and compiled in a manner equally acceptable in both countries. Most of these stations are designated as "International gaging stations."

Some records have been collected and computed by contractors in accordance with U.S. Geological Survey specifications and under Geological Survey quality control.

ACKNOWLEDGMENT

North Dakota district personnel who contributed significantly to the collection and/or preparation of water-resources data for publication in this report were:

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HYDROLOGIC CONDITIONS

Streamflows were less than normal throughout the North Dakota part of the Red River of the North basin at the beginning of the water year. This condition was due to less than normal precipitation. Dry weather continued into the winter months, and streamflow remained less than normal into the period of winter ice cover. Warm weather in mid-February was sufficient to melt the snow on the ground, except in sheltered areas. However, the thaw was not rapid and did not result in peak discharges of significance on any streams in the basin. During the remainder of the winter, there were only minor accumulations of snow in the basin.

Figure 3 compares the monthly mean discharges for the 1981 water year with the median monthly discharges for the 1951-80 water years for the Red River of the North at Grand Forks, North Dakota index station. This figure illustrates the difference between the normal April snowmelt runoff and the runoff for April 1981. The bar graph shows that July rather than April had the highest monthly mean discharge for the water year.

The dry conditions throughout the basin prevailed until summer thunderstorms resulted in above normal precipitation for the month of July in the headwaters of the Red River of the North. Additional rainfall in early August, especially in the northeast part of the State, caused streamflow to be greater than normal for the first time during the year.

The maximum discharge for the water year at the Grand Forks index station was 6,710 ft^3/s (190 m^3/s) on July 1. During the one-hundred year period of record at this site, only seven annual peaks occurred on a later date and eighty peaks had a greater discharge.

As shown in figure 3, the mean discharge of the Red River of the North at Grand Forks, North Dakota, although slightly greater than normal for August and September, the annual mean discharge was less than half the median discharge for the 1951-80 reference period. Annual mean flows were significantly less than normal at nearly all gaging stations in the basin.

Storage in the lakes and reservoirs in the basin generally was less at the end of the water year than at the beginning. Releases from regulated storage were less than normal because the probability for large snowmelt inflow was minimal. In some instances, this resulted in year-end storage being greater than at the beginning of the year.

Devils Lake, a large saline lake with no natural outlet, did not have a significant change in water level during the year. The lake has been increasing in level since about 1940 and reached a maximum for this century during the 1979 water year. The 1981 maximum level was about one foot lower than the 1979 peak.

Most small lakes and prairie potholes in the basin were observed to have lower water levels than they have had for several years. In fact, many of the smaller prairie potholes dried up completely.

Shallow ground-water levels in the basin generally were below normal throughout the year. Monthly water levels are compared with mean monthly water levels for the period of record (1963-80 water years) at a representative ground-water well in the Sheyenne Delta aquifer, Richland County (fig. 4). Measured monthly water levels at the index well were not higher than its mean monthly water levels for the period of record. However, figure 4 shows the water level had recovered to almost normal in July. This recovery was probably due to increased precipitation or the combination of increased precipitation and reduced irrigation pumpage.

DEFINITION OF TERMS

Terms related to streamflow, water quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting inch-pound units to International System Units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

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

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

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

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

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

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

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

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

Dry mass refers to the weight of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Wet mass is the mass of living matter plus contained water.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

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

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

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate incubation membrane filter method.

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

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

Continuing-record station is a specified site which meets one or more conditions as listed:

1. When gage-height record for a river or canal is recorded or collected by an observer on a regular basis during periods of flow. Daily discharge and/or gage-height record may be published.
2. When ground-water level below land-surface datum is recorded or measured 10 or more months during the water year.
3. When chemical samples are collected daily or monthly for 10 or more months during the water year.
4. When water temperature records include observations taken once or more times daily.
5. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Instantaneous discharge is the discharge at a particular instant of time.

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

Dissolved refers to the amount of substance present in the true chemical solution. In practice, however, the term includes all forms of substance that will pass through a 0.45 micrometer membrane filter, and thus may include some very small (colloidal) suspended particles. Analyses for "dissolved" constituents are performed on subsamples of the filtrate.

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

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

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

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

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

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

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

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

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

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

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

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

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

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

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

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

Total organism count is the total number of organisms collected and enumerated in any particular sample.

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

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

Particle-size distributions used in this report are based on recommended classifications made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classifications are as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

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

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

Percent saturation is a comparison of the actual oxygen content of water to the saturation content of oxygen, expressed in terms of percent.

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

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

pH indicates the degree of acidity or alkalinity of water and is expressed in terms of pH units. The pH value of a solution is the negative logarithm of the concentration of hydrogen ions, in moles per liter. 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.

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

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

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

Chlorophyta (green algae) have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats of floating "moss" in lakes.

Chrysophyta (yellow-green algae, yellow-brown algae, and diatoms) have pigments in which yellow-green to golden-brown are predominate. The cell wall of these organisms, especially diatoms, often consists of two overlapping halves which are highly silicified.

Cryptophyta (cryptomonads) have pigments that are usually brown but also occur as red, blue or grass green. The cells are motile with two flagella and occur in freshwaters sometimes rich in organic and in nitrogenous materials.

Cyanophyta (blue-green algae) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Euglenophyta (euglenoids) are motile cells usually with one flagella and have a dominant grass-green pigment. They often occur in small pools rich in organic matter and are frequently present in sufficient amounts to color the water or the damp mud along river banks.

Pyrrhophyta (fire algae) have greenish tan to golden brown pigments. The cells are motile usually with two flagella. The freshwater forms are most abundant in pools, ditches, and small lakes with considerable vegetation.

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

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

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

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bedload is that sediment carried by a river in rolling and saltation on or near the streambed.

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

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

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

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

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. 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.

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

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage is the height of a water surface above an established datum plane; also gage height.

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

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

Substrate is the physical surface upon which an organism lived.

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

Natural substrate refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total constituents" are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

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

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

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

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

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

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

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and includes 9 of the 12 months of that calendar year plus the last 3 months of the previous calendar year. Thus, the year ending September 30, 1981, is called the "1981 water year."

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharge. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

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

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 05051700, which appears just to the left of the station name, includes the 2-digit part number "05" plus the 6-digit downstream order number "051700".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude; the next 7 digits denote degrees, minutes, and seconds of longitude; and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1.

In order to compare data for wells in other publications, such as the county ground-water studies, the wells in this report are also numbered according to a system based on the location in the public land classification of the U.S. Bureau of Land Management. The system is illustrated in figure 2. The first numeral denotes the township north of a base line, the second numeral denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the well is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre or 4-hectare tract). For example, well 139-049-15ADC is in the SW¼SE¼NE¼ sec. 15, T. 139 N., R. 049 W. Consecutive terminal numerals are added if more than one well is recorded within a 10-acre tract.

SPECIAL NETWORKS AND PROGRAMS

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 man-made changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data-collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

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

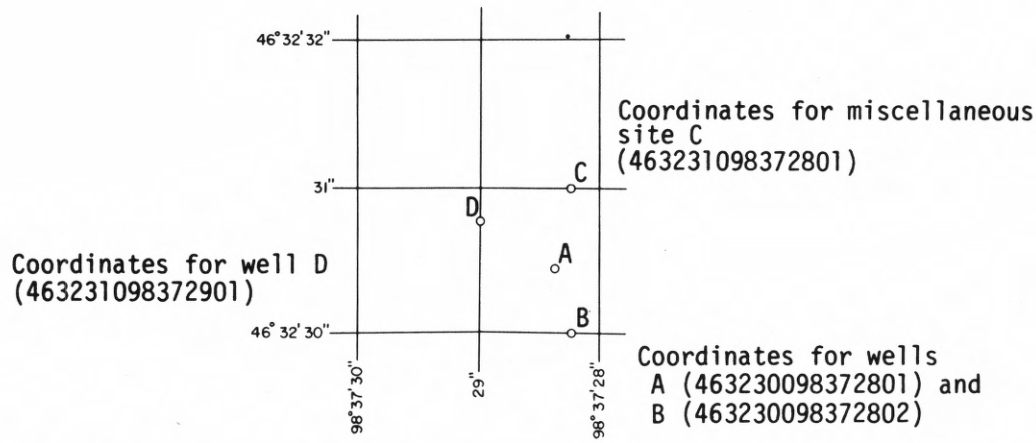

FIGURE 1--System for numbering wells and miscellaneous sites (latitude and longitude)

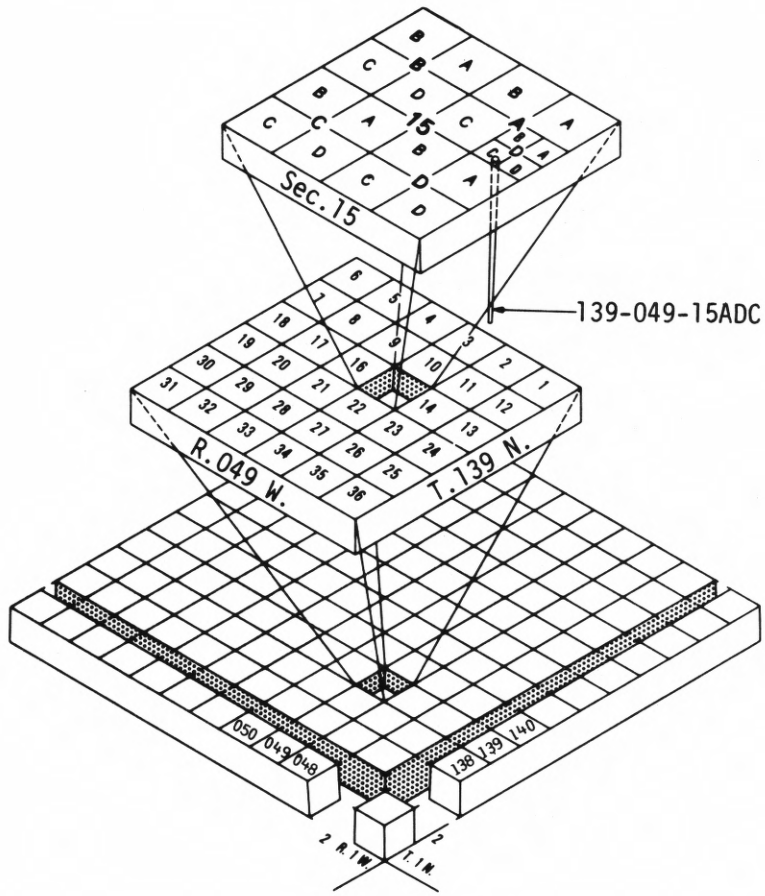

FIGURE 2--System for numbering wells and miscellaneous sites (township and range)

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and hydrographic comparison with other stations in the same or nearby basins.

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

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

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

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams, a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs, a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1981 stands for the water year October 1, 1980, to September 30, 1981. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS."

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations, information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stations that have 10 or more complete years of record, if the median differs from the average by more than 10 percent.

Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skelton rating tables are published, immediately following "EXTREMES," for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations and the second is a table of both low flow and high-flow measurements. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

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

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

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

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

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22092, maintains an index of all discharge measurement sites in the State. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

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

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

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

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

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

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

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

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

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

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

Parameter codes

In most of the column headings of this report the names of the constituents or properties for which data are given are followed by five-digit codes which appear in parentheses. These codes, called parameter codes, are identical to those introduced or approved by the U.S. Environmental Protection Agency and are widely used by Federal and State agencies. The codes indicate, to one having a key, more precisely than the verbal column headings can the constituents or properties being reported. Data listed under a given code in this report should be comparable to those listed under the same code by other agencies.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figures 1 and 2.

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

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). NGVD of 1929 is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface of each well. If known, the altitude of the land-surface datum in NGVD of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

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

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents,* by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction,* by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
4-D1. *Computation of rate and volume of stream depletion by wells,* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
5-A2. *Determination of minor elements in water by emission spectroscopy,* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
5-A3. *Methods for analysis of organic substances in water,* by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
8-A1. *Methods of measuring water levels in deep wells,* by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

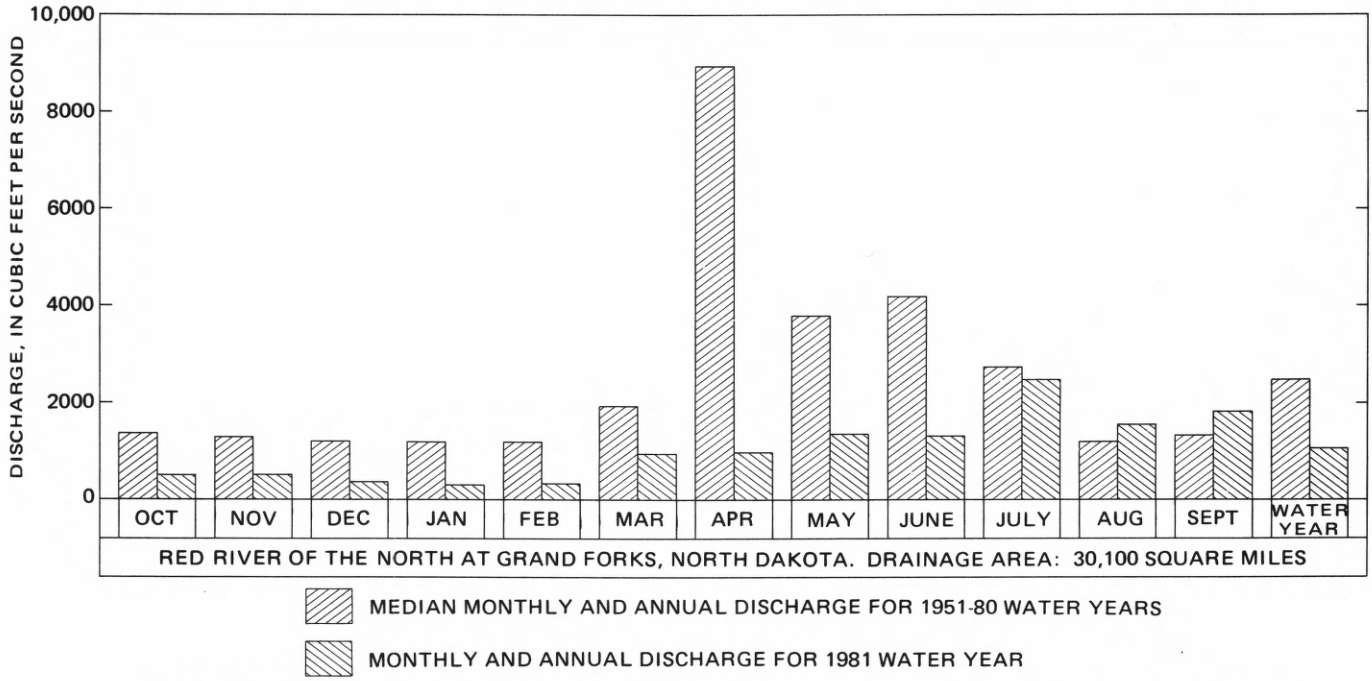

FIGURE 3.–Discharge during 1981 water year compared with median discharge for 1951-80 water years for a representative gaging station.

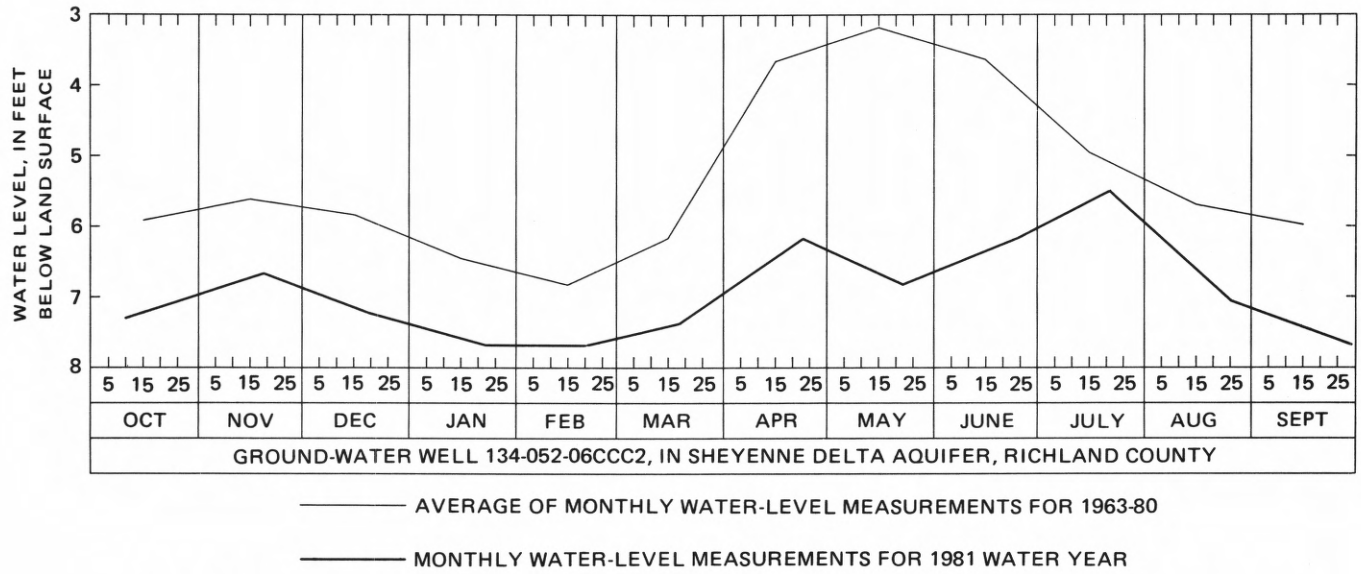

FIGURE 4.–Monthly ground-water levels during 1981 water year compared with mean of monthly water-level measurements for 1963-80 water years for a representative ground-water well.

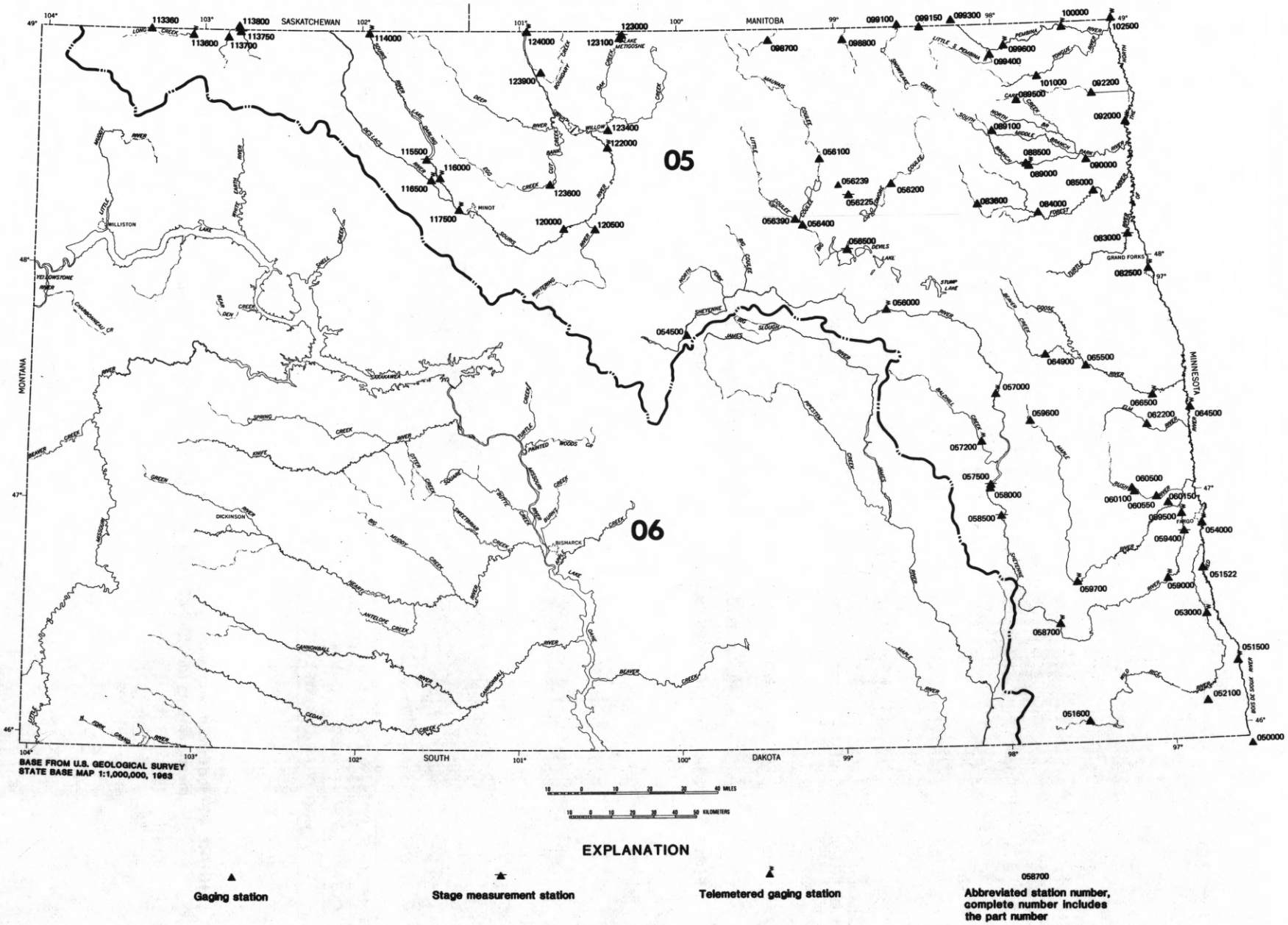

FIGURE 5--Locations of lake, crest-stage and stream-gaging stations.

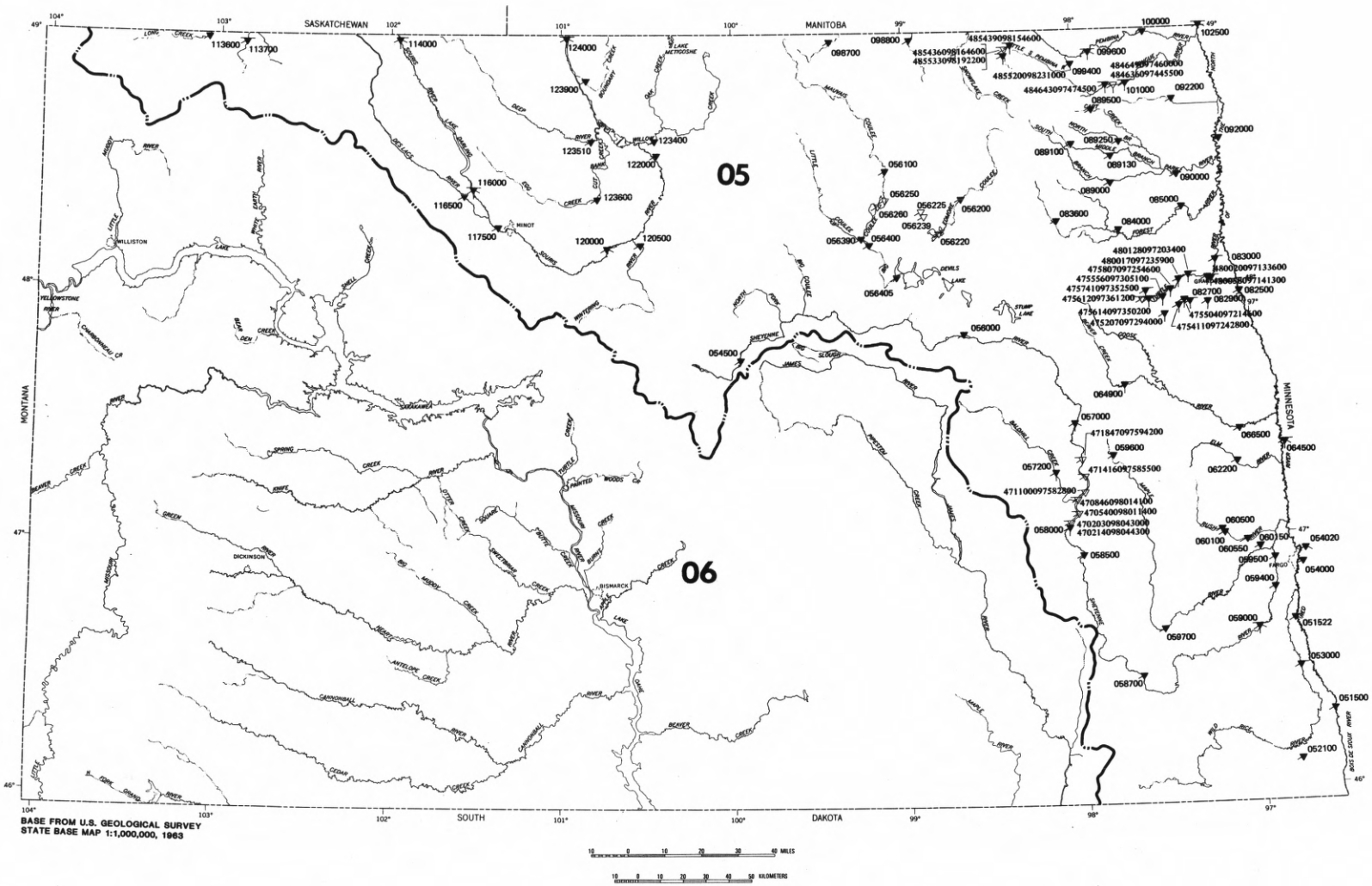

FIGURE 6--Locations of water-quality stations.

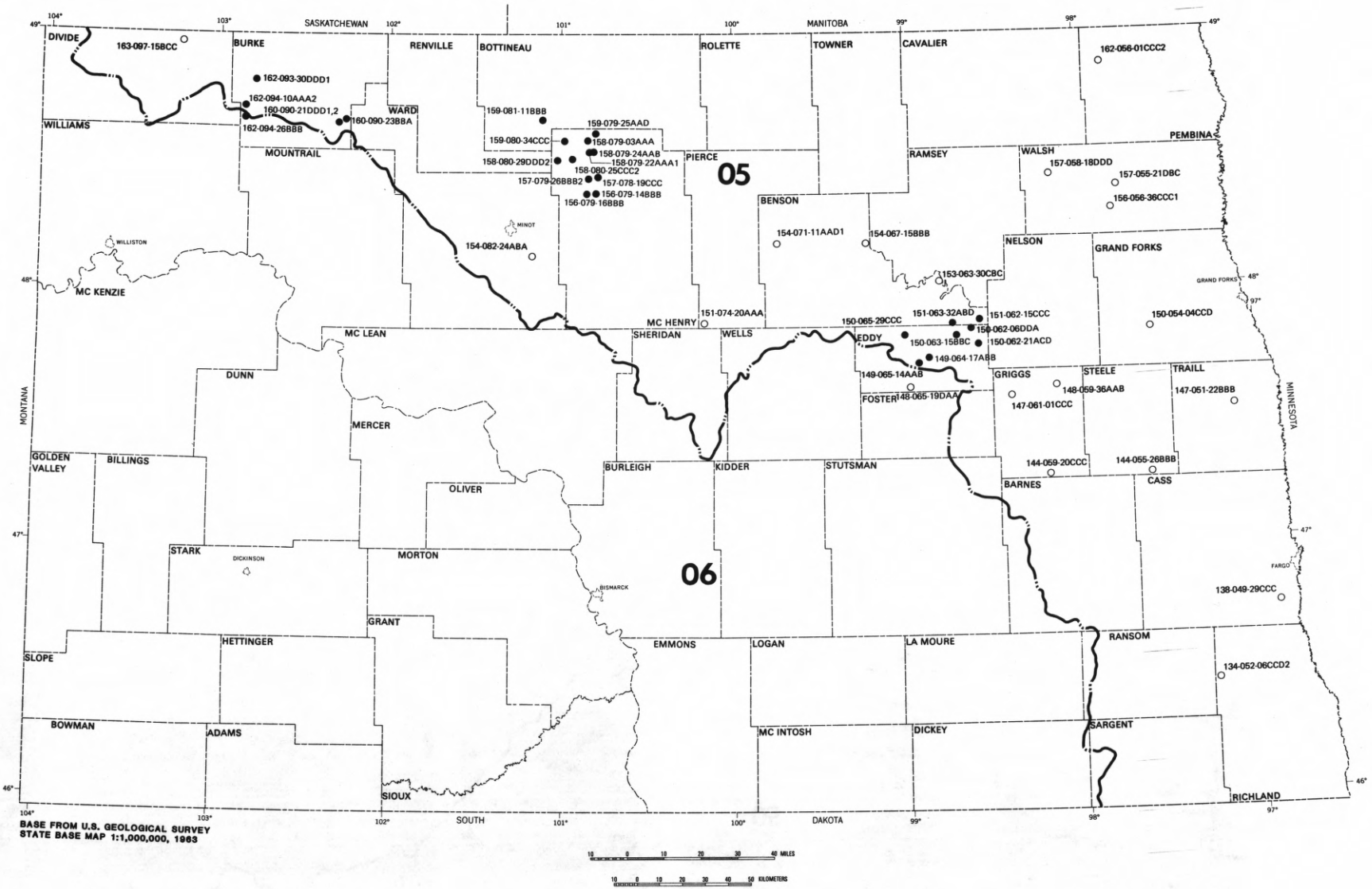

FIGURE 7--Locations of ground-water observation wells.

05050000 BOIS DE SIOUX RIVER NEAR WHITE ROCK, SD

LOCATION.--Lat 45°51'45", long 96°34'25", in SW¼SW¼ sec.27, T.128 N., R.47 W., Roberts County, Hydrologic Unit 09020101, on Sisseton Indian Reservation, on left bank just downstream from Big Slough Outlet, 300 ft (91 m) downstream from White Rock Dam, 4 mi (6 km) south of White Rock, and 5 mi (8 km) northwest of Wheaton, MN.

DRAINAGE AREA.--1,160 mi^2 (3,000 km^2), approximately.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft (292.608 m), adjustment of 1912 (levels by Corps of Engineers). Prior to Jan. 14, 1943, nonrecording gage at same site at datum 0.11 ft (0.034 m) lower. Jan. 15, 1943, to Sept. 30, 1963, water-stage recorder at same site at datum 0.11 ft (0.034 m) lower.

REMARKS.--Records fair. Flow regulated by Lake Traverse-Bois de Sioux Flood Control and Water Conservation project, available capacity for flood control, 137,000 acre-ft (169 hm^3).

AVERAGE DISCHARGE.--40 years, 78.1 ft^3/s (2.212 m^3/s), 56,580 acre-ft/yr (69.8 hm^3/yr); median of yearly mean discharges, 52 ft^3/s (1.47 m^3/s), 37,700 acre-ft/yr (46 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft^3/s (107 m^3/s), occurred during period Apr. 19-21, 1969, gage height, 15.07 ft (4.593 m), from floodmark; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27 ft^3/s (0.76 m^3/s) July 19, gage height, 4.16 ft (1.268 m); maximum gage height, 4.28 ft (1.305 m) May 9; no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	.42	.21	.00	.00	.29	2.8	1.8	2.4	10	.55	.00
2	7.9	.33	.19	.00	.00	.25	3.4	.85	2.4	9.1	.50	.00
3	2.6	.50	.17	.00	.00	.23	4.0	1.6	2.1	9.1	.42	.00
4	1.1	.45	.21	.00	.00	.21	3.4	2.4	2.4	8.7	.33	.00
5	.65	.38	.19	.00	.00	.19	1.8	2.0	2.8	8.7	.27	.02
6	.60	.42	.19	.00	.00	.19	.96	1.3	1.9	8.7	.23	.00
7	.70	.45	.19	.00	.00	.19	1.9	1.1	1.6	5.2	.15	.00
8	.75	.35	.19	.00	.00	.19	2.0	1.2	1.5	3.6	.09	.02
9	.82	.45	.19	.00	.00	.19	1.8	2.6	1.9	2.8	.03	.00
10	1.0	.33	.17	.00	.00	.21	2.6	1.5	1.9	2.2	.00	.00
11	.85	.21	.17	.00	.00	.21	2.5	1.1	1.5	2.2	.00	.00
12	.75	.33	.17	.00	.00	.23	1.9	1.0	1.3	4.9	.00	.00
13	.68	.45	.15	.00	.00	.25	4.0	1.1	3.0	9.6	.00	.00
14	.70	.31	.17	.00	.00	.27	2.6	1.1	12	18	.00	.00
15	.65	.25	.15	.00	.00	.31	1.3	1.1	15	21	.00	.00
16	.62	.25	.15	.00	.02	.33	1.3	1.2	18	20	.00	.00
17	.35	.25	.17	.00	.03	.35	1.3	1.3	20	21	.00	.00
18	.62	.27	.15	.00	.14	.35	1.0	1.2	21	22	.00	.00
19	.52	.27	.15	.00	.42	.35	1.6	1.2	18	24	.00	.00
20	.55	.37	.08	.00	.62	.35	.85	1.1	16	21	.00	.00
21	.50	.31	.00	.00	.60	.35	.58	.75	16	5.2	.02	.00
22	.52	.29	.00	.00	.52	.35	1.3	.62	18	1.8	.03	.00
23	.62	.31	.00	.00	.48	.33	2.5	.82	19	1.2	.12	.00
24	.65	.33	.00	.00	.42	.33	1.3	1.0	19	1.4	.09	.00
25	.72	.31	.00	.00	.38	.42	1.0	1.2	19	2.4	.08	.00
26	.58	.27	.00	.00	.35	.50	1.3	1.3	17	2.2	.04	.00
27	.52	.25	.00	.00	.35	.31	2.1	1.4	14	1.4	.02	.00
28	.50	.25	.00	.00	.31	.48	2.1	2.2	14	1.0	.00	.00
29	.42	.23	.00	.00	---	.85	2.0	2.6	14	.78	.00	.00
30	.55	.23	.00	.00	---	1.1	2.5	3.0	12	.65	.00	.00
31	.52	---	.00	.00	---	1.9	---	2.5	---	.60	.00	---
TOTAL	38.51	9.82	3.41	.00	4.64	12.06	59.69	45.14	308.7	250.43	2.97	.04
MEAN	1.24	.33	.11	.000	.17	.39	1.99	1.46	10.3	8.08	.096	.001
MAX	10	.50	.21	.00	.62	1.9	4.0	3.0	21	24	.55	.02
MIN	.35	.21	.00	.00	.00	.19	.58	.62	1.3	.60	.00	.00
AC-FT	76	19	6.8	.00	9.2	24	118	90	612	497	5.9	.08

CAL YR 1980 TOTAL 5799.45 MEAN 15.8 MAX 165 MIN .00 AC-FT 11500
WTR YR 1981 TOTAL 735.41 MEAN 2.01 MAX 24 MIN .00 AC-FT 1460

05051500 RED RIVER OF THE NORTH AT WAHPETON, ND

LOCATION.--Lat 46°15'55", long 96°35'40", in NE¼ sec.8, T.132 N., R.47 W., Richland County, Hydrologic Unit 09020104, on left bank in Wahpeton, 800 ft (240 m) downstream from confluence of Bois de Sioux and Otter Tail Rivers, and at mile 548.6 (882.7 km).

DRAINAGE AREA.--4,010 mi^2 (10,390 km^2), approximately.

PERIOD OF RECORD.--April 1942 to current year. Gage-height records collected in this vicinity since 1917 are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete and wooden dam. Datum of gage is 942.97 ft (287.417 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1943, U.S. Weather Bureau nonrecording gage 800 ft (240 m) upstream, converted to present datum. Aug. 6, 1943, to Oct. 27, 1950, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm^3) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm^3), available for flood control; numerous other controlled lakes and ponds, and several powerplants.

AVERAGE DISCHARGE.--38 years (1943-81), 525 ft^3/s (14.87 m^3/s), 380,400 acre-ft/yr (469 hm^3/yr); median of yearly mean discharges, 483 ft^3/s (13.7 m^3/s), 350,000 acre-ft/yr (432 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft^3/s (261 m^3/s) Apr. 10, 1969, gage height, 16.34 ft (4.980 m); minimum daily, 1.7 ft^3/s (0.048 m^3/s) Aug. 28 to Sept. 5, 9, 10, 1976; minimum observed gage height, 0.63 ft (0.192 m) Aug. 29, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 17.0 ft (5.182 m), discharge, 10,500 ft^3/s (297 m^3/s) occurred in the spring of 1897 and has not been exceeded since.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 512 ft^3/s (14.5 m^3/s) Aug. 2, gage height, 4.54 ft (1.384 m); minimum daily, 35 ft^3/s (0.99 m^3/s) Oct. 2, Sept. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	86	75	125	95	205	251	241	149	265	445	59
2	35	86	53	115	90	210	237	233	153	238	493	47
3	37	84	101	105	110	205	232	229	159	228	462	42
4	40	84	131	105	130	205	232	232	156	202	405	35
5	42	83	118	100	125	205	232	222	150	187	401	36
6	44	101	113	100	120	205	227	198	152	172	405	44
7	45	119	103	100	115	205	224	190	160	160	385	54
8	45	125	83	100	115	205	226	186	166	151	360	54
9	45	125	94	95	120	205	218	181	170	152	344	54
10	55	127	92	90	135	205	197	185	167	148	329	54
11	57	125	99	85	140	205	194	192	164	159	276	56
12	60	123	130	85	140	210	197	190	164	164	194	54
13	60	125	135	95	145	250	202	190	180	153	182	50
14	59	125	125	95	150	290	208	187	227	193	176	50
15	59	117	125	95	150	290	202	187	417	179	174	52
16	72	125	125	90	150	275	192	187	408	178	172	53
17	73	125	125	95	150	260	192	186	313	167	167	53
18	68	117	110	95	150	240	202	186	246	156	160	53
19	68	133	69	95	150	210	205	165	223	156	142	53
20	66	140	105	105	154	224	205	140	204	149	133	52
21	104	119	115	115	220	240	194	150	208	162	131	53
22	96	138	115	116	215	232	192	270	195	184	129	53
23	76	136	115	120	210	232	197	175	190	200	133	54
24	70	99	105	120	205	229	205	150	207	250	146	55
25	74	81	100	120	200	218	199	150	238	251	144	56
26	88	90	115	120	200	208	194	153	259	233	108	57
27	89	100	115	115	200	221	202	153	232	216	94	54
28	89	105	120	110	200	218	208	153	192	195	89	57
29	89	110	120	105	---	245	234	148	174	169	84	58
30	86	120	120	100	---	248	238	146	222	153	68	59
31	88	---	125	100	---	237	---	147	---	221	62	---
TOTAL	2015	3373	3376	3211	4284	7037	6338	5702	6245	5791	6993	1561
MEAN	65.0	112	109	104	153	227	211	184	208	187	226	52.0
MAX	104	140	135	125	220	290	251	270	417	265	493	59
MIN	35	81	53	85	90	205	192	140	149	148	62	35
AC-FT	4000	6690	6700	6370	8500	13960	12570	11310	12390	11490	13870	3100

CAL YR 1980 TOTAL 128357 MEAN 351 MAX 2960 MIN 27 AC-FT 254600
WTR YR 1981 TOTAL 55926 MEAN 153 MAX 493 MIN 35 AC-FT 110900

05051522 RED RIVER OF THE NORTH AT HICKSON, ND

LOCATION.--Lat 46°39'35", long 96°47'44", in SW¼ sec.19, T.137 N., R.48 W., Clay County, MN, Hydrologic Unit 09020104, on right bank 60 ft (18 m) downstream from bridge on township road, and 1 mi (2 km) southeast of Hickson, ND.

DRAINAGE AREA.--4,300 mi^2 (11,100 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 877.06 ft (267.3 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm^3) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm^3), available for flood control; numerous other controlled lakes and ponds; and several powerplants.

AVERAGE DISCHARGE.--6 years, 485 ft^3/s (13.74 m^3/s), 351,400 acre-ft/yr (433 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,600 ft^3/s (272 m^3/s) Apr. 18, 1979, gage height, 33.03 ft (10.068 m); no flow Oct. 26, 1976 to Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 544 ft^3/s (15.4 m^3/s) Aug. 4, gage height, 10.41 ft (3.173 m), from graph based on gage readings; minimum daily, 30 ft^3/s (0.85 m^3/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	80	110	125	105	205	292	223	168	195	192	92
2	30	83	75	125	95	205	284	240	172	236	356	81
3	32	83	60	115	110	205	279	258	171	278	512	67
4	34	83	74	105	110	205	270	258	173	265	540	56
5	37	80	80	100	110	210	256	250	178	246	520	48
6	38	77	115	100	125	210	256	253	179	220	468	44
7	40	83	132	100	130	205	257	244	172	204	456	47
8	46	92	124	100	120	205	253	222	170	179	448	51
9	52	108	110	100	120	205	252	201	172	163	428	57
10	50	122	80	95	120	205	252	198	180	152	400	58
11	50	122	75	95	135	205	236	192	186	153	380	56
12	52	129	90	95	135	210	220	198	181	159	364	55
13	69	127	100	95	140	205	216	202	182	162	300	51
14	89	126	110	95	145	205	216	200	189	213	236	50
15	98	126	125	95	150	240	220	196	201	208	208	50
16	95	126	125	95	150	280	228	194	286	216	192	52
17	92	126	136	95	155	290	216	193	425	204	188	52
18	83	111	125	90	160	290	212	192	402	194	184	52
19	80	105	110	95	160	270	204	187	335	179	180	52
20	66	115	105	100	160	260	208	184	283	167	168	54
21	61	140	85	105	170	250	208	172	263	162	156	54
22	56	130	80	115	190	260	212	155	242	153	144	54
23	89	135	115	115	205	300	204	173	240	163	140	54
24	115	105	110	120	215	340	196	291	229	178	156	54
25	74	80	115	120	210	330	196	191	223	213	160	56
26	61	85	115	120	205	300	204	167	233	288	164	59
27	59	97	115	120	205	260	208	160	268	284	160	56
28	71	108	115	120	205	244	200	160	282	255	126	59
29	86	115	120	110	---	272	201	162	261	240	111	59
30	86	120	120	110	---	276	208	164	218	216	108	59
31	86	---	120	110	---	276	---	164	---	196	104	---
TOTAL	2011	3219	3271	3280	4240	7623	6864	6244	6864	6341	8249	1689
MEAN	64.9	107	106	106	151	246	229	201	229	205	266	56.3
MAX	115	140	136	125	215	340	292	291	425	288	540	92
MIN	30	77	60	90	95	205	196	155	168	152	104	44
AC-FT	3990	6380	6490	6510	8410	15120	13610	12380	13610	12580	16360	3350

CAL YR 1980 TOTAL 136734 MEAN 374 MAX 3180 MIN 26 AC-FT 271200
WTR YR 1981 TOTAL 59895 MEAN 164 MAX 540 MIN 30 AC-FT 118800

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,900 micromhos Jan. 27, 1977; minimum daily, 190 micromhos Mar. 28, 1978.
WATER TEMPERATURES: Maximum observed, 30.5°C July 14, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 715 micromhos June 19; minimum daily, 400 micromhos Mar. 18.
WATER TEMPERATURES: Maximum daily, 29.5°C July 6; minimum daily, 0.5°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
DEC												
17...	1310	135	755	8.1	2.5	.0	25	5.2	12.8	91	300	25
MAR												
19...	1315	E270	410	8.4	1.0	.0	10	4.0	15.3	111	200	23
JUN												
10...	1705	194	615	8.4	22.0	22.0	10	39	9.2	109	260	15
SEP												
03...	1020	62	428	8.1	16.5	20.0	15	44	8.1	91	200	14

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DEC												
17...	56	40	22	13	.5	5.4	280	3.6	84	11	.3	6.3
MAR												
19...	40	25	9.6	9	.3	3.1	180	1.2	38	6.4	.2	8.1
JUN												
10...	50	34	21	14	.6	10	250	1.6	70	11	.2	7.2
SEP												
03...	37	27	11	10	.4	4.2	190	2.4	31	6.3	.1	1.0

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC											
17...	427	394	.58	156	--	--	.17	.16	.430	1.6	2.00
MAR											
19...	242	239	.33	176	.19	.010	.20	.00	.010	1.4	1.40
JUN											
10...	349	355	.47	183	.19	.040	.23	.25	.100	3.7	3.80
SEP											
03...	255	232	.35	42.7	.00	.010	.01	.00	.060	.17	.23

E - Estimated.

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOSPHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	BORON, DISSOLVED (UG/L AS B) (01020)
DEC											
17...	2.2	9.6	.120	.31	.37	.100	.100	.00	.10	.12	120
MAR											
19...	1.6	7.1	.100	--	.31	.030	.020	.07	.09	.01	40
JUN											
10...	4.0	18	.390	--	1.2	.050	.150	.04	.19	.20	120
SEP											
03...	.24	1.1	.070	--	.21	.020	.070	.00	.07	.00	60

DATE	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	PHENOLS (UG/L) (32730)
DEC			
17...	16	--	0
MAR			
19...	7.6	--	0
JUN			
10...	19	1.2	5
SEP			
03...	8.7	1.1	0

DATE	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT		
09...	28	4.1
NOV		
12...	34	12
DEC		
17...	11	4.0
JAN		
21...	10	2.8
FEB		
26...	16	8.9
MAR		
19...	9	6.6
APR		
29...	132	71
JUN		
10...	98	51
JUL		
23...	180	85
SEP		
03...	72	12

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	580	600	540	595	---	---	460	500	570	635	490	440
2	600	---	560	600	550	460	460	500	575	625	---	460
3	540	600	565	600	530	460	450	---	580	550	490	450
4	540	600	560	---	550	470	460	500	580	555	400	450
5	---	590	560	560	600	480	---	510	580	---	400	470
6	570	560	560	500	610	490	480	515	590	560	530	---
7	600	540	---	520	615	480	485	520	---	560	540	490
8	600	530	560	550	---	---	490	500	580	500	480	520
9	650	---	625	550	570	480	485	500	570	500	---	530
10	650	600	625	560	600	460	480	---	580	520	500	545
11	---	600	640	---	620	500	---	540	585	510	520	560
12	---	500	630	530	620	470	---	540	540	---	500	570
13	540	500	625	535	600	450	460	520	560	520	480	---
14	540	500	---	600	635	470	480	510	---	480	475	580
15	560	480	625	550	---	---	495	515	550	450	470	580
16	550	---	650	560	635	420	500	500	560	440	---	600
17	555	500	690	570	635	420	480	---	500	435	480	600
18	530	500	660	---	630	400	495	505	630	420	495	625
19	---	500	650	560	600	420	---	505	715	---	460	625
20	620	510	655	550	560	420	490	505	540	450	410	---
21	700	510	---	590	520	405	505	500	---	500	440	670
22	620	505	650	580	---	---	500	505	500	550	450	630
23	540	---	655	550	460	405	480	510	500	540	---	620
24	530	520	625	580	460	405	500	---	510	530	440	600
25	520	520	580	---	425	405	495	460	500	510	440	590
26	---	500	600	600	425	420	---	460	490	---	450	540
27	580	525	605	585	420	410	495	500	500	490	450	---
28	420	550	---	580	420	430	500	545	---	445	420	520
29	500	510	640	550	---	---	495	570	580	465	450	500
30	450	---	620	520	---	460	500	580	600	500	---	500
31	460	---	605	500	---	460	---	---	---	490	440	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	4.5	4.0	1.0	---	---	8.5	15.5	19.0	25.5	26.5	23.0
2	12.5	---	.5	1.0	.5	1.0	10.5	16.5	18.5	25.0	---	21.5
3	10.5	5.5	1.0	1.0	1.0	2.0	8.5	---	21.0	26.0	26.5	19.5
4	12.5	5.5	1.5	---	1.0	1.5	8.0	15.0	20.0	27.0	26.0	18.5
5	---	6.5	4.5	1.0	1.0	1.0	---	16.0	22.0	---	26.0	20.5
6	16.0	6.0	1.0	.5	.5	1.0	10.5	16.0	23.5	29.5	24.5	---
7	14.0	6.5	---	.5	.5	1.5	9.5	16.0	---	29.0	24.5	21.0
8	16.0	7.0	4.0	.5	---	---	10.0	16.5	21.5	27.0	24.0	23.5
9	13.5	---	1.0	.5	1.0	1.5	11.5	14.5	21.0	27.5	---	24.5
10	12.0	5.0	.5	.5	1.0	1.5	10.5	---	21.0	27.5	23.0	26.0
11	---	5.0	2.5	---	1.0	2.5	---	15.5	23.5	27.5	23.5	23.5
12	---	5.0	3.5	.5	2.5	2.0	---	15.0	22.5	---	24.5	23.5
13	8.0	4.5	1.5	.5	1.0	2.0	10.5	15.0	21.5	25.5	25.0	---
14	7.5	2.0	---	.5	2.0	4.0	10.5	16.0	---	23.5	26.0	18.5
15	7.5	2.5	2.0	1.0	---	---	11.5	17.5	21.5	24.0	24.5	17.5
16	8.0	---	4.0	1.0	3.0	3.0	13.5	17.0	21.5	26.5	---	16.0
17	7.0	3.5	1.0	1.0	2.0	1.5	13.0	---	20.0	26.5	23.5	18.0
18	7.5	2.5	1.0	---	2.5	1.0	11.5	17.5	20.0	26.0	24.0	17.5
19	---	2.0	1.0	.5	2.0	1.5	---	18.5	18.5	---	23.5	20.0
20	8.0	2.0	.5	.5	2.0	2.0	12.5	18.5	20.0	27.5	23.5	---
21	8.0	2.5	---	1.0	2.0	2.0	11.5	20.0	---	26.5	24.0	18.5
22	6.5	2.5	1.0	1.0	---	---	10.0	20.0	20.5	25.0	22.5	15.5
23	5.5	---	.5	1.0	3.0	2.5	10.5	19.0	19.5	26.0	---	14.5
24	5.0	1.5	.5	2.5	1.5	4.0	12.0	---	21.0	25.5	22.5	16.0
25	4.0	1.0	.5	---	1.5	2.5	14.5	16.5	22.0	23.5	23.0	15.5
26	---	2.0	.5	1.0	2.0	3.0	---	17.0	24.0	---	22.5	14.0
27	4.0	1.0	1.0	1.0	1.0	4.0	13.5	19.0	22.0	23.0	22.0	---
28	2.5	3.5	---	1.0	2.0	5.5	14.5	18.5	---	22.5	23.5	12.0
29	4.0	3.0	1.0	.5	---	---	14.5	19.0	24.5	23.0	24.0	12.0
30	4.5	---	6.0	.5	---	8.0	15.0	19.0	25.0	23.5	---	11.0
31	3.5	---	1.5	1.0	---	8.0	---	---	---	25.5	22.0	---

05051600 WILD RICE RIVER NEAR RUTLAND, ND

LOCATION.--Lat 46°01'20", long 97°30'40", in SE¼SE¼ sec.36, T.130 N., R.55 W., Sargent County, Hydrologic Unit 09020105, on right bank 1,000 ft (305 m) upstream from bridge on county highway, 2 mi (3 km) south of Rutland, and 10 mi (16 km) upstream from Lake Tewaukon.

DRAINAGE AREA.--546 mi^2 (1,410 km^2), of which about 250 mi^2 (648 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,197.73 ft (365.068 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 11, 1960, nonrecording gage at same site and datum.

REMARKS.--Records excellent.

AVERAGE DISCHARGE.--22 years, 8.77 ft^3/s (0.248 m^3/s), 6,350 acre-ft/yr (7.83 hm^3/yr); median of yearly mean discharges, 5.0 ft^3/s (0.14 m^3/s), 3,600 acre-ft/yr (4.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,270 ft^3/s (36.0 m^3/s) Apr. 8, 1969, gage height, 8.77 ft (2.673 m), backwater from ice; maximum gage height, 8.78 ft (2.676 m) Apr. 8, 1969, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--No flow during entire year. No peak above base of 30 ft^3/s (0.85 m^3/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 1455.99 MEAN 3.98 MAX 124 MIN .00 AC-FT 2890
WTR YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

05052100 RICHLAND COUNTY DRAIN 65 NEAR GREAT BEND, ND

LOCATION.--Lat 46°05'41", long 96°47'01", in NE¼NE¼NE¼ sec.11, T.130 N., R.49 W., Richland County, Hydrologic Unit 09020105, at bridge on county road 4 mi (6.4 km) south and 1 mi (1.6 km) east of Great Bend.

DRAINAGE AREA.--38 mi^2 (61 km^2).

PERIOD OF RECORD.--October 1980 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 988 ft (301 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 3.5 ft^3/s (0.099 m^3/s) June 25, gage height, 1.83 ft (0.558 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	3.5	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	21.60	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.72	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	3.5	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	43	.00	.00	.00

WTR YR 1981 TOTAL 21.60 MEAN .059 MAX 3.5 MIN .00 AC-FT 43

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND

LOCATION.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., Richland County, Hydrologic Unit 09020105, on right bank 420 ft (130 m) upstream from bridge on county highway, 0.75 mi (1.2 km) upstream from rubble masonry dam which serves as control, 3.2 mi (5 km) northwest of Abercrombie, and 7 mi (11 km) downstream from Antelope Creek.

DRAINAGE AREA.--2,080 mi^2 (5,390 km^2), of which about 590 mi^2 (1,530 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1388: 1939, 1941(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 907.94 ft (276.740 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 7, 1939, nonrecording gage at site 420 ft (130 m) downstream at datum 5.0 ft (1.52 m) lower. Dec. 7, 1939, to Nov. 24, 1952, nonrecording gage at site 0.75 mi (1.2 km) downstream at present datum.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tawaukon is the largest. Some small diversions for irrigation.

AVERAGE DISCHARGE.--49 years, 73.8 ft^3/s (2.090 m^3/s), 53,470 acre-ft/yr (65.9 hm^3/yr); median of yearly mean discharges, 32 ft^3/s (0.91 m^3/s), 23,200 acre-ft/yr (29 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,540 ft^3/s (270 m^3/s) Apr. 11, 1969, gage height, 24.58 ft (7.492 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in spring of 1897 reached a stage of 27.5 ft (8.38 m) present site and datum, from floodmarks pointed out by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25.8 ft^3/s (0.731 m^3/s) Apr. 2, gage height, 1.69 ft (0.515 m), backwater from ice, no peaks above base of 300 ft^3/s (8.50 m^3/s); no flow Feb. 12-14, Sept. 5-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.43	1.2	.81	.26	9.7	16	10	20	22	6.3	.02
2	.05	.43	1.1	.72	.18	9.4	20	9.0	18	19	5.5	.01
3	.05	.43	1.1	.72	.08	9.0	26	7.8	17	17	4.5	.01
4	.05	.37	1.2	.72	.07	8.6	26	6.0	15	15	4.0	.01
5	.05	.31	1.2	.72	.07	7.8	26	4.5	13	13	3.5	.00
6	.04	.26	1.2	.72	.07	7.4	24	4.0	10	11	3.0	.00
7	.04	.26	1.1	.64	.05	6.7	23	3.3	7.4	9.4	2.5	.00
8	.03	.26	1.2	.56	.04	6.0	21	2.7	5.4	8.2	2.0	.00
9	.03	.22	1.1	.49	.04	5.7	20	2.7	4.5	6.3	1.4	.00
10	.02	.18	1.1	.43	.04	5.7	18	2.5	3.8	5.1	1.0	.00
11	.01	.18	1.1	.37	.02	6.0	17	2.0	2.3	5.4	.72	.00
12	.04	.15	1.0	.31	.00	6.7	16	1.4	1.2	5.1	.43	.00
13	.09	.15	1.0	.22	.00	7.4	14	1.0	1.0	4.0	.37	.00
14	.15	.12	.96	.37	.00	8.2	13	.91	1.1	6.3	.31	.00
15	.43	.12	.90	.43	.02	9.4	12	.91	1.5	6.3	.26	.00
16	.91	.15	.97	.43	.05	9.8	12	.81	1.5	6.0	.15	.00
17	1.4	.22	1.1	.31	.18	11	11	.56	2.1	4.3	.12	.00
18	1.1	.31	1.2	.27	1.2	11	10	.49	2.0	3.3	.08	.00
19	1.1	.37	1.1	.12	2.9	9.9	9.4	.37	1.8	3.1	.06	.00
20	1.2	.49	.88	.10	5.7	9.7	9.0	.15	2.0	2.3	.04	.00
21	1.2	.56	.75	.09	8.5	9.8	9.8	.05	2.3	2.0	.03	.00
22	1.1	.64	.72	.31	10	11	11	.04	7.4	2.7	.02	.00
23	1.0	.72	.72	.19	11	12	12	.31	13	2.3	.08	.00
24	.91	.72	.72	.32	9.4	13	11	1.0	14	1.8	.12	.00
25	.72	.86	.72	.44	9.2	14	10	.72	13	5.0	.12	.00
26	.64	1.1	.72	.65	11	15	8.6	.43	14	9.8	.09	.00
27	.56	1.0	.72	.64	13	14	9.4	.15	18	9.6	.08	.00
28	.49	1.1	.64	.56	11	11	10	.15	20	9.4	.06	.00
29	.49	1.2	.64	.44	---	11	11	.09	21	9.7	.05	.00
30	.49	1.2	.72	.26	---	12	12	6.3	23	10	.03	.00
31	.43	---	.81	.18	---	12	---	20	---	8.2	.02	---
TOTAL	14.89	14.51	29.59	13.54	94.07	299.9	448.2	90.34	276.3	242.6	36.94	.05
MEAN	.48	.48	.95	.44	3.36	9.67	14.9	2.91	9.21	7.83	1.19	.002
MAX	1.4	1.2	1.2	.81	13	15	26	20	23	22	6.3	.02
MIN	.01	.12	.64	.09	.00	5.7	8.6	.04	1.0	1.8	.02	.00
AC-FT	30	29	59	27	187	595	889	179	548	481	73	.10

CAL YR 1980 TOTAL 14849.61 MEAN 40.6 MAX 1500 MIN .01 AC-FT 29450
WTR YR 1981 TOTAL 1560.93 MEAN 4.28 MAX 26 MIN .00 AC-FT 3100

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-56, 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT										
09...	1335	.03	808	8.2	23.0	13.0	--	318	.00	73
NOV										
13...	1140	.14	933	8.3	.0	2.0	100	354	24	79
DEC										
18...	1400	1.2	1950	7.7	-11.0	2.0	100	613	190	140
JAN										
21...	1440	.09	2930	7.8	1.5	1.0	60	1052	300	240
FEB										
24...	1300	9.0	1200	7.4	7.5	.5	40	389	120	90
MAR										
19...	1015	9.7	765	8.5	5.0	1.0	10	254	64	57
APR										
29...	1520	11	978	8.1	14.5	14.5	20	372	110	88
JUN										
11...	0930	2.4	1400	8.1	20.0	19.0	25	505	190	110
JUL										
24...	1030	1.8	1135	6.8	19.0	24.0	40	401	91	88
SEP										
03...	1340	.01	892	8.6	23.0	17.0	30	313	23	66

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT										
09...	33	43	23	1.1	1.9	320	62	36	.3	44
NOV										
13...	38	54	24	1.3	20	330	99	40	.2	36
DEC										
18...	64	200	41	3.6	18	420	460	95	.4	32
JAN										
21...	110	260	34	3.6	23	750	670	110	.6	42
FEB										
24...	40	120	39	2.7	13	270	290	63	.3	16
MAR										
19...	27	45	27	1.3	8.2	190	190	20	.2	5.1
APR										
29...	37	65	27	1.5	11	260	240	23	.3	5.8
JUN										
11...	56	120	33	2.4	16	320	400	52	.3	14
JUL										
24...	44	93	33	2.1	14	310	260	41	.2	25
SEP										
03...	36	74	33	1.9	14	290	150	25	.3	20

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT									
09...	474	484	.64	.04	.00	1.30	130	16	.00
NOV									
13...	587	565	.80	.22	.01	.470	130	10	.00
DEC									
18...	1320	1260	1.8	4.3	.01	.250	420	22	.07
JAN									
21...	2030	1910	2.8	.49	.01	.410	580	25	.01
FEB									
24...	825	798	1.1	20.0	.75	.380	220	17	.41
MAR									
19...	486	467	.66	12.7	.00	.070	130	5	.13
APR									
29...	659	627	.90	19.6	.00	.110	200	8	.24
JUN									
11...	968	961	1.3	6.3	.02	.220	300	18	.12
JUL									
24...	779	752	1.1	3.8	.07	.660	250	32	.16
SEP									
03...	596	560	.81	.02	.10	.460	250	--	--

05054000 RED RIVER OF THE NORTH AT FARGO, ND

LOCATION.--Lat 46°51'40", long 96°47'00", in NW¼NE¼ sec.18, T.139 N., R.48 W., Cass County, Hydrologic Unit 09020104, at city waterplant on 4th St. S. in Fargo, 25 mi (40 km) upstream from mouth of Sheyenne River, and at mile 453.0 (728.9 km).

DRAINAGE AREA.--6,800 mi^2 (17,600 km^2), approximately.

PERIOD OF RECORD.--May 1901 to current year. Published as "at Moorhead, Minn." 1901. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1902-4, 1906-7, 1910-14, 1916, 1918, 1924. WSP 1388: 1905-6, 1917-20(M), 1935(M), 1938-39(M), 1943.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft (262.68 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1960, to Sept. 30, 1962, water-stage recorder at present site at datum 5.6 ft (1.71 m) higher. See WSP 1728 or 1913 for history of changes prior to Oct. 1, 1960.

REMARKS.--Records good. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm^3) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm^3), available for flood control; other controlled lakes and ponds; and several powerplants. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to cities of Fargo and Moorhead and from Sheyenne River.

AVERAGE DISCHARGE (UNADJUSTED).--80 years, 554 ft^3/s (15.69 m^3/s), 401,400 acre-ft/yr (495 hm^3/yr); median of yearly mean discharges, 442 ft^3/s (12.5 m^3/s), 320,200 acre-ft/yr (395 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,300 ft^3/s (716 m^3/s) Apr. 15, 1969, gage height, 37.34 ft (11.381 m); no flow for many days in each year for period 1932-41, Sept. 30, Oct. 1, 2, 1970, Oct. 10-19, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1897 reached a stage of 39.1 ft (11.92 m) present datum, discharge, 25,000 ft^3/s (708 m^3/s) at site 1.5 mi (2.4 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,710 ft^3/s (48.4 m^3/s) May 24, gage height, 15.84 ft (4.828 m); minimum daily, 19 ft^3/s (0.54 m^3/s) Oct. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	85	118	110	90	190	330	246	182	208	189	101
2	19	84	97	110	100	190	313	265	168	218	207	87
3	19	83	78	100	100	190	313	271	164	285	415	77
4	21	82	63	85	100	190	313	274	182	308	561	64
5	21	80	60	80	100	195	308	268	182	296	625	58
6	21	77	65	80	105	195	302	257	186	253	583	72
7	21	80	94	80	115	195	302	252	186	208	530	82
8	25	82	114	80	120	200	302	237	182	177	476	42
9	30	85	118	80	120	200	290	211	177	160	463	43
10	30	105	111	80	110	195	290	208	199	144	432	44
11	28	114	94	80	120	200	274	190	182	148	394	45
12	33	113	85	80	130	205	263	190	182	160	370	39
13	35	114	82	75	140	205	238	195	228	153	341	30
14	43	115	83	75	140	210	238	195	200	270	258	29
15	58	111	93	75	140	215	233	195	190	258	206	29
16	77	110	100	75	145	245	233	204	204	327	187	27
17	91	108	110	75	145	280	223	213	318	314	174	27
18	80	107	113	75	145	287	223	204	406	272	165	28
19	80	97	115	75	145	285	204	195	376	234	158	29
20	77	99	115	75	145	290	218	200	313	194	162	29
21	68	110	110	80	155	275	218	208	280	174	152	29
22	65	124	110	85	160	260	213	204	253	164	130	31
23	65	124	80	90	170	280	218	450	253	159	126	31
24	94	120	90	100	195	310	218	1710	238	164	170	33
25	104	111	105	100	205	350	213	1490	213	172	179	33
26	94	80	105	95	191	325	218	814	218	225	155	40
27	77	82	105	95	190	302	233	462	249	270	149	41
28	71	94	105	95	190	253	223	324	290	263	142	39
29	80	104	105	95	---	290	223	218	290	245	124	37
30	85	114	110	90	---	290	231	200	253	218	109	40
31	85	---	110	90	---	302	---	186	---	242	110	---
TOTAL	1718	2994	3043	2660	3911	7599	7618	10736	6944	6883	8442	1336
MEAN	55.4	99.8	98.2	85.8	140	245	254	346	231	222	272	44.5
MAX	104	124	118	110	205	350	330	1710	406	327	625	101
MIN	19	77	60	75	90	190	204	186	164	144	109	27
AC-FT	3410	5940	6040	5280	7760	15070	15110	21290	13770	13650	16740	2650
(+)	1091	1031	1016	1161	1122	1034	1118	1268	1482	1324	1593	1462
MEAN*	73	117	115	105	160	262	273	367	256	244	298	69
AC-FT*	4500	6970	7060	6440	8880	16100	16230	22560	15250	14970	18330	4110

			OBSERVED							ADJUSTED		
CAL YR 1980	TOTAL	150892	MEAN	412	MAX	5180	MIN	13	AC-FT	299300	MEAN	432	AC-FT	313660
WTR YR 1981	TOTAL	63884	MEAN	175	MAX	1710	MIN	19	AC-FT	126700	MEAN	195	AC-FT	141400

\+ Diversions in acre-feet to cities of Fargo and Moorhead.
* Adjusted for diversions to cities of Fargo and Moorhead.

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND

LOCATION.--Lat 46°55'50", long 96°47'05", in SW¼NE¼ sec.19, T.140 N., R.48 W., Cass County, Hydrologic Unit 09020104, at bridge on county highway 2 mi (3.2 km) north of North Dakota State University campus in Fargo, and 12 mi (19 km) above mouth of Sheyenne River.

DRAINAGE AREA.--6,820 mi^2 (17,660 km^2), approximately.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to September 1974, October 1975 to March 1978, July 1978 to current year.
WATER TEMPERATURES: October 1973 to September 1974, October 1975 to March 1978, July 1978 to current year.

REMARKS.--Fragmentary records of specific conductance and temperature for October 1974 to September 1975 are available in the Bismarck District office. Records of discharge are given for station 05054000 Red River of the North at Fargo, N. Dak., and are unadjusted for treated sewage inflow between sites. Water-quality monitor discontinued March 1978. Daily measurements of specific conductance and temperature resumed by observer July 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos Nov. 7, 1976; minimum, 206 micromhos July 4, 1977.
WATER TEMPERATURES: Maximum daily, 31.5°C July 19, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 945 micromhos June 26; minimum daily, 230 micromhos May 26.
WATER TEMPERATURES: Maximum daily, 25.5°C July 8, 12, 13 and Aug. 14; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
08...	1000	22	636	8.0	--	13.0	--	283	53	49	39	49
NOV												
12...	1300	117	609	8.4	3.5	4.0	27	253	33	42	36	24
DEC												
18...	1200	114	702	8.5	-11.0	.0	25	301	31	53	41	25
JAN												
20...	1000	76	636	7.7	-1.5	.0	15	296	26	56	38	22
FEB												
26...	0745	197	619	7.4	-1.0	.0	20	257	17	50	32	22
MAR												
18...	0930	292	500	7.7	.0	.0	10	221	21	44	27	15
APR												
29...	0900	214	588	8.4	11.5	13.0	20	260	40	48	34	24
JUN												
10...	1030	200	640	8.2	20.5	19.0	10	278	28	52	36	24
JUL												
23...	0900	167	491	7.5	19.0	23.0	40	212	52	42	26	20
SEP												
01...	1030	96	501	8.0	20.0	19.0	15	215	35	43	26	21

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
08...	26	1.3	15	230	120	29	.5	11	435	439	.59	25.8
NOV												
12...	17	.7	6.9	220	88	12	.3	3.3	371	346	.50	117
DEC												
18...	15	.6	7.8	270	86	16	.3	3.0	411	395	.56	127
JAN												
20...	14	.6	6.7	270	62	13	.3	8.8	386	370	.53	79.2
FEB												
26...	15	.6	5.8	240	60	9.6	.3	12	374	339	.51	199
MAR												
18...	13	.5	5.0	200	52	10	.2	9.5	298	283	.41	235
APR												
29...	16	.7	8.7	220	76	26	.3	1.8	364	352	.50	210
JUN												
10...	15	.6	11	250	84	15	.2	5.3	383	379	.52	207
JUL												
23...	16	.6	7.4	160	87	14	.2	15	308	310	.42	139
SEP												
01...	17	.6	6.8	180	70	11	.2	3.5	307	291	.42	79.3

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
08...	.31	.840	--	--	--	190	--	--	--	--	--
NOV											
12...	.14	.320	--	--	--	110	--	--	--	--	--
DEC											
18...	.12	.250	--	--	--	110	--	--	--	--	--
JAN											
20...	.16	.110	--	--	--	60	--	--	--	--	--
FEB											
26...	.70	.280	--	--	--	90	--	--	--	--	--
MAR											
18...	.01	.120	--	--	--	60	--	--	--	--	--
APR											
29...	.13	.150	--	--	--	80	--	--	--	--	--
JUN											
10...	.28	.170	--	--	--	110	--	--	--	--	--
JUL											
23...	.39	.230	--	--	--	60	--	--	--	--	--
SEP											
01...	.21	.170	10	3	140	80	<1	0	0	4	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
SEP											
01...	0	20	5	.0	<10	3	0	160	3.0	25	>.01

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	690	595	550	705	650	570	485	575	690	600	550	510
2	685	595	555	700	650	545	485	570	690	600	545	520
3	700	590	575	700	660	540	475	570	660	715	545	500
4	690	630	575	655	655	515	485	565	650	710	520	510
5	690	670	575	650	645	510	475	580	630	705	525	510
6	700	750	585	640	645	510	500	545	630	705	520	500
7	735	745	580	625	630	510	490	565	625	685	515	565
8	730	625	580	640	640	575	490	605	625	700	550	560
9	745	610	575	625	640	580	515	590	615	735	555	560
10	740	560	580	640	635	570	520	565	660	725	545	560
11	730	550	595	630	630	565	525	560	660	705	570	565
12	710	555	600	640	620	565	520	560	655	675	575	550
13	705	545	610	640	600	560	520	550	650	665	525	565
14	700	610	610	630	620	540	525	565	645	545	515	565
15	680	605	625	640	620	545	550	560	650	540	515	550
16	675	610	630	630	610	530	530	560	660	580	505	550
17	650	625	640	630	610	510	530	565	665	595	500	570
18	645	620	640	605	605	495	520	570	665	620	520	570
19	640	615	630	600	610	485	525	570	600	615	525	570
20	655	595	625	600	610	485	515	590	590	620	495	575
21	650	595	625	605	620	470	520	590	590	530	525	575
22	650	590	640	605	610	465	540	600	595	500	520	580
23	635	580	625	600	610	465	540	310	560	485	520	595
24	610	575	630	605	600	465	510	240	565	480	500	570
25	600	565	640	670	600	455	505	240	720	480	505	575
26	600	560	660	670	600	425	510	230	945	485	500	570
27	595	555	675	680	605	435	520	310	830	540	480	555
28	590	550	700	640	585	435	580	485	590	555	510	550
29	590	550	700	625	---	430	575	670	565	555	500	580
30	580	550	705	620	---	470	565	670	605	560	510	585
31	595	---	700	620	---	480	---	690	---	560	510	---
MEAN	664	599	620	638	622	506	518	530	649	605	522	555

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	5.5	.5	.0	.0	1.0	3.5	14.0	17.5	22.0	24.5	21.5
2	14.0	6.0	.5	.0	.0	1.5	4.0	14.0	17.5	22.0	25.0	21.0
3	13.0	7.0	.5	.0	.0	1.5	4.0	14.0	18.5	23.0	25.0	20.0
4	13.5	7.0	.5	.0	.0	1.0	5.0	13.5	18.5	23.5	24.5	19.5
5	13.0	6.0	.5	.0	.0	1.0	5.5	13.5	19.0	24.0	24.5	19.5
6	13.0	6.0	1.0	.0	.0	1.0	7.0	14.0	19.0	24.0	24.0	19.0
7	13.5	5.5	.5	.0	.0	1.0	8.0	14.5	19.5	24.5	24.0	19.0
8	14.0	5.5	.5	.0	.0	1.0	9.5	14.5	20.0	25.5	23.5	19.5
9	14.0	5.5	.5	.0	.0	1.0	9.5	14.5	20.0	25.0	24.5	20.0
10	13.0	4.0	.5	.0	.0	1.0	10.5	14.0	20.0	24.5	24.5	21.0
11	11.0	4.0	.5	.0	.0	1.0	10.5	14.0	19.5	25.0	24.5	21.5
12	9.5	4.0	1.0	.0	.5	1.0	11.0	14.5	19.5	25.5	25.0	21.5
13	8.0	4.0	1.0	.0	.5	1.0	10.0	15.0	19.5	25.5	25.0	21.0
14	8.5	3.5	.5	.0	.5	1.0	10.0	15.0	20.0	24.5	25.5	19.0
15	8.0	3.0	.5	.0	1.0	1.5	9.5	15.0	20.0	23.5	24.5	17.0
16	8.0	3.0	.5	.0	1.0	1.5	10.5	15.5	20.0	23.0	24.5	15.5
17	8.0	2.5	.5	.0	1.5	1.5	10.5	15.5	20.0	23.5	24.0	15.0
18	8.5	2.5	.5	.0	1.5	1.0	10.0	16.0	20.0	24.5	24.0	15.5
19	8.5	3.0	.5	.0	2.0	1.0	10.0	16.0	20.0	25.0	24.0	16.5
20	9.0	2.5	.0	.5	2.0	1.5	10.0	17.0	19.5	25.0	22.5	17.0
21	8.0	3.0	.0	.5	2.0	1.5	10.0	17.5	19.5	25.0	23.5	17.0
22	7.5	2.5	.0	.5	2.0	2.5	10.5	17.5	19.0	23.5	23.0	16.0
23	7.0	2.0	.0	.5	1.5	3.0	10.5	16.5	19.0	23.0	23.0	14.5
24	6.5	2.0	.0	.5	1.5	3.0	10.5	16.5	19.0	23.0	22.5	14.0
25	6.5	1.0	.0	.5	1.5	3.0	11.0	16.5	19.0	23.0	23.0	14.0
26	6.0	1.5	.0	.0	1.0	2.5	11.5	16.5	20.5	22.5	22.5	14.0
27	5.5	1.5	.0	.0	1.0	2.0	11.5	16.5	20.5	22.5	22.5	13.5
28	5.5	1.5	.0	.0	1.0	2.0	12.5	17.0	21.0	23.0	22.5	13.5
29	5.0	1.5	.0	.0	---	2.0	13.0	17.0	21.0	23.0	23.0	13.0
30	5.0	1.5	.0	.0	---	2.5	13.0	17.0	21.5	23.0	23.0	13.0
31	5.5	---	.0	.0	---	2.5	---	17.0	---	23.5	22.0	---
MEAN	9.5	3.5	.5	.0	1.0	1.5	9.5	15.5	19.5	24.0	24.0	17.5

05054500 SHEYENNE RIVER ABOVE HARVEY, ND

LOCATION.--Lat 47°42'10", long 99°56'55", in SW¼SE¼ sec.24, T.149 N., R.73 W., Wells County, Hydrologic Unit 09020202, on right bank just downstream from county road, and 4.5 mi (7.2 km) south of Harvey.

DRAINAGE AREA.--424 mi^2 (1,098 km^2), of which about 270 mi^2 (700 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1955 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,547.30 ft (471.617 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--26 years, 6.32 ft^3/s (0.179 m^3/s), 4,580 acre-ft/yr (5.65 hm^3/yr); median of yearly mean discharges, 4.6 ft^3/s (0.13 m^3/s), 3,330 acre-ft/yr (4.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,000 ft^3/s (28.3 m^3/s) Apr. 20, 1979, gage height, 9.45 ft (2.880 m); maximum gage height, 10.30 ft (3.139 m) Apr. 1, 1971, backwater from ice; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 5	--	50	1.42	7.10	2.164
June 14	0100	51	1.44	7.08	2.158
June 16	2000	*53	1.50	7.15	2.179

No flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	6.5	6.5	.05	.00	35	24	15	4.7	9.2	2.6	4.1
2	1.6	6.3	5.8	.03	.00	40	22	14	9.0	8.9	2.4	2.8
3	1.6	5.9	5.2	.00	.00	45	22	13	8.8	8.4	2.3	2.0
4	1.6	5.1	5.2	.00	.00	48	21	12	9.4	7.5	2.1	1.7
5	2.0	4.5	5.2	.00	.00	50	19	11	8.8	6.9	2.6	1.8
6	1.6	4.0	5.0	.00	.00	48	18	10	7.5	6.3	2.7	14
7	1.4	3.4	4.5	.00	.00	47	17	9.8	7.4	5.9	2.3	20
8	1.2	4.8	3.7	.00	.00	46	17	8.6	6.9	5.3	2.1	8.6
9	1.2	4.9	3.5	.00	.00	44	16	7.9	6.2	4.6	2.0	6.6
10	1.4	5.9	3.3	.00	.00	42	15	7.4	6.2	4.2	1.8	4.5
11	1.2	4.5	3.2	.00	.00	41	14	6.7	5.7	4.1	1.6	3.0
12	1.4	5.3	3.0	.00	.00	40	14	6.0	5.1	3.8	1.6	2.8
13	1.4	5.7	3.0	.00	.00	39	14	5.4	38	3.6	1.4	2.7
14	1.6	4.7	3.0	.00	.00	38	13	4.8	41	3.5	1.4	2.0
15	1.6	5.0	3.0	.00	5.0	37	12	4.5	37	3.4	1.2	1.9
16	4.4	5.5	2.5	.00	25	36	11	4.1	50	3.2	1.4	1.8
17	17	5.5	2.3	.00	35	35	11	4.2	48	2.9	1.2	1.8
18	9.4	5.3	2.0	.00	30	34	11	4.7	34	2.7	1.1	1.7
19	8.3	6.0	1.7	.00	35	33	9.5	4.8	23	2.6	.86	1.6
20	8.5	5.7	1.4	.00	35	33	9.8	4.2	20	2.8	.81	1.5
21	7.3	7.9	1.0	.00	20	32	9.5	3.4	18	2.3	.76	1.6
22	8.3	8.4	.90	.00	20	32	8.5	3.5	18	10	.76	1.5
23	12	7.5	.80	.00	20	32	8.0	5.4	17	9.4	.81	1.6
24	9.8	9.7	.70	.00	20	31	7.4	8.4	16	10	.96	1.5
25	7.5	7.2	.60	.00	16	32	6.5	7.7	13	7.3	1.3	1.4
26	6.8	6.3	.50	.00	25	32	8.1	6.5	12	5.6	1.4	3.0
27	7.3	6.9	.50	.00	40	30	13	6.0	11	4.5	1.4	2.8
28	8.5	6.5	.45	.00	35	31	15	5.6	11	3.8	1.2	2.5
29	8.1	6.3	.30	.00	---	30	16	5.0	10	3.2	.96	2.2
30	8.4	6.5	.20	.00	---	27	16	4.5	9.7	3.1	1.1	2.0
31	7.7	---	.10	.00	---	25	---	3.6	---	2.8	3.9	---
TOTAL	161.9	177.7	79.05	.08	361.00	1145	418.3	217.7	512.4	161.8	50.02	107.0
MEAN	5.22	5.92	2.55	.003	12.9	36.9	13.9	7.02	17.1	5.22	1.61	3.57
MAX	17	9.7	6.5	.05	40	50	24	15	50	10	3.9	20
MIN	1.2	3.4	.10	.00	.00	25	6.5	3.4	4.7	2.3	.76	1.4
AC-FT	321	352	157	.2	716	2270	830	432	1020	321	99	212

CAL YR 1980 TOTAL 1858.93 MEAN 5.08 MAX 25 MIN .10 AC-FT 3690
WTR YR 1981 TOTAL 3391.95 MEAN 9.29 MAX 50 MIN .00 AC-FT 6730

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
01...	1500	1.8	E1540	8.7	--	13.0	80	190	.00	35	25	300
NOV												
03...	1500	5.9	1650	8.7	13.0	8.0	76	294	.00	47	43	320
DEC												
01...	1330	6.5	2100	8.4	5.0	.0	50	466	.00	73	69	370
MAR												
05...	1300	50	1130	8.8	-1.0	1.0	60	294	.00	37	49	180
26...	1200	32	920	--	4.0	3.0	--	--	--	--	--	--
APR												
16...	1400	11	1500	8.3	26.0	15.0	40	329	.00	46	52	240
JUN												
04...	1130	9.6	1530	8.6	--	18.0	100	320	.00	44	51	260
JUL												
16...	1030	3.2	1400	8.2	22.0	21.0	80	297	.00	33	52	270
SEP												
03...	1100	2.0	1520	8.7	13.0	13.5	70	184	.00	34	24	300

DATE	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
01...	76	9.7	9.9	600	230	21	.4	25	1090	1001	1.5	5.4
NOV												
03...	69	8.3	13	570	340	26	.3	23	1150	1160	1.6	18.4
DEC												
01...	62	7.6	15	700	560	32	.3	30	1530	1598	2.1	27.0
MAR												
05...	56	4.6	14	370	310	20	.2	18	813	851	1.1	109
26...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
16...	60	5.9	13	520	320	20	.3	8.5	1040	1010	1.4	31.7
JUN												
04...	63	6.4	10	600	230	18	.2	14	1110	989	1.5	28.7
JUL												
16...	65	6.9	13	630	220	23	.3	9.5	1050	1000	1.4	9.1
SEP												
03...	77	9.9	11	570	210	24	.3	14	1050	962	1.4	5.6

E - Estimated.

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
OCT											
01...	.00	.140	--	--	--	10	--	--	--	--	--
NOV											
03...	.00	.250	--	--	--	600	--	--	--	--	--
DEC											
01...	.01	.080	--	--	--	880	--	--	--	--	--
MAR											
05...	.00	.030	--	--	--	520	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	.01	.170	10	4	100	660	<1	10	<3	1	40
JUN											
04...	.02	.380	--	--	--	780	--	--	--	--	--
JUL											
16...	.16	.360	--	--	--	870	--	--	--	--	--
SEP											
03...	.03	.320	20	5	76	840	<1	0	<3	5	100

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
NOV											
03...	--	--	--	--	--	--	--	--	--	--	--
DEC											
01...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	2	130	50	.0	<10	2	0	350	2.0	20	.00
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	0	140	110	.0	<10	2	0	220	6.0	74	>.01

05056000 SHEYENNE RIVER NEAR WARWICK, ND

LOCATION.--Lat 47°48'20", long 98°42'57", on south quarter of line between secs.15 and 16, T.150 N., R.63 W., Eddy County, Hydrologic Unit 09020203, on left bank on downstream side of county highway bridge, and 3.3 mi (5.3 km) south of Warwick.

DRAINAGE AREA.--2,070 mi^2 (5,360 km^2), approximately, of which about 1,310 mi^2 (3,390 km^2) is probably non-contributing - includes 227 mi^2 (588 km^2) in closed basins.

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1438: 1952(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and rubble masonry control. Altitude of gage is 1,370 ft (418 m), by barometer.

REMARKS.--Records good. Records include flow of spring which enters below gage and just above control. Discharge measurements of spring inflow made during the water year are listed below:

Date	Discharge (ft^3/s)	Discharge (m^3/s)	Date	Discharge (ft^3/s)	Discharge (m^3/s)	Date	Discharge (ft^3/s)	Discharge (m^3/s)
Oct. 29	1.19	0.034	Apr. 7	1.02	0.029	June 30	1.47	0.042
Dec. 18	1.34	.038	May 28	1.29	.037	Aug. 21	.98	.027
Jan. 28	1.32	.037						

AVERAGE DISCHARGE.--32 years, 52.4 ft^3/s (1.484 m^3/s), 37,960 acre-ft/yr (46.8 hm^3/yr); median of yearly mean discharges, 50 ft^3/s (1.42 m^3/s), 36,200 acre-ft/yr (45 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft^3/s (132 m^3/s) Apr. 14, 1969, gage height, 7.51 ft (2.289 m); maximum gage height, 7.83 ft (2.387 m) Apr. 18, 1956; no flow Aug. 7 to Sept. 1, Sept. 3-9, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 24	0100	*594	16.8	[a]4.01	1.222	June 13	1730	242	6.85	3.05	0.930
Mar. 18	0200	306	8.67	3.28	1.000						

Minimum daily, 7.6 ft^3/s (0.215 m^3/s) Feb. 14.

a - backwater from ice

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	60	34	15	9.5	288	146	74	76	120	20	17
2	34	58	32	15	14	234	143	70	76	108	28	17
3	36	58	28	15	12	214	125	62	76	98	22	18
4	36	56	24	15	9.5	180	110	58	78	89	17	18
5	32	56	24	15	8.6	162	98	58	78	82	16	17
6	32	56	24	15	8.6	149	93	54	78	72	12	24
7	30	56	24	15	8.6	134	87	52	76	60	12	28
8	28	54	24	13	9.5	131	87	50	68	50	14	36
9	28	54	22	13	8.6	125	82	52	64	42	18	42
10	24	54	22	13	9.5	112	72	52	62	34	15	44
11	22	56	20	12	9.5	112	70	50	56	34	14	44
12	24	56	20	12	8.6	122	70	52	54	32	13	44
13	30	58	18	12	8.6	115	62	46	150	32	14	36
14	28	56	18	12	7.6	118	64	44	230	38	14	30
15	22	54	18	12	9.5	158	64	42	230	38	14	30
16	20	52	18	12	20	222	60	40	225	46	14	26
17	34	50	18	12	34	284	58	56	225	40	17	24
18	52	48	17	12	54	266	58	28	220	36	20	20
19	68	46	17	12	122	258	54	32	220	26	22	18
20	64	46	17	12	258	214	42	36	218	24	24	20
21	56	46	17	12	387	190	36	32	180	18	18	18
22	50	46	17	12	465	162	46	28	176	17	13	16
23	50	46	16	12	515	149	50	28	169	16	12	17
24	50	44	15	11	572	140	50	30	162	16	12	17
25	58	44	15	11	540	140	50	36	158	15	22	17
26	60	44	15	11	455	143	44	70	149	13	30	24
27	58	42	15	11	405	128	48	89	131	13	36	32
28	58	40	15	11	333	118	54	89	118	12	38	44
29	58	38	15	8.6	---	118	58	89	120	11	34	52
30	58	36	15	8.6	---	120	68	87	134	11	30	50
31	58	---	15	8.6	---	118	---	80	---	14	26	---
TOTAL	1292	1510	609	380.8	4302.2	5124	2149	1666	4057	1257	611	840
MEAN	41.7	50.3	19.6	12.3	154	165	71.6	53.7	135	40.5	19.7	28.0
MAX	68	60	34	15	572	288	146	89	230	120	38	52
MIN	20	36	15	8.6	7.6	112	36	28	54	11	12	16
AC-FT	2560	3000	1210	755	8530	10160	4260	3300	8050	2490	1210	1670

CAL YR 1980 TOTAL 13621.6 MEAN 37.2 MAX 525 MIN 2.3 AC-FT 27020
WTR YR 1981 TOTAL 23798.0 MEAN 65.2 MAX 572 MIN 7.6 AC-FT 47200

05056100 MAUVAIS COULEE NEAR CANDO, ND

LOCATION.--Lat 48°26'53", long 99°06'08", in SE¼NE¼SE¼ sec.1, T.157 N., R.66 W., Towner County, Hydrologic Unit 09020201, on left bank 0.3 mi (0.5 km) upstream from highway bridge, about 4 mi (6 km) upstream from West Fork, 5.5 mi (8.8 km) southeast of Cando, and 7 mi (11 km) northeast of Maza.

DRAINAGE AREA.--387 mi^2 (1,000 km^2), of which about 10 mi^2 (26 km^2) is probably noncontributing.

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,445 ft (440.4 m), from topographic map. Prior to July 2, 1957, nonrecording gage at present site and datum.

REMARKS.--Records good except winter periods, which are fair.

AVERAGE DISCHARGE.--25 years, 18.9 ft^3/s (0.535 m^3/s), 13,690 acre-ft/yr (16.9 hm^3/yr); median of yearly mean discharges, 13 ft^3/s (0.37 m^3/s), 9,400 acre-ft/yr (11.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,660 ft^3/s (75.3 m^3/s) Apr. 25, 1979, gage height, 11.18 ft (3.408 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1954, reached a stage of 9.83 ft (2.996 m), and flood of Apr. 20, 1956, reached a stage of 10.71 ft (3.264 m), from floodmarks set by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 2	0915	*307	8.694	6.62	2.018	June 4	1645	26	0.736	3.21	0.978
Mar. 20	0115	176	4.984	5.53	1.686						

Minimum daily discharge, 0.06 ft^3/s (0.0017 m^3/s) Jan. 28 - Feb. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	4.8	10	1.8	.06	125	41	18	21	2.7	.20	.09
2	5.4	5.3	9.4	1.3	.06	283	40	18	22	2.4	.20	.06
3	5.4	6.3	9.0	.48	.06	208	42	19	23	2.4	.25	.05
4	5.3	6.0	8.5	.70	.06	158	43	18	24	1.7	.92	.03
5	5.2	8.0	8.0	.70	.06	124	43	16	24	1.1	1.5	.03
6	5.2	8.8	7.5	.60	.06	90	42	13	23	.54	2.5	.29
7	5.1	10	7.0	.50	.06	64	40	13	21	.50	1.5	.41
8	5.0	12	6.5	.45	.06	51	36	15	19	.50	.69	.38
9	4.9	13	6.0	.40	.06	41	34	15	17	.50	.27	.41
10	4.8	13	5.5	.35	.06	33	32	14	16	.50	.19	.33
11	4.7	13	5.0	.35	.06	27	31	14	14	.50	.22	.15
12	4.6	13	5.0	.35	.06	29	30	13	14	.50	.20	.09
13	4.6	13	4.5	.35	.06	39	27	13	16	.50	.18	.06
14	4.5	13	4.0	.30	.10	39	26	13	15	.50	.18	.05
15	3.5	12	3.5	.30	.50	46	25	14	13	.50	.13	.04
16	3.8	12	3.0	.25	.80	62	24	14	11	.50	.16	.03
17	5.8	12	2.5	.20	1.5	77	23	12	10	.45	.15	.03
18	4.0	11	2.3	.15	2.0	95	21	11	8.8	.40	.14	.04
19	3.8	11	1.4	.15	2.5	161	19	9.7	8.0	.35	.14	.04
20	3.8	11	1.2	.10	3.0	165	18	8.6	7.4	.35	.16	.05
21	3.8	11	.99	.10	14	154	18	7.4	6.2	.35	.14	.05
22	3.8	11	.84	.10	38	129	18	7.2	5.5	.35	.12	.04
23	4.3	11	.53	.08	20	108	17	8.0	5.5	.30	.22	.04
24	4.3	10	.52	.08	14	84	16	12	8.1	.30	.27	.16
25	3.8	10	.52	.08	10	69	15	14	6.2	.30	.43	.10
26	3.8	10	.46	.08	10	58	15	12	5.5	.25	.28	.70
27	3.5	10	.48	.07	11	49	16	11	5.0	.25	.23	2.7
28	3.5	10	1.0	.06	12	47	16	12	4.3	.25	.15	.58
29	3.8	10	1.4	.06	---	45	16	13	4.1	.25	.10	.33
30	4.7	10	1.7	.06	---	42	17	16	3.4	.20	.09	.36
31	4.8	---	1.3	.06	---	40	---	18	---	.20	.09	---
TOTAL	139.0	311.2	119.54	10.61	140.18	2742	801	411.9	381.0	20.39	12.00	7.72
MEAN	4.48	10.4	3.86	.34	5.01	88.5	26.7	13.3	12.7	.66	.39	.26
MAX	5.8	13	10	1.8	38	283	43	19	24	2.7	2.5	2.7
MIN	3.5	4.8	.46	.06	.06	27	15	7.2	3.4	.20	.09	.03
AC-FT	276	617	237	21	278	5440	1590	817	756	40	24	15

CAL YR 1980 TOTAL 1128.22 MEAN 3.08 MAX 30 MIN .00 AC-FT 2240
WTR YR 1981 TOTAL 5096.54 MEAN 14.0 MAX 283 MIN .03 AC-FT 10110

05056200 EDMORE COULEE NEAR EDMORE, ND

LOCATION.--Lat 48°20'14", long 98°39'33", in NW¼ sec.17, T.156 N., R.62 W., Ramsey County, Hydrologic Unit 09020201, on right bank 50 ft (15 m) upstream from bridge on county highway, 11 mi (18 km) southwest of Edmore, and about 13 mi (21 km) upstream from Sweetwater Lake.

DRAINAGE AREA.--382 mi^2 (989 km^2), of which about 100 mi^2 (259 km^2) is probably noncontributing.

PERIOD OF RECORD.--April to June 1956, June 1957 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Prior to June 26, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--24 years (1957-81), 13.4 ft^3/s (0.379 m^3/s), 9,710 acre-ft/yr (12.0 hm^3/yr); median of yearly mean discharges, 9.1 ft^3/s (0.26 m^3/s), 6,600 acre-ft/yr (8.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,110 ft^3/s (31.4 m^3/s) Apr. 25, 1979, gage height, 7.31 ft (2.228 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 28	--	[a]*80	2.27	--	--	Mar. 16	--	[a]60	1.70	--	--

No flow for several months.

a - Maximum daily discharge occurred during period of missing record.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.0	1.5	.00	.00	70	34	3.6	.60	.60	1.0	.00
2	.00	9.0	1.5	.00	.00	60	32	3.5	.65	.65	1.0	.00
3	.00	8.5	1.5	.00	.00	50	30	3.3	1.0	.65	1.0	.00
4	.00	8.5	1.5	.00	.00	42	30	3.0	1.2	.65	1.0	.00
5	.00	8.0	1.5	.00	.00	37	29	2.9	1.2	.65	1.3	.00
6	.00	8.0	1.5	.00	.00	33	27	2.8	1.4	.55	1.2	.00
7	.00	8.0	1.5	.00	.00	29	25	2.5	1.2	.50	1.1	.00
8	.00	7.5	1.5	.00	.00	26	23	2.3	1.1	.50	1.0	.00
9	.00	7.5	1.5	.00	.00	26	21	2.4	1.0	.50	.90	.00
10	.00	7.5	1.3	.00	.00	36	19	2.3	.95	.50	.80	.00
11	.00	7.0	1.2	.00	.00	42	18	2.2	.95	.50	.70	1.1
12	.00	7.0	1.1	.00	.00	50	16	2.2	.95	.50	.60	2.6
13	.00	7.0	1.1	.00	.00	56	15	2.2	.95	.50	.50	3.1
14	.00	6.5	1.1	.00	.00	53	13	2.0	.95	.50	.40	3.1
15	.00	6.5	1.1	.00	.00	58	11	1.8	.90	.50	.30	3.3
16	.00	6.0	1.1	.00	.00	60	9.6	1.8	.80	.50	.20	3.3
17	.15	6.0	1.1	.00	.00	58	8.6	1.5	.70	.50	.10	3.2
18	2.3	5.5	1.1	.00	.00	56	7.8	1.3	.80	.75	.05	3.1
19	5.0	5.0	1.0	.00	.00	54	7.0	1.0	.80	.80	.00	3.0
20	6.9	5.0	.85	.00	.00	52	6.4	.95	.85	.85	.00	2.7
21	7.5	4.0	.95	.00	5.0	50	5.5	.75	.75	.90	.00	2.6
22	7.9	4.0	1.1	.00	10	50	4.9	.60	.65	.95	.00	2.4
23	8.9	3.5	1.0	.00	20	48	4.3	.65	.52	.95	.00	2.3
24	9.1	3.0	.75	.00	30	46	4.2	1.2	.56	.95	.00	2.2
25	9.1	3.0	.60	.00	45	44	4.1	1.9	.56	1.0	.00	2.1
26	9.0	2.5	.36	.00	60	42	3.9	2.2	.56	1.0	.00	2.1
27	8.9	2.5	.14	.00	75	40	3.6	2.3	.60	1.0	.00	2.0
28	8.8	2.5	.00	.00	80	40	3.6	5.2	.60	1.0	.00	2.0
29	8.7	2.0	.00	.00	---	40	3.6	4.3	.60	1.0	.00	2.0
30	8.6	2.0	.00	.00	---	38	3.9	2.3	.60	1.0	.00	2.0
31	8.5	---	.00	.00	---	36	---	1.1	---	1.0	.00	---
TOTAL	109.35	172.0	30.45	.00	325.00	1422	424.0	68.05	24.95	22.40	13.15	50.20
MEAN	3.53	5.73	.98	.000	11.6	45.9	14.1	2.20	.83	.72	.42	1.67
MAX	9.1	9.0	1.5	.00	80	70	34	5.2	1.4	1.0	1.3	3.3
MIN	.00	2.0	.00	.00	.00	26	3.6	.60	.52	.50	.00	.00
AC-FT	217	341	60	.00	645	2820	841	135	49	44	26	100

CAL YR 1980 TOTAL 677.26 MEAN 1.85 MAX 26 MIN .00 AC-FT 1340
WTR YR 1981 TOTAL 2661.55 MEAN 7.29 MAX 80 MIN .00 AC-FT 5280

05056225 WEBSTER COULEE AT WEBSTER, ND

LOCATION.--Lat 48°16'55", long 98°53'45", in SW¼SW¼SW¼ sec.33, T.156 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, on left bank 0.8 mi (1.3 km) west of Webster.

DRAINAGE AREA.--About 670 mi^2 (1,730 km^2) of which about 280 mi^2 (720 km^2) is probably noncontributing.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Nonrecording gage. Altitude of gage is 1,450 ft (442 m), from topographic map.

REMARKS.--Gage heights observed during periods of flow only.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 8.04 ft (2.451 m) Feb. 21, backwater from ice; minimum not observed.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	6.30			---	6.10	5.76	5.60	5.38	5.06	---	
2	---	6.34			---	6.06	5.74	5.60	5.34	5.04	---	
3	---	6.32			---	5.00	5.72	5.58	5.20	5.04	---	
4	---	6.28			---	---	5.70	5.56	5.16	5.02	---	
5	---	6.20			---	---	5.72	5.54	5.10	5.02	---	
6	---	6.10			---	---	5.74	5.54	5.06	5.02	---	
7	---	6.08			---	---	5.80	5.56	5.06	5.02	---	
8	---	6.08			---	---	5.82	5.56	5.06	5.02	---	
9	---	6.04			---	---	5.84	5.54	5.04	5.00	---	
10	---	6.02			---	---	5.76	5.54	5.04	5.00	---	
11	---	6.00			---	6.36	5.58	5.54	5.06	5.00	---	
12	---	5.98			---	6.58	5.38	5.52	5.06	5.00	---	
13	---	5.96			---	6.54	5.24	5.52	5.08	4.98	---	
14	---	5.94			---	6.40	5.48	5.50	5.08	4.98	---	
15	---	5.92			---	6.32	5.48	5.50	5.10	4.98	---	
16	---	5.90			---	6.26	5.48	5.48	5.10	4.94	---	
17	---	5.88			---	6.20	5.48	5.50	5.12	4.92	---	
18	---	5.88			---	6.18	5.46	5.52	5.10	4.80	---	
19	---	5.88			---	6.16	5.46	5.50	5.06	---	5.14	
20	---	5.88			7.68	6.14	5.46	5.52	5.04	---	---	
21	---	5.86			8.04	6.12	5.48	5.52	5.02	---	---	
22	6.80	5.84			7.10	6.10	5.48	5.54	5.02	---	---	
23	---	---			7.22	6.06	5.50	5.52	5.04	---	---	
24	---	---			7.00	6.02	5.52	5.54	5.04	---	---	
25	---	---			6.94	5.98	5.52	5.54	5.06	---	---	
26	6.70	---			6.78	5.96	5.54	5.54	5.06	---	---	
27	6.60	---			6.44	5.92	5.54	5.52	5.08	---	---	
28	6.56	---			6.36	5.88	5.56	5.52	5.08	---	---	
29	6.46	---			---	5.84	5.56	5.48	5.08	---	---	
30	6.42	---			---	5.80	5.58	5.44	5.06	---	---	
31	6.38	---			---	5.78	---	5.42	---	---	---	
TOTAL	---	---			---	---	167.38	171.30	152.78	---	---	
MEAN	---	---			---	---	5.58	5.53	5.09	---	---	
MAX	---	---			---	---	5.84	5.60	5.38	---	---	
MIN	---	---			---	---	5.24	5.42	5.02	---	---	

05056225 WEBSTER COULEE AT WEBSTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT										
22...	1045	1.5	788	7.7	1.5	4.0	299	152	67	32
FEB										
26...	1645	9.4	330	7.1	6.0	.5	119	9.5	31	10
APR										
09...	1540	3.8	510	8.2	16.5	11.5	212	28	52	20
MAY										
27...	1730	2.4	985	8.3	21.0	18.0	380	92	83	42
JUL										
06...	1225	.83	760	8.6	32.0	27.5	231	50	38	33

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE, FET-LAB (MG/L AS HCO3) (95440)	CAR-BONATE, FET-LAB (MG/L AS CO3) (95445)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
22...	48	25	1.2	9.2	179	.00	147	5.7	230
FEB									
26...	12	16	.5	11	133	.00	109	17	37
APR									
09...	12	10	.4	11	224	.00	184	2.2	48
MAY									
27...	71	27	1.6	27	351	.00	288	2.8	250
JUL									
06...	73	38	2.1	21	220	.00	180	.9	200

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)
OCT									
22...	25	.1	21	573	522	.78	2.3	.23	1.0
FEB									
26...	12	.0	18	229	200	.31	5.8	.75	3.3
APR									
09...	11	.1	27	332	292	.45	3.4	.23	1.0
MAY									
27...	25	.1	25	733	697	.00	4.7	.23	1.0
JUL									
06...	23	.3	9.0	522	507	.71	1.2	.23	1.0

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT				
22...	.86	260	60	20
FEB				
26...	1.3	100	100	20
APR				
09...	1.7	30	40	10
MAY				
27...	.22	60	40	60
JUL				
06...	.32	100	30	200

05056239 STARKWEATHER COULEE NEAR WEBSTER, ND

LOCATION.--Lat 48°19'13", long 98°56'23", in NW¼SW¼NW¼ sec.19, T.156 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, on bridge 3.8 mi (6.1 km) northwest of Webster.

DRAINAGE AREA.--About 310 mi^2 (800 km^2) of which about 100 mi^2 (260 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Nonrecording gage.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 44 ft^3/s (1.25 m^3/s) Apr. 7, 1980, gage height, 5.10 ft (1.554 m); no flow for many months.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 31 ft^3/s (0.878 m^3/s) Mar. 22, gage height, 6.38 ft (1.945 m), backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.6	.00	.00	.00	27	24	1.4	1.2	1.6	.00	.00
2	.80	2.6	.00	.00	.00	24	23	.52	5.0	1.8	.00	.00
3	.75	2.5	.00	.00	.00	26	22	.46	10	2.2	.00	.00
4	.60	2.5	.00	.00	.00	26	20	.46	8.0	2.2	.00	.00
5	.45	2.4	.00	.00	.00	25	19	.35	10	2.2	.00	.00
6	.30	2.4	.00	.00	.00	24	19	.18	9.0	.78	.00	.00
7	.20	2.3	.00	.00	.00	23	18	.16	8.0	.16	.00	.00
8	.15	2.3	.00	.00	.00	22	16	.14	7.0	.08	.00	.00
9	.10	2.2	.00	.00	.00	22	16	.22	6.0	.01	.00	.00
10	.05	2.2	.00	.00	.00	22	14	.22	5.0	.00	.00	.00
11	.02	1.9	.00	.00	.00	20	12	.18	4.0	.00	.00	.00
12	.00	1.8	.00	.00	.00	20	10	.22	3.0	.00	.00	.00
13	.00	1.5	.00	.00	.00	22	9.6	.12	3.0	.00	.00	.00
14	.00	1.1	.00	.00	.00	24	6.7	.12	4.0	.00	.00	.00
15	.00	1.0	.00	.00	.00	28	6.0	.02	3.0	.00	.00	.00
16	1.0	.68	.00	.00	.00	27	5.4	.00	2.5	.00	.00	.00
17	5.0	.28	.00	.00	.00	24	5.4	.00	1.9	.00	.00	.00
18	6.0	.20	.00	.00	.00	24	3.6	.00	2.1	.00	.00	.00
19	5.0	.15	.00	.00	6.0	27	3.2	.00	2.1	.00	.00	.00
20	4.5	.10	.00	.00	12	30	2.8	.00	2.2	.00	.00	.00
21	4.0	.05	.00	.00	14	30	2.4	.00	2.2	.00	.00	.00
22	3.6	.02	.00	.00	16	31	2.8	.00	3.0	.00	.00	.00
23	3.2	.00	.00	.00	18	29	2.4	.00	4.6	.00	.00	.00
24	3.0	.00	.00	.00	20	29	1.4	.00	11	.00	.00	.00
25	3.0	.00	.00	.00	22	30	1.9	.20	6.7	.00	.00	.00
26	2.9	.00	.00	.00	24	29	1.0	.40	4.8	.00	.00	.00
27	2.9	.00	.00	.00	26	29	2.4	.68	3.6	.00	.00	.00
28	2.8	.00	.00	.00	27	29	1.9	.70	3.0	.00	.00	.00
29	2.8	.00	.00	.00	---	27	1.6	.90	2.8	.00	.00	.00
30	2.7	.00	.00	.00	---	27	1.2	1.2	1.9	.00	.00	.00
31	2.7	---	.00	.00	---	25	---	1.2	---	.00	.00	---
TOTAL	59.52	32.78	.00	.00	185.00	802	274.7	10.05	140.6	11.03	.00	.00
MEAN	1.92	1.09	.000	.000	6.61	25.9	9.16	.32	4.69	.36	.000	.000
MAX	6.0	2.6	.00	.00	27	31	24	1.4	11	2.2	.00	.00
MIN	.00	.00	.00	.00	.00	20	1.0	.00	1.2	.00	.00	.00
AC-FT	118	65	.00	.00	367	1590	545	20	279	22	.00	.00

CAL YR 1980 TOTAL 413.93 MEAN 1.13 MAX 44 MIN .00 AC-FT 821
WTR YR 1981 TOTAL 1515.68 MEAN 4.15 MAX 31 MIN .00 AC-FT 3010

RED RIVER OF THE NORTH BASIN

05056239 STARKWEATHER COULEE NEAR WEBSTER, ND

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT										
22...	1220	3.6	678	8.2	1.5	4.0	319	71	75	32
FEB										
20...	1345	12	145	--	4.0	.5	--	--	--	--
27...	1055	25	300	7.0	.0	.5	131	22	31	13
APR										
09...	1635	15	608	8.4	17.0	11.0	262	45	62	26
MAY										
27...	1555	.70	870	8.7	21.0	20.0	391	95	84	44
JUL										
06...	1305	E1.0	895	8.6	35.0	29.5	390	162	82	45

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE, FET-LAB (MG/L AS HCO3) (95440)	CAR-BONATE, FET-LAB (MG/L AS CO3) (95445)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
22...	25	14	.6	8.9	303	.00	249	3.0	110
FEB									
20...	--	--	--	--	--	--	--	--	--
27...	6.9	9	.3	11	133	.00	109	21	29
APR									
09...	18	13	.5	9.6	264	.00	217	1.7	76
MAY									
27...	39	17	.9	17	361	.00	296	1.1	170
JUL									
06...	49	21	1.1	16	278	.00	228	1.1	250

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)
OCT									
22...	16	.1	25	465	442	.63	4.5	.23	1.0
FEB									
20...	--	--	--	--	--	--	--	--	--
27...	9.0	.1	17	185	188	.25	12.5	1.20	5.3
APR									
09...	13	.1	44	370	380	.50	15.0	.23	1.0
MAY									
27...	29	.1	15	608	577	.83	1.1	.23	1.0
JUL									
06...	33	.2	18	651	631	.89	--	.23	1.0

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT				
22...	.36	230	40	10
FEB				
27...	.94	130	80	10
APR				
09...	.10	230	10	10
MAY				
27...	.05	100	80	0
JUL				
06...	.28	130	20	20

E - Estimated.

05056390 LITTLE COULEE NEAR BRINSMADE, ND

LOCATION.--Lat 48°11'15", long 99°14'34", in SW¼ sec.2, T.154 N., R.67 W., Benson County, Hydrologic Unit 09020201, on right bank 100 ft (30 m) downstream from bridge on township road, 0.5 mi (0.8 km) downstream from Silver Lake, and 4 mi (6 km) east of Brinsmade.

DRAINAGE AREA.--350 mi^2 (906 km^2), of which 160 mi^2 (414 km^2) is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,435 ft (437 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--6 years, 7.75 ft^3/s (0.219 m^3/s), 5,620 acre-ft/yr (6.93 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 425 ft^3/s (12.1 m^3/s) May 1, 1979, gage height, 10.43 ft (3.179 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22 ft^3/s (0.623 m^3/s) Mar. 18, gage height, 7.95 ft (2.423 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	20	4.7	.25	.69	.00	.00
2	.00	.00	.00	.00	.00	.00	19	3.9	.45	.58	.00	.00
3	.00	.00	.00	.00	.00	.00	19	3.7	.20	.57	.00	.00
4	.00	.00	.00	.00	.00	.00	18	3.4	.19	.50	.00	.00
5	.00	.00	.00	.00	.00	.00	17	3.1	.30	.47	.00	.00
6	.00	.00	.00	.00	.00	.00	16	3.0	.59	.42	.00	.00
7	.00	.00	.00	.00	.00	.01	15	2.7	1.6	.34	.00	.00
8	.00	.00	.00	.00	.00	.01	15	2.2	1.9	.25	.00	.00
9	.00	.00	.00	.00	.00	.01	14	2.7	1.7	.17	.00	.00
10	.00	.00	.00	.00	.00	.15	14	1.6	1.6	.06	.00	.00
11	.00	.00	.00	.00	.00	.40	13	.88	1.4	.05	.00	.00
12	.00	.00	.00	.00	.00	.70	12	.65	1.0	.01	.00	.00
13	.00	.00	.00	.00	.00	.50	12	.52	1.6	.00	.00	.00
14	.00	.00	.00	.00	.00	.50	11	.45	2.0	.00	.00	.00
15	.00	.00	.00	.00	.00	.50	9.8	.28	2.2	.00	.00	.00
16	.00	.00	.00	.00	.00	.50	9.5	.31	2.6	.00	.00	.00
17	.19	.00	.00	.00	.00	.50	9.0	.19	2.2	.00	.00	.00
18	.08	.00	.00	.00	.00	14	7.9	.03	1.9	.00	.00	.00
19	.03	.02	.00	.00	.00	16	7.5	.02	1.2	.00	.00	.00
20	.01	.01	.00	.00	.97	15	6.4	.01	.88	.00	.00	.00
21	.01	.00	.00	.00	.80	15	5.5	.01	.82	.00	.00	.00
22	.01	.00	.00	.00	.60	15	5.4	.00	1.0	.00	.00	.00
23	.04	.00	.00	.00	.50	15	4.7	.17	1.4	.00	.00	.00
24	.05	.00	.00	.00	.30	16	4.1	.63	1.5	.00	.00	.00
25	.05	.00	.00	.00	.20	16	3.6	.63	1.2	.00	.00	.00
26	.04	.00	.00	.00	.10	16	3.2	.34	1.1	.00	.00	.00
27	.02	.00	.00	.00	.05	17	3.3	.20	1.1	.00	.00	.00
28	.01	.00	.00	.00	.00	19	3.8	.14	.97	.00	.00	.00
29	.01	.00	.00	.00	---	19	4.0	.06	.97	.00	.00	.00
30	.01	.00	.00	.00	---	19	4.6	.01	.85	.00	.00	.00
31	.00	---	.00	.00	---	20	---	.00	---	.00	.00	---
TOTAL	.56	.03	.00	.00	3.52	235.78	307.3	36.53	36.67	4.11	.00	.00
MEAN	.018	.001	.000	.000	.13	7.61	10.2	1.18	1.22	.13	.000	.000
MAX	.19	.02	.00	.00	.97	20	20	4.7	2.6	.69	.00	.00
MIN	.00	.00	.00	.00	.00	.00	3.2	.00	.19	.00	.00	.00
AC-FT	1.1	.06	.00	.00	7.0	468	610	72	73	8.2	.00	.00

CAL YR 1980 TOTAL 67.51 MEAN .18 MAX 4.8 MIN .00 AC-FT 134
WTR YR 1981 TOTAL 624.50 MEAN 1.71 MAX 20 MIN .00 AC-FT 1240

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to current year.
WATER TEMPERATURES: October 1975 to September 1976, October 1977 to current year.

REMARKS.--No flow Oct. 1 to Feb. 20, Feb. 26 to Mar. 12, July 19 to Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,010 micromhos May 12, 1978; minimum daily, 220 micromhos Apr. 6, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C June 15, 1979; minimum daily, 0.0°C Apr. 2, 1980, Feb. 20, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,990 micromhos June 5; minimum daily, 350 micromhos Feb. 22.
WATER TEMPERATURES: Maximum daily, 27.0°C July 6, 7; minimum daily, 0.0°C on Feb. 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
30...	1015	.03	2920	7.7	8.0	2.5	43	1227	850	310	110	200
FEB												
20...	1630	E1.0	450	--	7.0	.0	--	--	--	--	--	--
APR												
09...	1230	14	798	8.4	11.5	7.0	25	273	43	55	33	63
MAY												
21...	1335	.01	1260	8.0	28.0	20.0	30	453	83	94	52	110
JUL												
06...	1705	.40	985	7.6	34.0	25.5	50	353	33	72	42	81

DATE	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
30...	26	2.6	34	380	1100	150	.1	30	2240	1957	3.0	.18
FEB												
20...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
09...	32	1.7	17	230	160	23	.2	14	527	504	.72	19.9
MAY												
21...	33	2.3	21	370	260	45	.2	3.8	860	814	1.2	.02
JUL												
06...	32	1.9	20	320	160	45	.2	33	686	647	.93	.74

E - Estimated.

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
30...	.00	.420	--	--	--	160	--	--	--	--	--
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	.01	.360	--	--	--	80	--	--	--	--	--
MAY											
21...	.01	1.00	20	10	70	200	<1	0	<3	2	30
JUL											
06...	.31	.660	--	--	--	330	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT											
30...	--	--	--	--	--	--	--	--	--	--	--
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	2	80	900	.0	<10	1	0	3800	1.0	30	.01
JUL											
06...	--	--	--	--	--	--	--	--	--	--	--

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	---	400	825	1750	950		
2					---	---	400	800	1700	950		
3					---	---	500	800	1700	950		
4					---	---	690	800	1800	800		
5					---	---	710	840	1990	950		
6					---	---	740	850	1200	950		
7					---	---	750	850	850	1000		
8					---	---	750	790	900	1000		
9					---	---	790	850	875	1000		
10					---	---	760	800	895	1000		
11					---	---	751	750	895	---		
12					---	---	800	800	900	1100		
13					---	425	600	800	845	1100		
14					---	410	800	825	850	1100		
15					---	400	800	900	900	1000		
16					---	400	775	800	900	1200		
17					---	360	800	750	900	1200		
18					---	575	800	990	900	1100		
19					---	525	775	1100	900	---		
20					390	420	800	1100	900	---		
21					410	500	800	1200	910	---		
22					350	500	800	1200	900	---		
23					460	500	800	1200	950	---		
24					480	500	850	1150	975	---		
25					425	520	800	1500	975	---		
26					---	520	800	1490	950	---		
27					---	490	800	1520	775	---		
28					---	440	800	1520	815	---		
29					---	420	790	1530	950	---		
30					---	380	800	1720	950	---		
31					---	390	---	1750	---	---		
MEAN					419	457	741	1060	1060	1020		

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	---	9.0	15.0	14.0	24.0		
2					---	---	10.0	17.0	19.0	23.0		
3					---	---	6.0	17.0	21.0	24.0		
4					---	---	8.0	16.0	18.0	22.0		
5					---	---	10.0	16.5	20.0	26.0		
6					---	---	9.0	16.5	20.0	27.0		
7					---	---	9.0	15.0	18.0	27.0		
8					---	---	10.0	12.0	17.0	23.0		
9					---	---	10.0	12.0	18.0	23.0		
10					---	---	11.0	9.0	19.0	21.0		
11					---	---	7.0	14.0	20.0	---		
12					---	---	11.0	15.0	20.0	25.0		
13					---	1.0	10.0	16.0	17.0	25.0		
14					---	1.5	9.0	16.0	17.0	25.0		
15					---	2.0	14.0	17.0	16.0	25.0		
16					---	3.0	16.0	15.5	20.0	26.0		
17					---	1.0	11.0	18.0	19.0	24.0		
18					---	3.0	10.0	19.0	16.5	24.0		
19					---	4.0	10.0	19.0	18.0	---		
20					.0	3.5	11.0	18.0	17.0	---		
21					1.0	3.5	13.0	20.0	17.0	---		
22					4.0	6.0	10.0	21.0	18.0	---		
23					1.0	7.0	11.5	10.0	16.0	---		
24					1.0	8.0	13.0	9.0	20.0	---		
25					1.0	5.0	14.0	11.0	19.0	---		
26					---	5.0	11.0	13.0	21.0	---		
27					---	9.0	13.0	16.0	24.0	---		
28					---	7.0	15.0	21.0	22.0	---		
29					---	10.0	12.0	19.0	22.0	---		
30					---	10.0	14.0	15.0	22.5	---		
31					---	7.0	---	18.0	---	---		
MEAN					1.5	5.0	11.0	15.5	19.0	24.5		

05056400 BIG COULEE NEAR CHURCHS FERRY, ND

LOCATION.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., Benson County, Hydrologic Unit 09020201, on right bank on downstream side of bridge on U.S. Highway 281, 1 mi (1.6 km) downstream from Little Coulee, and 6 mi (10 km) south of Churchs Ferry.

DRAINAGE AREA.--2,510 mi^2 (6,500 km^2), approximately, of which about 690 mi^2 (1,790 km^2) is probably non-contributing.

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1960, published as Mauvais Coulee near Churchs Ferry.

GAGE.--Water-stage recorder. Datum of gage is 1,432.65 ft (436.672 m) National Geodetic Vertical Datum of 1929. Prior to June 21, 1950, reference marks, and June 21, 1950, to July 17, 1956, nonrecording gage at former bridge on U.S. Highway 281, 0.1 mi (0.2 km) upstream at datum 0.70 ft (0.213 km) higher.

REMARKS.--Records fair. Flow affected by many lakes on the mainstem and tributaries.

AVERAGE DISCHARGE.--31 years, 42.0 ft^3/s (1.189 m^3/s), 30,430 acre-ft/yr (37.5 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 7,970 acre-ft/yr (9.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,420 ft^3/s (40.2 m^3/s) May 6, 1979, gage height, 7.59 ft (2.313 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 98 ft^3/s (2.78 m^3/s) Apr. 14, gage height, 3.42 ft (1.042 m); no flow Dec. 24 - Feb. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.1	1.4	.00	.00	2.5	83	71	16	23	2.6	3.3
2	.97	1.8	1.3	.00	.00	1.9	84	61	19	16	3.3	4.2
3	1.0	1.4	1.1	.00	.00	1.8	84	57	19	15	3.3	3.9
4	1.0	1.3	.90	.00	.00	1.8	85	61	16	19	3.3	3.8
5	1.1	1.3	.70	.00	.00	1.6	85	57	16	19	3.6	4.1
6	.99	1.3	.80	.00	.00	1.2	83	53	17	19	3.4	4.7
7	.91	1.3	.70	.00	.00	1.2	75	49	20	18	3.3	5.8
8	.90	1.5	.80	.00	.00	1.2	78	44	21	14	3.3	9.9
9	.82	1.6	.70	.00	.00	1.2	83	52	22	14	3.2	12
10	.60	1.7	.70	.00	.00	1.2	82	45	21	16	3.0	10
11	.80	1.8	.65	.00	.00	1.4	85	37	19	16	2.8	8.7
12	.95	2.0	.65	.00	.00	2.0	88	33	19	16	2.4	8.7
13	1.1	2.1	.60	.00	.00	2.3	86	34	23	14	2.2	8.3
14	1.1	2.1	.60	.00	.00	2.6	94	35	27	12	2.0	7.9
15	1.1	2.2	.55	.00	.00	3.2	84	33	33	10	1.8	7.9
16	1.3	2.1	.55	.00	.00	3.3	81	37	34	9.5	1.8	7.5
17	2.9	2.3	.54	.00	.00	4.2	82	36	33	7.9	1.7	7.5
18	3.4	9.9	.40	.00	.00	10	84	27	29	7.2	1.4	6.9
19	4.0	3.2	.20	.00	.00	35	89	24	32	6.7	1.3	5.3
20	3.7	2.7	.08	.00	20	34	90	20	32	5.3	1.1	5.3
21	3.0	2.1	.06	.00	22	33	73	16	31	4.7	1.0	5.5
22	2.5	1.8	.05	.00	18	40	78	13	33	4.6	1.1	5.0
23	2.9	1.8	.02	.00	18	45	82	21	35	4.2	2.0	5.3
24	2.6	1.8	.00	.00	12	51	76	45	39	3.7	2.5	5.0
25	2.3	1.6	.00	.00	8.7	54	69	43	41	3.4	3.6	5.0
26	2.5	1.6	.00	.00	4.6	61	67	33	37	3.6	3.7	6.1
27	2.4	1.5	.00	.00	3.4	65	67	25	34	3.6	3.8	4.7
28	2.3	1.5	.00	.00	2.9	72	67	20	30	3.2	4.1	7.9
29	2.4	1.5	.00	.00	---	75	66	16	29	2.9	4.2	8.3
30	2.3	1.5	.00	.00	---	76	70	16	29	2.7	3.8	6.7
31	2.3	---	.00	.00	---	79	---	16	---	3.0	3.7	---
TOTAL	57.14	62.4	14.05	.00	109.60	764.6	2400	1130	806	317.2	84.3	195.2
MEAN	1.84	2.08	.45	.000	3.91	24.7	80.0	36.5	26.9	10.2	2.72	6.51
MAX	4.0	9.9	1.4	.00	22	79	94	71	41	23	4.2	12
MIN	.60	1.3	.00	.00	.00	1.2	66	13	16	2.7	1.0	3.3
AC-FT	113	124	28	.00	217	1520	4760	2240	1600	629	167	387

CAL YR 1980	TOTAL	1090.58	MEAN	2.98	MAX 47	MIN .00	AC-FT	2160
WTR YR 1981	TOTAL	5940.49	MEAN	16.3	MAX 94	MIN .00	AC-FT	11780

05056500 DEVILS LAKE NEAR DEVILS LAKE, ND

LOCATION.--Lat 48°04'00", long 98°56'07", in SW¼ sec.18, T.153 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, at Lakewood, on east bank of Creel Bay, 4.5 mi (7.2 km) southwest of city of Devils Lake. Creel Bay, which is 0.5 mi (0.8 km) wide, is an arm of Devils Lake and extends 2 mi (3 km) to the north of the lake.

DRAINAGE AREA.--3,130 mi^2 (8,110 km^2), approximately, of which about 1,000 mi^2 (2,600 km^2) is probably noncontributing.

PERIOD OF RECORD.--1867, 1879, 1883, 1887, 1890, 1896 (one gage height for each year), 1901-63 (fragmentary), 1964 to current year.

REVISED RECORDS.--WSP 1913: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.72 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. June 23, 1950, to June 6, 1963, nonrecording gage at present site and datum. See WSP 1913 for history of changes prior to June 23, 1950. Prior to October 1979 only monthend elevations were published.

REMARKS.--Elevation at gage frequently affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,438.40 ft (438.424 m) in 1867, present datum; minimum observed, 1,400.87 ft (426.985 m) Oct. 24, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--The lake level was about elevation 1,446 ft (441 m) about 1830 and lower thereafter, according to the tree growth noted 1885-89. Reference is Geological Survey monograph, volume XXV, The Glacial History of Lake Agassiz by Warren Upham.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 1,425.93 ft (434.623 m) June 24; minimum recorded, 1,425.11 ft (434.374 m) Oct. 13.

MONTHEND ELEVATION, IN FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Oct. 31.....	1,425.31	Jan. 31.....	1,425.38	Apr. 30.....	1,425.70	July 31.....	1,425.65
Nov. 30.....	1,425.31	Feb. 28.....*	1,425.50	May 31.....	1,425.50	Aug. 31.....*	1,425.45
Dec. 31.....	1,425.34	Mar. 31.....*	1,425.60	June 30.....	1,425.88	Sept.30.....*	1,425.35

* Estimated

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.38	25.29	25.31	25.32	25.36	25.47	---	25.70	25.62	25.86	25.65	
2	25.29	25.32	25.30	25.30	25.37	25.47	---	25.70	25.74	25.88	25.64	
3	25.30	25.35	25.31	25.30	25.36	25.47	---	25.69	25.74	25.88	25.63	
4	25.29	25.31	25.32	25.31	25.37	25.51	---	25.64	25.75	25.88	25.63	
5	25.30	25.32	25.33	25.32	25.38	---	---	25.63	25.80	25.87	25.63	
6	25.31	25.32	25.31	25.32	25.39	---	---	25.64	25.76	25.86	25.62	
7	25.32	25.30	25.31	25.31	25.39	---	25.68	25.64	25.77	25.85	25.60	
8	25.31	25.36	25.31	25.32	25.38	---	25.67	25.61	25.76	25.85	25.59	
9	25.32	25.33	25.32	25.31	25.38	---	25.67	25.58	25.75	25.78	25.56	
10	25.35	25.32	25.30	25.31	25.24	---	25.70	25.59	25.76	25.74	25.57	
11	25.22	25.33	25.31	25.32	25.37	---	25.63	25.60	25.73	25.75	25.56	
12	25.20	25.34	25.33	25.34	25.61	---	25.66	25.59	25.71	25.76	25.54	
13	25.15	25.36	25.32	25.34	25.59	---	25.67	25.59	25.79	25.75	25.55	
14	25.21	25.35	25.32	25.34	25.48	---	25.67	25.59	25.84	25.71	25.54	
15	25.22	25.34	25.32	25.33	25.41	---	25.68	25.54	25.85	25.76	25.51	
16	25.17	25.33	25.33	25.33	25.42	---	25.69	25.50	25.83	25.76	25.50	
17	25.30	25.33	25.33	25.33	25.42	---	25.70	25.55	25.85	25.72	25.51	
18	25.34	25.34	25.30	25.34	25.43	---	25.63	25.57	25.83	25.72	25.49	
19	25.33	25.33	25.29	25.33	25.44	---	25.57	25.56	25.74	25.71	25.47	
20	25.34	25.35	25.29	25.33	25.45	---	25.63	25.55	25.76	25.71	---	
21	25.31	25.35	25.29	25.34	25.47	---	25.66	25.52	25.78	25.67	---	
22	25.27	25.35	25.31	25.34	25.47	---	25.64	25.50	25.82	25.68	---	
23	25.31	25.34	25.31	25.35	25.47	---	25.62	25.45	25.84	25.69	---	
24	25.35	25.35	25.31	25.36	25.47	---	25.61	25.53	25.91	25.69	---	
25	25.33	25.35	25.31	25.37	25.47	---	25.63	25.57	25.87	25.65	---	
26	25.33	25.35	25.31	25.38	25.47	---	25.65	25.57	25.85	25.65	---	
27	25.33	25.35	25.36	25.35	25.47	---	25.63	25.59	25.87	25.64	---	
28	25.33	25.37	25.34	25.36	25.47	---	25.67	25.61	25.90	25.64	---	
29	25.34	25.35	25.33	25.35	---	---	25.70	25.59	25.90	25.61	---	
30	25.37	25.32	25.34	25.36	---	---	25.72	25.55	25.87	25.62	---	
31	25.32	---	25.34	25.38	---	---	---	25.54	---	25.68	---	
TOTAL	784.24	760.10	784.81	785.39	712.00	---	---	793.08	773.99	798.02	---	
MEAN	25.30	25.34	25.32	25.34	25.43	---	---	25.58	25.80	25.74	---	
MAX	25.38	25.37	25.36	25.38	25.61	---	---	25.70	25.91	25.88	---	
MIN	25.15	25.29	25.29	25.30	25.24	---	---	25.45	25.62	25.61	---	

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND

LOCATION.--Lat 47°26'01", long 98°01'43", in NE¼NE¼SE¼ sec.27, T.146 N., R.58 W., Griggs County, Hydrologic Unit 09020203, on right bank 150 ft (46 m) downstream from county bridge, and 5 mi (8 km) east of Cooperstown.

DRAINAGE AREA.--6,470 mi^2 (16,760 km^2), approximately, of which about 5,200 mi^2 (13,470 km^2) is probably noncontributing, includes 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1944 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area. WDR ND-80-1: Gage datum.

GAGE.--Water-stage recorder. Datum of gage is 1,271.761 ft (387.633 m), National Geodetic Vertical Datum of 1929, Coast and Geodetic Survey benchmark. Prior to Aug. 3, 1950, nonrecording gage at site 150 ft (45.7 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--37 years, 103 ft^3/s (2.917 m^3/s), 74,620 acre-ft/yr (92.0 hm^3/yr); median of yearly mean discharges, 84 ft^3/s (2.38 m^3/s) 60,900 acre-ft/yr (75 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,830 ft^3/s (222 m^3/s) Apr. 17, 1950, gage height, 18.69 ft (5.697 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
(a)	--	480	13.6	*b,c10.80	3.292	June 24	1800	334	9.46	7.12	2.170
Mar. 23	0800	*500	14.2	b8.61	2.624						

Minimum daily discharge, 14 ft^3/s (0.396 m^3/s) Jan. 11 - Feb. 13.

a - Sometime during the period Mar. 5-10
b - Gage height obtained from floodmark
c - Backwater from ice

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	66	42	20	14	360	208	80	68	190	41	16
2	51	68	42	20	14	430	199	82	82	179	47	16
3	47	70	30	19	14	480	200	87	90	164	48	20
4	45	70	30	19	14	480	225	91	96	146	47	24
5	43	70	25	19	14	460	230	94	101	128	45	25
6	43	69	25	19	14	450	219	98	100	126	41	30
7	44	71	25	19	14	430	206	97	93	122	38	33
8	44	72	25	19	14	400	187	93	89	113	37	31
9	43	71	25	18	14	350	167	87	90	102	38	36
10	43	70	25	16	14	300	152	82	92	89	39	37
11	41	70	25	14	14	270	140	77	89	81	38	32
12	39	70	25	14	14	250	130	77	85	81	36	28
13	37	70	25	14	14	230	122	77	86	83	33	25
14	35	70	25	14	15	220	115	77	89	89	30	25
15	35	50	25	14	20	210	106	75	91	75	29	25
16	37	61	20	14	20	200	101	75	95	72	27	24
17	39	60	20	14	20	230	99	75	97	73	25	25
18	39	60	20	14	30	200	92	73	99	79	25	25
19	37	60	20	14	70	190	86	69	105	77	23	25
20	44	60	20	14	120	200	85	67	120	67	22	25
21	47	60	20	14	140	250	84	65	177	60	21	25
22	47	58	20	14	130	360	81	64	248	61	20	24
23	49	58	20	14	150	424	79	59	308	59	23	24
24	55	55	20	14	175	374	78	57	332	57	20	25
25	66	48	20	14	200	315	76	57	327	56	18	25
26	72	45	20	14	230	270	71	57	298	57	18	25
27	70	45	20	14	280	236	69	58	266	51	18	27
28	54	45	20	14	310	218	72	59	243	45	19	27
29	66	45	20	14	---	206	75	60	223	42	19	25
30	62	45	20	14	---	206	79	58	204	41	18	28
31	64	---	20	14	---	211	---	58	---	41	17	---
TOTAL	1490	1832	739	482	2092	9410	3833	2285	4483	2706	920	782
MEAN	48.1	61.1	23.8	15.5	74.7	304	128	73.7	149	87.3	29.7	26.1
MAX	72	72	42	20	310	480	230	98	332	190	48	37
MIN	35	45	20	14	14	190	69	57	68	41	17	16
AC-FT	2960	3630	1470	956	4150	18660	7600	4530	8890	5370	1820	1550

CAL YR 1980 TOTAL 20174.3 MEAN 55.1 MAX 730 MIN 3.4 AC-FT 40020
WTR YR 1981 TOTAL 31054.0 MEAN 85.1 MAX 480 MIN 14 AC-FT 61600

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES:' October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,170 micromhos Mar. 18, 1967; minimum daily, 180 micromhos Apr. 18, 1979.
WATER TEMPERATURES: Maximum daily, 29.0°C July 7, 1981; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,670 micromhos Jan. 12, 13; minimum daily, 360 micromhos Mar. 5.
WATER TEMPERATURES: Maximum daily, 29.0°C July 7; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT											
28...	1525	62	886	8.3	4.5	1.0	30	6.6	12.9	94	1.6
DEC											
02...	1450	42	1190	8.4	-10.0	.0	50	6.9	13.0	92	.8
JAN											
06...	1320	19	1550	8.5	-14.5	.0	30	6.2	5.0	36	1.3
FEB											
03...	1330	14	1600	7.9	-10.5	.0	30	4.1	4.5	32	1.0
25...	0745	E150	550	7.8	-1.5	.0	80	20	11.1	79	6.1
MAR											
03...	1300	449	421	7.7	4.0	.5	100	12	8.6	63	3.3
10...	1540	E290	580	7.7	2.0	.5	80	7.0	9.9	71	3.2
17...	1025	E240	530	8.1	-1.0	1.0	60	12	11.3	83	3.4
25...	1150	308	630	8.0	6.0	3.0	65	23	11.9	93	3.8
31...	1140	202	583	8.2	2.5	5.5	60	20	10.8	91	4.0
APR											
07...	1215	E200	682	8.3	12.5	7.5	60	18	11.2	99	3.6
14...	1050	E115	805	8.2	4.5	8.5	60	8.4	10.6	93	1.4
21...	1535	89	890	8.3	12.0	9.5	30	12	10.4	97	2.4
28...	1055	E72	920	8.1	10.5	12.5	30	6.4	8.9	87	1.9
MAY											
05...	1330	92	928	8.2	15.0	13.5	30	9.0	9.1	90	1.7
11...	1310	81	971	8.5	16.5	11.0	30	5.0	9.8	105	7.1
19...	1040	E76	980	8.5	19.0	16.5	40	7.5	8.6	--	2.0
27...	1225	58	995	8.4	21.5	15.0	25	4.3	9.1	--	1.7
JUN											
02...	1050	E97	975	8.3	14.5	16.0	35	6.7	7.8	83	2.0
09...	1535	92	1020	8.5	19.5	19.5	25	10	7.7	89	1.5
17...	1005	E97	1060	8.4	18.5	19.0	35	16	7.1	81	1.6
23...	1325	313	1050	8.2	15.5	18.0	50	24	6.8	75	2.1
JUL											
06...	1500	126	850	8.1	33.0	27.0	60	16	6.8	90	2.0
AUG											
10...	1655	39	1020	8.3	25.0	20.0	40	16	8.2	94	2.6
SEP											
16...	1555	24	892	8.3	15.0	14.0	50	25	8.3	82	2.5

E - Estimated.

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)
OCT											
28...	4500	K43	170	272	.00	56	32	97	43	2.6	9.1
DEC											
02...	530	K3	360	392	.00	81	46	140	43	3.2	11
JAN											
06...	1300	K2	110	458	.00	96	53	180	45	3.8	9.5
FEB											
03...	620	K14	130	505	.00	110	56	190	44	3.8	9.3
25...	K13000	--	--	176	.00	39	19	52	38	1.8	9.4
MAR											
03...	--	--	K14	128	.00	28	14	40	38	1.6	10
10...	230	2300	K24	143	.00	31	16	68	49	2.5	9.6
17...	K510	<3	48	141	.00	30	16	58	45	2.2	8.2
25...	550	K140	68	157	.00	33	18	76	50	2.7	8.0
31...	880	K1400	73	152	.00	33	17	58	44	2.1	7.1
APR											
07...	700	K17	K32	205	.00	44	23	72	42	2.3	8.2
14...	1500	K10	K40	241	.00	52	27	82	41	2.4	8.8
21...	780	K3	210	279	.00	59	32	100	43	2.7	8.8
28...	14000	23	300	302	.00	68	32	98	40	2.5	9.4
MAY											
05...	7000	K27	150	307	.00	67	34	100	41	2.6	8.5
11...	3600	K17	100	313	.00	66	36	96	39	2.4	8.9
19...	6300	K20	52	330	.00	71	37	100	39	2.5	8.9
27...	8400	37	160	313	.00	66	36	100	40	2.5	7.6
JUN											
02...	14000	150	370	308	.00	64	36	110	43	2.8	7.6
09...	10000	K32	860	325	.00	66	39	110	42	2.7	7.7
17...	13000	130	290	310	.00	63	37	120	45	3.0	8.1
23...	K28000	670	1600	311	.00	62	38	120	45	3.0	8.4
JUL											
06...	6900	130	310	286	.00	60	33	82	38	2.2	7.7
AUG											
10...	8600	K50	80	306	.00	63	36	110	43	2.8	8.5
SEP											
16...	155	250	125	252	.00	48	32	110	48	3.1	8.0

DATE	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT											
28...	330	2.6	120	16	.2	9.3	557	538	.76	93.2	.00
DEC											
02...	443	3.4	220	24	.3	14	796	802	1.1	90.3	.00
JAN											
06...	530	2.7	300	28	.3	23	1030	1010	1.4	52.6	.10
FEB											
03...	570	11	360	32	.2	26	1070	1130	1.5	40.4	.00
25...	190	4.8	99	11	.1	16	378	360	.51	--	1.1
MAR											
03...	140	4.5	70	8.2	.1	13	273	268	.37	331	.56
10...	190	6.1	95	8.7	.1	15	360	358	.49	--	.35
17...	180	2.3	81	7.6	.2	14	361	324	.49	--	.14
25...	210	3.4	98	10	.2	13	402	383	.55	334	.11
31...	200	2.0	92	7.9	.2	11	371	347	.50	202	.00
APR											
07...	240	1.9	120	14	.2	14	433	440	.59	--	.00
14...	290	2.9	130	12	.2	15	503	502	.68	--	.01
21...	320	2.6	150	21	.2	17	590	581	.80	142	.00
28...	340	4.3	150	22	.3	17	596	601	.81	--	.00
MAY											
05...	320	3.2	160	17	.2	16	617	595	.84	153	.01
11...	370	1.9	160	11	.2	15	641	616	.87	140	.08
19...	390	2.0	160	17	.2	14	638	643	.87	--	.02
27...	380	2.4	140	17	.2	13	644	609	.88	101	.06
JUN											
02...	370	3.0	150	17	.2	11	632	619	.86	--	.02
09...	390	2.0	160	15	.2	16	680	649	.92	169	.01
17...	390	2.5	110	18	.2	17	709	608	.96	--	.16
23...	360	3.6	190	16	.2	22	710	674	.97	600	.12
JUL											
06...	310	3.9	120	25	.1	27	565	543	.77	192	.22
AUG											
10...	380	3.1	160	16	.2	24	678	647	.92	71.4	.16
SEP											
16...	310	2.5	140	21	.2	20	573	567	.78	37.1	.16

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)
OCT											
28...	.00	.00	.010	.010	.03	.01	.00	.000	.000	.00	.00
DEC											
02...	.00	.00	.000	.010	.03	.00	.00	.040	.060	.05	.08
JAN											
06...	.10	.44	.020	.010	.03	.12	.11	.180	.210	.22	.27
FEB											
03...	.00	.00	.050	.050	.16	.05	.02	.370	.350	--	.45
25...	.55	2.4	.040	.040	.13	1.1	.59	.230	.200	--	.26
MAR											
03...	.58	2.6	.030	.020	.07	.59	.60	.170	.150	--	.19
10...	.35	1.5	.010	.010	.03	.36	.36	.100	.100	--	.13
17...	.16	.71	.010	.000	.00	.15	.16	.060	.030	--	.04
25...	.00	.00	.010	.000	.00	.12	.00	.100	.020	--	.03
31...	.00	.00	.000	.000	.00	.00	.00	.060	.060	--	.08
APR											
07...	.02	.09	.000	.000	.00	.00	.02	.090	.080	--	.10
14...	.01	.04	.010	.000	.00	.02	.01	.070	.070	--	.09
21...	.00	.00	.000	.000	.00	.00	.00	.070	.120	--	.15
28...	.00	.00	.010	.010	.03	.01	.01	.080	.140	--	.18
MAY											
05...	.01	.04	.020	.000	.00	.03	.01	.130	.150	--	.19
11...	.03	.13	.000	.000	.00	.08	.03	.240	.190	--	.24
19...	.02	.09	.000	.000	.00	.02	.02	.250	.110	--	.14
27...	.04	.18	.010	.000	.00	.07	.04	.110	.100	--	.13
JUN											
02...	.02	.09	.000	.010	.03	.02	.03	.140	.140	--	.18
09...	.04	.18	.010	.010	.03	.02	.05	.100	.090	--	.12
17...	.18	.80	.020	.010	.03	.18	.19	.150	.160	--	.21
23...	.12	.53	.020	.010	.03	.14	.13	.150	.110	--	.14
JUL											
06...	.26	1.2	.010	.020	.07	.23	.28	.060	.100	--	.13
AUG											
10...	.14	.62	.000	.010	.03	.16	.15	.200	.170	--	.22
SEP											
16...	.18	.80	.030	.010	.03	.19	.19	.210	.210	--	.27

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
OCT										
28...	1.6	1.1	1.60	.50	1.1	1.6	7.1	.190	.28	.58
DEC										
02...	1.4	1.1	1.40	.20	1.2	1.4	6.2	.090	.18	.28
JAN										
06...	1.3	1.1	1.50	.20	1.3	1.6	7.2	.100	.34	.31
FEB										
03...	1.2	.85	1.60	.40	1.2	1.6	7.2	.140	--	.43
25...	2.3	1.3	2.50	1.0	1.5	3.6	16	.520	--	1.6
MAR										
03...	1.6	1.4	1.80	.30	1.5	2.4	11	.440	--	1.4
10...	1.3	1.2	1.40	.10	1.3	1.8	7.8	.290	--	.89
17...	1.4	1.1	1.50	.40	1.1	1.7	7.3	.130	--	.40
25...	1.6	1.3	1.70	.40	1.3	1.8	8.1	.220	--	.67
31...	1.4	.73	1.50	.71	.79	1.5	6.6	.010	--	.03
APR										
07...	1.5	1.1	1.60	.40	1.2	1.6	7.1	.180	--	.55
14...	1.5	.92	1.60	.61	.99	1.6	7.2	.170	--	.52
21...	1.2	.98	1.30	.20	1.1	1.3	5.8	.190	--	.58
28...	1.2	.85	1.30	.31	.99	1.3	5.8	.190	--	.58
MAY										
05...	1.1	.85	1.20	.20	1.0	1.2	5.4	.210	--	.64
11...	2.1	1.6	2.30	.50	1.8	2.4	11	.220	--	.67
19...	1.6	1.1	1.80	.60	1.2	1.8	8.1	.260	--	.80
27...	7.1	1.0	7.20	6.1	1.1	7.3	32	.190	--	.58
JUN										
02...	1.5	1.3	1.60	.20	1.4	1.6	7.2	.190	--	.58
09...	2.1	1.4	2.20	.70	1.5	2.2	9.8	.240	--	.74
17...	1.6	2.0	1.70	.00	2.2	1.9	8.3	.310	--	.95
23...	1.7	1.5	1.80	.20	1.6	1.9	8.6	.350	--	1.1
JUL										
06...	1.8	1.3	1.90	.50	1.4	2.1	9.4	.360	--	1.1
AUG										
10...	1.3	.93	1.50	.40	1.1	1.7	7.3	.350	--	1.1
SEP										
16...	1.6	1.5	1.80	.10	1.7	2.0	8.8	.280	--	.86

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT											
28...	.160	.090	.070	.21	130	530	510	20	170	110	60
DEC											
02...	.080	.060	.050	.15	200	310	290	20	140	80	60
JAN											
06...	.120	.110	.080	.25	260	320	290	30	740	40	700
FEB											
03...	.233	.120	.110	.34	260	250	220	30	2200	2200	2
25...	.359	.370	.330	1.0	80	800	690	110	360	100	260
MAR											
03...	.293	.300	.260	.80	90	950	780	170	280	170	110
10...	.209	.190	.160	.49	140	540	430	110	170	80	90
17...	.098	.110	.080	.25	130	540	450	90	250	110	140
25...	.100	.090	.050	.15	170	890	840	50	420	280	140
31...	--	.070	.040	.12	120	850	820	30	290	270	20
APR											
07...	.011	.090	.060	.18	130	1200	1200	30	310	280	30
14...	.010	.060	.030	.09	150	590	560	30	420	400	20
21...	.111	.110	.090	.28	180	410	370	40	390	310	80
28...	.127	.120	.100	.31	180	310	270	40	360	210	150
MAY											
05...	.150	.130	.170	.52	180	330	310	20	240	180	60
11...	.166	.050	.120	.37	180	380	370	10	280	150	130
19...	.167	.210	.100	.31	190	410	390	20	360	150	210
27...	.173	.110	.040	.12	180	270	250	20	500	80	420
JUN											
02...	.175	.140	.150	.46	160	390	--	<10	360	140	220
09...	.189	.230	.190	.58	180	500	450	50	390	150	240
17...	.025	.250	.230	.71	180	700	--	<10	560	330	230
23...	.248	.200	.200	.61	170	940	920	20	530	450	80
JUL											
06...	--	.220	.210	.64	320	710	690	20	410	270	140
AUG											
10...	.250	.230	.170	.52	180	570	--	<10	850	410	440
SEP											
16...	.234	.230	.100	.31	.170	1200	--	<10	600	260	340

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT		
28...	17	.5
DEC		
02...	27	.3
JAN		
06...	13	.2
FEB		
03...	23	1.2
25...	22	3.0
MAR		
03...	21	1.5
10...	18	.8
17...	13	.7
25...	16	1.9
31...	17	1.1
APR		
07...	17	1.0
14...	20	.8
21...	9.7	.9
28...	26	1.0
MAY		
05...	15	.7
11...	12	.5
19...	21	.7
27...	12	.5
JUN		
02...	14	--
09...	25	--
17...	17	.5
23...	11	.9
JUL		
06...	14	.7
AUG		
10...	15	.8
SEP		
16...	11	.8

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	900	1130	1500	1480	600	560	890	960	780	930	
2	---	925	1200	---	1500	500	610	880	970	---	940	
3	940	960	1220	---	1520	440	620	890	980	---	970	
4	960	---	1280	---	1570	370	645	890	990	790	980	
5	950	900	1280	1490	1570	360	645	---	990	820	960	
6	930	890	---	1410	1570	380	640	920	1000	820	---	
7	920	---	1300	1540	1570	440	670	920	---	850	925	
8	---	---	1300	1500	1560	490	675	930	1040	850	940	
9	---	830	1330	1500	1560	515	700	920	1010	850	960	
10	---	850	1380	1600	1550	550	720	920	1010	880	980	
11	---	---	1370	1600	1550	565	740	930	1020	---	980	
12	---	840	1390	1670	1540	560	750	930	1020	920	990	
13	930	840	1400	1670	1560	---	750	940	1020	925	---	
14	930	860	1440	1650	1600	540	775	940	1030	850	970	
15	---	900	---	1650	1500	---	800	945	1060	850	970	
16	900	925	1480	1650	1470	520	800	940	1070	825	---	
17	850	950	1490	---	1490	---	820	940	---	850	930	
18	840	---	1500	1600	1400	500	850	940	---	880	980	
19	---	980	---	1600	1100	---	850	950	1030	890	990	
20	---	1000	---	1590	775	475	850	975	---	870	1000	
21	---	990	1530	1590	600	480	850	975	980	870	1000	
22	850	1000	1550	1590	475	465	860	975	960	880	990	
23	850	1060	1600	1550	440	520	860	980	1050	890	970	
24	850	1080	---	1510	575	---	870	---	---	900	970	
25	850	1100	---	---	---	610	875	950	995	900	960	
26	---	1160	1650	1510	530	600	880	950	870	920	960	
27	850	1110	1650	1480	610	580	880	975	810	940	975	
28	850	1120	1610	1500	600	560	970	1000	---	930	985	
29	870	1160	1590	1500	---	555	870	1000	770	930	1000	
30	---	1100	---	1530	---	555	880	980	760	930	1010	
31	880	---	1520	1590	---	550	---	---	---	910	1010	
MEAN	889	977	1420	1560	1230	511	776	942	975	875	972	

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	3.0	.0	.0	.0	.0	5.5	13.5	16.0	23.5	25.0	
2	---	3.0	.0	---	.0	.0	4.5	12.5	16.0	---	25.0	
3	11.5	4.5	.0	---	.0	.0	6.0	15.0	17.5	---	25.0	
4	11.5	---	.0	---	.0	.0	5.0	14.0	18.0	24.0	24.5	
5	11.5	4.0	.0	.0	.0	.0	6.5	---	18.0	25.5	24.5	
6	12.0	4.0	---	.0	.0	.0	6.0	14.0	18.0	26.0	---	
7	13.0	---	.0	.0	.0	.0	6.0	13.5	---	29.0	23.0	
8	4.5	---	.0	.0	.0	.0	6.5	13.5	19.0	24.5	23.0	
9	13.0	4.0	.0	.0	.0	.0	6.5	12.5	19.5	23.5	22.0	
10	11.5	3.0	.0	.0	.0	.0	7.5	11.5	19.0	23.5	21.5	
11	9.0	---	.0	.0	.0	.0	7.5	12.0	19.5	---	22.0	
12	8.0	2.5	.0	.0	.0	.0	8.0	13.0	20.0	24.5	22.5	
13	7.0	2.0	.0	.0	.0	---	7.5	12.5	20.5	25.0	---	
14	6.5	1.0	.0	.0	.0	.0	8.0	13.0	19.5	23.5	24.0	
15	---	1.0	---	.0	.0	---	9.0	14.0	18.5	22.5	24.0	
16	6.5	.5	.0	.0	.0	.0	11.0	15.0	18.0	23.0	---	
17	6.0	.5	.0	---	.0	---	11.5	16.0	---	23.0	22.0	
18	5.5	---	.0	.0	.0	.0	10.5	17.0	---	24.0	22.0	
19	---	.5	---	.0	.0	---	9.5	17.0	17.5	25.0	22.0	
20	---	.5	---	.0	.0	.0	9.5	17.5	---	25.5	23.0	
21	---	.5	.0	.0	.0	.0	9.5	19.0	18.5	24.0	24.0	
22	5.5	.5	.0	.0	.0	.0	9.0	20.0	19.0	22.0	23.5	
23	4.5	.5	.0	.0	.0	.0	9.0	18.0	18.5	22.0	24.5	
24	3.5	.5	---	.0	.0	---	9.0	---	---	23.0	23.5	
25	2.5	.5	---	---	---	2.0	12.5	13.0	20.5	22.0	23.5	
26	---	.5	.0	.0	.0	2.5	14.0	13.0	20.5	22.0	24.0	
27	1.5	.5	.0	.0	.0	2.0	13.5	14.5	22.5	21.5	23.5	
28	1.0	.5	.0	.0	.0	5.0	12.5	17.0	---	21.5	23.0	
29	1.5	.5	.0	.0	---	6.0	12.5	16.5	23.0	21.5	22.5	
30	---	.5	---	.0	---	5.5	11.5	17.0	23.5	22.0	22.5	
31	2.0	---	.0	.0	---	4.0	---	---	---	24.0	21.0	
MEAN	7.0	1.5	.0	.0	.0	1.0	9.0	15.0	19.0	23.5	23.0	

05057200 BALDHILL CREEK NEAR DAZEY, ND

LOCATION.--Lat 47°13'45", long 98°07'28", in NW¼SE¼SW¼ sec.2, T.143 N., R.59 W., Barnes County, Hydrologic Unit 09020203, on left bank 500 ft (150 km) upstream from bridge on county highway, 4.5 mi (7.2 km) northeast of Dazey, and 14 mi (23 km) upstream from mouth.

DRAINAGE AREA.--691 mi^2 (1,790 km^2), of which about 340 mi^2 (880 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Prior to Nov. 9, 1956, nonrecording gage 500 ft (150 m) downstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--25 years, 15.2 ft^3/s (0.430 m^3/s), 11,010 acre-ft/yr (13.6 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 8,000 acre-ft/yr (9.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 9,000 ft^3/s (255 m^3/s) Apr. 19, 1979, gage height, 17.78 ft (5.419 m), from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28 ft^3/s (0.79 m^3/s) Feb. 17, gage height, 4.65 ft (1.417 m), no peak above base of 60 ft^3/s (1.70 m^3/s); maximum gage height, 6.13 ft (1.868 m) Sept. 30, backwater from beaver dam; minimum daily discharge, 0.05 ft^3/s (0.001 m^3/s) Feb. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.63	1.5	1.3	1.2	.40	2.5	5.1	2.5	2.5	1.3	.80	.30
2	.59	1.7	1.3	1.0	.30	2.4	4.1	2.2	2.8	1.3	.80	.25
3	.59	1.9	1.2	.95	.25	2.5	3.9	2.3	2.8	.97	.75	.25
4	.59	1.5	1.2	.90	.20	2.5	3.7	2.0	2.5	.59	.75	.15
5	.59	1.9	1.2	.90	.18	2.4	3.0	1.9	2.4	.40	.80	.10
6	.59	1.9	1.1	.90	.18	2.4	2.7	1.8	1.7	.12	.75	.50
7	.59	1.9	1.0	.90	.18	2.7	2.3	1.7	1.6	.13	.70	.60
8	.47	2.0	1.0	.90	.18	2.8	1.9	1.6	1.4	.13	.70	.70
9	.47	1.9	1.0	.90	.14	3.0	1.7	1.6	1.3	.13	.70	.65
10	.59	1.6	1.0	.85	.10	2.8	1.6	1.6	1.3	.15	.70	.60
11	.37	1.6	1.0	.85	.08	3.0	1.9	1.6	1.2	.15	.68	.55
12	.55	1.6	1.0	.85	.07	3.3	2.2	1.6	1.0	.15	.65	.50
13	.82	1.6	1.0	.85	.05	3.2	2.3	1.6	1.7	.15	.65	.45
14	.87	1.5	1.0	.85	.08	3.0	2.5	1.6	2.3	.20	.60	.40
15	.87	1.5	1.0	.85	2.0	3.3	2.5	1.5	2.7	.20	.55	.35
16	1.2	1.5	1.0	.80	3.7	3.0	2.5	1.4	2.7	.20	.55	.30
17	5.1	1.5	1.0	.80	11	3.3	2.7	1.5	3.0	.20	.50	.22
18	4.6	1.5	1.0	.80	7.2	2.7	2.5	1.6	2.8	.25	.45	.20
19	3.9	1.6	1.0	.75	5.6	2.5	2.0	1.4	2.5	.25	.40	.20
20	3.3	1.6	1.0	.70	6.3	3.3	1.8	1.2	1.7	.25	.30	.20
21	2.8	1.7	.90	.65	6.0	2.7	1.8	.97	2.5	.25	.25	.25
22	2.3	1.7	.90	.60	3.5	5.1	1.8	.97	2.0	.25	.20	.30
23	3.3	1.7	.90	.70	3.7	3.7	1.8	1.3	2.0	.65	.50	.60
24	3.3	1.7	.90	.85	3.3	2.5	1.7	2.1	5.4	.60	.55	.80
25	2.8	1.7	.90	1.0	3.2	3.0	1.6	2.3	3.0	.60	.60	.70
26	2.3	1.7	.90	.70	2.5	2.7	1.6	2.4	2.5	.60	.55	.75
27	2.2	1.7	.90	.60	2.5	2.4	2.1	2.3	2.0	.60	.50	.65
28	2.1	1.7	1.0	.60	2.2	2.7	2.2	1.9	2.0	.60	.45	.65
29	2.2	1.7	1.1	.60	---	2.5	2.8	1.7	1.8	.60	.40	.80
30	2.0	1.6	1.1	.60	---	2.5	3.0	1.5	1.7	.80	.40	2.0
31	1.6	---	1.2	.50	---	3.7	---	1.5	---	.80	.35	---
TOTAL	54.18	50.2	32.00	24.90	65.09	90.1	73.3	53.14	66.8	13.57	17.53	14.97
MEAN	1.75	1.67	1.03	.80	2.32	2.91	2.44	1.71	2.23	.44	.57	.50
MAX	5.1	2.0	1.3	1.2	11	5.1	5.1	2.5	5.4	1.3	.80	2.0
MIN	.37	1.5	.90	.50	.05	2.4	1.6	.97	1.0	.12	.20	.10
AC-FT	107	100	63	49	129	179	145	105	132	27	35	30

CAL YR 1980 TOTAL 1781.30 MEAN 4.87 MAX 90 MIN .01 AC-FT 3530
WTR YR 1981 TOTAL 555.78 MEAN 1.52 MAX 11 MIN .05 AC-FT 1100

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-56, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT											
29...	0920	2.2	878	8.4	2.5	3.5	15	1.9	13.3	104	3.6
DEC											
03...	0940	1.2	1060	8.3	-6.0	1.0	10	2.6	15.4	113	1.6
JAN											
07...	0940	.87	1410	7.3	-17.5	.0	6	2.5	10.4	75	1.3
FEB											
04...	0950	.19	1220	7.7	-16.5	1.0	5	1.5	14.5	106	1.4
18...	1255	11	700	8.0	8.0	.5	40	5.4	12.2	89	6.2
25...	1125	3.1	590	7.8	-1.5	.5	30	3.7	11.0	80	4.8
MAR											
11...	0920	2.4	630	8.0	5.5	.0	20	2.4	13.5	96	2.0
APR											
07...	1120	2.9	660	--	10.0	8.5	--	--	--	--	--
22...	0930	1.9	708	8.4	5.5	9.0	20	3.3	10.6	97	2.5
MAY											
05...	1150	2.0	759	--	14.5	13.0	--	--	--	--	--
JUN											
10...	0910	1.2	810	8.1	15.0	18.0	10	8.8	6.3	70	2.8
JUL											
07...	0840	.13	800	8.2	25.5	24.5	30	13	4.7	59	2.5
AUG											
11...	0910	.67	795	7.9	24.0	20.0	30	5.4	4.4	50	2.0
SEP											
17...	0935	.22	781	8.2	14.0	13.0	20	3.7	7.4	72	1.2

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT											
29...	1500	K47	K24	362	72	74	43	57	25	1.3	9.3
DEC											
03...	500	K7	K16	419	69	92	46	64	24	1.4	10
JAN											
07...	K430	K7	K28	597	120	140	60	86	24	1.6	9.4
FEB											
04...	340	K1	55	564	94	140	52	79	23	1.5	7.6
18...	K18000	K10	2800	321	48	79	30	36	19	.9	8.9
25...	1200	--	--	230	50	54	23	29	21	.9	7.6
MAR											
11...	110	<3	<4	272	52	66	26	35	21	1.0	5.7
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
22...	1600	<3	K4	288	58	66	30	48	26	1.3	6.1
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	K13000	K20	420	325	55	69	37	53	26	1.3	7.0
JUL											
07...	>16000	120	3100	309	59	61	38	59	29	1.5	7.1
AUG											
11...	>8000	K47	980	291	31	57	36	60	30	1.6	8.6
SEP											
17...	155	123	205	290	50	50	40	69	33	1.8	8.8

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT											
29...	290	1.9	160	17	.2	13	540	548	.73	3.2	.15
DEC											
03...	362	3.5	210	22	.2	18	686	679	.93	2.2	.00
JAN											
07...	480	38	300	24	.3	29	953	938	1.3	2.2	.00
FEB											
04...	470	15	250	23	.2	27	822	861	1.1	.42	.00
18...	260	4.2	140	11	.2	19	472	481	.64	14.0	.29
25...	180	4.6	110	9.5	.1	12	365	354	.50	3.1	.29
MAR											
11...	220	3.5	120	11	.1	11	409	407	.56	2.7	.00
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
22...	230	1.5	140	21	.2	5.4	470	455	.64	2.4	.00
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	270	3.4	160	13	.2	12	525	514	.71	1.7	.00
JUL											
07...	250	2.5	170	16	.2	14	515	516	.70	.18	.01
AUG											
11...	260	5.2	160	15	.2	15	522	509	.71	.94	.11
SEP											
17...	240	2.4	170	19	.2	7.4	510	509	.69	.30	.00

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)
OCT											
29...	.00	.00	.000	.010	.03	.15	.00	.000	.000	.00	.00
DEC											
03...	.00	.00	.000	.000	.00	.00	.00	.000	.020	.00	.03
JAN											
07...	.00	.00	.010	.000	.00	.00	.00	.090	.130	.11	.17
FEB											
04...	.00	.00	.010	.010	.03	.00	.00	.090	.120	--	.15
18...	.30	1.3	.020	.000	.00	.31	.30	.200	.210	--	.27
25...	.17	.75	.030	.020	.07	.32	.19	.110	.110	--	.14
MAR											
11...	.00	.00	.000	.000	.00	.00	.00	.040	.020	--	.03
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
22...	.00	.00	.000	.000	.00	.00	.00	.060	.060	--	.08
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	.01	.04	.020	.010	.03	.00	.02	.090	.090	--	.12
JUL											
07...	.04	.18	.000	.010	.03	.01	.05	.070	.110	--	.14
AUG											
11...	.11	.49	.000	.000	.00	.11	.11	.140	.150	--	.19
SEP											
17...	.00	.00	.010	.000	.00	.01	.00	.090	.090	--	.12

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)
OCT										
29...	1.0	.95	1.00	.05	.95	1.2	5.1	.070	.00	.21
DEC										
03...	1.2	.84	1.20	.34	.86	1.2	5.3	.060	.03	.18
JAN										
07...	.81	.68	.90	.09	.81	.90	4.0	.060	.12	.18
FEB										
04...	1.1	.76	1.20	.32	.88	1.2	5.3	.030	--	.09
18...	1.4	1.2	1.60	.20	1.4	1.9	8.5	.300	--	.92
25...	2.3	.89	2.40	1.4	1.0	2.7	12	.210	--	.64
MAR										
11...	.73	.65	.77	.10	.67	.77	3.4	.070	--	.21
APR										
07...	--	--	--	--	--	--	--	--	--	--
22...	1.3	.58	1.40	.76	.64	1.4	6.2	.060	--	.18
MAY										
05...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	1.0	.91	1.10	.10	1.0	1.1	4.9	.110	--	.34
JUL										
07...	1.9	.89	2.00	1.0	1.0	2.0	8.9	.130	--	.40
AUG										
11...	.96	.77	1.10	.18	.92	1.2	5.4	.100	--	.31
SEP										
17...	1.4	1.2	1.50	.20	1.3	1.5	6.7	.040	--	.12

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
OCT											
29...	.030	.000	.000	.00	150	270	260	10	100	50	50
DEC											
03...	.060	.010	.010	.03	220	150	140	10	130	80	50
JAN											
07...	.040	.040	.010	.03	220	180	160	20	160	20	140
FEB											
04...	.035	.050	.000	.00	170	160	140	20	190	20	170
18...	.140	.180	.140	.43	100	380	320	60	610	10	600
25...	.073	.070	.050	.15	60	270	200	70	340	20	320
MAR											
11...	.018	.010	.000	.00	90	130	100	30	120	30	90
APR											
22...	.021	.020	.010	.03	130	150	120	30	230	190	40
JUN											
10...	.030	.060	.050	.15	150	390	370	20	570	300	270
JUL											
07...	.019	.030	.020	.06	350	680	670	10	420	400	20
AUG											
11...	.035	.040	.030	.09	190	330	310	25	260	190	68
SEP											
17...	.032	.000	.000	.00	200	270	240	27	130	120	14

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT		
29...	41	.5
DEC		
03...	13	.6
JAN		
07...	11	.6
FEB		
04...	22	.7
18...	39	1.6
25...	19	1.8
MAR		
11...	12	.6
APR		
22...	5.0	.6
JUN		
10...	20	.7
JUL		
07...	9.3	1.3
AUG		
11...	10	.8
SEP		
17...	9.7	.7

05057500 LAKE ASHTABULA AT BALDHILL DAM, ND

LOCATION.--Lat 47°02'00", long 98°05'00", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020203, at Baldhill Dam on Sheyenne River, and 8 mi (13 km) northwest of Valley City.

DRAINAGE AREA.--7,470 mi^2 (19,300 km^2), approximately, of which about 5,560 mi^2 (14,400 km^2) is probably noncontributing, including 3,800 mi^2 (9,800 km^2) in closed basins.

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1238: 1950(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-fill dam, 1,650 ft (503 m) long; storage began on July 30, 1949; dam completed September 1949. Usable capacity, 69,100 acre-ft (85.2 hm^3) between invert of outlet conduit, elevation, 1,238.0 ft (377.34 m), and normal pool level, elevation, 1,266.0 ft (385.8 m). Dead storage below elevation 1,238.0 ft (377.34 m), 1,500 acre-ft (1.85 hm^3). Maximum pool elevation, 1,273.2 ft (388.07 m), capacity, 116,500 acre-ft (144 hm^3). Low flows are controlled by 2 sluice gates 3 ft (0.914 m) in diameter. The spillway crest is 120 ft (36.6 m) long at elevation 1,252.0 ft (381.61 m), surmounted by 3 taintor gates, each 15 ft (4.572 m) high and 40 ft (12.192 m) long. The reservoir is operated for flood control and to increase low-water flow.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 91,400 acre-ft (113 hm^3) May 14, 1950, elevation, 1,269.46 ft (386.931 m); minimum since reservoir first reached spillway level, 6,660 acre-ft (8.21 hm^3) Aug. 11-14, 1950, elevation, 1,245.13 ft (379.516 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 73,222 acre-ft (90.3 hm^3) May 25, elevation, 1,266.46 ft (386.017 m); minimum, 55,250 acre-ft (68.1 hm^3) Dec. 8, elevation, 1,263.25 ft (385.039 m).

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,264.50	61,250	--
Oct. 31	1,263.66	56,480	-4,770
Nov. 30	1,263.35	55,550	-930
Dec. 31	1,263.33	55,490	-60
CAL YR 1980	--	--	-60
Jan. 31	1,263.35	55,550	+60
Feb. 28	1,263.85	57,050	+1,500
Mar. 31	1,266.24	71,968	+14,918
Apr. 30	1,266.32	72,424	+456
May 31	1,266.31	72,367	-57
June 30	1,266.40	72,880	+513
July 31	1,266.19	71,683	-1,197
Aug. 31	1,266.01	70,657	-1,026
Sept. 30	1,265.76	69,256	-1,401
WTR YR 1981	--	--	+8,006

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND

LOCATION.--Lat 47°01'50", long 98°05'50", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020204, on right bank 600 ft (180 m) downstream from Baldhill Dam, 8 mi (13 km) northwest of Valley City, and at mile 270.5 (435.2 km).

DRAINAGE AREA.--7,470 mi^2 (19,350 km^2), approximately, of which about 5,560 mi^2 (14,400 km^2) is probably noncontributing, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow completely regulated by Lake Ashtabula (station 05057500). Records 1955 to 1972 include releases at Baldhill Dam to the fish-rearing ponds of the Fish and Wildlife Service. Small diversions are still made but not published.

AVERAGE DISCHARGE (UNADJUSTED).--32 years, 120 ft^3/s (3.398 m^3/s), 86,940 acre-ft/yr (107 hm^3/yr); median of yearly mean discharges, 88 ft^3/s (2.49 m^3/s), 63,800 acre-ft/yr (79 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,740 ft^3/s (134 m^3/s) Apr. 24, 1979, gage height, 36.26 ft (11.052 m); no flow at times in 1950, 1952-53, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 493 ft^3/s (14.0 m^3/s) Apr. 3, gage height, 27.37 ft (8.342 m); minimum daily, 7.6 ft^3/s (0.216 m^3/s) Apr. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	149	84	9.1	9.1	11	345	137	152	325	11	8.8
2	104	148	85	9.1	9.1	11	439	138	130	243	11	8.8
3	104	148	87	9.1	9.1	11	489	136	130	175	13	8.8
4	102	148	82	9.1	9.3	14	490	110	130	161	24	9.0
5	102	136	69	9.1	9.1	14	487	91	113	158	30	9.1
6	102	96	72	9.1	9.1	13	266	65	94	134	30	9.5
7	93	87	37	9.1	9.1	13	65	40	94	65	46	9.6
8	113	89	8.8	9.1	9.1	12	11	24	94	25	62	9.5
9	119	89	8.8	9.1	9.1	12	8.9	19	94	12	63	9.5
10	117	89	8.8	9.1	9.1	12	8.6	19	94	9.2	63	13
11	117	89	8.8	9.1	9.1	12	7.6	19	94	8.7	63	17
12	117	89	8.8	9.1	9.1	11	7.7	18	94	9.5	64	16
13	117	89	8.8	9.1	9.1	11	21	18	94	12	64	16
14	118	89	8.8	9.1	9.3	11	32	18	94	28	41	15
15	106	92	8.8	9.1	9.5	11	42	18	94	64	25	16
16	85	92	8.8	9.1	9.5	11	49	18	94	115	25	18
17	103	91	8.8	9.1	9.9	11	47	18	94	187	16	19
18	104	92	8.8	9.1	9.9	24	46	23	94	228	13	17
19	104	84	8.8	9.1	9.9	80	48	22	71	224	13	17
20	104	79	8.8	9.1	9.9	149	75	19	55	181	12	16
21	104	79	8.8	9.1	9.9	168	100	23	54	90	11	24
22	104	79	8.8	9.1	9.9	170	100	20	54	29	11	31
23	104	79	8.8	9.1	9.9	171	100	19	54	17	10	49
24	148	79	8.8	9.1	9.9	192	103	51	71	17	10	95
25	232	80	8.8	9.1	10	233	102	111	226	16	10	127
26	238	78	8.8	9.1	11	263	102	133	325	16	9.9	136
27	240	78	8.8	9.1	11	272	104	150	325	17	9.1	139
28	186	78	8.8	9.1	11	272	124	171	325	17	8.8	139
29	149	77	10	9.1	---	272	138	175	325	16	8.8	139
30	151	76	9.1	9.1	---	280	138	175	325	11	8.8	149
31	151	---	9.1	9.1	---	298	---	178	---	11	8.8	---
TOTAL	3942	2848	729.0	282.1	269.0	3045	4095.8	2176	4087	2621.4	795.2	1290.6
MEAN	127	94.9	23.5	9.10	9.61	98.2	137	70.2	136	84.6	25.7	43.0
MAX	240	149	87	9.1	11	298	490	178	325	325	64	149
MIN	85	76	8.8	9.1	9.1	11	7.6	18	54	8.7	8.8	8.8
AC-FT	7820	5650	1450	560	534	6040	8120	4320	8110	5200	1580	2560

CAL YR 1980 TOTAL 21613.6 MEAN 59.1 MAX 492 MIN 3.7 AC-FT 42870
WTR YR 1981 TOTAL 26181.1 MEAN 71.7 MAX 490 MIN 7.6 AC-FT 51930

RED RIVER OF THE NORTH BASIN

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-65, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT											
29...	1310	142	681	8.7	11.0	6.0	20	1.4	11.8	99	2.0
DEC											
03...	1430	87	690	8.5	-3.5	.0	15	1.8	13.4	96	.2
JAN											
07...	1340	9.0	798	8.2	-15.0	2.5	15	3.0	12.9	99	1.3
FEB											
04...	1345	9.7	920	8.2	-4.5	3.5	20	2.1	14.0	110	1.1
25...	1505	12	990	--	3.0	5.5	--	--	--	--	--
MAR											
11...	1200	E13	1080	8.1	12.0	5.5	25	2.7	12.9	107	1.1
APR											
01...	1430	356	774	--	13.0	4.5	--	--	--	--	--
22...	1350	106	795	8.4	9.0	8.0	20	2.6	11.0	100	1.7
JUN											
10...	1320	90	760	8.5	23.0	17.0	15	3.5	10.1	110	1.3
JUL											
07...	1245	34	738	8.6	33.0	22.5	15	4.0	10.0	121	1.5
AUG											
11...	1315	E63	680	8.6	33.5	21.0	20	1.5	8.3	97	.9
SEP											
17...	1410	E19	673	8.8	25.0	19.0	15	2.6	10.7	118	1.0

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT											
29...	300	K1	34	219	.00	45	26	65	38	2.0	11
DEC											
03...	62	K1	K8	208	.00	42	25	65	39	2.0	11
JAN											
07...	K36	K1	K1	261	1.0	55	30	77	38	2.1	10
FEB											
04...	K17	K1	K2	311	.00	65	36	96	39	2.4	10
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	K20	<1	<1	347	.00	73	40	110	40	2.6	9.4
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
22...	130	<1	K1	253	.00	52	30	78	39	2.2	9.6
JUN											
10...	920	K3	44	234	.00	51	26	71	39	2.1	9.4
JUL											
07...	K20000	22	40	231	.00	48	27	71	39	2.1	9.3
AUG											
11...	>8000	K1	K9	190	.00	35	25	72	44	2.3	9.8
SEP											
17...	K75	K3	640	204	.00	37	27	78	44	2.4	9.6

E - Estimated.
K - Results based on colony count outside the acceptable range (non-ideal colony count).

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT											
29...	220	.7	110	13	.2	21	436	424	.59	167	.02
DEC											
03...	166	1.0	120	15	.2	20	476	399	.65	112	.17
JAN											
07...	260	2.6	150	16	.2	23	494	518	.67	12.0	.46
FEB											
04...	330	3.3	170	18	.2	20	588	616	.80	15.4	.44
MAR											
11...	380	4.8	210	22	.2	19	709	713	.96	--	.36
APR											
22...	270	1.7	150	20	.2	18	543	520	.74	155	.10
JUN											
10...	250	1.3	130	12	.2	15	479	466	.65	116	.14
JUL											
07...	240	1.0	140	14	.1	5.7	476	460	.65	43.7	.03
AUG											
11...	230	.9	120	12	.1	7.5	435	421	--	~~96.3~~	.15
SEP											
17...	240	.6	110	26	.1	13	450	445	--	~~31.6~~	.05

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)
OCT											
29...	.03	.13	.010	.010	.03	.03	.04	.150	.040	.18	.05
DEC											
03...	.18	.80	.010	.000	.00	.18	.18	.270	.240	.33	.31
JAN											
07...	.47	2.1	.010	.009	.03	.47	.48	.430	.480	.52	.62
FEB											
04...	.45	2.0	.010	.010	.03	.45	.46	.300	.300	--	.39
MAR											
11...	.36	1.6	.040	.040	.13	.40	.40	.170	.170	--	.22
APR											
22...	.10	.44	.000	.010	.03	.10	.11	.110	.100	--	.13
JUN											
10...	.16	.71	.020	.020	.07	.16	.18	.240	.240	--	.31
JUL											
07...	.05	.22	.000	.020	.07	.03	.07	.080	.110	--	.14
AUG											
11...	.13	.58	.000	.030	.10	.15	.16	.270	.300	--	.39
SEP											
17...	.04	.18	.020	.030	.10	.07	.07	.230	.230	--	.30

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
OCT										
29...	1.2	1.3	1.30	.00	1.3	1.3	5.9	.240	.43	.74
DEC										
03...	1.1	1.4	1.40	.00	1.6	1.6	7.0	.200	.52	.61
JAN										
07...	1.4	1.2	1.80	.10	1.7	2.3	10	.230	1.60	.71
FEB										
04...	2.1	1.3	2.40	.80	1.6	2.9	13	.160	--	.49
MAR										
11...	1.3	1.3	1.50	.00	1.5	1.9	8.4	.180	--	.55
APR										
22...	1.3	1.2	1.40	.10	1.3	1.5	6.6	.100	--	.31
JUN										
10...	3.4	.86	3.60	2.5	1.1	3.8	17	.290	--	.89
JUL										
07...	1.5	1.1	1.60	.40	1.2	1.6	7.2	.100	--	.31
AUG										
11...	1.0	1.0	1.30	.00	1.3	1.5	6.4	.190	--	.58
SEP										
17...	1.7	1.5	1.90	.20	1.7	2.0	8.7	.210	--	.64

RED RIVER OF THE NORTH BASIN

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT											
29...	.230	.140	.120	.37	140	190	160	30	110	20	90
DEC											
03...	.170	.170	.160	.49	160	90	70	20	220	40	180
JAN											
07...	.210	.510	.190	.58	140	110	90	20	310	40	270
FEB											
04...	.288	.150	.140	.43	130	80	60	20	250	20	230
MAR											
11...	.118	.120	.110	.34	160	20	0	20	660	70	590
APR											
22...	.089	.060	.070	.21	140	40	0	40	40	20	20
JUN											
10...	.108	.110	.180	.55	130	160	150	10	310	90	220
JUL											
07...	.040	.040	.040	.12	310	140	--	<10	240	160	80
AUG											
11...	.158	.140	.130	.40	140	20	--	<10	280	60	220
SEP											
17...	.191	.080	.030	.09	160	70	--	<10	140	110	26

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT		
29...	13	.3
DEC		
03...	12	.2
JAN		
07...	19	.1
FEB		
04...	18	.4
MAR		
11...	21	.2
APR		
22...	11	.4
JUN		
10...	11	.1
JUL		
07...	6.8	.1
AUG		
11...	11	--
SEP		
17...	11	.6

05058500 SHEYENNE RIVER AT VALLEY CITY, ND

LOCATION.--Lat 46°54'50", long 98°00'30", in SE¼NW¼ sec.28, T.140 N., R.58 W., Barnes County, on left bank 100 ft (30 m) downstream from College Dam in Valley City, and at mile 253.0 (407.1 km).

DRAINAGE AREA.--7,810 mi^2 (20,230 km^2), approximately, of which about 5,700 mi^2 (14,760 km^2) is probably non-contributing, includes 3,800 mi^2 (9,840 km^2) in closed basins.

PERIOD OF RECORD.--March to August 1919, March to June 1938, August 1938 to September 1975 (discharge); October 1979 to September 1981 (gage heights and annual maximum discharge only). Records for July 1938, published in WSP 855, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,199.27 ft (365.537 m) National Geodetic Vertical Datum of 1929. March to August 1919, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. March to Oct. 13, 1938, nonrecording gage at present site and datum.

AVERAGE DISCHARGE (UNADJUSTED).--37 years (1938-75), 124 ft^3/s (3.512 m^3/s) 89,840 acre-ft/yr (111 hm^3/yr); median of yearly mean discharges, 97 ft^3/s (2.75 m^3/s), 70,300 acre-ft/yr (87 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,580 ft^3/s (130 m^3/s) Apr. 28, 1948, gage height, 17.51 ft (5.337 m); maximum gage height, 17.62 ft (5.371 m) Apr. 19, 1969; no flow during several periods in 1938-41.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 542 ft^3/s (15.3 m^3/s) Apr. 2, gage height, 5.91 ft (1.801 m); minimum not determined.

REMARKS.--Flow regulated by Lake Ashtabula 13 mi (21 km) upstream (see station 05057500). Small diversions above station for municipal supply.

REVISIONS (WATER YEARS).--WSP 1388: 1939 (M). WSP 1728: Drainage area.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.45	4.18	3.28	2.88	2.87	2.87	4.97	3.74	4.02	4.88	2.87	2.83
2	3.44	4.23	3.34	2.88	2.86	2.87	5.53	3.76	3.53	4.75	2.85	2.82
3	3.45	4.20	3.40	2.86	2.86	2.87	5.72	3.78	3.48	4.07	2.85	2.82
4	3.45	4.15	3.40	2.86	2.85	2.88	5.68	3.74	3.63	3.82	2.86	2.80
5	3.45	4.18	3.31	2.87	2.86	2.89	5.65	3.46	3.63	3.79	3.01	2.79
6	3.45	3.85	3.29	2.88	2.86	2.89	5.39	3.30	3.43	3.73	3.07	2.90
7	3.44	3.44	3.33	2.87	2.87	2.89	3.45	3.10	3.38	3.46	3.07	2.92
8	3.44	3.41	3.07	2.87	2.87	2.89	2.65	3.03	3.36	3.13	3.18	2.85
9	3.54	3.39	2.93	2.87	2.86	2.89	2.84	3.00	3.37	2.98	3.29	2.84
10	3.58	3.38	2.88	2.87	2.86	2.88	2.87	2.94	3.36	3.05	3.33	2.83
11	3.56	3.39	2.86	2.88	2.86	2.90	2.84	2.93	3.36	2.87	3.34	2.85
12	3.55	3.41	2.87	2.88	2.86	2.89	2.83	2.93	3.36	2.61	3.33	2.87
13	3.56	3.40	2.87	2.88	2.86	2.88	2.83	2.92	3.48	2.61	3.31	2.90
14	3.56	3.40	2.87	2.88	2.88	2.88	2.88	2.92	3.42	2.93	3.31	2.91
15	3.53	3.40	2.87	2.88	2.98	2.89	2.98	2.92	3.41	3.00	3.16	2.92
16	3.54	3.40	2.87	2.87	3.10	2.88	3.09	2.92	3.38	3.30	3.02	2.89
17	3.47	3.39	2.88	2.87	3.05	2.88	3.13	2.94	3.38	3.71	2.99	2.91
18	3.47	3.40	2.87	2.88	2.99	2.86	3.10	2.94	3.38	4.49	2.94	2.92
19	3.47	3.40	2.85	2.88	2.97	2.99	3.13	2.96	3.37	4.39	2.89	2.94
20	3.48	3.35	2.85	2.87	2.94	3.85	3.13	2.94	3.25	4.28	2.87	2.94
21	3.45	3.31	2.86	2.87	2.93	4.78	3.40	2.91	3.21	3.65	2.86	2.95
22	3.47	3.32	2.88	2.87	2.91	4.76	3.49	2.93	3.09	3.13	2.89	2.98
23	3.47	3.31	2.88	2.87	2.89	4.74	3.48	2.94	3.12	3.04	2.90	3.09
24	3.47	3.31	2.87	2.88	2.89	4.75	3.47	3.00	3.17	2.98	2.98	3.28
25	4.46	3.32	2.86	2.88	2.87	5.14	3.46	3.24	3.43	2.94	2.91	3.67
26	5.41	3.32	2.87	2.88	2.87	5.61	3.47	3.71	4.71	2.92	2.87	3.96
27	5.45	3.31	2.86	2.88	2.87	5.33	3.67	3.84	4.93	2.90	2.83	3.96
28	5.41	3.31	2.87	2.87	2.87	4.74	3.60	4.28	5.00	2.91	2.82	3.96
29	4.68	3.31	2.88	2.87	---	4.69	3.67	4.98	4.94	2.90	2.81	3.98
30	4.39	3.30	2.87	2.87	---	4.68	3.71	4.34	4.91	2.90	2.81	4.03
31	4.24	---	2.87	2.87	---	4.93	---	4.04	---	2.93	2.85	---
TOTAL	117.78	105.47	92.46	89.09	81.21	112.87	110.11	103.38	109.49	105.05	93.07	93.31
MEAN	3.80	3.52	2.98	2.87	2.90	3.64	3.67	3.33	3.65	3.39	3.00	3.11
MAX	5.45	4.23	3.40	2.88	3.10	5.61	5.72	4.98	5.00	4.88	3.34	4.03
MIN	3.44	3.30	2.85	2.86	2.85	2.86	2.65	2.91	3.09	2.61	2.81	2.79

WTR YR 1981 TOTAL 1213.29 MEAN 3.32 MAX 5.72 MIN 2.61

05058700 SHEYENNE RIVER AT LISBON, ND

LOCATION.--Lat 46°26'49", long 97°40'44", on line between secs.1 and 2, T.134 N., R.56 W., Ransom County, Hydrologic Unit 09020204, on left bank 150 ft (46 m) downstream from dam at State Fish Hatchery at north edge of city of Lisbon, 3 mi (5 km) upstream from Timber Coulee, and at mile 162.1 (260.8 km).

DRAINAGE AREA.--8,190 mi^2 (21,210 km^2), approximately, of which about 5,700 mi^2 (14,800 km^2) is probably noncontributing, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,066.46 ft (325.057 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Lake Ashtabula (station 05057500) 108.5 mi (174.6 km) upstream.

AVERAGE DISCHARGE.--25 years, 150 ft^3/s (4.248 m^3/s), 108,700 acre-ft/yr (134 hm^3/yr); median of yearly mean discharges, 120 ft^3/s (3.40 m^3/s), 86,940 acre-ft/yr (107 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,270 ft^3/s (149 m^3/s) July 1, 1975, gage height, 19.04 ft (5.803 m); no flow Sept. 19-21, Oct. 23, 24, 1956, Aug. 16, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 460 ft^3/s (13.0 m^3/s) Apr. 5, gage height, 4.30 ft (1.311 m); minimum daily, 7.1 ft^3/s (0.20 m^3/s) Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	165	82	21	15	30	275	122	195	271	22	13
2	101	154	57	21	15	25	287	124	188	271	21	11
3	101	148	57	21	15	24	306	122	176	273	23	9.6
4	101	145	66	18	14	24	361	124	161	267	24	8.3
5	103	145	84	17	13	23	450	126	128	235	24	7.1
6	103	145	94	16	13	23	450	126	103	182	20	8.3
7	105	148	94	16	13	23	445	124	115	151	16	8.3
8	103	152	82	15	13	23	420	107	122	138	16	12
9	105	141	74	15	13	24	257	86	115	129	14	16
10	105	120	70	15	13	25	122	72	101	108	20	15
11	101	109	57	15	13	25	66	51	92	86	31	13
12	111	105	48	15	13	29	41	36	88	69	41	15
13	120	105	36	15	17	29	29	35	109	54	61	15
14	124	105	29	15	12	29	25	32	103	138	65	13
15	122	103	24	15	14	33	25	25	96	111	64	12
16	134	103	23	15	18	33	23	23	94	85	61	9.9
17	145	103	22	15	20	32	22	23	94	54	60	9.7
18	137	90	22	15	35	28	19	21	86	42	55	9.6
19	130	84	18	15	40	28	29	20	86	57	44	12
20	122	117	16	15	45	28	51	19	86	128	32	17
21	115	98	14	15	80	32	60	18	96	211	26	19
22	115	107	13	15	75	27	59	21	94	215	20	18
23	117	103	13	15	65	70	57	27	88	197	19	19
24	117	62	13	15	60	202	82	30	82	149	17	21
25	117	80	13	15	50	227	98	38	70	92	15	21
26	117	101	13	15	41	213	98	40	59	67	12	28
27	124	94	13	15	45	213	98	35	49	50	11	45
28	181	98	15	15	35	248	98	36	60	39	13	105
29	215	94	17	15	---	275	103	92	197	30	18	136
30	218	94	18	15	---	278	124	124	261	26	18	145
31	199	---	21	15	---	268	---	143	---	24	19	---
TOTAL	3913	3418	1218	490	815	2591	4580	2022	3394	3949	902	791.8
MEAN	126	114	39.3	15.8	29.1	83.6	153	65.2	113	127	29.1	26.4
MAX	218	165	94	21	80	278	450	143	261	273	65	145
MIN	101	62	13	15	12	23	19	18	49	24	11	7.1
AC-FT	7760	6780	2420	972	1620	5140	9080	4010	6730	7830	1790	1570

CAL YR 1980 TOTAL 31165.6 MEAN 85.2 MAX 682 MIN 7.6 AC-FT 61820
WTR YR 1981 TOTAL 28083.8 MEAN 76.9 MAX 450 MIN 7.1 AC-FT 55700

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
OCT									
01...	0950	107	726	8.2	22.0	14.0	25	227	7.0
30...	1010	226	773	8.4	10.0	3.0	30	245	15
DEC									
04...	1100	65	852	8.4	.0	.5	15	266	6.0
JAN									
08...	1025	16	1200	7.9	-19.0	.0	10	389	79
FEB									
05...	1020	13	1290	7.8	-3.5	.0	15	417	77
MAR									
12...	1135	30	860	8.1	9.0	1.5	15	271	61
APR									
23...	0950	55	950	8.3	7.5	10.5	20	323	33
JUN									
11...	1120	91	810	8.3	25.5	20.0	10	252	.00
JUL									
08...	0925	145	770	8.2	22.0	26.0	30	240	.00
AUG									
12...	1210	40	830	8.3	27.0	21.5	30	245	.00
SEP									
16...	1010	9.5	874	8.1	11.5	16.5	25	269	9.0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
01...	48	26	64	37	1.9	11	220	130	16
30...	52	28	70	37	2.0	10	230	130	22
DEC									
04...	57	30	84	39	2.3	14	260	150	30
JAN									
08...	88	41	110	37	2.5	12	310	240	42
FEB									
05...	96	43	130	40	2.9	12	340	280	76
MAR									
12...	64	27	78	38	2.1	9.0	210	190	38
APR									
23...	70	36	97	39	2.4	11	290	200	20
JUN									
11...	53	29	78	39	2.2	10	260	150	19
JUL									
08...	50	28	76	40	2.2	9.9	250	150	18
AUG									
12...	52	28	84	41	2.4	11	260	160	23
SEP									
16...	55	32	97	43	2.6	11	260	150	35

RED RIVER OF THE NORTH BASIN

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
01...	.2	18	481	445	.65	139	.24	.130	110
30...	.2	14	480	465	.65	293	.00	.190	150
DEC									
04...	.2	12	561	535	.76	98.5	.00	.120	200
JAN									
08...	.3	15	765	736	1.0	33.0	.25	.090	220
FEB									
05...	.3	19	848	860	1.2	29.8	.87	.190	280
MAR									
12...	.2	13	544	548	.74	44.1	.62	.140	170
APR									
23...	.3	13	655	622	.89	97.3	.03	.070	200
JUN									
11...	.2	12	521	508	.71	128	.12	.080	160
JUL									
08...	.2	9.8	509	493	.69	199	.01	.110	320
AUG									
12...	.2	17	547	532	.74	59.1	.11	.000	190
SEP									
16...	.2	17	593	554	.81	15.2	.01	.070	240

05059000 SHEYENNE RIVER NEAR KINDRED, ND

LOCATION.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., Richland County, Hydrologic Unit 09020204, on right bank 25 ft (8 m) downstream from Burlington Northern Railway bridge, 1.5 mi (2.4 km) southeast of Kindred, and at mile 68.1 (109.6 km).

DRAINAGE AREA.--8,800 mi^2 (22,800 km^2), approximately, of which about 5,780 mi^2 (14,970 km^2) is probably noncontributing, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 925.55 ft (282.108 m) National Geodetic Vertical Datum of 1929. July 1949 to Sept. 30, 1962, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated to a large degree by Lake Ashtabula (station 05057500) 202 mi (325 km) upstream and several small reservoirs.

AVERAGE DISCHARGE.--32 years, 195 ft^3/s (5.522 m^3/s), 141,300 acre-ft/yr (174 hm^3/yr); median of yearly mean discharges, 146 ft^3/s (4.13 m^3/s), 105,800 acre-ft/yr (130 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft^3/s (133 m^3/s) Apr. 15, 1969, gage height, 21.03 ft (6.410 m); maximum gage height, 21.66 ft (6.602 m) July 6, 1975; minimum daily discharge, 13 ft^3/s (0.37 m^3/s) Nov. 13, 1955, Aug. 22-24, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Spring flood in 1947 or 1948 reached a stage of 22.1 ft (6.74 m), from floodmarks, discharge about 3,600 ft^3/s (102 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 435 ft^3/s (12.3 m^3/s) Apr. 10, gage height, 4.77 ft (1.454 m), minimum daily discharge, 30 ft^3/s (0.85 m^3/s) Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	193	95	45	35	110	321	152	82	85	94	39
2	126	201	75	45	35	100	321	150	136	172	100	34
3	124	198	90	40	35	90	318	158	170	262	83	37
4	124	182	95	40	35	90	318	160	210	256	70	40
5	124	170	100	40	35	90	327	160	216	254	70	40
6	124	166	100	40	35	85	346	162	210	250	66	40
7	124	162	90	40	35	85	396	162	197	246	63	45
8	124	162	85	40	35	80	423	162	166	231	61	43
9	124	164	90	40	35	80	429	162	138	206	52	39
10	122	164	90	40	35	75	432	158	130	187	52	36
11	120	162	95	35	35	75	387	146	138	180	50	33
12	118	158	95	35	35	80	303	128	142	168	48	32
13	118	148	85	35	40	81	218	108	136	160	41	30
14	118	138	75	35	40	87	168	94	130	191	37	32
15	118	132	70	35	40	98	130	80	130	197	39	34
16	130	130	70	35	40	112	108	75	136	186	45	34
17	146	126	65	35	40	108	89	70	132	186	54	34
18	152	122	60	35	45	112	87	65	118	176	63	34
19	152	124	60	35	45	98	85	63	110	156	65	34
20	152	122	55	35	50	106	83	61	108	140	65	34
21	152	140	50	35	55	102	80	60	108	120	63	34
22	146	128	45	35	55	116	78	60	110	112	63	32
23	142	128	45	35	65	116	82	63	112	140	65	32
24	134	100	45	35	70	110	83	92	124	193	59	32
25	134	80	45	35	75	110	85	80	128	204	52	32
26	132	90	45	35	80	102	89	75	116	203	50	33
27	130	100	45	35	108	193	96	70	102	182	46	33
28	130	110	45	35	115	237	136	70	89	152	45	33
29	130	110	45	35	---	244	150	75	85	126	43	40
30	130	110	45	35	---	262	154	75	85	108	41	45
31	154	---	45	35	---	294	---	70	---	94	43	---
TOTAL	4100	4220	2140	1145	1383	3728	6322	3266	3994	5523	1788	1070
MEAN	132	141	69.0	36.9	49.4	120	211	105	133	178	57.7	35.7
MAX	154	201	100	45	115	294	432	162	216	262	100	45
MIN	118	80	45	35	35	75	78	60	82	85	37	30
AC-FT	8130	8370	4240	2270	2740	7390	12540	6480	7920	10950	3550	2120

CAL YR 1980 TOTAL 42518 MEAN 116 MAX 720 MIN 30 AC-FT 84330
WTR YR 1981 TOTAL 38679 MEAN 106 MAX 432 MIN 30 AC-FT 76720

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued
National stream-quality accounting network station

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1976 to current year.
WATER TEMPERATURES: November 1970 to September 1975, April 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,280 micromhos Jan. 10, 1979; minimum, 303 micromhos Sept. 14, 1978.
WATER TEMPERATURES: Maximum, 30.5°C July 18, 19, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,180 micromhos Feb. 9; mimimum, 599 micromhos July 15.
WATER TEMPERATURES: Maximum, 27.5°C July 6, 7; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
30...	1535	128	778	8.3	11.5	4.0	9.1	12.2	96	67	140
JAN											
09...	1040	39	1070	7.6	-18.0	.5	2.0	5.4	38	K10	140
APR											
01...	1455	322	770	8.2	13.0	7.0	32	11.8	101	300	77
27...	1430	97	900	8.5	13.0	15.0	18	9.3	95	42	320
JUL											
09...	0910	208	768	8.3	25.0	23.5	62	6.7	81	530	2700
AUG											
13...	0915	47	770	8.3	22.0	22.0	25	6.2	73	70	220

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT										
30...	268	28	61	28	68	35	1.9	9.2	240	1.9
JAN										
09...	348	148	88	31	83	34	2.0	8.0	200	8.0
APR										
01...	248	18	58	25	70	37	2.0	6.7	230	2.3
27...	322	32	78	31	73	32	1.8	9.1	290	1.5
JUL										
09...	246	.00	54	27	73	38	2.1	9.9	250	2.0
AUG										
13...	296	6.0	74	27	56	28	1.5	7.9	290	2.3

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT										
30...	130	24	.2	16	490	480	.67	169	.00	.00
JAN										
09...	200	72	.3	21	668	624	.91	70.3	.49	.44
APR										
01...	150	22	.2	9.5	499	480	.68	434	.04	.05
27...	150	33	.3	13	539	562	.73	141	.02	.01
JUL										
09...	150	19	.2	21	514	505	.70	289	.48	.17
AUG										
13...	120	22	.2	24	479	506	.65	60.8	.01	.00

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)
OCT										
30...	.010	.000	.00	1.4	1.4	1.40	.00	1.4	1.4	1.4
JAN										
09...	.420	.420	.54	1.1	.78	1.50	.30	1.2	2.0	1.6
APR										
01...	.050	.060	.08	1.8	1.0	1.80	.70	1.1	1.8	1.2
27...	.080	.110	.14	1.1	.78	1.20	.31	.89	1.2	.90
JUL										
09...	.130	.050	.06	1.8	1.1	1.90	.80	1.1	2.4	1.3
AUG										
13...	.050	.060	.08	.92	.71	.97	.20	.77	.98	.77

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT										
30...	6.2	.220	.67	.150	--	--	--	--	--	--
JAN										
09...	8.8	.150	.46	.120	5	2	3	100	0	200
APR										
01...	8.1	.250	.77	.100	4	3	1	100	0	100
27...	5.4	.140	.43	.060	--	--	--	--	--	--
JUL										
09...	11	.370	1.1	.140	12	2	10	100	0	200
AUG										
13...	4.3	.230	.71	.090	14	4	10	200	70	130

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT										
30...	--	--	--	--	--	--	--	--	--	--
JAN										
09...	0	<1	0	0	0	1	<3	6	4	2
APR										
01...	1	<1	20	10	10	0	<3	8	6	2
27...	--	--	--	--	--	--	--	--	--	--
JUL										
09...	1	<1	10	0	10	3	<3	10	6	4
AUG										
13...	0	<1	20	10	10	0	<3	5	3	2

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
30...	--	--	--	--	--	--	--	--	--
JAN									
09...	500	480	20	1	1	0	350	50	300
APR									
01...	1500	--	<10	0	0	0	380	320	60
27...	--	--	--	--	--	--	--	--	--
JUL									
09...	4100	4100	10	6	4	2	1200	1200	4
AUG									
13...	1500	1500	17	5	4	1	530	520	8

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT									
30...	--	--	--	--	--	--	--	--	--
JAN									
09...	.0	.0	.0	6	3	3	0	0	0
APR									
01...	.1	.0	.5	6	2	4	0	0	0
27...	--	--	--	--	--	--	--	--	--
JUL									
09...	.1	.0	.1	13	7	6	0	0	0
AUG									
13...	.2	.2	.0	6	3	3	1	1	0

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT									
30...	--	--	--	--	--	--	22	--	--
JAN									
09...	0	0	0	20	0	20	--	25	--
APR									
01...	0	0	0	40	30	7	--	21	1.3
27...	--	--	--	--	--	--	15	--	--
JUL									
09...	0	0	0	50	30	20	--	11	1.3
AUG									
13...	0	0	0	10	0	20	--	5.9	1.5

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
30...	5500	24	8.3	100
JAN				
09...	--	20	2.1	72
APR				
01...	6000	76	66	93
27...	8600	39	10	98
JUL				
09...	11000	210	118	99
AUG				
13...	170000	72	9.1	98

RED RIVER OF THE NORTH BASIN

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	709	687			---	---	---	---	---	---	1070	984
2	720	706			---	---	---	---	---	---	976	934
3	728	717			---	---	---	---	---	---	944	914
4	741	729			---	---	---	---	---	---	931	908
5	746	726			880	864	---	---	1130	1120	911	899
6	742	696			909	869	---	---	1140	1120	893	866
7	751	720			927	909	---	---	1150	1130	881	843
8	755	735			921	903	---	---	1140	1080	885	852
9	763	747			927	909	1070	1050	1180	1120	883	861
10	763	759			933	927	1060	1040	1110	1100	877	844
11	772	760			933	927	1060	1050	1120	1100	863	804
12	782	769			933	915	1050	1020	1130	1100	831	784
13	786	765			951	927	1050	1020	1110	1070	796	770
14	765	745			971	958	1030	1020	1110	1090	784	737
15	753	737			978	951	1040	1020	1090	1060	751	747
16	757	741			958	927	1050	1030	1090	1060	728	683
17	758	742			927	921	1060	1020	1060	992	711	691
18	771	751			927	927	1060	1040	991	887	708	675
19	771	755			945	933	1060	1040	897	851	714	691
20	763	751			971	945	1060	1030	879	849	716	683
21	768	752			985	971	1060	1020	858	829	713	684
22	772	764			991	971	1060	1020	866	837	711	654
23	768	756			978	958	1050	1020	870	822	716	683
24	773	761			958	958	1040	1040	924	869	714	679
25	774	762			---	---	1040	1040	959	868	746	693
26	778	762			---	---	---	---	986	949	764	748
27	778	766			---	---	---	---	1030	974	787	738
28	---	---			---	---	---	---	1070	1030	819	784
29	---	---			---	---	---	---	---	---	817	765
30	---	---			---	---	---	---	---	---	762	694
31	---	---			---	---	---	---	---	---	736	710
MONTH	786	687			991	864	1070	1020	1180	822	1070	654

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	800	727	908	875	854	830	805	794	805	752	824	796
2	800	750	897	860	906	854	803	779	755	729	828	804
3	861	805	903	875	912	879	793	687	736	719	838	822
4	881	856	881	865	917	884	768	732	731	713	831	817
5	898	866	892	855	901	864	772	749	757	730	846	825
6	909	882	914	892	906	849	766	744	770	733	850	839
7	915	856	898	856	906	873	762	744	772	763	843	779
8	882	819	865	837	885	854	770	757	770	755	816	797
9	847	775	851	827	869	840	774	756	774	753	811	782
10	814	788	851	818	845	831	782	768	778	762	810	786
11	833	806	827	805	850	826	781	763	783	766	818	789
12	838	810	818	801	850	831	779	761	776	754	812	784
13	833	819	818	792	834	811	783	769	789	770	810	786
14	838	811	810	779	843	805	772	612	811	787	809	800
15	843	815	819	783	923	846	650	599	819	804	808	789
16	843	802	810	797	1030	924	653	601	812	788	807	788
17	844	829	814	801	1080	1030	693	612	858	801	838	806
18	849	829	814	784	1050	1020	716	696	872	855	848	821
19	844	816	815	788	1030	990	740	715	886	864	846	813
20	839	820	815	793	985	933	739	667	894	877	840	828
21	839	830	819	802	927	879	712	669	897	847	844	827
22	849	840	833	819	872	839	732	715	856	834	843	832
23	845	812	829	789	841	803	749	710	837	794	837	825
24	854	817	789	633	808	789	766	689	811	788	830	814
25	896	854	748	714	814	798	765	684	807	751	822	812
26	896	855	768	718	813	787	768	737	821	807	816	811
27	885	875	780	744	814	703	772	749	810	782	810	794
28	886	855	811	780	815	793	766	752	820	806	819	793
29	897	880	824	811	804	782	779	751	820	806	835	818
30	908	891	853	829	810	788	792	778	830	809	850	833
31	---	---	858	844	---	---	806	772	825	809	---	---
MONTH	915	727	914	633	1080	703	806	599	897	713	850	779

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.5	14.0			---	---	---	---	---	---	1.0	1.0
2	14.0	12.0			---	---	---	---	---	---	1.0	.5
3	11.5	11.0			---	---	---	---	---	---	1.0	.5
4	11.0	10.0			---	---	---	---	---	---	1.0	.5
5	11.0	9.5			.0	.0	---	---	.0	.0	.5	.5
6	12.0	11.0			.0	.0	---	---	.0	.0	.5	.0
7	13.5	12.0			.0	.0	---	---	.0	.0	.5	.0
8	13.5	13.0			.0	.0	---	---	.5	.0	.5	.0
9	13.5	13.0			.0	.0	.5	.5	.5	.0	.5	.0
10	13.5	11.0			.0	.0	.5	.5	.5	.5	.5	.0
11	11.0	9.5			.0	.0	.5	.5	.5	.0	.5	.0
12	9.0	7.5			.0	.0	.5	.0	.5	.0	.5	.0
13	7.5	7.5			.0	.0	.5	.0	.5	.0	.5	.0
14	7.5	7.0			.0	.0	.5	.5	.5	.0	.5	.0
15	7.0	6.5			.0	.0	.5	.5	.5	.0	.5	.0
16	7.0	6.5			.0	.0	.5	.5	.5	.0	.5	.0
17	7.5	6.5			.0	.0	.5	.0	.5	.5	.5	.0
18	7.5	7.0			.0	.0	.5	.0	1.0	.5	.5	.0
19	7.5	6.5			.0	.0	.5	.0	.5	.5	.5	.5
20	6.5	5.0			.0	.0	.5	.0	1.0	.5	.5	.5
21	5.0	4.5			.0	.0	.5	.0	1.0	.5	.5	.5
22	5.0	4.0			.0	.0	.5	.0	1.0	1.0	1.0	.5
23	4.0	3.0			.0	.0	.5	.0	1.0	.5	1.0	.5
24	3.5	2.5			.0	.0	.5	.5	1.0	.5	1.0	.5
25	3.0	1.5			---	---	.5	.5	1.0	.5	7.0	.5
26	3.5	2.5			---	---	---	---	1.0	1.0	7.0	6.0
27	4.0	3.5			---	---	---	---	1.0	1.0	6.0	5.0
28	---	---			---	---	---	---	1.0	1.0	8.0	6.0
29	---	---			---	---	---	---	---	---	8.0	7.0
30	---	---			---	---	---	---	---	---	7.5	7.0
31	---	---			---	---	---	---	---	---	7.5	5.5
MONTH	15.5	1.5			.0	.0	.5	.0	1.0	.0	8.0	.0

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

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO AUGUST 1981

DATE	OCT 30,80		APR 1,81		APR 27,81		JUL 9,81		AUG 13,81	
TIME	1535		1455		1430		0910		0915	
TOTAL CELLS/ML	5500		6000		8600		11000		170000	
DIVERSITY: DIVISION	1.4		1.3		0.7		1.6		0.8	
.CLASS	1.4		1.3		0.7		1.6		0.9	
..ORDER	1.8		1.9		1.0		2.3		0.9	
...FAMILY	1.8		2.2		1.2		3.1		1.0	
...GENUS	2.0		2.2		1.7		3.8		2.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....PLANKTOSPHAERIA	--	-	--	-	--	-	--	-	*	0
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	--	-	--	-	370	3	*	0
...OOCYSTACEAE										
....ANKISTRODESMUS	34	1	--	-	70	1	280	3	1200	1
....DICTYOSPHAERIUM	67	1	--	-	--	-	510	5	7500	4
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	4800	3
....OOCYSTIS	--	-	--	-	--	-	370	3	*	0
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0
....TETRAEDRON	--	-	--	-	--	-	140	1	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	*	0
....WESTELLA	--	-	--	-	--	-	--	-	*	0
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	--	-	740	7	*	0
....CRUCIGENIA	--	-	--	-	--	-	--	-	*	0
....SCENEDESMUS	300	6	200	3	--	-	1200	12	1200	1
....TETRASTRUM	--	-	--	-	--	-	1500	14	*	0
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	470	9	910#	15	280	3	650	6	--	-
...POLYBLEPHARIDACEAE										
....SPERMATOZOOPSIS	--	-	--	-	--	-	--	-	*	0
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	3500#	64	--	-	1200	14	1100	10	1900	1
....MELOSIRA	--	-	--	-	--	-	--	-	2100	1
....STEPHANODISCUS	--	-	3300#	56	5800#	68	--	-	--	-
..PENNALES										
...CYMBELLACEAE										
....EPITHEMIA	--	-	--	-	--	-	*	0	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	100	2	70	1	*	0	*	0
...NAVICULACEAE										
....NAVICULA	--	-	100	2	70	1	140	1	*	0
...NITZSCHIACEAE										
....NITZSCHIA	240	4	400	7	280	3	690	6	1000	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO AUGUST 1981 (CONTINUED)

DATE / TIME	OCT 30,80 1535		APR 1,81 1455		APR 27,81 1430		JUL 9,81 0910		AUG 13,81 0915	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
...SURIRELLACEAE										
....SURIRELLA	--	-	250	4	--	-	320	3	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	2300	1
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	200	4	200	3	420	5	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	300	5	280	3	140	1	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	--	-	14000	8
....ANACYSTIS	300	6	--	-	--	-	920	9	110000#	67
....COCCOCHLORIS	270	5	--	-	--	-	--	-	--	-
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-	14000	8
..HORMOGONALES										
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	--	-	--	-	*	0
....OSCILLATORIA	--	-	--	-	--	-	1300	13	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	50	1	--	-	140	1	--	-
....PHACUS	34	1	--	-	--	-	*	0	*	0
....TRACHELOMONAS	34	1	--	-	70	1	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	100	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05059400 SHEYENNE RIVER NEAR HORACE, ND

LOCATION.--Lat 46°48'13", long 96°54'13", in NW¼NW¼ sec.5, T.138 N., R.49 W., Cass County, Hydrologic Unit 09020204, at bridge on county road 3 mi (5 km) north and 0.1 mi (0.2 km) east of Horace.

DRAINAGE AREA.--8,850 mi^2 (22,920 km^2), approximately, of which about 5,780 mi^2 (14,970 km^2) is probably non-contributing, including 3,800 mi^2 (6,100 km^2) in closed basins.

PERIOD OF RECORD.--October 1979 to current year (gage heights and annual maximum discharge).

GAGE.--Water-stage recorder. Datum of gage is 888.94 ft (270.949 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated to a large degree by Lake Ashtabula (station 05057500) 241 mi (388 km) upstream. Above 3,000 ft^3/s (84.96 m^3/s) overflow occurs upstream between Kindred and Horace. This overflow bypasses the station by flowing into the Maple River to the west and into the Wild Rice River to the east.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 800 ft^3/s (22.7 m^3/s) Apr. 7, 1980, gage height, 12.86 ft (3.920 m), backwater from ice; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 546 ft^3/s (15.5 m^3/s) Apr. 10, gage height, 8.82 ft (2.688 m); minimum not determined.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	6.20	6.23	5.69	6.17	7.04	7.35	5.85	5.12	---	5.14	---
2	---	6.76	6.13	5.71	6.15	7.05	7.68	5.85	5.17	---	5.09	4.40
3	---	---	5.77	5.71	6.13	6.86	7.72	5.84	5.70	---	5.17	4.37
4	---	---	5.65	5.75	6.09	6.66	7.71	5.89	6.07	---	5.02	4.35
5	---	---	5.75	5.83	6.09	6.52	7.71	5.97	6.53	---	4.98	4.36
6	5.95	---	5.86	5.85	6.10	6.44	7.82	5.96	6.67	7.55	4.91	4.39
7	---	---	6.03	---	6.13	6.38	8.02	5.97	6.58	---	4.87	4.45
8	5.88	---	6.00	---	6.17	6.32	8.47	5.97	6.47	---	4.77	4.45
9	5.89	---	5.95	---	6.21	6.29	8.76	5.99	6.23	---	4.72	4.43
10	5.89	---	6.08	---	6.18	6.24	8.82	6.00	5.92	---	4.68	4.36
11	5.88	6.60	6.18	---	6.19	6.22	8.82	5.99	5.81	---	4.64	4.32
12	5.86	---	6.15	---	6.28	6.22	8.48	5.89	5.87	---	4.59	4.29
13	5.85	6.33	6.02	---	6.34	6.23	7.59	5.72	5.93	6.25	4.57	4.27
14	5.84	6.17	5.94	---	6.35	6.28	6.74	5.56	5.83	---	4.54	4.24
15	5.84	6.01	5.92	---	6.34	6.32	6.14	5.42	5.75	---	---	4.22
16	5.85	5.90	5.86	---	6.36	6.34	5.78	5.25	5.74	---	---	4.27
17	6.00	5.85	5.80	---	6.39	6.41	5.56	5.09	5.78	---	4.75	4.32
18	6.20	5.91	5.73	---	6.45	6.43	5.40	5.02	5.79	---	---	4.32
19	6.32	5.81	5.64	---	6.49	6.42	5.28	---	5.67	---	---	4.28
20	6.33	5.93	5.56	6.00	6.51	6.34	5.23	---	5.60	6.30	4.77	4.30
21	6.35	5.95	5.52	6.00	6.70	6.23	5.21	---	5.62	5.68	4.82	4.30
22	6.31	5.95	5.52	6.00	6.71	6.21	5.16	---	5.64	5.45	4.87	4.29
23	6.23	6.17	5.48	5.99	6.61	6.22	5.09	---	5.64	5.28	4.84	4.27
24	6.15	6.27	5.50	5.97	6.53	6.23	5.07	---	5.66	5.51	4.80	---
25	6.06	6.32	5.55	5.95	6.61	6.24	---	---	5.69	6.30	4.82	---
26	5.98	6.33	5.58	5.96	6.80	6.01	---	5.35	5.74	6.65	4.85	---
27	5.96	6.16	5.61	5.98	6.88	5.78	---	---	5.67	6.63	4.79	---
28	5.96	6.33	5.61	6.03	6.94	6.25	5.39	---	5.58	6.34	4.65	4.50
29	5.96	6.48	5.61	6.05	---	6.74	5.61	5.02	5.48	6.03	4.60	---
30	5.95	6.33	5.62	6.08	---	6.75	5.82	5.10	---	5.62	4.53	---
31	5.95	---	5.65	6.14	---	6.92	---	5.14	---	5.33	4.55	---
TOTAL	---	---	179.50	---	178.90	198.59	---	---	---	---	---	---
MEAN	---	---	5.79	---	6.39	6.41	---	---	---	---	---	---
MAX	---	---	6.23	---	6.94	7.05	---	---	---	---	---	---
MIN	---	---	5.48	---	6.09	5.78	---	---	---	---	---	---

05059500 SHEYENNE RIVER AT WEST FARGO, ND

LOCATION.--Lat 46°53'28", long 96°54'24", in SE¼SE¼ sec.31, T.140 N., R.49 W., Cass County, Hydrologic Unit 09020204, on right bank at downstream side of county highway bridge, 1 mi (2 km) north of West Fargo, 3 mi (5 km) upstream from Maple River, and at mile 24.5 (39.4 km).

DRAINAGE AREA.--8,870 mi^2 (22,970 km^2), approximately, of which about 5,780 mi^2 (14,970 km^2) is probably noncontributing, including 3,800 mi^2 (9,840 km^2) in closed basins.

PERIOD OF RECORD.--March to November 1902 (gage heights only), April 1903 to October 1905, March to August 1919, September 1929 to current year. Published as "at or near Haggart" 1902-7, 1919. Records for March to November 1902 and November 1905 to June 1907, published in WSP 100, 171, 207, and 245, have been found to be unreliable and should not be used. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1388: 1904(M). WSP 1728: Drainage area. See also "PERIOD OF RECORD."

GAGE.--Water-stage recorder. Datum of gage is 877.19 ft (267.368 m) National Geodetic Vertical Datum of 1929. June 27, 1933 to September 1969 on left bank about 600 ft (180 m) downstream on unimproved channel at same datum. See WSP 1728 or 1913 for history of changes prior to June 27, 1933.

REMARKS.--Records fair. Flow regulated to a large degree by Lake Ashtabula (station 05057500) 246 mi (396 km) upstream. Above 3,000 ft^3/s (84.96 m^3/s) overflow occurs upstream between Kindred and West Fargo. This overflow bypasses the station in the Maple River basin and drain 21 to the west and in the Wild Rice River basin to the east. This overflow is not included in the flow for this station. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to the Red River of the North; however, there were no diversions during the 1978 water year.

AVERAGE DISCHARGE (ADJUSTED).--54 years (water years 1904-5, 1930-81), 172 ft^3/s (4.871 m^3/s), 124,600 acre-ft/yr (154 hm^3/yr); median of yearly mean discharges, 142 ft^3/s (4.02 m^3/s), 103,000 acre-ft/yr (127 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,480 ft^3/s (98.6 m^3/s) Apr. 21, 1979, gage height, 22.12 ft (6.742 m), backwater from Red and/or Maple Rivers; maximum gage height, 22.25 ft (6.782 m) July 5, 1975, backwater from Red and/or Maple Rivers; minimum daily, 1.0 ft^3/s (0.028 m^3/s) Sept. 23, 1976, caused by diversion to Red River of the North.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 460 ft^3/s (13.0 m^3/s) Apr. 11, gage height, 7.99 ft (2.435 m); minimum daily, 31 ft^3/s (0.88 m^3/s) Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228	133	120	45	36	110	285	146	84	94	97	42
2	185	182	110	45	36	120	323	146	81	97	89	40
3	142	214	80	45	36	115	337	145	113	127	92	38
4	118	220	90	43	36	100	337	147	154	261	88	36
5	113	208	110	40	36	95	335	155	188	303	82	35
6	115	186	110	40	36	90	343	156	210	296	75	40
7	116	175	100	40	36	85	363	157	207	290	70	42
8	116	170	100	40	34	85	405	157	198	282	63	42
9	116	167	95	40	34	80	443	158	182	266	58	41
10	118	166	90	40	34	80	456	160	157	235	56	39
11	118	166	100	40	34	75	456	160	141	203	53	36
12	116	166	100	36	34	75	425	152	142	187	50	34
13	114	166	90	36	34	75	343	141	160	174	48	34
14	114	157	85	36	38	80	250	125	147	191	47	32
15	114	142	80	36	42	85	197	113	138	185	44	32
16	120	131	78	36	45	90	158	100	133	182	40	31
17	130	125	73	36	45	96	135	84	135	175	40	34
18	140	117	65	36	45	110	118	75	140	170	48	34
19	155	114	60	36	45	105	106	70	133	160	58	34
20	160	120	55	36	45	100	95	65	124	155	63	34
21	160	124	52	36	48	100	92	63	128	140	66	34
22	161	115	48	36	60	110	91	62	130	120	65	34
23	156	139	45	36	58	110	86	69	128	110	63	34
24	150	135	45	36	52	100	81	79	129	115	70	33
25	140	125	45	36	55	100	90	88	129	174	85	32
26	132	100	45	36	65	110	100	105	133	217	62	32
27	129	90	45	36	85	124	106	89	132	222	54	32
28	129	100	45	36	105	142	102	80	127	205	50	32
29	128	120	45	36	---	233	118	74	116	178	47	34
30	127	120	45	36	---	235	138	77	105	148	46	38
31	127	---	45	36	---	249	---	82	---	121	47	---
TOTAL	4187	4393	2296	1178	1289	3464	6914	3480	4224	5783	1916	1065
MEAN	135	146	74.1	38.0	46.0	112	230	112	141	187	61.8	35.5
MAX	228	220	120	45	105	249	456	160	210	303	97	42
MIN	113	90	45	36	34	75	81	62	81	94	40	31
AC-FT	8300	8710	4550	2340	2560	6870	13710	6900	8380	11470	3800	2110

CAL YR 1980 TOTAL 43701 MEAN 119 MAX 798 MIN 32 AC-FT 86680
WTR YR 1981 TOTAL 40189 MEAN 110 MAX 456 MIN 31 AC-FT 79710

05059600 MAPLE RIVER NEAR HOPE, ND

LOCATION.--Lat 47°19'30", long 97°47'25", in NW¼NW¼ sec.4, T.144 N., R.56 W., Steele County, Hydrologic Unit 09020205, 100 ft (30 m) downstream from box culvert on State Highway 38, 500 ft (152 m) east of the intersection of State Highways 32 and 38, and 3 mi (5 km) west of Hope.

DRAINAGE AREA.--20.2 mi^2 (52.3 km^2), of which about 2.8 mi^2 (7.3 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,296.62 ft (395.210 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--17 years, 2.78 ft^3/s (0.079 m^3/s), 2,010 acre-ft/yr (2.48 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 900 ft^3/s (25.5 m^3/s) Apr. 18, 1979, gage height, 5.86 ft (1.786 m), backwater from ice; no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.98 ft^3/s (0.028 m^3/s) June 21, gage height, 1.88 ft (0.573 m), no peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.04	.03	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.03	.03	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.02	.03	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.01	.02	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.01	.02	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.07	.00	.00	.00	.03	.00	.00	.00
22	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.17	.15	.25	.00	.03	.00	.00	.00
MEAN	.000	.000	.000	.000	.006	.005	.008	.000	.001	.000	.000	.000
MAX	.00	.00	.00	.00	.07	.04	.05	.00	.03	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.3	.3	.5	.00	.06	.00	.00	.00

CAL YR 1980 TOTAL 143.88 MEAN .39 MAX 30 MIN .00 AC-FT 285
WTR YR 1981 TOTAL 0.60 MEAN .002 MAX .07 MIN .00 AC-FT 1.2

05059700 MAPLE RIVER NEAR ENDERLIN, ND

LOCATION.--Lat 46°37'18", long 97°34'25", on west line sec.2, T.136 N., R.55 W., Ransom County, Hydrologic Unit 09020205, on left bank 25 ft (8 m) downstream from county highway bridge, 1 mi (1.6 km) downstream from South Branch, and 1.2 mi (1.9 km) east of Enderlin.

DRAINAGE AREA.--843 mi^2 (2,180 km^2), of which about 47 mi^2 (122 km^2) is probably noncontributing.

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.72 ft (322.088 m) National Geodetic Vertical Datum of 1929. Sept. 21, 1956 to June 9, 1969, recording gage on right bank at same datum. Prior to Sept. 20, 1956, nonrecording gage at site 25 ft (8 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--25 years, 34.4 ft^3/s (0.974 m^3/s), 24,920 acre-ft/yr (30.7 hm^3/yr); median of yearly mean discharges, 23 ft^3/s (0.65 m^3/s), 16,700 acre-ft/yr (21 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,610 ft^3/s (216 m^3/s) June 30, 1975, gage height, 15.41 ft (4.697 m); minimum daily, 0.1 ft^3/s (0.003 m^3/s) Dec. 7-9, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 172 ft^3/s (4.87 m^3/s) July 14, gage height, 5.84 ft (1.780 m), only peak above base of 100 ft^3/s (2.83 m^3/s); minimum daily discharge, 1.6 ft^3/s (0.05 m^3/s) Jan. 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	2.3	2.7	2.2	1.8	3.5	3.6	2.7	6.5	4.5	2.5	2.3
2	3.8	2.3	2.7	2.2	1.8	3.0	3.6	2.4	5.1	4.7	2.5	3.1
3	3.8	2.3	2.7	2.2	1.8	2.8	3.6	2.4	4.7	4.6	2.7	3.9
4	3.8	2.3	4.5	2.2	1.8	2.6	3.6	2.4	4.0	3.8	2.7	4.0
5	3.8	2.4	4.5	2.2	1.9	2.6	3.4	2.3	4.5	4.2	2.7	4.0
6	3.8	2.6	4.5	2.1	1.9	2.6	3.0	2.2	4.2	4.2	2.9	4.0
7	3.6	2.7	4.2	2.1	1.9	2.6	2.9	2.2	3.6	2.5	2.9	3.9
8	3.6	2.7	4.2	2.1	2.1	2.6	2.7	2.2	3.2	2.2	2.9	3.5
9	3.4	2.7	4.2	2.1	2.1	2.4	2.7	2.3	3.2	2.3	2.9	2.7
10	2.9	2.7	4.2	1.8	2.1	2.4	2.6	2.2	3.2	2.4	2.7	2.6
11	2.7	2.7	4.2	1.6	2.1	2.4	2.3	2.2	3.0	2.3	3.0	2.5
12	2.6	2.7	4.2	1.6	2.1	2.3	2.4	2.2	3.0	2.3	3.4	2.4
13	2.4	2.7	4.0	1.6	2.2	2.2	2.6	2.2	7.2	2.3	3.0	2.4
14	2.4	2.7	4.0	1.8	2.2	2.1	2.6	2.2	6.1	83	3.0	2.4
15	2.4	2.7	4.0	1.8	2.2	2.1	2.6	2.2	5.2	52	3.0	2.5
16	2.7	2.7	4.0	1.8	2.2	2.3	2.6	2.2	4.6	61	3.0	2.7
17	2.9	2.7	4.0	1.7	2.2	2.2	2.6	2.2	3.9	42	3.0	2.5
18	2.7	2.7	3.5	1.7	2.2	2.2	2.6	2.2	3.6	31	3.0	2.4
19	2.7	2.7	3.2	1.7	2.3	2.2	2.7	2.3	3.6	26	3.0	2.6
20	2.4	2.7	3.2	1.7	2.3	2.2	2.7	2.4	3.6	22	3.0	2.9
21	2.3	2.7	3.2	1.7	3.6	2.2	2.7	2.5	3.6	17	3.0	3.0
22	2.5	2.7	3.1	1.7	4.6	2.2	2.8	2.6	3.6	12	3.2	2.7
23	2.7	2.7	2.5	1.8	5.3	2.2	4.3	3.2	3.1	9.4	3.4	2.7
24	2.5	2.7	2.4	1.8	5.4	2.2	4.7	5.1	3.0	9.0	4.2	2.7
25	2.4	2.7	2.3	1.8	5.0	2.2	4.7	3.2	2.9	6.3	2.6	2.4
26	2.4	2.7	2.3	1.8	5.0	2.2	4.7	3.9	2.9	4.5	2.4	2.5
27	2.4	2.7	2.6	1.8	5.0	2.2	4.7	6.9	3.4	3.8	2.3	2.3
28	2.4	2.7	2.7	1.8	4.0	2.2	4.4	10	3.5	3.5	2.3	2.3
29	2.4	2.7	2.6	1.8	---	2.4	4.2	8.2	3.1	3.0	2.3	2.3
30	2.4	2.7	2.4	1.8	---	2.4	3.7	6.3	4.2	2.9	2.3	2.5
31	2.3	---	2.2	1.8	---	2.9	---	5.9	---	2.9	2.3	---
TOTAL	88.9	79.0	105.0	57.8	79.1	74.6	98.3	103.4	119.3	433.6	88.1	84.7
MEAN	2.87	2.63	3.39	1.86	2.83	2.41	3.28	3.34	3.98	14.0	2.84	2.82
MAX	3.8	2.7	4.5	2.2	5.4	3.5	4.7	10	7.2	83	4.2	4.0
MIN	2.3	2.3	2.2	1.6	1.8	2.1	2.3	2.2	2.9	2.2	2.3	2.3
AC-FT	176	157	208	115	157	148	195	205	237	860	175	168

CAL YR 1980 TOTAL 4352.6 MEAN 11.9 MAX 174 MIN 1.8 AC-FT 8630
WTR YR 1981 TOTAL 1411.8 MEAN 3.87 MAX 83 MIN 1.6 AC-FT 2800

05060100 CASS COUNTY DRAIN 52 NEAR AMENIA, ND

LOCATION.--Lat 46°58'41", long 97°11'52", in sec.36, T.141 N., R.52 W., Cass County, Hydrologic Unit 09020204, on left bank 40 ft (12.19 m) upstream on county road 0.7 mi (2.7 km) south and 1 mi (1.6 km) east of Amenia.

DRAINAGE AREA.--13.5 mi^2 (21.7 km^2).

PERIOD OF RECORD.--October 1980 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 943 ft (287 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6.9 ft^3/s (0.195 m^3/s) Feb. 19, gage height, 0.75 ft (0.229 m); no flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.08	.00	.00	.00	.10	.00	.00
3	.00	.00	.00	.00	.00	.07	.00	.00	.00	.15	.00	.00
4	.00	.00	.00	.00	.00	.10	.00	.00	.00	.15	.00	.00
5	.00	.00	.00	.00	.00	.09	.00	.00	.00	.15	.00	.00
6	.00	.00	.00	.00	.00	.08	.00	.00	.00	.15	.00	.00
7	.00	.00	.00	.00	.00	.07	.00	.00	.00	.15	.00	.00
8	.00	.00	.00	.00	.00	.07	.00	.00	.00	.20	.00	.00
9	.00	.00	.00	.00	.00	.13	.00	.00	.00	.20	.00	.00
10	.00	.00	.00	.00	.00	.09	.00	.00	.00	.20	.00	.00
11	.00	.00	.00	.00	.00	.09	.00	.00	.00	.25	.00	.00
12	.00	.00	.00	.00	.00	.18	.00	.00	.00	.25	.00	.00
13	.00	.00	.00	.00	.00	.08	.00	.00	.00	.25	.00	.00
14	.00	.00	.00	.00	.00	.07	.00	.00	.00	.30	.00	.00
15	.00	.00	.00	.00	.10	.06	.00	.00	.00	.35	.00	.00
16	.00	.00	.00	.00	.50	.05	.00	.00	.00	.40	.00	.00
17	.00	.00	.00	.00	1.0	.04	.00	.00	.00	.45	.00	.00
18	.00	.00	.00	.00	3.0	.02	.00	.00	.00	.50	.00	.00
19	.00	.00	.00	.00	6.9	.01	.00	.00	.00	.55	.00	.00
20	.00	.00	.00	.00	6.0	.00	.00	.00	.00	.60	.00	.00
21	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.70	.00	.00
22	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.83	.00	.00
23	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.70	.00	.00
24	.00	.00	.00	.00	.50	.00	.00	.00	.00	.50	.00	.00
25	.00	.00	.00	.00	.13	.00	.00	.00	.00	.25	.00	.00
26	.00	.00	.00	.00	.13	.00	.00	.00	.00	.10	.00	.00
27	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	27.63	1.45	.00	.00	.00	8.43	.00	.00
MEAN	.000	.000	.000	.000	.99	.047	.000	.000	.000	.27	.000	.000
MAX	.00	.00	.00	.00	6.9	.18	.00	.00	.00	.83	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	55	2.9	.00	.00	.00	17	.00	.00

WTR YR 1981 TOTAL 37.51 MEAN .10 MAX 6.9 MIN .00 AC-FT 74

05060150 LOWER BRANCH RUSH RIVER NEAR AMENIA, ND

LOCATION.--Lat 46°56'30", long 96°59'18", in sec.16, T.140 N., R.50 W., Cass County, Hydrologic Unit 09020204, on right bank 60 ft (18.29 m) upstream on county road 1.5 mi (2.4 km) east and 1.5 mi (2.4 km) south of Prosper.

DRAINAGE AREA.--35.8 mi^2 (92.7 km^2).

PERIOD OF RECORD.--October 1980 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 900 ft (274 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.6 ft^3/s (0.045 m^3/s) May 24, gage height, 2.50 ft (0.762 m); no flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.10	.25	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.25	.20	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.50	.15	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.75	.05	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	1.0	.00	.00	.85	.00	.00	.00	.00
25	.00	.00	.00	.00	1.1	.00	.00	.35	.00	.00	.00	.00
26	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.95	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	6.75	12.35	.00	1.20	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.24	.40	.000	.039	.000	.000	.000	.000
MAX	.00	.00	.00	.00	1.1	.80	.00	.85	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	13	24	.00	2.4	.00	.00	.00	.00

WTR YR 1981 TOTAL 20.30 MEAN .056 MAX 1.1 MIN .00 AC-FT 40

05060500 RUSH RIVER AT AMENIA, ND

LOCATION.--Lat 47°01'00", long 97°12'50", in sec.24, T.141 N., R.52 W., Cass County, Hydrologic Unit 09020204, on left bank on downstream side of bridge on State Highway 18, and 0.6 mi (1.0 km) north of Amenia.

DRAINAGE AREA.--116 mi^2 (300 km^2).

PERIOD OF RECORD.--July 1946 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is about 943 ft (287 m), from topographic map. See WSP 1913 for history of changes prior to June 10, 1961.

REMARKS.--Records good except those for the winter periods, which are fair.

AVERAGE DISCHARGE.--35 years, 9.07 ft^3/s (0.257 m^3/s), 6,570 acre-ft/yr (8.10 hm^3/yr); median of yearly mean discharges, 5.4 ft^3/s (0.15 m^3/s), 3,900 acre-ft/yr (4.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,490 ft^3/s (98.8 m^3/s) Apr. 19, 1979, gage height, 10.37 ft (3.161 m); maximum gage height, 12.15 ft (3.703 m) Mar. 23, 1966, backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 22 ft^3/s (0.62 m^3/s) May 27, gage height, 5.14 ft (1.567 m); no peak above base of 27 ft^3/s (0.76 m^3/s); no flow at times during the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.24	.00	.00	.93	3.0	2.3	3.6	1.9	.00	.00
2	.00	.00	.24	.00	.00	.20	3.2	5.2	3.4	1.3	.00	.00
3	.00	.00	.15	.00	.00	.11	3.0	5.2	3.4	1.0	.00	.00
4	.00	.00	.11	.00	.00	.08	3.8	5.0	3.6	.69	.00	.00
5	.00	.00	.11	.00	.00	.17	4.2	3.8	5.9	.15	.00	.00
6	.00	.20	.11	.00	.00	.24	4.2	2.7	5.4	.01	.00	.00
7	.00	.03	.11	.00	.00	.29	3.4	1.6	4.0	.00	.00	.00
8	.00	.00	.10	.00	.00	.24	2.3	.93	2.5	.00	.00	.00
9	.00	.00	.08	.00	.00	.40	1.2	.58	1.3	.00	.00	.00
10	.00	.00	.08	.00	.00	3.0	.69	.29	.81	.00	.00	.00
11	.00	.00	.06	.00	.00	3.6	.20	.15	.58	.00	.00	.00
12	.00	.00	.03	.00	.00	3.8	.11	.11	.58	.00	.00	.00
13	.00	.00	.01	.00	.00	3.8	.09	.09	.81	.00	.00	.00
14	.00	.00	.00	.00	.00	4.4	.09	.05	1.0	.00	.00	.00
15	.00	.00	.00	.00	.05	4.2	.09	.02	2.2	.00	.00	.00
16	.00	.00	.00	.00	.10	4.2	.08	.00	2.8	.00	.00	.00
17	.00	.00	.00	.00	.20	5.0	.06	.00	3.4	.00	.00	.00
18	.00	.00	.00	.00	.40	3.8	.05	.00	5.6	.00	.00	.00
19	.00	.00	.00	.00	.81	2.7	.05	.00	6.4	.00	.00	.00
20	.00	.13	.00	.00	.15	2.3	.06	.00	5.9	.00	.00	.00
21	.00	.34	.00	.00	.48	2.0	.06	.00	5.2	.00	.00	.00
22	.00	.48	.00	.00	.48	1.7	.04	.00	4.8	.00	.00	.00
23	.00	.48	.00	.00	.48	1.3	.03	.00	4.8	.00	.00	.00
24	.00	.48	.00	.00	.58	1.0	.02	.02	4.4	.00	.00	.00
25	.00	.29	.00	.00	.69	.81	.02	.05	4.2	.00	.00	.00
26	.00	.24	.00	.00	.48	.81	.10	.40	3.8	.00	.00	.00
27	.00	.24	.00	.00	3.2	.48	.24	17	3.4	.00	.00	.00
28	.00	.24	.00	.00	2.2	.34	1.6	20	3.0	.00	.00	.00
29	.00	.24	.00	.00	---	.17	1.0	13	2.7	.00	.00	.00
30	.00	.24	.00	.00	---	.24	.69	8.0	2.3	.00	.00	.00
31	.00	---	.00	.00	---	1.2	---	4.8	---	.00	.00	---
TOTAL	.00	3.63	1.43	.00	10.30	53.51	33.67	91.29	101.78	5.05	.00	.00
MEAN	.000	.12	.046	.000	.37	1.73	1.12	2.94	3.39	.16	.000	.000
MAX	.00	.48	.24	.00	3.2	5.0	4.2	20	6.4	1.9	.00	.00
MIN	.00	.00	.00	.00	.00	.08	.02	.00	.58	.00	.00	.00
AC-FT	.00	7.2	2.8	.00	20	106	67	181	202	10	.00	.00

CAL YR 1980 TOTAL 894.80 MEAN 2.44 MAX 63 MIN .00 AC-FT 1770
WTR YR 1981 TOTAL 300.66 MEAN .82 MAX 20 MIN .00 AC-FT 596

05060550 RUSH RIVER NEAR PROSPER, ND

LOCATION.--Lat 46°57'59", long 97°03'04", in sec.1, T.140 N., R.51 W., Cass County, Hydrologic Unit 09020204, on right bank 30 ft upstream on county road 1.5 mi (2.4 km) west and 0.2 mi (0.3 km) north of Prosper.

DRAINAGE AREA.--170 mi^2 (440 km^2).

PERIOD OF RECORD.--October 1980 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 908 ft (277 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.0 ft^3/s (0.085 m^3/s) Mar. 15, gage height, 2.91 ft (0.887 m) Mar. 15; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.87	.87	.10	1.0	.17	.00	.00
2	.00	.00	.00	.00	.00	.63	.87	.25	1.5	.60	.00	.00
3	.00	.00	.00	.00	.00	.69	.87	.35	2.0	.54	.00	.00
4	.00	.00	.00	.00	.00	1.1	.84	.50	2.5	.24	.00	.00
5	.00	.00	.00	.00	.00	1.7	.84	.65	2.6	.17	.00	.00
6	.00	.00	.00	.00	.00	.90	.81	.80	2.5	.17	.00	.00
7	.00	.00	.00	.00	.00	.69	.81	.81	2.1	.14	.00	.00
8	.00	.00	.00	.00	.00	.63	.78	.70	1.8	.10	.00	.00
9	.00	.00	.00	.00	.00	.57	.78	.60	1.4	.05	.00	.00
10	.00	.00	.00	.00	.00	.48	.78	.50	1.3	.00	.00	.00
11	.00	.00	.00	.00	.00	.51	.70	.40	1.1	.00	.00	.00
12	.00	.00	.00	.00	.00	.54	.60	.30	.90	.24	.00	.00
13	.00	.00	.00	.00	.00	.48	.50	.20	.94	.17	.00	.00
14	.00	.00	.00	.00	.00	.32	.40	.14	.84	.36	.00	.00
15	.00	.00	.00	.00	.25	2.6	.30	.12	.72	.63	.00	.00
16	.00	.00	.00	.00	.50	2.6	.20	.10	.51	.22	.00	.00
17	.00	.00	.00	.00	1.0	2.7	.20	.05	.36	.10	.00	.00
18	.00	.00	.00	.00	1.5	2.5	.15	.01	.30	.00	.00	.00
19	.00	.00	.00	.00	2.1	2.2	.15	.00	.22	.00	.00	.00
20	.00	.00	.00	.00	1.5	2.6	.10	.00	.20	.00	.00	.00
21	.00	.00	.00	.00	1.1	2.2	.10	.00	.18	.00	.00	.00
22	.00	.00	.00	.00	.75	1.7	.05	.00	.18	.00	.00	.00
23	.00	.00	.00	.00	.66	1.4	.01	.01	.20	.00	.00	.00
24	.00	.00	.00	.00	.60	1.3	.01	.02	.58	.00	.00	.00
25	.00	.00	.00	.00	.48	1.1	.01	.03	.78	.00	.00	.00
26	.00	.00	.00	.00	.45	1.0	.01	.04	.81	.00	.00	.00
27	.00	.00	.00	.00	2.4	1.0	.01	.05	.75	.00	.00	.00
28	.00	.00	.00	.00	1.3	.90	.01	.05	.75	.00	.00	.00
29	.00	.00	.00	.00	---	.90	.02	.10	.57	.00	.00	.00
30	.00	.00	.00	.00	---	.90	.03	.25	.30	.00	.00	.00
31	.00	---	.00	.00	---	.90	---	.50	---	.00	.00	---
TOTAL	.00	.00	.00	.00	14.59	38.61	11.81	7.63	29.89	3.90	.00	.00
MEAN	.000	.000	.000	.000	.52	1.25	.39	.25	1.00	.13	.000	.000
MAX	.00	.00	.00	.00	2.4	2.7	.87	.81	2.6	.63	.00	.00
MIN	.00	.00	.00	.00	.00	.32	.01	.00	.18	.00	.00	.00
AC-FT	.00	.00	.00	.00	29	77	23	15	59	7.7	.00	.00

WTR YR 1981 TOTAL 106.43 MEAN .29 MAX 2.7 MIN .00 AC-FT 211

05062200 ELM RIVER NEAR KELSO, ND

LOCATION.--Lat 47°17'30", long 97°06'50", in sec.23, T.144 N., R.51 W., Traill County, Hydrologic Unit 09020107, on left bank 50 ft (15.2 m) upstream from county road, 4.0 mi (6.4 km) south and 3.4 mi (5.5 km) west of Kelso.

DRAINAGE AREA.--199 mi^2 (515 km^2).

PERIOD OF RECORD.--December 1955 to September 1963, October 1980 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 893 ft (272 m), from topographic map. Prior to September 1963 gage located at site one mile upstream at datum of 887.60 ft (270.540 m) National Geodetic Vertical Datum of 1929, Emerson-Crookston supplementary adjustment of 1941.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--9 years (water years 1956-63, 1981), 2.22 ft^3/s (0.063 m^3/s), 1,610 acre-ft/yr (1.99 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 440 ft^3/s (12.46 m^3/s) Apr. 8, 1962; maximum gage height, 10.20 ft (3.109 m) Apr. 5, 1962, backwater from ice, site and datum then in use; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 0.05 ft^3/s (0.001 m^3/s) Feb. 27, 28, no peak above base of 70 ft^3/s (1.982 m^3/s); no flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.04	.05	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.03	.05	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.02	.04	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.01	.04	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.01	.03	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.01	.03	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.05	.01	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.05	.01	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.01	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.01	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.04	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.24	.22	.35	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.009	.007	.012	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.05	.04	.05	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.5	.4	.7	.00	.00	.00	.00	.00

WTR YR 1981 TOTAL 0.81 MEAN .002 MAX .05 MIN .00 AC-FT 1.6

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN

LOCATION.--Lat 47°21'10", long 96°50'50", on line between secs.24 and 25, T.145 N., R.49 W., Traill County, Hydrologic Unit 09020107, on left bank on upstream side of highway bridge, 0.5 mi (0.8 km) west of Halstad, 2.5 mi (4.0 km) downstream from Wild Rice River, and at mile 375.2 (603.7 km).

DRAINAGE AREA.--21,800 mi^2 (56,500 km^2), approximately, including 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1936 to June 1937 (no winter records), April 1942 to September 1960 (spring and summer months only), May 1961 to current year.

REVISED RECORDS.--WSP 1388: 1936, 1950. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 826.65 ft (251.963 m) National Geodetic Vertical Datum of 1929. Prior to July 17, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by many controlled lakes and reservoirs on tributaries.

AVERAGE DISCHARGE.--20 years (1961-81), 1,761 ft^3/s (49.87 m^3/s), 1,276,000 acre-ft/yr (1.57 km^3/yr); median of yearly mean discharges, 1,640 ft^3/s (46.4 m^3/s), 1,188,000 acre-ft/yr (1.5 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft^3/s (1,190 m^3/s) Apr. 22, 1979, gage height, 39.00 ft (11.887 m); minimum observed, 5.4 ft^3/s (0.15 m^3/s) Oct. 8, 9, 12-14, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1897 reached a stage of about 38.5 ft (11.73 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,920 ft^3/s (111 m^3/s) May 25, gage height, 10.57 ft (3.222 m); minimum daily, 123 ft^3/s (3.48 m^3/s) Jan. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	316	318	354	155	152	390	850	500	522	649	652	321
2	310	323	362	155	145	392	858	522	487	620	630	336
3	305	323	345	155	140	410	922	539	464	620	566	352
4	273	345	362	155	140	417	966	563	427	655	536	385
5	236	407	362	155	144	414	974	566	417	700	636	407
6	202	437	307	150	148	425	946	572	460	780	818	397
7	181	437	257	150	142	432	922	582	517	822	914	414
8	179	420	238	150	139	432	910	569	545	776	870	457
9	181	402	235	150	140	432	906	550	547	723	826	508
10	179	394	230	146	155	440	906	542	542	675	787	464
11	179	392	225	145	155	447	930	517	525	643	759	430
12	189	400	220	144	155	457	950	508	492	604	732	395
13	189	414	215	142	155	470	934	503	484	575	700	347
14	194	404	209	134	160	495	882	484	503	588	662	318
15	196	380	203	133	160	540	773	472	611	627	598	289
16	207	364	198	130	167	600	675	452	617	773	547	265
17	231	350	194	124	175	650	598	437	563	756	482	246
18	259	321	194	123	179	700	542	420	547	776	432	233
19	314	347	198	123	184	750	497	404	617	787	390	216
20	327	354	196	124	205	800	472	367	713	742	360	205
21	321	357	189	126	244	850	447	332	719	710	340	202
22	332	370	187	127	270	890	452	314	700	671	334	191
23	329	345	184	127	277	900	470	1150	687	620	332	178
24	325	347	175	128	300	870	464	2930	662	579	323	173
25	327	347	160	130	330	850	464	3800	639	582	327	175
26	336	334	151	133	357	825	467	3320	617	598	360	178
27	338	347	152	139	382	780	472	2420	585	630	412	170
28	338	354	156	144	390	756	482	1880	575	691	400	160
29	325	338	160	148	---	756	505	1050	604	703	360	163
30	318	338	159	151	---	770	505	752	643	675	343	165
31	321	---	157	152	---	822	---	604	---	675	340	---
TOTAL	8257	11009	6934	4348	5690	19162	21141	28621	17031	21025	16768	8740
MEAN	266	367	224	140	203	618	705	923	568	678	541	291
MAX	338	437	362	155	390	900	974	3800	719	822	914	508
MIN	179	318	151	123	139	390	447	314	417	575	323	160
AC-FT	16380	21840	13750	8620	11290	38010	41930	56770	33780	41700	33260	17340

CAL YR 1980 TOTAL 272767 MEAN 745 MAX 11100 MIN 151 AC-FT 541000
WTR YR 1981 TOTAL 168726 MEAN 462 MAX 3800 MIN 123 AC-FT 334700

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued
(National stream-quality accounting network station)
(Radiochemical station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1964-67, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1977 to current year.
WATER TEMPERATURES: February 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,050 micromhos Oct. 4, 1978; minimum daily, 225 micromhos Apr. 5, 1978.
WATER TEMPERATURES: Maximum daily, 31.0°C on several days in July 1980 and 1981; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 980 micromhos Feb. 4, 16; minimum daily, 300 micromhos May 25.
WATER TEMPERATURES: Maximum daily, 31.0°C July 11, 12; minimum observed, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
07...	1335	172	796	8.5	30.0	13.0	28	10.6	104	K12	150
NOV											
11...	1220	380	892	8.9	4.5	3.0	16	13.1	100	K13	86
DEC											
16...	1345	198	962	7.8	-1.0	.0	7.6	11.6	82	K10	32
JAN											
19...	1225	124	968	7.8	-.5	.0	1.0	5.1	36	K19	K14
FEB											
18...	1415	179	860	7.8	8.5	.0	4.6	6.6	47	K6	54
MAR											
16...	1305	575	628	8.0	10.0	1.0	5.4	13.3	97	--	120
APR											
27...	1130	E480	848	8.7	9.0	13.5	45	6.9	61	K10	120
MAY											
26...	1300	3370	310	8.1	16.0	15.0	360	6.8	71	780	K20000
JUN											
23...	1225	659	629	8.2	17.0	19.0	78	7.6	81	K120	850
JUL											
21...	1435	700	684	8.1	25.5	26.0	74	5.9	74	K60	100
AUG											
25...	1130	337	608	8.3	25.0	22.5	40	7.7	90	220	135
SEP											
29...	1335	165	600	8.7	16.5	10.0	11	11.4	104	K37	K55

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT											
07...	261	21	55	30	69	35	1.9	10	240	1.2	120
NOV											
11...	312	62	64	37	67	31	1.7	10	250	.5	150
DEC											
16...	369	49	77	43	61	26	1.4	9.7	320	8.1	140
JAN											
19...	365	11	77	42	48	22	1.1	7.2	340	8.6	120
FEB											
18...	367	47	81	40	41	19	1.0	7.2	320	8.1	110
MAR											
16...	235	35	53	25	24	18	.7	5.0	200	3.2	83
APR											
27...	304	34	64	35	65	31	1.7	8.3	270	.9	110
MAY											
26...	132	22	28	15	7.6	11	.3	3.9	110	1.4	37
JUN											
23...	267	37	54	32	31	20	.8	6.8	230	2.9	81
JUL											
21...	254	44	54	29	47	28	1.3	6.8	210	2.7	100
AUG											
25...	259	39	56	29	25	17	.7	7.1	220	1.8	81
SEP											
29...	261	21	55	30	30	20	.8	4.9	240	.8	86

E - Estimated.
K - Results based on colony count outside the acceptable range (non-ideal colony count).

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT											
07...	29	.3	18	501	475	.68	233	--	--	.22	.24
NOV											
11...	35	.4	13	534	529	.73	548	--	--	.37	.34
DEC											
16...	33	.3	12	587	570	.80	314	--	--	.32	.31
JAN											
19...	23	.3	15	578	539	.79	194	--	--	.62	.51
FEB											
18...	20	.3	18	514	513	.70	248	--	--	.65	.63
MAR											
16...	11	.2	11	353	334	.48	548	--	--	.25	.24
APR											
27...	52	.4	8.2	525	507	.71	--	--	--	.48	.49
MAY											
26...	4.7	.1	5.7	176	170	.24	1600	--	--	.48	.46
JUN											
23...	23	.2	11	383	378	.52	681	--	--	.18	.17
JUL											
21...	21	.2	18	430	407	.58	813	--	--	1.1	1.1
AUG											
25...	12	.2	14	365	357	.50	332	.14	.010	.15	.14
SEP											
29...	14	.2	13	378	378	.51	168	--	--	.08	.08

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
OCT											
07...	.000	.000	.00	1.3	1.0	1.30	.30	1.0	1.5	1.2	6.7
NOV											
11...	.820	.560	.72	2.4	1.6	3.20	1.0	2.2	3.6	2.5	16
DEC											
16...	.300	.310	.40	2.7	.99	3.00	1.7	1.3	3.3	1.6	15
JAN											
19...	.740	.700	.90	--	--	--	--	--	--	--	--
FEB											
18...	.480	.470	.61	1.2	1.0	1.70	.20	1.5	2.4	2.1	10
MAR											
16...	.010	.030	.04	1.2	1.1	1.20	.10	1.1	1.5	1.3	6.4
APR											
27...	.760	1.10	1.4	5.1	1.3	5.90	3.5	2.4	6.4	2.9	28
MAY											
26...	.160	.160	.21	1.9	1.2	2.10	.70	1.4	2.6	1.9	11
JUN											
23...	.120	.110	.14	2.1	1.5	2.20	.60	1.6	2.4	1.8	11
JUL											
21...	.140	.110	.14	1.4	.89	1.50	.50	1.0	2.6	2.1	12
AUG											
25...	.110	.080	.10	1.3	.84	1.40	.48	.92	1.6	1.1	6.9
SEP											
29...	.110	.130	.17	.99	.97	1.10	.00	1.1	1.2	1.2	5.2

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT 07...	.300	.92	.230	--	--	--	--	--	--	--
NOV 11...	.610	1.9	.010	--	4	0	4	100	0	200
DEC 16...	.250	.77	.180	--	--	--	--	--	--	--
JAN 19...	.200	.61	.140	--	--	--	--	--	--	--
FEB 18...	.230	.71	.190	--	2	0	2	100	0	100
MAR 16...	.170	.52	.100	--	--	--	--	--	--	--
APR 27...	.850	2.6	.640	--	--	--	--	--	--	--
MAY 26...	.450	1.4	.150	--	10	6	4	200	0	200
JUN 23...	.260	.80	.100	--	--	--	--	--	--	--
JUL 21...	.600	1.8	.460	--	--	--	--	--	--	--
AUG 25...	.160	.49	.110	.130	7	0	7	100	0	100
SEP 29...	.120	.37	.050	--	--	--	--	--	--	--

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 11...	1	--	<1	10	10	0	2	--	<3	20	11	9
FEB 18...	0	0	2	0	0	0	0	--	<3	6	3	3
APR 27...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 26...	0	0	0	30	30	0	0	0	0	35	31	4
AUG 25...	0	--	<1	0	0	0	1	--	<3	9	4	5
SEP 29...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 11...	630	610	20	7	3	4	100	90	10	.2	.0	.3
FEB 18...	280	250	30	4	4	0	80	20	60	.1	.0	.1
APR 27...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 26...	18000	18000	20	25	22	3	860	850	10	.3	.2	.1
AUG 25...	1300	--	<10	8	3	5	120	120	5	.2	.2	.0
SEP 29...	--	--	--	--	--	--	--	--	--	--	--	--

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)
NOV											
11...	20	4	16	0	0	0	1	1	0	30	10
FEB											
18...	5	3	2	0	0	0	0	0	2	30	0
APR											
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
26...	25	23	2	1	1	0	1	1	0	140	120
AUG											
25...	8	4	4	0	0	1	0	0	0	40	20
SEP											
29...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)
OCT											
07...	--	--	--	--	--	--	--	--	14	--	--
NOV											
11...	20	--	--	--	--	--	--	--	--	12	.7
DEC											
16...	--	--	--	--	--	--	--	--	16	--	--
JAN											
19...	--	--	--	--	--	--	--	--	18	--	--
FEB											
18...	40	--	--	--	--	--	--	--	--	39	.4
APR											
27...	--	--	--	--	--	--	--	--	24	--	--
MAY											
26...	20	<4.9	31	7.8	37	7.5	35	.61	--	9.0	2.4
JUN											
23...	--	--	--	--	--	--	--	--	28	--	--
JUL											
21...	--	--	--	--	--	--	--	--	14	--	--
AUG											
25...	22	<8.1	3.5	16	3.2	14	3.0	.11	--	9.5	.7
SEP											
29...	--	--	--	--	--	--	--	--	11	--	--

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
07...	--	43	20	100
NOV				
11...	48000	16	16	96
DEC				
16...	--	13	6.9	92
JAN				
19...	--	17	5.7	88
FEB				
18...	--	10	4.8	83
MAR				
16...	10000	--	--	--
MAY				
26...	3100	730	6640	100
JUN				
23...	26000	172	306	99
JUL				
21...	13000	205	387	100
AUG				
25...	5800	70	64	98
SEP				
29...	5000	19	8.5	95

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	750	800	850	920	880	700	520	760	540	750	600	570
2	755	800	830	900	890	650	500	750	560	740	580	590
3	750	810	900	890	920	640	550	730	560	680	600	600
4	760	800	800	930	980	650	525	710	580	670	580	600
5	770	820	830	750	960	640	550	710	---	650	580	580
6	790	800	820	730	920	650	580	700	450	650	540	690
7	790	800	870	700	900	700	600	700	550	640	530	695
8	810	805	900	690	910	710	600	720	600	660	550	680
9	780	830	880	680	900	700	650	740	750	670	560	640
10	800	820	890	700	920	760	650	730	740	700	540	570
11	810	800	950	720	900	750	680	720	720	740	540	570
12	800	800	940	720	860	670	720	710	710	780	540	600
13	820	780	960	730	900	650	700	730	700	725	560	610
14	850	750	950	750	910	620	720	745	650	720	580	600
15	860	750	960	730	950	600	720	750	680	700	580	620
16	820	730	930	720	980	550	740	750	650	620	580	650
17	830	700	940	730	910	570	700	750	640	600	570	630
18	800	700	930	750	890	560	710	750	620	630	560	640
19	810	720	910	880	850	560	680	740	650	640	580	630
20	800	710	900	870	860	570	670	725	660	660	600	640
21	820	700	900	890	840	550	650	700	650	660	580	650
22	790	750	900	900	820	540	660	720	655	670	600	650
23	720	730	920	880	800	500	650	---	630	670	610	630
24	670	740	920	900	760	500	690	---	660	660	600	610
25	740	800	930	890	750	480	700	300	640	660	610	600
26	750	780	920	900	780	480	720	320	630	660	600	620
27	770	800	930	870	800	460	800	330	650	660	580	600
28	750	800	920	820	770	490	800	330	680	650	600	600
29	730	800	930	830	---	500	800	320	710	640	580	610
30	810	780	910	830	---	520	800	440	740	620	600	600
31	900	---	920	800	---	500	---	520	---	610	600	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	3.5	.5	.0	1.0	1.0	4.5	16.0	17.0	26.5	25.0	22.5
2	12.5	5.0	.5	.0	1.0	1.0	6.0	16.0	17.5	27.0	24.0	24.0
3	13.0	5.5	.5	.0	1.0	1.0	7.0	16.0	17.5	28.0	26.0	20.0
4	11.5	5.5	.5	.0	1.0	1.0	8.0	15.0	17.5	28.5	26.5	22.0
5	13.0	5.5	.5	.0	1.0	1.0	8.5	15.5	18.0	28.5	26.0	18.5
6	13.5	5.5	.0	.0	1.0	1.0	9.0	16.5	20.0	29.5	25.5	19.0
7	16.0	5.5	.0	.0	1.0	1.0	9.0	16.5	21.0	30.0	28.5	18.0
8	16.0	7.0	.0	.0	1.0	1.0	9.5	17.0	21.0	30.0	25.0	22.0
9	14.5	7.0	.0	.0	1.0	1.0	10.5	13.0	21.5	30.0	24.0	25.0
10	13.0	6.0	.0	.0	1.0	1.0	11.0	12.0	22.5	30.0	24.0	25.5
11	9.0	4.5	.0	.0	1.0	1.0	9.0	16.0	23.0	31.0	24.5	25.5
12	8.0	3.5	.0	.5	1.0	3.0	9.0	16.0	23.0	31.0	25.0	25.0
13	8.0	3.0	.0	.5	1.0	2.0	9.0	17.0	23.0	28.5	26.5	24.0
14	7.5	3.0	.0	.5	1.0	1.0	10.0	17.5	22.0	28.0	26.5	18.5
15	7.5	3.0	.0	.5	1.0	1.0	11.5	17.5	22.0	25.0	26.0	17.0
16	7.0	2.0	.0	.5	1.0	1.0	13.0	18.0	21.0	25.0	25.0	16.0
17	7.0	1.0	.0	.5	1.0	1.0	12.0	19.0	22.0	26.0	25.0	16.5
18	6.0	1.0	.0	.5	1.0	1.0	13.5	21.0	22.0	26.0	24.0	16.5
19	6.0	1.0	.0	.5	1.0	1.0	13.0	22.0	19.5	27.0	25.0	17.0
20	7.0	1.0	.0	.5	1.0	1.0	13.0	22.0	19.0	28.0	24.0	17.0
21	7.0	1.0	.0	.5	1.0	1.0	10.0	22.0	19.0	26.5	25.0	16.0
22	6.0	1.0	.0	.5	1.0	1.5	9.0	22.0	21.0	25.0	23.0	16.0
23	6.0	1.0	.0	.5	1.0	1.5	10.0	---	19.5	24.5	23.0	15.0
24	5.5	1.0	.0	.5	1.0	1.5	12.0	---	22.5	25.0	24.0	15.0
25	3.0	1.0	.0	.5	1.0	2.0	13.0	15.5	23.0	25.0	24.0	14.0
26	5.0	1.0	.0	.0	1.0	2.0	15.0	16.0	23.5	24.5	24.5	13.0
27	3.5	1.0	.0	.0	1.0	2.0	14.0	16.5	24.0	24.0	25.0	10.0
28	3.5	1.0	.0	.0	1.0	2.0	13.0	18.0	24.0	25.5	25.0	11.0
29	4.0	.5	.0	.0	---	2.0	14.0	18.5	25.0	27.0	25.0	12.0
30	4.0	.5	.0	.0	---	2.0	15.0	19.0	26.0	25.5	25.0	12.0
31	3.0	---	.0	.0	---	2.5	---	17.0	---	25.5	24.0	---

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	MAR 16,81	MAY 26,81	JUN 23,81	JUL 21,81	AUG 25,81	SEP 29,81
TIME	1305	1300	1225	1435	1130	1335
TOTAL CELLS/ML	10000	3100	26000	13000	5800	5000
DIVERSITY: DIVISION	0.5	1.3	1.6	1.6	1.3	1.9
.CLASS	0.5	1.3	1.6	1.6	1.3	1.9
..ORDER	0.8	2.5	1.9	2.4	1.8	2.1
...FAMILY	0.8	3.0	2.5	2.9	2.9	2.8
....GENUS	1.3	3.6	3.7	3.7	3.6	3.2

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..ACHNANTHALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	*	0	--	-
..BACILLARIALES												
...NITZSCHIACEAE												
....NITZSCHIA	100	1	400	13	560	2	510	4	310	5	180	4
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	7400#	72	490#	16	2900	11	700	6	56	1	200	4
....MELOSIRA	--	-	710#	23	1500	6	370	3	*	0	--	-
....STEPHANODISCUS	1400	14	*	0	--	-	--	-	--	-	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....ASTERIONELLA	100	1	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	69	2	--	-	--	-	--	-	--	-
..NAVICULALES												
...CYMBELLACEAE												
....CYMBELLA	--	-	*	0	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	*	0	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....CALONEIS	--	-	*	0	--	-	--	-	--	-	--	-
....NAVICULA	--	-	120	4	*	0	94	1	70	1	39	1
..SURIRELLALES												
...SURIRELLACEAE												
....SURIRELLA	--	-	120	4	--	-	94	1	*	0	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....SCHROEDERIA	100	1	--	-	--	-	--	-	--	-	--	-
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	280	1	--	-	--	-	--	-
...DICTYOSPHAERIACEAE												
....DICTYOSPHAERIUM	--	-	110	4	630	2	280	2	880#	15	790#	16
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	290	9	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	420	2	--	-	98	2	98	2
...OOCYSTACEAE												
....ANKISTRODESMUS	100	1	--	-	490	2	140	1	130	2	200	4
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	*	0
....CLOSTERIOPSIS	--	-	--	-	*	0	--	-	--	-	--	-
....FRANCEIA	--	-	--	-	--	-	*	0	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	840	3	140	1	--	-	79	2
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	56	1	--	-
....OOCYSTIS	--	-	110	4	350	1	230	2	400	7	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981 (CONTINUED)

DATE TIME	MAR 16,81 1305		MAY 26,81 1300		JUN 23,81 1225		JUL 21,81 1435		AUG 25,81 1130		SEP 29,81 1335	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
....QUADRIGULA	--	-	--	-	--	-	--	-	56	1	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	370	3	260	5	160	3
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	220	7	560	2	190	1	--	-	--	-
....COELASTRUM	--	-	41	1	2700	11	650	5	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	330	3	170	3	--	-
....GLOEOACTINIUM	--	-	--	-	280	1	330	3	200	3	--	-
....SCENEDESMUS	--	-	27	1	2200	9	1500	12	910#	16	160	3
....TETRASTRUM	--	-	--	-	1400	5	370	3	170	3	79	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	1100	11	82	3	910	4	280	2	56	1	160	3
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	370	3	--	-	--	-
CHRYSOPHYTA												
.CHRYSOPHYCEAE												
..OCHROMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	1300#	25
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	140	1	*	0	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	*	0	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	280	1	--	-	--	-	490	10
....ANACYSTIS	--	-	--	-	5200#	20	3500#	28	390	7	--	-
....GOMPHOSPHAERIA	--	-	--	-	3600	14	--	-	--	-	1100#	22
..NOSTOCALES												
...HAMMATOIDEACEAE												
....RAPHIDIOPSIS	--	-	55	2	--	-	--	-	--	-	--	-
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	200	3	--	-
....OSCILLATORIA	--	-	140	4	--	-	1900	15	1300#	22	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	55	2	--	-	--	-	*	0	--	-
....PHACUS	--	-	--	-	*	0	--	-	*	0	--	-
....TRACHELOMONAS	--	-	27	1	210	1	140	1	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..DINOKONTAE												
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05064900 BEAVER CREEK NEAR FINLEY, ND
(Hydrologic bench-mark station)

LOCATION.--Lat 47°35'40", long 97°42'18", in NE¼ sec.31, T.148 N., R.55 W., Steele County, Hydrologic Unit 09020109, on right bank 500 ft (150 m) upstream from bridge on county highway, and 7 mi (11 km) northeast of Finley.

DRAINAGE AREA.--160 mi^2 (410 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and concrete broad-crested weir. Datum of gage is 1,170.08 ft (356.640 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years, 9.17 ft^3/s (0.260 m^3/s), 6,640 acre-ft/yr (8.19 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,900 ft^3/s (53.8 m^3/s) Apr. 19, 1979, gage height, 8.35 ft (2.545 m), backwater from ice; maximum gage height, 9.70 ft (2.957 m) Mar. 14, 1966, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft^3/s (0.28 m^3/s) July 17, gage height, 2.89 ft (0.881 m), no peaks above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3.0	.05	.43	.43	.01	.69	.00
2	.00	.00	.00	.00	.00	2.8	.12	.51	.51	.00	.59	.00
3	.00	.00	.00	.00	.00	2.6	.40	.51	.43	.00	.47	.00
4	.00	.00	.00	.00	.00	2.2	.39	.43	.39	.00	.45	.00
5	.00	.00	.00	.00	.00	2.6	.39	.35	.51	.00	.47	.00
6	.00	.00	.00	.00	.00	2.0	.39	.31	.51	.00	.41	.00
7	.00	.00	.00	.00	.00	2.0	.24	.23	.43	.00	.55	.05
8	.00	.00	.00	.00	.00	1.6	.18	.18	.31	.00	.64	.05
9	.00	.00	.00	.00	.00	1.0	.23	.18	.19	.00	.51	.05
10	.00	.00	.00	.00	.00	.82	.23	.12	.16	.18	.43	.18
11	.00	.00	.00	.00	.00	.82	.12	.09	.09	.24	.34	.27
12	.00	.00	.00	.00	.00	.94	.18	.05	.05	.05	.30	.21
13	.00	.00	.00	.00	.00	.75	.23	.01	.35	.00	.27	.15
14	.00	.00	.00	.00	.00	.59	.18	.00	.27	.24	.25	.05
15	.00	.00	.00	.00	.00	.43	.19	.00	.27	1.8	.20	.05
16	.00	.00	.00	.00	.00	.39	.19	.00	.26	2.2	.17	.05
17	.00	.00	.00	.00	1.0	.31	.12	.00	.24	4.8	.12	.05
18	.00	.00	.00	.00	5.8	.12	.09	.00	.15	4.4	.07	.05
19	.00	.00	.00	.00	4.1	.09	.09	.00	.09	2.4	.02	.02
20	.00	.00	.00	.00	2.6	.09	.09	.00	.05	1.7	.00	.00
21	.00	.00	.00	.00	2.6	.02	.09	.00	.43	1.3	.00	.00
22	.00	.00	.00	.00	1.7	.01	.09	.00	.47	1.7	.00	.00
23	.00	.00	.00	.00	2.3	.00	.09	.00	.53	2.1	.00	.02
24	.00	.00	.00	.00	1.0	.00	.09	.00	.47	1.6	.00	.12
25	.00	.00	.00	.00	.59	.00	.09	.09	.39	1.6	.00	.07
26	.00	.00	.00	.00	.51	.00	.05	.02	.25	1.2	.00	.05
27	.00	.00	.00	.00	3.4	.00	.18	.01	.18	.96	.00	.02
28	.00	.00	.00	.00	3.8	.00	.24	.01	.15	.35	.00	.02
29	.00	.00	.00	.00	---	.00	.31	.01	.15	1.1	.00	.02
30	.00	.00	.00	.00	---	.00	.43	.02	.09	.82	.00	.15
31	.00	---	.00	.00	---	.00	---	.09	---	.89	.00	---
TOTAL	.00	.00	.00	.00	29.40	25.18	5.76	3.65	8.80	31.64	6.95	1.70
MEAN	.000	.000	.000	.000	1.05	.81	.19	.12	.29	1.02	.22	.057
MAX	.00	.00	.00	.00	5.8	3.0	.43	.51	.53	4.8	.69	.27
MIN	.00	.00	.00	.00	.00	.00	.05	.00	.05	.00	.00	.00
AC-FT	.00	.00	.00	.00	58	50	11	7.2	17	63	14	3.4

CAL YR 1980 TOTAL 503.99 MEAN 1.38 MAX 75 MIN .00 AC-FT 1000
WTR YR 1981 TOTAL 113.08 MEAN .31 MAX 5.8 MIN .00 AC-FT 224

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
FEB											
24...	1025	.59	407	7.6	2.5	.5	11.3	82	--	--	--
MAR											
10...	1110	1.0	770	8.1	.0	1.0	12.7	92	--	1300	1600
APR											
21...	1155	.08	1140	8.2	10.0	7.5	10.9	96	--	73	190
JUN											
09...	1120	.19	1400	8.2	19.0	20.0	9.3	108	10000	K650	210
AUG											
10...	1155	.43	1060	8.1	25.5	20.0	7.4	84	--	K80	200
SEP											
16...	1055	E.05	1200	8.3	17.0	12.0	8.8	83	--	77	K65

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
FEB											
24...	161	79	43	13	15	16	.5	9.8	82	3.3	110
MAR											
10...	300	130	74	28	45	24	1.2	11	170	2.2	230
APR											
21...	468	320	110	47	75	25	1.6	12	150	1.5	350
JUN											
09...	544	280	122	58	100	28	1.9	15	260	2.6	460
AUG											
10...	411	71	92	44	85	30	1.9	12	340	4.3	200
SEP											
16...	426	110	88	50	100	33	2.2	18	320	2.6	280

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
FEB											
24...	8.4	.1	12	292	265	.40	.47	--	--	.83	.82
MAR											
10...	16	.1	18	526	528	.72	1.4	--	--	.93	.93
APR											
21...	29	.2	8.0	820	721	1.1	.18	.00	.000	.00	.01
JUN											
09...	47	.2	8.4	1030	968	1.4	.53	--	--	.00	.02
AUG											
10...	22	.2	35	750	695	1.0	.87	--	--	.01	<1.0
SEP											
16...	20	.2	21	823	770	1.1	.27	--	--	.00	.00

E - Estimated.
K - Results based on colony count outside the acceptable range (non-ideal colony count).

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
FEB											
24...	.380	.410	.53	2.0	1.5	2.40	.50	1.9	3.2	2.7	14
MAR											
10...	.050	.050	.06	1.9	1.7	1.90	.20	1.7	2.8	2.6	13
APR											
21...	.080	.060	.08	1.4	.94	1.50	.50	1.0	1.5	1.0	6.6
JUN											
09...	.110	.110	.14	2.2	1.1	2.30	1.1	1.2	2.3	1.2	10
AUG											
10...	.070	.050	.06	1.6	1.5	1.70	.20	1.5	1.7	1.5	7.6
SEP											
16...	.080	.070	.09	1.6	1.2	1.70	.40	1.3	1.7	1.3	7.5

DATE	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)
FEB										
24...	.550	1.7	.450	4	2	2	100	10	90	<1
MAR										
10...	.390	1.2	.340	--	--	--	--	--	--	--
APR										
21...	.080	.25	.040	--	--	--	--	--	--	--
JUN										
09...	.160	.49	.060	5	1	4	0	0	0	<1
AUG										
10...	.310	.95	.230	--	--	--	--	--	--	--
SEP										
16...	.120	.37	.060	--	--	--	--	--	--	--

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
FEB												
24...	2	<1	10	10	0	<3	6	0	12	830	710	120
MAR												
10...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	0	<1	10	9	1	<3	5	--	<10	150	120	28
AUG												
10...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
16...	--	--	--	--	--	--	--	--	--	--	--	--

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)
FEB												
24...	2	<10	17	100	20	76	.1	.1	.0	<10	1	0
MAR												
10...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	0	<10	110	230	60	170	.1	.0	.1	<10	0	0

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)
FEB											
24...	1	0	0	0	170	<6.0	10	0	22	--	--
MAR											
10...	--	--	--	--	--	--	--	--	--	--	--
APR											
21...	--	--	--	--	--	--	--	--	--	<20	<.4
JUN											
09...	0	0	0	0	710	<6.0	30	30	4	--	--

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)
FEB											
24...	--	--	--	--	--	--	--	23	5.2	.00	--
MAR											
10...	--	--	--	--	--	--	22	--	--	--	--
APR											
21...	18	1.1	18	1.1	.06	5.9	12	--	--	--	.00
JUN											
09...	--	--	--	--	--	--	--	23	.3	.00	--
AUG											
10...	--	--	--	--	--	--	17	--	--	--	--
SEP											
16...	--	--	--	--	--	--	17	--	--	--	--

DATE	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)
FEB											
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	--	--	--	--	--	--	--	--	--	--	--
APR											
21...	0	.00	.0	.00	.0	.00	.0	.00	.1	.00	.2

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
FEB 24...	--	--	--	--	--	--	--	--	--	--	--
MAR 10...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	.00	.00	.0	.00	.0	.00	.00	.0	.00	.0	.02
JUN 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 10...	--	--	--	--	--	--	--	--	--	--	--
SEP 16...	--	--	--	--	--	--	--	--	--	--	--

DATE	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)
FEB 24...	--	--	--	--	--	--	--	--	--	--
MAR 10...	--	--	--	--	--	--	--	--	--	--
APR 21...	.1	.00	.00	.0	.00	.00	.00	.00	.00	.00
JUN 09...	--	--	--	--	--	--	--	--	--	--
AUG 10...	--	--	--	--	--	--	--	--	--	--
SEP 16...	--	--	--	--	--	--	--	--	--	--

DATE	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
FEB 24...	--	--	--	--	--	--	23	.04	96
MAR 10...	--	--	--	--	--	--	6	.02	86
APR 21...	.00	.0	.00	.00	.00	.00	10	.00	87
JUN 09...	--	--	--	--	--	--	12	.01	88
AUG 10...	--	--	--	--	--	--	12	.01	95
SEP 16...	--	--	--	--	--	--	15	.00	98

05065500 GOOSE RIVER NEAR PORTLAND, ND

LOCATION.--Lat 47°32'20", long 97°27'20", in SE¼NE¼ sec.19, T.147 N., R.53 W., Traill County, Hydrologic Unit 09020101, on left bank 75 ft (23 m) upstream from bridge on State Highway 18, 1.2 mi (1.9 km) upstream from unnamed tributary 4 mi (6 km) downstream from Beaver Creek, and 5 mi (8 km) northwest of Portland.

DRAINAGE AREA.--517 mi^2 (1,340 km^2), of which about 110 mi^2 (285 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1939 to September 1975, October 1980 to September 1981.

GAGE.--Water stage recorder and wooden control. Datum of gage is 967.48 ft (294.888 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1956, nonrecording gages at site 2 mi (3 km) upstream at datum 11.28 ft (3.438 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--37 years, 30.1 ft^3/s (0.852 m^3/s), 21,810 acre-ft/yr (26.9 hm^3/yr); median of yearly mean discharges, 15 ft^3/s (0.42 m^3/s), 10,900 acre-ft/yr (13 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,530 ft^3/s (242 m^3/s), May 9, 1950, gage height, 20.12 ft (6.133 m), on basis of contracted opening measurement, present site and datum; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--No flow during entire year. No peak above base of 200 ft^3/s (5.66 m^3/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

WTR YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

05066500 GOOSE RIVER AT HILLSBORO, ND

LOCATION.--Lat 47°24'20", long 97°03'40", in NW¼ sec.5, T.145 N., R.50 W., Traill County, Hydrologic Unit 09020109, on right bank 600 ft (180 m) upstream from Foogman Dam in Hillsboro, and 27.5 mi (44 km) upstream from mouth.

DRAINAGE AREA.--1,203 mi^2 (3,116 km^2), of which 110 mi^2 (285 km^2) is probably noncontributing.

PERIOD OF RECORD.--March 1931 to current year (no winter records 1932-34). Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and masonry dam. Datum of gage is 879.52 ft (268.078 m) National Geodetic Vertical Datum of 1929. Sept. 26, 1941, to Oct. 27, 1965, at site 600 ft (180 m) downstream at same datum. See WSP 1728 or 1913 for history of changes prior to Sept. 26, 1941.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--48 years (1931-32, 1934-81), 67.7 ft^3/s (1.917 m^3/s), 49,050 acre-ft/yr (60.5 hm^3/yr); median of yearly mean discharges, 40 ft^3/s (1.13 m^3/s), 28,980 acre-ft/yr (35.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft^3/s (419 m^3/s) Apr. 21, 1979, gage height, 16.76 ft (5.108 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25.6 ft^3/s (0.72 m^3/s) June 25, gage height, 1.83 ft (0.558 m), no peak above base of 200 ft^3/s (5.66 m^3/s); minimum daily, 0.18 ft^3/s (0.005 m^3/s) Oct. 2, 3, 4, and Sept. 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	1.9	2.4	2.4	2.4	8.0	14	6.8	12	18	11	3.4
2	.18	1.9	2.4	2.4	2.4	9.4	13	6.8	11	16	9.4	2.5
3	.18	1.9	2.4	2.4	2.4	8.0	9.4	8.0	11	12	15	1.9
4	.18	1.9	2.4	2.4	2.4	8.0	.94	8.0	12	11	15	1.9
5	.29	1.9	2.4	2.4	2.4	8.0	3.1	8.0	14	11	14	1.9
6	.38	1.9	2.4	2.4	2.4	6.8	5.6	8.0	14	8.8	14	6.8
7	.66	1.9	2.4	2.4	2.4	6.8	6.8	8.0	15	7.0	14	11
8	.94	2.4	2.4	2.4	3.1	6.8	6.8	8.0	17	4.9	12	4.0
9	.94	2.4	2.4	2.4	3.1	6.8	5.6	8.0	14	3.5	12	3.8
10	.62	2.4	2.4	2.4	3.1	6.8	5.6	8.0	12	4.1	9.4	3.7
11	.38	2.4	2.4	2.4	3.7	6.8	6.8	8.0	10	9.3	9.4	3.1
12	.18	2.7	2.4	2.4	4.7	6.8	6.8	6.8	9.4	6.8	8.9	3.1
13	.18	3.1	2.4	2.4	5.6	8.0	6.8	6.8	13	6.5	7.5	3.1
14	.38	3.1	2.4	2.4	7.1	9.4	6.8	6.8	11	9.6	6.5	3.1
15	.38	3.1	2.4	2.4	6.5	9.4	6.8	6.8	11	8.7	5.6	3.1
16	.63	3.1	2.4	2.4	9.1	9.4	5.6	6.8	11	5.6	5.6	2.4
17	1.4	3.1	2.4	2.2	6.4	10	8.0	8.0	9.9	3.8	5.3	2.4
18	.96	3.1	2.4	1.9	4.7	11	8.0	8.0	8.7	2.4	4.4	2.4
19	.62	2.4	2.4	1.9	3.8	11	7.3	6.8	8.0	2.4	3.8	2.4
20	.62	2.4	2.4	1.9	3.8	11	6.2	5.6	8.0	3.1	3.8	2.4
21	.62	2.4	2.4	1.9	3.8	11	5.6	4.7	10	3.8	3.8	2.2
22	.77	2.4	2.4	1.7	4.7	11	5.6	3.8	9.8	4.4	3.8	1.4
23	.94	2.4	2.4	1.4	6.8	12	5.6	3.8	18	5.6	3.8	2.4
24	1.4	2.4	2.4	1.4	8.0	12	5.5	3.8	24	5.6	12	2.4
25	1.4	2.4	2.4	1.9	9.4	12	5.6	3.8	24	5.6	8.0	2.4
26	1.4	2.4	2.4	2.4	8.0	12	5.6	3.8	25	5.7	6.3	1.4
27	1.4	2.4	2.4	2.4	6.8	12	5.6	6.8	23	7.7	5.6	.38
28	1.4	2.4	2.4	1.9	6.8	14	5.6	9.4	22	8.8	5.6	.18
29	1.4	2.4	2.4	1.9	---	14	6.8	15	22	9.4	5.6	.18
30	1.4	2.4	2.4	1.9	---	14	6.8	15	21	9.8	5.6	1.4
31	1.4	---	2.4	1.9	---	14	---	14	---	16	5.9	---
TOTAL	24.25	73.0	74.4	67.0	135.8	306.2	198.24	231.9	430.8	236.9	252.6	82.74
MEAN	.78	2.43	2.40	2.16	4.85	9.88	6.61	7.48	14.4	7.64	8.15	2.76
MAX	1.4	3.1	2.4	2.4	9.4	14	14	15	25	18	15	11
MIN	.18	1.9	2.4	1.4	2.4	6.8	.94	3.8	8.0	2.4	3.8	.18
AC-FT	48	145	148	133	269	607	393	460	854	470	501	164

CAL YR 1980 TOTAL 9147.32 MEAN 25.0 MAX 782 MIN .18 AC-FT 18140
WTR YR 1981 TOTAL 2113.83 MEAN 5.79 MAX 25 MIN .18 AC-FT 4190

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°56'34", long 97°03'10", in SW¼NE¼ sec.33, T.152 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on left bank on second floor of old sewage plant in Grand Forks, 2.3 mi (3.7 km) downstream from Red Lake River, and at mile 295.7 (475.8 km).

DRAINAGE AREA.--30,100 mi^2 (78,000 km^2), approximately, including 3,800 mi^2 (9,840 km^2) in closed basins.

PERIOD OF RECORD.--April 1882 to current year. Monthly discharge only prior to May 1901, published in WSP 1308.

REVISED RECORDS.--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 778.35 ft (237.241 m) National Geodetic Vertical Datum of 1929. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mi (0.5 km) upstream at present datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

REMARKS.--Records good.

AVERAGE DISCHARGE.--99 years, 2,535 ft^3/s (71.79 m^3/s), 1,837,000 acre-ft/yr (2.27 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 85,000 ft^3/s (2,410 m^3/s) Apr. 10, 1897, gage height, 50.2 ft (15.30 m), site and datum then in use, from rating curve extended above 54,000 ft^3/s (1,530 m^3/s); minimum, 1.8 ft^3/s (0.051 m^3/s) Sept. 2, 1977, caused by unusual regulation during repair of dam at Grand Forks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,710 ft^3/s (190 m^3/s) July 1, gage height, 14.68 ft (4.474 m); minimum daily, 250 ft^3/s (7.08 m^3/s) Feb. 4-11.

REVISIONS.--The maximum discharges for the 1882 and 1897 water years have been revised to about 75,000 ft^3/s (2,120 m^3/s) and about 85,000 ft^3/s (2,410 m^3/s), respectively, superseding figures published in WSP 1308. The 1897 figure, which is the maximum for the period of record, was published in the 1979 and subsequent water year reports, but was not noted as "revised." The 1882 maximum discharge revision was not previously published.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	538	430	493	305	262	950	1360	655	1210	6590	1520	1140
2	556	428	418	300	258	920	1380	655	1030	6020	1460	1600
3	488	418	352	300	253	850	1380	684	908	4600	1470	2590
4	396	418	359	300	250	810	1380	722	870	3490	1380	2490
5	420	415	385	300	250	800	1420	750	908	2850	1280	1960
6	425	415	410	300	250	780	1470	761	908	2500	1300	1780
7	406	460	438	300	250	740	1430	764	956	2280	1540	1760
8	381	510	410	300	250	700	1380	750	1010	2160	1820	2500
9	356	518	354	300	250	690	1290	730	1010	2050	1990	4140
10	337	500	339	290	250	680	1200	726	1000	1870	1940	5040
11	330	493	334	290	250	670	1180	694	988	1760	1780	4400
12	328	490	343	290	260	670	1140	664	952	1940	1640	3330
13	317	495	350	290	270	680	1150	649	952	2400	1550	2500
14	317	510	345	290	310	680	1150	628	888	2310	1470	1950
15	326	507	326	290	316	700	1100	601	870	2300	1400	1620
16	337	490	334	290	325	730	1020	595	912	2440	1320	1390
17	354	438	442	290	330	760	912	571	1100	2460	1230	1660
18	365	345	420	290	340	820	824	541	1230	2430	1160	1520
19	374	300	387	290	350	870	722	518	1220	2330	1030	1410
20	392	367	370	290	380	880	667	490	1140	2200	940	928
21	420	415	340	300	420	950	604	460	1180	2020	888	862
22	435	435	319	310	450	1030	550	418	1270	1860	866	820
23	448	505	312	300	500	1070	547	440	1410	1770	976	817
24	463	475	306	300	560	1080	565	1510	1760	1680	1710	834
25	465	372	306	295	640	1200	568	3890	1660	1620	1980	842
26	468	341	304	290	770	1330	568	5380	1470	1550	1950	876
27	475	376	298	285	880	1420	583	5500	1340	1490	2080	866
28	726	385	288	280	940	1470	598	4320	1300	1440	1830	842
29	610	406	282	275	---	1460	601	3100	1780	1450	1560	817
30	463	435	288	270	---	1380	628	2210	4860	1470	1300	828
31	432	---	302	265	---	1260	---	1530	---	1530	1150	---
TOTAL	13148	13092	10954	9065	10814	29030	29367	41906	38092	74860	45510	54112
MEAN	424	436	353	292	386	936	979	1352	1270	2415	1468	1804
MAX	726	518	493	310	940	1470	1470	5500	4860	6590	2080	5040
MIN	317	300	282	265	250	670	547	418	870	1440	866	817
AC-FT	26080	25970	21730	17980	21450	57580	58250	83120	75560	148500	90270	107300

CAL YR 1980 TOTAL 596885 MEAN 1631 MAX 21800 MIN 282 AC-FT 1184000
WTR YR 1981 TOTAL 369950 MEAN 1014 MAX 6590 MIN 250 AC-FT 733800

05083000 TURTLE RIVER AT MANVEL, ND

LOCATION.--Lat 48°04'43", long 97°11'03", in SE¼ sec.10, T.153 N., R.51 W., Grand Forks County, Hydrologic Unit 09020307, on left bank 10 ft (3.1 m) downstream from bridge on State Highway No. 33, 0.3 mi (0.48 km) west of Manvel, and 10 mi (16 km) upstream from mouth.

DRAINAGE AREA.--613 mi^2 (1,590 km^2), of which 57 mi^2 (148 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to September 1970 (discharge), December 1979 to current year (gage heights and annual maximum discharge only).

REVISED RECORDS.--WSP 1438: 1947(M), 1948. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 799.28 ft (243.621 m) National Geodetic Vertical Datum of 1929. Prior to June 29, 1959, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--25 years (water years 1946-70), 50.3 ft^3/s (1.424 m^3/s), 36,440 acre-ft/yr (44.9 hm^3/yr); median of yearly mean discharges 32 ft^3/s (0.91 m^3/s), 23,200 acre-ft/yr (29 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft^3/s (793 m^3/s) Apr. 19, 1950, from rating curve extended above 4,300 ft^3/s (122 m^3/s) on basis of contracted-opening measurement of peak flow, gage height, 21.5 ft (6.55 m) from floodmark; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft^3/s (2.38 m^3/s) June 17, gage height, 6.39 ft (1.95 m); minimum not determined.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.86	6.15	6.12	5.45	5.23	6.16	5.88	5.20	5.42	5.32	---	4.55
2	5.80	6.14	5.95	5.45	5.21	6.11	5.87	5.28	5.47	5.18	---	4.51
3	5.79	6.16	5.80	5.43	5.18	6.00	5.80	5.40	5.47	5.15	---	4.46
4	5.78	6.16	5.71	5.39	5.13	5.83	5.79	5.47	5.45	5.13	4.96	4.41
5	5.76	6.15	5.69	5.35	5.11	5.75	5.84	5.45	5.60	5.00	4.99	4.36
6	5.73	6.14	5.70	5.35	5.12	5.71	5.87	5.43	5.70	4.63	4.95	4.46
7	5.68	6.14	5.67	5.33	5.14	5.61	5.89	5.43	5.67	4.71	4.91	4.75
8	5.62	6.16	5.63	5.30	5.15	5.56	5.83	5.39	5.65	4.77	4.88	5.07
9	5.58	6.18	5.60	5.29	5.14	5.55	5.68	5.36	5.60	4.85	4.83	5.28
10	5.53	6.20	5.59	5.25	5.12	5.53	5.59	5.33	5.57	4.93	4.77	5.81
11	5.48	6.23	5.57	5.22	5.08	5.56	5.51	5.29	5.51	---	4.70	5.73
12	5.46	6.32	5.56	5.21	5.04	5.67	5.43	5.25	5.42	---	4.64	5.42
13	5.47	6.56	5.55	5.21	5.02	5.82	5.37	5.21	5.41	---	4.57	5.17
14	5.54	6.60	5.54	5.23	5.02	5.92	5.31	5.20	5.44	---	4.49	4.97
15	5.64	6.53	5.53	5.23	5.04	5.99	5.25	5.20	5.54	---	4.50	4.82
16	5.76	6.55	5.52	5.21	5.08	6.05	5.19	5.19	5.96	---	4.49	4.72
17	5.92	6.53	5.54	5.21	5.10	6.13	5.17	5.18	6.33	---	4.44	4.64
18	6.04	6.48	5.54	5.20	5.17	6.19	5.18	5.15	6.33	---	4.48	4.56
19	6.13	6.40	5.48	5.21	5.33	6.03	5.16	5.10	6.15	---	4.48	4.51
20	6.23	6.41	5.40	5.22	5.64	5.98	5.15	5.06	5.99	---	4.41	4.46
21	6.42	6.39	5.33	5.22	5.70	5.95	5.13	5.02	5.86	---	4.36	4.43
22	6.44	6.36	5.33	5.23	5.63	5.98	5.10	4.95	5.77	---	4.40	4.39
23	6.44	6.34	5.35	5.25	6.32	5.95	5.11	4.99	5.76	---	4.37	4.48
24	6.44	6.26	5.36	5.27	6.66	5.92	5.11	5.05	5.70	---	4.41	4.58
25	6.38	6.21	5.33	5.29	6.30	5.93	5.07	5.13	5.67	---	4.49	4.66
26	6.30	6.17	5.31	5.30	6.26	5.88	5.06	5.19	5.65	---	4.56	4.62
27	6.25	6.17	5.32	---	6.34	5.78	5.08	5.25	5.66	---	4.56	4.61
28	6.26	6.21	5.36	---	6.12	5.87	5.10	5.48	5.65	---	4.52	4.78
29	6.30	6.20	5.40	5.26	---	5.82	5.15	5.60	5.57	---	4.47	4.91
30	6.27	6.18	5.43	5.24	---	5.88	5.20	5.65	5.48	---	4.45	4.90
31	6.20	---	5.44	5.22	---	5.87	---	5.43	---	---	4.50	---
TOTAL	184.50	188.68	171.65	---	152.38	181.98	161.87	163.31	170.45	---	---	143.02
MEAN	5.95	6.29	5.54	---	5.44	5.87	5.40	5.27	5.68	---	---	4.77
MAX	6.44	6.60	6.12	---	6.66	6.19	5.89	5.65	6.33	---	---	5.81
MIN	5.46	6.14	5.31	---	5.02	5.53	5.06	4.95	5.41	---	---	4.36

05083600 MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, ND

LOCATION.--Lat 48°14'50", long 98°07'00", in SE¼NW¼ sec.16, T.155 N., R.58 W., Walsh County, Hydrologic Unit 09020308, 150 ft (46 m) downstream from bridge on State Highway 35, and 6 mi (10 km) north of Whitman.

DRAINAGE AREA.--47.7 mi^2 (123.5 km^2), of which 8.8 mi^2 (22.8 km^2) is noncontributing.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,510 ft (460 m) from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--21 years, 3.01 ft^3/s (0.085 m^3/s), 2,180 acre-ft/yr (2.69 hm^3/yr); median of yearly mean discharges, 2.2 ft^3/s (0.062 m^3/s), 1,600 acre-ft/yr (2.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 984 ft^3/s (27.9 m^3/s) May 19, 1974, gage height, 7.11 ft (2.167 m); no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 65 ft^3/s (1.84 m^3/s) Apr. 2, gage height, 4.47 ft (1.362 m), no peaks above base of 70 ft^3/s (1.98 m^3/s); maximum gage height, 4.51 ft (1.375 m) Aug. 23; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	.46	.06	.00	.00	1.0	18	.22	.12	.36	.00	6.5
2	1.8	.46	.00	.00	.00	1.0	50	.20	.18	.34	.00	4.6
3	1.3	.44	.00	.00	.00	5.0	31	.17	.12	.32	.13	3.0
4	1.0	.44	.00	.00	.00	3.0	18	.17	.10	.30	.10	2.1
5	.74	.42	.00	.00	.00	1.0	9.6	.15	.14	.28	.11	1.2
6	.62	.40	.00	.00	.00	1.0	6.7	.13	.12	.25	.17	2.5
7	.44	.38	.00	.00	.00	2.0	4.9	.12	.08	.20	.12	4.6
8	.40	.36	.00	.00	.00	2.0	3.2	.11	.06	.15	.07	2.1
9	.32	.36	.00	.00	.00	2.0	2.2	.13	.04	.10	.04	1.2
10	.28	.36	.00	.00	.00	3.0	1.7	.11	.04	.05	.02	.90
11	.25	.36	.00	.00	.00	4.0	1.2	.09	.03	.00	.00	.56
12	.22	.36	.00	.00	.00	17	.90	.08	.01	.00	.00	.38
13	.21	.36	.00	.00	.00	10	.71	.07	.21	.00	.00	.34
14	.20	.36	.00	.00	.00	16	.56	.06	.28	5.0	.00	.28
15	.20	.30	.00	.00	.00	15	.48	.06	.23	10	.00	.24
16	.22	.26	.00	.00	.50	13	.42	.03	.22	5.0	.00	.21
17	.54	.26	.00	.00	1.0	10	.38	.02	.22	4.0	.00	.19
18	.42	.24	.00	.00	5.2	10	.34	.01	.21	3.0	.00	.17
19	.38	.23	.00	.00	10	8.0	.28	.00	.21	2.0	.00	.16
20	.42	.22	.00	.00	21	7.0	.25	.00	.22	1.0	.00	.14
21	.42	.23	.00	.00	30	4.0	.22	.00	.27	.50	.00	.13
22	.44	.23	.00	.00	35	3.0	.21	.00	.32	.00	.00	.12
23	.71	.22	.00	.00	39	2.0	.20	.00	.34	.00	35	.16
24	.98	.18	.00	.00	20	2.0	.17	.00	.59	.00	14	.17
25	.94	.15	.00	.00	20	2.0	.15	.04	.74	.00	6.1	.17
26	.71	.13	.00	.00	7.0	2.0	.14	.06	.40	.00	29	2.3
27	.54	.12	.00	.00	5.0	1.5	.17	.08	.44	.00	27	1.5
28	.48	.10	.00	.00	5.0	4.2	.22	.09	.50	.00	20	.48
29	.50	.10	.00	.00	---	4.6	.23	.09	.42	.00	14	.29
30	.50	.09	.00	.00	---	11	.23	.08	.40	.00	11	.27
31	.48	---	.00	.00	---	10	---	.07	---	.00	8.4	---
TOTAL	18.86	8.58	.06	.00	198.70	177.3	152.76	2.44	7.26	32.85	165.26	36.96
MEAN	.61	.29	.002	.000	7.10	5.72	5.09	.079	.24	1.06	5.33	1.23
MAX	2.2	.46	.06	.00	39	17	50	.22	.74	10	35	6.5
MIN	.20	.09	.00	.00	.00	1.0	.14	.00	.01	.00	.00	.12
AC-FT	37	17	.1	.00	394	352	303	4.8	14	65	328	73

CAL YR 1980 TOTAL 362.80 MEAN .99 MAX 58 MIN .00 AC-FT 720
WTR YR 1981 TOTAL 801.03 MEAN 2.19 MAX 50 MIN .00 AC-FT 1590

05084000 FOREST RIVER NEAR FORDVILLE, ND

LOCATION.--Lat 48°11'50", long 97°43'49", on line between secs.32 and 33, T.155 N., R.55 W., Walsh County, Hydrologic Unit 09020308, on right bank 50 ft (15 m) upstream from highway bridge, 0.5 mi (0.8 km) downstream from South Branch, and 3 mi (5 km) southeast of Fordville.

DRAINAGE AREA.--456 mi^2 (1,181 km^2), of which about 120 mi^2 (311 km^2) is probably noncontributing.

PERIOD OF RECORD.--April 1940 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,035 ft (315 m), from topographic map. Prior to July 21, 1951, nonrecording gage at site 50 ft (15 m) downstream at same datum.

REMARKS.--Records good except those for the ice period, which are fair. Some regulation of high flows by temporary retention in several retarding basins above station. Retarding basins have a combined capacity of about 14,000 acre-ft (17.3 hm^3).

AVERAGE DISCHARGE.--41 years, 38.0 ft^3/s (1.076 m^3/s), 27,500 acre-ft/yr (33.9 hm^3/yr); median of yearly mean discharges, 36 ft^3/s (1.02 m^3/s), 26,100 acre-ft/yr (32 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft^3/s (464 m^3/s) Apr. 18, 1950, gage height, 14.48 ft (4.414 m), from floodmark, from rating curve extended above 5,600 ft^3/s (159 m^3/s) on basis of contracted-opening and slope-area measurements of peak flow; no flow Apr. 1-13, Sept. 3, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft^3/s (5.098 m^3/s) Apr. 2, gage height, 2.73 ft (0.832 m), no peak above base of 200 ft^3/s (5.66 m^3/s); maximum gage height, 3.20 ft (0.975 m) Feb. 18; minimum, 1.6 ft^3/s (0.045 m^3/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	8.0	6.0	3.0	49	39	22	16	20	1.8	28
2	6.9	14	7.5	5.5	2.5	45	84	21	18	20	1.6	26
3	5.6	14	7.0	6.0	2.5	43	131	20	16	18	5.0	23
4	6.9	14	7.0	7.0	2.0	37	87	20	15	18	5.6	20
5	6.9	15	7.0	7.0	2.0	31	67	18	15	16	4.4	18
6	8.0	14	6.0	6.0	2.5	28	56	18	15	16	8.6	21
7	7.5	14	4.0	6.0	2.5	26	54	17	14	15	5.6	28
8	6.9	15	4.0	7.0	2.5	25	46	16	13	14	4.0	25
9	5.6	14	5.0	5.5	2.5	24	40	16	12	14	6.2	22
10	8.6	14	4.0	5.5	2.0	23	32	14	11	14	6.9	19
11	6.9	14	5.5	5.5	2.0	27	29	13	9.2	14	7.5	17
12	7.5	14	5.0	5.5	2.0	32	26	13	4.4	14	7.5	16
13	7.5	14	5.0	5.5	2.0	46	24	14	9.7	14	7.5	14
14	6.9	14	5.5	5.5	2.0	80	21	14	14	15	6.9	35
15	6.9	13	5.5	5.0	2.0	51	20	18	24	14	7.5	11
16	8.6	13	5.5	5.0	2.0	64	18	16	23	10	5.0	10
17	14	13	6.0	5.0	4.0	48	16	14	20	7.5	2.7	9.2
18	11	12	4.0	5.0	26	45	18	16	18	7.5	2.2	8.6
19	11	13	8.0	5.0	63	51	16	16	15	6.2	2.2	8.0
20	9.2	13	7.5	5.0	59	39	14	14	14	5.0	2.0	8.0
21	8.0	13	7.0	4.5	62	29	14	13	13	4.0	2.7	8.0
22	8.6	13	7.5	4.0	66	26	14	12	13	4.4	1.7	6.2
23	14	13	7.5	4.0	72	26	14	14	13	4.0	12	9.7
24	13	12	6.0	4.0	106	25	14	16	13	4.4	13	9.7
25	11	14	6.0	4.0	111	28	14	18	13	3.0	14	10
26	11	13	6.0	4.0	96	29	14	18	12	2.7	13	13
27	10	12	7.0	4.0	72	29	18	16	13	2.4	21	13
28	16	13	7.5	3.5	64	37	21	15	18	2.0	29	11
29	16	13	7.0	3.0	---	38	21	14	20	1.8	34	11
30	16	13	7.0	3.0	---	42	22	14	20	2.0	32	29
31	16	---	7.0	3.0	---	39	---	13	---	2.4	30	---
TOTAL	305.0	405	192.5	154.5	837.0	1162	1004	493	444.3	305.3	303.1	487.4
MEAN	9.84	13.5	6.21	4.98	29.9	37.5	33.5	15.9	14.8	9.85	9.78	16.2
MAX	16	15	8.0	7.0	111	80	131	22	24	20	34	35
MIN	5.6	12	4.0	3.0	2.0	23	14	12	4.4	1.8	1.6	6.2
AC-FT	605	803	382	306	1660	2300	1990	978	881	606	601	967

CAL YR 1980 TOTAL 4133.3 MEAN 11.3 MAX 95 MIN 3.0 AC-FT 8200
WTR YR 1981 TOTAL 6093.1 MEAN 16.7 MAX 131 MIN 1.6 AC-FT 12090

05085000 FOREST RIVER AT MINTO, ND

LOCATION.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., Walsh County, Hydrologic Unit 09020308, on right bank 30 ft (9 m) upstream from dam in Minto, 150 ft (45 m) upstream from Burlington Northern Railway bridge, and 900 ft (270 m) east of U.S. Highway 81.

DRAINAGE AREA.--740 mi^2 (1,920 km^2), of which about 120 mi^2 (310 km^2) is probably noncontributing.

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

REVISED RECORDS.--WSP 1438: 1948-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 806.95 ft (245.958 m) National Geodetic Vertical Datum of 1929. Prior to July 15, 1954, nonrecording gage at site 400 ft (120 m) upstream at same datum.

REMARKS.--Records good except those for the winter periods, which are fair. Occasionally during high stages, particularly when the channel is filled with snow, overflow occurs 0.5 mi (0.8 km) below the municipality of Forest River and bypasses the gage 3 mi (5 km) south of Minto and flows into Lake Ardoch. Bypass flow is not included in computation of discharge record for station at Minto.

AVERAGE DISCHARGE.--37 years, 50 ft^3/s (1.416 m^3/s), 36,220 acre-ft/yr (44.7 hm^3/yr); median of yearly mean discharges, 43 ft^3/s (1.22 m^3/s), 31,200 acre-ft/yr (38 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft^3/s (470 m^3/s) Apr. 18, 1950, gage height, 11.80 ft (3.597 m) from floodmarks, from rating curve extended above 7,200 ft^3/s (204 m^3/s) on basis of contracted-opening measurement of peak flow; no flow at times each year 1945-47, 1953-55, 1959-64.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 176 ft^3/s (4.98 m^3/s) June 28, gage height, 2.04 ft (0.622 m), no peak above base of 200 ft^3/s (5.66 m^3/s); minimum daily discharge, 0.65 ft^3/s (0.018 m^3/s) Aug. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	9.0	11	7.3	2.0	20	49	22	14	31	4.3	21
2	4.1	9.2	11	6.6	1.5	26	61	21	15	27	4.3	23
3	4.1	9.9	9.9	6.6	1.1	46	61	21	18	24	6.5	22
4	4.1	11	8.0	6.6	.70	27	109	20	19	26	5.9	21
5	5.0	11	8.0	6.6	.70	28	95	19	18	24	6.2	20
6	4.5	11	7.3	6.0	.82	28	78	19	17	22	8.9	22
7	5.0	11	7.3	6.0	1.1	26	69	18	16	18	6.9	21
8	3.4	12	8.0	5.5	1.1	20	62	18	15	16	5.7	21
9	2.6	11	8.0	5.0	.95	19	56	17	14	14	5.2	22
10	3.0	11	8.0	5.0	1.1	19	48	15	13	13	5.1	22
11	3.3	11	8.0	4.5	1.1	20	41	15	12	12	5.5	17
12	4.1	11	8.0	4.1	1.1	26	38	14	12	12	4.8	15
13	5.0	11	8.0	4.1	1.1	27	33	14	14	12	3.7	13
14	4.5	11	8.0	4.1	1.1	28	29	14	13	11	3.2	12
15	4.5	9.2	8.0	3.7	1.5	33	27	13	13	11	2.7	11
16	5.0	9.9	7.3	3.3	1.7	43	27	12	12	11	2.3	11
17	5.0	8.6	7.3	3.3	1.9	47	27	11	15	11	2.1	11
18	5.5	8.6	8.0	3.3	2.1	42	26	11	18	9.7	1.9	12
19	6.0	9.9	9.9	3.3	2.6	36	24	11	17	9.0	1.5	11
20	6.6	11	11	3.0	28	33	22	11	15	7.8	.91	9.2
21	6.0	11	9.9	3.0	73	36	20	11	14	6.9	.76	9.9
22	6.0	11	9.2	3.0	57	35	19	12	13	6.2	.65	9.2
23	5.5	11	8.6	3.0	49	35	18	12	14	5.7	.65	9.2
24	6.0	9.2	8.0	3.0	51	35	18	14	13	5.1	.95	8.6
25	6.6	9.2	7.3	3.7	41	38	17	15	14	5.4	1.6	9.2
26	8.2	9.2	6.6	3.3	59	39	17	16	14	5.0	5.5	11
27	7.3	11	6.6	2.6	63	33	18	16	17	5.4	9.9	15
28	6.6	11	6.6	2.3	38	39	17	17	137	5.1	9.2	16
29	7.3	9.9	6.6	2.0	---	41	17	16	67	4.7	8.6	17
30	8.0	11	7.3	1.7	---	52	21	14	41	4.9	9.2	18
31	8.6	---	7.3	1.5	---	54	---	13	---	5.0	15	---
TOTAL	165.5	310.8	254.0	127.0	484.27	1031	1164	472	644	380.9	149.62	460.3
MEAN	5.34	10.4	8.19	4.10	17.3	33.3	38.8	15.2	21.5	12.3	4.83	15.3
MAX	8.6	12	11	7.3	73	54	109	22	137	31	15	23
MIN	2.6	8.6	6.6	1.5	.70	19	17	11	12	4.7	.65	8.6
AC-FT	328	616	504	252	961	2040	2310	936	1280	756	297	913

CAL YR 1980 TOTAL 3958.73 MEAN 10.8 MAX 152 MIN .78 AC-FT 7850
WTR YR 1981 TOTAL 5643.39 MEAN 15.5 MAX 137 MIN .65 AC-FT 11190

05088500 HOMME LAKE NEAR PARK RIVER, ND

LOCATION.--Lat 48°24'20", long 97°47'10", in SE¼NW¼ sec.19, T.157 N., R.55 W., Walsh County, Hydrologic Unit 09020310, at Homme Dam on South Branch Park River, and 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.--226 mi^2 (585 km^2).

PERIOD OF RECORD.--September 1949 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-fill dam, 865 ft (264 m) long; storage began in September 1949, dam completed in October 1950. Usable capacity between invert of outlet, elevation, 1,048.0 ft (319.43 m), and crest of spillway, elevation, 1,080.0 ft (329.18 m), is 3,550 acre-ft (4.38 hm^3). Dead storage is 100 acre-ft (0.12 hm^3). Low flows are controlled by two sluice gates 3 x 5 ft (0.914 x 1.524 m). The spillway, which is 150 ft (46 m) long, is uncontrolled. The records herein represent total contents. The reservoir is operated for flood control, water supply, and pollution abatement during low-flow periods.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,710 acre-ft (5.81 hm^3) Apr. 20, 1979, elevation, 1,084.58 ft (330.580 m); minimum since first reaching spillway level, 184 acre-ft (0.23 hm^3) Feb. 8, 1952, elevation, 1,051.22 ft (320.412 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,823 acre-ft (4.71 hm^3) June 28, elevation, 1,080.86 ft (329.446 m); minimum, 2,404 acre-ft (2.96 hm^3) Jan. 20, elevation, 1,073.39 ft (327.169 m).

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,080.23	3,703	--
Oct. 31	1,079.90	3,641	-62
Nov. 30	1,078.73	3,419	-222
Dec. 31	1,075.42	2,789	-630
CAL YR 1980	--	--	+228
Jan. 31	1,073.56	2,436	-353
Feb. 28	1,080.04	3,667	+1,231
Mar. 31	1,080.20	3,698	+31
Apr. 30	1,079.79	3,620	-78
May 31	1,080.10	3,679	+59
June 30	1,080.75	3,802	+123
July 31	1,078.95	3,461	-341
Aug. 31	1,079.38	3,542	+81
Sept. 30	1,078.80	3,432	-110
WTR YR 1981	--	--	-271

05089000 SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND

LOCATION.--Lat 48°24'07", long 97°46'55", in SE¼ sec.19, T.157 N., R.55 W., Walsh County, Hydrologic Unit 09020310, on right bank 0.5 mi (0.8 km) downstream from Homme Dam, and 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.--226 mi^2 (585 km^2).

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for October and November 1949, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft (304.800 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor except those for the winter periods, which are fair. Flow regulated by Homme Lake (station 05088500).

AVERAGE DISCHARGE.--32 years, 27.1 ft^3/s (0.767 m^3/s), 19,630 acre-ft/yr (24.2 hm^3/yr); median of yearly mean discharges, 21 ft^3/s (0.59 m^3/s), 15,200 acre-ft/yr (19 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 13,000 ft^3/s (368 m^3/s) Apr. 24, 1950, gage height, 37.52 ft (11.436 m), from rating curve extended above 5,500 ft^3/s (156 m^3/s), result of failure of emergency embankment at site of Homme Dam; no flow Oct. 1 to Dec. 3, 1949, Oct. 1-4, 1969, Sept. 21, 1970, July 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 429 ft^3/s (12.15 m^3/s) Apr. 2, gage height, 25.49 ft (7.769 m), backwater from ice; minimum daily, 0.10 ft^3/s (0.003 m^3/s) Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	11	11	6.0	.30	76	107	9.7	15	95	8.7	.97
2	6.9	11	11	6.0	.28	47	309	13	17	81	7.7	.91
3	7.8	12	11	5.0	.26	24	200	13	18	62	8.4	4.0
4	9.7	12	11	5.0	.27	24	171	13	8.4	45	8.0	8.2
5	9.2	10	11	5.0	.30	24	167	13	13	34	8.0	8.2
6	11	12	11	4.0	.32	18	66	13	7.3	25	7.3	8.7
7	9.0	12	11	4.0	.32	13	4.9	13	7.7	20	3.9	7.7
8	7.8	12	11	4.0	.30	11	4.0	13	11	24	.97	7.7
9	8.7	12	11	3.0	.30	11	4.0	13	7.7	13	.72	8.0
10	17	12	11	3.0	.30	12	4.0	13	7.5	13	.52	7.7
11	14	12	11	3.0	.30	12	3.9	13	11	13	.47	4.7
12	14	12	12	2.0	.30	12	3.9	10	14	13	.52	.91
13	14	12	12	2.0	.30	12	9.0	7.5	14	12	.44	.78
14	8.2	12	12	2.0	.50	74	17	7.3	9.2	10	.39	.91
15	1.9	12	12	1.5	1.0	125	16	7.1	21	10	.47	.91
16	2.1	12	11	1.5	5.0	104	16	6.7	16	10	.52	.84
17	1.9	12	11	1.3	10	86	12	7.1	7.3	9.7	.67	.84
18	2.0	12	11	1.3	20	73	7.3	8.0	9.0	9.7	.67	.78
19	2.4	12	10	1.3	30	68	7.1	8.0	13	9.7	.67	.63
20	7.7	12	10	1.2	45	54	6.7	9.7	16	9.7	.67	.67
21	6.1	12	10	1.2	60	59	6.1	9.4	17	9.4	.67	.63
22	9.4	12	9.0	1.2	75	58	6.5	5.5	23	9.4	.67	.63
23	15	12	9.0	1.2	100	56	6.5	2.5	19	9.4	.91	.67
24	16	12	9.0	1.1	130	51	6.5	2.4	14	9.4	.84	.20
25	14	12	8.0	1.0	92	59	6.5	2.3	29	9.4	.78	.11
26	12	12	8.0	.85	65	57	6.3	8.4	251	9.2	.72	.10
27	12	12	8.0	.70	86	57	6.1	16	181	9.0	.84	.13
28	11	12	7.0	.63	78	81	5.9	14	149	9.0	.84	.17
29	11	12	7.0	.55	---	144	5.9	14	145	9.0	.97	.11
30	18	11	7.0	.38	---	122	5.7	19	140	8.7	1.0	.11
31	10	---	6.0	.35	---	98	---	18	---	8.7	1.0	---
TOTAL	307.8	355	310.0	71.26	801.35	1722	1197.8	322.6	1211.1	619.4	68.94	76.91
MEAN	9.93	11.8	10.0	2.30	28.6	55.5	39.9	10.4	40.4	20.0	2.22	2.56
MAX	18	12	12	6.0	130	144	309	19	251	95	8.7	8.7
MIN	1.9	10	6.0	.35	.26	11	3.9	2.3	7.3	8.7	.39	.10
AC-FT	611	704	615	141	1590	3420	2380	640	2400	1230	137	153

CAL YR 1980 TOTAL 3372.64 MEAN 9.21 MAX 177 MIN .15 AC-FT 6690
WTR YR 1981 TOTAL 7064.16 MEAN 19.4 MAX 309 MIN .10 AC-FT 14010

05089100 MIDDLE BRANCH PARK RIVER NEAR UNION, ND

LOCATION.--Lat 48°32'32", long 98°01'10", on north line of sec.5, T.158 N., R.57 W., Walsh County, Hydrologic Unit 09020310, on left bank 20 ft (6 m) downstream from bridge on county highway between Walsh and Cavalier Counties, and 3.5 mi (5.6 km) southwest of Union.

DRAINAGE AREA.--15.3 mi^2 (39.6 km^2).

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,495 ft (456 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years, 2.23 ft^3/s (0.063 m^3/s), 1,620 acre-ft/yr (2.00 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 960 ft^3/s (27.2 m^3/s) Apr. 20, 1979, gage height, 6.16 ft (1.878 m), backwater from ice; maximum gage height, 7.51 ft (2.289 m) May 4, 1966, from floodmark, backwater from snowdrift; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 90 ft^3/s (2.55 m^3/s) June 27, gage height, 3.42 ft (1.042 m), only peak above base of 20 ft^3/s (0.57 m^3/s); maximum gage height, 4.20 ft (1.280 m) Mar. 12, backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.57	.63	.38	.00	.00	3.2	11	.63	.29	3.6	.10	.08
2	.47	.69	.36	.00	.00	2.4	12	.52	.28	2.3	.06	.07
3	.42	.69	.32	.00	.00	2.2	6.5	.42	.24	1.7	.86	.06
4	.29	.52	.20	.00	.00	3.0	4.2	.37	.20	1.2	.63	.04
5	.29	.52	.20	.00	.00	3.0	2.9	.32	.18	.69	.29	.03
6	.23	.52	.20	.00	.00	2.8	2.1	.29	.18	.37	.26	1.3
7	.23	.57	.20	.00	.00	2.2	1.5	.29	.16	.23	.26	1.2
8	.26	.60	.20	.00	.00	2.2	.90	.26	.16	.12	.17	.70
9	.23	.60	.20	.00	.00	3.4	.57	.26	.14	.06	.12	.45
10	.23	.60	.20	.00	.00	4.0	.57	.26	.13	.03	.09	.30
11	.23	.55	.20	.00	.00	5.0	.47	.26	.13	.10	.08	.22
12	.23	.55	.20	.00	.00	5.8	.42	.26	.12	.07	.07	.15
13	.20	.55	.20	.00	.00	6.4	.32	.26	.63	.08	.06	.10
14	.17	.50	.20	.00	.00	6.6	.23	.26	.83	.07	.06	.08
15	.17	.50	.20	.00	1.0	5.7	.23	.26	.77	.15	.02	.07
16	.23	.50	.20	.00	2.0	4.9	.23	.23	.83	.12	.02	.06
17	2.6	.50	.20	.00	3.5	4.0	.23	.23	.69	.08	.02	.05
18	2.6	.46	.15	.00	10	3.4	.23	.23	.47	.07	.02	.04
19	1.6	.46	.15	.00	12	2.0	.23	.20	.29	.06	.02	.04
20	1.2	.46	.10	.00	9.0	2.4	.23	.17	.29	.04	.01	.04
21	.90	.44	.10	.00	8.0	3.0	.23	.15	.52	.04	.01	.03
22	.83	.44	.05	.00	7.5	3.6	.23	.13	2.2	.03	.01	.03
23	.77	.44	.05	.00	7.0	4.8	.13	.15	3.3	.04	1.4	.35
24	.69	.44	.05	.00	6.0	5.4	.12	.15	4.6	.04	2.2	.30
25	.57	.42	.00	.00	5.0	6.0	.12	1.2	3.3	.04	.69	.25
26	.52	.42	.00	.00	3.6	5.8	.12	1.4	2.5	.04	.23	.50
27	.52	.42	.00	.00	3.5	5.0	.32	1.3	4.8	.03	.15	.40
28	.47	.40	.00	.00	3.3	4.2	.42	1.0	30	.02	.13	.30
29	.37	.40	.00	.00	---	3.3	.47	.69	12	.02	.12	.20
30	.52	.40	.00	.00	---	2.7	.69	.47	5.9	.04	.10	.75
31	.63	---	.00	.00	---	2.0	---	.37	---	.12	.09	---
TOTAL	19.24	15.19	4.51	.00	81.40	120.4	47.91	12.99	76.13	11.60	8.35	8.19
MEAN	.62	.51	.15	.000	2.91	3.88	1.60	.42	2.54	.37	.27	.27
MAX	2.6	.69	.38	.00	12	6.6	12	1.4	30	3.6	2.2	1.3
MIN	.17	.40	.00	.00	.00	2.0	.12	.13	.12	.02	.01	.03
AC-FT	38	30	8.9	.00	161	239	95	26	151	23	17	16

CAL YR 1980 TOTAL 257.68 MEAN .70 MAX 18 MIN .00 AC-FT 511
WTR YR 1981 TOTAL 405.91 MEAN 1.11 MAX 30 MIN .00 AC-FT 805

05089500 CART CREEK AT MOUNTAIN, ND

LOCATION.--Lat 48°40'37", long 97°51'41", in SW¼ sec.15, T.160 N., R.56 W., Pembina County, Hydrologic Unit 09020310, on right bank 50 ft (15 m) downstream from bridge on State Highway 32, and 0.7 mi (1.1 km) south of Mountain.

DRAINAGE AREA.--16.9 mi^2 (43.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1954 to current year.

GAGE.--Water-stage recorder and wooden control. Datum of gage is 1,027.40 ft (313.152 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--27 years, 2.83 ft^3/s (0.080 m^3/s), 2,050 acre-ft/yr (2.53 hm^3/yr); median of yearly mean discharges, 2.7 ft^3/s (0.08 m^3/s), 2,000 acre-ft/yr (2.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft^3/s (36.8 m^3/s) June 18, 1964, gage height, 9.18 ft (2.798 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 17	1100	50	1.42	3.16	0.963	Apr. 1	--	56	1.59	b3.23	0.985
Mar. 27	--	*62	1.76	a,b3.28	1.000	June 27	1800	36	1.02	3.07	.936

Minimum daily, 0.16 ft^3/s (0.004 m^3/s) Aug. 19, 20

a - Backwater from ice
b - Obtained from graph based on observer readings

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	3.6	.65	.36	.31	.50	38	3.3	5.5	1.8	.27	1.9
2	1.4	3.3	.65	.36	.31	.50	18	3.1	5.5	1.6	.21	.85
3	1.4	2.9	.60	.36	.31	.50	9.2	3.1	3.8	1.6	7.5	.64
4	1.4	2.6	.60	.36	.31	.50	4.7	2.8	4.0	1.1	2.1	.55
5	1.3	2.2	.60	.36	.31	.50	3.8	2.6	4.7	.98	1.4	.50
6	1.2	2.4	.60	.36	.31	.50	2.9	2.4	3.3	.79	2.9	1.3
7	1.1	2.6	.56	.36	.31	.50	2.9	2.4	2.9	.64	1.1	3.1
8	1.0	4.2	.56	.34	.31	.50	2.1	2.9	2.8	.50	1.4	1.6
9	1.0	6.6	.56	.34	.31	.50	2.1	4.0	2.8	.42	.74	.85
10	1.0	3.3	.52	.34	.31	.50	2.2	3.1	2.8	.42	.55	.55
11	.98	2.9	.50	.34	.31	3.8	2.1	2.9	1.9	.59	.46	.35
12	.98	2.8	.50	.32	.31	10	1.8	2.6	1.6	.55	.35	.31
13	.98	2.6	.46	.32	.31	7.0	1.7	2.4	6.9	.46	.35	.24
14	1.0	2.2	.42	.32	.31	5.0	1.4	2.4	5.2	.55	.27	.21
15	1.0	2.1	.40	.32	.50	6.5	1.6	2.2	4.5	.92	.27	.24
16	1.4	1.9	.40	.32	4.0	4.0	2.2	2.1	3.8	.79	.31	.31
17	37	1.6	.40	.32	7.0	8.2	2.2	1.9	2.8	.64	.21	.35
18	16	1.4	.40	.32	2.0	4.2	1.8	1.8	2.1	.50	.18	.24
19	8.2	1.6	.40	.32	5.2	3.6	1.7	1.8	1.8	.46	.16	.21
20	6.1	1.4	.38	.32	4.5	3.3	1.9	1.6	1.7	.50	.16	.31
21	4.5	1.4	.38	.32	3.8	2.0	2.2	1.4	1.8	.50	.38	.42
22	4.2	1.7	.38	.32	5.0	4.7	2.2	1.4	2.9	.46	.27	.35
23	4.5	1.0	.38	.32	4.0	5.0	1.9	3.1	3.3	.50	6.9	.50
24	4.2	.80	.38	.32	3.0	9.0	1.8	11	3.8	.46	4.2	.50
25	3.8	.70	.38	.32	1.2	10	2.2	20	2.6	.42	1.7	.46
26	3.3	.65	.36	.32	1.4	6.9	2.2	13	1.7	.35	1.0	.85
27	2.9	.65	.36	.32	.50	20	3.8	9.5	10	.35	.79	.50
28	2.6	.65	.36	.32	.50	44	4.0	7.9	13	.31	.59	.46
29	5.0	.65	.36	.31	---	15	4.7	6.3	5.0	.27	.50	.50
30	4.2	.65	.36	.31	---	5.8	4.0	5.5	2.8	.31	.42	.79
31	5.0	---	.36	.31	---	8.9	---	4.7	---	.64	1.5	---
TOTAL	130.24	63.05	14.22	10.25	46.94	191.90	133.3	135.2	117.3	20.38	39.14	19.94
MEAN	4.20	2.10	.46	.33	1.68	6.19	4.44	4.36	3.91	.66	1.26	.66
MAX	37	6.6	.65	.36	7.0	44	38	20	13	1.8	7.5	3.1
MIN	.98	.65	.36	.31	.31	.50	1.4	1.4	1.6	.27	.16	.21
AC-FT	258	125	28	20	93	381	264	268	233	40	78	40

CAL YR 1980 TOTAL 872.18 MEAN 2.38 MAX 60 MIN .00 AC-FT 1730
WTR YR 1981 TOTAL 921.86 MEAN 2.53 MAX 44 MIN .16 AC-FT 1830

05089500 CART CREEK AT MOUNTAIN, ND--Continued

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV											
05...	1055	1027.40	2.2	900	--	8.0	3.5	--	--	--	--
DEC											
03...	1555	1027.40	.61	1070	--	.0	.5	--	--	--	--
JAN											
15...	1040	1027.40	.32	970	--	-10.0	.0	--	--	--	--
FEB											
17...	1255	1027.40	13	352	--	6.0	.5	--	--	--	--
19...	0950	1027.40	6.8	295	--	7.0	.5	--	--	--	--
26...	1640	1027.40	2.6	672	8.0	3.0	.5	270	92	70	23
MAR											
19...	1135	1027.40	1.9	752	--	2.0	.5	--	--	--	--
31...	1225	1027.40	5.9	648	--	5.0	1.0	--	--	--	--
APR											
07...	0915	1027.40	3.1	795	--	3.0	3.0	--	--	--	--
28...	1200	1027.40	4.0	831	--	11.0	9.0	--	--	--	--
JUN											
10...	1325	1027.40	2.7	875	--	20.5	15.5	--	--	--	--
JUL											
15...	1310	1027.40	.92	902	--	21.5	18.5	--	--	--	--
AUG											
28...	1400	1027.40	.53	984	8.2	25.0	19.0	411	108	110	33
SEP											
30...	1000	1027.40	.50	840	--	5.0	7.0	--	--	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE, FET-LAB (MG/L AS HCO3) (95440)	CAR-BONATE, FET-LAB (MG/L AS CO3) (95445)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
FEB											
17...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
26...	44	26	1.2	4.4	217	.00	178	3.4	150	18	.3
AUG											
28...	73	27	1.6	11	369	.00	303	3.7	230	33	.5
SEP											
30...	--	--	--	--	--	--	--	--	--	--	--

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB										
17...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
26...	18	468	438	.64	3.3	.72	.50	130	10	200
AUG										
28...	25	683	698	.93	.98	.23	.47	50	10	50
SEP										
30...	--	--	--	--	--	--	--	--	--	--

05090000 PARK RIVER AT GRAFTON, ND

LOCATION.--Lat 48°25'24", long 97°24'30", in NE¼ sec.13, T.157 N., R.53 W., Walsh County, Hydrologic Unit 09020310, on right bank 30 ft (9 m) upstream from Wakeman Avenue bridge in Grafton, and 3.5 mi (5.6 km) downstream from South Branch.

DRAINAGE AREA.--695 mi^2 (1,800 km^2), approximately.

PERIOD OF RECORD.--April 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 955: 1941. WSP 1438: 1932, 1933(M), 1936-37(M), 1939(M), 1944. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 807.39 ft (246.092 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1940, nonrecording gage at site 30 ft (9 m) downstream at same datum. Oct. 1, 1940, to Sept. 17, 1946, nonrecording gage at site 2 mi (3 km) downstream above masonry dam at same datum. Sept. 18, 1946, to July 25, 1952, nonrecording gage at site 30 ft (9 m) downstream at same datum.

REMARKS.--Records fair. Flow regulated by Homme Lake (station 05088500) and several small reservoirs. Diversion by city of Grafton started in 1955. Figures of daily discharge do not include diversion by city of Grafton.

AVERAGE DISCHARGE (UNADJUSTED).--50 years (water years 1932-81), 57.6 ft^3/s (1.631 m^3/s), 41,730 acre-ft/yr (51.4 hm^3/yr); median of yearly mean discharges, 42 ft^3/s (1.19 m^3/s), 30,400 acre-ft/yr (37 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 19, 1950, gage height, 20.13 ft (6.136 m), result of dam failure, from rating curve extended above 9,000 ft^3/s (255 m^3/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 471 ft^3/s (13.3 m^3/s) Apr. 3, gage height, 9.51 ft (2.899 m); minimum daily, 0.30 ft^3/s (0.008 m^3/s) Feb. 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	46	21	9.0	.80	165	272	21	50	277	18	.80
2	61	42	20	9.0	.50	150	293	26	47	236	16	.68
3	47	39	19	9.0	.50	130	465	33	46	192	20	.68
4	32	35	19	9.0	.50	52	465	34	45	149	18	.50
5	30	34	20	9.0	.50	52	428	34	40	122	17	.59
6	26	33	20	9.0	.50	50	349	32	41	102	21	42
7	23	32	20	9.0	.50	45	169	31	36	83	14	43
8	23	36	19	8.0	.50	36	92	31	28	67	11	43
9	17	33	17	7.0	.43	32	69	31	30	61	7.4	33
10	16	30	16	7.0	.38	27	54	30	26	50	4.5	33
11	17	28	15	6.0	.33	32	45	28	23	43	4.5	34
12	23	33	15	6.0	.30	36	40	27	23	41	4.5	28
13	20	32	15	6.0	.30	40	36	27	32	36	3.0	20
14	20	32	16	6.0	.30	48	33	27	32	34	2.6	6.0
15	20	34	14	6.0	.38	69	40	27	31	34	2.3	3.2
16	21	34	13	6.0	.80	162	40	24	33	30	1.4	1.4
17	16	30	13	6.0	.80	202	36	23	31	29	.80	.92
18	15	32	13	6.0	1.0	186	33	20	27	27	.59	.59
19	15	32	13	6.0	1.4	176	28	19	36	25	1.0	.43
20	17	33	13	5.2	2.3	152	26	19	32	24	1.7	.43
21	37	27	12	4.6	3.0	136	24	17	32	24	16	.59
22	104	32	12	3.6	3.5	134	23	19	31	20	14	1.2
23	98	28	10	3.0	20	124	28	21	33	15	15	20
24	88	23	9.7	2.4	290	114	28	21	38	14	21	.50
25	77	21	9.0	2.4	300	112	24	20	38	14	23	.68
26	69	27	9.0	2.3	275	122	21	22	34	14	17	.92
27	56	26	9.0	1.7	235	111	23	24	38	12	8.0	.68
28	49	24	9.0	1.2	140	134	21	31	72	12	5.2	.59
29	48	26	9.0	1.0	---	156	21	50	242	13	3.0	.59
30	45	24	9.0	.80	---	234	21	56	274	16	1.0	2.6
31	47	---	9.0	.80	---	269	---	52	---	16	1.7	---
TOTAL	1249	938	437.7	168.00	1279.52	3488	3247	877	1521	1832	294.19	320.57
MEAN	40.3	31.3	14.1	5.42	45.7	113	108	28.3	50.7	59.1	9.49	10.7
MAX	104	46	21	9.0	300	269	465	56	274	277	23	43
MIN	15	21	9.0	.80	.30	27	21	17	23	12	.59	.43
AC-FT	2480	1860	868	333	2540	6920	6440	1740	3020	3630	584	636
(+)	50	48	0	29	10	0	0	0	0	0	0	0
MEAN*	41.1	32.1	14.1	5.89	45.9	113	108	28.3	50.7	59.1	9.49	10.7
AC-FT*	2530	1910	868	362	2550	6920	6440	1740	3020	3630	584	636

			OBSERVED						ADJUSTED		
CAL YR 1980	TOTAL	7967.60	MEAN	21.8	MAX	385	MIN	.10	AC-FT	15800	MEAN	23	AC-FT	16311
WAT YR 1981	TOTAL	15651.98	MEAN	42.9	MAX	465	MIN	.30	AC-FT	31050	MEAN	43	AC-FT	31190

\+ Diversion in acre-feet by city of Grafton.
* Adjusted for diversion by city of Grafton.

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND

LOCATION.--Lat 48°34'20", long 97°08'50", in SE¼SE¼SE¼ sec.24, T.159 N., R.51 W., Pembina County, Hydrologic Unit 09020311, on downstream end of east pier of interstate highway bridge, 1.5 mi (2.4 km) northeast of Drayton, and at mile 206.7 (332.6 km).

DRAINAGE AREA.--34,800 mi^2 (90,130 km^2), approximately, includes 3,800 mi^2 (9,840 km^2) in closed basins.

PERIOD OF RECORD.--April 1936 to June 1937, April 1941 to current year (fragmentary prior to April 1949).

REVISED RECORDS.--WSP 1388: 1949-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft (230.124 m) National Geodetic Vertical Datum of 1929 (Minnesota highway benchmark). Prior to Nov. 30, 1954, nonrecording gage at site 1.5 mi (2.4 km) upstream at datum 1.59 ft (0.485 m) higher.

REMARKS.--Records good. Some regulation by reservoirs on tributaries.

AVERAGE DISCHARGE.--32 years (1949-81), 3,759 ft^3/s (106.5 m^3/s), 2,723,000 acre-ft/yr (3.36 km^3/yr); median of yearly mean discharges, 2,650 ft^3/s (75.0 m^3/s), 1,920,000 acre-ft/yr (2.4 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,900 ft^3/s (2,630 m^3/s) Apr. 28, 1979, gage height, 43.66 ft (13.308 m); minimum observed, 7.7 ft^3/s (0.22 m^3/s) Oct. 16, 1936, gage height, 1.75 ft (0.533 m), former site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1897 reached a stage of about 41 ft (12.5 m), at site and datum in use prior to Nov. 30, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,520 ft^3/s (213 m^3/s) July 3, gage height, 13.96 ft (4.255 m); minimum daily, 250 ft^3/s (7.08 m^3/s) Feb. 4-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	689	761	525	313	262	1000	2080	748	2070	4200	1480	1370
2	672	680	510	313	258	1110	2100	756	1690	6820	1510	1240
3	672	632	500	313	253	1170	2100	748	1370	7380	1520	1230
4	648	648	495	313	250	1190	2000	792	1190	6380	1520	1800
5	616	648	490	313	250	1150	1900	828	1080	4940	1520	1940
6	537	632	480	313	250	1070	1850	846	1020	3840	1450	2310
7	509	640	470	313	250	1020	1800	884	1010	3140	1400	2100
8	509	656	470	313	250	980	1700	874	1010	2630	1400	1980
9	474	672	460	313	250	940	1670	893	1050	2460	1610	2070
10	418	734	450	313	250	912	1540	893	1080	2290	1830	3420
11	448	743	440	313	250	893	1470	855	1090	2150	1940	4940
12	442	725	435	313	250	902	1360	837	1080	1970	1880	5100
13	412	716	430	313	250	912	1280	819	1100	1900	1780	4240
14	400	725	420	313	250	912	1270	792	1100	2120	1640	3240
15	394	707	410	313	250	960	1260	756	1080	2310	1550	2530
16	394	707	400	313	250	980	1230	740	1050	2320	1470	2040
17	436	680	390	313	260	1040	1180	731	990	2340	1400	1710
18	481	648	380	313	290	1090	1130	714	1000	2390	1340	1490
19	481	672	380	310	320	1150	1030	688	1150	2410	1260	1310
20	467	656	375	310	330	1160	980	664	1260	2360	1180	1180
21	481	586	370	310	348	1240	874	640	1300	2270	1110	1100
22	502	586	365	305	378	1340	783	616	1270	2130	1030	1030
23	544	616	360	302	403	1390	740	578	1300	2180	990	970
24	624	600	360	300	436	1420	722	608	1350	1840	990	940
25	640	600	350	295	483	1520	688	706	1530	1760	1150	931
26	672	600	350	290	600	1600	680	2070	1700	1670	1660	922
27	664	590	345	285	783	1660	688	4560	1660	1600	1870	922
28	672	570	340	280	855	1760	706	5400	1690	1530	1980	980
29	680	550	335	275	---	1810	714	4820	1910	1470	1970	940
30	800	540	330	270	---	1930	714	3720	2150	1440	1800	922
31	860	---	325	265	---	2000	---	2750	---	1460	1550	---
TOTAL	17238	19520	12740	9431	9509	38211	38239	42326	39330	85700	46780	56897
MEAN	556	651	411	304	340	1233	1275	1365	1311	2765	1509	1897
MAX	860	761	525	313	855	2000	2100	5400	2150	7380	1980	5100
MIN	394	540	325	265	250	893	680	578	990	1440	990	922
AC-FT	34190	38720	25270	18710	18860	75790	75850	83950	78010	170000	92790	112900

CAL YR 1980 TOTAL 661646 MEAN 1808 MAX 22300 MIN 325 AC-FT 1312000
WTR YR 1981 TOTAL 415921 MEAN 1140 MAX 7380 MIN 250 AC-FT 825000

05092200 PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, ND

LOCATION.--Lat 48°41'49", long 97°23'03", in NW¼ sec.8, T.160 N., R.52 W., Pembina County, Hydrologic Unit 09020311, on left bank 50 ft (15 m) downstream from bridge on county highway, and 3 mi (5 km) southeast of Glasston.

DRAINAGE AREA.--80 mi^2 (207 km^2).

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 808 ft (246 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--10 years, 2.35 ft^3/s (0.067 m^3/s), 1,700 acre-ft/yr (2.10 hm^3/yr); median of yearly mean discharges, 0.86 ft^3/s (0.024 m^3/s), 623 acre-ft/yr (0.77 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 940 ft^3/s (26.6 m^3/s) Apr. 20, 1979, gage height, 9.3 ft (2.83 m); maximum gage height, 14.64 ft (4.462 m) Apr. 19, 1979, backwater from ice; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 80 ft^3/s (2.27 m^3/s) Apr. 1, gage height, 6.53 ft (1.990 m), backwater from ice, only peak above base of 25 ft^3/s (0.71 m^3/s); maximum gage height, 9.35 ft (2.850 m) sometime during the period Mar. 18-27, backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.05	.00	.00	.00	.00	39	.00	.28	.66	.00	.00
2	.05	.03	.00	.00	.00	.00	32	.00	.46	.42	.00	.00
3	.05	.03	.00	.00	.00	.00	16	.00	.54	.24	.00	.00
4	.05	.08	.00	.00	.00	.00	9.0	.00	.54	.03	.00	.00
5	.05	.10	.00	.00	.00	.00	6.7	.00	.88	.00	.00	.00
6	.03	.05	.00	.00	.00	.00	4.6	.00	.75	.00	.00	.00
7	.03	.03	.00	.00	.00	.00	3.2	.00	.50	.00	.22	.00
8	.03	.24	.00	.00	.00	.00	2.3	.00	.50	.00	.16	.00
9	.01	.24	.00	.00	.00	.00	1.6	.00	.42	.00	.00	.00
10	.03	.08	.00	.00	.00	.00	1.2	.00	.38	.00	.00	.00
11	.05	.05	.00	.00	.00	.00	.70	.00	.28	.00	.00	.00
12	.16	.03	.00	.00	.00	.00	.66	.00	.10	.00	.00	.00
13	.16	.03	.00	.00	.00	.00	.54	.00	.94	.00	.00	.00
14	.13	.05	.00	.00	.00	.00	.28	.00	1.6	.00	.00	.00
15	.10	.01	.00	.00	.00	.00	.28	.00	2.3	.00	.00	.00
16	.21	.00	.00	.00	.00	.00	.16	.00	1.1	.00	.00	.00
17	.75	.00	.00	.00	.00	.00	.10	.00	.66	.00	.00	.00
18	.84	.00	.00	.00	.00	.00	.00	.00	.46	.00	.00	.00
19	.75	.13	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00
20	.50	.24	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00
21	.42	.10	.00	.00	.00	.00	.00	.00	.58	.00	.00	.00
22	.50	.01	.00	.00	.00	.00	.00	.00	.62	.00	.00	.00
23	.46	.08	.00	.00	.00	.10	.00	.00	.62	.00	.00	.00
24	.38	1.8	.00	.00	.00	.50	.00	.00	.80	.00	.00	.00
25	.38	.28	.00	.00	.00	1.0	.00	1.2	.70	.00	.00	.00
26	.24	.00	.00	.00	.00	1.5	.00	.93	.38	.00	.00	.00
27	.13	.00	.00	.00	.00	2.5	.00	.66	3.8	.00	.00	.00
28	.08	.00	.00	.00	.00	12	.00	.54	7.6	.00	.00	.00
29	.08	.00	.00	.00	---	26	.05	.54	2.0	.00	.00	.00
30	.10	.00	.00	.00	---	17	.05	.42	1.1	.00	.00	.00
31	.08	---	.00	.00	---	8.8	---	.28	---	.00	.00	---
TOTAL	6.93	3.74	.00	.00	.00	69.40	118.42	4.57	31.72	1.35	.38	.00
MEAN	.22	.12	.000	.000	.000	2.24	3.95	.15	1.06	.044	.012	.000
MAX	.84	1.8	.00	.00	.00	26	39	1.2	7.6	.66	.22	.00
MIN	.01	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00
AC-FT	14	7.4	.00	.00	.00	138	235	9.1	63	2.7	.8	.00

CAL YR 1980 TOTAL 122.78 MEAN .34 MAX 20 MIN .00 AC-FT 244
WTR YR 1981 TOTAL 236.51 MEAN .65 MAX 39 MIN .00 AC-FT 469

05098700 HIDDEN ISLAND COULEE NEAR HANSBORO, ND
(International gaging station)

LOCATION.--Lat 48°57'10", long 99°25'35", in SE¼SW¼ sec.11, T.163 N., R.68 W., Towner County, Hydrologic Unit 09020313, on right bank 400 ft (122 m) downstream from bridge on county highway, and 2.5 mi (4.0 km) west of Hansboro.

DRAINAGE AREA.--38 mi^2 (98 km^2), approximately.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,615 ft (492 m), from topographic map. Prior to May 20, 1962, nonrecording gage 400 ft (122 m) upstream at same datum.

REMARKS.--Records fair.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--20 years, 3.76 ft^3/s (0.106 m^3/s), 2,720 acre-ft/yr (3.35 hm^3/yr); median of yearly mean discharges, 2.5 ft^3/s (0.071 m^3/s), 1,810 acre-ft/yr (2.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 1,200 ft^3/s (34.0 m^3/s) Apr. 23, 1979, gage height, 10.50 ft (3.200 m), from floodmark, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 95 ft^3/s (2.69 m^3/s) Feb. 21, gage height, 7.65 ft (2.332 m), backwater from ice, only peak above base of 25 ft^3/s (0.71 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	1.5	.00	.00	.00	11	1.2	.08	1.9	.40	.00	.00
2	.28	1.3	.00	.00	.00	10	1.0	.08	1.5	.29	.00	.00
3	.20	1.0	.00	.00	.00	9.0	.90	.08	.45	.19	.00	.00
4	.17	1.1	.00	.00	.00	8.5	.80	.08	.22	.14	.00	.00
5	.14	1.1	.00	.00	.00	8.0	.75	.08	.46	.10	.00	.00
6	.13	1.3	.00	.00	.00	7.0	.70	.07	.49	.06	.00	.00
7	.11	1.2	.00	.00	.00	6.5	.60	.07	.34	.01	.00	.00
8	.09	1.0	.00	.00	.00	6.2	.50	.07	.24	.00	.00	.00
9	.09	1.0	.00	.00	.00	6.0	.37	.06	.20	.00	.00	.00
10	.08	.80	.00	.00	.00	5.8	.25	.06	.17	.00	.00	.00
11	.08	.80	.00	.00	.00	5.5	.17	.06	.13	.00	.00	.00
12	.08	.70	.00	.00	.00	5.2	.15	.06	.11	.00	.00	.00
13	.08	.60	.00	.00	.00	5.0	.12	.05	.11	.00	.00	.00
14	.08	.60	.00	.00	.00	4.8	.09	.05	.15	.00	.00	.00
15	.08	.50	.00	.00	.00	4.6	.09	.05	.13	.00	.00	.00
16	.10	.40	.00	.00	.00	4.4	.08	.05	.12	.00	.00	.00
17	.18	.40	.00	.00	.00	4.2	.07	.04	.10	.00	.00	.00
18	.55	.30	.00	.00	2.0	4.0	.06	.04	.09	.00	.00	.00
19	.97	.20	.00	.00	10	3.8	.06	.04	.07	.00	.00	.00
20	1.6	.20	.00	.00	20	3.6	.05	.03	.05	.00	.00	.00
21	4.0	.10	.00	.00	64	3.4	.06	.02	.08	.00	.00	.00
22	2.6	.05	.00	.00	55	3.2	.06	.06	.20	.00	.00	.00
23	2.1	.00	.00	.00	34	3.0	.06	.19	.83	.00	.00	.00
24	2.4	.00	.00	.00	39	2.8	.06	14	8.0	.00	.00	.00
25	3.4	.00	.00	.00	39	2.6	.06	14	11	.00	.00	.00
26	3.2	.00	.00	.00	27	2.4	.07	11	9.6	.00	.00	.00
27	2.6	.00	.00	.00	16	2.2	.07	8.3	7.0	.00	.00	.00
28	2.1	.00	.00	.00	12	2.0	.09	7.2	6.4	.00	.00	.00
29	1.6	.00	.00	.00	---	1.8	.10	5.6	4.3	.00	.00	.00
30	1.5	.00	.00	.00	---	1.6	.10	3.9	2.2	.00	.00	.00
31	1.5	---	.00	.00	---	1.4	---	2.5	---	.00	.00	---
TOTAL	32.56	16.15	.00	.00	318.00	149.5	8.74	67.97	56.64	1.19	.00	.00
MEAN	1.05	.54	.000	.000	11.4	4.82	.29	2.19	1.89	.038	.000	.000
MAX	4.0	1.5	.00	.00	64	11	1.2	14	11	.40	.00	.00
MIN	.08	.00	.00	.00	.00	1.4	.05	.02	.05	.00	.00	.00
AC-FT	65	32	.00	.00	631	297	17	135	112	2.4	.00	.00

CAL YR 1980 TOTAL 269.18 MEAN .74 MAX 58 MIN .00 AC-FT 534
WTR YR 1981 TOTAL 650.75 MEAN 1.78 MAX 64 MIN .00 AC-FT 1290

05098800 CYPRESS CREEK NEAR SARLES, ND
(International gaging station)

LOCATION.--Lat 48°56'35", long 98°57'05", in SW¼SE¼ sec.9, T.163 N., R.64 W., Cavalier County, Hydrologic Unit 09020313, on right bank 150 ft (46 m) downstream from twin multiplate culverts on county highway, and 2.5 mi (4.0 km) east of Sarles.

DRAINAGE AREA.--71 mi^2 (184 km^2), approximately.

PERIOD OF RECORD.--May 1961 to current year. Prior to October 1973, published as Long River near Sarles.

GAGE.--Water-stage recorder. Altitude of gage is 1,545 ft (471 m), from topographic map.

REMARKS.--Records fair.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--20 years, 6.12 ft^3/s (0.173 m^3/s), 4,430 acre-ft/yr (5.46 hm^3/yr); median of yearly mean discharges, 4.8 ft^3/s (0.14 m^3/s), 3,480 acre-ft/yr (4.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2,000 ft^3/s (56.6 m^3/s) Apr. 21, 1979, gage height, 10.35 ft (3.155 m), backwater from ice and snow; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft^3/s (0.88 m^3/s) Feb. 24, gage height, 5.00 ft (1.524 m), no peaks above base of 50 ft^3/s (1.42 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.03	.00	.00	.00	19	.76	.29	.03	.00	.00	.00
2	.01	.03	.00	.00	.00	20	.91	.68	.05	.00	.00	.00
3	.01	.02	.00	.00	.00	18	1.0	1.1	.04	.00	.00	.00
4	.01	.02	.00	.00	.00	14	1.2	1.7	.05	.00	.00	.00
5	.01	.02	.00	.00	.00	6.2	1.1	2.5	.09	.00	.00	.00
6	.01	.02	.00	.00	.00	4.3	.91	3.1	.08	.00	.00	.00
7	.01	.02	.00	.00	.00	4.5	.76	2.5	.06	.00	.00	.00
8	.01	.02	.00	.00	.00	3.9	.65	2.0	.05	.00	.00	.00
9	.01	.01	.00	.00	.00	3.7	.85	1.0	.03	.00	.00	.00
10	.01	.01	.00	.00	.00	3.5	.92	.05	.00	.00	.00	.00
11	.01	.01	.00	.00	.00	3.6	1.0	.00	.00	.00	.00	.00
12	.01	.01	.00	.00	.00	4.0	1.0	.00	.00	.00	.00	.00
13	.01	.01	.00	.00	.00	4.3	1.2	.00	.00	.00	.00	.00
14	.01	.01	.00	.00	.00	4.0	1.2	.00	.00	.00	.00	.00
15	.01	.01	.00	.00	.00	3.7	1.5	.00	.00	.00	.00	.00
16	.03	.01	.00	.00	.00	3.9	1.9	.00	.00	.00	.00	.00
17	.03	.01	.00	.00	.00	3.4	1.4	.00	.00	.00	.00	.00
18	.03	.01	.00	.00	.00	3.1	.42	.00	.00	.00	.00	.00
19	.02	.01	.00	.00	.00	2.6	.20	.00	.00	.00	.00	.00
20	.01	.01	.00	.00	.00	2.2	.00	.00	.00	.00	.00	.00
21	.01	.01	.00	.00	.80	2.1	.00	.00	.00	.00	.00	.00
22	.01	.01	.00	.00	7.0	1.8	.00	.00	.00	.00	.00	.00
23	.03	.01	.00	.00	16	1.6	.00	.00	.00	.00	.00	.00
24	.03	.01	.00	.00	21	1.4	.01	.09	.00	.00	.00	.00
25	.04	.01	.00	.00	22	1.2	.10	.14	.00	.00	.00	.00
26	.04	.01	.00	.00	22	.91	.11	.14	.00	.00	.00	.00
27	.04	.01	.00	.00	24	.76	.00	.03	.00	.00	.00	.00
28	.01	.01	.00	.00	19	.76	.00	.00	.00	.00	.00	.00
29	.01	.01	.00	.00	---	1.7	.00	.00	.00	.00	.00	.00
30	.03	.01	.00	.00	---	1.3	.05	.02	.00	.00	.00	.00
31	.03	---	.00	.00	---	.60	---	.03	---	.00	.00	---
TOTAL	.55	.40	.00	.00	131.80	146.03	19.15	15.37	.48	.00	.00	.00
MEAN	.018	.013	.000	.000	4.71	4.71	.64	.50	.016	.000	.000	.000
MAX	.04	.03	.00	.00	24	20	1.9	3.1	.09	.00	.00	.00
MIN	.01	.01	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
AC-FT	1.1	.8	.00	.00	261	290	38	30	1.0	.00	.00	.00

CAL YR 1980 TOTAL 268.23 MEAN .73 MAX 60 MIN .00 AC-FT 532
WTR YR 1981 TOTAL 313.78 MEAN .86 MAX 24 MIN .00 AC-FT 622

05099100 SNOWFLAKE CREEK NEAR SNOWFLAKE, MAN
(International gaging station)

LOCATION.--Lat 49°01'17", long 98°36'13", in SW¼ sec.10, T.1, R.9 W., 1st meridian, at traffic bridge, 2.5 mi (4.0 km) east, and 1.5 mi (2.4 km) south of Snowflake.

DRAINAGE AREA.--348 mi^2 (901 km^2).

PERIOD OF RECORD.--March 1961 to current year.

GAGE.--Water-stage recorder since March 1968 and nonrecording gage prior thereto. Datum of gage is 1,221.66 ft (372.362 m), Geodetic Survey of Canada datum. Prior to Apr. 2, 1964, nonrecording gage at present site and datum. Apr. 2, 1964, to May 10, 1965, nonrecording gage at site 0.5 mi (0.8 km) downstream at present datum.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--20 years, 17.1 ft^3/s (0.484 m^3/s), 12,400 acre-ft/yr (15.3 hm^3/yr); median of yearly mean discharges, 10 ft^3/s (0.28 m^3/s), 7,200 acre-ft/yr (8.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,130 ft^3/s (32.0 m^3/s) Apr. 21, 1979, gage height, 8.28 ft (2.524 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 82 ft^3/s (2.32 m^3/s) May 22, gage height, 4.01 ft (1.222 m); maximum gage height, 4.36 ft (1.329 m) Feb. 16, backwater from ice; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	4.7	3.7	.00	.00	4.8	23	16	5.2	3.2	.04	.03
2	2.4	4.9	2.7	.00	.00	2.7	23	16	5.2	2.7	.04	.04
3	2.0	5.1	1.8	.00	.00	1.5	23	15	4.6	2.7	.04	.04
4	1.4	4.7	.81	.00	.00	1.9	22	14	5.0	2.7	.04	.04
5	.91	4.6	.35	.00	.00	.09	24	14	4.8	2.5	.53	.04
6	.60	4.8	.18	.00	.00	.88	25	13	4.5	1.6	.23	.22
7	.27	4.7	.00	.00	.00	1.5	25	13	4.4	.74	.22	.13
8	.19	5.3	.00	.00	.00	1.0	24	14	4.1	.28	.13	.06
9	.16	5.8	.00	.00	.00	2.5	24	12	4.2	.07	.03	.03
10	.35	6.0	.00	.00	.00	.70	25	13	4.0	.04	.02	.02
11	.14	4.9	.00	.00	.00	2.8	23	13	3.5	.04	.01	.00
12	.09	5.3	.00	.00	.00	6.2	24	12	3.2	.04	.00	.00
13	.06	5.3	.00	.00	.00	9.0	23	12	3.5	.04	.00	.00
14	.04	6.3	.00	.00	.00	9.2	22	11	3.4	.04	.00	.00
15	.02	5.9	.00	.00	.00	8.2	23	11	3.5	.21	.00	.00
16	.06	5.3	.00	.00	.07	7.8	22	9.2	3.4	.25	.00	.00
17	.80	5.5	.00	.00	.25	6.0	21	8.7	3.6	.07	.00	.00
18	2.1	5.4	.00	.00	.42	4.5	20	8.4	3.6	.04	.00	.00
19	2.5	4.2	.00	.00	12	4.3	20	7.8	3.9	.04	.00	.00
20	3.0	5.3	.00	.00	16	5.5	20	7.1	4.1	.04	.00	.00
21	4.5	5.8	.00	.00	22	4.5	20	7.0	3.6	.04	.00	.00
22	5.3	5.0	.00	.00	21	4.8	19	15	4.4	.04	.00	.00
23	5.4	5.1	.00	.00	22	4.8	18	16	4.1	.04	.97	.00
24	5.3	4.8	.00	.00	16	4.4	18	7.9	4.8	.04	.56	.00
25	5.3	5.3	.00	.00	10	5.0	17	6.8	4.1	.04	.26	.00
26	5.3	5.6	.00	.00	7.8	6.0	17	7.3	4.4	.04	.15	.00
27	5.9	5.9	.00	.00	5.5	9.9	17	7.5	4.3	.04	.07	.00
28	6.9	5.7	.00	.00	4.1	13	17	7.1	3.8	.04	.03	.00
29	6.2	5.3	.00	.00	---	14	17	6.6	3.5	.04	.02	.00
30	5.5	4.7	.00	.00	---	17	16	5.9	3.4	.04	.02	.04
31	5.5	---	.00	.00	---	19	---	5.3	---	.02	.06	---
TOTAL	80.89	157.2	9.54	.00	137.14	183.47	632	332.6	122.1	17.76	3.47	.69
MEAN	2.61	5.24	.31	.000	4.90	5.92	21.1	10.7	4.07	.57	.11	.023
MAX	6.9	6.3	3.7	.00	22	19	25	16	5.2	3.2	.97	.22
MIN	.02	4.2	.00	.00	.00	.09	16	5.3	3.2	.02	.00	.00
AC-FT	160	312	19	.00	272	364	1250	660	242	35	6.9	1.4

CAL YR 1980 TOTAL 706.25 MEAN 1.93 MAX 43 MIN .00 AC-FT 1400
WTR YR 1981 TOTAL 1676.86 MEAN 4.59 MAX 25 MIN .00 AC-FT 3330

05099150 MOWBRAY CREEK NEAR MOWBRAY, MAN

LOCATION.--Lat 49°00'00", long 98°27'15", in SE¼ sec.3, T.1, R.8 W., 1st meridian, on downstream side of bridge on Municipal Road on international boundary, and 1.5 mi (2.4 km) east of Mowbray.

DRAINAGE AREA.--93.9 mi^2 (243.2 km^2).

PERIOD OF RECORD.--March to October, 1962 to current year.

GAGE.--Water-stage recorder operated March 1 to October 31 each year. Nonrecording gage prior to 1971.

COOPERATION.--Records furnished by Water Survey of Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 777 ft^3/s (22.0 m^3/s) Apr. 24, 1979, gage height, 7.02 ft (2.140 m); maximum gage height, 7.88 ft (2.402 m) Mar. 29, 1966, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 126 ft^3/s (3.57 m^3/s) May 22, gage height, 4.98 ft (1.519 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0				.00	3.5	11	1.4	1.8	.67	.00	.87
2	4.2				.00	3.2	10	1.3	2.0	.64	.00	.64
3	5.1				.00	3.0	8.7	1.0	1.8	.53	.00	.52
4	4.9				.00	2.9	8.2	1.1	1.9	.42	1.1	.44
5	4.3				.00	2.9	7.4	1.0	2.0	.39	5.3	.36
6	8.8				.00	2.9	7.6	.89	1.6	.28	5.8	.52
7	8.5				.00	2.9	5.9	.88	1.5	.18	2.3	.59
8	7.4				.00	3.0	5.2	.87	1.4	.00	1.1	.52
9	6.2				.00	3.2	5.1	.82	1.4	.00	.78	.47
10	5.5				.00	3.5	4.8	.91	1.5	.00	.78	.39
11	4.7				.00	4.2	4.2	.76	1.2	.00	.52	.29
12	4.0				.00	5.1	4.3	.58	.87	.00	.24	.21
13	3.8				.00	7.0	3.9	.58	.95	.00	.07	.10
14	3.7				.00	9.3	3.6	.60	1.1	.33	.00	.00
15	4.8				.00	14	3.5	.53	1.1	1.9	.00	.00
16	5.8				.53	18	3.3	.45	.92	5.6	.00	.00
17	5.8				1.4	22	2.8	.50	.72	.92	.00	.00
18	4.6				7.5	24	2.6	.48	.51	.43	.00	.00
19	3.8				14	26	2.5	.43	.50	.29	.00	.00
20	3.4				18	26	2.4	.38	.45	.18	.00	.00
21	4.1				22	25	2.4	.33	.38	.16	.00	.00
22	4.9				23	24	2.4	21	.66	.06	.00	.00
23	3.7				21	23	2.1	14	.89	.01	1.6	.00
24	2.8				17	21	1.9	3.0	.92	.00	2.2	.00
25	2.7				14	20	1.7	2.1	.95	.00	1.3	.00
26	4.7				9.3	19	1.7	1.3	.92	.00	1.1	.00
27	8.5				6.5	18	1.6	.94	.88	.00	1.2	.00
28	9.4				4.7	18	1.5	1.3	.85	.00	.94	.00
29	4.7				---	16	1.4	1.5	.78	.00	.71	.00
30	4.4				---	15	1.5	1.7	.74	.00	.59	.00
31	6.5				---	14	---	1.8	---	.00	.67	---
TOTAL	159.7				158.93	399.6	125.2	64.43	33.19	12.99	28.30	5.92
MEAN	5.15				5.68	12.9	4.17	2.08	1.11	.42	.91	.20
MAX	9.4				23	26	11	21	2.0	5.6	5.8	.87
MIN	2.7				.00	2.9	1.4	.33	.38	.00	.00	.00
AC-FT	317				315	793	248	128	66	26	56	12

05099300 PEMBINA RIVER NEAR WINDYGATES, MAN
(International gaging station)

LOCATION.--Lat 49°01'53", long 98°16'40", in SE¼ sec.13, T.1, R.7 W., 1st meridian, on left bank 0.2 mi (0.3 km) downstream from bridge, and 3 mi (5 km) northeast of Windygates.

DRAINAGE AREA.--3,020 mi^2 (7,820 km^2).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder and nonrecording gage. Datum of recording gage is 1,102.02 ft (335.896 m). Datum of nonrecording gage is 1,105.00 ft (336.804 m), both gages referred to Geodetic Survey of Canada datum.

REMARKS.--Records fair.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--19 years, 230 ft^3/s (6.514 m^3/s) 166,600 acre-ft/yr (205 hm^3/yr); median of yearly mean discharges, 134 ft^3/s (3.79 m^3/s), 97,100 acre-ft/yr (120 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s (326 m^3/s) Apr. 26, 1974, gage height, 19.50 ft (5.944 m); no flow in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 526 ft^3/s (14.9 m^3/s) May 22, gage height, 5.29 ft (1.612 m); maximum gage height, 6.20 ft (1.889 m) Mar. 23; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	3.3	4.9	.00	.00	12	186	167	41	16	3.1	2.8
2	1.3	3.5	4.9	.00	.00	10	162	164	39	19	1.8	2.1
3	1.3	3.7	4.9	.00	.00	12	155	159	36	20	2.1	1.7
4	1.4	3.9	4.8	.00	.00	11	156	148	39	17	3.6	1.4
5	1.4	4.2	4.8	.00	.00	11	154	139	38	16	8.5	1.3
6	1.4	4.3	4.7	.00	.00	7.4	162	133	34	19	9.5	2.7
7	1.4	4.4	4.6	.00	.00	9.5	168	125	31	19	7.9	2.0
8	1.5	4.5	4.4	.00	.00	11	172	117	28	15	6.9	1.6
9	1.5	4.6	4.2	.00	.00	14	184	109	28	13	5.2	1.4
10	1.5	4.8	4.1	.00	.00	16	198	102	29	10	3.4	1.2
11	1.6	4.9	3.8	.00	.00	21	201	94	27	10	2.2	1.1
12	1.6	4.9	3.6	.00	.00	28	205	86	25	9.6	1.7	.77
13	1.7	4.9	3.4	.00	.00	32	213	78	27	8.4	1.3	.68
14	1.7	4.9	3.2	.00	.00	38	213	70	29	7.6	.92	.63
15	1.7	4.9	3.1	.00	.00	44	215	62	30	8.3	.75	.66
16	1.7	4.9	3.0	.00	1.8	47	217	57	27	22	.62	.66
17	1.7	4.9	2.8	.00	4.4	47	216	53	26	14	.58	.63
18	1.8	4.9	2.6	.00	7.5	48	213	49	25	12	.63	.65
19	1.8	4.9	2.3	.00	4.4	71	212	43	23	9.9	.50	.55
20	1.9	4.9	2.0	.00	5.9	79	213	34	21	8.0	.44	.61
21	2.0	4.9	1.5	.00	16	80	212	29	21	8.6	.49	.66
22	2.0	5.0	1.0	.00	25	69	211	93	22	8.1	.46	.61
23	2.0	5.0	.57	.00	20	91	196	287	25	7.6	3.5	.68
24	2.1	5.0	.25	.00	29	67	193	173	26	6.9	8.0	.64
25	2.2	5.0	.07	.00	20	69	195	104	22	6.3	8.6	.67
26	2.3	4.9	.00	.00	12	64	190	90	20	5.3	7.1	2.4
27	2.4	4.9	.00	.00	11	76	176	73	18	4.4	4.1	1.1
28	2.4	4.9	.00	.00	12	121	171	64	18	3.6	2.5	1.1
29	2.6	4.9	.00	.00	---	123	170	56	17	2.9	1.7	1.1
30	2.8	4.9	.00	.00	---	101	169	49	16	3.0	1.3	1.5
31	3.0	---	.00	.00	---	175	---	44	---	3.3	1.7	---
TOTAL	57.0	139.6	79.49	.00	169.00	1604.9	5698	3051	808	333.8	101.09	35.60
MEAN	1.84	4.65	2.56	.000	6.04	51.8	190	98.4	26.9	10.8	3.26	1.19
MAX	3.0	5.0	4.9	.00	29	175	217	287	41	22	9.5	2.8
MIN	1.3	3.3	.00	.00	.00	7.4	154	29	16	2.9	.44	.55
AC-FT	113	277	158	.00	335	3180	11300	6050	1600	662	201	71

CAL YR 1980	TOTAL	8054.79	MEAN 22.0	MAX 327	MIN .00	AC-FT	15980	
WTR YR 1981	TOTAL	12077.48	MEAN 33.1	MAX 287	MIN .00	AC-FT	23960	

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND

LOCATION.--Lat 48°51'55", long 98°00'20", in SW¼ sec.10, T.162 N., R.57 W., Cavalier County, Hydrologic Unit 09020313, on right bank 25 ft (8 m) upstream from county bridge, 3.5 mi (5.6 km) above mouth, and 6 mi (10 km) southwest of Walhalla.

DRAINAGE AREA.--182 mi^2 (471 km^2), of which 10 mi^2 (26 km^2) is noncontributing.

PERIOD OF RECORD.--April 1956 to current year. Prior to October 1973, published as Little Pembina River near Walhalla.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,099.48 ft (335.122 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 10, 1956, nonrecording gage at bridge 25 ft (8 m) downstream at same datum.

REMARKS.--Records are fair. Flow regulated since March 1971 by Mt. Carmel Reservoir, 30 mi (48 km) upstream, capacity, 4,200 acre-ft (5.18 hm^3).

AVERAGE DISCHARGE.--25 years, 22.1 ft^3/s (0.626 m^3/s), 16,010 acre-ft/yr (19.7 hm^3/yr); median of yearly mean discharges, 19 ft^3/s (0.54 m^3/s), 13,800 acre-ft/yr (17 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,600 ft^3/s (187 m^3/s) Apr. 25, 1970, gage height, 13.95 ft (4.252 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 200 ft^3/s (5.664 m^3/s) Mar. 12, gage height, 6.98 ft (2.128 m), backwater from ice; minimum daily, 0.10 ft^3/s (0.003 m^3/s) Feb. 3-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.5	.90	.18	.12	15	29	5.3	8.6	1.8	.42	.32
2	2.3	3.1	.64	.16	.12	10	28	5.0	8.6	1.7	.37	.19
3	2.3	3.3	.76	.16	.10	5.0	22	5.0	6.5	1.6	.58	.16
4	1.9	3.1	1.3	.14	.10	4.0	28	4.8	6.2	1.4	.52	.13
5	1.9	2.9	2.5	.14	.10	3.0	25	4.6	6.5	1.3	.64	.13
6	1.7	2.8	1.9	.14	.10	3.0	14	4.3	5.6	1.2	.95	.88
7	1.5	3.1	1.3	.12	.10	3.0	13	4.0	5.0	1.1	.88	.82
8	1.4	6.5	1.0	.12	.10	3.0	12	4.8	4.3	.95	.82	.37
9	1.3	7.2	1.0	.12	.10	3.0	11	5.3	4.0	.88	.52	.28
10	1.5	2.8	1.0	.12	.10	4.0	10	5.0	4.0	.88	.37	.22
11	1.5	5.0	1.0	.12	.10	15	9.0	4.8	3.4	1.0	.28	.16
12	1.4	5.0	1.0	.12	.10	135	9.8	4.3	3.1	.95	.28	.16
13	1.2	4.3	1.0	.12	.10	110	8.6	4.0	6.2	.82	.28	.16
14	1.3	3.6	1.0	.12	.10	95	9.4	3.8	5.6	.88	.28	.16
15	1.3	3.3	1.0	.12	.10	90	7.2	3.4	4.8	.95	.28	.19
16	2.7	3.4	.90	.12	.10	80	6.8	2.9	3.8	.82	.25	.22
17	23	3.4	.80	.12	10	80	6.2	2.5	3.3	.76	.28	.22
18	23	5.0	.75	.12	85	70	5.3	2.2	2.9	.76	.22	.19
19	21	4.0	.65	.12	82	66	4.8	1.9	2.5	.64	.22	.16
20	17	2.9	.60	.12	70	60	4.6	1.7	2.3	.64	.22	.22
21	13	1.5	.50	.12	85	62	4.8	1.6	2.8	.64	.25	.32
22	7.5	2.5	.40	.12	125	55	4.6	1.4	2.8	.64	.25	.25
23	7.8	1.2	.30	.12	110	50	4.3	1.9	2.5	.58	.52	.37
24	6.2	.90	.20	.12	100	43	4.0	4.3	2.3	.52	.47	.42
25	5.3	1.2	.12	.12	50	30	4.0	11	1.8	.58	.37	.32
26	2.9	1.2	.12	.12	70	24	3.8	16	1.5	.52	.32	.58
27	2.6	1.0	.30	.12	30	23	4.3	15	6.4	.52	.22	.42
28	2.8	1.2	.20	.12	25	37	4.6	13	6.5	.47	.16	.52
29	3.1	1.2	.20	.12	---	29	5.3	11	2.8	.47	.13	.28
30	3.3	1.0	.20	.12	---	24	5.9	9.4	2.2	.42	.13	.58
31	2.8	---	.20	.12	---	22	---	7.8	---	.47	.28	---
TOTAL	168.8	90.10	23.74	3.92	843.64	1253.0	309.3	172.0	128.8	26.86	11.76	9.40
MEAN	5.45	3.00	.77	.13	30.1	40.4	10.3	5.55	4.29	.87	.38	.31
MAX	23	7.2	2.5	.18	125	135	29	16	8.6	1.8	.95	.88
MIN	1.2	.90	.12	.12	.10	3.0	3.8	1.4	1.5	.42	.13	.13
AC-FT	335	179	47	7.8	1670	2490	613	341	255	53	23	19

CAL YR 1980 TOTAL 1975.09 MEAN 5.40 MAX 140 MIN .02 AC-FT 3920
WTR YR 1981 TOTAL 3041.32 MEAN 8.33 MAX 135 MIN .10 AC-FT 6030

05099600 PEMBINA RIVER AT WALHALLA, ND

LOCATION.--Lat 48°54'50", long 97°55'00", in NE¼NE¼ sec.29, T.163 N., R.56 W., Pembina County, Hydrologic Unit 09020313, on left bank at downstream side of bridge on State Highway 32, at south edge of Walhalla, and 7 mi (11 km) downstream from Little South Pembina River.

DRAINAGE AREA.--3,350 mi^2 (8,680 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1963, published as "near Walhalla."

REVISED RECORDS.--WSP 1388: 1943, 1950(P). WSP 1558: 1957. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 934 ft (284.7 m), from topographic map. Prior to Nov. 10, 1943, nonrecording gage and Nov. 10, 1943, to Sept. 30, 1963, water-stage recorder at site 5.5 mi (8.8 km) upstream at different datum.

REMARKS.--Records good except for winter periods, which are fair.

AVERAGE DISCHARGE.--42 years, 238 ft^3/s (6.740 m^3/s), 172,400 acre-ft/yr (213 hm^3/yr); median of yearly mean discharges, 166 ft^3/s (4.70 m^3/s), 120,000 acre-ft/yr (148 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft^3/s (578 m^3/s) Apr. 18, 1950, gage height, 19.2 ft (5.85 m) former site and datum, 16.2 ft (4.938 m) present site and datum, from rating curve extended above 7,000 ft^3/s (198 m^3/s) on basis of contracted-opening measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 260 ft^3/s (7.36 m^3/s) Apr. 1, gage height, 3.16 ft (0.963 m), no peaks above base of 400 ft^3/s (11.3 m^3/s); maximum gage height, 4.90 ft (1.494 m) Feb. 22, backwater from ice; minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) Feb. 11-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	16	11	1.0	.44	36	248	196	72	26	5.7	6.7
2	7.0	16	10	1.0	.40	42	228	188	71	25	5.1	5.4
3	6.7	16	8.0	1.0	.40	32	210	186	65	26	6.0	4.8
4	6.7	17	8.0	1.0	.38	28	194	178	61	27	6.7	5.1
5	7.0	17	8.0	1.0	.36	28	192	166	62	26	7.8	5.4
6	7.8	17	8.0	1.0	.34	27	196	154	61	24	18	5.7
7	7.8	17	5.0	1.0	.32	26	202	146	57	22	18	6.0
8	7.4	18	5.0	1.0	.32	23	204	140	54	20	15	6.4
9	7.4	20	3.0	1.0	.30	23	204	138	51	17	11	6.0
10	7.4	25	3.0	1.0	.26	23	216	126	48	16	8.6	5.1
11	7.4	21	3.0	.50	.20	20	218	120	46	16	7.4	4.2
12	7.4	19	3.0	.50	.20	62	220	115	43	16	7.0	3.8
13	7.4	18	3.0	.50	.20	100	226	104	46	14	6.7	3.2
14	7.4	19	3.0	.50	.20	124	226	100	49	13	5.6	3.5
15	7.8	20	3.0	.50	.20	140	230	92	47	14	4.5	3.5
16	9.9	21	3.0	.50	5.0	138	234	88	46	14	4.4	3.5
17	28	20	3.0	.50	72	140	234	83	43	20	4.2	3.5
18	38	28	3.0	.50	89	132	226	80	42	24	4.0	3.5
19	25	23	2.0	.50	92	134	226	79	38	20	4.0	3.5
20	24	18	1.4	.50	90	138	228	76	38	17	4.2	3.2
21	21	17	1.4	.50	80	140	228	68	36	14	3.8	3.6
22	20	16	1.4	.50	106	146	230	64	38	13	3.2	4.0
23	19	17	1.0	.50	78	130	216	134	38	11	7.0	4.4
24	18	18	1.0	.50	66	130	208	244	38	10	6.0	4.8
25	18	18	1.0	.50	44	124	214	188	36	9.9	5.4	4.2
26	18	18	1.0	.50	36	115	212	150	33	9.4	7.0	5.7
27	18	17	1.0	.50	51	100	206	128	34	8.6	11	5.1
28	18	15	1.0	.50	37	160	200	111	46	7.8	11	4.2
29	17	14	1.0	.48	---	168	200	97	34	7.0	8.6	4.2
30	16	13	1.0	.44	---	180	198	86	28	6.4	7.0	5.7
31	16	---	1.0	.44	---	180	---	76	---	6.4	6.4	---
TOTAL	435.1	549	108.2	20.36	850.52	2989	6474	3901	1401	500.5	230.3	137.9
MEAN	14.0	18.3	3.49	.66	30.4	96.4	216	126	46.7	16.1	7.43	4.60
MAX	38	28	11	1.0	106	180	248	244	72	27	18	6.7
MIN	6.7	13	1.0	.44	.20	20	192	64	28	6.4	3.2	3.2
AC-FT	863	1090	215	40	1690	5930	12840	7740	2780	993	457	274

CAL YR 1980 TOTAL 11388.50 MEAN 31.1 MAX 362 MIN 1.0 AC-FT 22590
WTR YR 1981 TOTAL 17596.88 MEAN 48.2 MAX 248 MIN .20 AC-FT 34900

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1962 to September 1972, October 1974 to current year.
WATER TEMPERATURES: April 1962 to September 1972, October 1974 to current year.

INSTRUMENTATION.--Water-quality monitor since August 1976. Once-daily observer readings are supplemented by continuous monitor records during high flow periods.

REMARKS.--No continuous monitor record available for the water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,290 micromhos Feb. 17, 1972; minimum daily, 223 micromhos Apr. 9, 1971.
WATER TEMPERATURES: Maximum recorded, 31.5°C July 20, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos Dec. 2; minimum observed, 380 micromhos Mar. 13.
WATER TEMPERATURES: Maximum observed, 24.0°C Aug. 2; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT											
07...	1340	7.6	938	8.2	26.0	16.5	5	52	10.2	106	1.9
NOV											
04...	1235	17	980	8.2	11.0	6.0	15	10	12.9	107	1.9
DEC											
02...	1525	10	1220	7.9	5.0	.0	10	48	11.5	80	.3
JAN											
14...	1000	.52	890	7.7	-7.0	.5	3	55	9.9	71	1.0
FEB											
18...	1000	54	478	8.1	2.0	.5	150	63	12.0	86	11
25...	1250	50	441	7.9	3.0	.5	6	33	12.0	81	8.6
MAR											
03...	1130	37	750	7.9	.0	.5	50	10	9.1	66	--
10...	1100	20	819	7.9	2.0	.5	40	34	10.4	74	--
17...	1200	194	468	8.0	-1.0	.5	90	210	11.5	82	5.8
25...	1145	125	550	8.1	5.0	1.0	50	100	12.8	94	--
31...	1305	140	559	8.0	5.0	5.0	50	180	12.0	99	--
APR											
07...	1200	202	830	8.3	5.0	7.0	50	110	11.5	99	--
14...	1215	E230	728	8.2	3.0	6.0	30	110	12.6	102	--
22...	1045	228	700	8.0	5.0	7.0	55	72	11.4	97	--
28...	1400	205	730	8.3	12.0	10.0	30	46	10.0	92	2.8
MAY											
05...	1045	163	773	8.4	12.5	12.0	30	32	10.6	100	--
13...	1130	E105	823	8.3	20.0	15.0	30	19	9.4	95	--
19...	1110	80	862	8.4	18.0	18.0	30	16	9.0	92	--
28...	1100	E100	868	8.2	22.0	16.0	15	50	9.0	94	--
JUN											
03...	1030	66	912	8.1	22.0	17.5	5	22	9.2	100	2.0
09...	1000	E46	908	8.4	16.5	17.0	15	21	8.7	93	--
17...	1025	41	910	8.4	20.0	19.0	5	17	8.5	97	--
24...	1115	E35	893	8.8	20.5	20.5	5	12	8.7	100	--
JUL											
14...	1140	13	915	8.1	25.5	22.5	20	8.0	7.6	90	1.0
AUG											
24...	1335	5.8	785	8.2	25.0	24.5	5	2.2	9.7	120	1.2
SEP											
30...	1740	5.3	~~140~~ 740	--	5.5	8.0	--	--	--	--	--

E - Estimated.

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
OCT											
07...	K19	381	120	100	32	50	22	1.2	8.6	260	1.9
NOV											
04...	K9	415	150	110	34	62	24	1.4	11	26	.3
DEC											
02...	K80	473	140	120	42	76	25	1.6	10	330	6.7
JAN											
14...	K10	406	96	110	32	31	14	.7	5.2	310	9.9
FEB											
18...	K500	190	80	53	14	21	18	.7	12	110	1.4
25...	--	168	48	46	13	23	22	.8	10	120	2.4
MAR											
03...	K1500	277	87	73	23	44	25	1.2	9.7	190	3.8
10...	K20	314	94	83	26	48	24	1.2	9.0	220	4.4
17...	830	170	40	45	14	32	28	1.1	6.7	130	2.1
25...	K13	190	50	48	17	37	29	1.2	6.6	140	1.8
31...	310	204	64	52	18	40	29	1.3	6.4	140	2.2
APR											
07...	K5	316	110	72	33	59	28	1.5	9.6	210	1.7
14...	500	269	79	60	29	48	27	1.3	9.0	190	1.9
22...	K20	267	87	59	29	44	26	1.2	9.7	180	2.9
28...	K47	282	92	62	31	45	25	1.2	9.7	190	1.5
MAY											
05...	K32	303	93	67	33	49	25	1.3	9.7	210	1.3
13...	K7	316	86	69	35	54	26	1.4	11	230	1.8
19...	K11	341	120	77	36	56	26	1.4	9.7	220	1.4
28...	180	342	110	86	31	62	28	1.5	9.2	230	2.3
JUN											
03...	93	366	120	89	35	65	27	1.5	9.0	250	3.2
09...	K27	375	120	91	36	63	26	1.5	10	260	1.7
17...	56	362	110	89	34	61	26	1.4	12	250	1.6
24...	43	360	130	88	34	61	26	1.4	9.8	230	.6
JUL											
14...	K79	366	110	92	33	56	24	1.3	11	260	3.3
AUG											
24...	K190	348	78	93	28	36	18	.9	8.0	270	2.7

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)
OCT										
07...	220	15	.4	18	578	538	.79	11.9	.00	.00
NOV										
04...	270	21	.3	17	683	542	.93	31.3	.00	.00
DEC										
02...	290	27	.3	21	820	785	1.1	22.1	.00	.00
JAN										
14...	150	12	.4	23	544	551	.74	.76	.08	.07
FEB										
18...	120	9.7	.2	5.7	312	309	.42	45.5	1.4	1.40
25...	99	8.2	.2	18	358	296	.49	48.3	1.1	1.10
MAR										
03...	160	33	.2	19	474	477	.64	47.4	.94	.94
10...	190	17	.2	18	534	524	.73	28.8	.48	.50
17...	100	9.4	.2	15	302	303	.41	158	.28	.35
25...	110	12	.3	15	361	331	.49	122	.50	.15
31...	140	19	.3	15	377	375	.51	143	.09	.12
APR										
07...	230	16	.2	17	555	563	.75	303	.00	.03
14...	170	14	.2	16	483	461	.66	--	.00	.00
22...	180	11	.2	17	502	458	.68	309	.09	.01
28...	180	24	.2	16	516	482	.70	286	.00	.01
MAY										
05...	200	17	.2	16	533	518	.72	235	.02	.01
13...	200	15	.2	15	563	538	.77	--	.00	.01
19...	210	18	.2	17	584	556	.79	126	.00	.01
28...	240	16	.3	21	598	605	.81	--	.14	.12
JUN										
03...	230	16	.3	21	623	616	.85	111	.00	.02
09...	220	16	.3	22	637	615	.87	--	.02	.02
17...	220	20	.3	22	631	609	.86	69.9	2.3	.00
24...	230	16	.3	23	612	601	.83	--	.01	.01
JUL										
14...	210	17	.3	27	615	603	.84	21.6	--	.00
AUG										
24...	150	11	.3	24	486	513	.66	7.6	.00	.00

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)
OCT										
07...	.00	.000	.000	.00	.00	.00	.000	.000	.00	.00
NOV										
04...	.00	.000	.000	.00	.00	.00	.000	.000	.00	.00
DEC										
02...	.00	.010	.000	.00	.01	.00	.060	.090	.07	.12
JAN										
14...	.31	.000	.010	.03	.08	.08	.140	.130	.17	.17
FEB										
18...	6.2	.080	.050	.16	1.5	1.4	.450	.350	--	.45
25...	4.9	.090	.090	.30	1.2	1.2	.220	.230	--	.30
MAR										
03...	4.2	.060	.060	.20	1.0	1.0	.280	.290	--	.37
10...	2.2	.040	.020	.07	.52	.52	.140	.120	--	.15
17...	1.5	.070	.010	.03	.35	.36	.130	.110	--	.14
25...	.66	.030	.010	.03	.53	.16	.180	.100	--	.13
31...	.53	.060	.020	.07	.15	.14	.120	.100	--	.13
APR										
07...	.13	.000	.000	.00	.00	.03	.170	.090	--	.12
14...	.00	.010	.020	.07	.01	.02	.070	.070	--	.09
22...	.04	.010	.000	.00	.10	.01	.110	.100	--	.13
28...	.04	.010	.000	.00	.01	.01	.100	.120	--	.15
MAY										
05...	.04	.020	.000	.00	.04	.01	.120	.090	--	.12
13...	.04	.000	.000	.00	.00	.01	.170	.130	--	.17
19...	.04	.020	.000	.00	.02	.01	.190	.120	--	.15
28...	.53	.020	.000	.00	.16	.12	.140	.110	--	.14
JUN										
03...	.09	.010	.000	.00	.01	.02	.090	.120	--	.15
09...	.09	.000	.000	.00	.02	.02	.070	.180	--	.23
17...	.00	.000	.000	.00	2.3	.00	.080	.090	--	.12
24...	.04	.000	.000	.00	.01	.01	.080	.070	--	.09
JUL										
14...	.00	.000	.040	.13	<.10	.00	.000	.040	--	.05
AUG										
24...	.00	.010	.000	.00	.01	.00	.040	.030	--	.04

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
OCT										
07...	.73	.72	.73	.01	.72	.73	3.2	.060	.09	.18
NOV										
04...	.92	.73	.92	.19	.73	.92	4.1	.160	.12	.49
DEC										
02...	.60	.53	.66	.04	.62	.67	3.0	.120	.31	.37
JAN										
14...	.50	.45	.64	.06	.58	.72	3.2	.040	.12	.12
FEB										
18...	2.4	--	2.80	--	--	4.3	19	1.40	--	4.3
25...	2.3	1.9	2.50	.40	2.1	3.7	16	.650	--	2.0
MAR										
03...	1.3	1.1	1.60	.20	1.4	2.6	12	.700	--	2.1
10...	1.4	.85	1.50	.53	.97	2.0	8.9	.200	--	.61
17...	2.4	.89	2.50	1.5	1.0	2.9	13	.710	--	2.2
25...	1.5	1.0	1.70	.60	1.1	2.2	9.9	.340	--	1.0
31...	1.5	.90	1.60	.60	1.0	1.8	7.7	.420	--	1.3
APR										
07...	1.8	3.8	2.00	.00	3.9	2.0	8.9	.320	--	.98
14...	2.3	1.2	2.40	1.1	1.3	2.4	11	.300	--	.92
22...	1.2	1.3	1.30	.00	1.4	1.4	6.2	.260	--	.80
28...	2.8	1.1	2.90	1.7	1.2	2.9	13	.180	--	.55
MAY										
05...	1.5	1.5	1.60	.00	1.6	1.6	7.3	.200	--	.61
13...	.83	.78	1.00	.09	.91	1.0	4.4	.190	--	.58
19...	1.2	.88	1.40	.40	1.0	1.4	6.3	.160	--	.49
28...	1.5	.72	1.60	.77	.83	1.8	7.8	.260	--	.80
JUN										
03...	1.1	.88	1.20	.20	1.0	1.2	5.4	.360	--	1.1
09...	1.1	.65	1.20	.37	.83	1.2	5.4	.150	--	.46
17...	.92	.38	1.00	.53	.47	3.3	15	.120	--	.37
24...	.85	.69	.93	.17	.76	.94	4.2	.130	--	.40
JUL										
14...	.96	.75	.96	.17	.79	--	--	.100	--	.31
AUG										
24...	.66	.54	.70	.13	.57	.71	3.1	.050	--	.15

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT										
07...	.040	.030	.020	.06	--	--	--	--	--	--
NOV										
04...	.110	.040	.040	.12	--	--	--	--	--	--
DEC										
02...	.080	.100	.060	.18	--	--	--	--	--	--
JAN										
14...	.030	.040	.010	.03	--	--	--	--	--	--
FEB										
18...	.590	.720	.570	1.7	--	--	--	--	--	--
25...	.500	.530	.490	1.5	470	3	0	3	100	60
MAR										
03...	.650	.580	.550	1.7	--	--	--	--	--	--
10...	.160	.180	.170	.52	--	--	--	--	--	--
17...	.300	.390	.200	.61	--	--	--	--	--	--
25...	.200	.220	.150	.46	--	--	--	--	--	--
31...	.170	.220	.120	.37	--	--	--	--	--	--
APR										
07...	.120	.140	.070	.21	--	--	--	--	--	--
14...	.110	.100	.050	.15	--	--	--	--	--	--
22...	.100	.100	.050	.15	--	--	--	--	--	--
28...	.090	.100	.060	.18	--	--	--	--	--	--
MAY										
05...	.100	.120	.070	.21	--	--	--	--	--	--
13...	.210	.080	.050	.15	--	--	--	--	--	--
19...	.130	.130	.000	.00	--	--	--	--	--	--
28...	.170	.160	.000	.00	--	--	--	--	--	--
JUN										
03...	.120	.110	.120	.37	--	--	--	--	--	--
09...	.110	.110	.060	.18	--	--	--	--	--	--
17...	.100	.130	.110	.34	--	--	--	--	--	--
24...	.090	.090	.080	.25	--	--	--	--	--	--
JUL										
14...	.080	.000	.040	.12	--	--	--	--	--	--
AUG										
24...	.040	.010	.020	.06	150	2	0	2	100	100

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, SUS-PENDED RECOV-ERABLE (UG/L AS B) (01021)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)
OCT										
07...	--	--	--	--	140	--	--	--	--	--
NOV										
04...	--	--	--	--	170	--	--	--	--	--
DEC										
02...	--	--	--	--	150	--	--	--	--	--
JAN										
14...	--	--	--	--	90	--	--	--	--	--
FEB										
18...	--	--	--	--	200	--	--	--	--	--
25...	40	0	310	260	50	2	1	1	0	0
MAR										
03...	--	--	--	--	90	--	--	--	--	--
10...	--	--	--	--	100	--	--	--	--	--
17...	--	--	--	--	290	--	--	--	--	--
25...	--	--	--	--	70	--	--	--	--	--
31...	--	--	--	--	50	--	--	--	--	--
APR										
07...	--	--	--	--	110	--	--	--	--	--
14...	--	--	--	--	100	--	--	--	--	--
22...	--	--	--	--	110	--	--	--	--	--
28...	--	--	--	--	110	--	--	--	--	--
MAY										
05...	--	--	--	--	120	--	--	--	--	--
13...	--	--	--	--	130	--	--	--	--	--
19...	--	--	--	--	110	--	--	--	--	--
28...	--	--	--	--	130	--	--	--	--	--
JUN										
03...	--	--	--	--	140	--	--	--	--	--
09...	--	--	--	--	150	--	--	--	--	--
17...	--	--	--	--	150	--	--	--	--	--
24...	--	--	--	--	150	--	--	--	--	--
JUL										
14...	--	--	--	--	240	--	--	--	--	--
AUG										
24...	2	0	400	280	120	0	--	<1	0	0

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)
OCT										
07...	--	--	--	--	--	--	330	--	<10	--
NOV										
04...	--	--	--	--	--	--	480	--	<10	--
DEC										
02...	--	--	--	--	--	--	1700	--	<10	--
JAN										
14...	--	--	--	--	--	--	2400	--	<10	--
FEB										
18...	--	--	--	--	--	--	16000	16000	130	--
25...	0	1	<3	19	0	110	1600	890	710	7
MAR										
03...	--	--	--	--	--	--	840	690	150	--
10...	--	--	--	--	--	--	1800	1700	60	--
17...	--	--	--	--	--	--	11000	11000	120	--
25...	--	--	--	--	--	--	4600	4500	60	--
31...	--	--	--	--	--	--	5000	5000	50	--
APR										
07...	--	--	--	--	--	--	3900	3900	20	--
14...	--	--	--	--	--	--	2800	2800	20	--
22...	--	--	--	--	--	--	2800	2800	50	--
28...	--	--	--	--	--	--	1500	1500	20	--
MAY										
05...	--	--	--	--	--	--	2700	2700	20	--
13...	--	--	--	--	--	--	1400	1400	10	--
19...	--	--	--	--	--	--	--	--	10	--
28...	--	--	--	--	--	--	2300	2300	20	--
JUN										
03...	--	--	--	--	--	--	940	--	<10	--
09...	--	--	--	--	--	--	740	730	10	--
17...	--	--	--	--	--	--	600	--	<10	--
24...	--	--	--	--	--	--	410	400	10	--
JUL										
14...	--	--	--	--	--	--	330	310	20	--
AUG										
24...	0	0	<3	8	3	5	220	--	<10	18

DATE	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)
OCT										
07...	--	--	--	320	70	250	--	--	--	--
NOV										
04...	--	--	--	300	40	260	--	--	--	--
DEC										
02...	--	--	--	430	130	300	--	--	--	--
JAN										
14...	--	--	--	910	60	850	--	--	--	--
FEB										
18...	--	--	--	1100	810	290	--	--	--	--
25...	0	16	30	200	0	310	1.1	.0	1.1	0
MAR										
03...	--	--	--	290	40	250	--	--	--	--
10...	--	--	--	350	90	260	--	--	--	--
17...	--	--	--	1500	1400	100	--	--	--	--
25...	--	--	--	640	530	110	--	--	--	--
31...	--	--	--	720	630	90	--	--	--	--
APR										
07...	--	--	--	570	540	30	--	--	--	--
14...	--	--	--	620	590	30	--	--	--	--
22...	--	--	--	620	620	5	--	--	--	--
28...	--	--	--	370	350	20	--	--	--	--
MAY										
05...	--	--	--	650	620	30	--	--	--	--
13...	--	--	--	310	250	60	--	--	--	--
19...	--	--	--	170	110	60	--	--	--	--
28...	--	--	--	300	250	50	--	--	--	--
JUN										
03...	--	--	--	190	110	80	--	--	--	--
09...	--	--	--	210	130	80	--	--	--	--
17...	--	--	--	190	120	70	--	--	--	--
24...	--	--	--	170	100	70	--	--	--	--
JUL										
14...	--	--	--	250	80	170	--	--	--	--
AUG										
24...	15	3	70	310	110	200	.1	.1	.0	7

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
OCT									
07...	--	--	--	--	--	--	--	--	--
NOV									
04...	--	--	--	--	--	--	--	--	--
DEC									
02...	--	--	--	--	--	--	--	--	--
JAN									
14...	--	--	--	--	--	--	--	--	--
FEB									
18...	--	--	--	--	--	--	--	--	--
25...	31	13	18	2	0	2	0	0	0
AUG									
24...	8	5	3	1	0	1	0	0	0

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)
OCT												
07...	--	--	--	7.5	--	--	--	--	--	--	--	--
NOV												
04...	--	--	--	7.7	.2	--	--	--	--	--	--	--
DEC												
02...	--	--	--	14	.5	--	--	--	--	--	--	--
JAN												
14...	--	--	--	8.0	.6	--	--	--	--	--	--	--
FEB												
18...	--	--	--	36	3.1	--	--	--	--	--	--	--
25...	90	0	240	19	--	.00	--	--	--	--	--	--
MAR												
03...	--	--	--	16	1.0	--	--	--	--	--	--	--
10...	--	--	--	12	.7	--	--	--	--	--	--	--
17...	--	--	--	36	3.7	--	--	--	--	--	--	--
25...	--	--	--	13	--	--	--	--	--	--	--	--
31...	--	--	--	9.4	2.1	--	--	--	--	--	--	--
APR												
07...	--	--	--	17	1.5	--	--	--	--	--	--	--
14...	--	--	--	12	1.3	--	--	--	--	--	--	--
22...	--	--	--	9.8	1.0	--	--	--	--	--	--	--
28...	--	--	--	16	1.5	--	--	--	--	--	--	--
MAY												
05...	--	--	--	14	--	--	--	--	--	--	--	--
13...	--	--	--	13	.4	--	--	--	--	--	--	--
19...	--	--	--	12	.6	--	--	--	--	--	--	--
28...	--	--	--	16	1.3	--	--	--	--	--	--	--
JUN												
03...	--	--	--	4.7	--	--	--	--	--	--	--	--
09...	--	--	--	18	--	--	--	--	--	--	--	--
17...	--	--	--	6.4	.6	--	--	--	--	--	--	--
24...	--	--	--	14	.7	--	--	--	--	--	--	--
JUL												
14...	--	--	--	2.6	.3	--	--	--	--	--	--	--
AUG												
24...	30	10	16	3.9	.4	.00	0	.0	.0	.0	.0	.0

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)
AUG											
24...	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

DATE	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39541)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
07...	--	--	--	1300	14.5	12.4	--	4.33	.460	--	--
NOV											
04...	--	--	--	400	--	--	--	--	--	--	--
DEC											
02...	--	--	--	--	--	--	--	--	--	--	--
JAN											
14...	--	--	--	--	--	--	--	--	--	--	--
FEB											
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	4400	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	35000	.472	.394	--	.040	.000	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	--	7100	5.91	5.51	--	2.06	.150	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	--	--	--	880	34.9	30.5	41	28.9	.750	--	--
AUG											
24...	.0	.0	.0	820	8.58	7.32	--	3.21	.220	24	.38

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
AUG	
24...	86

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	930	---	1100	---	830	600	560	---	875	910	815	800
2	930	980	1110	---	800	650	710	750	880	---	825	800
3	920	980	1120	---	860	700	820	---	880	920	800	800
4	900	980	1100	---	860	710	820	---	890	925	820	---
5	890	980	1080	---	840	740	810	---	890	925	800	---
6	900	990	1100	925	830	775	810	---	890	920	710	---
7	900	990	1100	925	800	800	810	---	890	920	800	---
8	915	---	1150	910	830	790	820	790	900	920	---	800
9	915	---	1050	910	820	790	800	790	900	920	---	800
10	940	---	1050	920	825	790	775	800	890	920	---	800
11	---	1000	---	910	825	790	---	800	880	910	800	800
12	---	1010	---	900	820	560	750	800	890	910	800	800
13	---	1000	1050	900	820	380	725	810	900	910	800	800
14	950	---	1050	900	820	450	730	815	900	900	800	800
15	950	---	1030	900	825	460	---	815	900	900	800	800
16	950	1000	1000	900	810	500	730	820	900	900	---	800
17	850	1000	1000	880	760	480	735	830	900	900	805	800
18	---	---	1000	880	520	500	740	---	---	900	810	800
19	---	---	1000	880	---	540	740	---	---	875	800	800
20	950	1000	---	850	---	575	---	850	920	875	800	800
21	975	1000	950	850	---	575	735	850	920	875	825	---
22	1000	1000	950	840	---	550	730	---	900	875	810	---
23	---	950	950	840	---	550	---	---	900	850	725	---
24	975	1010	940	840	---	580	---	---	900	850	780	780
25	970	1010	940	820	410	530	725	---	900	850	790	775
26	970	1020	940	840	---	---	735	800	900	850	780	750
27	960	---	---	830	---	540	---	830	900	850	800	760
28	970	---	950	830	530	550	---	850	875	850	815	760
29	975	---	980	860	---	530	---	850	890	---	815	760
30	975	---	980	850	---	540	---	850	900	860	815	760
31	---	---	---	820	---	550	---	---	---	850	815	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	---	.0	---	.0	.0	2.5	---	15.0	19.0	20.0	12.0
2	8.0	3.0	.0	---	.0	.0	5.0	11.0	13.0	---	24.0	13.0
3	9.0	3.5	.0	---	.0	.0	5.0	---	14.0	21.0	19.0	12.0
4	9.0	3.5	.0	---	.0	.0	2.5	---	17.0	22.0	20.0	---
5	10.0	3.5	.0	---	.0	.0	4.0	---	16.0	22.0	19.0	---
6	11.0	4.0	.0	.0	.0	.0	4.5	---	16.0	22.0	19.0	---
7	11.0	3.0	.0	.0	.0	.0	5.0	---	16.0	22.0	19.0	---
8	10.0	---	.0	.0	.0	1.0	5.0	7.0	16.0	22.0	---	14.0
9	10.0	---	.0	.0	.0	1.0	5.5	6.0	16.0	17.0	---	15.0
10	7.0	---	.0	.0	.0	1.0	5.0	8.5	17.0	18.0	---	15.0
11	6.0	.0	---	.0	.0	1.0	---	9.0	16.0	20.0	18.0	15.0
12	---	1.0	---	.0	.0	1.0	5.0	10.0	16.0	21.0	17.0	15.0
13	---	1.0	.0	.0	.0	.0	5.0	11.0	17.0	20.0	17.0	15.0
14	6.0	---	.0	.0	.0	2.0	5.0	12.0	18.0	19.0	17.0	11.0
15	6.0	---	.0	.0	.0	1.0	---	12.5	15.0	19.0	17.0	11.0
16	6.0	.5	.0	.0	.0	1.0	9.0	11.0	14.5	19.0	---	10.0
17	4.0	.0	.0	.0	1.0	.0	10.0	12.0	15.0	19.5	16.0	10.0
18	---	---	.0	.0	.5	.0	6.0	---	---	20.0	16.0	10.0
19	---	---	.0	.0	.5	.0	5.0	---	---	20.0	17.0	9.0
20	5.0	.0	---	.0	.5	.0	---	15.0	16.0	21.0	17.0	10.0
21	3.0	.0	.0	.0	1.0	.0	6.0	15.0	17.0	17.0	19.0	---
22	2.5	.0	.0	.0	.5	.0	8.0	---	16.0	18.0	19.0	---
23	---	.0	.0	.0	.0	.0	---	---	16.0	18.0	19.0	---
24	2.0	.0	.0	.5	.0	.0	---	---	18.0	19.0	19.0	8.0
25	2.0	.0	.0	.0	.0	2.0	9.0	---	18.0	19.0	19.0	8.0
26	1.0	.0	.0	.0	---	---	10.0	11.0	18.0	22.5	18.0	12.0
27	.0	---	---	.0	---	1.0	---	13.0	18.0	17.0	17.0	8.0
28	.0	---	.0	.0	.0	1.5	---	15.0	22.0	17.0	16.0	6.0
29	.0	---	.0	.0	---	2.5	---	16.0	18.5	---	16.0	7.0
30	.0	---	.5	.0	---	2.0	---	15.0	19.0	18.0	18.0	9.0
31	---	---	---	.0	---	2.5	---	---	---	18.0	19.0	---

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO AUGUST 1981

DATE	OCT 7,80		NOV 4,80		MAR 17,81		APR 28,81	
TIME	1340		1235		1200		1400	
TOTAL CELLS/ML	1300		400		4400		35000	
DIVERSITY: DIVISION	1.9		1.0		1.6		1.7	
.CLASS	1.9		1.0		1.6		1.7	
..ORDER	2.4		2.0		2.6		1.9	
...FAMILY	2.7		2.0		2.7		2.6	
....GENUS	2.8		2.0		2.8		2.8	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..ACHNANTHALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	70	2	--	-
....COCCONEIS	--	-	13	3	70	2	--	-
..BACILLARIALES								
...NITZSCHIACEAE								
....NITZSCHIA	130	10	65#	16	770#	17	840	2
..EPITHEMIALES								
...EPITHEMIACEAE								
....EPITHEMIA	--	-	--	-	--	-	*	0
....RHOPALODIA	--	-	--	-	70	2	--	-
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	250#	19	230#	58	140	3	4800	14
....MELOSIRA	--	-	--	-	140	3	--	-
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	280	1
..NAVICULALES								
...GOMPHONEMACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	13	3	420	10	280	1
..SURIRELLALES								
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...DICTYOSPHAERIACEAE								
....DICTYOSPHAERIUM	100	8	--	-	280	6	9100#	26
...OOCYSTACEAE								
....ANKISTRODESMUS	52	4	--	-	280	6	2500	7
....CHODATELLA	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	560	2
....OOCYSTIS	--	-	--	-	--	-	--	-
....TREUBARIA	13	1	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	77	6	--	-	--	-	3400	10
....TETRASTRUM	--	-	--	-	--	-	1300	4
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	150	12	26	6	560	13	280	1
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	77	6	--	-	--	-	1400	4
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	26	6	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	430#	33	--	-	--	-	10000#	29
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	1600#	37	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	13	1	26	6	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO AUGUST 1981

DATE	JUN 3,81	JUL 14,81	AUG 24,81
TIME	1030	1140	1335
TOTAL CELLS/ML	7100	880	820
DIVERSITY: DIVISION	1.6	1.5	1.9
.CLASS	1.6	1.5	1.9
..ORDER	2.6	2.0	2.7
...FAMILY	2.9	2.2	2.8
....GENUS	3.0	2.2	3.2

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)						
.BACILLARIOPHYCEAE						
..ACHNANTHALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	--	-	--	-
....COCCONEIS	--	-	26	3	14	2
..BACILLARIALES						
...NITZSCHIACEAE						
....NITZSCHIA	1900#	27	170#	19	29	4
..EPITHEMIALES						
...EPITHEMIACEAE						
....EPITHEMIA	52	1	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-
..EUPODISCALES						
...COSCINODISCACEAE						
....CYCLOTELLA	1800#	26	--	-	43	5
....MELOSIRA	--	-	--	-	43	5
..FRAGILARIALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
..NAVICULALES						
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	13	1	--	-
...NAVICULACEAE						
....NAVICULA	210	3	--	-	72	9
..SURIRELLALES						
...SURIRELLACEAE						
....SURIRELLA	210	3	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...DICTYOSPHAERIACEAE						
....DICTYOSPHAERIUM	460	7	13	1	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	210	3	--	-	29	4
....CHODATELLA	260	4	--	-	--	-
....KIRCHNERIELLA	52	1	--	-	--	-
....OOCYSTIS	--	-	90	10	--	-
....TREUBARIA	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	--	-	--	-	58	7
....SCENEDESMUS	210	3	--	-	200#	25
....TETRASTRUM	--	-	52	6	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	150	2	26	3	72	9
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	13	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	1200#	17	--	-	43	5
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	13	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	--	-	--	-
....GOMPHOSPHAERIA	--	-	--	-	170#	21
..OSCILLATORIALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	210	3	460#	53	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	52	1	--	-	14	2
....PHACUS	52	1	--	-	--	-
....TRACHELOMONAS	52	1	--	-	29	4

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05100000 PEMBINA RIVER AT NECHE, ND
(International gaging station)

LOCATION.--Lat 48°59'20", long 97°33'05", in SE¼NW¼ sec.31, T.164 N., R.53 W., Pembina County, Hydrologic Unit 09020313, on right bank 0.3 mi (0.5 km) east of State Highway 18, and at north edge of Neche.

DRAINAGE AREA.--3,410 mi^2 (8,830 km^2), approximately.

PERIOD OF RECORD.--May 1903 to September 1908, June 1909 to September 1915, April 1919 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1904-8, 1910-15, 1920, 1921, 1923, 1924. WSP 1388: 1904(M), 1914, 1915(M), 1931(M), 1933, 1938(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 809.69 ft (246.794 m) National Geodetic Vertical Datum of 1929. Prior to May 24, 1932, nonrecording gage at Burlington Northern Railway bridge 1 mi (2 km) upstream, at same datum. May 25, 1932, to Apr. 17, 1939, nonrecording gage on bridge on State Highway 18, 500 ft (150 m) downstream from railway bridge, at same datum.

REMARKS.--Records good except those for the winter period, which are fair.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--73 years (1903-8, 1909-15, 1919-81), 193 ft^3/s (5.466 m^3/s), 139,800 acre-ft/yr (172 hm^3/yr); median of yearly mean discharges, 138 ft^3/s (3.91 m^3/s), 100,000 acre-ft/yr (123 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft^3/s (303 m^3/s) Apr. 20, 1950, gage height, 21.58 ft (6.578 m), backwater from ice; from rating curve extended above 5,300 ft^3/s (150 m^3/s); maximum gage height, 23.64 ft (7.205 m) Apr. 20, 1979, backwater from ice; no flow at times each year 1932-41, 1953, 1960-62.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 285 ft^3/s (8.07 m^3/s) Apr. 1, gage height, 9.28 ft (2.829 m), no peaks above base of 400 ft^3/s (11.3 m^3/s); minimum daily discharge, 0.36 ft^3/s (0.010 m^3/s) Feb. 14-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	26	16	2.0	.90	52	261	196	100	48	18	9.4
2	9.4	23	14	2.0	.90	98	220	189	95	44	17	8.3
3	7.2	23	12	2.0	.90	100	238	186	92	41	15	7.2
4	7.2	23	10	2.0	.90	73	234	182	89	39	15	6.7
5	7.2	23	10	2.0	.90	67	217	175	86	37	16	5.1
6	7.2	23	10	2.0	.90	57	210	162	83	34	17	5.1
7	8.3	23	10	2.0	.90	46	206	152	80	33	17	7.2
8	8.3	25	9.0	2.0	.90	44	206	145	75	33	17	7.2
9	10	25	7.0	2.0	.80	44	206	142	70	31	21	7.2
10	13	25	7.0	2.0	.60	41	206	142	67	26	26	6.7
11	12	25	5.0	2.0	.50	41	206	136	65	23	25	6.7
12	12	27	5.0	2.0	.40	39	206	133	65	23	21	6.2
13	10	34	5.0	1.5	.40	39	206	124	65	23	17	6.2
14	10	33	5.0	1.0	.36	52	210	121	65	23	14	5.6
15	10	30	5.0	1.0	.36	112	217	115	65	23	10	5.6
16	12	28	5.0	1.0	.36	142	220	109	65	23	10	5.1
17	17	20	5.0	1.0	.36	142	231	106	62	23	10	4.6
18	23	23	5.0	1.0	.36	139	231	103	62	23	10	4.1
19	33	21	5.0	1.0	.36	139	234	95	60	23	10	4.1
20	62	28	5.0	1.0	1.5	142	234	89	57	26	10	4.1
21	52	30	3.5	.96	77	139	238	89	55	28	8.3	4.1
22	41	33	2.5	.90	92	139	238	89	52	30	8.3	4.1
23	41	33	2.5	.90	98	142	238	89	52	28	17	4.1
24	37	25	2.5	.90	103	142	238	86	52	28	17	5.6
25	33	21	2.0	.90	70	152	231	162	50	26	15	6.2
26	30	18	2.0	.90	80	158	220	228	50	25	12	7.2
27	20	20	2.0	.90	115	158	206	189	48	25	9.4	9.4
28	20	20	2.0	.90	55	158	206	155	48	23	9.4	8.3
29	20	20	2.0	.90	---	175	206	133	48	23	9.4	8.3
30	31	18	2.0	.90	---	249	200	121	48	20	8.3	8.3
31	30	---	2.0	.90	---	257	---	109	---	20	8.3	---
TOTAL	649.8	746	180.0	42.46	703.56	3478	6620	4252	1971	875	438.4	188.0
MEAN	21.0	24.9	5.81	1.37	25.1	112	221	137	65.7	28.2	14.1	6.27
MAX	62	34	16	2.0	115	257	261	228	100	48	26	9.4
MIN	7.2	18	2.0	.90	.36	39	200	86	48	20	8.3	4.1
AC-FT	1290	1480	357	84	1400	6900	13130	8430	3910	1740	870	373

CAL YR 1980 TOTAL 13055.90 MEAN 35.7 MAX 429 MIN 2.0 AC-FT 25900
WTR YR 1981 TOTAL 20144.22 MEAN 55.2 MAX 261 MIN .36 AC-FT 39960

05101000 TONGUE RIVER AT AKRA, ND

LOCATION.--Lat 48°46'42", long 97°44'43", in SW¼ sec.10, T.161 N., R.55 W., Pembina County, Hydrologic Unit 09020313, on left bank 300 ft (90 m) downstream from Renwick Dam, 0.9 mi (1.4 km) northwest of Akra, and 6 mi (10 km) west of Cavalier.

DRAINAGE AREA.--160 mi^2 (414 km^2).

PERIOD OF RECORD.--April to June 1950 (WSP 1137-B), October 1951 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 930.00 ft (283.464 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1954, nonrecording gage 1.2 mi (1.9 km) downstream at datum 30.00 ft (9.144 m) lower. July 23, 1954 to Dec. 19, 1973, water stage recorder 2.7 mi (4.3 km) downstream at datum 9.10 ft (2.774 m) lower.

REMARKS.--Records poor. Flow regulated by temporary retention in ten retarding basins beginning 300 ft (90 m) above station, four of which have slow release outlet structures to regulate the flow. Retarding basins were completed during the period 1955 to 1961 and have a combined capacity of 19,245 acre-ft (23.7 hm^3).

AVERAGE DISCHARGE.--30 years (water years 1952-81), 21.5 ft^3/s (0.609 m^3/s), 15,580 acre-ft/yr (19.2 hm^3/yr); median of yearly mean discharges, 19 ft^3/s (0.54 m^3/s), 13,800 acre-ft/yr (17 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft^3/s (334 m^3/s) Apr. 18, 1950, gage height, 48.7 ft (14.844 m), from floodmarks, site and datum then in use, from rating curve extended above 1,500 ft^3/s (42.5 m^3/s) on basis of contracted-opening measurement of peak flow; no flow Dec. 1-27, 1952, Aug. 13, 14, 1961.

This flood is the highest known since settlement of the region in about 1860.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 76 ft^3/s (2.15 m^3/s) sometime during the period Mar. 25 - Apr. 29, gage height, 10.73 ft (3.271 m), from recorded range-in-stage; minimum daily, 1.1 ft^3/s (0.031 m^3/s) July 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	40	6.0	4.6	7.5	25	70	23	29	39	1.8	11
2	24	40	5.0	4.6	8.0	19	75	23	27	26	2.0	11
3	22	40	4.0	4.6	8.0	16	75	22	25	19	2.6	11
4	21	37	5.0	4.4	8.2	14	70	20	23	14	2.7	10
5	20	34	6.4	4.4	8.4	13	70	18	24	12	3.2	10
6	19	32	6.4	4.4	8.6	12	65	17	23	10	5.2	11
7	18	30	6.4	4.2	8.6	11	65	16	22	8.2	6.4	12
8	18	32	6.2	4.2	8.5	10	60	15	19	7.0	7.1	13
9	18	32	6.2	4.2	8.0	9.0	60	15	17	5.5	7.3	13
10	19	31	6.2	4.2	7.5	8.1	55	16	15	4.6	7.0	13
11	18	30	6.5	4.2	7.0	9.6	55	17	14	4.1	6.4	13
12	16	25	6.5	4.1	6.5	11	50	16	12	4.1	5.9	14
13	15	23	6.0	4.1	6.0	23	50	13	13	3.7	5.5	14
14	13	22	5.8	4.1	5.5	40	50	13	14	3.2	5.2	14
15	13	21	5.8	4.2	5.0	49	45	12	18	3.1	4.2	14
16	13	20	6.0	4.1	4.5	54	45	11	21	3.0	3.9	14
17	29	20	5.6	4.2	4.7	56	45	10	22	2.8	3.9	14
18	49	19	5.0	4.2	4.9	53	40	10	20	2.6	4.0	14
19	64	18	4.5	4.2	5.9	48	40	11	17	2.5	4.0	14
20	66	17	4.0	4.2	18	43	40	8.6	15	2.4	4.2	14
21	58	16	3.5	4.3	38	38	35	7.1	13	2.2	4.5	14
22	46	15	3.0	4.4	51	34	35	7.1	13	2.0	4.6	14
23	42	14	3.0	4.5	60	30	35	7.7	12	1.9	6.4	16
24	37	13	2.5	4.5	60	28	30	11	12	1.8	9.4	16
25	35	12	3.0	4.5	50	29	30	22	12	1.7	12	17
26	35	11	4.0	5.0	44	29	30	40	11	1.6	14	21
27	35	10	5.0	5.0	40	28	25	50	11	1.4	15	20
28	34	9.5	5.0	5.5	31	29	25	50	18	1.2	13	19
29	33	9.0	5.0	6.0	---	35	25	45	43	1.1	12	14
30	36	8.0	5.0	6.5	---	40	23	38	52	1.1	11	2.1
31	40	---	5.0	7.0	---	50	---	32	---	1.8	11	---
TOTAL	932	680.5	157.5	142.6	523.3	893.7	1418	616.5	587	194.6	205.4	407.1
MEAN	30.1	22.7	5.08	4.60	18.7	28.8	47.3	19.9	19.6	6.28	6.63	13.6
MAX	66	40	6.5	7.0	60	56	75	50	52	39	15	21
MIN	13	8.0	2.5	4.1	4.5	8.1	23	7.1	11	1.1	1.8	2.1
AC-FT	1850	1350	312	283	1040	1770	2810	1220	1160	386	407	807

CAL YR 1980 TOTAL 4623.49 MEAN 12.6 MAX 163 MIN .09 AC-FT 9170
WTR YR 1981 TOTAL 6758.20 MEAN 18.5 MAX 75 MIN 1.1 AC-FT 13400

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN
(International gaging station)

LOCATION.--Lat 49°00'30", long 97°12'40", in sec.2, T.1, R.2 E., on right bank 1,500 ft (460 m) downstream from Canadian National Railway bridge in Emerson, 0.8 mi (1.3 km) downstream from international boundary, 3.6 mi (5.8 km) downstream from Pembina River, and at mile 154.3 (248.3 km).

DRAINAGE AREA.--40,200 mi^2 (104,100 km^2), approximately, includes 3,800 mi^2 (9,840 km^2) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to November 1902 (gage heights only), May 1912 to September 1929 (monthly discharge only, published in WSP 1308), October 1929 to current year.

GAGE.--Water-stage recorder. Datum of gage is 700.00 ft (213.360 m) National Geodetic Vertical Datum of 1929, by Geodetic Survey of Canada. See WSP 1728 or 1913 for history of changes prior to Apr. 10, 1953.

REMARKS.--Records good. Discharge partially regulated by reservoirs on tributaries.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--69 years (water years 1913-81) 3,280 ft^3/s (92.89 m^3/s), 2,376,000 acre-ft/yr (2.93 km^3/yr); median of yearly mean discharges, 2,630 ft^3/s (74.5 m^3/s), 1,910,000 acre-ft/yr (2.4 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,500 ft^3/s (2,700 m^3/s) May 13, 1950, gage height, 90.89 ft (27.703 m); maximum gage height, 91.19 ft (27.795 m) May 1, 1979; minimum observed discharge, 0.9 ft^3/s (0.025 m^3/s) Feb. 6-8, 1937.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,150 ft^3/s (174 m^3/s) July 4, gage height, 55.19 ft (16.822 m); minimum daily, 246 ft^3/s (6.97 m^3/s) Feb. 8-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	681	804	456	305	261	783	3790	964	3100	2430	1510	1590
2	685	847	444	303	257	903	3110	991	2550	4260	1540	1400
3	679	797	439	303	254	1020	2740	1000	2130	6070	1550	1230
4	675	716	433	301	252	1150	2620	997	1760	6110	1550	1230
5	659	684	427	301	250	1270	2580	1010	1430	5530	1580	1690
6	635	669	422	301	248	1340	2550	1030	1320	4550	1590	2210
7	578	664	414	301	248	1370	2490	1050	1240	3800	1530	2250
8	514	656	407	299	246	1370	2450	1070	1200	3230	1460	2070
9	474	658	400	299	246	1330	2360	1090	1190	2860	1450	1950
10	460	663	391	299	246	1250	2160	1090	1200	2600	1620	2080
11	435	679	384	299	246	1170	2000	1110	1230	2440	1830	3070
12	413	715	375	299	246	1110	1880	1090	1240	2280	1930	4040
13	416	739	366	299	246	1070	1780	1060	1270	2110	1910	4100
14	396	736	355	299	246	1070	1680	1040	1300	2030	1810	3590
15	372	740	345	299	246	1100	1650	1020	1370	2170	1680	2970
16	366	740	337	299	246	1150	1630	981	1410	2310	1590	2470
17	394	740	331	297	246	1220	1590	929	1380	2340	1510	2070
18	417	714	326	297	246	1300	1560	890	1290	2370	1440	1740
19	440	636	324	295	246	1360	1530	857	1280	2420	1350	1520
20	483	612	322	293	248	1410	1440	831	1330	2410	1260	1330
21	507	605	318	291	254	1450	1330	786	1440	2370	1170	1190
22	533	593	316	291	272	1490	1210	742	1560	2270	1090	1090
23	552	589	314	288	291	1520	1120	745	1530	2150	1030	1010
24	564	581	312	286	343	1560	1080	748	1530	2010	977	941
25	594	574	312	282	419	1610	1040	781	1560	1900	955	897
26	637	559	310	278	496	1680	1000	865	1680	1820	1090	886
27	674	537	310	276	581	1810	956	1680	1910	1730	1550	866
28	696	509	308	272	674	2050	955	3510	1940	1650	1840	885
29	705	483	308	270	---	2400	964	4580	1970	1580	1930	926
30	707	468	307	267	---	2900	957	4560	2120	1540	1930	936
31	728	---	305	265	---	3370	---	3880	---	1510	1780	---
TOTAL	17069	19707	11118	9054	8300	45586	54202	42977	47460	84850	47032	54227
MEAN	551	657	359	292	296	1471	1807	1386	1582	2737	1517	1808
MAX	728	847	456	305	674	3370	3790	4580	3100	6110	1930	4100
MIN	366	468	305	265	246	783	955	742	1190	1510	955	866
AC-FT	33860	39090	22050	17960	16460	90420	107500	85240	94140	168300	93290	107600

CAL YR 1980 TOTAL 668415 MEAN 1826 MAX 21700 MIN 305 AC-FT 1326000
WTR YR 1981 TOTAL 441582 MEAN 1210 MAX 6110 MIN 246 AC-FT 875900

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued
(National stream-quality accounting network station)
(Pesticide station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.
WATER TEMPERATURE: October 1977 to current year.

REMARKS.--Specific conductance and temperature monitor operated by Canada.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,200 micromhos Sept. 24, 1978, Aug. 30, 1980, and on many days during October 1980 through March 1981; minimum daily mean, 330 micromhos Apr. 10, 16, 17, 1978.
WATER TEMPERATURES: Maximum daily mean, 26.0°C July 13, 14, 1981; minimum daily mean, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,200 micromhos on many days during October through March; minimum daily mean, 400 micromhos May 30, 31.
WATER TEMPERATURES: Maximum daily mean, 26.0°C July 13, 14; minimum daily mean, 1.0°C on many days during winter months.

CORRECTIONS.--Mean values of specific conductance and water temperature for the 1980 water year (U.S. Geological Survey Water-Data Report, ND-80-1, page 162) were published as "once-daily" values. The published data are mean values and the table headings are incorrect.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
09...	0900	509	1190	8.7	11.0	12.5	46	10.0	95	K10	K12
NOV											
06...	0930	705	1093	8.4	--	4.5	1.0	12.7	102	K12	66
DEC											
05...	1220	E430	1460	8.9	-3.0	.5	14	18.2	130	<2	46
JAN											
13...	1200	296	1810	7.9	-2.0	.5	6.1	9.8	70	K13	440
FEB											
20...	1515	E250	1150	8.0	.0	.5	5.1	10.5	82	K10	600
MAR											
18...	0900	E1250	829	8.1	15.0	.5	21	13.5	96	1000	1700
APR											
15...	1015	1640	778	8.6	15.0	9.0	110	11.9	105	53	K44
MAY											
20...	0900	E830	910	8.7	24.0	18.0	72	8.5	92	K27	160
JUN											
10...	0830	E1220	811	8.2	20.0	19.5	120	7.0	79	K20	170
JUL											
07...	1030	E4000	600	8.1	30.0	26.0	270	5.3	69	96	1100
AUG											
13...	1240	E1890	665	8.4	29.0	24.5	99	6.4	86	K43	--
SEP											
10...	1300	2210	488	8.0	29.0	20.5	95	7.2	82	--	--

E - Estimated.
K - Results based on colony count outside the acceptable range (non-ideal colony count).

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)
OCT											
09...	339	130	78	35	120	43	2.9	130	11	210	.7
NOV											
06...	317	87	71	34	110	42	2.8	120	11	230	1.5
DEC											
05...	379	120	81	43	170	48	3.9	180	13	260	.5
JAN											
13...	497	140	110	54	190	45	3.8	200	13	360	7.3
FEB											
20...	390	80	87	42	97	35	2.2	100	7.4	310	5.0
MAR											
18...	234	64	54	24	78	41	2.3	85	7.3	170	2.2
APR											
15...	243	73	56	25	65	36	1.9	71	6.0	170	.7
MAY											
20...	300	70	64	34	83	37	2.1	91	7.6	230	.7
JUN											
10...	235	75	53	25	70	38	2.0	77	7.0	160	1.6
JUL											
07...	223	73	53	22	37	26	1.1	43	5.7	150	1.9
AUG											
13...	230	30	51	25	45	29	1.3	50	5.2	200	1.3
SEP											
10...	200	50	47	20	22	19	.7	28	5.9	150	2.4

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
09...	160	170	.4	11	748	711	1.0	1030	.00	.00	.000
NOV											
06...	150	130	.3	9.9	654	654	.89	1240	.19	.18	.070
DEC											
05...	180	200	.4	4.7	877	848	1.2	1590	.00	.00	.040
JAN											
13...	220	240	.6	15	1100	1060	1.5	879	.63	.61	2.30
FEB											
20...	140	130	.3	15	690	709	.94	--	.93	.93	.330
MAR											
18...	88	110	.2	12	494	479	.67	1330	.75	.75	.060
APR											
15...	100	76	.2	6.0	469	437	.64	2080	.00	.02	.070
MAY											
20...	140	96	.3	6.8	573	570	.78	309	.00	.02	.180
JUN											
10...	96	99	.2	11	486	462	.66	1600	.91	.98	.160
JUL											
07...	94	52	.2	14	368	372	.50	3970	.85	.82	.090
AUG											
13...	47	51	.2	13	409	359	.56	2090	.24	.25	.070
SEP											
10...	72	15	.2	11	289	285	.39	1720	.32	.33	.160

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
09...	.000	.00	1.4	1.0	1.40	.40	1.0	1.4	1.0	6.2	.250
NOV											
06...	.100	.13	1.4	1.2	1.50	.20	1.3	1.7	1.5	7.5	.380
DEC											
05...	.060	.08	1.6	1.1	1.60	.40	1.2	1.6	1.2	7.1	.300
JAN											
13...	2.30	3.0	.80	.50	3.10	.30	2.8	3.7	3.4	17	.880
FEB											
20...	.240	.31	.14	.07	.47	.16	.31	1.4	1.2	6.2	.230
MAR											
18...	.030	.04	2.1	1.7	2.20	.50	1.7	3.0	2.5	13	.260
APR											
15...	.090	.12	1.5	1.5	1.60	.00	1.6	1.6	1.6	7.1	.240
MAY											
20...	.090	.12	1.6	.84	1.80	.87	.93	1.8	.95	8.0	.240
JUN											
10...	.250	.32	1.3	.65	1.50	.60	.90	2.4	1.9	11	.280
JUL											
07...	.070	.09	1.6	1.1	1.70	.50	1.2	2.6	2.0	11	.450
AUG											
13...	<.060	.08	1.0	--	1.10	.00	1.1	1.3	1.4	5.9	.350
SEP											
10...	.100	.13	1.3	.90	1.50	.50	1.0	1.8	1.3	8.1	.250

DATE	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT										
09...	.77	.130	--	--	7	2	5	100	0	100
NOV										
06...	1.2	.290	--	--	--	--	--	--	--	--
DEC										
05...	.92	.250	--	--	--	--	--	--	--	--
JAN										
13...	2.7	.750	--	--	3	0	4	100	0	200
FEB										
20...	.71	.210	--	--	--	--	--	--	--	--
MAR										
18...	.80	.200	--	--	--	--	--	--	--	--
APR										
15...	.74	.040	--	--	4	2	2	100	0	100
MAY										
20...	.74	.130	.090	.28	--	--	--	--	--	--
JUN										
10...	.86	.110	--	--	--	--	--	--	--	--
JUL										
07...	1.4	.130	--	--	9	5	4	100	0	100
AUG										
13...	1.1	.170	--	--	--	--	--	--	--	--
SEP										
10...	.77	.050	--	--	5	1	4	100	0	230

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT											
09...	0	--	<1	20	20	0	1	--	<3	14	10
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
13...	0	--	<1	10	10	0	2	--	<3	5	2
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
18...	--	--	--	--	--	--	--	--	--	--	--
APR											
15...	0	--	<1	20	10	10	2	--	<3	5	1
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	1	1	0	30	30	0	5	5	0	27	21
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	1	--	<1	10	0	10	1	1	0	14	9

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT											
09...	4	1400	1400	<10	4	4	0	120	120	3	.1
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
13...	3	240	210	30	2	1	1	70	40	30	.1
FEB											
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
18...	--	--	--	--	--	--	--	--	--	--	--
APR											
15...	4	3300	3300	10	6	5	1	280	280	5	.1
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	6	12000	12000	50	10	9	1	530	520	10	.2
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	5	4300	4300	20	22	20	2	170	170	4	.2

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)
OCT										
09...	.1	.0	14	14	0	1	0	1	0	0
NOV										
06...	--	--	--	--	--	--	--	--	--	--
DEC										
05...	--	--	--	--	--	--	--	--	--	--
JAN										
13...	.0	.1	5	1	4	0	0	0	0	0
FEB										
20...	--	--	--	--	--	--	--	--	--	--
MAR										
18...	--	--	--	--	--	--	--	--	--	--
APR										
15...	.0	.1	8	6	2	0	0	0	2	2
MAY										
20...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	--	--	--	--	--	--	--	--	--	--
JUL										
07...	.1	.1	19	14	5	0	0	0	0	0
AUG										
13...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	.2	.0	11	9	2	1	1	0	0	0

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)
OCT										
09...	0	40	40	<3	--	17	.7	--	--	--
NOV										
06...	--	--	--	--	31	--	--	ND	ND	ND
DEC										
05...	--	--	--	--	19	--	--	--	--	--
JAN										
13...	0	10	0	30	--	16	--	--	--	--
FEB										
20...	--	--	--	--	35	--	--	--	--	--
MAR										
18...	--	--	--	--	13	--	--	--	--	--
APR										
15...	0	30	--	<3	--	9.0	1.0	--	--	--
MAY										
20...	--	--	--	--	16	--	--	--	--	--
JUN										
10...	--	--	--	--	14	--	--	--	--	--
JUL										
07...	0	70	10	60	--	11	.9	--	--	--
AUG										
13...	--	--	--	--	7.4	--	--	--	--	--
SEP										
10...	0	30	0	40	--	13	--	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed mater ND - Not detected at 0.1 µg/mg level.

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)
OCT										
09...	--	--	--	--	--	--	--	--	--	--
NOV										
06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT								
09...	--	--	--	--	--	--	--	--
NOV								
06...	ND	ND	ND	ND	ND	ND	ND	--
MAR								
18...	--	--	--	--	--	--	--	18000
APR								
15...	--	--	--	--	--	--	--	--
MAY								
20...	--	--	--	--	--	--	--	14000
JUN								
10...	--	--	--	--	--	--	--	7100
JUL								
07...	--	--	--	--	--	--	--	2900
AUG								
13...	--	--	--	--	--	--	--	16000
SEP								
10...	--	--	--	--	--	--	--	7800

DATE	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT							
09...	12.0	10.6	6.99	.540	--	--	--
NOV							
06...	--	--	--	--	--	--	--
DEC							
05...	--	--	--	--	20	36	96
JAN							
13...	--	--	--	--	12	9.6	97
FEB							
20...	--	--	--	--	11	--	94
MAR							
18...	--	--	--	--	20	54	84
APR							
15...	--	--	--	--	140	620	100
MAY							
20...	--	--	--	--	130	--	100
JUN							
10...	--	--	--	--	230	758	100
JUL							
07...	--	--	--	--	510	--	100
AUG							
13...	--	--	--	--	196	1000	100
SEP							
10...	--	--	--	--	166	991	99

Whole water ND - Not detected at 0.01 µg/L level.
Bed mater ND - Not detected at 0.1 µg/mg level.

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1120	1150	1200	1200	1200	1030	630	860	420	1010	580	550
2	1160	1200	1200	1200	1200	1080	620	850	440	1030	610	520
3	1090	1200	1200	1200	1200	1200	610	840	460	980	620	530
4	1090	1180	1200	1200	1200	1150	620	860	490	650	620	580
5	1130	1150	1200	1200	1200	1020	640	880	530	550	590	590
6	1200	1100	1200	1200	1200	490	680	880	580	600	580	610
7	1200	1080	1200	1200	1200	500	650	850	630	620	570	600
8	1200	1080	1200	1200	1200	540	670	880	690	640	570	570
9	1200	1170	1200	1200	1200	550	730	890	740	670	600	520
10	1200	1180	1200	1200	1200	580	780	860	850	690	630	520
11	1200	1130	1200	1200	1200	640	840	840	890	670	680	680
12	1200	1200	1200	1200	1200	620	840	900	920	700	680	660
13	1200	1200	1200	1200	1200	580	820	870	---	720	650	550
14	1200	1200	1200	1200	1200	540	810	880	---	700	630	480
15	1140	1200	1200	1200	1200	520	760	910	---	690	610	530
16	1120	1200	1200	1200	1200	510	820	940	1000	690	---	610
17	1110	1200	1200	1200	1200	680	840	970	1010	670	---	640
18	1090	1200	1200	1200	1200	800	730	950	1030	660	---	600
19	1200	1200	1200	1200	1200	700	---	930	1070	640	---	580
20	1200	1200	1200	1200	1200	680	760	910	1070	570	---	600
21	1110	1200	1200	1200	1200	660	770	900	1100	540	590	590
22	1120	1200	1200	1200	1180	700	760	880	1140	530	590	590
23	1200	1200	1200	1200	1110	710	760	870	1140	560	580	600
24	1100	1200	1200	1200	1020	690	790	870	---	570	580	600
25	1050	---	1200	1200	980	680	780	880	---	600	580	640
26	1040	1200	1200	1200	970	690	780	890	---	570	580	670
27	1060	1200	1200	1200	980	720	870	900	---	570	580	650
28	1200	1200	1200	1200	1020	750	840	900	---	580	580	670
29	1150	1200	1200	1200	---	720	830	750	---	570	580	650
30	1170	1200	1200	1200	---	660	830	400	980	570	580	690
31	1110	---	1200	1200	---	660	---	400	---	570	570	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	3.0	2.5	2.0	1.0	1.0	5.5	8.5	17.0	22.5	23.5	21.0
2	12.0	3.0	2.5	2.0	1.0	1.0	6.0	9.0	17.0	23.0	23.5	20.5
3	11.0	3.5	2.5	1.5	1.0	1.0	7.0	9.0	17.0	23.0	24.0	20.0
4	10.5	3.5	2.5	2.0	1.0	1.0	7.0	9.5	17.5	23.0	24.0	19.0
5	10.0	3.5	2.5	2.5	1.0	1.0	8.0	9.5	18.0	23.0	24.0	19.0
6	11.0	4.0	2.5	1.5	1.5	1.0	9.0	10.0	18.5	24.0	23.5	19.0
7	12.0	4.0	2.5	1.0	1.5	1.0	9.5	11.0	19.0	24.5	23.0	19.0
8	12.5	3.5	2.5	1.0	1.5	1.0	10.0	12.0	19.0	25.5	23.0	19.5
9	13.0	3.0	2.5	1.0	1.5	1.0	10.5	12.5	19.0	25.0	23.0	19.5
10	11.5	2.0	2.5	1.0	1.0	1.0	11.5	12.0	19.0	25.0	22.5	20.0
11	11.0	1.5	2.5	1.0	1.0	1.0	11.0	12.0	19.5	25.0	23.0	21.0
12	8.0	2.0	2.5	1.0	1.0	1.0	11.0	13.0	19.5	25.5	23.5	20.5
13	7.0	3.0	2.5	1.0	1.0	1.0	11.0	14.5	---	26.0	23.5	20.5
14	7.0	3.0	2.5	1.0	1.0	1.0	9.5	15.0	---	26.0	24.0	20.0
15	7.0	2.0	2.0	1.0	1.0	1.0	7.0	16.0	---	25.0	24.0	19.0
16	7.5	2.0	2.0	1.0	1.0	1.0	8.5	16.0	19.5	24.5	---	18.5
17	7.5	1.5	2.0	1.0	1.0	3.0	8.5	16.0	19.0	24.5	---	18.0
18	7.0	1.5	2.0	1.0	1.0	4.5	6.0	16.5	18.5	25.0	---	18.0
19	6.0	1.5	2.0	1.0	1.0	4.5	---	17.0	18.0	24.5	---	18.0
20	6.5	2.0	2.0	1.0	1.0	4.5	6.0	17.5	19.0	25.0	---	17.5
21	7.0	2.0	2.0	1.0	1.0	5.0	6.0	18.0	19.0	24.5	23.0	17.5
22	6.5	2.0	2.0	1.0	1.0	5.0	5.0	19.0	19.0	24.0	23.0	17.5
23	6.5	2.0	2.0	1.0	1.0	5.0	4.5	17.5	19.0	24.0	23.0	16.5
24	5.5	1.5	2.0	1.0	1.0	4.5	5.0	16.0	---	23.5	23.0	16.0
25	5.0	---	2.0	1.0	1.0	4.5	6.0	15.0	---	23.0	23.0	15.5
26	4.0	2.0	2.0	1.0	1.0	4.5	6.5	14.5	---	24.0	23.0	14.5
27	3.5	1.5	2.0	1.0	1.0	4.5	7.5	15.0	---	24.0	22.5	14.0
28	3.0	1.5	2.0	1.0	1.0	4.5	8.5	15.5	---	25.0	23.0	14.0
29	3.0	1.5	2.0	1.0	---	4.5	9.0	16.5	---	25.0	23.0	14.0
30	3.5	1.5	2.0	1.0	---	4.5	9.0	16.5	22.0	24.5	22.0	14.5
31	3.5	---	2.5	1.0	---	5.0	---	16.5	---	23.5	20.5	---

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	MAR 18,81		MAY 20,81		JUN 10,81		JUL 7,81		AUG 13,81		SEP 10,81	
TIME	0900		0900		0830		1030		1240		1300	
TOTAL CELLS/ML	18000		14000		7100		2900		16000		7800	
DIVERSITY: DIVISION	0.2		1.8		1.4		1.7		1.3		1.3	
.CLASS	0.2		1.8		1.4		1.7		1.3		1.3	
..ORDER	0.3		2.3		1.6		2.6		1.8		1.5	
...FAMILY	0.3		3.0		1.9		2.8		2.6		2.1	
....GENUS	0.3		3.5		2.4		3.2		3.2		3.1	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..BACILLARIALES												
...NITZSCHIACEAE												
....NITZSCHIA	--	-	930	7	110	2	330	11	220	1	170	2
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	2000	14	400	6	190	7	250	2	61	1
....MELOSIRA	--	-	880	6	110	2	55	2	110	1	--	-
....STEPHANODISCUS	17000#	96	--	-	--	-	*	0	--	-	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	*	0
....SYNEDRA	--	-	310	2	--	-	28	1	--	-	--	-
..NAVICULALES												
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	*	0	--	-	--	-
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	--	-	--	-	*	0	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	110	4	*	0	46	1
..SURIRELLALES												
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	96	1	55	2	--	-	46	1
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....SCHROEDERIA	330	2	--	-	*	0	--	-	*	0	*	0
....TETRAEDRON	--	-	--	-	83	1	--	-	--	-	--	-
...DICTYOSPHAERIACEAE												
....DICTYOSPHAERIUM	--	-	--	-	170	2	--	-	--	-	92	1
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	1300	8	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	3000#	21	55	1	--	-	1200	8	230	3
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	620	4	83	1	69	2	330	2	280	4
....CHODATELLA	--	-	--	-	--	-	--	-	*	0	--	-
....CLUSTERIOPSIS	--	-	*	0	--	-	--	-	--	-	--	-
....FRANCEIA	--	-	*	0	--	-	--	-	*	0	--	-
....KIRCHNERIELLA	--	-	--	-	96	1	41	1	510	3	670	9
....OOCYSTIS	--	-	100	1	--	-	110	4	250	2	290	4
....QUADRIGULA	--	-	--	-	--	-	--	-	--	-	110	1
....TREUBARIA	--	-	150	1	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	2100	15	96	1	--	-	--	-	120	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981 (CONTINUED)

DATE TIME	MAR 18,81 0900		MAY 20,81 0900		JUN 10,81 0830		JUL 7,81 1030		AUG 13,81 1240		SEP 10,81 1300	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
....COELASTRUM	--	-	--	-	260	4	--	-	290	2	76	1
....CRUCIGENIA	--	-	--	-	--	-	--	-	720	4	61	1
....GLOEOACTINIUM	--	-	--	-	140	2	--	-	--	-	660	8
....SCENEDESMUS	--	-	310	2	480	7	330	11	1600	10	570	7
....TETRASTRUM	--	-	210	1	220	3	150	5	1000	6	430	5
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	330	2	210	1	110	2	--	-	*	0	46	1
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	410	3	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	*	0	28	1	140	1	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	180	2
....ANACYSTIS	--	-	980	7	4500#	63	280	10	6700#	41	3500#	45
..NOSTOCALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	800	5	--	-
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	470	3	--	-
....OSCILLATORIA	--	-	1300	9	--	-	1000#	35	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	310	2	*	0	--	-	140	1	*	0
....PHACUS	--	-	--	-	*	0	--	-	--	-	--	-
....TRACHELOMONAS	--	-	150	1	55	1	--	-	*	0	61	1
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..DINOKONTAE												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	41	1	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05113360 LONG CREEK AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY, SASK.
(International gaging station)

LOCATION.--Lat 49°00'01", long 103°21'08", in SE¼ sec.1, T.1, R.11 W., 2d meridian, Hydrologic Unit 09010001, and on right bank 10 mi (16 km) south of Outram.

DRAINAGE AREA.--1,320 mi^2 (3,420 km^2).

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

GAGE.--Water-stage recorder and artificial control. Datum of gage is 1,894.00 ft (577.291 m) National Geodetic Vertical Datum of 1929, international boundary survey.

REMARKS.--Records good except those for the winter period, which are fair. Discharge affected by storage in upstream reservoirs.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--22 years, 41.4 ft^3/s (1.172 m^3/s), 29,990 acre-ft/yr (37.0 hm^3/yr); median of yearly mean discharges, 28 ft^3/s (0.79 m^3/s), 20,300 acre-ft/yr (25 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft^3/s (133 m^3/s) Apr. 1, 1976, gage height, 12.05 ft (3.673 m); maximum gage height, 12.70 ft (3.871 m) Mar. 31, 1976 backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 139 ft^3/s (3.94 m^3/s) Feb. 19, gage height, 2.97 ft (0.904 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	11	.07	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	7.1	.07	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	5.0	.07	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	4.7	.07	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	3.2	.07	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	3.7	.07	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	2.9	.04	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	2.6	.04	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	2.6	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	2.7	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	2.6	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	2.1	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	20	1.3	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	81	1.1	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	78	.71	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	102	.71	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	95	.71	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	85	.67	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	77	.63	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	95	.46	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	49	.39	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	30	.35	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	21	.28	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	8.3	.25	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.18	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.14	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.14	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	741.30	66.62	.50	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	26.5	2.15	.017	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	102	11	.07	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	1470	132	1.0	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 1028.83 MEAN 2.81 MAX 58 MIN .00 AC-FT 2040
WTR YR 1981 TOTAL 808.42 MEAN 2.21 MAX 102 MIN .00 AC-FT 1600

05113600 LONG CREEK NEAR NOONAN, ND
(International gaging station)

LOCATION.--Lat 48°58'52", long 103°04'34", near north line of NE¼ sec.1, T.163 N., R.96 W., Divide County, Hydrologic Unit 09010001, on right bank 150 ft (46 m) upstream from county highway bridge, 1.5 mi (2.4 km) upstream from international boundary, and 7 mi (11 km) northwest of Noonan.

DRAINAGE AREA.--1,790 mi^2 (4,640 km^2), approximately, of which about 1,160 mi^2 (3,000 km^2) is probably non-contributing.

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

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,840 ft (561 m), from topographic map. Prior to Aug. 18, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--22 years, 53.4 ft^3/s (1.512 m^3/s), 38,690 acre-ft/yr (47.7 hm^3/yr); median of yearly mean discharges, 34 ft^3/s (0.96 m^3/s), 24,600 acre-ft/yr (30 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,310 ft^3/s (179 m^3/s) Mar. 31, 1976, gage height, 17.61 ft (5.367 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 400 ft^3/s (11.3 m^3/s) Feb. 21, gage height, 7.37 ft (2.246 m), backwater from ice, only peak above base of 200 ft^3/s (5.66 m^3/s); maximum gage height, 7.44 ft (2.268 m) Feb. 22, backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.07	.28	.10	.00	39	2.3	.41	.12	.06	.00	.00
2	.02	.10	.25	.08	.00	37	2.0	.39	.12	.06	.00	.00
3	.02	.12	.21	.04	.00	32	1.7	.29	.10	.04	.00	.00
4	.01	.14	.21	.02	.00	27	1.4	.25	.15	.03	.00	.00
5	.01	.12	.20	.01	.00	28	1.2	.20	.14	.02	.00	.00
6	.00	.16	.18	.02	.00	30	1.1	.16	.16	.01	.00	.00
7	.00	.14	.15	.02	.00	23	1.1	.14	.26	.00	.00	.00
8	.00	.42	.12	.02	.00	20	1.0	.25	.14	.00	.00	.00
9	.00	.34	.10	.02	.00	18	.91	.34	.11	.00	.00	.00
10	.00	.25	.10	.02	.00	16	.73	.30	.10	.00	.00	.00
11	.00	.25	.10	.02	.00	14	.60	.23	.07	.00	.00	.00
12	.00	.28	.10	.01	.00	14	.71	.22	.07	.00	.00	.00
13	.00	.31	.10	.01	.00	12	.61	.22	.40	.00	.00	.00
14	.00	.31	.10	.01	.00	11	.55	.22	.66	.01	.00	.00
15	.00	.31	.12	.01	.20	10	.56	.17	.39	.03	.00	.00
16	.01	.25	.12	.00	2.0	9.3	.52	.12	.34	.01	.00	.00
17	.02	.25	.12	.00	6.0	7.9	.42	.17	.38	.00	.00	.00
18	.02	.25	.10	.00	62	6.5	.44	.22	.34	.00	.00	.00
19	.02	.25	.06	.00	250	5.7	.38	.23	.25	.00	.00	.00
20	.02	.31	.04	.00	292	4.8	.34	.20	.18	.01	.00	.00
21	.02	.31	.03	.00	375	4.3	.46	.19	.16	.05	.00	.00
22	.02	.34	.02	.00	366	3.7	.45	.28	.22	.03	.00	.00
23	.06	.34	.01	.00	257	3.5	.35	.26	.20	.02	.00	.00
24	.06	.34	.01	.00	155	3.3	.32	.32	.20	.01	.00	.00
25	.05	.31	.01	.00	96	3.7	.31	.33	.14	.00	.00	.00
26	.04	.31	.05	.00	46	2.9	.37	.28	.11	.00	.00	.00
27	.04	.31	.15	.00	55	2.9	.38	.29	.08	.00	.00	.00
28	.04	.31	.10	.00	33	4.3	.39	.34	.07	.00	.00	.00
29	.05	.31	.10	.00	---	4.3	.50	.31	.07	.02	.00	.00
30	.08	.31	.12	.00	---	4.0	.42	.23	.06	.01	.00	.00
31	.07	---	.12	.00	---	3.1	---	.15	---	.01	.00	---
TOTAL	.70	7.82	3.48	.41	1995.20	405.2	22.52	7.71	5.79	.43	.00	.00
MEAN	.023	.26	.11	.013	71.3	13.1	.75	.25	.19	.014	.000	.000
MAX	.08	.42	.28	.10	375	39	2.3	.41	.66	.06	.00	.00
MIN	.00	.07	.01	.00	.00	2.9	.31	.12	.06	.00	.00	.00
AC-FT	1.4	16	6.9	.8	3960	804	45	15	11	.9	.00	.00

CAL YR 1980 TOTAL 1386.87 MEAN 3.79 MAX 73 MIN .00 AC-FT 2750
WTR YR 1981 TOTAL 2449.26 MEAN 6.71 MAX 375 MIN .00 AC-FT 4860

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND

LOCATION.--Lat 48°58'04", long 102°51'04", in SW¼SW¼SW¼ sec.2, T.163 N., R.94 W., Burke County, Hydrologic Unit 09010001, on right bank 1,000 ft (305 m) downstream from bridge on county road, 5.4 mi (8.7 km) northwest of Columbus, 3.1 mi (5.0 km) upstream from international boundary, and 6 mi (9.7 km) upstream from the confluence with East Branch Short Creek.

DRAINAGE AREA.--167 mi^2 (432 km^2), of which 87 mi^2 (225 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 1,880 ft (573 m), from topographic map.

REMARKS.--Records good except those for February 16 to March 2, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft^3/s (43.6 m^3/s) Apr. 19, 1979, gage height, 8.04 ft (2.451 m); maximum gage height, 10.77 ft (3.283 m) Apr. 18, 1979, ice jam; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 80 ft^3/s (2.27 m^3/s) Feb. 18, gage height, unknown, no peak above base of 100 ft^3/s (2.83 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	5.0	.59	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	5.2	.51	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	5.5	.44	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	5.2	.34	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	3.0	.25	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	2.5	.25	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	2.1	.15	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	1.9	.11	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	2.0	.09	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	1.7	.05	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	1.5	.03	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	1.3	.02	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	3.6	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	30	3.3	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	70	2.5	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	75	2.0	.01	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	60	2.0	.06	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	50	1.8	.06	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	30	1.5	.06	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	15	1.2	.05	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	10	1.0	.04	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	5.0	.99	.02	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	3.1	.88	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	3.4	.73	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	4.0	.64	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	4.4	.64	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.68	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.78	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.78	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	359.90	67.12	3.13	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	12.9	2.17	.10	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	75	5.5	.59	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.64	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	714	133	6.2	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 453.94 MEAN 1.24 MAX 35 MIN .00 AC-FT 900
WTR YR 1981 TOTAL 430.15 MEAN 1.18 MAX 75 MIN .00 AC-FT 853

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to September 1981 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
FEB												
19...	1235	60	630	7.7	9.0	.5	10.8	80	79	0	16	9.4
25...	1110	3.1	910	8.0	-1.0	.0	9.7	70	--	--	--	--
MAR												
12...	1010	1.3	1270	8.2	4.0	4.0	11.4	93	190	0	38	22
25...	0930	.88	1670	8.5	3.0	4.5	13.1	106	--	--	--	--
APR												
22...	1030	.06	2100	8.9	17.0	10.0	9.6	91	270	0	48	37

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY, CARBON-ATE FET-FLD (MG/L CACO3) (00430)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
FEB												
19...	100	71	4.9	9.6	120	180	7.4	.2	11	401	406	.55
25...	--	--	--	--	221	--	--	--	--	--	--	--
MAR												
12...	240	72	7.7	11	280	390	15	.2	16	913	901	1.2
25...	--	--	--	--	372	--	--	--	--	--	--	--
APR												
22...	400	75	11	12	460	630	37	.3	5.1	1540	1450	2.0

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)
FEB												
19...	65.3	--	--	--	--	--	--	--	3	1	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	3.3	.00	.090	1.6	1.70	.090	.28	.120	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22...	.25	.01	.100	1.0	1.10	.090	.28	.070	5	0	0	100

DATE	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
FEB												
19...	--	--	0	--	<1	40	10	10	0	--	--	5
25...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	--	--	--	--	--	90	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22...	0	200	0	0	0	120	10	10	0	3	10	6

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
FEB											
19...	4	1	--	460	--	--	--	60	30	30	.1
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	110	--	--	--	20	10	10	--
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
22...	2	4	16	60	80	0	90	40	30	10	.2

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
FEB											
19...	.1	.0	--	5	3	2	0	0	1	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
22...	.1	.1	.00	1	0	3	0	0	0	0	750

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)
FEB									
19...	40	30	8	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
MAR									
12...	--	--	--	--	--	--	--	--	--
APR									
22...	120	110	10	15	<37	<.4	<18	<.4	<17

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	PUTAS-SIUM 40 DIS-SOLVED (PCI/L AS K40) (82068)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS (UG/L) (32730)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
FEB								
19...	--	7.2	--	--	.00	5	36	5.9
25...	--	--	--	--	--	--	16	.13
MAR								
12...	--	8.2	25	1.0	--	--	7	.03
APR								
22...	<.4	9.0	49	.5	.00	5	3	.00

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO APRIL 1981

DATE	FEB 19,81		MAR 12,81		APR 22,81	
TIME	1235		1010		1030	
TOTAL CELLS/ML	1100		5600		6200	
DIVERSITY: DIVISION	1.2		1.2		1.5	
.CLASS	1.2		1.2		1.5	
..ORDER	1.8		1.8		2.0	
...FAMILY	1.8		2.4		2.2	
....GENUS	2.0		2.5		2.8	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	*	0	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	42	4	110	2	2700#	43
....DICTYOSPHAERIUM	--	-	--	-	370	6
....KIRCHNERIELLA	28	2	*	0	--	-
....SELENASTRUM	--	-	--	-	140	2
....TREUBARIA	--	-	--	-	46	1
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	180	3
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	640#	57	890#	16	--	-
...SPONDYLOMORACEAE						
....PASCHERIELLA	--	-	1100#	20	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	*	0	140	2
....STEPHANODISCUS	--	-	--	-	460	7
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	14	1	*	0	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	*	0	46	1
...NAVICULACEAE						
....NAVICULA	--	-	56	1	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	--	-	420	7
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	340	6	370	6
....ANACYSTIS	180#	16	140	2	600	10
....COCCOCHLORIS	56	5	--	-	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....APHANIZOMENON	--	-	170	3	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	2500#	45	690	11
...RIVULARIACEAE						
....RAPHIDIOPSIS	140	12	84	1	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	46	1
....TRACHELOMONAS	--	-	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..GYMNODINIALES						
...GYMNODINIACEAE						
....GYMNODINIUM	--	-	*	0	--	-
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	28	2	--	-	46	1
...PERIDINIACEAE						
....PERIDINIUM	--	-	42	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05113750 EAST BRANCH SHORT CREEK RESERVOIR NEAR COLUMBUS, ND

LOCATION.--Lat 48°59'26", long 102°47'07", in SW¼NW¼ sec.32, T.164 N., R.93 W., Burke County, Hydrologic Unit 09010001, on left bank of reservoir on East Branch Short Creek, 0.5 mi (0.8 km) south of international boundary, and 6.0 mi (9.7 km) north of Columbus.

DRAINAGE AREA.--280 mi^2 (725 km^2), of which 175 mi^2 (453 km^2) is noncontributing.

PERIOD OF RECORD.--April 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth-fill dam; storage began April 1963. Outlet of lake is a fixed-crest concrete dam; average crest elevation, 1,886.90 ft (575.127 m) National Geodetic Vertical Datum of 1929. Reservoir capacity at crest elevation, 1,200 acre-ft (1.48 hm^3). The reservoir is operated for water supply and recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,850 acre-ft (2.28 hm^3) Mar. 28, 1976, gage height, 32.13 ft (9.793 m); minimum, 890 acre-ft (1.10 hm^3) Dec. 10, 1977, gage height, 23.92 ft (7.291 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,330 acre-ft (1.64 hm^3) Feb. 23, gage height, 28.06 ft (8.553 m); minimum, 1,050 acre-ft (1.29 hm^3) Dec. 24, gage height, 25.57 ft (7.794 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	25.90	1,080	--
Oct. 31	*25.71	1,060	-20
Nov. 30	25.62	1,050	-10
Dec. 31	25.72	1,060	+10
CAL YR 1980	--	--	-60
Jan. 31	25.71	1,060	0
Feb. 28	27.86	1,300	+240
Mar. 31	27.46	1,260	-40
Apr. 30	27.23	1,230	-30
May 31	26.93	1,190	-40
June 30	27.13	1,220	+30
July 31	26.63	1,160	-60
Aug. 31	26.71	1,170	+10
Sept. 30	26.37	1,130	-40
WTR YR 1981	--	--	+50

* - Estimated

05113800 SHORT CREEK BELOW INTERNATIONAL BOUNDARY NEAR ROCHE PERCEE, SASK.
(International gaging station)

LOCATION.--Lat 49°01'42", long 102°51'00", in SW¼ sec.14, T.1, R.7 W., 2d meridian, Hydrologic Unit 09010001
4 mi (6 km) southwest of Roche Percee, Saskatchewan, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--480 mi^2 (1,240 km^2).

PERIOD OF RECORD.--March 1960 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for the winter period, which are fair.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--21 years, 13.5 ft^3/s (0.382 m^3/s), 9,780 acre-ft/yr (12.1 hm^3/yr); median of yearly mean discharges, 4.8 ft^3/s (0.14 m^3/s), 3,500 acre-ft/yr (4.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft^3/s (48.1 m^3/s) Apr. 7, 1969, gage height, 14.33 ft (4.368 m); maximum gage height, 14.39 ft (4.386 m) Mar. 28, 1960; no flow on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 88 ft^3/s (2.48 m^3/s) Feb. 21, gage height, 6.43 ft (1.960 m), backwater from ice; maximum gage height, 6.69 ft (2.039 m) Feb. 18, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	17	.88	.00	.00	.00	.00	.04
2	.00	.00	.00	.00	.00	12	.92	.04	.00	.00	.00	.04
3	.00	.00	.00	.00	.00	9.2	.71	.04	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	6.1	.56	.04	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	4.8	.49	.04	.00	.00	.00	.00
6	.00	.04	.00	.00	.00	3.6	.35	.04	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	3.3	.25	.07	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	2.8	.25	.11	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	2.7	.21	.11	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	2.8	.21	.07	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	2.8	.14	.07	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	2.5	.14	.07	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	2.1	.11	.04	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	2.2	.11	.00	.04	.00	.00	.00
15	.00	.00	.00	.00	1.1	5.5	.07	.00	.04	.00	.00	.00
16	.00	.00	.00	.00	3.2	5.2	.07	.00	.04	.00	.00	.00
17	.00	.00	.00	.00	44	4.2	.04	.00	.07	.00	.00	.00
18	.00	.00	.00	.00	68	3.6	.00	.00	.11	.00	.46	.00
19	.00	.00	.00	.00	68	3.0	.00	.00	.11	.00	.21	.00
20	.00	.00	.00	.00	63	2.7	.00	.00	.07	.00	.07	.00
21	.00	.00	.00	.00	67	2.4	.00	.00	.11	.00	.07	.00
22	.00	.00	.00	.00	69	2.0	.00	.00	.11	.00	.04	.00
23	.00	.00	.00	.00	60	1.6	.00	.00	.11	.00	.07	.00
24	.00	.00	.00	.00	51	1.3	.00	.00	.07	.00	.14	.00
25	.00	.00	.00	.00	32	1.3	.00	.00	.04	.00	.14	.00
26	.00	.00	.00	.00	19	1.3	.00	.00	.00	.00	.11	.00
27	.00	.00	.04	.00	29	1.2	.00	.00	.00	.00	.11	.00
28	.00	.00	.07	.00	12	1.2	.00	.00	.00	.00	.07	.00
29	.00	.00	.00	.00	---	.88	.04	.00	.00	.00	.07	.00
30	.00	.00	.00	.00	---	.81	.04	.00	.00	.00	.07	.00
31	.00	---	.00	.00	---	.85	---	.00	---	.00	.04	---
TOTAL	.00	.04	.11	.00	586.30	112.94	5.59	.74	.92	.00	1.67	.08
MEAN	.000	.001	.004	.000	20.9	3.64	.19	.024	.031	.000	.054	.003
MAX	.00	.04	.07	.00	69	17	.92	.11	.11	.00	.46	.04
MIN	.00	.00	.00	.00	.00	.81	.00	.00	.00	.00	.00	.00
AC-FT	.00	.08	.2	.00	1160	224	11	1.5	1.8	.00	3.3	.2

CAL YR 1980 TOTAL 488.40 MEAN 1.33 MAX 36 MIN .00 AC-FT 969
WTR YR 1981 TOTAL 708.39 MEAN 1.94 MAX 69 MIN .00 AC-FT 1410

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW¼SE¼NE¼ sec.33, T.164 N., R.87 W., Renville County, Hydrologic Unit 09010001, on right bank 0.8 mi (1.3 km) downstream from international boundary, 16 mi (26 km) northwest of Sherwood, and at mile 511.4 (822.8 km).

DRAINAGE AREA.--8,940 mi^2 (23,150 km^2), approximately, of which about 5,900 mi^2 (15,300 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1934, 1945. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.73 ft (488.817 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 8, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by reservoirs in Canada. Some small diversions for irrigation and municipal supply.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--51 years, 140 ft^3/s (3.965 m^3/s), 101,400 acre-ft/yr (125 hm^3/yr); median of yearly mean discharges, 78 ft^3/s (2.21 m^3/s), 56,500 acre-ft/yr (70 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft^3/s (419 m^3/s) Apr. 10, 1976, gage height, 25.15 ft (7.666 m); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of about 22 ft (6.7 m) and flood in 1904 reached a stage of about 25.8 ft (7.86 m) from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 660 ft^3/s (18.7 m^3/s) Feb. 21, gage height, 8.95 ft (2.728 m), backwater from ice; minimum daily, 0.17 ft^3/s (0.005 m^3/s) Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	1.9	3.0	2.7	1.9	150	17	8.0	2.2	.80	.20	.40
2	.70	1.9	2.9	2.7	1.9	110	17	7.8	2.0	.80	.20	.40
3	.80	1.8	2.9	2.7	1.9	70	17	7.6	1.8	.70	.20	.40
4	.80	1.9	2.9	2.7	1.9	68	16	7.4	1.7	.70	.17	.40
5	.70	1.9	2.9	2.7	1.9	62	14	7.4	1.7	.65	.20	.40
6	.70	2.0	2.8	2.7	1.9	58	14	7.4	1.7	.60	1.0	.40
7	.70	1.8	2.8	2.7	1.9	54	14	7.3	1.6	.60	1.0	.40
8	.70	1.9	2.8	2.6	1.9	50	13	7.6	1.6	.60	.90	.40
9	.70	1.9	2.8	2.6	1.9	48	12	7.3	1.6	.60	.90	.40
10	.60	1.9	2.8	2.6	1.8	47	12	6.9	1.5	.60	.85	.40
11	.60	2.0	2.8	2.6	1.8	53	12	6.6	1.5	.60	.80	.40
12	.70	2.1	2.9	2.6	1.8	51	11	6.2	1.5	.55	.70	.35
13	.70	2.5	2.9	2.6	1.7	48	11	6.0	1.4	.50	.60	.30
14	.70	2.8	2.9	2.6	1.7	48	10	5.4	1.4	.50	.60	.30
15	.80	2.8	2.9	2.6	1.8	49	10	5.2	1.4	.50	.50	.30
16	1.0	2.8	2.9	2.6	3.5	43	9.9	5.0	1.3	.50	.50	.30
17	1.1	2.8	2.9	2.6	100	39	9.9	5.0	1.3	.45	.50	.30
18	1.0	2.8	2.9	2.6	250	41	9.9	4.7	1.3	.40	.50	.30
19	1.0	3.0	2.7	2.5	375	27	9.7	4.4	1.2	.35	.50	.30
20	1.1	3.0	2.5	2.4	490	27	9.2	4.1	1.2	.30	.50	.30
21	1.2	3.0	2.5	2.4	585	26	9.0	3.8	1.2	.30	.45	.30
22	1.2	3.0	2.5	2.3	455	21	9.0	3.5	1.1	.30	.40	.30
23	1.3	3.0	2.5	2.3	395	23	9.2	3.2	1.1	.30	.40	.30
24	2.3	3.0	2.5	2.3	345	23	8.8	3.2	1.1	.30	.40	.30
25	2.3	3.0	2.5	2.3	295	22	8.5	3.2	1.0	.30	.40	.30
26	2.2	3.0	2.5	2.2	260	21	8.3	3.0	1.0	.30	.40	.30
27	2.4	3.0	2.5	2.1	220	18	8.1	2.9	1.0	.30	.40	.30
28	2.4	3.0	2.6	2.0	205	20	8.3	2.7	.95	.30	.40	.25
29	2.3	3.0	2.7	2.0	---	19	8.3	2.5	.90	.25	.40	.25
30	1.9	3.0	2.7	2.0	---	18	8.1	2.3	.85	.25	.40	.25
31	1.8	---	2.7	2.0	---	18	---	2.2	---	.25	.40	---
TOTAL	37.10	75.5	85.1	76.3	4006.2	1372	334.2	159.8	41.10	14.45	15.77	10.00
MEAN	1.20	2.52	2.75	2.46	143	44.3	11.1	5.15	1.37	.47	.51	.33
MAX	2.4	3.0	3.0	2.7	585	150	17	8.0	2.2	.80	1.0	.40
MIN	.60	1.8	2.5	2.0	1.7	18	8.1	2.2	.85	.25	.17	.25
AC-FT	74	150	169	151	7950	2720	663	317	82	29	31	20

CAL YR 1980 TOTAL 10047.80 MEAN 27.5 MAX 598 MIN .40 AC-FT 19930
WTR YR 1981 TOTAL 6227.52 MEAN 17.1 MAX 585 MIN .17 AC-FT 12350

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to September 1981 (discontinued).

REMARKS.--No specific conductance or temperature record Oct. 1 to Dec. 2 and July 26 - Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,700 micromhos Mar. 27, 1978; minimum daily, 310 micromhos May 10, 11, 1979.
WATER TEMPERATURES: Maximum daily, 29.0°C July 7, 1981; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 306 mg/L May 22, 1975; minimum daily mean, 4 mg/L Feb. 14 to Mar. 17, 1978.
SEDIMENT LOADS: Maximum daily, 2,810 tons (2,550 metric tons) Apr. 9, 1976; minimum daily, <0.01 ton (<0.01 metric ton) on several days in 1980 and July 7, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 2,650 micromhos Jan. 9; minimum observed, 600 micromhos Mar. 3.
WATER TEMPERATURES: Maximum observed, 29.0°C July 7, minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 68 mg/L Dec. 13, minimum daily, 4 mg/L Nov. 6.
SEDIMENT LOADS: Maximum daily, 49 tons (44 metric tons) Feb. 22; minimum daily, <0.01 ton (<0.01 metric ton) July 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT												
01...	1115	.57	1040	7.8	15.0	11.5	35	4.0	36	42	K12	--
NOV												
06...	1515	1.9	1010	8.2	9.0	4.5	25	--	--	42	--	--
DEC												
03...	1545	2.9	1510	8.3	-9.0	.5	30	13.1	91	46	K3	--
JAN												
08...	1200	2.7	2470	7.7	-9.0	.5	30	2.6	18	56	K2	--
FEB												
04...	1700	1.9	2050	7.5	-5.0	.0	30	2.3	16	49	K5	--
19...	1750	400	640	--	7.0	.0	--	--	--	--	--	--
MAR												
04...	1245	68	630	7.8	3.0	.0	120	10.3	--	56	K20	--
31...	1515	18	745	8.3	11.0	5.5	50	13.0	104	35	K5	--
MAY												
05...	1145	7.4	1060	8.3	13.0	13.0	25	8.9	83	74	210	--
JUN												
03...	1610	1.8	1100	8.2	26.0	19.0	30	9.7	104	39	98	--
JUL												
07...	1600	.61	970	8.0	33.0	29.0	30	5.2	68	43	340	--
AUG												
04...	1035	.17	1010	7.9	23.5	20.0	30	3.2	35	190	410	--
SEP												
02...	1215	E1.2	755	7.9	24.0	15.5	30	47.0	47	74	K26	--

E - Estimated
K - Results based on colony count outside the acceptable range (non-ideal colony count).

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
OCT												
01...	337	.00	69	40	100	38	2.4	110	10	340	8.6	140
NOV												
06...	--	--	--	--	--	--	--	--	--	330	3.3	140
DEC												
03...	424	.00	79	55	190	48	4.1	200	14	450	3.6	210
JAN												
08...	724	74	140	91	350	51	5.8	360	14	650	21	510
FEB												
04...	621	41	120	78	260	47	4.7	270	14	580	29	490
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
04...	152	12	31	18	78	51	2.8	89	11	140	3.6	170
31...	185	.00	41	20	100	53	3.3	108	7.9	190	1.5	180
MAY												
05...	282	.00	62	31	130	49	3.5	139	9.3	300	2.4	210
JUN												
03...	313	.00	66	36	130	47	3.3	139	9.0	350	3.5	190
JUL												
07...	282	.00	60	32	110	45	2.9	121	11	300	4.8	170
AUG												
04...	296	.00	61	35	120	46	3.1	129	8.7	360	7.3	92
SEP												
02...	224	.00	45	27	79	42	2.4	88	9.2	260	5.2	82

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT												
01...	62	.2	9.7	669	636	.91	1.0	11	.00	.000	.00	.00
NOV												
06...	59	.2	--	649	--	.88	3.4	0	.00	.000	.00	.00
DEC												
03...	130	.2	10	1010	959	1.4	7.9	5	.00	.000	.00	.00
JAN												
08...	190	.3	14	1750	1700	2.4	12.7	19	.03	.010	.04	.04
FEB												
04...	120	.2	16	1400	1450	1.9	7.2	9	.03	.010	.04	.06
19...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
04...	13	.1	8.3	428	414	.58	78.9	19	.28	.020	.30	.00
31...	21	.2	5.3	499	490	.68	24.1	16	.00	.010	.01	.01
MAY												
05...	51	.2	3.5	710	678	.97	14.2	9	.01	.010	.02	.00
JUN												
03...	59	.2	9.5	728	710	.99	3.4	11	.00	.010	.01	.00
JUL												
07...	51	.1	13	636	629	.87	1.0	5	.22	.010	.23	.19
AUG												
04...	58	.2	14	653	606	.89	.30	37	.10	.030	.13	.13
SEP												
02...	44	.1	10	466	453	.63	.94	11	.02	.000	<.10	<.10

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
OCT											
01...	.010	--	.01	--	1.7	1.70	1.7	7.5	.210	.37	.64
NOV											
06...	.000	--	.00	--	1.0	1.00	1.0	4.4	.210	.18	.64
DEC											
03...	.030	--	.04	--	1.3	1.30	1.3	5.8	.100	.18	.31
JAN											
08...	.150	--	.18	--	1.9	2.00	2.0	9.0	.140	.89	.43
FEB											
04...	.340	--	--	--	.76	1.10	1.1	5.0	.150	--	.46
19...	--	--	--	--	--	--	--	--	--	--	--
MAR											
04...	.390	--	--	--	1.4	1.80	2.1	9.3	.300	--	.92
31...	.080	.010	--	.01	1.2	1.30	1.3	5.8	.170	--	.52
MAY											
05...	.100	.080	--	.10	2.5	2.60	2.6	12	.150	--	.46
JUN											
03...	.070	.080	--	.10	1.2	1.30	1.3	5.8	.430	--	1.3
JUL											
07...	.330	--	--	--	1.6	1.90	2.1	9.4	.680	--	2.1
AUG											
04...	.270	--	--	--	1.3	1.60	1.7	7.7	.470	--	1.4
SEP											
02...	.110	--	--	--	1.3	1.40	1.4	6.3	.450	--	1.4

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO, + ORTHO TOTAL (MG/L AS P) (00678)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)
OCT												
01...	.130	.120	--	--	.03	.15	.06	160	150	10	6	0
NOV												
06...	.160	.060	--	--	.00	.00	.21	--	--	--	--	--
DEC												
03...	.120	.060	--	--	.00	.00	.10	--	--	--	--	--
JAN												
08...	.130	.290	--	--	.00	.12	.02	--	--	--	--	--
FEB												
04...	.090	.130	--	--	.00	.11	.04	--	--	--	--	--
MAR												
04...	.210	.160	--	--	.11	.27	.03	--	--	--	--	--
31...	.060	.070	--	--	.06	.13	.04	250	240	10	4	3
MAY												
05...	.110	.120	--	--	.00	.11	.04	--	--	--	--	--
JUN												
03...	.270	.000	.000	.00	.25	.25	.18	--	--	--	--	--
JUL												
07...	.620	.560	--	--	.03	.59	.09	--	--	--	--	--
AUG												
04...	.370	.350	--	--	.05	.40	.07	--	--	--	--	--
SEP												
02...	.390	.340	--	--	.00	.26	.19	--	--	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT												
01...	6	100	30	70	0	--	<1	210	310	0	<1	0
NOV												
06...	--	--	--	--	--	--	--	--	190	--	--	--
DEC												
03...	--	--	--	--	--	--	--	--	290	--	--	--
JAN												
08...	--	--	--	--	--	--	--	--	320	--	--	--
FEB												
04...	--	--	--	--	--	--	--	--	300	--	--	--
MAR												
04...	--	--	--	--	--	--	--	--	240	--	--	--
31...	1	100	50	50	0	0	0	340	130	0	<1	30
MAY												
05...	--	--	--	--	--	--	--	--	240	--	--	--
JUN												
03...	--	--	--	--	--	--	--	--	220	--	--	--
JUL												
07...	--	--	--	--	--	--	--	--	200	--	--	--
AUG												
04...	--	--	--	--	--	--	--	--	110	--	--	--
SEP												
02...	--	--	--	--	--	--	--	--	110	--	--	--

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT											
01...	0	0	0	<3	4	2	2	460	410	50	3
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
31...	20	10	1	<3	7	5	2	1200	1200	50	2

DATE	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT											
01...	1	2	50	0	50	520	50	470	.0	.0	.0
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
31...	2	0	30	0	30	180	80	100	.0	.0	.0

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, DISSOLVED (UG/L AS AG) (01075)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT											
01...	1	<10	5	4	0	0	0	0	0	0	--
NOV											
06...	--	--	3	--	--	--	--	--	0	--	--
DEC											
03...	--	--	9	--	--	--	--	--	0	--	--
JAN											
08...	--	--	6	--	--	--	--	--	0	--	--
FEB											
04...	--	--	5	--	--	--	--	--	0	--	--
MAR											
04...	--	--	5	--	--	--	--	--	0	--	--
31...	1	<10	7	3	4	0	0	0	1	0	5.0
MAY											
05...	--	--	7	--	--	--	--	--	0	--	--
JUN											
03...	--	--	4	--	--	--	--	--	0	--	--
JUL											
07...	--	--	3	--	--	--	--	--	0	--	--
AUG											
04...	--	--	6	--	--	--	--	--	0	--	--
SEP											
02...	--	--	3	--	--	--	--	--	0	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS (UG/L) (32730)	PCB, TOTAL (UG/L) (39516)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)
OCT												
01...	10	20	6	.00	4	.00	.00	.00	.00	.00	.00	.00
NOV												
06...	10	--	--	.00	7	--	--	--	--	--	--	--
DEC												
03...	10	--	--	.00	0	--	--	--	--	--	--	--
JAN												
08...	30	--	--	--	1	--	--	--	--	--	--	--
FEB												
04...	20	--	--	.00	0	.00	.00	.00	.00	.00	.00	.00
MAR												
04...	30	--	--	.00	3	--	--	--	--	--	--	--
31...	620	--	<3	.00	1	.00	.00	.00	.00	.00	.00	.00
MAY												
05...	10	--	--	.00	1	--	--	--	--	--	--	--
JUN												
03...	0	--	--	.00	1	--	--	--	--	--	--	--
JUL												
07...	10	--	--	.01	1	.00	.00	.00	.00	.00	.00	.00
AUG												
04...	10	--	--	.00	1	--	--	--	--	--	--	--
SEP												
02...	10	--	--	.00	1	--	--	--	--	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	TOTAL TRI-THION (UG/L) (39786)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)
OCT											
01...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
04...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
01...	.00	.00	.00	.00	.00	.00	.02	.00	.00	12	.02
NOV											
06...	--	--	--	--	--	--	--	--	--	4	.02
DEC											
03...	--	--	--	--	--	--	--	--	--	22	.17
JAN											
08...	--	--	--	--	--	--	.02	.00	.00	49	.35
FEB											
04...	.00	.00	.00	.00	.00	.00	--	--	--	10	.05
MAR											
04...	--	--	--	--	--	--	--	--	--	18	3.3
31...	.00	.00	.00	.00	.00	.00	.08	.00	.00	16	.77
MAY											
05...	--	--	--	--	--	--	--	--	--	8	.16
JUN											
03...	--	--	--	--	--	--	--	--	--	10	.05
JUL											
07...	.00	.00	.00	.00	.00	.00	--	--	--	6	.01
AUG											
04...	--	--	--	--	--	--	--	--	--	26	.01
SEP											
02...	--	--	--	--	--	--	--	--	--	10	.02

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	---	---	2420	2130	650	775	990	1000	1100	---	---
2	---	---	---	2420	2150	650	775	1000	1030	1000	---	755
3	---	---	1610	2300	2100	600	790	1050	1000	1000	---	---
4	---	---	1610	2400	2100	700	725	1050	1000	1000	1010	---
5	---	---	1610	2450	2150	650	790	1050	1030	950	---	---
6	---	1010	1610	2550	2200	700	790	1050	1030	950	---	---
7	---	---	1650	2550	2150	675	800	1050	1050	970	---	---
8	---	---	1670	2600	2150	700	800	1050	1050	900	---	---
9	---	---	1670	2650	2100	700	850	1100	1100	900	---	---
10	---	---	1670	2400	2100	700	850	1100	1100	900	---	---
11	---	---	1610	2450	2150	700	860	1100	1100	975	---	---
12	---	---	1610	2450	2130	725	900	1030	1100	975	---	---
13	---	---	1610	2450	1500	750	890	1030	1050	1000	---	---
14	---	---	1600	2300	1330	725	890	1030	1050	975	---	---
15	---	---	1600	2300	1330	700	890	1030	1050	975	---	---
16	---	---	1650	2350	1100	650	950	1000	1050	900	---	---
17	---	---	1650	2350	1100	700	950	1000	1050	900	---	---
18	---	---	1700	2250	1130	725	900	1000	1100	900	---	---
19	---	---	1700	2300	900	750	925	1030	1100	950	---	---
20	---	---	1670	2250	925	750	925	1030	1100	975	---	---
21	---	---	1670	2200	865	725	900	975	1100	950	---	---
22	---	---	1670	2200	700	725	990	975	1100	950	---	---
23	---	---	1650	2250	700	725	1000	975	1100	950	---	---
24	---	---	1650	2300	625	725	1000	1000	1100	900	---	---
25	---	---	1610	2250	650	750	990	1000	1130	950	---	---
26	---	---	1610	2200	650	725	975	1000	1100	---	---	---
27	---	---	1650	2200	650	725	975	1000	1100	---	---	---
28	---	---	1650	2100	650	750	1000	975	1100	---	---	---
29	---	---	1650	2100	---	700	1030	975	1100	---	---	---
30	---	---	2100	2100	---	800	995	975	1100	---	---	---
31	---	---	2150	2150	---	800	---	1000	---	---	---	---
MEAN	1040	1010	1670	2330	1440	711	896	1020	1070	956	1010	755

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.5	---	---	.0	.0	.0	6.0	14.5	16.5	19.5	---	---
2	---	---	---	.5	.0	.0	6.0	14.0	17.5	19.5	---	15.5
3	---	---	.0	.5	.0	.0	7.0	14.5	17.5	19.5	---	---
4	---	---	.5	.0	.0	.0	7.5	14.5	17.5	19.0	20.0	---
5	---	---	.5	.0	.0	.0	7.5	14.5	17.5	19.0	---	---
6	---	4.5	.5	.0	.0	.0	7.5	14.0	17.5	19.0	---	---
7	---	---	.5	.0	.5	.0	8.0	15.0	18.0	29.0	---	---
8	---	---	.5	.0	.5	.0	7.5	15.0	18.0	19.5	---	---
9	---	---	.5	.0	.0	.0	7.5	15.0	18.0	19.0	---	---
10	---	---	.5	.0	.0	.5	8.0	16.5	18.0	19.0	---	---
11	---	---	.5	.0	.5	.5	8.0	16.0	18.0	18.0	---	---
12	---	---	.5	.0	.5	.5	8.5	16.0	18.0	18.0	---	---
13	---	---	.5	.0	.0	1.0	8.5	15.5	18.0	19.5	---	---
14	---	---	.0	.5	.0	1.0	9.0	15.5	18.0	19.5	---	---
15	---	---	.0	.0	1.0	2.0	9.0	16.5	18.5	19.0	---	---
16	---	---	.0	.0	.5	2.5	9.0	16.5	18.0	19.0	---	---
17	---	---	.0	.0	.0	2.0	10.0	16.5	18.5	19.0	---	---
18	---	---	.0	.0	1.0	2.5	10.5	16.0	18.5	20.0	---	---
19	---	---	.0	.0	.0	2.5	10.5	17.0	19.0	19.0	---	---
20	---	---	.5	.5	.5	3.0	10.5	17.5	18.5	19.5	---	---
21	---	---	.5	.5	.5	3.0	11.5	17.0	18.0	19.5	---	---
22	---	---	.5	.5	1.0	3.0	11.0	17.0	18.0	19.5	---	---
23	---	---	1.0	.5	.0	3.5	11.0	16.5	18.5	19.5	---	---
24	---	---	1.0	.0	.0	3.5	13.0	16.5	18.5	19.5	---	---
25	---	---	1.0	.0	.5	4.0	13.5	16.0	18.0	19.0	---	---
26	---	---	1.0	.0	.5	4.0	14.0	16.0	18.0	---	---	---
27	---	---	.5	.0	.0	4.0	14.0	16.0	19.0	---	---	---
28	---	---	.5	.0	.0	4.0	14.0	17.5	18.5	---	---	---
29	---	---	.5	.5	---	5.0	14.5	17.5	18.5	---	---	---
30	---	---	.0	.0	---	5.5	14.5	17.5	18.5	---	---	---
31	---	---	.0	.0	---	5.0	---	17.0	---	---	---	---
MEAN	11.5	4.5	.5	.0	.5	2.0	10.0	16.0	18.0	19.5	20.0	15.5

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12	.02	13	.07	28	.23	50	.36	31	.16	20	8.1
2	12	.02	11	.06	25	.20	48	.35	24	.12	20	5.9
3	11	.02	9	.04	22	.17	46	.34	17	.09	20	3.8
4	11	.02	7	.04	24	.19	47	.34	10	.05	20	3.7
5	12	.02	5	.03	26	.20	47	.34	15	.08	20	3.3
6	14	.03	4	.02	28	.21	48	.35	25	.13	20	3.1
7	16	.03	5	.02	34	.26	48	.35	35	.18	25	3.6
8	18	.03	6	.03	40	.30	49	.34	30	.15	20	2.7
9	20	.04	7	.04	46	.35	42	.29	30	.15	20	2.6
10	22	.04	8	.04	52	.39	36	.25	25	.12	10	1.3
11	23	.04	9	.05	58	.44	35	.25	25	.12	15	2.1
12	22	.04	10	.06	64	.50	34	.24	20	.10	10	1.4
13	20	.04	11	.07	68	.53	34	.24	20	.09	10	1.3
14	18	.03	12	.09	67	.52	33	.23	20	.09	15	1.9
15	16	.03	12	.09	66	.52	32	.22	20	.10	20	2.6
16	14	.04	16	.12	66	.52	31	.22	20	.19	20	2.3
17	13	.04	20	.15	65	.51	30	.21	20	5.4	20	2.1
18	12	.03	24	.18	65	.51	32	.22	20	13	15	1.7
19	14	.04	28	.23	64	.47	34	.23	20	20	15	1.1
20	16	.05	32	.26	64	.43	36	.23	20	26	14	1.0
21	18	.06	36	.29	64	.43	38	.25	20	32	13	.91
22	20	.06	41	.33	64	.43	40	.25	40	49	13	.74
23	22	.08	39	.32	63	.43	42	.26	45	48	13	.81
24	24	.15	38	.31	63	.43	44	.27	45	42	13	.81
25	26	.16	37	.30	63	.43	43	.27	40	32	12	.71
26	25	.15	36	.29	62	.42	42	.25	40	28	12	.68
27	23	.15	35	.28	62	.42	41	.23	30	18	12	.58
28	21	.14	34	.28	60	.42	40	.22	15	8.3	12	.65
29	19	.12	34	.28	57	.42	39	.21	---	---	13	.67
30	17	.09	31	.25	55	.40	38	.21	---	---	15	.73
31	15	.07	---	---	52	.38	38	.21	---	---	16	.78
TOTAL	---	1.88	---	4.62	---	12.06	---	8.23	---	323.62	---	63.67

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	20	.92	16	.35	13	.08	25	.05	26	.01	10	.01
2	20	.92	15	.32	12	.06	24	.05	26	.01	10	.01
3	25	1.1	13	.27	10	.05	24	.05	26	.01	10	.01
4	30	1.3	11	.22	15	.07	24	.05	26	.01	10	.01
5	25	.95	8	.16	20	.09	18	.03	26	.01	10	.01
6	25	.95	11	.22	24	.11	12	.02	30	.08	12	.01
7	20	.76	14	.28	25	.11	6	.00	30	.08	12	.01
8	20	.70	16	.33	27	.12	9	.01	30	.07	12	.01
9	15	.49	18	.35	28	.12	12	.02	25	.06	12	.01
10	15	.49	18	.34	29	.12	15	.02	20	.05	12	.01
11	14	.45	18	.32	30	.12	18	.03	18	.04	14	.02
12	17	.50	18	.30	32	.13	20	.03	16	.03	14	.01
13	20	.59	18	.29	33	.12	22	.03	14	.02	14	.01
14	23	.62	18	.26	33	.12	24	.03	12	.02	14	.01
15	25	.68	18	.25	32	.12	26	.04	10	.01	14	.01
16	27	.72	20	.27	31	.11	28	.04	10	.01	16	.01
17	29	.78	20	.27	30	.11	30	.04	10	.01	16	.01
18	31	.83	20	.25	29	.10	31	.03	10	.01	16	.01
19	30	.79	20	.24	28	.09	31	.03	10	.01	16	.01
20	28	.70	20	.22	28	.09	30	.02	10	.01	16	.01
21	27	.66	20	.21	28	.09	30	.02	10	.01	18	.01
22	25	.61	20	.19	28	.08	29	.02	10	.01	18	.01
23	24	.60	20	.17	28	.08	29	.02	10	.01	18	.01
24	23	.55	20	.17	27	.08	28	.02	10	.01	18	.01
25	22	.50	19	.16	27	.07	28	.02	10	.01	18	.01
26	21	.47	19	.15	27	.07	27	.02	10	.01	18	.01
27	20	.44	18	.14	26	.07	27	.02	10	.01	18	.01
28	19	.43	18	.13	26	.07	27	.02	10	.01	18	.01
29	18	.40	17	.11	26	.06	26	.02	10	.01	18	.01
30	17	.37	17	.11	25	.06	26	.02	10	.01	18	.01
31	---	---	15	.09	---	---	26	.02	10	.01	---	---
TOTAL	---	20.27	---	7.14	---	2.77	---	0.84	---	0.67	---	0.31

TOTAL LOAD FOR YEAR: 446.08 TONS.

05115500 LAKE DARLING NEAR FOXHOLM, ND

LOCATION.--Lat 48°27'27", long 101°35'14", in NE¼NE¼ sec.1, T.157 N., R.85 W., Ward County, Hydrologic Unit 09010001, on control structure of Lake Darling Dam, reservoir of Fish and Wildlife Service, on Souris River about 6 mi (10 km) north of Foxholm, and at mile 430.0 (691.9 km).

DRAINAGE AREA.--9,450 mi^2 (24,480 km^2), approximately, of which about 6,200 mi^2 (16,100 km^2) is probably noncontributing.

PERIOD OF RECORD.--April 1936 to current year (no winter records 1936-39).

REVISED RECORDS.--WSP 1338: 1942. WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,577.00 ft (480.670 m) National Geodetic Vertical Datum of 1929. April 1936 to Aug. 8, 1963, nonrecording gages at same site and datum.

REMARKS.--Gage heights frequently affected by wind. Reservoir is formed by earth dam; storage began in April 1936; dam completed in July 1936. Usable capacity, 108,500 acre-ft (134 hm^3) between gage heights of 0.0 ft, sill of control gages, and 21.0 ft (6.40 m), crest of spillway. Dead storage, 3,500 acre-ft (4.32 hm^3). Figures given herein represent total contents based on capacity table dated June 7, 1943. Water is used during periods of low flow at wildlife refuge downstream.

COOPERATION.--Supplementary gage readings furnished by Fish and Wildlife Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 145,400 acre-ft (179 hm^3) Apr. 17, 1976, gage height, 24.24 ft (7.388 m); minimum observed since April 1943 when reservoir was first filled to spillway level, 31,200 acre-ft (38.5 hm^3) Feb. 18, 25, 1963, gage height, 10.04 ft (3.060 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 82,300 acre-ft (101 hm^3) Apr. 5, gage height, 17.80 ft (5.425 m); minimum, 66,100 acre-ft (81.5 hm^3) Sept. 25, gage height, 15.89 ft (4.843 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	16.85	74,200	--
Oct. 31	16.63	72,400	-1,800
Nov. 30	16.56	71,800	-600
Dec. 31	16.54	71,600	-200
CAL YR 1980	--	--	-4,100
Jan. 31	16.54	71,600	0
Feb. 29	17.60	80,600	+9,000
Mar. 31	17.79	82,200	+1,600
Apr. 30	17.59	80,500	-1,700
May 31	17.18	77,000	-3,500
June 30	17.11	76,400	-600
July 31	16.73	73,200	-3,200
Aug. 31	16.32	69,700	-3,500
Sept. 30	15.93	66,400	-3,300
WTR YR 1981	--	--	-7,800

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND

LOCATION.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., Ward County, Hydrologic Unit 09010001, on left bank 30 ft (9 m) upstream from county highway bridge, 3 mi (5 km) east of Foxholm, 19 mi (31 km) upstream from Des Lacs River, and at mile 414.5 (666.9 km).

DRAINAGE AREA.--9,470 mi^2 (24,530 km^2), approximately, of which about 6,200 mi^2 (16,100 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1904 to November 1905, March to July 1906 (gage heights only), October 1936 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River near Foxholm, 1904-6.

REVISED RECORDS.--WSP 1308: 1905. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,560.73 ft (475.711 m) National Geodetic Vertical Datum of 1929. June 23, 1904, to July 31, 1906, nonrecording gage at site 3.2 mi (5.1 km) upstream at different datum. Apr. 1, 1937, to Mar. 25, 1938, nonrecording gage at site 600 ft (180 m) downstream at datum about 0.5 ft (0.15 m) higher.

REMARKS.--Records good. Flow almost completely regulated since 1936 by Lake Darling (station 05115500) 15 mi (24 km) upstream and several small reservoirs, combined capacity, about 184,000 acre-ft (227 hm^3). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--46 years, 147 ft^3/s (4.163 m^3/s), 106,500 acre-ft/yr (131 hm^3/yr); median of yearly mean discharges, 63 ft^3/s (1.78 m^3/s), 45,600 acre-ft/yr (56 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,600 ft^3/s (244 m^3/s) Apr. 17, 1976, gage height, 17.17 ft (5.233 m); maximum reverse flow, 25 ft^3/s (0.71 m^3/s) Apr. 4, 1949 caused by backwater from the Des Lacs River; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 240 ft^3/s (6.80 m^3/s) May 2, gage height, 6.04 ft (1.841 m); minimum daily, 0.38 ft^3/s (0.011 m^3/s) Apr. 7-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	14	12	8.7	9.2	2.3	9.6	53	19	5.4	6.1	2.0
2	11	14	12	8.7	9.2	2.8	3.5	137	17	5.4	6.1	1.8
3	11	13	12	8.7	9.2	2.8	1.4	44	17	5.4	6.1	1.4
4	10	13	12	8.7	9.2	3.0	.85	44	17	5.4	6.4	1.2
5	10	14	12	8.7	9.2	3.0	.72	44	17	5.4	6.4	1.3
6	10	12	12	8.7	9.2	2.6	.48	44	16	5.1	5.8	1.3
7	11	12	12	8.7	9.2	2.6	.38	44	16	5.1	6.1	1.1
8	13	13	12	8.7	7.8	2.6	.38	46	15	5.1	6.1	1.3
9	14	13	12	8.7	7.3	2.1	.38	46	15	6.1	6.1	1.3
10	16	13	12	8.7	8.2	2.1	.38	46	15	3.8	6.1	1.2
11	15	13	11	8.7	8.2	2.0	.38	46	15	3.5	6.1	1.3
12	15	13	11	8.7	8.2	1.6	.38	46	13	5.4	6.1	1.4
13	15	13	8.7	8.7	10	1.1	.38	46	5.4	5.8	5.1	1.4
14	15	13	8.7	8.7	11	.98	.60	46	4.2	6.4	4.8	1.3
15	14	13	8.7	8.7	11	.98	3.0	46	3.5	6.4	5.1	1.4
16	15	12	8.7	8.7	10	.85	2.8	46	2.8	6.9	5.4	1.4
17	16	12	8.7	8.7	8.2	4.0	2.6	46	2.6	6.4	5.4	1.6
18	15	12	8.7	8.7	6.4	10	2.3	46	3.2	6.9	5.4	1.8
19	15	12	8.7	8.7	5.8	8.7	2.1	46	4.5	6.4	5.4	1.4
20	19	13	8.7	8.7	5.8	8.2	1.3	46	5.1	6.9	5.1	1.8
21	30	12	8.7	9.2	5.8	8.2	.98	33	5.8	8.2	4.5	2.1
22	31	12	8.7	9.2	5.8	8.2	.72	19	5.8	6.9	4.8	2.1
23	31	12	8.7	9.2	3.5	7.8	.72	19	6.1	7.8	6.1	2.3
24	31	12	8.7	9.2	2.1	7.8	2.0	18	5.8	7.8	6.1	2.3
25	31	12	8.7	9.2	2.1	8.2	13	18	5.8	7.3	6.1	2.1
26	30	12	8.7	9.2	2.1	10	13	18	5.8	6.1	6.1	2.1
27	30	12	8.7	9.2	2.1	9.6	15	18	5.8	6.1	6.1	2.1
28	30	12	8.7	9.2	2.1	9.6	11	18	5.8	6.1	6.1	2.3
29	30	12	8.7	9.2	---	9.6	9.2	18	5.4	6.1	5.1	2.6
30	24	12	8.7	9.2	---	9.2	5.8	18	5.4	6.1	4.0	2.8
31	16	---	8.7	9.2	---	10	---	17	---	6.1	2.0	---
TOTAL	585	377	307.3	275.2	197.9	162.51	105.33	1222	280.8	187.8	172.2	51.5
MEAN	18.9	12.6	9.91	8.88	7.07	5.24	3.51	39.4	9.36	6.06	5.55	1.72
MAX	31	14	12	9.2	11	10	15	137	19	8.2	6.4	2.8
MIN	10	12	8.7	8.7	2.1	.85	.38	17	2.6	3.5	2.0	1.1
AC-FT	1160	748	610	546	393	322	209	2420	557	373	342	102

CAL YR 1980 TOTAL 5545.38 MEAN 15.2 MAX 538 MIN .85 AC-FT 11000
WTR YR 1981 TOTAL 3924.54 MEAN 10.8 MAX 137 MIN .38 AC-FT 7780

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1972 to current year.
WATER TEMPERATURE: October 1972 to current year.

REMARKS.--Records are considered poor.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,320 micromhos Jan. 4, 5, 1974; minimum, 234 micromhos June 26, 1974.
WATER TEMPERATURES: Maximum, 28.0°C on several days during July 1974 and June 16, 1975; minimum, 0.0°C on many days during winter months.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1			---	---	912	880	972	963				
2	*830		---	---	936	914	981	972				
3			---	---	938	929	1010	981				
4			---	---	940	936	1060	1000				
5			---	---	944	935	1020	1000	*1060		*990	
6			---	---	958	940	1010	997				
7			884	870	962	958	1020	991				
8			889	881	966	957	1020	995				
9			907	887	966	957	1010	993				
10			912	904	975	957	1020	985				
11			914	906	975	966	1020	989				
12			907	903	970	966	1010	1000				
13			913	904	970	966	1010	1010				
14			911	902	984	966	1020	1000				
15			917	908	983	974	1010	1000				
16			924	915	983	970	1020	1000				
17			921	912	974	956	1080	1010				
18			914	905	999	956	1030	1010				
19			907	898	1030	960	1030	1020				
20			895	886	1060	1030	1040	1020				
21			888	880	1060	1030	1040	1030				
22			881	873	1030	1020	1040	1020				
23			875	871	1020	999	1030	1030				
24			885	872	1010	999	1040	1030				
25			891	873	1010	1000	1040	1030				
26			889	871	1010	1010	1050	1030				
27			886	848	1010	1010	1110	1040				
28			884	875	1010	998	1070	1040				
29			881	872	998	977	---	---				
30			883	874	981	977	1130	1050				
31			---	---	977	968	1110	1040				
MONTH			924	848	1060	880	1130	963				

* Instantaneous readings only

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	792	747	934	926	998	965				
2	---	---	804	782	946	907	993	957				
3	---	---	802	772	932	882	979	952				
4	---	---	803	768	913	877	973	948			*950	
5	649	629	813	774	911	878	953	922				
6	672	643	819	778	919	899	936	916	*880			
7	690	666	826	793	927	908	930	917				
8	695	667	843	824	949	930	944	918				
9	701	679	874	830	963	944	964	940				
10	711	674	883	844	980	949	---	---				
11	712	696	877	842	988	958	---	---				
12	717	691	881	856	988	960	---	---				
13	718	686	886	856	977	960	---	---				
14	729	689	887	865	985	966	---	---				
15	722	671	895	857	1000	979	---	---				
16	695	654	893	871	1020	982	---	---				
17	688	664	904	871	999	977	---	---				
18	717	685	907	858	1020	996	---	---				
19	736	699	899	839	1020	1000	---	---				
20	744	731	886	840	1030	1010	---	---				
21	751	710	884	841	1020	993	---	---				
22	736	708	879	843	1020	1000	---	---				
23	743	697	937	879	1010	1000	---	---				
24	736	704	979	942	1030	1010	---	---				
25	720	707	989	982	1040	1010	---	---				
26	756	724	992	971	1030	1000	---	---				
27	747	741	979	966	1010	990	---	---				
28	753	746	977	933	995	982	---	---				
29	771	751	955	917	1020	995	---	---				
30	777	748	942	912	1010	984	---	---				
31	---	---	937	906	---	---	---	---				
MONTH	777	629	992	747	1040	877	998	916				

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1			---	---								
2	*12.0		---	---								
3			---	---								
4			---	---	*1.5							
5			---	---					*0.5		*5.5	
6			---	---								
7			6.5	6.0			*2.0					
8			6.0	5.0								
9			5.5	4.5								
10			4.5	3.5								
11			4.0	3.5								
12			3.5	3.0								
13			3.5	3.0								
14			3.5	3.0								
15			3.0	3.0								
16			3.0	2.5								
17			3.0	2.5								
18			3.0	3.0								
19			3.0	2.5								
20			3.5	3.0								
21			3.0	2.5								
22			3.5	3.0								
23			3.5	2.5								
24			2.5	2.5								
25			3.0	2.5								
26			2.5	2.5								
27			3.0	2.5								
28			2.5	2.5								
29			2.5	2.0								
30			2.5	2.0								
31			---	---								
MONTH			6.5	2.0								

* Instantaneous readings only

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	13.5	11.5	---	---	25.0	23.0				
2	---	---	13.5	12.0	---	---	25.5	24.5				
3	---	---	14.5	12.5	---	---	25.5	24.0				
4	---	---	16.0	13.0	21.0	18.5	25.5	24.5			*17.0	
5	---	---	16.0	14.0	21.0	18.5	26.0	25.5				
6	10.0	9.0	15.5	13.5	20.5	19.0	27.0	26.0	*25.0			
7	---	---	14.5	12.5	20.0	19.0	27.5	26.5				
8	---	---	12.5	11.0	19.5	18.0	27.0	25.0				
9	---	---	12.0	10.0	19.0	18.0	25.0	23.0				
10	11.5	8.0	12.0	9.5	19.0	17.0	---	---				
11	---	---	12.5	10.5	19.5	17.5	---	---				
12	10.5	8.0	12.5	11.0	19.5	18.0	---	---				
13	11.0	8.5	13.0	11.5	19.0	18.5	---	---				
14	10.5	8.0	13.5	12.5	19.0	18.0	---	---				
15	12.0	9.0	14.5	12.0	19.0	17.5	---	---				
16	14.0	11.0	14.0	12.5	18.5	16.0	---	---				
17	13.5	12.5	14.5	12.5	19.0	18.0	---	---				
18	13.0	11.0	16.0	13.0	18.0	16.5	---	---				
19	12.5	10.5	17.5	14.0	17.5	17.0	---	---				
20	---	---	17.5	14.5	17.5	16.0	---	---				
21	12.5	10.0	18.5	16.0	19.0	17.5	---	---				
22	13.5	11.0	19.0	17.5	19.0	17.5	---	---				
23	13.5	10.5	17.5	13.5	19.5	19.0	---	---				
24	14.0	11.5	13.5	11.0	19.5	17.5	---	---				
25	15.5	13.0	---	---	20.0	18.5	---	---				
26	15.0	13.5	---	---	20.5	19.0	---	---				
27	14.0	13.5	---	---	23.0	21.0	---	---				
28	13.5	13.0	---	---	23.0	22.5	---	---				
29	---	---	16.5	14.5	22.5	20.5	---	---				
30	13.5	11.5	17.0	15.5	23.0	21.5	---	---				
31	---	---	18.5	16.5	---	---	---	---				
MONTH	15.5	8.0	19.0	9.5	23.0	16.0	27.5	23.0				

* Instantaneous readings only

05116500 DES LACS RIVER AT FOXHOLM, ND

LOCATION.--Lat 48°22'14", long 101°34'11", in NW¼NE¼NW¼ sec.2, T.156 N., R.85 W., Ward County, Hydrologic Unit 09010002, on left bank 200 ft (60 m) upstream from county highway bridge in Foxholm, and at mile 23.0 (37.0 km).

DRAINAGE AREA.--939 mi^2 (2,432 km^2), of which about 400 mi^2 (1,040 km^2) is probably noncontributing.

PERIOD OF RECORD.--June 1904 to July 1906, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,632.98 ft (497.732 m) National Geodetic Vertical Datum of 1929. June 14 to Oct. 23, 1955, nonrecording gage at site 200 ft (60 m) downstream from present gage at same datum. See WSP 1728 or 1913 for history of changes prior to June 14, 1955.

REMARKS.--Records fair. Some regulation at low flow by a series of wildlife refuge ponds, beginning about 53 mi (85 km) upstream, combined capacity about 64,000 acre-ft (79 hm^3). Some small diversions for irrigation above station.

AVERAGE DISCHARGE.--38 years, 31.5 ft^3/s (0.892 m^3/s), 22,820 acre-ft/yr (28.1 hm^3/yr); median of yearly mean discharges, 17 ft^3/s (0.48 m^3/s), 12,300 acre-ft/yr (15 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft^3/s (121 m^3/s) Apr. 19, 1979, gage height, 21.23 ft (6.471 m), from highwater mark; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 580 ft^3/s (16.4 m^3/s) Feb. 19, gage height, 11.05 ft (3.368 m), backwater from ice; minimum daily, 0.09 ft^3/s (0.003 m^3/s) Sept. 19, 20, 23-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	2.0	1.8	4.0	.60	12	6.0	2.4	3.5	5.0	4.1	.51
2	1.2	2.0	1.4	4.0	.60	13	6.0	2.3	4.7	4.3	3.5	.48
3	1.1	2.1	1.0	2.5	.60	12	5.8	2.2	4.9	3.9	2.9	.45
4	1.0	2.0	1.1	1.5	.60	12	4.4	2.1	5.4	3.5	2.5	.44
5	1.1	2.0	1.3	1.4	.60	11	4.3	2.0	5.2	3.2	2.1	.41
6	1.1	2.0	1.2	1.4	.60	10	4.3	2.0	4.9	2.8	1.9	.38
7	1.1	1.9	1.1	1.2	.60	10	4.3	2.0	4.6	2.6	1.7	.35
8	1.0	2.0	1.0	1.2	.60	10	4.0	2.1	3.9	2.1	1.6	.34
9	1.1	2.0	.90	1.2	.60	12	4.0	2.1	3.4	1.7	1.5	.31
10	1.2	2.0	.90	1.0	.60	12	4.0	2.8	3.0	1.5	1.3	.27
11	1.2	2.0	.90	.90	.50	13	3.9	3.4	2.8	1.4	1.2	.23
12	1.2	2.0	1.0	.80	.40	14	3.8	1.8	2.6	1.4	1.1	.19
13	1.1	2.1	1.0	.70	.40	14	3.7	1.8	2.4	1.4	1.0	.17
14	1.1	2.0	1.0	.70	.40	13	3.6	2.0	2.4	1.3	.99	.14
15	1.2	2.0	1.0	.70	5.0	12	3.5	1.8	2.4	1.4	.90	.13
16	1.3	2.1	1.1	.70	50	14	3.4	1.6	2.4	1.4	.83	.12
17	1.7	1.9	1.3	.70	200	14	3.3	1.6	2.4	1.4	.78	.11
18	1.8	1.8	1.1	.70	400	12	3.2	1.6	2.4	1.4	.75	.10
19	1.8	1.7	.70	.70	540	10	3.1	1.4	2.3	1.4	.72	.09
20	1.8	2.0	.60	.70	300	10	3.0	1.4	2.4	1.4	.67	.09
21	1.8	2.0	.65	.70	180	9.8	2.9	1.8	2.5	1.4	.60	.11
22	1.9	2.1	.60	.70	130	9.4	2.8	2.2	9.6	5.3	.56	.10
23	2.3	2.1	.55	.70	100	9.0	2.7	2.7	16	10	.54	.09
24	2.3	2.0	.50	.80	95	10	2.6	2.5	17	28	.54	.09
25	2.3	1.9	.50	.80	50	12	2.5	2.4	14	32	.51	.09
26	2.4	1.9	.50	.80	27	11	2.5	2.6	12	24	.53	.09
27	2.4	1.9	1.0	.80	28	11	2.5	2.8	9.6	15	.56	.10
28	2.4	1.9	3.0	.70	17	12	2.5	2.9	7.9	11	.57	.13
29	2.2	2.0	2.5	.60	---	11	2.5	2.9	6.2	7.7	.57	.19
30	2.2	2.0	2.0	.60	---	5.3	2.5	3.2	5.4	5.8	.57	.29
31	2.0	---	2.5	.60	---	5.6	---	3.0	---	4.9	.55	---
TOTAL	49.08	59.4	35.70	34.50	2129.70	346.1	107.6	69.4	168.2	189.6	38.14	6.59
MEAN	1.58	1.98	1.15	1.11	76.1	11.2	3.59	2.24	5.61	6.12	1.23	.22
MAX	2.4	2.1	3.0	4.0	540	14	6.0	3.4	17	32	4.1	.51
MIN	.78	1.7	.50	.60	.40	5.3	2.5	1.4	2.3	1.3	.51	.09
AC-FT	97	118	71	68	4220	686	213	138	334	376	76	13

CAL YR 1980 TOTAL 2486.81 MEAN 6.79 MAX 103 MIN .48 AC-FT 4930
WTR YR 1981 TOTAL 3234.01 MEAN 8.86 MAX 540 MIN .09 AC-FT 6410

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND

LOCATION.--Lat 48°14'45", long 101°22'15", in NW¼NW¼SE¼ sec.17, T.155 N., R.83 W., Ward County, Hydrologic Unit 09010001, on right bank 180 ft (55 m) downstream from county highway bridge, 3.5 mi (5.6 km) west of Minot, 7 mi (11 km) downstream from Des Lacs River, and at mile 388.5 (625.1 km).

DRAINAGE AREA.--10,600 mi^2 (27,500 km^2), approximately, of which about 6,700 mi^2 (17,400 km^2) is probably noncontributing.

PERIOD OF RECORD.--May 1903 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River at Minot, 1903-24, Souris River at Minot, 1927-28, 1929-34, and Souris River near Minot, 1928-29.

REVISED RECORDS.--WSP 1308: 1905, 1909-14, 1918, 1924-25, 1927. WSP 1338: 1903-4, 1906, 1917, 1928, 1929(M). WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,545.75 ft (471.145 m) National Geodetic Vertical Datum of 1929. May 5, 1903, to Sept. 30, 1928, Oct. 1, 1929, to Sept. 30, 1934, nonrecording gages at mile 377.6 (607.6 km) in Minot, at datum 12.5 ft (3.8 m) lower, Oct. 1, 1928, to Sept. 30, 1929, nonrecording gages at Saugstad bridge at mile 366.8 (590.2 km), 5 mi (8 km) southeast of Minot and at datum 19.2 ft (5.85 m) lower than present datum. Records equivalent except those for periods of extreme low flow, as some industrial and sanitary waste enters river between the sites.

REMARKS.--Records good except for winter periods, which are fair. Flow almost completely regulated by Lake Darling (station 05115500), 41 mi (66 km) upstream and several smaller reservoirs; combined capacity, about 248,000 acre-ft (306 hm^3). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--78 years, 169 ft^3/s (4.786 m^3/s), 122,400 acre-ft/yr (151 hm^3/yr); median of yearly mean discharges, 89 ft^3/s (2.52 m^3/s), 64,500 acre-ft/yr (80 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s (340 m^3/s) Apr. 20, 1904, gage height, 21.9 ft (6.675 m) at site in Minot, from rating curve extended above 8,100 ft^3/s (229 m^3/s); no flow at times in some years. Maximum stage at present site, about 23 ft (7.0 m) in April 1904.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage in Minot at least 3 ft (0.9 m) higher than 1904 peak, in 1881, according to Apr. 20, 1904 issue of Minot Daily Optic. This peak probably occurred in 1882.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 634 ft^3/s (18.0 m^3/s) Feb. 19, gage height, 9.70 ft (2.957 m), backwater from ice; minimum daily, 0.50 ft^3/s (0.014 m^3/s) Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	32	17	13	10	30	12	9.5	20	9.5	6.6	2.0
2	10	23	16	12	10	28	12	8.7	28	8.7	6.6	2.0
3	12	20	14	12	10	28	11	91	23	8.0	6.0	2.4
4	12	20	13	12	10	23	10	64	19	5.4	5.4	2.0
5	12	19	13	12	10	22	9.5	45	19	5.4	6.0	2.4
6	12	20	13	12	9.5	22	8.7	38	18	4.3	6.6	2.0
7	12	20	13	12	9.0	20	8.7	45	16	3.8	6.6	1.8
8	13	20	12	12	9.5	19	7.3	40	15	3.4	6.6	1.8
9	13	20	12	12	9.0	19	6.6	42	15	3.4	6.0	1.8
10	15	19	12	11	9.0	19	6.0	40	19	3.8	5.4	1.8
11	16	18	12	10	8.0	19	4.8	40	18	4.3	5.4	1.6
12	15	19	11	10	6.5	19	4.3	42	19	4.8	5.4	1.1
13	16	20	11	10	6.0	19	4.3	42	36	4.8	6.0	1.0
14	16	20	11	10	6.0	20	4.3	42	17	5.4	6.6	1.0
15	16	19	11	10	15	20	4.3	42	14	5.4	6.6	1.0
16	19	19	11	10	80	18	4.3	40	12	4.8	6.6	1.0
17	23	19	11	10	150	17	4.3	38	10	4.8	6.0	1.0
18	22	19	11	10	450	17	4.3	38	8.0	5.4	6.0	1.0
19	20	19	11	10	600	16	3.4	36	7.3	6.6	7.3	.80
20	22	20	10	10	450	15	3.4	35	6.6	6.6	6.6	.80
21	20	20	8.0	10	400	15	3.0	35	7.3	15	6.0	.80
22	34	20	8.0	10	300	16	3.0	35	6.6	11	6.0	.80
23	51	19	8.0	10	200	16	3.0	26	7.3	8.7	6.6	.80
24	49	19	8.0	10	150	16	3.0	19	19	11	7.3	.50
25	43	19	8.0	10	100	16	3.0	18	34	47	6.6	.65
26	43	19	9.0	10	70	15	3.0	18	23	49	6.0	2.4
27	43	19	10	10	50	15	3.0	18	18	24	4.8	2.6
28	42	18	11	10	40	15	6.0	17	16	15	6.0	2.6
29	42	19	14	10	---	15	13	16	13	10	5.4	2.6
30	43	18	14	10	---	13	13	15	11	9.5	2.4	3.0
31	42	---	14	10	---	13	---	14	---	8.7	2.4	---
TOTAL	756.7	595	357.0	330	3177.5	575	186.5	1049.2	495.1	317.5	183.8	47.05
MEAN	24.4	19.8	11.5	10.6	113	18.5	6.22	33.8	16.5	10.2	5.93	1.57
MAX	51	32	17	13	600	30	13	91	36	49	7.3	3.0
MIN	8.7	18	8.0	10	6.0	13	3.0	8.7	6.6	3.4	2.4	.50
AC-FT	1500	1180	708	655	6300	1140	370	2080	982	630	365	93

CAL YR 1980 TOTAL 8309.80 MEAN 22.7 MAX 551 MIN 1.3 AC-FT 16480
WTR YR 1981 TOTAL 8070.35 MEAN 22.1 MAX 600 MIN .50 AC-FT 16010

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND

LOCATION.--Lat 48°09'35", long 100°43'45", in NW¼SW¼ sec.17, T.154 N., R.78 W., McHenry County, Hydrologic Unit 09010003, on left bank 2.7 mi (4.3 km) north of Verendrye, 19 mi (31 km) upstream from mouth of Wintering River, and at mile 302.0 (485.9 km).

DRAINAGE AREA.--11,300 mi^2 (29,300 km^2), approximately, of which about 6,900 mi^2 (17,900 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to June 1933 (gage heights only), April 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,464.87 ft (446.492 m) National Geodetic Vertical Datum of 1929. February to June 1933, at site 4 mi (6 km) upstream at datum 1.65 ft (0.503 m) higher. April 1, 1937 to Mar. 3, 1938, nonrecording gage at present site, at datum 1.97 ft (0.600 m) higher.

REMARKS.--Records fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, the largest of which is Lake Darling (station 05115500), 128 mi (206 km) upstream, combined capacity about 248,000 acre-ft (306 hm^3). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--44 years, 216 ft^3/s (6.117 m^3/s), 156,500 acre-ft/yr (193 hm^3/yr); median of yearly mean discharges, 117 ft^3/s (3.31 m^3/s), 84,800 acre-ft/yr (105 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft^3/s (280 m^3/s) Apr. 19, 1976, gage height, 17.84 ft (5.438 m); minimum recorded, 0.3 ft^3/s (0.008 m^3/s) Aug. 11-19, 1937, Oct. 10-21, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 870 ft^3/s (24.6 m^3/s) Feb. 22, gage height, 11.89 ft (3.624 m); minimum daily discharge, 3.1 ft^3/s (0.088 m^3/s) Sept. 17-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	69	36	14	14	300	36	20	38	19	28	5.0
2	11	50	33	14	14	180	36	25	44	22	28	4.7
3	12	44	33	14	14	120	34	29	56	23	27	4.3
4	11	40	33	14	14	94	33	24	45	21	26	4.0
5	9.8	38	30	14	14	87	31	20	51	19	26	3.7
6	8.9	36	26	13	14	69	30	18	46	16	26	9.3
7	8.9	34	25	13	14	58	29	19	41	15	24	11
8	8.9	35	25	13	14	54	29	61	38	14	22	13
9	9.3	33	26	13	14	54	27	91	36	13	20	11
10	9.8	29	26	13	14	53	27	84	34	12	18	8.4
11	9.3	26	28	13	14	50	26	76	33	13	16	6.5
12	8.4	24	27	13	14	52	26	74	32	14	15	5.0
13	8.4	24	27	13	14	53	29	74	32	14	15	5.0
14	8.9	27	27	13	14	57	35	74	32	14	13	4.0
15	8.4	24	27	13	15	66	32	74	33	14	13	3.7
16	10	22	26	13	20	67	30	72	32	14	12	3.4
17	17	24	26	13	80	62	29	72	32	14	12	3.1
18	22	33	26	13	420	57	26	70	33	13	12	3.1
19	27	44	24	13	600	55	27	70	36	13	11	3.1
20	29	44	22	13	700	49	26	69	37	13	10	3.1
21	35	36	20	13	800	52	25	69	36	15	7.9	3.1
22	40	36	19	13	850	40	23	67	32	14	7.0	3.1
23	39	36	18	14	850	39	21	67	32	13	7.0	3.1
24	44	32	17	14	800	36	20	69	32	14	6.5	3.1
25	45	33	16	14	700	36	20	69	30	20	5.7	3.1
26	63	36	15	14	600	35	19	53	29	28	6.5	3.1
27	84	35	15	14	500	35	20	51	25	27	7.0	3.1
28	91	33	15	14	400	36	20	46	22	25	6.1	4.0
29	96	34	15	14	---	36	22	40	21	23	5.0	3.7
30	86	36	15	14	---	36	21	37	20	20	4.7	3.4
31	79	---	15	14	---	36	---	34	---	20	5.3	---
TOTAL	951.0	1047	733	417	7531	2054	809	1718	1040	529	442.7	147.2
MEAN	30.7	34.9	23.6	13.5	269	66.3	27.0	55.4	34.7	17.1	14.3	4.91
MAX	96	69	36	14	850	300	36	91	56	28	28	13
MIN	8.4	22	15	13	14	35	19	18	20	12	4.7	3.1
AC-FT	1890	2080	1450	827	14940	4070	1600	3410	2060	1050	878	292

CAL YR 1980 TOTAL 12532.8 MEAN 34.2 MAX 578 MIN 5.7 AC-FT 24860
WTR YR 1981 TOTAL 17418.9 MEAN 47.7 MAX 850 MIN 3.1 AC-FT 34550

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1952 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to current year.
WATER TEMPERATURES: October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,110 micromhos Dec. 12, 1977; minimum, 306 micromhos Apr. 20, 1979.
WATER TEMPERATURES: Maximum, 28.5°C July 7, 1981; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,820 micromhos Jan. 5, 19-21; minimum recorded, 375 micromhos Feb. 19; may have been lower during period of missing record.
WATER TEMPERATURES: Maximum, 28.5°C July 7; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT										
02...	1500	11	1290	8.0	10.0	11.5	30	338	8.0	71
NOV										
03...	1645	44	1280	--	11.0	4.5	--	--	--	--
DEC										
01...	1550	35	1500	--	-17.0	.5	--	--	--	--
JAN										
07...	1230	13	1770	7.6	-16.0	.0	45	422	22	85
FEB										
02...	1720	14	1440	--	-15.0	.0	--	--	--	--
18...	1515	459	535	--	8.0	.0	--	--	--	--
MAR										
03...	1140	120	395	--	3.0	.0	--	--	--	--
APR										
02...	1345	36	810	8.1	15.0	8.0	25	239	9.0	56
MAY										
04...	1715	22	880	--	15.5	15.0	--	--	--	--
JUN										
09...	1610	36	1150	--	15.0	19.0	--	--	--	--
JUL										
06...	1850	16	1040	8.2	35.0	26.5	40	322	2.0	68
AUG										
06...	1145	26	950	--	25.0	23.0	--	--	--	--
SEP										
01...	1215	5.0	1010	--	17.0	18.0	--	--	--	--

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT										
02...	39	170	51	4.1	13	330	300	65	.4	13
NOV										
03...	--	--	--	--	--	--	--	--	--	--
DEC										
01...	--	--	--	--	--	--	--	--	--	--
JAN										
07...	51	250	55	5.4	16	400	440	100	.7	19
FEB										
02...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
MAR										
03...	--	--	--	--	--	--	--	--	--	--
APR										
02...	24	84	42	2.4	8.8	230	160	17	.2	8.2
MAY										
04...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
JUL										
06...	37	120	44	3.0	10	320	240	40	.2	16
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
01...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	BORON, DISSOLVED (UG/L AS B) (01020)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT									
02...	830	866	1.1	24.9	.00	.210	360	16	.48
NOV									
03...	--	--	--	--	--	--	--	16	1.9
DEC									
01...	--	--	--	--	--	--	--	6	.57
JAN									
07...	1210	1203	1.6	43.8	.80	2.40	350	6	.22
FEB									
02...	--	--	--	--	--	--	--	6	.23
18...	--	--	--	--	--	--	--	--	--
MAR									
03...	--	--	--	--	--	--	--	48	16
APR									
02...	554	497	.75	53.8	.20	.210	100	18	1.7
MAY									
04...	--	--	--	--	--	--	--	10	.59
JUN									
09...	--	--	--	--	--	--	--	18	1.7
JUL									
06...	714	724	.97	30.8	.01	.900	190	18	.78
AUG									
06...	--	--	--	--	--	--	--	16	1.1
SEP									
01...	--	--	--	--	--	--	--	11	.15

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1280	1270	---	---	1540	1450	1760	1750	1450	1430		
2	1290	1290	---	---	1610	1540	1780	1750	1440	1420		
3	1300	1290	1280	1270	1650	1610	1790	1760	1440	1430		*395
4	---	---	1280	1270	1650	1630	1810	1790	1430	1390		
5	---	---	1300	1280	1630	1620	1820	1800	1430	1390		
6	---	---	1290	1290	1660	1630	1810	1800	1420	1370		
7	---	---	1300	1300	1660	1650	1790	1770	1430	1390		
8	---	---	1310	1310	1660	1650	1770	1760	1420	1400		
9	---	---	1310	1170	1680	1660	1790	1760	1400	1390		
10	1200	1200	1250	1160	1690	1680	1800	1790	1400	1390		
11	---	---	1300	1250	1690	1680	1800	1790	1400	1380		
12	---	---	1330	1310	1670	1650	1800	1750	1400	1370		
13	---	---	1330	1320	1660	1630	1790	1720	1400	1350		
14	---	---	1330	1320	1650	1640	1760	1730	1370	1320		
15	---	---	1330	1320	1640	1630	1780	1760	1360	1280		
16	---	---	1350	1340	1640	1630	1790	1760	1340	1220		
17	1290	1260	1360	1300	1720	1640	1790	1750	1340	781		
18	---	---	1290	1260	1760	1730	1790	1760	813	453		
19	---	---	1260	1190	1780	1760	1820	1770	458	375		
20	---	---	1190	1180	1790	1780	1820	1780	---	---		
21	---	---	1190	1180	1800	1790	1820	1770	---	---		
22	---	---	1210	1190	1790	1780	1760	1680	---	---		
23	---	---	1230	1210	1770	1760	1660	1550	---	---		
24	---	---	1230	1220	1760	1590	1550	1460	---	---		
25	1120	1110	1240	1230	1580	1530	1530	1480	---	---		
26	---	---	1240	1220	1530	1480	1490	1480	---	---		
27	---	---	1220	1210	1480	1400	1480	1460	---	---		
28	---	---	1220	1210	1620	1420	1460	1440	---	---		
29	---	---	1290	1220	1640	1580	1450	1430	---	---		
30	---	---	1450	1300	1740	1590	1450	1440	---	---		
31	---	---	---	---	1770	1740	1460	1420	---	---		
MONTH	1300	1110	1450	1160	1800	1400	1820	1420	1450	375		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1					---	---	1010	984	1070	1040	1030	1010
2		*810			---	---	992	960	1060	1030	1030	1020
3					---	---	1010	963	1050	1020	1040	999
4				*880	---	---	1010	962	1030	942	1050	1030
5					---	---	1020	992	980	952	1060	1040
6					---	---	1040	995	962	935	1060	1040
7					---	---	1080	1040	965	920	1080	1040
8					---	---	1080	1060	983	937	1100	1060
9					---	---	1090	1070	999	966	1090	1030
10					1190	1140	1090	1070	1000	960	1030	981
11					1230	1170	1080	1070	1030	995	1000	978
12					1320	1240	1100	1060	1010	990	1030	996
13					1310	1220	1110	1060	1020	988	1040	1020
14					1230	1180	1110	1080	999	938	1050	1040
15					1180	1130	1110	1080	1010	974	1070	1050
16					1130	1100	1090	1060	984	958	1080	1060
17					1090	1060	1060	1050	991	960	1090	1070
18					1090	1070	1050	1030	997	973	1100	1080
19					1080	1060	1050	1010	1010	962	1100	1070
20					1060	1050	1030	994	1010	979	1100	1090
21					1080	1060	1020	978	1010	993	1110	1100
22					1100	1060	1020	994	1000	988	1120	1090
23					1100	1080	1010	992	998	990	1130	1110
24					1090	1070	1010	980	1000	986	1140	1130
25					1100	1070	1010	992	1000	981	1150	1130
26					1100	1060	1010	971	1010	987	1140	1130
27					1100	1050	1010	987	1010	1000	1150	1130
28					1060	1040	1020	989	1010	996	1150	1140
29					1060	1030	1030	1020	1020	999	1160	1140
30					1040	1020	1060	1010	1030	998	1160	1150
31					---	---	1060	1010	1030	983	---	---
MONTH					1320	1020	1110	960	1070	920	1160	978

* Instantaneous readings only

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	11.5	---	---	1.0	.5	.5	.5	.0	.0	.0	.0
2	11.5	11.0	---	---	1.0	.5	.5	.5	.5	.0	.0	.0
3	12.0	11.0	5.0	3.5	.5	.5	.5	.5	.5	.0	.5	.0
4	---	---	4.5	4.5	1.0	.5	.5	.5	.5	.0	.5	.5
5	---	---	5.0	4.0	.5	.5	.5	.5	.5	.5	.5	.5
6	---	---	5.0	4.5	.5	.5	.5	.5	.5	.5	.5	.5
7	---	---	5.0	5.0	.5	.5	.0	.0	.5	.0	.5	.5
8	---	---	5.0	4.5	.5	.5	.5	.0	.5	.0	.5	.5
9	---	---	4.5	4.5	.5	.5	.5	.0	.0	.0	.5	.5
10	11.5	9.5	4.5	3.5	.5	.5	.5	.0	.0	.0	.5	.5
11	---	---	3.5	3.5	.5	.5	.5	.0	.0	.0	.5	.5
12	---	---	3.5	3.0	.5	.5	.5	.5	.5	.0	1.0	.5
13	---	---	3.0	3.0	.5	.5	.5	.5	.5	.0	1.0	.5
14	---	---	2.5	2.0	.5	.5	.5	.5	.5	.5	1.0	.5
15	---	---	2.0	1.5	.5	.5	.5	.5	.5	.5	1.5	.5
16	---	---	2.0	1.0	.5	.5	.5	.5	.5	.5	1.5	.5
17	5.5	4.5	1.5	1.0	.5	.5	.5	.5	.5	.5	1.5	.5
18	---	---	1.5	1.0	.5	.5	.5	.5	.5	.0	1.5	.5
19	---	---	1.5	1.0	.5	.5	.5	.5	.5	.5	2.0	.5
20	---	---	1.0	1.0	.5	.5	.5	.0	.5	.5	2.0	.5
21	---	---	1.5	1.0	.5	.5	.5	.5	.5	.5	2.5	1.0
22	---	---	1.0	1.0	.5	.5	.5	.5	.5	.0	2.5	1.0
23	---	---	1.0	1.0	.5	.5	.5	.5	.0	.0	3.5	1.5
24	---	---	1.0	1.0	.5	.5	.5	.5	.0	.0	4.0	2.0
25	4.5	4.0	1.0	1.0	.5	.5	.5	.5	.0	.0	4.0	3.0
26	---	---	1.0	1.0	.5	.5	.5	.5	.0	.0	4.5	2.5
27	---	---	1.0	1.0	.5	.5	.5	.5	.0	.0	5.5	3.5
28	---	---	1.0	1.0	.5	.5	.5	.0	.0	.0	6.0	4.5
29	---	---	1.0	1.0	.5	.5	.5	.0	---	---	7.0	4.5
30	---	---	1.0	.5	.5	.5	.5	.0	---	---	8.0	6.0
31	---	---	---	---	.5	.5	.5	.5	---	---	7.0	6.5
MONTH	12.5	4.0	5.0	.5	1.0	.5	.5	.0	.5	.0	8.0	.0

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

05120500 WINTERING RIVER NEAR KARLSRUHE, ND

LOCATION.--Lat 48°10'14", long 100°32'20", on line between secs.10 and 11, T.154 N., R.77 W., McHenry County, Hydrologic Unit 09010003, on left bank 30 ft (9 m) upstream from county highway bridge, 4 mi (6 km) upstream from mouth, and 7 mi (11 km) northeast of Karlsruhe.

DRAINAGE AREA.--705 mi^2 (1,826 km^2), of which about 420 mi^2 (1,090 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from river-profile map.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes; controlled capacity, about 850 acre-ft (1.05 hm^3).

AVERAGE DISCHARGE.--44 years, 12.7 ft^3/s (0.360 m^3/s), 9,200 acre-ft/yr (11.3 hm^3/yr); median of yearly mean discharges, 10 ft^3/s (0.28 m^3/s), 7,200 acre-ft/yr (8.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft^3/s (85.0 m^3/s) Apr. 7, 1949, by velocity-area studies; maximum gage height, 12.0 ft (3.66 m) Apr. 7, 1949, channel choked by packed snow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 75 ft^3/s (2.12 m^3/s) Mar. 4, gage height, 5.63 ft (1.716 m), backwater from ice; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.9	3.5	1.7	.00	40	13	7.8	16	2.2	1.2	3.1
2	2.5	4.8	3.0	1.7	.00	50	13	6.5	29	2.0	1.4	2.8
3	3.0	4.8	2.8	1.7	.00	70	12	5.4	28	1.7	1.3	2.2
4	2.8	4.8	2.6	1.7	.00	70	12	4.7	19	1.5	1.1	2.2
5	2.7	4.8	2.6	1.7	.00	65	11	3.6	10	1.5	.97	2.3
6	2.7	4.8	2.6	1.5	.00	60	11	4.7	9.3	1.4	.94	6.1
7	2.8	4.8	2.5	1.5	.00	55	11	3.7	7.6	1.1	.91	6.6
8	2.8	4.8	2.5	1.5	.00	52	10	3.3	6.4	.96	1.0	7.7
9	2.7	4.6	2.5	1.5	.00	50	10	3.1	6.1	.82	1.0	7.2
10	2.7	4.4	2.4	1.0	.00	46	9.5	3.0	5.1	.84	.95	5.8
11	2.7	4.2	2.4	.70	.00	42	9.1	3.4	4.8	.96	.75	4.4
12	2.7	4.2	2.4	.70	.00	38	9.7	2.9	4.3	1.2	.71	3.5
13	2.6	4.0	2.3	.50	.50	35	9.7	2.9	6.1	1.0	.78	2.9
14	2.6	3.9	2.3	.50	1.0	32	9.1	2.9	6.8	1.0	.83	3.0
15	2.7	3.8	2.3	.50	1.5	28	8.6	2.8	6.9	1.0	.91	3.2
16	3.5	3.7	2.2	.50	3.0	23	8.3	2.5	7.0	1.2	1.0	3.2
17	5.6	3.6	2.2	.50	4.0	21	9.0	2.1	5.7	1.2	.92	2.5
18	6.2	3.5	2.2	.50	4.6	20	8.1	2.3	5.3	1.3	1.7	2.3
19	6.0	3.4	2.1	.50	6.0	19	7.9	2.3	5.1	1.4	1.3	2.2
20	5.8	3.5	2.1	.50	12	18	7.3	2.7	4.3	1.1	1.0	2.3
21	5.5	3.5	2.1	.50	18	17	7.3	2.1	4.0	2.1	.75	2.5
22	5.3	3.5	2.0	.50	21	16	7.4	2.0	4.0	3.7	.73	2.6
23	6.0	3.5	2.0	.50	24	16	7.2	3.3	3.8	3.0	4.0	2.5
24	6.0	3.5	2.0	.50	27	16	7.0	7.1	4.1	2.2	4.2	2.6
25	6.0	3.5	1.9	.50	30	15	6.9	11	4.7	1.7	5.3	2.6
26	5.8	3.5	1.9	.20	32	15	6.8	9.3	4.1	1.6	6.2	2.9
27	5.3	3.5	1.9	.20	34	14	8.0	7.1	3.6	1.2	6.0	3.1
28	5.0	3.5	1.8	.20	37	14	9.7	5.7	2.8	1.2	3.9	2.8
29	5.0	3.5	1.8	.00	---	14	12	4.2	2.2	1.2	3.6	2.8
30	5.0	3.5	1.8	.00	---	14	10	3.5	2.3	1.3	3.0	2.8
31	5.0	---	1.8	.00	---	14	---	2.8	---	1.1	3.3	---
TOTAL	127.5	120.3	70.5	24.00	255.60	999	281.6	130.7	228.4	45.68	61.65	102.7
MEAN	4.11	4.01	2.27	.77	9.13	32.2	9.39	4.22	7.61	1.47	1.99	3.42
MAX	6.2	4.9	3.5	1.7	37	70	13	11	29	3.7	6.2	7.7
MIN	2.5	3.4	1.8	.00	.00	14	6.8	2.0	2.2	.82	.71	2.2
AC-FT	253	239	140	48	507	1980	559	259	453	91	122	204

CAL YR 1980 TOTAL 1680.55 MEAN 4.59 MAX 80 MIN .65 AC-FT 3330
WTR YR 1981 TOTAL 2447.63 MEAN 6.71 MAX 70 MIN .00 AC-FT 4850

05120500 WINTERING RIVER NEAR KARLSRUHE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-56, 1972 to September 1981 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
02...	1745	2.5	660	8.2	9.0	12.0	30	224	.00	50	24	54
NOV												
12...	1400	4.2	630	--	2.0	2.0	--	--	--	--	--	--
DEC												
04...	1240	2.4	800	--	-1.0	.5	--	--	--	--	--	--
JAN												
05...	1620	1.7	800	--	-1.0	.5	--	--	--	--	--	--
FEB												
18...	1310	4.6	390	--	8.0	.0	--	--	--	--	--	--
MAR												
01...	1755	39	410	--	-7.0	.0	--	--	--	--	--	--
APR												
02...	1830	13	690	8.2	14.0	10.5	60	182	.00	43	18	90
28...	1435	9.3	775	--	17.0	13.5	--	--	--	--	--	--
JUN												
09...	1425	5.8	760	--	20.0	19.0	--	--	--	--	--	--
AUG												
06...	1910	.94	605	--	20.0	25.0	--	--	--	--	--	--
SEP												
01...	1630	3.2	550	8.3	20.0	17.5	30	221	.00	49	24	39

DATE	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
02...	34	1.6	4.4	280	77	8.7	.2	8.0	424	395	.58	2.9
NOV												
12...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
04...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
18...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
01...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	51	3.0	7.4	270	100	11	.2	8.6	471	442	.64	16.5
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
06...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
01...	27	1.2	4.7	270	5.0	12	.1	16	346	313	.47	3.0

05120500 WINTERING RIVER NEAR KARLSRUHE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
02...	.00	.030	20	2	200	160	<1	0	<3	0	250
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
05...	--	--	--	--	--	--	--	--	--	--	--
FEB											
18...	--	--	--	--	--	--	--	--	--	--	--
MAR											
01...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	.01	.070	20	2	100	160	<1	10	<3	1	340
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	.01	.080	10	2	170	80	<1	0	<3	0	74

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT											
02...	2	20	30	.0	<10	0	0	160	2.0	<3	.00
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
05...	--	--	--	--	--	--	--	--	--	--	--
FEB											
18...	--	--	--	--	--	--	--	--	--	--	--
MAR											
01...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	0	30	50	.0	<10	5	0	210	10	<3	.00
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	6	18	23	.0	<10	1	0	150	2.0	10	.00

05122000 SOURIS (MOUSE) RIVER NEAR BANTRY, ND

LOCATION.--Lat 48°30'20", long 100°26'04", in SE¼NW¼SE¼ sec.14, T.158 N., R.76 W., McHenry County, Hydrologic Unit 09010003, on left bank 200 ft (61 m) upstream from Nelson bridge, 8 mi (13 km) east of Bantry, 18 mi (29 km) upstream from Willow Creek, and at mile 228.0 (366.9 km).

DRAINAGE AREA.--12,300 mi^2 (31,900 km^2), approximately, of which about 7,600 mi^2 (19,700 km^2) is probably noncontributing.

PERIOD OF RECORD.--[1]March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,427.56 ft (435.120 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 16, 1938, nonrecording gage at same site at datum 0.17 ft (0.052 m) lower.

REMARKS.--Records good except those for the winter periods, which are fair. Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers, total capacity, about 249,000 acre-ft (307 km). Diversions for irrigation of about 7,600 acres (30.8 km^2) at Eaton Dam about 42 mi (68 km) above station and other small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--44 years, 234 ft^3/s (6.627 m^3/s), 169,500 acre-ft/yr (209 hm^3/yr); median of yearly mean discharges, 132 ft^3/s (3.74 m^3/s), 95,600 acre-ft/yr (118 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,330 ft^3/s (264 m^3/s) Apr. 23, 1976, gage height, 14.59 ft (4.447 m); no flow at times each year 1937-40, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 430 ft^3/s (12.2 m^3/s) Feb. 27, gage height, 9.60 ft (2.926 m), backwater from ice; minimum daily discharge, 13 ft^3/s (0.37 m^3/s) Sept. 29-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	100	47	33	24	400	92	50	96	47	22	18
2	49	105	46	33	24	370	83	50	108	45	23	16
3	45	110	45	33	23	350	76	50	112	41	23	15
4	43	112	44	32	23	335	74	50	120	40	23	15
5	41	109	43	32	23	305	75	51	123	37	25	15
6	40	106	42	32	23	290	78	51	124	36	24	18
7	39	102	41	32	23	270	78	51	122	34	24	20
8	36	98	40	32	22	250	76	51	120	32	24	20
9	34	94	38	31	21	240	74	48	116	31	25	20
10	33	90	36	30	20	230	67	46	111	31	26	18
11	31	82	35	30	19	225	58	49	105	31	27	18
12	33	74	34	30	19	220	56	85	99	29	28	18
13	30	72	34	30	18	220	52	115	92	28	28	19
14	29	68	34	30	18	215	51	128	84	25	28	20
15	27	64	33	30	18	215	50	135	78	24	28	20
16	27	60	33	30	18	210	50	133	73	22	28	22
17	29	55	33	29	19	205	50	128	69	21	28	24
18	30	50	33	29	20	183	50	124	66	19	26	24
19	34	46	33	29	22	174	50	119	64	19	26	23
20	38	48	33	29	25	156	49	114	60	19	24	22
21	47	55	33	29	30	150	48	107	58	18	23	22
22	52	60	33	29	50	149	48	100	56	18	23	20
23	62	60	33	29	150	149	47	96	54	18	23	22
24	73	55	33	29	300	144	46	93	57	17	20	19
25	80	53	33	29	350	134	46	94	57	17	20	18
26	84	52	33	29	380	121	46	94	54	19	20	18
27	86	51	33	28	420	112	46	96	55	22	20	16
28	88	50	33	27	400	107	46	98	57	23	20	14
29	90	49	33	26	---	104	50	99	53	24	18	13
30	93	48	33	25	---	101	50	96	48	24	18	13
31	96	---	33	24	---	100	---	92	---	23	18	---
TOTAL	1572	2178	1120	920	2502	6434	1762	2693	2491	834	733	560
MEAN	50.7	72.6	36.1	29.7	89.4	208	58.7	86.9	83.0	26.9	23.6	18.7
MAX	96	112	47	33	420	400	92	135	124	47	28	24
MIN	27	46	33	24	18	100	46	46	48	17	18	13
AC-FT	3120	4320	2220	1820	4960	12760	3490	5340	4940	1650	1450	1110

CAL YR 1980 TOTAL 16051 MEAN 43.9 MAX 209 MIN 12 AC-FT 31840
WTR YR 1981 TOTAL 23799 MEAN 65.2 MAX 420 MIN 13 AC-FT 47210

05123000 LAKE METIGOSHE NEAR BOTTINEAU, ND

LOCATION.--Lat 48°59'05", long 100°20'52", in SE¼SW¼ sec.35, T.164 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, 25 ft (7.6 m) east from northeast corner of bridge over Lake Metigoshe, and 11.7 mi (18.8 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi^2 (153 km^2).

PERIOD OF RECORD.--June 1931 to September 1932, September 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,130.00 ft (649.224 m) National Geodetic Vertical Datum of 1929. 1931-32, nonrecording gage on north abutment of bridge at datum 6.32 ft (1.93 m) lower (reduced to elevations NGVD). Sept. 4, 1953, to Jan. 19, 1955, nonrecording gage at present datum on east end of south abutment of bridge.

REMARKS.--Outlet of lake is a concrete dam with removable stoplogs; average crest elevation without stoplogs about 2,138.0 ft (651.66 m) National Geodetic Vertical Datum of 1929. Lake level regulated since 1959 by dam and control works in the outlet of Sharpe Lake located on the principal tributary in Manitoba.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 9.70 ft (2.957 m) May 3, 1975; minimum, 4.28 ft (1.305 m) Sept. 17, 1932, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 6.90 ft (2.103 m) Apr. 6; minimum, 5.88 ft (1.792 m) Sept. 25.

MONTHEND GAGE HEIGHT, IN FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Oct. 31	*6.68	Jan. 31	*6.80	Apr. 30	6.69	July 31	*6.35
Nov. 30	*6.72	Feb. 28	*6.85	May 31	6.61	Aug. 31	6.11
Dec. 31	*6.76	Mar. 31	*6.89	June 30	6.49	Sept. 30	5.92

* - Estimated.

05123100 OAK CREEK AT LAKE METIGOSHE OUTLET NEAR BOTTINEAU, ND

LOCATION.--Lat 48°57'56", long 100°21'47", in SE¼SE¼ sec.3, T.163 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, at outlet of Lake Metigoshe, and 10 mi (16 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi^2 (153 km^2).

PERIOD OF RECORD.--October 1953 to September 1981 (discontinued).

GAGE.--Water-stage recorder and concrete control with stoplogs. Datum of gage is 2,130.00 ft (649.224 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 20, 1955, nonrecording gage at same site and datum. Gage is located 1.5 mi (2.4 km) northeast of outlet of lake, and is same as that used for station on Lake Metigoshe.

REMARKS.--No flow all year. Flow regulated since 1959 by dam and control works on the outlet of Sharpe Lake located on the principal tributary in Manitoba.

AVERAGE DISCHARGE.--28 years, 4.13 ft^3/s (0.117 m^3/s), 2,990 acre-ft/yr (3.69 hm^3/yr); median of yearly mean discharges, 1.8 ft^3/s (0.051 m^3/s), 1,300 acre-ft/yr (1.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 148 ft^3/s (4.19 m^3/s) May 3, 1975, gage height, 9.70 ft (2.957 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--No flow all year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

05123400 WILLOW CREEK NEAR WILLOW CITY, ND

LOCATION.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., McHenry County, Hydrologic Unit 09010004, on left bank 50 ft (15 m) downstream from bridge on county road, 1.5 mi (2.4 km) upstream from Snake Creek, and 7 mi (11 km) west of Willow City.

DRAINAGE AREA.--1,160 mi^2 (3,000 km^2), approximately, of which about 430 mi^2 (1,110 km^2) is probably noncontributing.

PERIOD OF RECORD.--August 1956 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (436 m), from topographic map. Prior to Oct. 5, 1956, nonrecording gage at site 50 ft (15 m) upstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--25 years, 46.0 ft^3/s (1.303 m^3/s), 33,330 acre-ft/yr (41.1 hm^3/yr); median of yearly mean discharges, 18 ft^3/s (0.51 m^3/s), 13,000 acre-ft/yr (16 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,900 ft^3/s (167 m^3/s) Apr. 12, 1969, gage height, 16.76 ft (5.108 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 220 ft^3/s (6.23 m^3/s) Mar. 3, gage height, 9.70 ft (2.957 m), only peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	48	23	2.5	.20	180	67	13	12	3.8	.87	.00
2	98	46	22	2.0	.18	216	64	13	12	3.6	.58	.00
3	96	44	21	1.6	.17	210	58	13	11	3.4	.36	.00
4	94	42	20	1.3	.17	200	54	12	11	3.4	.21	.00
5	92	42	19	1.1	.15	170	51	12	11	3.2	.14	.00
6	89	41	18	1.0	.15	140	48	12	11	3.2	.06	.00
7	86	40	17	.90	.15	110	44	11	9.9	3.0	.00	.00
8	84	39	16	.90	.15	100	40	11	9.6	2.6	.00	.00
9	82	39	15	.90	.15	90	36	10	9.6	2.3	.00	.00
10	80	39	14	.80	.15	90	33	9.6	9.6	2.3	.00	.00
11	78	38	13	.80	.15	80	30	9.3	9.3	2.3	.00	.00
12	76	37	12	.80	.10	80	28	9.0	8.7	2.3	.00	.00
13	74	37	12	.70	.10	75	27	9.3	9.3	2.2	.00	.00
14	74	36	11	.70	.20	80	25	9.0	11	2.2	.00	.00
15	72	35	11	.70	.50	85	23	8.7	11	2.1	.00	.00
16	70	34	10	.60	1.0	90	22	8.7	9.3	2.1	.00	.00
17	68	33	9.0	.60	3.0	80	21	8.2	9.3	2.0	.00	.00
18	67	33	8.5	.50	4.0	80	19	8.2	10	2.0	.00	.00
19	67	32	8.0	.50	5.0	78	18	8.2	7.3	1.9	.00	.00
20	65	32	7.5	.40	6.0	76	17	8.2	7.1	1.8	.00	.00
21	63	31	7.0	.40	10	72	16	7.9	6.9	1.6	.00	.00
22	61	30	6.5	.40	20	68	15	7.9	6.2	1.6	.00	.00
23	60	29	6.0	.30	28	62	15	9.0	7.1	1.6	.00	.00
24	60	29	5.5	.30	40	58	14	9.6	7.1	1.2	.00	.00
25	58	28	5.0	.30	60	56	14	9.9	5.5	1.2	.00	.00
26	56	27	4.5	.30	80	50	13	9.9	4.6	1.2	.00	.00
27	54	27	4.0	.20	90	50	13	10	4.4	1.2	.00	.00
28	52	26	3.5	.20	110	60	13	10	4.4	1.1	.00	.00
29	52	25	3.0	.20	---	65	13	10	4.3	1.1	.00	.00
30	50	24	3.0	.20	---	65	13	10	4.2	1.1	.00	.00
31	48	---	3.0	.20	---	65	---	10	---	1.0	.00	---
TOTAL	2226	1043	338.0	22.30	459.67	2981	864	307.6	253.7	65.6	2.22	.00
MEAN	71.8	34.8	10.9	.72	16.4	96.2	28.8	9.92	8.46	2.12	.072	.000
MAX	100	48	23	2.5	110	216	67	13	12	3.8	.87	.00
MIN	48	24	3.0	.20	.10	50	13	7.9	4.2	1.0	.00	.00
AC-FT	4420	2070	670	44	912	5910	1710	610	503	130	4.4	.00

CAL YR 1980 TOTAL 7973.94 MEAN 21.8 MAX 127 MIN .00 AC-FT 15820
WTR YR 1981 TOTAL 8563.09 MEAN 23.5 MAX 216 MIN .00 AC-FT 16980

RED RIVER OF THE NORTH BASIN

05123600 EGG CREEK NEAR GRANVILLE, ND

LOCATION.--Lat 48°21'18", long 100°49'19", on west line of sec.10, T.156 N., R.79 W., McHenry County, Hydrologic Unit 09010005, on right bank near right downstream wingwall of bridge, 2 mi (3 km) downstream from Hay Coulee, 3.5 mi (5.6 km) upstream from North Lake, and 6 mi (10 km) northeast of Granville.

DRAINAGE AREA.--289 mi^2 (749 km^2), of which 150 mi^2 (388 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1956 to September 1981 (discontinued).

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,478.14 ft (450.537 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Service).

AVERAGE DISCHARGE.--25 years, 6.41 ft^3/s (0.182 m^3/s), 4,640 acre-ft/yr (5.72 hm^3/yr); median of yearly mean discharges, 3.2 ft^3/s (0.09 m^3/s), 2,300 acre-ft/yr (2.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,710 ft^3/s (48.4 m^3/s) Apr. 10, 1969, gage height, 7.28 ft (2.219 m); maximum gage height, 8.10 ft (2.469 m) Apr. 9, 1969, from floodmark, backwater from snow; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft^3/s (5.10 m^3/s) Feb. 22, gage height, 5.49 ft (1.673 m), only peak above base of 20 ft^3/s (0.57 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	43	1.8	2.8	4.8	.22	.00	.00
2	.00	.00	.00	.00	.00	26	1.7	4.1	5.0	.06	.00	.00
3	.00	.00	.00	.00	.00	21	1.5	4.3	2.3	.04	.00	.00
4	.00	.00	.00	.00	.00	17	1.4	3.7	1.8	.02	.00	.00
5	.00	.00	.00	.00	.00	17	1.4	3.7	1.6	.00	.00	.00
6	.00	.00	.00	.00	.00	12	1.4	2.6	1.0	.00	.00	.00
7	.00	.00	.00	.00	.00	12	1.2	2.4	1.0	.00	.00	.00
8	.00	.00	.00	.00	.00	11	1.0	2.3	.96	.00	.00	.00
9	.00	.00	.00	.00	.00	11	.92	2.1	.92	.00	.00	.00
10	.00	.00	.00	.00	.00	10	.77	2.0	.92	.00	.00	.00
11	.00	.00	.00	.00	.00	10	.74	1.4	.88	.00	.00	.00
12	.00	.00	.00	.00	.00	9.6	.77	1.2	.80	.00	.00	.00
13	.00	.00	.00	.00	.00	9.2	.65	1.0	1.1	.00	.00	.00
14	.00	.00	.00	.00	.00	8.8	.55	1.0	1.8	.00	.00	.00
15	.00	.00	.00	.00	.00	8.4	.50	.68	2.0	.00	.00	.00
16	.00	.00	.00	.00	.00	8.0	.48	.43	2.0	.00	.00	.00
17	.00	.00	.00	.00	.00	7.6	.40	.58	1.9	.00	.00	.00
18	.00	.00	.00	.00	.00	7.2	.30	.24	1.4	.00	.00	.00
19	.00	.00	.00	.00	15	6.8	.24	.12	1.0	.00	.00	.00
20	.00	.00	.00	.00	60	6.4	.20	.00	.71	.00	.00	.00
21	.00	.00	.00	.00	120	6.0	.20	.00	.65	.00	.00	.00
22	.00	.00	.00	.00	130	5.6	.18	.00	.68	.00	.00	.00
23	.00	.00	.00	.00	95	5.2	.16	.00	1.1	.00	.00	.00
24	.00	.00	.00	.00	75	4.8	.10	.00	2.6	.00	.00	.00
25	.00	.00	.00	.00	70	4.4	.04	.00	2.0	.00	.00	.00
26	.00	.00	.00	.00	60	4.0	.01	.00	1.8	.00	.00	.00
27	.00	.00	.00	.00	40	3.6	.10	.00	1.6	.00	.00	.00
28	.00	.00	.00	.00	50	3.2	.32	.00	1.1	.00	.00	.00
29	.00	.00	.00	.00	---	2.8	.50	.00	1.0	.00	.00	.00
30	.00	.00	.00	.00	---	2.4	1.0	.00	.62	.00	.00	.00
31	.00	---	.00	.00	---	2.0	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	715.00	306.0	20.53	36.65	47.04	.34	.00	.00
MEAN	.000	.000	.000	.000	25.5	9.87	.68	1.18	1.57	.011	.000	.000
MAX	.00	.00	.00	.00	130	43	1.8	4.3	5.0	.22	.00	.00
MIN	.00	.00	.00	.00	.00	2.0	.01	.00	.62	.00	.00	.00
AC-FT	.00	.00	.00	.00	1420	607	41	73	93	.7	.00	.00

CAL YR 1980 TOTAL 519.64 MEAN 1.42 MAX 70 MIN .00 AC-FT 1030
WTR YR 1981 TOTAL 1125.56 MEAN 3.08 MAX 130 MIN .00 AC-FT 2230

05123600 EGG CREEK NEAR GRANVILLE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to September 1981 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
05...	1215	19	530	--	.0	.5	--	--	--	--	--	--
APR												
03...	1355	1.5	660	7.8	12.0	7.0	40	220	62	41	29	55
JUN												
09...	2000	.90	1850	--	15.0	19.0	--	--	--	--	--	--

DATE	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
MAR												
05...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
03...	33	1.6	13	160	150	20	.2	3.7	428	409	.58	1.7
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	.07	.250	20	2	40	80	<1	10	<3	1	50
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	1	40	20	.0	<10	4	0	150	7.0	8	.00
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--

RED RIVER OF THE NORTH BASIN

05123900 BOUNDARY CREEK NEAR LANDA, ND

LOCATION.--Lat 48°48'46", long 100°51'46", at east line sec.35, T.162 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on right bank 80 ft (24 m) downstream from bridge on county road, 5 mi (8 km) upstream from mouth, and 6 mi (10 km) southeast of Landa.

DRAINAGE AREA.--230 mi^2 (596 km^2), of which about 60 mi^2 (160 km^2) is probably noncontributing.

PERIOD OF RECORD.--September 1957 to September 1981 (discontinued).

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,420.03 ft (432.825 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some regulation since 1974 by Soil Conservation Service dam, combined capacity, 6,900 acre-ft (8.51 hm^3).

AVERAGE DISCHARGE.--24 years, 12.3 ft^3/s (0.348 m^3/s), 8,910 acre-ft/yr (11.0 hm^3/yr); median of yearly mean discharges, 5.5 ft^3/s (0.16 m^3/s), 4,000 acre-ft/yr (4.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,580 ft^3/s (101 m^3/s) Apr. 9, 1969, gage height, 12.70 ft (3.871 m); maximum gage height, 12.90 ft (3.932 m) Apr. 1, 1976, backwater from ice and snow; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 790 ft^3/s (22.4 m^3/s) Aug. 6, gage height, 10.10 ft (3.078 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	1.6	.17	.00	.00	15	1.5	.25	.12	.00	.00	.62
2	2.1	1.5	.14	.00	.00	17	1.5	.25	.12	.00	.00	.44
3	2.0	1.4	.12	.00	.00	20	1.5	.25	.12	.00	.00	.38
4	1.9	1.3	.10	.00	.00	16	1.5	.24	.12	.00	.00	.35
5	1.8	1.3	.08	.00	.00	14	1.4	.24	.12	.00	.00	.30
6	1.7	1.3	.06	.00	.00	12	1.3	.23	.10	.00	644	.28
7	1.8	1.2	.04	.00	.00	12	1.3	.23	.08	.00	496	.25
8	1.8	1.3	.03	.00	.00	11	1.3	.23	.06	.00	197	.22
9	1.6	1.2	.02	.00	.00	10	1.3	.23	.05	.00	87	.20
10	1.5	1.3	.01	.00	.00	11	1.2	.23	.03	.00	49	.16
11	1.4	1.2	.00	.00	.00	12	1.2	.22	.01	.00	35	.08
12	1.3	1.0	.00	.00	.00	12	1.2	.22	.00	.00	24	.02
13	1.3	1.0	.00	.00	.00	12	1.2	.21	.00	.00	17	.02
14	1.3	1.0	.00	.00	.00	11	1.2	.21	.00	.00	12	.02
15	1.2	.95	.00	.00	.05	9.0	1.2	.20	.00	.00	8.4	.02
16	1.3	.90	.00	.00	.05	8.0	1.2	.19	.00	.00	7.8	.01
17	1.4	.85	.00	.00	.10	7.5	1.0	.18	.00	.00	6.4	.01
18	1.4	.80	.00	.00	.10	7.0	.90	.18	.00	.00	5.4	.01
19	1.5	.75	.00	.00	.15	7.0	.90	.17	.00	.00	4.8	.00
20	1.5	.70	.00	.00	.20	6.5	.80	.16	.00	.00	3.9	.00
21	1.5	.65	.00	.00	3.0	6.0	.80	.15	.00	.00	3.4	.00
22	1.7	.60	.00	.00	5.0	5.5	.70	.15	.00	.00	3.1	.00
23	1.6	.55	.00	.00	6.0	6.0	.70	.14	.00	.00	2.9	.00
24	1.5	.50	.00	.00	7.0	5.0	.60	.14	.00	.00	2.8	.00
25	1.6	.45	.00	.00	8.0	4.5	.50	.14	.00	.00	2.6	.00
26	1.6	.40	.00	.00	10	4.0	.40	.14	.00	.00	2.1	.01
27	1.5	.35	.00	.00	11	3.5	.40	.13	.00	.00	1.7	.01
28	1.6	.30	.00	.00	12	3.0	.30	.13	.00	.00	1.4	.01
29	1.7	.25	.00	.00	---	2.5	.25	.13	.00	.00	1.0	.01
30	1.8	.20	.00	.00	---	2.0	.25	.12	.00	.00	.86	.02
31	1.6	---	.00	.00	---	2.0	---	.12	---	.00	.74	---
TOTAL	49.6	26.80	.77	.00	62.65	274.0	29.50	5.81	.93	.00	1620.30	3.45
MEAN	1.60	.89	.025	.000	2.24	8.84	.98	.19	.031	.000	52.3	.12
MAX	2.1	1.6	.17	.00	12	20	1.5	.25	.12	.00	644	.62
MIN	1.2	.20	.00	.00	.00	2.0	.25	.12	.00	.00	.00	.00
AC-FT	98	53	1.5	.00	124	543	59	12	1.8	.00	3210	6.8

CAL YR 1980 TOTAL 293.16 MEAN .80 MAX 26 MIN .00 AC-FT 581
WTR YR 1981 TOTAL 2073.81 MEAN 5.68 MAX 644 MIN .00 AC-FT 4110

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND
(International gaging station)
(Radiochemical station)

LOCATION.--Lat 48°59'47", long 100°57'29", in SW¼SE¼ sec.30, T.164 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on left bank 1,200 ft (370 m) upstream from second crossing of international boundary, 1 mi (2 km) downstream from Fish and Wildlife Service Dam 357, 7 mi (11 km) northeast of Westhope, 11 mi (18 km) downstream from Boundary Creek, and at mile 154.5 (248.6 km).

DRAINAGE AREA.--16,900 mi^2 (43,800 km^2), approximately, of which about 10,300 mi^2 (26,700 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to October 1929, April 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1338: 1932. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,402.45 ft (427.467 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 28, 1938, nonrecording gage at site 6.3 mi (10.1 km) upstream at datum 2.52 ft (0.768 m) higher.

REMARKS.--Records good. Flow regulated by dams on Souris River and tributaries, combined capacity, about 321,000 acre-ft (3,960 hm^3). Diversion at Eaton Dam for irrigation of about 7,600 acres (30.8 km^2) and other small diversions for irrigation and municipal supply above station.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--51 years (1930-81), 261 ft^3/s (7.392 m^3/s), 189,100 acre-ft/yr (233 hm^3/yr); median of yearly mean discharges, 133 ft^3/s (3.77 m^3/s), 96,400 acre-ft/yr (119 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 26, 1976, gage height, 19.16 ft (5.840 m); maximum daily reverse flow, 35 ft^3/s (0.99 m^3/s) Apr. 8, 1943, caused by backwater from downstream tributary inflow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 426 ft^3/s (12.1 m^3/s) Apr. 20, gage height, 6.87 ft (2.094 m); minimum daily, 9.3 ft^3/s (0.26 m^3/s) Feb. 10-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	120	132	48	17	101	267	278	120	91	49	37
2	68	120	135	48	17	101	245	267	122	83	49	38
3	81	120	138	48	17	101	231	250	125	78	49	38
4	122	100	138	48	16	101	222	250	128	78	47	38
5	125	89	135	48	14	132	236	256	122	74	53	38
6	122	87	135	48	11	182	245	171	125	76	46	38
7	122	87	138	48	10	182	217	80	125	68	40	38
8	122	87	138	48	10	178	222	66	128	62	37	38
9	125	83	94	48	9.7	203	231	64	135	61	38	37
10	109	91	49	48	9.3	278	250	78	138	53	40	36
11	117	160	49	48	9.3	278	226	78	135	45	41	36
12	125	112	49	48	9.3	278	226	68	155	44	41	36
13	128	112	49	48	9.3	212	194	64	174	43	42	36
14	108	112	51	46	9.3	148	207	74	178	42	41	36
15	114	112	51	46	9.3	145	207	83	170	41	42	36
16	109	112	51	46	9.3	145	207	85	174	36	43	36
17	96	114	49	46	9.3	145	190	91	178	34	42	36
18	112	114	49	46	9.3	145	212	109	170	34	42	36
19	114	114	49	46	17	132	203	135	182	34	40	36
20	114	114	49	46	29	114	306	142	182	34	40	36
21	117	109	49	46	32	106	306	135	182	34	40	36
22	117	114	49	48	38	95	272	117	186	34	40	36
23	114	114	49	40	45	94	278	109	190	34	43	36
24	117	120	49	34	53	95	330	112	186	33	44	36
25	120	120	49	33	62	101	300	120	186	32	42	36
26	120	122	48	32	76	109	294	125	186	32	42	36
27	120	122	48	32	89	154	284	128	186	32	41	31
28	150	125	48	32	96	217	289	125	186	31	40	33
29	150	125	48	26	---	222	278	128	146	29	40	34
30	150	128	48	18	---	262	256	125	94	35	40	35
31	140	---	48	18	---	278	---	128	---	51	37	---
TOTAL	3616	3359	2261	1305	742.4	5034	7431	4041	4694	1488	1311	1085
MEAN	117	112	72.9	42.1	26.5	162	248	130	156	48.0	42.3	36.2
MAX	150	160	138	48	96	278	330	278	190	91	53	38
MIN	68	83	48	18	9.3	94	190	64	94	29	37	31
AC-FT	7170	6660	4480	2590	1470	9980	14740	8020	9310	2950	2600	2150

CAL YR 1980 TOTAL 21985.07 MEAN 60.1 MAX 250 MIN .90 AC-FT 43610
WTR YR 1981 TOTAL 36367.40 MEAN 99.6 MAX 330 MIN 9.3 AC-FT 72130

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued
(National stream-quality accounting network station)
(Radiochemical station)
(Pesticide station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-64, 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1956 to September 1964, October 1966 to September 1968, October 1973 to current year.
WATER TEMPERATURES: October 1954 to September 1955, October 1956 to September 1959, October 1960 to September 1964, October 1966 to September 1968, October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

REMARKS.--Records are good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 4,750 micromhos Feb. 21, 1961; minimum, 232 micromhos Apr. 18, 1957.
WATER TEMPERATURES: Maximum recorded, 28.5°C July 4, 1975; minimum recorded, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,410 micromhos Feb. 16, 17; minimum, 486 micromhos Apr. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT												
01...	1810	67	880	8.8	12.0	12.0	48	9.6	88	63	K10	K16
NOV												
05...	1215	88	1100	8.4	11.0	4.0	42	11.7	87	53	K10	220
DEC												
02...	1300	135	1330	8.0	-14.0	.5	3.5	13.4	91	60	K10	K4
JAN												
08...	1715	48	1880	7.3	-11.0	1.0	3.2	3.5	24	85	<1	K1
FEB												
03...	1300	17	2250	7.3	-13.0	.5	5.1	.1	0	97	<1	<1
MAR												
04...	1900	101	2100	7.5	1.0	2.0	1.1	4.7	34	79	<2	<2
APR												
01...	1745	290	560	7.8	14.0	4.0	4.1	11.7	89	33	<2	K14
MAY												
05...	2010	254	690	8.3	14.0	14.5	4.3	10.0	95	97	K3	K2
JUN												
02...	1830	123	835	8.3	22.0	16.5	38	10.2	103	36	K6	K8
JUL												
08...	1715	62	900	8.9	25.0	23.5	11	11.0	126	79	K4	K6
AUG												
04...	1700	47	1000	8.7	30.0	27.0	7.4	7.5	93	87	K16	K10
SEP												
03...	1035	38	965	9.1	10.0	14.0	24	7.8	74	97	K22	150

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
OCT												
01...	262	2.0	47	35	93	42	2.6	110	14	260	.7	200
NOV												
05...	351	31	68	44	120	41	2.9	140	16	320	2.0	230
DEC												
02...	411	.00	77	53	160	45	3.5	180	15	420	6.7	270
JAN												
08...	609	29	120	75	210	42	3.8	230	20	580	47	460
FEB												
03...	807	52	160	99	260	40	4.1	280	22	710	57	670
MAR												
04...	753	63	150	92	230	39	3.7	250	19	690	35	500
APR												
01...	184	24	39	21	50	36	1.6	59	9.1	160	4.1	110
MAY												
05...	234	24	51	26	64	36	1.9	76	12	210	1.7	150
JUN												
02...	293	13	63	33	79	36	2.1	92	13	280	2.3	160
JUL												
08...	300	.00	54	40	100	41	2.6	110	13	320	.6	120
AUG												
04...	303	.00	52	42	120	45	3.1	130	11	340	1.1	170
SEP												
03...	254	.00	39	38	120	49	3.3	140	16	310	.4	170

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT												
01...	22	.2	6.0	584	573	.79	106	66	.00	.000	.00	.00
NOV												
05...	36	.2	14	778	721	1.1	185	37	.12	.010	.13	.10
DEC												
02...	42	.2	14	949	884	1.3	346	8	.00	.000	.00	.00
JAN												
08...	60	.3	25	1370	1320	1.9	178	21	.00	.010	.01	.00
FEB												
03...	74	.3	28	1630	1740	2.2	74.8	10	.00	.010	.01	.00
MAR												
04...	72	.3	24	1520	1500	2.1	415	14	.00	.010	.01	.00
APR												
01...	15	.1	8.2	379	349	.52	297	7	.00	.010	.01	.01
MAY												
05...	20	.1	6.3	462	456	.63	317	9	.00	.020	.02	.01
JUN												
02...	23	.1	4.1	563	544	.77	187	9	.00	.010	.01	.00
JUL												
08...	38	.1	7.8	624	566	.85	104	20	.01	.000	.01	.00
AUG												
04...	32	.2	14	694	647	.94	88.8	16	.17	.150	.32	.32
SEP												
03...	35	.2	8.9	652	614	.89	67.4	42	.03	.030	.06	.03

RED RIVER OF THE NORTH BASIN

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
OCT											
01...	--	.000	.00	--	1.8	--	--	1.8	--	1.8	--
NOV											
05...	.580	.540	.70	1.9	1.5	2.50	.50	2.0	2.6	2.1	12
DEC											
02...	.120	.040	.05	1.7	1.5	1.80	.30	1.5	1.8	1.5	8.0
JAN											
08...	.040	.040	.05	2.2	2.0	2.20	.20	2.0	2.2	2.0	9.7
FEB											
03...	.290	.300	.39	2.1	2.1	2.40	.00	2.4	2.4	2.4	11
MAR											
04...	.530	.570	.73	2.3	1.8	2.80	.40	2.4	2.8	2.4	12
APR											
01...	.060	.010	.01	1.4	.99	1.50	.50	1.0	1.5	1.0	6.7
MAY											
05...	.120	.110	.14	2.6	.99	2.70	1.6	1.1	2.7	1.1	12
JUN											
02...	.120	.120	.15	1.6	1.3	1.70	.30	1.4	1.7	1.4	7.5
JUL											
08...	.090	.080	.10	3.5	1.7	3.60	1.8	1.8	3.6	1.8	16
AUG											
04...	.420	.430	.55	2.3	1.2	2.70	1.1	1.6	3.0	1.9	13
SEP											
03...	.150	.020	.03	2.5	1.9	2.60	.70	1.9	2.7	1.9	12

DATE	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT											
01...	.230	.71	.060	.010	.03	6	0	6	200	100	90
NOV											
05...	.290	.89	.120	--	--	--	--	--	--	--	--
DEC											
02...	.150	.46	.040	--	--	--	--	--	--	--	--
JAN											
08...	.270	.83	.200	--	--	5	0	5	500	300	200
FEB											
03...	.420	1.3	.310	--	--	--	--	--	--	--	--
MAR											
04...	1.00	3.1	.640	--	--	--	--	--	--	--	--
APR											
01...	.260	.80	.170	--	--	4	3	1	0	0	60
MAY											
05...	.140	.43	.100	--	--	--	--	--	--	--	--
JUN											
02...	.260	.80	.140	.010	.03	--	--	--	--	--	--
JUL											
08...	.350	1.1	.190	--	--	8	0	9	100	0	200
AUG											
04...	.430	1.3	.450	--	--	--	--	--	--	--	--
SEP											
03...	.470	1.4	.400	--	--	--	--	--	--	--	--

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)
OCT												
01...	1	<1	0	0	0	0	<3	8	7	1	1400	--
JAN												
08...	4	<1	30	30	0	5	<3	210	210	0	120	0
APR												
01...	0	<1	20	10	10	0	<3	3	1	2	320	240
JUL												
08...	1	<1	0	0	0	0	<3	5	3	2	560	250

DATE	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)
OCT											
01...	<10	10	10	0	120	120	3	.2	.2	.0	5
JAN											
08...	210	18	18	0	160	0	1500	.1	.1	.0	9
FEB											
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
04...	--	--	--	--	--	--	--	--	--	--	5
APR											
01...	80	0	0	1	340	30	310	.0	.0	.0	2
MAY											
05...	--	--	--	--	--	--	--	--	--	--	7
JUN											
02...	--	--	--	--	--	--	--	--	--	--	3
JUL											
08...	310	5	4	1	50	0	50	.4	.3	.1	6
AUG											
04...	--	--	--	--	--	--	--	--	--	--	4
SEP											
03...	--	--	--	--	--	--	--	--	--	--	5

DATE	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT											
01...	5	0	0	0	0	0	0	0	20	20	4
JAN											
08...	6	3	0	0	0	2	2	0	330	330	5
FEB											
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
04...	--	--	--	--	--	--	--	--	20	--	--
APR											
01...	0	4	0	0	0	0	0	0	30	0	30
MAY											
05...	--	--	--	--	--	--	--	--	10	--	--
JUN											
02...	--	--	--	--	--	--	--	--	50	--	--
JUL											
08...	3	3	0	0	1	0	0	0	40	0	40
AUG											
04...	--	--	--	--	--	--	--	--	20	--	--
SEP											
03...	--	--	--	--	--	--	--	--	20	--	--

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT											
01...	<7.7	2.1	17	3.9	16	3.6	.12	--	31	1.9	.01
NOV											
05...	--	--	--	--	--	--	--	26	--	--	.00
DEC											
02...	--	--	--	--	--	--	--	19	--	--	.00
JAN											
08...	--	--	--	--	--	--	--	--	35	.4	.00
FEB											
03...	--	--	--	--	--	--	--	26	--	--	.01
MAR											
04...	--	--	--	--	--	--	--	32	--	--	.01
APR											
01...	<11	.7	11	.9	10	.9	.06	--	15	.9	.00
MAY											
05...	--	--	--	--	--	--	--	14	--	--	.00
JUN											
02...	--	--	--	--	--	--	--	17	--	--	.00
JUL											
08...	--	--	--	--	--	--	--	--	16	--	.00
AUG											
04...	--	--	--	--	--	--	--	18	--	--	.00
SEP											
03...	--	--	--	--	--	--	--	20	--	--	.00

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT									
01...	--	6.38	3.78	2.97	.740	28	67	12	99
NOV									
05...	14000	--	--	--	--	--	78	19	100
DEC									
02...	--	--	--	--	--	--	8	2.9	80
JAN									
08...	--	--	--	--	--	--	6	.78	100
FEB									
03...	--	--	--	--	--	--	4	.18	100
MAR									
04...	37000	--	--	--	--	--	112	31	57
APR									
01...	--	--	--	--	--	--	10	7.8	92
MAY									
05...	710	--	--	--	--	--	8	5.5	95
JUN									
02...	4900	--	--	--	--	--	8	2.7	86
JUL									
08...	880000	--	--	--	--	--	24	4.0	99
AUG									
04...	13000	--	--	--	--	--	11	1.4	90
SEP									
03...	--	--	--	--	--	--	82	8.5	99

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	886	882	1070	1050	---	---	1830	1680	2250	2210	2270	2230
2	882	864	1090	1060	---	---	1840	1810	2250	2220	2260	2230
3	897	856	1100	1050	---	---	1860	1820	2260	2230	2220	2140
4	911	898	1110	1080	1480	1460	1860	1840	2240	2210	2150	2080
5	926	903	1110	1100	1490	1410	1870	1840	2210	2180	2110	2010
6	940	904	1130	1090	1520	1490	1850	1830	2190	2160	2000	1890
7	954	941	1130	1020	1540	1470	1890	1830	2150	2130	1910	1790
8	964	955	1120	1100	1550	1470	1900	1880	2140	2130	1830	1670
9	970	952	1120	1110	1550	1470	1920	1890	2150	2130	1740	1590
10	970	961	1120	1100	1550	1470	1910	1900	2140	2130	1610	1370
11	994	962	1130	1120	1540	1490	1930	1910	2130	2120	1510	1440
12	995	995	1130	1100	1560	1480	1970	1910	2160	2110	1450	1350
13	996	991	1100	1100	1580	1530	1990	1960	2210	2150	1340	1240
14	1010	992	1120	1100	1590	1560	2010	1980	2140	1830	1260	1210
15	1010	1010	1150	1120	1590	1550	2000	2000	2400	1820	1200	1140
16	1020	1010	1160	1140	1590	1560	2030	2010	2410	2370	1140	1070
17	1020	995	1150	1130	1590	1570	2040	2020	2410	2370	1070	1040
18	1010	959	1150	1130	1610	1560	2040	2010	2380	2340	1030	980
19	1010	1000	1160	1150	1630	1610	2050	2020	2330	2280	1000	991
20	1020	1010	1160	1150	1650	1610	2110	2060	2250	2210	1020	970
21	1020	1010	1160	1140	1670	1620	2110	2080	2220	2190	1050	1020
22	1020	1010	1170	1160	1680	1600	2120	2110	2250	2180	1010	821
23	1020	1010	1170	1150	1670	1650	2130	2100	2300	2240	972	822
24	1020	992	---	---	1680	1660	2140	2110	2310	2270	947	809
25	1040	1020	---	---	1700	1670	2130	2110	2320	2120	908	868
26	1040	1030	---	---	1720	1700	2140	2120	2330	2200	870	822
27	1060	1040	---	---	1740	1680	2160	2140	2350	2190	843	755
28	1070	1050	---	---	1740	1710	2200	2170	2260	2190	756	720
29	1080	1060	---	---	1770	1730	2220	2190	---	---	721	682
30	1080	1040	---	---	1780	1720	2230	2200	---	---	690	641
31	1070	1060	---	---	1790	1700	2220	2210	---	---	652	563
MONTH	1080	856	1170	1020	1790	1410	2230	1680	2410	1820	2270	563

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	628	556	673	670	816	780	876	854	992	975	---	---
2	572	542	684	676	839	819	902	875	993	966	---	---
3	595	534	696	685	842	814	915	865	988	954	---	---
4	592	564	696	691	825	777	923	905	990	856	---	---
5	580	541	714	692	836	812	926	908	856	795	---	---
6	570	520	721	699	834	826	916	898	852	795	---	---
7	548	520	723	712	829	809	915	906	847	802	---	---
8	552	486	722	722	840	808	914	882	847	834	---	---
9	544	524	725	716	843	835	915	892	852	806	---	---
10	551	518	724	716	842	838	902	889	852	834	988	964
11	551	538	736	723	841	829	908	899	861	818	992	968
12	552	547	742	735	840	824	918	900	856	822	984	964
13	552	537	741	728	847	834	914	874	861	830	980	964
14	557	513	734	727	851	837	879	866	861	838	984	957
15	560	543	743	726	854	836	894	876	856	830	---	---
16	563	500	752	739	849	835	895	863	---	---	---	---
17	574	561	758	745	847	838	923	891	---	---	984	968
18	583	575	757	734	855	837	915	870	---	---	988	972
19	588	560	763	750	854	836	925	907	---	---	984	972
20	595	578	772	759	858	835	930	908	---	---	984	968
21	604	592	781	768	865	852	931	927	---	---	---	---
22	612	586	787	777	873	851	928	906	---	---	---	---
23	616	530	790	786	859	841	907	875	---	---	---	---
24	627	616	793	786	862	844	939	885	---	---	---	---
25	639	628	792	788	879	847	963	931	---	---	---	---
26	639	615	798	788	869	833	969	959	---	---	---	---
27	651	643	794	791	881	832	976	960	---	---	---	---
28	654	646	793	790	898	880	966	925	---	---	---	---
29	663	652	800	782	901	870	926	859	---	---	---	---
30	672	661	810	789	887	851	973	923	---	---	---	---
31	---	---	795	784	---	---	991	964	---	---	---	---
MONTH	672	486	810	670	901	777	991	854	993	795	992	957

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14.0	11.0	3.5	2.5	---	---	1.0	.5	.5	.5	2.5	1.0
2	11.0	8.5	5.0	2.5	---	---	.5	.5	.5	.0	2.5	1.0
3	11.5	9.0	6.5	5.0	---	---	.5	.0	.5	.0	3.5	1.0
4	12.5	10.0	6.0	4.5	.5	.5	.5	.0	.0	.0	3.0	1.5
5	13.0	10.5	5.0	3.5	.5	.0	.5	.0	.5	.0	3.0	1.5
6	15.0	12.0	5.5	4.5	.5	.0	.5	.5	.5	.5	3.0	1.5
7	15.0	13.0	5.5	3.5	.0	.0	.5	.0	.5	.5	3.0	1.5
8	15.0	13.0	3.5	3.0	.0	.0	1.0	.5	.5	.0	3.0	1.5
9	14.0	10.0	3.0	1.0	.0	.0	.5	.5	.0	.0	3.0	1.5
10	10.0	7.5	.5	.0	.0	.0	.5	.5	.0	.0	2.5	.0
11	8.0	6.5	1.0	.0	.0	.0	.5	.5	.0	.0	3.0	1.0
12	7.0	5.0	1.0	.0	.0	.0	.5	.5	.0	.0	3.0	1.0
13	5.0	3.5	1.0	.5	.0	.0	.5	.5	.0	.0	3.0	1.0
14	4.0	2.5	1.5	.0	.0	.0	.5	.5	.0	.0	3.0	1.5
15	3.0	3.0	2.0	1.0	.0	.0	.5	.5	.5	.0	3.5	1.5
16	3.5	3.0	2.5	1.5	.0	.0	.5	.5	1.0	.0	4.5	2.0
17	3.0	1.5	2.0	1.0	.5	.0	.5	.5	1.0	.5	4.0	1.5
18	3.0	1.0	1.5	.5	.5	.0	.5	.5	1.5	1.0	4.0	2.5
19	5.0	3.0	2.0	.5	.5	.0	.5	.5	1.5	1.0	5.0	2.5
20	6.5	5.0	2.0	.0	.5	.0	.5	.5	1.0	.0	5.0	2.5
21	7.0	5.0	1.0	.0	.5	.0	.5	.5	1.0	.5	5.0	3.0
22	7.0	3.0	1.5	.5	.5	.0	.5	.5	1.5	.0	5.5	2.5
23	3.0	2.5	1.0	.0	.5	.5	.5	.5	1.5	.0	6.5	3.0
24	3.0	2.5	---	---	.5	.5	.5	.5	1.0	.0	7.0	4.0
25	3.0	2.5	---	---	.5	.0	.5	.5	1.5	1.0	5.0	4.0
26	3.5	2.0	---	---	.5	.5	1.0	.5	1.5	1.0	6.5	3.5
27	4.0	3.0	---	---	.5	.5	1.0	.0	1.5	1.0	6.0	4.5
28	3.0	3.0	---	---	1.0	.0	.5	.0	2.5	1.5	6.5	5.0
29	3.0	2.0	---	---	1.0	.5	.5	.0	---	---	7.0	4.0
30	4.0	2.0	---	---	1.0	1.0	.5	.0	---	---	7.0	4.5
31	3.5	2.5	---	---	1.0	.5	.5	.0	---	---	4.5	3.0
MONTH	15.0	1.0	6.5	.0	1.0	.0	1.0	.0	2.5	.0	7.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	5.5	1.5	13.0	10.5	16.5	14.0	---	---			---	---
2	4.5	2.5	13.0	11.5	17.0	13.0	---	---			---	---
3	4.5	3.0	14.0	11.5	19.5	15.0	---	---			---	---
4	5.0	2.5	15.0	12.0	19.5	17.0	---	---			---	---
5	6.0	3.0	15.0	12.0	19.5	17.0	27.5	24.0			---	---
6	5.5	4.5	15.0	12.0	20.0	17.5	---	---			---	---
7	5.0	3.0	14.0	11.5	19.0	18.0	---	---			---	---
8	6.0	3.0	13.0	10.0	18.0	17.0	---	---			---	---
9	6.5	4.5	12.5	9.0	18.0	16.5	---	---			19.5	18.0
10	7.5	4.5	11.0	8.5	18.0	15.5	---	---			19.5	16.5
11	7.5	5.0	12.0	7.5	18.0	15.5	---	---			19.0	16.0
12	7.5	5.0	11.5	9.5	20.0	16.0	---	---			19.0	16.0
13	7.0	5.0	13.5	10.5	19.0	17.5	---	---			17.5	15.5
14	7.5	4.5	14.0	11.5	18.0	17.0	---	---			16.0	14.5
15	9.0	5.0	14.5	12.0	17.0	15.0	---	---			15.0	13.5
16	11.5	8.0	13.5	9.5	17.5	14.5	---	---			14.5	12.5
17	9.5	7.5	15.0	11.5	17.0	15.0	---	---			14.0	12.5
18	9.5	7.5	16.5	13.0	15.5	13.5	---	---			14.5	12.0
19	9.0	6.5	17.0	14.5	16.0	14.5	---	---			14.5	12.5
20	7.5	5.5	17.5	14.0	19.5	15.0	---	---			14.0	12.5
21	9.0	6.5	19.0	15.0	20.0	17.5	---	---			14.0	12.0
22	9.0	7.5	18.5	15.5	19.5	16.5	---	---			13.5	12.0
23	9.5	7.5	15.0	10.0	18.5	17.0	---	---			14.0	12.5
24	11.0	8.0	10.0	9.0	18.5	16.0	---	---			13.0	12.0
25	11.5	9.0	10.0	9.0	19.5	16.5	---	---			12.5	12.0
26	14.0	9.5	12.5	10.0	21.5	18.0	---	---			12.0	9.0
27	13.0	11.5	14.0	12.0	21.5	19.5	---	---			9.5	7.5
28	12.0	11.0	16.5	13.5	21.5	20.5	---	---			9.0	8.0
29	12.0	11.0	16.5	15.0	21.5	19.5	---	---			8.0	7.0
30	12.5	10.5	16.0	14.0	21.5	19.5	---	---			8.0	7.5
31	---	---	18.0	14.5	---	---	---	---			---	---
MONTH	14.0	1.5	19.0	7.5	21.5	13.0	27.5	24.0			19.5	7.0

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	NOV 5,80		MAR 4,81		MAY 5,81		JUN 2,81	
TIME	1215		1900		2010		1830	
TOTAL CELLS/ML	14000		37000		710		4900	
DIVERSITY: DIVISION	1.3		0.3		1.4		0.3	
.CLASS	1.3		0.3		1.4		0.3	
..ORDER	1.4		0.3		1.6		0.9	
...FAMILY	1.5		0.3		2.0		0.9	
....GENUS	1.7		0.3		2.0		0.9	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	13	2	--	-
...MICRACTINIACEAE								
....MICRACTINIUM	290	2	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	190	1	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	380	3	--	-	26	4	39	1
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	380	3	1100	3	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	8900#	63	*	0	39	5	--	-
..PENNALES								
...NAVICULACEAE								
....NAVICULA	95	1	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	13	2	26	1
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	420#	58	39	1
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	*	0	52	7	52	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	2800#	20	*	0	52	7	3900#	79
....COCCOCHLORIS	950	7	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	100	15	860#	17
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	35000#	96	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	*	0	--	-	*	0
....TRACHELOMONAS	95	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	JUL 8,81		AUG 4,81		SEP 3,81	
TIME	1715		1700		0000	
TOTAL CELLS/ML	880000		13000		66000	
DIVERSITY: DIVISION	0.0		0.7		0.4	
.CLASS	0.0		0.7		0.4	
..ORDER	0.0		1.3		1.3	
...FAMILY	0.0		1.4		1.4	
....GENUS	0.0		1.4		1.6	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	830	6	--	-
...MICRACTINIACEAE						
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	--	-
....SELENASTRUM	--	-	140	1	--	-
....TETRAEDRON	--	-	--	-	*	0
...SCENEDESMACEAE						
....SCENEDESMUS	*	0	280	2	4500	7
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	210	2	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	--	-
..PENNALES						
...NAVICULACEAE						
....NAVICULA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	140	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	9600#	73	34000#	52
....COCCOCHLORIS	--	-	--	-	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	3600	5
....APHANIZOMENON	880000#	100	--	-	22000#	34
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	1900	14	1100	2
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
....TRACHELOMONAS	--	-	140	1	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Red River of the North basin				
Sheyenne River	Red River of the North	Lat 47°47'00", long 98°46'21", in SE¼SE¼NW¼ sec.30, T.150 N., R.63 W., Eddy County, 5.7 mi (9.2 km) southwest of Warwick.	--	--	8-21-81	11.1
North Branch Turtle River	Turtle River	Lat 47°57'41", long 97°35'25", in NW¼NW¼NE¼ sec.29, T.152 N., R.54 W., Grand Forks County, 4 mi (6.4 km) northeast of Larimore.	--	1980	2-18-81 2-19-81 2-23-81 2-24-81 3-18-81 5-26-81 8-19-81	a1.0 4.8 5.6 a†10 4.7 5.2 *.49
South Branch Turtle River	Turtle River	Lat 47°55'49", long 97°37'30", in SE¼NE¼NE¼ sec.1, T.151 N., R.55 W., Grand Forks County, 1.5 mi (2.4 km) north of Larimore.	--	1980	8-19-81	*1.6
South Branch Turtle River	Turtle River	Lat 47°56'14", long 97°35'02", in NW¼NE¼SE¼ sec.32, T.152 N., R.54 W., Grand Forks County, 3.0 mi (4.8 km) northeast of Larimore.	--	--	2-18-81 2-19-81 2-23-81 3-18-81 5-26-81 6-25-81 8-19-81	a5 3.8 †7.7 3.5 5.8 4.2 *1.1
Turtle River	Red River of the North	Lat 47°55'56", long 97°30'51", in NW¼NE¼NW¼ sec.1, T.152 N., R.53 W., Grand Forks County, 2 mi (3.2 km) northwest of Arvilla.	--	1980	8-19-81	*4.5
Turtle River	Red River of the North	Lat 47°58'07", long 97°25'46", in NE¼NE¼SE¼ sec.21, T.152 N., R.53 W., Grand Forks County, 4 mi (6.4 km) northeast of Arvilla.	--	1980	8-19-81	*1.3
Turtle River	Red River of the North	Lat 48°00'17", long 97°23'59", in NW¼NE¼NW¼ sec.11, T.152 N., R.53 W., Grand Forks County, 1.5 mi (2.4 km) southwest of Mekinock.	--	1980	8-19-81	*1.5
Turtle River	Red River of the North	Lat 48°01'28", long 97°20'34", in SE¼NE¼SE¼ sec.32, T.153 N., R.52 W., Grand Forks County, 1 mi (1.6 km) northeast of Mekinock.	--	1980	8-20-81	*1.1
Turtle River	Red River of the North	Lat 48°00'58", long 97°14'13", in NW¼SW¼NW¼ sec.6, T.152 N., R.51 W., Grand Forks County, 5 mi (8.0 km) southwest of Manvel.	--	1980	8-20-81	*2.1
Kelly Slough	Turtle River	Lat 48°00'20", long 97°13'36", in SE¼SE¼SE¼ sec.6, T.152 N., R.52 W., Grand Forks County, 5 mi (8.0 km) southwest of Manvel.	--	1980	2-18-81 2-20-81 2-24-81 3-19-81 5-27-81 8-18-81	0 a.02 7.2 6.6 †11 *1.5

a - Estimated
b - Affected by diversion for irrigation
† - Peak flow
* - Base flow

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Red River of the North basin				
Hazen Brook	Saltwater Coulee	Lat 47°52'07", long 97°29'40", in SW¼SW¼NW¼ sec.30, T.151 N., R.53 W., Grand Forks County, 3.5 mi (5.6 km) south of Arvilla.	--	1980	8-19-81	a*.01
Hazen Brook	Saltwater Coulee	Lat 47°54'11", long 97°24'28", in NW¼NW¼NW¼ sec.14, T.151 N., R.53 W., Grand Forks County, 2 mi (3.2 km) southwest of Emerado.	--	1980	2-18-81 2-19-81 2-23-81 3-18-81 5-25-81 5-26-81 8-19-81	0 0 3.3 1.2 a†16 4.3 0
Hazen Brook	Saltwater Coulee	Lat 47°55'04", long 97°21'46", in NW¼NW¼NW¼ sec.7, T.151 N., R.52 W., Grand Forks County, at Emerado.	--	1980	8-19-81	a*.01
Saltwater Coulee	Turtle River	Lat 47°55'55", long 97°15'40", in NW¼NW¼NW¼ sec.1, T.151 N., R.52 W., Grand Forks County, at bridge on county highway 0.1 mi (0.2 km) south of Highway 2, and 5.5 mi (8.8 km) east of Emerado.	88.8	1954-73, 1980	2-18-81 2-19-81 2-24-81 2-28-81 3-19-81 5-27-81 8-18-81	0 .47 1.7 a†27 2.2 4.2 0
Freshwater Coulee	Saltwater Coulee	Lat 47°56'00", long 97°14'00", in SE¼SW¼SW¼ sec.31, T.152 N., R.51 W., Grand Forks County, at bridge on U.S. Highway 2, 6 mi (9.7 km) east of Emerado.	31.0	1955-73, 1980	8-18-81	*.01
Saltwater Coulee	Turtle River	Lat 48°00'19", long 97°12'26", in NE¼NE¼NW¼ sec.8, T.152 N., R.51 W., Grand Forks County, 5 mi (8.0 km) southwest of Manvel.	--	1980	8-19-81	*0
Turtle River	Red River of the North	Lat 48°04'43", long 97°11'03", in SE¼SE¼SW¼ sec.10, T.153 N., R.51 W., Grand Forks County, 0.3 mi (0.5 km) west of Manvel.	613	1945-74, 1980	2-20-81 2-24-81 3-19-81 5-27-81 6-17-81 8-18-81	5.0 24 28 11 †84 *4.5
Forest River	Red River of the North	Lat 48°11'08", long 97°42'19", in SE¼NW¼SW¼ sec.3, T.154 N., R.55 W., Grand Forks County, 3.6 mi (5.8 km) northwest of Inkster.	--	--	7-22-81 8-18-81	3.1 2.4
Forest River	Red River of the North	Lat 48°10'45", long 97°42'07", in NW¼NE¼NW¼ sec.10, T.154 N., R.55 W., Grand Forks County, 3.2 mi (5.1 km) northwest of Inkster.	--	--	7-22-81 7-22-81 8-18-81	b1.5 1.9 2.5
Forest River	Red River of the North	Lat 48°10'01", long 97°40'23", in SW¼SW¼SE¼ sec.11, T.154 N., R.55 W., Grand Forks County, 1.6 mi (2.6 km) northwest of Inkster.	--	--	7-22-81	2.5
Souris River	Red River of the North	Lat 48°14'23", long 101°17'30", in NE¼NW¼NW¼ sec.24, T.155 N., R.83 W., Ward County, at bridge on Main Street in Minot.	--	1968-76, 1978-79	2-19-81	448

a - Estimated
b - Affected by diversion for irrigation
† - Peak flow
* - Base flow

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
PART 5. HUDSON BAY BASIN												
RED RIVER OF THE NORTH BASIN												
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)												
OCT , 1980												
30...	1430	1400.00	58.72	880	9.1	4.0	45	204	24	27	33	76
MAY , 1981												
13...	1635	1400.00	59.76	850	9.0	15.0	60	277	67	45	40	81
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)												
OCT , 1980												
30...	0830	1400.00	41.52	1140	8.0	.0	65	435	170	98	46	73
MAY , 1981												
13...	1445	1400.00	43.06	800	8.6	14.8	30	298	68	63	34	50
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)												
OCT , 1980												
30...	0900	1400.00	39.44	1040	8.2	1.0	80	350	120	64	46	77
MAY , 1981												
13...	1250	1400.00	41.05	775	8.3	16.0	90	287	97	57	35	50
05056405 - BIG COULEE AT GRAHAM IS INLET NR FT TOTTEN, ND (LAT 48 02 25 LONG 099 02 50)												
OCT , 1980												
22...	1500	1400.00	25.28	2800	8.8	4.0	25	626	270	69	110	390
MAY , 1981												
14...	0825	1400.00	25.68	2440	8.7	11.5	30	554	190	70	92	330

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)											
OCT , 1980											
30...	42	2.4	21	18	190	23	.1	26	557	407	.76
MAY , 1981											
13...	37	2.2	19	210	210	28	.1	25	586	582	.80
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)											
OCT , 1980											
30...	25	1.6	27	260	310	37	.1	18	797	625	1.1
MAY , 1981											
13...	25	1.3	18	230	170	22	.1	6.9	532	504	.72
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
OCT , 1980											
30...	31	1.8	23	230	260	30	.1	15	682	530	.93
MAY , 1981											
13...	26	1.3	16	190	190	25	.1	15	508	503	.69
05056405 - BIG COULEE AT GRAHAM IS INLET NR FT TOTTEN, ND (LAT 48 02 25 LONG 099 02 50)											
OCT , 1980											
22...	55	6.9	59	360	910	180	.1	2.7	1960	1744	2.7
MAY , 1981											
14...	54	6.2	52	360	730	160	.1	5.5	1700	1660	2.3

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)											
OCT , 1980											
30...	.00	.110	10	8	200	110	1	0	<3	2	<10
MAY , 1981											
13...	1.6	.090	5	5	200	240	1	10	<3	2	10
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)											
OCT , 1980											
30...	.37	.260	10	4	60	110	<1	0	<3	8	20
MAY , 1981											
13...	.14	.210	0	5	70	350	<1	10	<3	3	20
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
OCT , 1980											
30...	.05	.240	10	7	100	100	<1	0	<3	6	10
MAY , 1981											
13...	.04	.200	0	7	100	340	1	0	<3	5	40
05056405 - BIG COULEE AT GRAHAM IS INLET NR FT TOTTEN, ND (LAT 48 02 25 LONG 099 02 50)											
OCT , 1980											
22...	.00	.470	20	15	0	500	0	10	1	4	40
MAY , 1981											
14...	.04	.280	0	10	100	400	0	10	0	2	40

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE		LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
PART 5. HUDSON BAY BASIN												
RED RIVER OF THE NORTH BASIN												
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)												
OCT , 1980												
30...	1	50	2	.1	<10	5	0	180	7.0	4	.00	
MAY , 1981												
13...	2	50	6	.0	<10	0	0	220	1.0	60	.00	
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)												
OCT , 1980												
30...	1	70	10	.3	<10	7	0	330	9.0	20	.00	
MAY , 1981												
13...	2	40	50	.1	<10	1	0	230	4.0	10	.00	
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)												
OCT , 1980												
30...	1	70	10	.1	<10	7	0	290	12	20	.00	
MAY , 1981												
13...	0	50	7	1.0	<10	2	0	230	5.0	30	.00	
05056405 - BIG COULEE AT GRAHAM IS INLET NR FT TOTTEN, ND (LAT 48 02 25 LONG 099 02 50)												
OCT , 1980												
22...	0	210	10	.2	4	5	0	270	8.0	10	.00	
MAY , 1981												
14...	2	170	10	.0	0	0	0	380	3.0	10	.00	

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471847097594200 - LAKE ASHTABULA (SITE A8-THALWEG) EAST OF HANNAFORD, ND											
APR											
10...	0850	.00	15	1200.00	66.08	8.0	10	270	13	768	675
10...	0852	1.60	--	--	--	--	--	--	--	--	689
10...	0854	3.30	--	--	--	--	--	--	--	--	691
10...	0856	6.60	--	--	--	--	--	--	--	--	692
10...	0858	9.90	--	--	--	--	--	--	--	--	691
10...	0900	13.2	--	--	--	--	--	--	--	--	691
20...	1205	.00	17	1200.00	66.43	13.0	25	180	13	780	829
20...	1207	1.60	--	--	--	--	--	--	--	--	857
20...	1209	3.30	--	--	--	--	--	--	--	--	866
20...	1211	6.60	--	--	--	--	--	--	--	--	872
20...	1213	9.90	--	--	--	--	--	--	--	--	872
20...	1215	13.2	--	--	--	--	--	--	--	--	876
MAY											
07...	0930	.00	14	1200.00	66.20	12.0	80	150	14	766	--
07...	0932	1.60	--	--	--	--	--	--	--	--	990
07...	0934	3.30	--	--	--	--	--	--	--	--	941
07...	0936	9.90	--	--	--	--	--	--	--	--	1010
07...	0940	13.2	--	--	--	--	--	--	--	--	943
20...	1300	.00	17	1200.00	66.29	25.0	40	--	20	774	933
20...	1302	1.60	--	--	--	--	--	--	--	--	939
20...	1304	3.30	--	--	--	--	--	--	--	--	1005
20...	1306	6.60	--	--	--	--	--	--	--	--	937
20...	1308	9.90	--	--	--	--	--	--	--	--	937
20...	1310	13.2	--	--	--	--	--	--	--	--	1000
JUN											
10...	1305	.00	16	1200.00	66.21	22.0	30	300	5.0	767	988
10...	1307	1.60	--	--	--	--	--	--	--	--	986
10...	1309	3.30	--	--	--	--	--	--	--	--	986
10...	1311	6.60	--	--	--	--	--	--	--	--	985
10...	1313	9.90	--	--	--	--	--	--	--	--	985
10...	1315	13.0	--	--	--	--	--	--	--	--	985
24...	1345	.00	16	1200.00	66.34	21.0	40	315	12	772	937
24...	1347	1.60	--	--	--	--	--	--	--	--	936
24...	1349	3.30	--	--	--	--	--	--	--	--	936
24...	1351	6.60	--	--	--	--	--	--	--	--	935
24...	1353	9.90	--	--	--	--	--	--	--	--	936
24...	1355	13.0	--	--	--	--	--	--	--	--	936
JUL											
16...	1015	.00	16	1200.00	66.37	26.0	0	305	5.0	773	937
16...	1017	1.60	--	--	--	--	--	--	--	--	936
16...	1019	3.30	--	--	--	--	--	--	--	--	931
16...	1021	6.60	--	--	--	--	--	--	--	--	928
16...	1023	9.90	--	--	--	--	--	--	--	--	927
16...	1025	16.0	--	--	--	--	--	--	--	--	926
29...	1215	.00	15	1200.00	66.21	24.0	90	75	12	772	855
29...	1217	1.60	--	--	--	--	--	--	--	--	856
29...	1219	3.30	--	--	--	--	--	--	--	--	859
29...	1221	6.60	--	--	--	--	--	--	--	--	859
29...	1223	9.90	--	--	--	--	--	--	--	--	859
29...	1225	13.2	--	--	--	--	--	--	--	--	856
AUG											
13...	0920	.00	16	1200.00	66.19	24.0	10	195	3.0	781	915
13...	0922	1.60	--	--	--	--	--	--	--	--	852
13...	0924	3.30	--	--	--	--	--	--	--	--	832
13...	0926	6.60	--	--	--	--	--	--	--	--	829
13...	0928	9.90	--	--	--	--	--	--	--	--	823
13...	0930	13.2	--	--	--	--	--	--	--	--	819
26...	1650	.00	15	1200.00	66.03	24.0	40	25	7.0	777	894
26...	1652	1.60	--	--	--	--	--	--	--	--	893
26...	1654	3.30	--	--	--	--	--	--	--	--	892
26...	1656	6.60	--	--	--	--	--	--	--	--	891
26...	1658	9.90	--	--	--	--	--	--	--	--	888
26...	1700	13.2	--	--	--	--	--	--	--	--	887
SEP											
10...	1200	.00	15	1200.00	66.03	30.0	0	--	.0	770	914
10...	1202	1.60	--	--	--	--	--	--	--	--	929
10...	1204	3.30	--	--	--	--	--	--	--	--	930
10...	1206	6.60	--	--	--	--	--	--	--	--	928
10...	1208	9.90	--	--	--	--	--	--	--	--	925
10...	1210	13.2	--	--	--	--	--	--	--	--	921

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471847097594200 - LAKE ASHTABULA (SITE A8-THALWEG) EAST OF HANNAFORD, ND											
APR											
10...	8.3	7.0	--	19.2	10.5	85	--	--	--	--	--
10...	8.3	7.0	--	--	10.4	85	--	--	--	--	--
10...	8.3	7.0	5.6	--	10.4	85	432	356	.00	.01	.000
10...	8.3	7.0	--	--	10.4	85	--	--	--	--	--
10...	8.3	7.0	--	--	10.3	84	--	--	--	--	--
10...	8.3	7.0	6.4	--	10.3	84	434	332	.00	.01	.010
20...	8.2	8.4	--	48.0	9.9	82	--	--	--	--	--
20...	8.2	8.4	--	--	10.0	83	--	--	--	--	--
20...	8.3	8.4	6.8	--	10.2	85	539	144	.00	.00	.000
20...	8.3	8.5	--	--	10.3	86	--	--	--	--	--
20...	8.3	8.5	--	--	10.3	86	--	--	--	--	--
20...	8.3	8.3	7.4	--	10.0	82	541	126	.00	.00	.000
MAY											
07...	--	12.0	--	22.8	9.2	84	--	--	--	--	--
07...	8.2	12.0	--	--	8.8	81	--	--	--	--	--
07...	8.2	12.0	6.1	--	8.8	81	621	123	.00	.00	.000
07...	8.2	12.0	--	--	8.6	79	--	--	--	--	--
07...	8.3	12.0	4.6	--	8.3	76	623	127	.00	.00	.000
20...	8.4	15.9	--	34.8	7.7	76	--	--	--	--	--
20...	8.4	15.9	--	--	7.6	75	--	--	--	--	--
20...	8.3	15.9	3.7	--	7.2	71	652	175	.01	.01	.000
20...	8.4	15.9	--	--	7.2	71	--	--	--	--	--
20...	8.4	15.9	--	--	7.2	71	--	--	--	--	--
20...	8.2	15.7	--	--	6.4	63	654	--	.01	.01	.000
JUN											
10...	8.3	19.3	--	28.0	7.9	84	--	--	--	--	--
10...	8.3	19.3	--	--	7.9	84	--	--	--	--	--
10...	8.3	19.3	3.8	--	7.9	84	672	108	.00	.00	.010
10...	8.3	19.2	--	--	7.7	82	--	--	--	--	--
10...	8.3	19.0	--	--	7.5	80	--	--	--	--	--
10...	8.2	18.7	4.4	--	6.8	72	673	105	.01	.00	.000
24...	8.2	19.1	--	25.0	7.0	74	--	--	--	--	--
24...	8.2	19.1	--	--	7.0	74	--	--	--	--	--
24...	8.2	19.1	10	--	7.0	74	644	158	.13	.14	.020
24...	8.2	19.0	--	--	7.0	74	--	--	--	--	--
24...	8.2	18.6	--	--	6.7	70	--	--	--	--	--
24...	8.2	18.6	12	--	6.7	70	646	148	.12	.14	.020
JUL											
16...	7.9	23.5	--	37.2	5.0	58	--	--	--	--	--
16...	8.0	23.1	--	--	4.5	52	--	--	--	--	--
16...	8.0	23.0	3.1	--	4.1	47	597	116	.02	.04	.030
16...	8.0	22.9	--	--	3.7	43	--	--	--	--	--
16...	8.0	22.9	--	--	3.5	40	--	--	--	--	--
16...	7.9	22.8	4.6	--	3.3	38	595	123	.02	.04	.030
29...	8.2	21.3	--	38.4	6.2	68	--	--	--	--	--
29...	8.2	21.3	--	--	6.2	68	--	--	--	--	--
29...	8.2	21.3	--	--	6.2	68	--	--	--	--	--
29...	8.1	21.1	--	--	5.7	63	--	--	--	--	--
29...	8.1	21.1	--	--	5.6	61	--	--	--	--	--
29...	8.1	21.1	--	--	5.5	61	587	--	.07	.07	.020
AUG											
13...	8.1	20.6	--	48.0	7.6	83	--	--	--	--	--
13...	8.2	20.6	--	--	7.6	83	--	--	--	--	--
13...	8.2	20.4	2.5	--	5.4	59	623	116	.00	.00	.010
13...	8.1	19.5	--	--	3.2	34	--	--	--	--	--
13...	8.0	19.2	--	--	1.7	18	--	--	--	--	--
13...	7.9	19.0	4.5	--	1.1	12	624	80	.00	.00	.010
26...	8.3	21.5	--	45.6	4.9	54	--	--	--	--	--
26...	8.3	21.5	--	--	4.9	54	--	--	--	--	--
26...	8.2	21.3	--	--	4.6	51	661	--	--	.10	<.020
26...	8.2	20.7	--	--	3.2	35	--	--	--	--	--
26...	8.1	20.3	--	--	2.7	29	--	--	--	--	--
26...	8.1	20.2	4.7	--	2.4	26	658	61	--	.10	<.020
SEP											
10...	8.6	18.7	--	42.0	7.1	75	--	--	--	--	--
10...	8.6	18.1	--	--	7.1	74	--	--	--	--	--
10...	8.5	17.5	--	--	6.3	65	--	--	--	--	--
10...	8.4	17.0	--	--	4.5	46	--	--	--	--	--
10...	8.4	16.6	--	--	3.7	37	--	--	--	--	--
10...	8.4	16.5	--	--	3.6	36	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471847097594200 - LAKE ASHTABULA (SITE A8-THALWEG) EAST OF HANNAFORD, ND										
APR										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.000	.00	.01	.080	.110	1.7	.81	1.80	.88	.92
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.000	.01	.01	.070	.090	2.3	.80	2.40	1.5	.89
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.040	.00	.00	.150	.140	2.2	1.4	2.30	.80	1.5
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.150	.00	.00	.110	.100	2.3	1.1	2.40	1.2	1.2
MAY										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.000	.00	.00	.150	.110	.95	.89	1.10	.10	1.0
07...	--	--	--	--	--	--	--	--	--	--
07...	.000	.00	.00	.130	.090	.97	.79	1.10	.22	.88
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.010	.01	.02	.150	.100	1.2	1.2	1.30	.00	1.3
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.000	.01	.01	.150	.110	1.4	1.2	1.50	.20	1.3
JUN										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.010	.01	.00	.090	.090	1.4	1.0	1.50	.40	1.1
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.010	.01	.00	.060	.100	1.4	1.0	1.50	.40	1.1
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	.010	.15	.15	.160	.160	1.7	1.5	1.90	.20	1.7
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	.010	.14	.15	.140	.150	1.6	1.4	1.70	.20	1.5
JUL										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	.030	.05	.07	.160	.150	1.1	1.3	1.30	.00	1.4
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	.040	.05	.08	.240	.180	.96	1.1	1.20	.00	1.3
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	.020	.09	.09	.090	.090	1.2	1.2	1.30	.00	1.3
AUG										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	.000	.00	.00	.080	.050	1.6	1.2	1.70	.50	1.2
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	.000	.00	.00	.070	.090	1.5	1.0	1.60	.50	1.1
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	<.09	.12	.090	.090	1.5	1.1	1.60	.40	1.2
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	<.09	.12	.180	.160	1.7	1.2	1.90	.50	1.4

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

471847097594200 - LAKE ASHTABULA (SITE A8-THALWEG) EAST OF HANNAFORD, ND

APR										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	1.8	.160	.100	.060	.030	.10	.00	25	11.5	.910
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	2.4	.160	.100	.000	.050	.09	.01	14	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	2.3	.190	.110	.100	.100	.08	.03	18	14.8	.810
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	2.4	.180	.110	.090	.100	.01	.10	16	--	--
MAY										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	1.1	.210	.160	.160	.110	.13	.03	18	3.49	.000
07...	--	--	--	--	--	--	--	--	--	--
07...	1.1	.210	.160	.170	.130	.12	.04	24	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	1.3	.220	.170	.160	.160	.16	.01	22	4.88	.780
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	1.5	.250	.200	.190	.000	.07	.13	13	--	--
JUN										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	1.5	.240	.200	.160	.150	.15	.05	23	8.04	.000
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	1.5	.280	.240	.160	.180	.20	.04	19	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	2.1	.300	.270	.240	.240	.22	.05	40	6.55	.000
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	1.8	.300	.270	.240	.240	.23	.04	21	--	--
JUL										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	1.4	.360	.310	.340	.330	.30	.01	17	1.84	.210
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	1.3	.380	.350	.360	.350	.32	.03	17	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	5.79	1.19
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	1.4	.310	.340	.300	.290	.30	.04	19	--	--
AUG										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.7	.360	.290	.240	.250	.24	.05	13	15.3	.820
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.6	.400	.340	.290	.300	.29	.05	13	5.10	1.23
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.300	.350	.290	.230	.20	.15	15	7.49	1.05
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.390	.370	.310	.250	.21	.16	14	--	--
SEP										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	13.7	2.18
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND											
APR											
14...	1330	.00	17	1200.00	66.27	9.0	25	315	5.0	790	786
14...	1332	1.60	--	--	--	--	--	--	--	--	797
14...	1334	3.30	--	--	--	--	--	--	--	--	798
14...	1336	6.60	--	--	--	--	--	--	--	--	798
14...	1338	9.90	--	--	--	--	--	--	--	--	796
14...	1340	13.2	--	--	--	--	--	--	--	--	799
14...	1342	16.5	--	--	--	--	--	--	--	--	803
22...	0940	.00	18	1200.00	66.35	9.0	100	315	14	772	620
22...	0942	1.60	--	--	--	--	--	--	--	--	621
22...	0944	3.30	--	--	--	--	--	--	--	--	619
22...	0946	6.60	--	--	--	--	--	--	--	--	622
22...	0948	9.90	--	--	--	--	--	--	--	--	623
22...	0950	13.2	--	--	--	--	--	--	--	--	624
22...	0952	16.5	--	--	--	--	--	--	--	--	623
MAY											
06...	1350	.00	18	1200.00	66.22	14.0	60	90	12	770	612
06...	1352	1.60	--	--	--	--	--	--	--	--	613
06...	1354	3.30	--	--	--	--	--	--	--	--	612
06...	1356	6.60	--	--	--	--	--	--	--	--	608
06...	1358	9.90	--	--	--	--	--	--	--	--	609
06...	1400	13.2	--	--	--	--	--	--	--	--	612
19...	0900	.00	18	1200.00	66.29	15.0	0	--	.0	779	697
19...	0902	1.60	--	--	--	--	--	--	--	--	697
19...	0904	3.30	--	--	--	--	--	--	--	--	701
19...	0906	6.60	--	--	--	--	--	--	--	--	767
19...	0908	9.90	--	--	--	--	--	--	--	--	813
19...	0910	13.2	--	--	--	--	--	--	--	--	793
19...	0912	16.5	--	--	--	--	--	--	--	--	775
JUN											
09...	0950	.00	17	1200.00	66.22	17.0	70	300	7.0	761	832
09...	0952	1.60	--	--	--	--	--	--	--	--	833
09...	0954	3.30	--	--	--	--	--	--	--	--	830
09...	0956	6.60	--	--	--	--	--	--	--	--	828
09...	0958	9.90	--	--	--	--	--	--	--	--	826
09...	1000	13.0	--	--	--	--	--	--	--	--	828
23...	0950	.00	19	1200.00	66.27	14.0	100	60	5.0	770	890
23...	0952	1.60	--	--	--	--	--	--	--	--	890
23...	0954	3.30	--	--	--	--	--	--	--	--	889
23...	0956	6.60	--	--	--	--	--	--	--	--	890
23...	0958	9.90	--	--	--	--	--	--	--	--	894

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND											
APR											
14...	8.8	6.8	--	16.8	11.2	89	--	--	--	--	--
14...	8.8	6.9	--	--	11.2	89	--	--	--	--	--
14...	8.8	6.9	--	--	11.2	89	--	--	--	--	--
14...	8.8	6.8	--	--	11.1	88	--	--	--	--	--
14...	8.8	6.8	--	--	11.1	88	--	--	--	--	--
14...	8.8	6.8	--	--	11.0	87	--	--	--	--	--
14...	8.5	6.7	--	--	10.9	86	--	--	--	--	--
22...	8.6	8.5	--	18.0	11.4	96	--	--	--	--	--
22...	8.6	8.5	--	--	11.2	95	--	--	--	--	--
22...	8.7	8.5	14	--	11.1	94	420	116	.00	.01	.000
22...	8.7	8.5	--	--	11.1	94	--	--	--	--	--
22...	8.7	8.5	--	--	11.2	95	--	--	--	--	--
22...	8.7	8.5	--	--	11.1	94	--	--	--	--	--
22...	8.7	8.5	13	--	11.1	94	418	114	.00	.00	.000
MAY											
06...	8.6	11.6	--	37.2	8.5	77	--	--	--	--	--
06...	8.6	11.7	--	--	8.0	73	--	--	--	--	--
06...	8.6	11.7	5.1	--	8.2	74	474	96	.01	.01	.000
06...	8.6	11.6	--	--	8.2	74	--	--	--	--	--
06...	8.6	11.6	--	--	8.2	74	--	--	--	--	--
06...	8.6	11.5	6.7	--	8.2	74	472	113	.01	.01	.000
19...	8.6	15.5	--	114	9.5	92	--	--	--	--	--
19...	8.6	15.4	--	--	10.0	97	--	--	--	--	--
19...	8.6	15.3	4.4	--	10.4	100	484	134	.02	.01	.010
19...	8.6	14.5	--	--	9.5	91	--	--	--	--	--
19...	8.4	14.3	--	--	8.3	79	--	--	--	--	--
19...	8.4	13.9	--	--	7.4	70	--	--	--	--	--
19...	8.4	13.7	2.7	--	6.7	60	443	126	.03	.03	.010
JUN											
09...	8.7	18.5	--	42.0	8.0	85	--	--	--	--	--
09...	8.7	18.5	--	--	8.0	85	--	--	--	--	--
09...	8.7	18.5	22	--	8.0	85	553	83	.00	.00	.000
09...	8.7	18.4	--	--	8.0	85	--	--	--	--	--
09...	8.7	18.4	--	--	8.0	85	--	--	--	--	--
09...	8.7	18.4	3.6	--	7.9	84	553	85	.00	.00	.000
23...	8.7	18.4	--	46.0	9.2	96	--	--	--	--	--
23...	8.7	18.3	--	--	9.2	96	--	--	--	--	--
23...	8.7	18.3	2.9	--	9.2	96	603	148	.00	.00	.010
23...	8.7	18.3	--	--	9.1	95	--	--	--	--	--
23...	8.7	18.2	--	--	8.7	90	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND										
APR										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.000	.00	.01	.080	.080	1.7	1.0	1.80	.70	1.1
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.000	.00	.00	.110	.140	1.3	.85	1.40	.41	.99
MAY										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	.000	.01	.01	.220	.190	3.2	2.2	3.40	1.0	2.4
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	.000	.01	.01	.240	.210	1.2	1.5	1.40	.00	1.7
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.000	.03	.01	.360	.110	1.1	1.3	1.50	.10	1.4
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.010	.04	.04	.330	.320	1.3	1.3	1.60	.00	1.6
JUN										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.050	.00	.00	.180	.190	1.1	1.0	1.30	.10	1.2
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.010	.00	.00	.200	.200	1.1	1.0	1.30	.10	1.2
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	.010	.01	.01	.170	.160	1.5	1.1	1.70	.40	1.3
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND										
APR										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	15	15.7	.430
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	16	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	1.8	.160	.070	.070	.060	.04	.03	11	25.4	.000
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	1.4	.150	.070	.050	.050	.06	.01	11	--	--
MAY										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	3.4	.330	.290	.280	.220	.11	.18	21	2.53	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	1.4	.190	.140	.140	.110	.13	.01	14	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	1.5	.200	.200	.150	.000	.13	.07	11	1.77	.000
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	1.6	.230	.170	.170	.160	.12	.05	14	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.3	.190	.170	.120	.130	.13	.04	13	2.68	.090
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.3	.200	.170	.130	.130	.13	.04	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	1.7	.230	.200	.170	.180	.16	.04	19	5.31	.910
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND											
JUN											
23...	1000	13.0	--	--	--	--	--	--	--	--	904
JUL											
14...	0945	.00	17	1200.00	66.24	19.0	100	110	2.0	770	944
14...	0947	1.60	--	--	--	--	--	--	--	--	943
14...	0949	3.30	--	--	--	--	--	--	--	--	942
14...	0951	6.60	--	--	--	--	--	--	--	--	941
14...	0953	9.90	--	--	--	--	--	--	--	--	941
14...	0955	13.0	--	--	--	--	--	--	--	--	942
29...	1730	.00	19	1200.00	66.21	26.0	40	140	12	771	840
29...	1732	1.60	--	--	--	--	--	--	--	--	839
29...	1734	3.30	--	--	--	--	--	--	--	--	839
29...	1736	6.60	--	--	--	--	--	--	--	--	837
29...	1738	9.90	--	--	--	--	--	--	--	--	837
29...	1740	13.2	--	--	--	--	--	--	--	--	836
29...	1742	16.5	--	--	--	--	--	--	--	--	838
AUG											
10...	1410	.00	18	1200.00	66.29	26.0	100	290	12	778	845
10...	1412	1.60	--	--	--	--	--	--	--	--	835
10...	1414	3.30	--	--	--	--	--	--	--	--	819
10...	1416	6.60	--	--	--	--	--	--	--	--	819
10...	1418	9.90	--	--	--	--	--	--	--	--	810
10...	1420	13.2	--	--	--	--	--	--	--	--	816
10...	1422	16.5	--	--	--	--	--	--	--	--	818
24...	1355	.00	18	1200.00	65.99	26.0	95	120	11	774	749
24...	1357	1.60	--	--	--	--	--	--	--	--	749
24...	1359	3.30	--	--	--	--	--	--	--	--	749
24...	1401	6.60	--	--	--	--	--	--	--	--	749
24...	1403	9.90	--	--	--	--	--	--	--	--	750
24...	1405	13.2	--	--	--	--	--	--	--	--	750
24...	1407	16.5	--	--	--	--	--	--	--	--	750
SEP											
10...	1000	.00	17	1200.00	66.03	23.0	0	150	2.0	770	798
10...	1002	1.60	--	--	--	--	--	--	--	--	794
10...	1004	3.30	--	--	--	--	--	--	--	--	797
10...	1006	6.60	--	--	--	--	--	--	--	--	796
10...	1008	9.90	--	--	--	--	--	--	--	--	795
10...	1010	13.2	--	--	--	--	--	--	--	--	798
10...	1012	16.5	--	--	--	--	--	--	--	--	798

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND											
JUN											
23...	8.7	17.8	11	--	7.8	80	610	150	.00	.00	.010
JUL											
14...	8.8	22.7	--	27.6	7.2	82	--	--	--	--	--
14...	8.8	22.7	--	--	7.2	82	--	--	--	--	--
14...	8.8	22.7	9.8	--	7.2	82	643	131	.01	.04	.030
14...	8.8	22.7	--	--	7.2	82	--	--	--	--	--
14...	8.8	22.7	--	--	7.3	83	--	--	--	--	--
14...	8.8	22.6	15	--	7.2	82	613	133	.01	.04	.040
29...	8.8	22.0	--	39.6	10.8	123	--	--	--	--	--
29...	8.8	22.0	--	--	10.8	123	--	--	--	--	--
29...	8.8	22.0	3.5	--	10.9	124	587	124	.07	.07	.020
29...	8.8	21.9	--	--	10.9	124	--	--	--	--	--
29...	8.8	21.9	--	--	10.7	122	--	--	--	--	--
29...	8.8	21.6	--	--	10.3	116	--	--	--	--	--
29...	8.7	21.4	--	--	9.4	106	584	--	.07	.07	.020
AUG											
10...	9.1	19.4	--	24.0	13.2	140	--	--	--	--	--
10...	9.1	19.4	--	--	13.0	138	--	--	--	--	--
10...	9.1	19.4	4.1	--	13.1	139	540	106	.00	.00	.010
10...	9.1	19.2	--	--	12.8	135	--	--	--	--	--
10...	9.1	18.8	--	--	11.6	122	--	--	--	--	--
10...	9.1	18.7	--	--	10.6	110	--	--	--	--	--
10...	9.0	18.7	3.7	--	9.9	103	576	114	.00	.00	.010
24...	9.1	21.2	--	25.2	9.3	106	--	--	--	--	--
24...	9.1	21.1	--	--	9.1	103	--	--	--	--	--
24...	9.1	21.1	3.1	--	9.4	107	544	115	--	.08	<.020
24...	9.1	21.1	--	--	9.2	105	--	--	--	--	--
24...	9.1	20.8	--	--	8.3	94	--	--	--	--	--
24...	9.1	20.8	--	--	8.1	92	--	--	--	--	--
24...	9.1	20.7	2.2	--	8.4	95	563	131	--	.09	<.020
SEP											
10...	9.3	18.3	--	16.8	13.1	137	--	--	--	--	--
10...	9.3	18.2	--	--	12.7	132	--	--	--	--	--
10...	9.2	17.8	4.1	--	10.8	111	559	121	--	.00	.000
10...	9.2	17.7	--	--	10.4	107	--	--	--	--	--
10...	9.2	17.3	--	--	7.9	81	--	--	--	--	--
10...	9.2	16.5	--	--	6.3	63	--	--	--	--	--
10...	9.2	16.4	3.5	--	5.8	58	581	119	--	.00	.010

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND										
JUN										
23...	.010	.01	.01	.240	.230	1.7	1.1	1.90	.60	1.3
JUL										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	.030	.04	.07	.310	.340	1.5	1.2	1.80	.30	1.5
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	.030	.05	.07	.330	.300	1.3	1.3	1.60	.00	1.6
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	.020	.09	.09	.210	.220	1.4	1.1	1.60	.30	1.3
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	.020	.09	.09	.150	.140	1.6	1.1	1.70	.50	1.2
AUG										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.000	.00	.00	.160	.100	3.5	1.2	3.70	2.4	1.3
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.000	.00	.00	.130	.130	2.0	1.2	2.10	.80	1.3
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	.020	<.09	.10	.100	.080	3.2	1.4	3.30	1.8	1.5
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	.020	<.09	.11	.160	.180	2.3	1.5	2.50	.80	1.7
SEP										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.000	<.09	<.09	.120	.110	3.4	.68	3.50	2.7	.79
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.010	<.09	<.09	.200	.240	2.1	1.1	2.30	1.0	1.3

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471416097585500 - LAKE ASHTABULA (SITE A7-THALWEG) ABOVE SIBLEY BRIDGE, ND										
JUN										
23...	1.9	.290	.230	.210	.190	.18	.05	38	--	--
JUL										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	1.8	.410	.330	.360	.350	.35	.00	12	34.3	.500
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	1.7	.420	.340	.380	.350	.32	.02	16	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	1.7	.400	.400	.420	.350	.37	.03	27	28.4	.000
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	1.8	.400	.400	.400	.350	.37	.03	16	8.37	.320
AUG										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	3.7	.480	.290	.280	.250	.24	.05	16	91.0	.000
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	2.1	.410	.300	.260	.250	.24	.06	15	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	.240	.210	.180	.090	.10	.11	21	79.4	1.76
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	.230	.240	.200	.120	.11	.13	16	--	--
SEP										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	.440	.260	.260	.240	.16	.10	21	86.8	<.010
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	.330	.290	.290	.290	.19	.10	17	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND											
APR											
16...	0745	.00	22	1200.00	66.27	10.0	60	180	12	770	638
16...	0747	1.60	--	--	--	--	--	--	--	--	648
16...	0749	3.30	--	--	--	--	--	--	--	--	650
16...	0751	6.60	--	--	--	--	--	--	--	--	650
16...	0753	9.90	--	--	--	--	--	--	--	--	651
16...	0755	13.2	--	--	--	--	--	--	--	--	651
16...	0757	16.5	--	--	--	--	--	--	--	--	651
16...	0759	19.8	--	--	--	--	--	--	--	--	651
23...	0930	.00	22	1200.00	66.36	9.0	10	0	13	784	597
23...	0932	1.60	--	--	--	--	--	--	--	--	559
23...	0934	3.30	--	--	--	--	--	--	--	--	560
23...	0936	6.60	--	--	--	--	--	--	--	--	558
23...	0938	9.90	--	--	--	--	--	--	--	--	558
23...	0940	13.2	--	--	--	--	--	--	--	--	558
23...	0942	16.5	--	--	--	--	--	--	--	--	557
23...	0944	19.8	--	--	--	--	--	--	--	--	556
MAY											
06...	0902	.00	24	1200.00	66.22	9.0	10	120	8.0	769	508
06...	0904	1.60	--	--	--	--	--	--	--	--	510
06...	0906	3.30	--	--	--	--	--	--	--	--	511
06...	0908	6.60	--	--	--	--	--	--	--	--	511
06...	0910	9.90	--	--	--	--	--	--	--	--	509
06...	0912	13.2	--	--	--	--	--	--	--	--	510
06...	0914	16.5	--	--	--	--	--	--	--	--	509
06...	0916	19.8	--	--	--	--	--	--	--	--	508
19...	1320	.00	24	1200.00	66.29	21.0	10	190	6.0	778	602
19...	1322	1.60	--	--	--	--	--	--	--	--	630
19...	1324	3.30	--	--	--	--	--	--	--	--	630
19...	1326	6.60	--	--	--	--	--	--	--	--	658
19...	1328	9.90	--	--	--	--	--	--	--	--	658
19...	1330	13.2	--	--	--	--	--	--	--	--	658
19...	1332	16.5	--	--	--	--	--	--	--	--	700
19...	1334	19.8	--	--	--	--	--	--	--	--	700
JUN											
09...	1245	.00	22	1200.00	66.22	--	30	230	13	759	662
09...	1247	1.60	--	--	--	--	--	--	--	--	662
09...	1249	3.30	--	--	--	--	--	--	--	--	662
09...	1251	6.60	--	--	--	--	--	--	--	--	661
09...	1253	9.90	--	--	--	--	--	--	--	--	661
09...	1255	13.0	--	--	--	--	--	--	--	--	663

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND											
APR											
16...	8.2	7.3	--	21.6	10.2	84	--	--	--	--	--
16...	8.3	7.2	--	--	10.2	84	--	--	--	--	--
16...	8.4	7.2	7.2	--	10.2	84	348	87	.03	.01	.000
16...	8.4	7.2	--	--	10.2	84	--	--	--	--	--
16...	8.4	7.2	--	--	10.2	84	--	--	--	--	--
16...	8.4	7.2	--	--	10.2	84	--	--	--	--	--
16...	8.4	7.2	--	--	10.2	84	--	--	--	--	--
16...	8.4	7.2	7.1	--	10.1	82	349	83	.01	.01	.010
23...	8.8	7.0	--	25.2	9.2	73	--	--	--	--	--
23...	8.8	7.0	--	--	9.2	73	--	--	--	--	--
23...	8.8	7.0	6.4	--	9.2	73	375	103	.00	.01	.000
23...	8.8	7.0	--	--	9.2	73	--	--	--	--	--
23...	8.8	7.0	--	--	9.1	73	--	--	--	--	--
23...	8.8	7.0	--	--	9.1	73	--	--	--	--	--
23...	8.8	7.0	--	--	9.1	73	--	--	--	--	--
23...	8.8	7.0	6.4	--	9.1	73	371	97	.00	.00	.000
MAY											
06...	8.5	11.0	--	94.8	8.9	81	--	--	--	--	--
06...	8.6	12.0	--	--	9.0	83	--	--	--	--	--
06...	8.6	12.0	3.5	--	9.0	83	387	93	.02	.02	.000
06...	8.6	11.5	--	--	8.9	82	--	--	--	--	--
06...	8.5	11.5	--	--	8.8	81	--	--	--	--	--
06...	8.5	11.5	--	--	8.8	81	--	--	--	--	--
06...	8.5	11.5	--	--	8.8	81	--	--	--	--	--
06...	8.5	11.0	7.2	--	7.8	71	384	95	.02	.01	.000
19...	8.6	16.1	--	112	10.0	99	--	--	--	--	--
19...	8.6	16.0	--	--	10.0	98	--	--	--	--	--
19...	8.6	16.0	2.5	--	9.8	96	401	109	.06	.06	.010
19...	8.6	14.2	--	--	10.0	95	--	--	--	--	--
19...	8.6	13.4	--	--	10.0	93	--	--	--	--	--
19...	8.6	13.2	--	--	9.8	91	--	--	--	--	--
19...	8.5	12.9	--	--	8.4	77	--	--	--	--	--
19...	8.5	12.9	4.5	--	8.1	75	397	106	.06	.05	.010
JUN											
09...	8.7	18.3	--	50.0	9.0	95	--	--	--	--	--
09...	8.7	18.3	--	--	9.0	95	--	--	--	--	--
09...	8.7	18.3	2.8	--	9.0	95	438	70	.02	.00	.010
09...	8.7	18.2	--	--	9.0	95	--	--	--	--	--
09...	8.7	18.2	--	--	9.0	95	--	--	--	--	--
09...	8.7	18.0	--	--	8.7	91	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND										
APR										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	.000	.03	.01	.090	.090	2.3	1.6	2.40	.70	1.7
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	.000	.02	.01	.070	.090	1.9	1.5	2.00	.40	1.6
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	.000	.00	.01	.110	.140	1.2	1.4	1.30	.00	1.5
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	.000	.00	.00	.110	.140	6.5	1.3	6.60	5.2	1.4
MAY										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	.000	.02	.02	.290	.270	1.0	1.1	1.30	.00	1.4
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	.000	.02	.01	.290	.270	2.4	1.2	2.70	1.2	1.5
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.010	.07	.07	.240	.190	1.3	1.2	1.50	.10	1.4
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.020	.07	.07	.280	.240	1.2	1.2	1.50	.10	1.4
JUN										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.010	.03	.00	.230	.230	1.4	.74	1.60	.63	.97
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND										
APR										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	2.4	.180	.110	.110	.060	--	--	16	9.05	.000
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	2.0	.150	.080	.050	.040	--	--	16	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	1.3	.250	.190	.170	.020	.05	.14	9.2	16.5	.100
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	6.6	.120	.070	.050	.050	.04	.03	14	--	--
MAY										
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	1.3	.150	.140	.130	.090	.34	.00	14	1.51	.000
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	2.7	.410	.350	.320	.270	.27	.08	14	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	1.6	.150	.110	.100	.080	.08	.03	12	1.09	.000
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	1.6	.170	.130	.130	.110	.15	.00	14	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.6	.170	.150	.120	.100	.11	.04	--	2.23	.120
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND											
JUN											
09...	1257	16.0	--	--	--	--	--	--	--	--	665
09...	1259	20.0	--	--	--	--	--	--	--	--	670
24...	1110	.00	23	1200.00	66.34	19.0	0	310	10	770	700
24...	1112	1.60	--	--	--	--	--	--	--	--	704
24...	1114	3.30	--	--	--	--	--	--	--	--	704
24...	1116	6.60	--	--	--	--	--	--	--	--	704
24...	1118	9.90	--	--	--	--	--	--	--	--	706
24...	1120	13.0	--	--	--	--	--	--	--	--	706
24...	1122	16.0	--	--	--	--	--	--	--	--	706
24...	1124	20.0	--	--	--	--	--	--	--	--	706
JUL											
14...	1400	.00	23	1200.00	66.24	21.0	100	75	8.0	772	765
14...	1402	1.60	--	--	--	--	--	--	--	--	765
14...	1404	3.30	--	--	--	--	--	--	--	--	764
14...	1406	6.60	--	--	--	--	--	--	--	--	764
14...	1408	9.90	--	--	--	--	--	--	--	--	765
14...	1410	13.2	--	--	--	--	--	--	--	--	765
14...	1412	16.5	--	--	--	--	--	--	--	--	770
14...	1414	20.0	--	--	--	--	--	--	--	--	773
29...	0915	.00	24	1200.00	66.21	19.0	100	210	14	772	804
29...	0917	1.60	--	--	--	--	--	--	--	--	800
29...	0919	3.30	--	--	--	--	--	--	--	--	799
29...	0921	6.60	--	--	--	--	--	--	--	--	798
29...	0923	9.90	--	--	--	--	--	--	--	--	797
29...	0925	13.2	--	--	--	--	--	--	--	--	797
29...	0927	16.5	--	--	--	--	--	--	--	--	798
29...	0929	19.8	--	--	--	--	--	--	--	--	800
AUG											
11...	0914	.00	23	1200.00	66.25	20.0	100	235	2.0	773	708
11...	0916	1.60	--	--	--	--	--	--	--	--	708
11...	0918	3.30	--	--	--	--	--	--	--	--	708
11...	0920	6.60	--	--	--	--	--	--	--	--	707
11...	0922	9.90	--	--	--	--	--	--	--	--	708
11...	0924	13.2	--	--	--	--	--	--	--	--	710
11...	0926	16.5	--	--	--	--	--	--	--	--	711
11...	0928	19.8	--	--	--	--	--	--	--	--	716
25...	1055	.00	22	1200.00	66.01	21.0	90	75	5.0	775	737
25...	1057	1.60	--	--	--	--	--	--	--	--	737
25...	1059	3.30	--	--	--	--	--	--	--	--	738
25...	1101	6.60	--	--	--	--	--	--	--	--	738

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND											
JUN											
09...	8.7	17.9	--	--	8.1	85	--	--	--	--	--
09...	8.6	17.7	--	--	6.9	72	440	--	.04	.00	.010
24...	8.6	18.0	--	31.0	9.5	98	--	--	--	--	--
24...	8.6	18.0	--	--	9.5	98	--	--	--	--	--
24...	8.6	17.9	3.6	--	9.5	98	469	95	.02	.03	.010
24...	8.6	17.9	--	--	9.5	98	--	--	--	--	--
24...	8.6	17.9	--	--	9.5	98	--	--	--	--	--
24...	8.6	17.9	--	--	9.4	97	--	--	--	--	--
24...	8.6	17.9	--	--	9.4	97	--	--	--	--	--
24...	8.6	17.7	4.1	--	9.1	94	467	119	.02	.04	.010
JUL											
14...	9.1	23.2	--	43.2	8.6	99	--	--	--	--	--
14...	9.0	23.2	--	--	8.6	99	--	--	--	--	--
14...	9.0	23.2	5.1	--	8.6	99	511	104	.01	.02	.030
14...	9.0	23.2	--	--	8.6	99	--	--	--	--	--
14...	9.0	23.2	--	--	8.5	98	--	--	--	--	--
14...	9.0	23.1	--	--	8.5	98	--	--	--	--	--
14...	9.0	23.1	--	--	8.1	93	--	--	--	--	--
14...	9.0	23.0	6.0	--	7.6	87	515	100	.02	.03	.020
29...	8.8	21.5	--	30.0	8.5	94	--	--	--	--	--
29...	8.8	21.5	--	--	8.9	95	--	--	--	--	--
29...	8.9	21.5	5.2	--	9.1	101	538	106	.08	.07	.030
29...	8.9	21.5	--	--	9.1	101	--	--	--	--	--
29...	8.9	21.5	--	--	9.1	101	--	--	--	--	--
29...	8.9	21.5	--	--	9.1	101	--	--	--	--	--
29...	8.9	21.5	--	--	9.1	101	--	--	--	--	--
29...	8.8	21.5	6.9	--	8.9	99	555	115	.06	.06	.030
AUG											
11...	9.0	19.6	--	276	7.9	85	--	--	--	--	--
11...	9.0	19.6	--	--	8.0	86	--	--	--	--	--
11...	9.0	19.3	5.4	--	7.9	85	540	105	.00	.00	.010
11...	9.0	19.5	--	--	7.6	82	--	--	--	--	--
11...	9.0	19.5	--	--	7.2	77	--	--	--	--	--
11...	9.0	19.5	--	--	6.9	74	--	--	--	--	--
11...	9.0	19.4	--	--	6.4	69	--	--	--	--	--
11...	9.0	19.4	6.5	--	5.9	63	556	109	.00	.00	.010
25...	9.1	20.7	--	34.8	6.3	71	--	--	--	--	--
25...	9.1	20.7	--	--	6.4	72	--	--	--	--	--
25...	9.1	20.7	3.6	--	6.3	71	542	49	--	.07	<.020
25...	9.1	20.6	--	--	6.3	71	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND										
JUN										
09...	--	--	--	--	--	--	--	--	--	--
09...	.010	.05	.00	.070	.370	1.3	.83	1.40	.20	1.2
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	.000	.03	.03	.170	.160	1.4	1.2	1.60	.20	1.4
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	.000	.03	.04	.190	.190	2.4	1.1	2.60	1.3	1.3
JUL										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	.030	.04	.05	.280	.270	1.3	1.0	1.60	.30	1.3
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	.030	.04	.06	.350	.350	1.3	1.1	1.60	.20	1.4
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	.020	.11	.09	.210	.270	1.7	1.1	1.90	.50	1.4
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	.030	.09	.09	.240	.230	1.9	1.5	2.10	.40	1.7
AUG										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.00	.00	.150	.100	3.0	1.6	3.10	1.4	1.7
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.00	.00	.230	.260	1.9	1.4	2.10	.40	1.7
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	.030	<.09	.10	.260	.220	1.4	3.4	1.70	.00	3.6
25...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND										
JUN										
09...	--	--	--	--	--	--	--	--	--	--
09...	1.5	.240	.200	.040	.150	.16	.04	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	1.6	.190	.150	.130	.130	.12	.03	25	16.0	.000
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	2.6	.190	.150	.130	.120	.12	.03	26	--	--
JUL										
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	1.6	.270	.210	.240	.200	.20	.01	12	51.2	.000
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	1.6	.290	.220	.250	.250	.25	.00	13	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	2.0	.540	.360	.660	.300	.33	.03	21	46.1	.000
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
29...	2.2	.460	.420	.440	.340	.36	.06	25	52.3	.000
AUG										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	3.1	.460	.330	.300	.280	.27	.06	14	97.8	.000
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	2.1	.450	.370	.310	.300	.31	.06	13	18.1	.000
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	.280	.550	.280	.250	.20	.35	17	46.0	<.010
25...	--	--	--	--	--	--	--	--	--	--

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	ELEV-ATION ABOVE NGVD (FEET) (72020)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)
AUG										
25...	1103	9.90	--	--	--	--	--	--	--	--
25...	1105	13.2	--	--	--	--	--	--	--	--
25...	1107	16.5	--	--	--	--	--	--	--	--
25...	1109	19.0	--	--	--	--	--	--	--	--
SEP										
09...	1430	.00	22	1200.00	66.02	29.0	0	280	8.0	769
09...	1432	1.60	--	--	--	--	--	--	--	--
09...	1434	3.30	--	--	--	--	--	--	--	--
09...	1436	6.60	--	--	--	--	--	--	--	--
09...	1438	9.90	--	--	--	--	--	--	--	--
09...	1440	13.2	--	--	--	--	--	--	--	--
09...	1442	16.5	--	--	--	--	--	--	--	--
09...	1444	19.8	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
471100097582800 - LAKE ASHTABULA (SITE A4-THALWEG) ABOVE BALDHILL CREEK, ND										
AUG										
25...	738	9.1	20.6	--	--	6.3	71	--	--	--
25...	738	9.1	20.6	--	--	6.1	69	--	--	--
25...	739	9.1	20.5	--	--	5.6	63	--	--	--
25...	738	9.1	20.4	2.5	--	5.3	60	549	119	.08
SEP										
09...	749	9.3	18.1	--	58.8	11.7	122	--	--	--
09...	750	9.3	18.0	--	--	11.7	121	--	--	--
09...	750	9.3	17.9	2.2	--	11.8	122	550	118	.00
09...	753	9.3	17.7	--	--	11.4	118	--	--	--
09...	754	9.3	17.4	--	--	11.7	120	--	--	--
09...	757	9.3	17.0	--	--	8.9	90	--	--	--
09...	767	9.3	16.9	--	--	8.4	81	--	--	--
09...	762	9.3	16.8	2.7	--	7.8	79	557	103	.00

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)
AUG										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	<.020	.030	<.09	.11	.290	.100	1.8	1.7	2.10	.30
SEP										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.000	.000	<.09	<.09	.140	.120	2.2	--	2.30	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.060	.010	<.09	<.09	.160	.180	2.1	1.4	2.30	.70

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
AUG										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	1.8	.430	.370	.310	.240	.20	.17	12	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	<.22	.430	.370	.350	.380	.26	.11	16	45.7	<.010
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.6	.380	.360	.340	.000	.26	.10	16	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND											
APR											
09...	1315	.00	19	1200.00	66.04	11.0	75	180	10	770	556
09...	1317	1.60	--	--	--	--	--	--	--	--	629
09...	1319	3.30	--	--	--	--	--	--	--	--	633
09...	1321	6.60	--	--	--	--	--	--	--	--	637
09...	1323	9.90	--	--	--	--	--	--	--	--	639
09...	1325	13.2	--	--	--	--	--	--	--	--	640
09...	1327	16.5	--	--	--	--	--	--	--	--	633
09...	1329	18.0	--	--	--	--	--	--	--	--	636
22...	1450	.00	20	1200.00	66.35	8.0	100	315	12	774	804
22...	1452	1.60	--	--	--	--	--	--	--	--	788
22...	1454	3.30	--	--	--	--	--	--	--	--	790
22...	1456	6.60	--	--	--	--	--	--	--	--	792
22...	1458	9.90	--	--	--	--	--	--	--	--	790
22...	1500	13.2	--	--	--	--	--	--	--	--	790
22...	1502	16.5	--	--	--	--	--	--	--	--	790
22...	1504	19.8	--	--	--	--	--	--	--	--	790
MAY											
05...	1325	.00	21	1200.00	66.24	14.0	25	0	2.0	768	662
05...	1327	1.60	--	--	--	--	--	--	--	--	652
05...	1329	3.30	--	--	--	--	--	--	--	--	658
05...	1331	6.60	--	--	--	--	--	--	--	--	658
05...	1333	9.90	--	--	--	--	--	--	--	--	662
05...	1335	13.2	--	--	--	--	--	--	--	--	660
05...	1337	16.5	--	--	--	--	--	--	--	--	672
05...	1339	19.8	--	--	--	--	--	--	--	--	662
20...	0855	.00	21	1200.00	66.29	15.0	10	180	15	774	649
20...	0857	1.60	--	--	--	--	--	--	--	--	650
20...	0859	3.30	--	--	--	--	--	--	--	--	720
20...	0902	9.90	--	--	--	--	--	--	--	--	656
20...	0904	13.2	--	--	--	--	--	--	--	--	656
20...	0906	16.5	--	--	--	--	--	--	--	--	653
JUN											
10...	0920	.00	21	1200.00	66.21	16.0	0	280	10	767	675
10...	0922	1.60	--	--	--	--	--	--	--	--	674
10...	0924	3.30	--	--	--	--	--	--	--	--	672
10...	0926	6.60	--	--	--	--	--	--	--	--	672
10...	0928	9.90	--	--	--	--	--	--	--	--	672
10...	0930	13.0	--	--	--	--	--	--	--	--	672
10...	0932	16.0	--	--	--	--	--	--	--	--	672
23...	1300	.00	20	1200.00	66.27	15.5	100	60	12	758	654

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND											
APR											
09...	8.9	6.1	--	16.8	13.7	109	--	--	--	--	--
09...	8.9	6.1	--	--	13.7	109	--	--	--	--	--
09...	8.9	6.1	3.1	--	13.7	109	403	308	.01	.00	.000
09...	8.9	6.1	--	--	13.7	109	--	--	--	--	--
09...	8.9	6.1	--	--	13.7	109	--	--	--	--	--
09...	8.9	6.0	--	--	13.5	107	--	--	--	--	--
09...	8.9	5.5	--	--	13.0	102	--	--	--	--	--
09...	8.9	5.4	3.9	--	12.8	100	403	305	.01	.01	.000
22...	8.8	8.0	--	47.6	10.3	85	--	--	--	--	--
22...	8.8	8.1	--	--	10.3	85	--	--	--	--	--
22...	8.8	8.1	4.6	--	10.3	85	427	124	.01	.02	.000
22...	8.8	8.1	--	--	10.3	85	--	--	--	--	--
22...	8.8	8.0	--	--	10.3	85	--	--	--	--	--
22...	8.8	8.0	--	--	10.3	85	--	--	--	--	--
22...	8.8	8.0	--	--	10.3	85	--	--	--	--	--
22...	8.8	8.0	4.1	--	10.3	85	424	120	.00	.00	.000
MAY											
05...	8.3	12.0	--	94.8	9.4	86	--	--	--	--	--
05...	8.3	12.0	--	--	9.4	86	--	--	--	--	--
05...	8.3	12.0	2.5	--	9.4	86	425	93	.04	.04	.000
05...	8.3	11.5	--	--	9.2	83	--	--	--	--	--
05...	8.3	11.5	--	--	9.2	83	--	--	--	--	--
05...	8.3	11.0	--	--	9.0	81	--	--	--	--	--
05...	8.3	11.0	--	--	8.9	80	--	--	--	--	--
05...	8.3	11.0	4.0	--	8.8	79	436	96	.03	.03	.000
20...	8.7	15.0	--	80.4	11.2	109	--	--	--	--	--
20...	8.7	15.0	--	--	10.8	105	--	--	--	--	--
20...	8.6	14.9	2.5	--	10.9	106	448	121	.07	.07	.010
20...	8.6	14.3	--	--	10.2	97	--	--	--	--	--
20...	8.6	14.2	--	--	10.1	96	--	--	--	--	--
20...	8.5	13.0	3.1	--	10.0	93	447	120	.10	.09	.010
JUN											
10...	8.7	17.7	--	49.0	9.4	97	--	--	--	--	--
10...	8.7	17.7	--	--	9.4	97	--	--	--	--	--
10...	8.7	17.7	2.9	--	9.4	97	447	66	.04	.02	.010
10...	8.7	17.7	--	--	9.4	97	--	--	--	--	--
10...	8.7	17.7	--	--	9.4	97	--	--	--	--	--
10...	8.7	17.7	--	--	9.4	97	--	--	--	--	--
10...	8.7	17.6	3.1	--	9.5	98	447	69	.03	.02	.010
23...	9.1	18.2	--	38.0	11.5	121	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND										
APR										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.010	.01	.01	.060	.070	1.7	.81	1.80	.92	.88
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.000	.01	.01	.060	.070	1.9	.85	2.00	1.1	.92
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.000	.01	.02	.130	.120	1.3	1.2	1.40	.10	1.3
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.040	.00	.02	.150	.130	1.2	1.2	1.30	.00	1.3
MAY										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	.000	.04	.04	.340	.330	1.4	1.2	1.70	.20	1.5
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	.000	.03	.03	.370	.330	1.0	.97	1.40	.10	1.3
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.010	.08	.08	.220	.200	1.9	1.5	2.10	.40	1.7
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.020	.11	.11	.270	.230	1.3	1.3	1.60	.10	1.5
JUN										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.010	.05	.03	.200	.160	1.2	.84	1.40	.40	1.0
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	.010	.04	.03	.160	.170	1.2	.76	1.40	.47	.93
23...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND										
APR										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.8	.170	.070	.050	.040	.09	.00	12	19.9	.340
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	2.0	.170	.100	.050	.010	.09	.01	18	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	1.4	.200	.170	.140	.160	.05	.12	18	2.46	.000
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	1.3	.110	.080	.060	.080	.08	.00	14	--	--
MAY										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	1.7	.180	.140	.140	.100	.28	.00	14	.600	.000
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	1.4	.350	.300	.270	.220	.10	.20	17	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	2.2	.160	.110	.110	.170	.09	.02	15	5.01	.000
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	1.7	.180	.140	.140	.090	.01	.13	14	--	--
JUN										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	1.5	.160	.130	.110	.100	.10	.03	43	4.83	.000
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	1.4	.160	.130	.100	.090	.10	.03	14	--	--
23...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND											
JUN											
23...	1302	1.60	--	--	--	--	--	--	--	--	654
23...	1304	3.30	--	--	--	--	--	--	--	--	658
23...	1306	6.60	--	--	--	--	--	--	--	--	658
23...	1308	9.90	--	--	--	--	--	--	--	--	620
23...	1312	16.0	--	--	--	--	--	--	--	--	630
23...	1314	19.8	--	--	--	--	--	--	--	--	630
JUL											
15...	1035	.00	21	1200.00	66.33	20.0	100	330	6.0	774	689
15...	1037	1.60	--	--	--	--	--	--	--	--	690
15...	1039	3.30	--	--	--	--	--	--	--	--	690
15...	1041	6.60	--	--	--	--	--	--	--	--	691
15...	1043	9.90	--	--	--	--	--	--	--	--	693
15...	1045	13.2	--	--	--	--	--	--	--	--	692
15...	1047	16.0	--	--	--	--	--	--	--	--	691
28...	1504	.00	22	1200.00	66.22	22.0	5	180	10	775	649
28...	1506	1.60	--	--	--	--	--	--	--	--	649
28...	1508	3.30	--	--	--	--	--	--	--	--	649
28...	1510	6.60	--	--	--	--	--	--	--	--	650
28...	1512	9.90	--	--	--	--	--	--	--	--	650
28...	1514	13.0	--	--	--	--	--	--	--	--	668
28...	1516	16.5	--	--	--	--	--	--	--	--	662
28...	1518	19.8	--	--	--	--	--	--	--	--	668
AUG											
11...	1146	.00	19	1200.00	66.25	30.0	100	255	3.0	775	596
11...	1148	1.60	--	--	--	--	--	--	--	--	596
11...	1150	3.30	--	--	--	--	--	--	--	--	596
11...	1152	6.60	--	--	--	--	--	--	--	--	598
11...	1154	9.90	--	--	--	--	--	--	--	--	600
11...	1156	13.2	--	--	--	--	--	--	--	--	602
11...	1158	16.5	--	--	--	--	--	--	--	--	603
25...	1240	.00	19	1200.00	66.01	22.0	100	60	4.0	776	657
25...	1242	1.60	--	--	--	--	--	--	--	--	659
25...	1244	3.30	--	--	--	--	--	--	--	--	661
25...	1246	6.60	--	--	--	--	--	--	--	--	664
25...	1248	9.90	--	--	--	--	--	--	--	--	665
25...	1250	13.2	--	--	--	--	--	--	--	--	666
25...	1252	16.5	--	--	--	--	--	--	--	--	667
SEP											
09...	1210	.00	21	1200.00	66.02	25.0	0	275	12	769	676
09...	1212	1.60	--	--	--	--	--	--	--	--	677

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND											
JUN											
23...	9.1	18.2	--	--	11.5	121	--	--	--	--	--
23...	9.1	18.2	4.0	--	11.5	121	433	114	.00	.00	.010
23...	9.1	18.2	--	--	11.5	121	--	--	--	--	--
23...	9.1	18.2	--	--	11.5	121	--	--	--	--	--
23...	9.1	18.2	2.9	--	11.4	119	432	89	.00	.01	.000
23...	9.1	18.2	--	--	11.4	119	--	--	--	--	--
JUL											
15...	8.9	22.4	--	40.8	6.9	78	--	--	--	--	--
15...	8.9	22.4	--	--	6.8	77	--	--	--	--	--
15...	8.9	22.4	3.9	--	6.7	76	443	96	.01	.02	.020
15...	8.9	22.3	--	--	6.4	73	--	--	--	--	--
15...	8.9	22.3	--	--	6.2	70	--	--	--	--	--
15...	8.9	22.3	--	--	6.1	69	--	--	--	--	--
15...	8.9	22.2	4.9	--	6.2	70	443	94	.02	.03	.020
28...	9.0	23.1	--	9.2	13.1	151	--	--	--	--	--
28...	9.0	23.1	--	--	13.1	151	--	--	--	--	--
28...	9.0	23.1	3.6	--	13.0	149	437	97	--	--	--
28...	9.0	22.5	--	--	11.5	131	--	--	--	--	--
28...	8.9	22.4	--	--	10.5	119	--	--	--	--	--
28...	8.3	21.7	--	--	9.8	111	--	--	--	--	--
28...	8.4	21.7	--	--	2.5	28	--	--	--	--	--
28...	8.3	21.7	4.7	--	1.3	14	435	90	.07	.07	.020
AUG											
11...	9.0	19.7	--	76.8	8.1	87	--	--	--	--	--
11...	9.0	19.7	--	--	8.0	86	--	--	--	--	--
11...	9.0	19.5	3.1	--	7.5	81	448	94	.00	.00	.010
11...	9.0	19.4	--	--	6.8	73	--	--	--	--	--
11...	8.9	19.3	--	--	6.2	67	--	--	--	--	--
11...	8.9	19.2	--	--	6.2	66	--	--	--	--	--
11...	8.9	19.1	4.2	--	6.1	65	458	79	.00	.00	.010
25...	8.9	20.9	--	54.0	5.3	58	--	--	--	--	--
25...	8.9	20.9	--	--	4.9	54	--	--	--	--	--
25...	8.9	20.8	4.1	--	4.1	45	476	87	--	.08	<.020
25...	8.8	20.6	--	--	3.3	36	--	--	--	--	--
25...	8.7	20.6	--	--	2.1	23	--	--	--	--	--
25...	8.7	20.5	--	--	1.7	18	--	--	--	--	--
25...	8.7	20.5	3.7	--	1.7	18	269	115	--	.08	.030
SEP											
09...	9.0	17.8	--	58.8	9.6	99	--	--	--	--	--
09...	9.0	17.8	--	--	9.6	99	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND										
JUN										
23...	--	--	--	--	--	--	--	--	--	--
23...	.000	.00	.00	.090	.110	1.4	1.1	1.50	.30	1.2
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	.000	.00	.01	.090	.090	1.8	1.3	1.90	.50	1.4
23...	--	--	--	--	--	--	--	--	--	--
JUL										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	.030	.03	.05	.250	.250	1.8	1.1	2.00	.70	1.3
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	.020	.04	.05	.330	.310	.97	.99	1.30	.00	1.3
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	.020	.09	.09	.520	.530	1.3	.97	1.80	.30	1.5
AUG										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.00	.00	.160	.220	1.9	.98	2.10	.90	1.2
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.00	.00	.260	.280	1.8	1.5	2.10	.30	1.8
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	.030	<.09	.11	.070	.090	2.7	1.7	2.80	1.0	1.8
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	.030	<.09	.11	.600	.580	1.9	1.5	2.50	.40	2.1
SEP										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND										
JUN										
23...	--	--	--	--	--	--	--	--	--	--
23...	1.5	.130	.090	.080	.070	.06	.03	16	20.4	.000
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	1.9	.140	.090	.080	.080	.07	.02	24	--	--
23...	--	--	--	--	--	--	--	--	--	--
JUL										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	2.0	.250	.170	.200	.190	.15	.02	11	79.5	.000
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	1.3	.240	.170	.190	.190	.14	.03	9.0	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	25	88.5	.700
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	1.9	.320	.350	.340	.310	.32	.03	16	6.86	.000
AUG										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	2.1	.320	.250	.220	.210	.21	.04	13	31.6	.000
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	2.1	.330	.300	.230	.230	.24	.06	13	4.95	.000
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	.300	.330	.260	.190	.17	.16	13	16.4	<.010
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	.410	.360	.270	.230	.20	.16	13	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470846098014100 - LAKE ASHTABULA (SITE A3A-THALWEG) AT MOUTH OF BALDHILL CREEK, ND											
SEP											
09...	1214	7.30	676	9.0	17.8	2.9	9.6	99	480	95	.00
09...	1216	6.60	675	9.0	17.7	--	9.6	99	--	--	--
09...	1218	9.90	676	9.0	17.7	--	9.3	96	--	--	--
09...	1220	13.2	678	9.0	17.5	--	8.6	88	--	--	--
09...	1222	16.5	680	8.9	17.1	--	6.8	69	--	--	--
09...	1224	19.8	680	8.9	16.9	3.0	6.0	61	481	109	.00

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)
SEP										
09...	.030	.030	<.09	<.09	.310	.330	2.4	1.2	2.70	1.2
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.030	.030	<.09	<.09	.390	.500	1.7	.80	2.10	.80

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
SEP										
09...	1.5	.330	.290	.310	.290	.19	.10	14	39.8	<.010
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.3	.330	.290	.300	.290	.20	.09	15	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND											
APR											
09...	0915	.00	29	1200.00	66.04	9.0	75	225	3.0	772	767
09...	0917	1.60	--	--	--	--	--	--	--	--	776
09...	0919	3.30	--	--	--	--	--	--	--	--	776
09...	0921	6.60	--	--	--	--	--	--	--	--	780
09...	0923	9.90	--	--	--	--	--	--	--	--	783
09...	0925	13.2	--	--	--	--	--	--	--	--	780
09...	0927	16.5	--	--	--	--	--	--	--	--	784
09...	0929	19.8	--	--	--	--	--	--	--	--	784
09...	0931	23.1	--	--	--	--	--	--	--	--	783
09...	0933	26.4	--	--	--	--	--	--	--	--	780
09...	0935	29.7	--	--	--	--	--	--	--	--	783
21...	1545	.00	36	1200.00	66.38	13.0	75	135	13	760	670
21...	1547	1.60	--	--	--	--	--	--	--	--	685
21...	1549	3.30	--	--	--	--	--	--	--	--	710
21...	1551	6.60	--	--	--	--	--	--	--	--	695
21...	1553	9.90	--	--	--	--	--	--	--	--	695
21...	1555	13.2	--	--	--	--	--	--	--	--	695
21...	1557	16.5	--	--	--	--	--	--	--	--	700
21...	1559	19.8	--	--	--	--	--	--	--	--	705
21...	1601	23.1	--	--	--	--	--	--	--	--	720
21...	1603	26.4	--	--	--	--	--	--	--	--	710
21...	1605	29.7	--	--	--	--	--	--	--	--	710
21...	1607	33.0	--	--	--	--	--	--	--	--	720
21...	1609	36.3	--	--	--	--	--	--	--	--	720
MAY											
05...	0905	.00	36	1200.00	66.24	6.0	100	30	5.0	762	791
05...	0907	1.60	--	--	--	--	--	--	--	--	728
05...	0909	3.30	--	--	--	--	--	--	--	--	715
05...	0911	6.60	--	--	--	--	--	--	--	--	712
05...	0913	9.90	--	--	--	--	--	--	--	--	709
05...	0915	12.3	--	--	--	--	--	--	--	--	709
05...	0917	16.5	--	--	--	--	--	--	--	--	709
05...	0919	19.8	--	--	--	--	--	--	--	--	708
05...	0921	23.1	--	--	--	--	--	--	--	--	706
05...	0923	26.4	--	--	--	--	--	--	--	--	707
05...	0925	29.7	--	--	--	--	--	--	--	--	707
05...	0927	33.0	--	--	--	--	--	--	--	--	707
05...	0929	36.3	--	--	--	--	--	--	--	--	702
21...	0935	.00	29	1200.00	66.29	17.0	10	180	15	765	888
21...	0937	1.60	--	--	--	--	--	--	--	--	888

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND											
APR											
09...	8.4	5.5	--	58.8	12.1	95	--	--	--	--	--
09...	8.4	5.5	--	--	12.1	95	--	--	--	--	--
09...	8.4	5.5	2.4	--	11.9	93	495	401	.16	.17	.010
09...	8.4	5.5	--	--	11.9	93	--	--	--	--	--
09...	8.4	5.5	--	--	11.8	92	--	--	--	--	--
09...	8.4	5.4	--	--	11.8	92	--	--	--	--	--
09...	8.4	5.4	--	--	11.7	91	--	--	--	--	--
09...	8.4	5.2	--	--	11.7	91	--	--	--	--	--
09...	8.4	5.1	--	--	11.7	91	--	--	--	--	--
09...	8.4	5.1	--	--	11.7	91	--	--	--	--	--
09...	8.4	5.1	1.9	--	11.6	90	496	576	.17	.18	.010
21...	9.2	7.4	--	169	10.3	86	--	--	--	--	--
21...	9.2	7.2	--	--	10.0	88	--	--	--	--	--
21...	9.2	7.3	3.0	--	10.8	89	493	125	.08	.09	.000
21...	9.3	7.5	--	--	11.1	93	--	--	--	--	--
21...	9.3	7.5	--	--	11.3	94	--	--	--	--	--
21...	9.3	7.8	--	--	11.3	95	--	--	--	--	--
21...	9.3	7.6	--	--	11.4	95	--	--	--	--	--
21...	9.3	7.6	--	--	11.4	95	--	--	--	--	--
21...	9.3	7.6	--	--	11.4	95	--	--	--	--	--
21...	9.3	7.6	--	--	11.5	95	--	--	--	--	--
21...	9.3	7.5	--	--	11.5	95	--	--	--	--	--
21...	9.3	7.5	--	--	11.5	95	--	--	--	--	--
21...	9.2	7.5	3.7	--	11.6	97	503	138	.09	.10	.000
MAY											
05...	8.5	10.5	--	148	9.6	86	--	--	--	--	--
05...	8.5	11.0	--	--	9.8	88	--	--	--	--	--
05...	8.5	11.0	2.0	--	9.4	85	487	132	.09	.09	.000
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.0	--	--	9.2	83	--	--	--	--	--
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.0	--	--	9.2	83	--	--	--	--	--
05...	8.5	11.0	--	--	9.3	84	--	--	--	--	--
05...	8.5	11.5	2.6	--	9.3	85	480	95	.08	.08	.000
21...	8.6	14.0	--	38.4	11.1	107	--	--	--	--	--
21...	8.6	14.0	--	--	10.8	104	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
APR										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.000	.17	.17	.130	.120	1.9	.98	2.00	.90	1.1
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.000	.18	.18	.090	.110	1.5	1.7	1.60	.00	1.8
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.000	.08	.09	.150	.170	1.5	1.2	1.60	.20	1.4
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
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21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.000	.09	.10	.170	.190	1.4	1.2	1.60	.20	1.4
MAY										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	.000	.09	.09	.340	.290	1.7	1.6	2.00	.10	1.9
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
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05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	.000	.08	.08	.300	.280	1.2	1.0	1.50	.20	1.3
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
APR										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	2.2	.160	.120	.070	.030	.13	.00	21	23.3	.350
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.8	.150	.130	.070	.020	.12	.01	15	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.7	.120	.100	.070	.070	.06	.04	14	1.65	.000
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
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21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.7	.120	.100	.070	.080	.12	.00	14	--	--
MAY										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	2.1	.180	.160	.130	.110	.36	.00	11	.720	.000
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	1.6	.410	.380	.330	.310	.11	.27	12	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND											
MAY											
21...	0939	3.30	--	--	--	--	--	--	--	--	880
21...	0941	6.60	--	--	--	--	--	--	--	--	880
21...	0943	9.90	--	--	--	--	--	--	--	--	880
21...	0945	13.2	--	--	--	--	--	--	--	--	872
21...	0947	16.5	--	--	--	--	--	--	--	--	865
21...	0949	19.8	--	--	--	--	--	--	--	--	863
21...	0951	23.1	--	--	--	--	--	--	--	--	838
21...	0953	26.4	--	--	--	--	--	--	--	--	838
21...	0955	29.7	--	--	--	--	--	--	--	--	770
JUN											
11...	1120	.00	39	1200.00	66.20	22.0	75	0	.0	769	707
11...	1122	1.60	--	--	--	--	--	--	--	--	707
11...	1124	3.30	--	--	--	--	--	--	--	--	705
11...	1126	6.60	--	--	--	--	--	--	--	--	705
11...	1128	9.90	--	--	--	--	--	--	--	--	706
11...	1130	13.0	--	--	--	--	--	--	--	--	707
11...	1132	16.0	--	--	--	--	--	--	--	--	708
11...	1134	20.0	--	--	--	--	--	--	--	--	707
11...	1136	23.0	--	--	--	--	--	--	--	--	708
11...	1138	26.0	--	--	--	--	--	--	--	--	709
11...	1140	30.0	--	--	--	--	--	--	--	--	712
11...	1142	33.0	--	--	--	--	--	--	--	--	720
25...	1034	.00	40	1200.00	66.38	20.0	0	--	.0	778	693
25...	1036	1.60	--	--	--	--	--	--	--	--	693
25...	1038	3.30	--	--	--	--	--	--	--	--	693
25...	1040	6.60	--	--	--	--	--	--	--	--	693
25...	1042	9.90	--	--	--	--	--	--	--	--	693
25...	1044	13.0	--	--	--	--	--	--	--	--	694
25...	1046	16.0	--	--	--	--	--	--	--	--	695
25...	1048	20.0	--	--	--	--	--	--	--	--	695
25...	1050	23.0	--	--	--	--	--	--	--	--	696
25...	1052	26.0	--	--	--	--	--	--	--	--	698
25...	1054	30.0	--	--	--	--	--	--	--	--	698
25...	1056	33.0	--	--	--	--	--	--	--	--	700
25...	1058	36.0	--	--	--	--	--	--	--	--	700
JUL											
15...	1416	.00	39	1200.00	66.33	29.0	60	155	9.0	773	672
15...	1418	1.60	--	--	--	--	--	--	--	--	673
15...	1420	3.30	--	--	--	--	--	--	--	--	674
15...	1422	6.60	--	--	--	--	--	--	--	--	674

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND											
MAY											
21...	8.6	14.0	2.7	--	10.8	104	478	129	.09	.02	.010
21...	8.6	13.9	--	--	10.8	103	--	--	--	--	--
21...	8.6	14.0	--	--	10.8	104	--	--	--	--	--
21...	8.6	14.0	--	--	10.7	103	--	--	--	--	--
21...	8.6	13.9	--	--	10.6	102	--	--	--	--	--
21...	8.6	13.9	--	--	10.8	103	--	--	--	--	--
21...	8.6	13.9	--	--	10.8	103	--	--	--	--	--
21...	8.6	13.9	--	--	10.6	102	--	--	--	--	--
21...	8.6	13.8	3.1	--	9.6	92	481	134	.11	.10	.010
JUN											
11...	8.5	18.1	--	84.0	8.7	90	--	--	--	--	--
11...	8.5	18.1	--	--	8.7	90	--	--	--	--	--
11...	8.5	17.9	2.4	--	8.7	90	474	75	.08	.01	.010
11...	8.5	17.8	--	--	8.7	90	--	--	--	--	--
11...	8.5	17.7	--	--	8.6	89	--	--	--	--	--
11...	8.5	17.6	--	--	8.6	88	--	--	--	--	--
11...	8.5	17.6	--	--	8.6	88	--	--	--	--	--
11...	8.5	17.6	--	--	8.7	89	--	--	--	--	--
11...	8.5	17.5	--	--	8.6	88	--	--	--	--	--
11...	8.5	17.5	--	--	8.6	88	--	--	--	--	--
11...	8.5	17.5	--	--	8.4	86	--	--	--	--	--
11...	8.4	17.1	7.2	--	7.6	77	481	82	.09	.00	.010
25...	8.7	18.2	--	38.0	10.2	105	--	--	--	--	--
25...	8.7	18.2	--	--	10.2	105	--	--	--	--	--
25...	8.7	18.2	3.9	--	10.2	105	462	122	.06	.07	.020
25...	8.7	18.1	--	--	10.2	105	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	--	--	10.0	103	--	--	--	--	--
25...	8.7	18.0	2.9	--	9.9	101	464	123	.06	.08	.020
JUL											
15...	8.7	23.0	--	119	7.1	82	--	--	--	--	--
15...	8.7	23.1	--	--	7.0	82	--	--	--	--	--
15...	8.7	23.0	2.9	--	7.1	82	428	85	.02	.04	.030
15...	8.8	22.8	--	--	7.5	86	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
MAY										
21...	.010	.10	.03	.160	.120	1.7	1.7	1.90	.10	1.8
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.020	.12	.12	.160	.130	1.6	1.3	1.80	.40	1.4
JUN										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.09	.01	.260	.280	1.2	.82	1.50	.40	1.1
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.010	.10	.01	.310	.300	1.2	.80	1.50	.40	1.1
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	.010	.08	.08	.100	.100	1.8	1.2	1.90	.60	1.3
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
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25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	.010	.08	.09	.090	.110	1.6	1.1	1.70	.50	1.2
JUL										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	.030	.05	.07	.370	.410	1.0	.99	1.40	.00	1.4
15...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO, + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
MAY										
21...	2.0	.160	.100	.090	.020	.06	.04	21	20.5	.000
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.9	.160	.110	.110	.080	.07	.04	14	--	--
JUN										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	1.6	.150	.130	.100	.100	.09	.04	16	1.62	.000
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	1.6	.160	.140	.110	.090	.10	.04	43	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	2.0	.130	.080	.080	.070	.06	.02	33	28.2	.000
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
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25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	1.8	.130	.080	.070	.070	.06	.02	31	--	--
JUL										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	1.5	.100	.080	.140	.120	.06	.02	11	2.39	.000
15...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND											
JUL											
15...	1424	9.90	--	--	--	--	--	--	--	--	676
15...	1426	13.2	--	--	--	--	--	--	--	--	679
15...	1428	16.5	--	--	--	--	--	--	--	--	683
15...	1430	19.8	--	--	--	--	--	--	--	--	682
15...	1432	23.2	--	--	--	--	--	--	--	--	687
15...	1434	26.4	--	--	--	--	--	--	--	--	696
15...	1436	29.7	--	--	--	--	--	--	--	--	700
15...	1438	33.0	--	--	--	--	--	--	--	--	702
15...	1440	36.0	--	--	--	--	--	--	--	--	706
28...	1200	.00	43	1200.00	66.22	20.0	40	185	5.0	777	637
28...	1202	1.60	--	--	--	--	--	--	--	--	637
28...	1204	3.30	--	--	--	--	--	--	--	--	645
28...	1206	6.60	--	--	--	--	--	--	--	--	637
28...	1208	9.90	--	--	--	--	--	--	--	--	637
28...	1210	13.2	--	--	--	--	--	--	--	--	640
28...	1212	16.5	--	--	--	--	--	--	--	--	640
28...	1214	19.8	--	--	--	--	--	--	--	--	642
28...	1216	23.1	--	--	--	--	--	--	--	--	642
28...	1218	26.4	--	--	--	--	--	--	--	--	643
28...	1220	29.7	--	--	--	--	--	--	--	--	644
28...	1222	33.0	--	--	--	--	--	--	--	--	645
AUG											
11...	1500	.00	39	1200.00	66.22	31.0	0	185	8.0	774	577
11...	1502	1.60	--	--	--	--	--	--	--	--	580
11...	1504	3.30	--	--	--	--	--	--	--	--	583
11...	1506	6.60	--	--	--	--	--	--	--	--	583
11...	1508	9.90	--	--	--	--	--	--	--	--	584
11...	1510	13.2	--	--	--	--	--	--	--	--	584
11...	1512	16.5	--	--	--	--	--	--	--	--	585
11...	1514	19.8	--	--	--	--	--	--	--	--	586
11...	1516	23.1	--	--	--	--	--	--	--	--	587
11...	1518	26.4	--	--	--	--	--	--	--	--	587
11...	1520	29.7	--	--	--	--	--	--	--	--	586
11...	1522	33.0	--	--	--	--	--	--	--	--	585
11...	1524	36.3	--	--	--	--	--	--	--	--	587
11...	1526	39.6	--	--	--	--	--	--	--	--	588
25...	1550	.00	40	1200.00	66.01	22.0	100	150	2.0	775	621
25...	1552	1.60	--	--	--	--	--	--	--	--	620
25...	1554	3.30	--	--	--	--	--	--	--	--	621
25...	1556	6.60	--	--	--	--	--	--	--	--	621

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND											
JUL											
15...	8.8	22.5	--	--	7.9	90	--	--	--	--	--
15...	8.8	22.2	--	--	7.6	85	--	--	--	--	--
15...	8.7	22.2	--	--	7.6	85	--	--	--	--	--
15...	8.7	22.1	--	--	7.5	84	--	--	--	--	--
15...	8.7	22.1	--	--	6.9	78	--	--	--	--	--
15...	8.7	22.0	--	--	6.1	69	--	--	--	--	--
15...	8.6	21.9	--	--	5.7	64	--	--	--	--	--
15...	8.6	21.9	--	--	5.3	60	--	--	--	--	--
15...	8.5	21.8	6.0	--	4.2	47	441	82	.02	.04	.040
28...	8.9	22.4	--	17.2	7.8	89	--	--	--	--	--
28...	8.9	22.4	--	--	7.8	89	--	--	--	--	--
28...	8.8	22.0	--	--	7.8	89	--	--	--	--	--
28...	8.9	22.3	--	--	7.7	88	--	--	--	--	--
28...	8.9	22.3	--	--	7.5	85	--	--	--	--	--
28...	8.8	22.2	--	--	6.8	76	--	--	--	--	--
28...	8.8	22.1	--	--	6.6	74	--	--	--	--	--
28...	8.8	22.1	--	--	6.5	73	--	--	--	--	--
28...	8.8	22.1	--	--	6.5	73	--	--	--	--	--
28...	8.8	22.0	--	--	6.6	74	--	--	--	--	--
28...	8.8	22.0	--	--	6.3	71	--	--	--	--	--
28...	8.8	22.0	--	--	6.2	70	--	--	--	--	--
AUG											
11...	9.0	20.4	--	58.8	9.7	107	--	--	--	--	--
11...	9.0	20.4	--	--	9.8	108	--	--	--	--	--
11...	9.0	20.3	2.4	--	9.8	108	423	85	00	.00	.010
11...	8.9	19.9	--	--	8.9	97	--	--	--	--	--
11...	8.9	19.8	--	--	8.8	96	--	--	--	--	--
11...	8.9	19.8	--	--	8.7	95	--	--	--	--	--
11...	8.9	19.8	--	--	8.3	90	--	--	--	--	--
11...	8.9	19.7	--	--	8.3	90	--	--	--	--	--
11...	8.9	19.7	--	--	8.0	86	--	--	--	--	--
11...	8.9	19.7	--	--	7.6	82	--	--	--	--	--
11...	8.9	19.7	--	--	7.3	78	--	--	--	--	--
11...	8.9	19.7	--	--	7.2	77	--	--	--	--	--
11...	8.9	19.7	--	--	6.6	71	--	--	--	--	--
11...	8.9	19.7	5.5	--	6.4	69	434	81	.00	.00	.010
25...	8.9	20.7	--	82.8	5.2	59	--	--	--	--	--
25...	8.9	20.7	--	--	5.2	59	--	--	--	--	--
25...	8.9	20.7	2.1	--	5.3	60	441	111	--	.08	<.020
25...	8.9	20.7	--	--	5.3	60	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
JUL										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	.030	.06	.07	.390	.380	.81	1.0	1.20	.00	1.4
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.00	.00	.170	.120	2.0	1.1	2.20	1.0	1.2
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	.000	.00	.00	.200	.200	1.5	.90	1.70	.60	1.1
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	.030	<.09	.11	.190	.170	1.1	1.3	1.30	.00	1.5
25...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
JUL										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	1.3	.180	.150	.190	.170	.13	.02	12	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	40.9	.000
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	2.96	.000
AUG										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	2.2	.270	.200	.170	.160	.15	.05	12	31.5	.000
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	1.7	.300	.220	.190	.190	.18	.04	11	4.43	.000
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	.180	.260	.160	.130	.12	.14	12	2.80	<.010
25...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND										
AUG										
25...	1558	9.90	--	--	--	--	--	--	--	--
25...	1600	13.2	--	--	--	--	--	--	--	--
25...	1602	16.5	--	--	--	--	--	--	--	--
25...	1604	19.8	--	--	--	--	--	--	--	--
25...	1606	23.1	--	--	--	--	--	--	--	--
25...	1608	26.4	--	--	--	--	--	--	--	--
25...	1610	29.7	--	--	--	--	--	--	--	--
25...	1612	33.0	--	--	--	--	--	--	--	--
25...	1614	36.3	--	--	--	--	--	--	--	--
SEP										
09...	0925	.00	39	1200.00	66.02	21.0	0	210	4.0	768
09...	0927	1.60	--	--	--	--	--	--	--	--
09...	0929	3.30	--	--	--	--	--	--	--	--
09...	0931	6.60	--	--	--	--	--	--	--	--
09...	0933	9.90	--	--	--	--	--	--	--	--
09...	0935	13.2	--	--	--	--	--	--	--	--
09...	0937	16.5	--	--	--	--	--	--	--	--
09...	0939	19.8	--	--	--	--	--	--	--	--
09...	0941	23.1	--	--	--	--	--	--	--	--
09...	0943	26.4	--	--	--	--	--	--	--	--
09...	0945	29.7	--	--	--	--	--	--	--	--
09...	0947	36.3	--	--	--	--	--	--	--	--

DATE	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)
AUG										
25...	621	8.9	20.7	--	--	5.8	66	--	--	--
25...	622	8.9	20.7	--	--	6.0	68	--	--	--
25...	623	8.8	20.2	--	--	4.5	51	--	--	--
25...	623	8.8	20.1	--	--	4.4	49	--	--	--
25...	622	8.8	20.1	--	--	4.4	49	--	--	--
25...	622	8.8	20.1	--	--	4.3	48	--	--	--
25...	623	8.8	20.0	--	--	4.1	46	--	--	--
25...	624	8.8	20.0	--	--	4.1	46	--	--	--
25...	624	8.8	20.0	2.0	--	4.1	46	439	58	.08
SEP										
09...	647	9.0	18.1	--	70.8	10.0	104	--	--	--
09...	647	9.0	18.1	--	--	10.1	105	--	--	--
09...	646	9.0	18.1	2.4	--	9.9	103	455	108	.00
09...	648	9.0	17.9	--	--	8.9	92	--	--	--
09...	650	8.9	17.7	--	--	8.0	83	--	--	--
09...	650	8.9	17.6	--	--	7.9	81	--	--	--
09...	651	8.9	17.6	--	--	7.8	80	--	--	--
09...	651	8.9	17.5	--	--	7.7	79	--	--	--
09...	652	8.9	17.5	--	--	7.6	78	--	--	--
09...	654	8.9	17.4	--	--	7.5	77	--	--	--
09...	655	8.9	17.4	--	--	7.3	75	--	--	--
09...	657	8.9	17.4	7.2	--	7.2	74	457	95	.00

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

470540098011400 - LAKE ASHTABULA (SITE A2-THALWEG) NEAR BALDHILL DAM, ND

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)
AUG										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	<.020	.030	<.09	.11	.230	.210	1.3	1.1	1.50	.20
SEP										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.010	.010	<.09	<.09	.200	.220	1.7	1.3	1.90	.40
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	.020	.020	<.09	<.09	.330	.370	1.8	1.1	2.10	.60

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
AUG										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	1.3	.210	.240	.180	.130	.12	.12	11	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.5	.240	.220	.230	.210	.13	.09	13	9.42	<.010
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	1.5	.260	.250	.250	.250	.16	.09	13	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
APR											
01...	1520	.00	44	1200.00	66.40	--	--	--	--	--	673
01...	1522	1.60	--	--	--	--	--	--	--	--	760
01...	1524	3.30	--	--	--	--	--	--	--	--	768
01...	1526	6.60	--	--	--	--	--	--	--	--	773
01...	1528	9.90	--	--	--	--	--	--	--	--	778
01...	1530	13.2	--	--	--	--	--	--	--	--	783
01...	1532	16.5	--	--	--	--	--	--	--	--	786
01...	1534	19.8	--	--	--	--	--	--	--	--	790
01...	1536	23.1	--	--	--	--	--	--	--	--	792
01...	1538	26.4	--	--	--	--	--	--	--	--	794
01...	1540	29.7	--	--	--	--	--	--	--	--	799
01...	1542	33.0	--	--	--	--	--	--	--	--	799
01...	1544	36.3	--	--	--	--	--	--	--	--	800
01...	1546	39.6	--	--	--	--	--	--	--	--	801
01...	1548	42.9	--	--	--	--	--	--	--	--	803
08...	1100	.00	44	1200.00	66.03	13.0	10	225	10	772	741
08...	1106	3.30	--	--	--	--	--	--	--	--	792
08...	1107	6.60	--	--	--	--	--	--	--	--	792
08...	1108	9.90	--	--	--	--	--	--	--	--	798
08...	1109	13.2	--	--	--	--	--	--	--	--	794
08...	1110	16.5	--	--	--	--	--	--	--	--	794
08...	1112	19.8	--	--	--	--	--	--	--	--	797
08...	1114	23.1	--	--	--	--	--	--	--	--	795
08...	1116	26.4	--	--	--	--	--	--	--	--	795
08...	1118	29.7	--	--	--	--	--	--	--	--	800
08...	1120	33.0	--	--	--	--	--	--	--	--	798
08...	1122	36.3	--	--	--	--	--	--	--	--	798
08...	1124	39.6	--	--	--	--	--	--	--	--	801
21...	1040	.00	44	1200.00	66.38	13.0	100	135	14	765	734
21...	1042	1.60	--	--	--	--	--	--	--	--	763
21...	1044	3.30	--	--	--	--	--	--	--	--	770
21...	1046	6.60	--	--	--	--	--	--	--	--	771
21...	1048	9.90	--	--	--	--	--	--	--	--	772
21...	1050	13.2	--	--	--	--	--	--	--	--	753
21...	1052	16.5	--	--	--	--	--	--	--	--	749
21...	1054	19.8	--	--	--	--	--	--	--	--	745
21...	1056	23.1	--	--	--	--	--	--	--	--	744
21...	1058	26.4	--	--	--	--	--	--	--	--	741
21...	1100	29.7	--	--	--	--	--	--	--	--	743

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
APR											
01...	8.4	4.7	--	--	--	--	--	--	--	--	--
01...	8.5	4.5	--	--	--	--	--	--	--	--	--
01...	8.5	4.5	--	--	11.6	--	--	--	--	--	--
01...	8.5	4.4	--	--	11.6	--	--	--	--	--	--
01...	8.3	4.3	--	--	--	--	--	--	--	--	--
01...	8.5	4.3	--	--	--	--	--	--	--	--	--
01...	8.5	4.2	--	--	11.5	--	--	--	--	--	--
01...	8.5	4.2	--	--	--	--	--	--	--	--	--
01...	8.6	4.1	--	--	--	--	--	--	--	--	--
01...	8.6	4.1	--	--	--	--	--	--	--	--	--
01...	8.6	4.1	--	--	--	--	--	--	--	--	--
01...	8.6	4.1	--	--	11.3	--	--	--	--	--	--
01...	8.6	4.1	--	--	11.2	--	--	--	--	--	--
01...	8.6	4.1	--	--	11.2	--	--	--	--	--	--
01...	8.5	4.1	--	--	11.1	--	--	--	--	--	--
08...	8.5	5.6	--	47.2	11.7	92	--	--	--	--	--
08...	8.5	5.2	1.7	--	11.9	93	507	390	.17	.18	.010
08...	8.5	5.2	--	--	11.9	93	--	--	--	--	--
08...	8.5	5.1	--	--	12.0	93	--	--	--	--	--
08...	8.4	5.0	--	--	12.0	93	--	--	--	--	--
08...	8.5	5.0	--	--	11.7	91	--	--	--	--	--
08...	8.5	5.0	--	--	11.7	91	--	--	--	--	--
08...	8.4	5.0	--	--	11.6	90	--	--	--	--	--
08...	8.4	4.9	--	--	11.6	90	--	--	--	--	--
08...	8.5	4.9	--	--	11.6	90	--	--	--	--	--
08...	8.4	4.9	--	--	11.6	90	--	--	--	--	--
08...	8.5	5.0	--	--	11.4	88	--	--	--	--	--
08...	8.4	4.9	2.0	--	11.3	88	524	384	.17	.20	.010
21...	8.7	7.1	--	103	11.1	91	--	--	--	--	--
21...	8.7	7.1	--	--	11.2	92	--	--	--	--	--
21...	8.7	7.1	3.1	--	11.2	92	539	148	.11	.12	.000
21...	8.7	7.1	--	--	11.2	92	--	--	--	--	--
21...	8.9	7.0	--	--	11.2	92	--	--	--	--	--
21...	8.9	7.0	--	--	11.2	92	--	--	--	--	--
21...	8.9	7.0	--	--	11.1	91	--	--	--	--	--
21...	8.9	7.0	--	--	11.2	92	--	--	--	--	--
21...	8.9	7.0	--	--	11.2	92	--	--	--	--	--
21...	8.9	7.0	--	--	11.1	91	--	--	--	--	--
21...	8.9	7.0	--	--	11.1	91	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
APR										
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.18	.18	.090	.080	1.9	.92	2.00	1.0	1.0
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.18	.20	.080	.100	2.1	2.1	2.20	.00	2.2
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.000	.11	.12	.100	.090	1.2	1.6	1.30	.00	1.7
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
APR										
08...	--	--	--	--	--	--	--	--	--	--
08...	2.2	.160	.120	.060	.060	.12	.00	12	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	2.4	.150	.110	.070	.060	.11	.00	15	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.4	.120	.090	.070	.070	.06	.03	14	6.60	.000
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
APR											
21...	1102	33.0	--	--	--	--	--	--	--	--	744
21...	1104	36.3	--	--	--	--	--	--	--	--	743
21...	1106	39.6	--	--	--	--	--	--	--	--	742
21...	1108	42.9	--	--	--	--	--	--	--	--	741
MAY											
04...	1505	.00	43	1200.00	66.25	12.0	100	0	5.0	787	772
04...	1507	1.60	--	--	--	--	--	--	--	--	771
04...	1509	3.30	--	--	--	--	--	--	--	--	771
04...	1511	6.60	--	--	--	--	--	--	--	--	770
04...	1513	9.90	--	--	--	--	--	--	--	--	770
04...	1515	13.2	--	--	--	--	--	--	--	--	771
04...	1517	16.5	--	--	--	--	--	--	--	--	771
04...	1519	19.8	--	--	--	--	--	--	--	--	771
04...	1521	23.1	--	--	--	--	--	--	--	--	771
04...	1523	26.4	--	--	--	--	--	--	--	--	771
04...	1525	29.7	--	--	--	--	--	--	--	--	772
04...	1527	33.0	--	--	--	--	--	--	--	--	772
04...	1529	36.3	--	--	--	--	--	--	--	--	771
04...	1531	39.6	--	--	--	--	--	--	--	--	772
18...	1420	.00	44	1200.00	66.29	18.0	75	30	5.0	781	727
18...	1422	1.60	--	--	--	--	--	--	--	--	727
18...	1424	3.30	--	--	--	--	--	--	--	--	790
18...	1426	6.60	--	--	--	--	--	--	--	--	728
18...	1428	9.90	--	--	--	--	--	--	--	--	735
18...	1430	13.2	--	--	--	--	--	--	--	--	725
18...	1432	16.5	--	--	--	--	--	--	--	--	729
18...	1434	19.8	--	--	--	--	--	--	--	--	729
18...	1436	23.1	--	--	--	--	--	--	--	--	730
18...	1438	26.4	--	--	--	--	--	--	--	--	732
18...	1440	29.7	--	--	--	--	--	--	--	--	736
18...	1442	33.0	--	--	--	--	--	--	--	--	741
18...	1444	36.3	--	--	--	--	--	--	--	--	742
18...	1446	39.6	--	--	--	--	--	--	--	--	790
JUN											
08...	1510	.00	44	1200.00	66.23	19.0	80	230	2.0	75	675
08...	1512	1.60	--	--	--	--	--	--	--	--	663
08...	1514	3.30	--	--	--	--	--	--	--	--	744
08...	1516	6.60	--	--	--	--	--	--	--	--	742
08...	1518	9.90	--	--	--	--	--	--	--	--	741
08...	1520	13.0	--	--	--	--	--	--	--	--	743

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
APR											
21...	8.9	7.0	--	--	11.1	91	--	--	--	--	--
21...	8.9	7.0	--	--	11.1	91	--	--	--	--	--
21...	8.9	7.0	--	--	11.1	91	--	--	--	--	--
21...	8.9	7.0	2.6	--	11.1	91	534	112	.10	.14	.010
MAY											
04...	8.5	11.0	--	143	10.2	89	--	--	--	--	--
04...	8.5	11.0	--	--	10.1	88	--	--	--	--	--
04...	8.5	11.0	1.9	--	10.1	88	512	131	.12	.12	.000
04...	8.5	11.0	--	--	10.1	88	--	--	--	--	--
04...	8.5	11.0	--	--	10.1	88	--	--	--	--	--
04...	8.5	11.0	--	--	10.1	88	--	--	--	--	--
04...	8.5	11.0	--	--	10.1	88	--	--	--	--	--
04...	8.5	11.0	--	--	10.3	90	--	--	--	--	--
04...	8.5	11.0	--	--	10.3	90	--	--	--	--	--
04...	8.5	11.0	--	--	10.3	90	--	--	--	--	--
04...	8.5	11.0	--	--	10.2	89	--	--	--	--	--
04...	8.5	11.0	--	--	10.3	90	--	--	--	--	--
04...	8.5	11.0	--	--	10.3	90	--	--	--	--	--
04...	8.5	11.0	3.1	--	10.0	87	525	130	.12	.12	.000
18...	8.5	15.0	--	94.8	10.5	101	--	--	--	--	--
18...	8.5	15.0	--	--	10.6	102	--	--	--	--	--
18...	8.5	14.8	3.3	--	10.2	98	505	125	.17	.17	.010
18...	8.5	14.6	--	--	9.5	90	--	--	--	--	--
18...	8.5	14.3	--	--	10.0	94	--	--	--	--	--
18...	8.5	13.2	--	--	9.6	88	--	--	--	--	--
18...	8.5	13.0	--	--	9.3	86	--	--	--	--	--
18...	8.5	12.8	--	--	9.3	86	--	--	--	--	--
18...	8.5	12.7	--	--	9.2	85	--	--	--	--	--
18...	8.5	12.6	--	--	9.0	82	--	--	--	--	--
18...	8.4	12.3	--	--	8.3	75	--	--	--	--	--
18...	8.4	12.0	--	--	8.0	72	--	--	--	--	--
18...	8.4	11.8	--	--	7.8	70	--	--	--	--	--
18...	8.4	11.4	1.5	--	7.3	65	492	133	.14	.13	.010
JUN											
08...	8.6	17.4	--	74.0	8.9	93	--	--	--	--	--
08...	8.6	17.4	--	--	8.9	93	--	--	--	--	--
08...	8.6	17.1	1.6	--	9.0	94	490	73	.10	.02	.010
08...	8.6	17.1	--	--	8.9	93	--	--	--	--	--
08...	8.6	17.0	--	--	8.9	93	--	--	--	--	--
08...	8.5	16.9	--	--	8.7	90	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
APR										
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.000	.11	.14	.140	.110	2.8	1.2	2.90	1.6	1.3
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	.000	.12	.12	.290	.250	1.0	1.2	1.30	.00	1.4
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	.000	.12	.12	.270	.270	.93	1.1	1.20	.00	1.4
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	.010	.18	.18	.330	.270	1.2	1.3	1.50	.00	1.6
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	.010	.15	.14	.260	.210	1.2	1.7	1.50	.00	1.9
JUN										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.010	.11	.03	.210	.270	1.2	1.0	1.40	.10	1.3
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
APR										
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	3.0	.120	.090	.060	.090	.06	.03	18	--	--
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	1.4	.160	.130	.110	.100	.11	.02	12	.000	.000
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	1.3	.170	.130	.110	.090	.13	.00	14	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	1.7	.140	.120	.120	.100	.18	.00	26	2.62	.000
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	1.7	.150	.120	.100	.080	.05	.07	41	--	--
JUN										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	1.5	.140	.130	.090	.100	.10	.03	--	2.46	.000
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
JUN											
08...	1522	16.0	--	--	--	--	--	--	--	--	747
08...	1524	20.0	--	--	--	--	--	--	--	--	747
08...	1526	23.0	--	--	--	--	--	--	--	--	748
08...	1528	26.0	--	--	--	--	--	--	--	--	750
08...	1530	30.0	--	--	--	--	--	--	--	--	751
08...	1532	33.0	--	--	--	--	--	--	--	--	758
08...	1534	36.0	--	--	--	--	--	--	--	--	762
08...	1536	40.0	--	--	--	--	--	--	--	--	764
22...	1506	.00	44	1200.00	66.21	22.0	50	320	5.0	77	711
22...	1508	1.60	--	--	--	--	--	--	--	--	712
22...	1510	3.30	--	--	--	--	--	--	--	--	714
22...	1512	6.60	--	--	--	--	--	--	--	--	715
22...	1514	9.90	--	--	--	--	--	--	--	--	721
22...	1516	13.0	--	--	--	--	--	--	--	--	721
22...	1518	16.0	--	--	--	--	--	--	--	--	721
22...	1520	20.0	--	--	--	--	--	--	--	--	721
22...	1522	23.0	--	--	--	--	--	--	--	--	725
22...	1524	26.0	--	--	--	--	--	--	--	--	727
22...	1526	30.0	--	--	--	--	--	--	--	--	729
22...	1528	33.0	--	--	--	--	--	--	--	--	733
22...	1530	36.0	--	--	--	--	--	--	--	--	734
22...	1532	40.0	--	--	--	--	--	--	--	--	736
JUL											
13...	1602	.00	44	1200.00	66.20	26.0	100	180	5.0	775	675
13...	1604	1.60	--	--	--	--	--	--	--	--	673
13...	1606	3.30	--	--	--	--	--	--	--	--	672
13...	1608	6.60	--	--	--	--	--	--	--	--	672
13...	1610	9.90	--	--	--	--	--	--	--	--	673
13...	1612	13.2	--	--	--	--	--	--	--	--	680
13...	1614	16.5	--	--	--	--	--	--	--	--	685
13...	1616	19.8	--	--	--	--	--	--	--	--	693
13...	1618	23.1	--	--	--	--	--	--	--	--	699
13...	1620	26.4	--	--	--	--	--	--	--	--	706
13...	1622	29.7	--	--	--	--	--	--	--	--	707
13...	1624	33.0	--	--	--	--	--	--	--	--	708
13...	1626	36.3	--	--	--	--	--	--	--	--	711
13...	1628	39.0	--	--	--	--	--	--	--	--	714
28...	0855	.00	45	1200.00	66.62	17.0	0	210	3.0	777	632
28...	0857	1.60	--	--	--	--	--	--	--	--	633
28...	0859	3.30	--	--	--	--	--	--	--	--	631

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
JUN											
08...	8.5	16.1	--	--	8.0	82	--	--	--	--	--
08...	8.5	15.9	--	--	7.7	78	--	--	--	--	--
08...	8.4	15.8	--	--	7.5	76	--	--	--	--	--
08...	8.4	15.7	--	--	7.3	74	--	--	--	--	--
08...	8.4	15.6	--	--	7.0	71	--	--	--	--	--
08...	8.3	14.9	--	--	6.0	60	--	--	--	--	--
08...	8.3	14.6	--	--	5.1	50	--	--	--	--	--
08...	8.2	14.3	6.8	--	4.0	39	500	79	.11	.10	.010
22...	8.4	19.0	--	74.0	8.7	92	--	--	--	--	--
22...	8.4	19.0	--	--	8.7	92	--	--	--	--	--
22...	8.4	18.9	1.6	--	8.7	92	482	123	.12	.13	.020
22...	8.4	18.7	--	--	8.8	92	--	--	--	--	--
22...	8.4	18.0	--	--	8.4	87	--	--	--	--	--
22...	8.4	17.8	--	--	8.4	86	--	--	--	--	--
22...	8.4	17.8	--	--	8.3	85	--	--	--	--	--
22...	8.4	17.7	--	--	8.2	84	--	--	--	--	--
22...	8.4	17.5	--	--	7.8	80	--	--	--	--	--
22...	8.4	17.4	--	--	7.5	77	--	--	--	--	--
22...	8.4	17.2	--	--	7.3	74	--	--	--	--	--
22...	8.4	17.1	--	--	7.1	72	--	--	--	--	--
22...	8.4	17.0	--	--	6.9	70	--	--	--	--	--
22...	8.3	16.9	5.4	--	6.1	62	486	102	.14	.15	.020
JUL											
13...	8.9	24.2	--	74.4	10.2	115	--	--	--	--	--
13...	8.9	24.2	--	--	10.2	115	--	--	--	--	--
13...	8.9	24.2	2.2	--	10.2	115	429	79	.01	.03	.030
13...	8.9	23.9	--	--	9.9	114	--	--	--	--	--
13...	8.9	23.7	--	--	10.0	116	--	--	--	--	--
13...	8.9	23.4	--	--	10.4	121	--	--	--	--	--
13...	8.8	22.9	--	--	9.0	103	--	--	--	--	--
13...	8.7	22.5	--	--	8.4	95	--	--	--	--	--
13...	8.7	22.1	--	--	8.0	90	--	--	--	--	--
13...	8.6	21.6	--	--	6.5	72	--	--	--	--	--
13...	8.6	21.6	--	--	6.2	69	--	--	--	--	--
13...	8.6	21.5	--	--	5.8	64	--	--	--	--	--
13...	8.6	21.3	--	--	4.5	50	--	--	--	--	--
13...	8.5	21.0	15	--	4.0	36	456	95	.07	.07	.030
28...	8.7	22.3	--	34.3	4.7	53	--	--	--	--	--
28...	8.7	22.3	--	--	4.7	53	--	--	--	--	--
28...	8.7	22.3	3.0	--	4.6	52	427	86	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
JUN										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.010	.12	.11	.350	.360	1.4	.94	1.70	.40	1.3
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.020	.14	.15	.200	.220	1.4	1.2	1.60	.20	1.4
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.010	.16	.16	.240	.240	1.9	1.1	2.10	.80	1.3
JUL										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	.020	.04	.05	.180	.140	1.1	1.1	1.30	.10	1.2
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	.030	.10	.10	.200	.190	.90	.91	1.10	.00	1.1
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
JUN										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	1.8	.190	.160	.120	.120	.12	.04	13	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	1.7	.120	.110	.080	.090	.08	.03	27	2.68	.000
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
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22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	2.3	.150	.120	.100	.100	.09	.03	21	--	--
JUL										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.3	.060	.020	.040	.040	.01	.01	14	16.4	.000
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.2	.120	.060	.100	.090	.05	.01	10	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	13	.700	.000

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
JUL											
28...	0901	6.60	--	--	--	--	--	--	--	--	631
28...	0903	9.90	--	--	--	--	--	--	--	--	631
28...	0905	13.2	--	--	--	--	--	--	--	--	631
28...	0907	16.5	--	--	--	--	--	--	--	--	631
28...	0909	19.8	--	--	--	--	--	--	--	--	630
28...	0911	23.1	--	--	--	--	--	--	--	--	630
28...	0913	26.4	--	--	--	--	--	--	--	--	631
28...	0915	29.7	--	--	--	--	--	--	--	--	641
28...	0917	33.0	--	--	--	--	--	--	--	--	661
28...	0919	36.3	--	--	--	--	--	--	--	--	665
28...	0921	39.6	--	--	--	--	--	--	--	--	677
AUG											
12...	1210	.00	44	1200.00	66.22	27.0	15	335	3.0	774	588
12...	1212	1.60	--	--	--	--	--	--	--	--	587
12...	1214	3.30	--	--	--	--	--	--	--	--	588
12...	1216	6.60	--	--	--	--	--	--	--	--	588
12...	1218	9.90	--	--	--	--	--	--	--	--	587
12...	1220	13.2	--	--	--	--	--	--	--	--	588
12...	1222	16.5	--	--	--	--	--	--	--	--	588
12...	1224	19.9	--	--	--	--	--	--	--	--	589
12...	1226	23.1	--	--	--	--	--	--	--	--	590
12...	1228	26.4	--	--	--	--	--	--	--	--	590
12...	1230	29.7	--	--	--	--	--	--	--	--	591
12...	1232	33.0	--	--	--	--	--	--	--	--	592
12...	1234	36.3	--	--	--	--	--	--	--	--	592
12...	1236	39.6	--	--	--	--	--	--	--	--	683
26...	1300	.00	43	1200.00	66.03	24.0	100	45	12	780	606
26...	1302	1.60	--	--	--	--	--	--	--	--	601
26...	1304	3.30	--	--	--	--	--	--	--	--	601
26...	1306	6.60	--	--	--	--	--	--	--	--	601
26...	1308	9.90	--	--	--	--	--	--	--	--	601
26...	1310	13.2	--	--	--	--	--	--	--	--	601
26...	1312	16.5	--	--	--	--	--	--	--	--	602
26...	1314	19.8	--	--	--	--	--	--	--	--	602
26...	1316	23.1	--	--	--	--	--	--	--	--	603
26...	1318	26.4	--	--	--	--	--	--	--	--	604
26...	1320	29.7	--	--	--	--	--	--	--	--	605
26...	1322	33.0	--	--	--	--	--	--	--	--	605
SEP											
08...	1540	.00	40	1200.00	66.00	28.0	0	270	3.0	778	652

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND											
JUL											
28...	8.7	22.2	--	--	4.6	52	--	--	--	--	--
28...	8.7	22.2	--	--	4.7	53	--	--	--	--	--
28...	8.7	22.2	--	--	4.6	52	--	--	--	--	--
28...	8.7	22.2	--	--	4.7	53	--	--	--	--	--
28...	8.7	22.2	--	--	4.6	52	--	--	--	--	--
28...	8.7	22.2	--	--	4.9	55	--	--	--	--	--
28...	8.7	22.2	--	--	4.9	55	--	--	--	--	--
28...	8.5	21.9	--	--	1.5	17	--	--	--	--	--
28...	8.4	21.5	--	--	.3	0	--	--	--	--	--
28...	8.4	21.3	--	--	.3	0	--	--	--	--	--
28...	8.4	22.8	6.0	--	.2	0	447	87	.07	--	.020
AUG											
12...	8.4	20.5	--	162	6.9	78	--	--	--	--	--
12...	8.4	20.5	--	--	6.9	78	--	--	--	--	--
12...	8.4	20.1	2.6	--	6.6	74	423	62	.00	.01	.020
12...	8.4	19.8	--	--	6.2	70	--	--	--	--	--
12...	8.4	19.7	--	--	6.9	77	--	--	--	--	--
12...	8.4	19.7	--	--	6.8	76	--	--	--	--	--
12...	8.4	19.7	--	--	6.7	74	--	--	--	--	--
12...	8.4	19.6	--	--	6.9	77	--	--	--	--	--
12...	8.4	19.5	--	--	6.7	74	--	--	--	--	--
12...	8.4	19.5	--	--	6.6	73	--	--	--	--	--
12...	8.4	19.5	--	--	6.4	70	--	--	--	--	--
12...	8.4	19.5	--	--	6.4	70	--	--	--	--	--
12...	8.4	19.5	--	--	6.3	70	--	--	--	--	--
12...	8.4	19.4	--	--	6.2	69	430	--	.00	.01	.030
26...	8.9	20.7	--	30.0	8.6	93	--	--	--	--	--
26...	8.9	20.7	--	--	8.6	93	--	--	--	--	--
26...	8.9	20.7	1.4	--	8.5	92	430	93	.07	.08	<.020
26...	8.9	20.7	--	--	8.5	92	--	--	--	--	--
26...	8.9	20.7	--	--	8.5	92	--	--	--	--	--
26...	8.9	20.7	--	--	8.5	92	--	--	--	--	--
26...	8.9	20.7	--	--	8.4	91	--	--	--	--	--
26...	8.9	20.7	--	--	8.4	91	--	--	--	--	--
26...	8.9	20.7	--	--	8.4	91	--	--	--	--	--
26...	8.9	20.6	--	--	8.3	90	--	--	--	--	--
26...	8.9	20.6	--	--	8.3	90	--	--	--	--	--
26...	8.9	20.6	1.6	--	7.9	86	436	323	--	.09	<.020
SEP											
08...	8.9	19.8	--	80.6	8.7	92	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
JUL										
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	.09	--	.790	--	1.0	--	1.80	--	--
AUG										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	.000	.00	.01	.290	.230	1.4	1.1	1.70	.40	1.3
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	.010	.00	.02	.260	.250	1.4	.95	1.70	.50	1.2
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	<.09	.10	.080	.070	2.0	.88	2.10	1.2	.95
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	<.09	.11	.090	.110	1.8	1.1	1.90	.70	1.2
SEP										
08...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND										
JUL										
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	1.9	.430	--	.420	--	.43	--	12	--	--
AUG										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	1.7	.240	.180	.160	.160	.15	.03	12	2.90	.000
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	1.7	.240	.190	.150	.170	.15	.04	9.7	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.200	.180	.140	.080	.08	.10	15	42.6	.180
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.190	.190	.150	.090	.09	.10	12	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

470203098043000 - LAKE ASHTABULA (SITE A1A-THALWEG) AT BALDHILL DAM, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)
SEP										
08...	1542	1.60	653	8.9	19.7	--	8.7	92	--	--
08...	1544	3.30	651	8.9	19.7	1.5	8.8	93	441	88
08...	1546	6.60	651	8.9	19.4	--	8.7	92	--	--
08...	1548	9.90	651	8.9	18.2	--	7.8	80	--	--
08...	1550	13.2	653	8.9	18.2	--	7.7	79	--	--
08...	1552	16.5	651	8.8	18.2	--	7.7	79	--	--
08...	1554	19.8	653	8.8	18.2	--	7.8	80	--	--
08...	1556	23.1	654	8.8	18.2	--	7.7	79	--	--
08...	1558	26.4	654	8.8	18.1	--	7.7	79	--	--
08...	1600	29.7	655	8.8	18.1	--	7.6	78	--	--
08...	1602	33.0	656	8.8	18.1	2.2	7.5	77	442	93

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	.00	.010	.010	<.09	<.09	.210	.270	1.4	.83	1.60
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.00	.010	.010	<.09	<.09	.260	.330	1.8	1.2	2.10

DATE	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
SEP									
08...	--	--	--	--	--	--	--	--	--
08...	.50	1.1	.200	.200	.200	.200	.12	.08	10
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	.60	1.5	.200	.210	.200	.200	.13	.08	13

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND											
APR											
08...	0925	.00	29	1200.00	66.03	9.0	5	225	8.0	772	768
08...	0927	1.60	--	--	--	--	--	--	--	--	798
08...	0929	3.30	--	--	--	--	--	--	--	--	802
08...	0931	6.60	--	--	--	--	--	--	--	--	803
08...	0933	9.90	--	--	--	--	--	--	--	--	802
08...	0935	13.2	--	--	--	--	--	--	--	--	806
08...	0937	16.5	--	--	--	--	--	--	--	--	806
08...	0939	19.8	--	--	--	--	--	--	--	--	806
08...	0941	23.1	--	--	--	--	--	--	--	--	808
08...	0943	26.1	--	--	--	--	--	--	--	--	808
21...	0935	.00	29	1200.00	66.38	11.0	100	180	13	765	741
21...	0937	1.60	--	--	--	--	--	--	--	--	786
21...	0939	3.30	--	--	--	--	--	--	--	--	788
21...	0941	6.60	--	--	--	--	--	--	--	--	790
21...	0943	9.90	--	--	--	--	--	--	--	--	790
21...	0945	13.2	--	--	--	--	--	--	--	--	790
21...	0947	16.5	--	--	--	--	--	--	--	--	790
21...	0949	19.8	--	--	--	--	--	--	--	--	790
21...	0951	23.1	--	--	--	--	--	--	--	--	790
21...	0953	26.4	--	--	--	--	--	--	--	--	790
MAY											
04...	1330	.00	29	1200.00	66.25	11.0	100	0	11	787	768
04...	1332	1.60	--	--	--	--	--	--	--	--	762
04...	1334	3.30	--	--	--	--	--	--	--	--	762
04...	1336	6.60	--	--	--	--	--	--	--	--	762
04...	1338	9.90	--	--	--	--	--	--	--	--	762
04...	1340	13.2	--	--	--	--	--	--	--	--	762
04...	1342	16.5	--	--	--	--	--	--	--	--	762
04...	1344	19.5	--	--	--	--	--	--	--	--	769
04...	1346	23.1	--	--	--	--	--	--	--	--	768
04...	1348	26.4	--	--	--	--	--	--	--	--	769
18...	1315	.00	29	1200.00	66.29	18.0	90	30	5.0	782	725
18...	1317	1.60	--	--	--	--	--	--	--	--	726
18...	1319	3.30	--	--	--	--	--	--	--	--	840
18...	1321	6.60	--	--	--	--	--	--	--	--	727
18...	1323	9.90	--	--	--	--	--	--	--	--	840
18...	1325	13.2	--	--	--	--	--	--	--	--	727
18...	1327	16.5	--	--	--	--	--	--	--	--	800
18...	1329	19.8	--	--	--	--	--	--	--	--	730
18...	1331	23.1	--	--	--	--	--	--	--	--	731

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND											
APR											
08...	8.4	5.0	--	32.4	12.3	95	--	--	--	--	--
08...	8.4	5.0	--	--	12.2	95	--	--	--	--	--
08...	8.4	5.0	2.3	--	12.3	95	521	547	.17	.18	.000
08...	8.5	5.0	--	--	12.2	95	--	--	--	--	--
08...	8.5	4.9	2.1	--	12.1	94	528	384	.17	.18	.010
08...	8.5	4.8	--	--	12.0	92	--	--	--	--	--
08...	8.4	4.8	2.0	--	12.0	92	522	384	.18	.18	.000
08...	8.4	4.8	--	--	12.0	92	--	--	--	--	--
08...	8.4	4.8	2.0	--	12.0	92	518	385	.18	.18	.000
08...	8.4	4.8	--	--	11.8	91	--	--	--	--	--
21...	8.5	7.1	--	102	11.3	93	--	--	--	--	--
21...	8.7	7.0	--	--	11.4	93	--	--	--	--	--
21...	8.7	7.0	3.0	--	11.4	93	542	143	.11	.13	.000
21...	8.7	7.0	--	--	11.4	93	--	--	--	--	--
21...	8.7	7.0	2.5	--	11.4	93	539	150	.10	.13	.010
21...	8.7	7.0	--	--	11.3	93	--	--	--	--	--
21...	8.7	7.0	2.9	--	11.3	93	537	146	.11	.10	.000
21...	8.7	7.0	--	--	11.3	93	--	--	--	--	--
21...	8.7	7.0	--	--	11.3	93	--	--	--	--	--
21...	8.7	7.0	6.5	--	11.3	93	534	107	.10	.10	.000
MAY											
04...	8.4	11.0	--	139	9.7	85	--	--	--	--	--
04...	8.4	11.0	--	--	9.6	84	--	--	--	--	--
04...	8.4	11.0	2.1	--	9.6	84	515	110	.18	.13	.000
04...	8.4	11.0	--	--	9.5	83	--	--	--	--	--
04...	8.4	11.0	1.9	--	9.5	83	511	124	.12	.12	.000
04...	8.4	11.0	--	--	9.5	83	--	--	--	--	--
04...	8.4	10.2	--	--	9.5	83	509	--	.12	.13	.000
04...	8.5	11.0	--	--	9.6	84	--	--	--	--	--
04...	8.5	11.0	--	--	9.6	84	--	--	--	--	--
04...	8.5	11.0	2.7	--	9.5	83	515	122	.12	.12	.000
18...	8.5	14.6	--	107	10.5	100	--	--	--	--	--
18...	8.5	14.2	--	--	10.3	97	--	--	--	--	--
18...	8.5	14.0	3.1	--	10.7	100	492	130	.14	.15	.010
18...	8.5	13.4	--	--	10.9	101	--	--	--	--	--
18...	8.5	13.3	2.2	--	11.1	103	498	133	.14	.13	.010
18...	8.5	13.1	--	--	9.5	87	--	--	--	--	--
18...	8.5	12.9	1.4	--	9.1	84	499	128	.15	.05	.010
18...	8.5	12.8	--	--	9.3	85	--	--	--	--	--
18...	8.4	12.7	--	--	8.8	81	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND										
APR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.17	.18	.100	.100	2.1	1.3	2.20	.80	1.4
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.18	.18	.100	.100	1.9	1.2	2.00	.70	1.3
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.18	.18	.090	.080	1.9	1.0	2.00	.90	1.1
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.18	.18	.080	.100	2.1	.90	2.20	1.2	1.0
08...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.010	.11	.14	.110	.090	1.4	1.2	1.50	.20	1.3
21...	--	--	--	--	--	--	--	--	--	--
21...	.000	.11	.13	.110	.090	3.7	1.4	3.80	2.3	1.5
21...	--	--	--	--	--	--	--	--	--	--
21...	.010	.11	.11	.120	.150	1.4	1.6	1.50	.00	1.7
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	.010	.10	.11	.100	.150	1.3	1.3	1.40	.00	1.4
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	.000	.18	.13	.270	.250	1.6	1.2	1.90	.50	1.4
04...	--	--	--	--	--	--	--	--	--	--
04...	.000	.12	.12	.280	.250	1.3	1.5	1.60	.00	1.7
04...	--	--	--	--	--	--	--	--	--	--
04...	.000	.12	.13	.290	.260	1.2	1.4	1.50	.00	1.7
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	.000	.12	.12	.250	.240	1.1	1.2	1.30	.00	1.4
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	.010	.15	.16	.280	.220	1.6	1.5	1.90	.20	1.7
18...	--	--	--	--	--	--	--	--	--	--
18...	.010	.15	.14	.220	.200	1.4	1.4	1.60	.00	1.6
18...	--	--	--	--	--	--	--	--	--	--
18...	.000	.16	.05	.270	.190	1.4	1.3	1.70	.20	1.5
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
APR										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	2.4	.160	.120	.070	.040	.11	.01	--	11.2	.410
08...	--	--	--	--	--	--	--	--	--	--
08...	2.2	.160	.120	.030	.040	.11	.01	22	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	2.2	.150	.110	.060	.040	.11	.00	17	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	2.4	.140	.120	.060	.050	.10	.02	17	--	--
08...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.6	.220	.190	.150	.160	.14	.05	11	7.21	.000
21...	--	--	--	--	--	--	--	--	--	--
21...	3.9	.130	.090	.070	.010	.06	.03	16	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.6	.140	.100	.070	.070	.06	.04	9.8	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	1.5	.130	.090	.070	.060	.06	.03	11	--	--
MAY										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	2.1	.250	.210	.160	.150	.15	.06	13	.000	.000
04...	--	--	--	--	--	--	--	--	--	--
04...	1.7	.210	.180	.120	.120	.10	.08	12	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	1.6	.160	.130	.120	.090	.10	.03	12	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	1.4	.150	.130	.110	.080	.10	.03	11	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	2.1	.160	.130	.120	.010	.08	.05	12	4.41	.000
18...	--	--	--	--	--	--	--	--	--	--
18...	1.8	.240	.230	.170	.180	.07	.16	27	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	1.9	.140	.120	.110	.000	.08	.04	31	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEVATION ABOVE NGVD (FEET) (72020)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND											
MAY											
18...	1333	26.4	--	--	--	--	--	--	--	--	790
JUN											
08...	1245	.00	29	1200.00	66.23	17.0	100	230	10	762	743
08...	1247	1.60	--	--	--	--	--	--	--	--	744
08...	1249	3.30	--	--	--	--	--	--	--	--	743
08...	1251	6.60	--	--	--	--	--	--	--	--	743
08...	1253	9.90	--	--	--	--	--	--	--	--	742
08...	1255	13.0	--	--	--	--	--	--	--	--	745
08...	1257	16.0	--	--	--	--	--	--	--	--	745
08...	1259	20.0	--	--	--	--	--	--	--	--	745
08...	1301	23.0	--	--	--	--	--	--	--	--	747
08...	1303	26.0	--	--	--	--	--	--	--	--	750
22...	1248	.00	29	1200.00	66.21	20.0	75	270	2.0	772	732
22...	1250	1.60	--	--	--	--	--	--	--	--	733
22...	1252	3.30	--	--	--	--	--	--	--	--	733
22...	1254	6.60	--	--	--	--	--	--	--	--	730
22...	1256	9.90	--	--	--	--	--	--	--	--	730
22...	1258	13.0	--	--	--	--	--	--	--	--	730
22...	1300	16.0	--	--	--	--	--	--	--	--	732
22...	1302	20.0	--	--	--	--	--	--	--	--	730
22...	1304	23.0	--	--	--	--	--	--	--	--	730
22...	1306	26.0	--	--	--	--	--	--	--	--	734
JUL											
13...	1340	.00	29	1200.00	66.20	27.0	100	120	10	775	670
13...	1342	1.60	--	--	--	--	--	--	--	--	670
13...	1344	3.30	--	--	--	--	--	--	--	--	670
13...	1346	6.60	--	--	--	--	--	--	--	--	670
13...	1348	9.90	--	--	--	--	--	--	--	--	670
13...	1350	13.2	--	--	--	--	--	--	--	--	670
13...	1352	16.0	--	--	--	--	--	--	--	--	680
13...	1354	19.8	--	--	--	--	--	--	--	--	690
13...	1356	23.0	--	--	--	--	--	--	--	--	696
13...	1358	26.4	--	--	--	--	--	--	--	--	705
27...	1545	.00	29	1200.00	66.22	23.0	100	--	.0	778	604
27...	1547	1.60	--	--	--	--	--	--	--	--	605
27...	1549	3.30	--	--	--	--	--	--	--	--	605
27...	1551	6.60	--	--	--	--	--	--	--	--	602
27...	1553	9.90	--	--	--	--	--	--	--	--	603
27...	1555	13.2	--	--	--	--	--	--	--	--	604
27...	1557	16.5	--	--	--	--	--	--	--	--	603
27...	1559	19.8	--	--	--	--	--	--	--	--	603
27...	1601	23.1	--	--	--	--	--	--	--	--	608
27...	1603	26.4	--	--	--	--	--	--	--	--	613
AUG											
12...	0940	.00	25	1200.00	66.22	25.0	22	40	3.0	773	587
12...	0942	1.60	--	--	--	--	--	--	--	--	587
12...	0944	3.30	--	--	--	--	--	--	--	--	689
12...	0946	6.60	--	--	--	--	--	--	--	--	585
12...	0948	9.90	--	--	--	--	--	--	--	--	686
12...	0950	13.2	--	--	--	--	--	--	--	--	587
12...	0952	16.5	--	--	--	--	--	--	--	--	589
12...	0954	19.8	--	--	--	--	--	--	--	--	588
12...	0956	23.1	--	--	--	--	--	--	--	--	589
26...	1030	.00	29	1200.00	66.03	21.0	100	30	15	780	603
26...	1032	1.60	--	--	--	--	--	--	--	--	602
26...	1034	3.30	--	--	--	--	--	--	--	--	602
26...	1036	6.60	--	--	--	--	--	--	--	--	601
26...	1038	9.90	--	--	--	--	--	--	--	--	601
26...	1040	13.2	--	--	--	--	--	--	--	--	602
26...	1042	16.5	--	--	--	--	--	--	--	--	602
26...	1044	19.8	--	--	--	--	--	--	--	--	602
26...	1046	23.0	--	--	--	--	--	--	--	--	602
SEP											
08...	1457	.00	28	1200.00	66.00	27.0	0	205	2.0	778	653
08...	1459	1.60	--	--	--	--	--	--	--	--	655
08...	1501	3.30	--	--	--	--	--	--	--	--	653
08...	1503	6.60	--	--	--	--	--	--	--	--	652
08...	1505	9.90	--	--	--	--	--	--	--	--	653
08...	1507	13.2	--	--	--	--	--	--	--	--	653
08...	1509	16.5	--	--	--	--	--	--	--	--	652
08...	1511	19.8	--	--	--	--	--	--	--	--	647
08...	1513	23.1	--	--	--	--	--	--	--	--	657

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L) (00505)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND											
MAY											
18...	8.5	12.6	2.4	--	8.4	76	497	128	.15	.01	.010
JUN											
08...	8.5	17.0	--	59.0	8.5	87	--	--	--	--	--
08...	8.5	17.0	--	--	8.5	87	--	--	--	--	--
08...	8.5	17.0	2.5	--	8.5	87	495	79	.13	.05	.010
08...	8.5	16.7	--	--	8.4	86	--	--	--	--	--
08...	8.5	16.7	2.1	--	8.4	86	492	89	.11	.03	.010
08...	8.5	16.5	--	--	8.1	82	--	--	--	--	--
08...	8.5	16.3	2.4	--	7.8	79	495	90	.11	.04	.010
08...	8.5	16.2	--	--	7.8	79	--	--	--	--	--
08...	8.5	16.2	4.6	--	7.8	79	499	81	.11	.04	.010
08...	8.4	15.8	--	--	6.6	66	--	--	--	--	--
22...	8.5	18.7	--	71.0	8.8	92	--	--	--	--	--
22...	8.5	18.4	--	--	8.6	90	--	--	--	--	--
22...	8.5	17.9	2.0	--	8.4	87	482	121	.12	.14	.020
22...	8.5	17.8	--	--	8.3	85	--	--	--	--	--
22...	8.4	17.7	1.5	--	8.1	83	479	116	.13	.14	.020
22...	8.4	17.7	--	--	8.1	83	--	--	--	--	--
22...	8.4	17.7	2.3	--	8.1	83	482	121	.13	.13	.030
22...	8.4	17.7	--	--	8.1	83	--	--	--	--	--
22...	8.4	17.6	2.3	--	8.0	82	480	116	.12	.13	.020
22...	8.4	17.3	--	--	7.5	76	--	--	--	--	--
JUL											
13...	8.9	24.4	--	22.8	12.2	144	--	--	--	--	--
13...	8.9	24.4	--	--	12.2	144	--	--	--	--	--
13...	8.9	24.4	2.5	--	12.1	142	411	85	.01	.05	.030
13...	8.9	24.4	--	--	12.1	142	--	--	--	--	--
13...	8.9	24.4	2.5	--	12.0	141	409	89	.01	.04	.030
13...	8.9	24.4	--	--	11.9	140	--	--	--	--	--
13...	8.8	23.6	1.5	--	10.1	116	426	84	.01	.02	.030
13...	8.8	22.8	--	--	8.8	101	--	--	--	--	--
13...	8.7	22.3	2.6	--	8.4	97	437	82	.02	.03	.020
13...	8.7	21.9	--	--	7.5	84	--	--	--	--	--
27...	8.6	23.2	--	36.6	7.1	81	--	--	--	--	--
27...	8.6	23.2	--	--	7.1	81	--	--	--	--	--
27...	8.6	22.9	2.3	--	7.1	81	426	87	.07	--	.020
27...	8.6	22.7	--	--	6.7	76	--	--	--	--	--
27...	8.6	22.7	2.6	--	6.7	76	425	90	.08	--	.020
27...	8.6	22.7	--	--	6.4	73	--	--	--	--	--
27...	8.6	22.6	3.0	--	6.4	73	421	90	.08	.07	.020
27...	8.6	22.6	--	--	6.0	68	--	--	--	--	--
27...	8.6	22.5	--	--	5.5	63	--	--	--	--	--
27...	8.5	22.4	2.5	--	4.1	47	433	82	.07	.08	.030
AUG											
12...	8.4	19.7	--	131	6.4	69	--	--	--	--	--
12...	8.4	19.7	--	--	6.5	70	--	--	--	--	--
12...	8.3	19.6	2.4	--	6.6	71	418	73	.00	.00	.020
12...	8.4	19.6	--	--	6.7	72	--	--	--	--	--
12...	8.4	19.6	2.5	--	6.5	70	417	860	.00	.01	.020
12...	8.4	19.6	--	--	6.1	66	--	--	--	--	--
12...	8.4	19.6	2.3	--	5.3	57	427	88	.00	.01	.020
12...	8.4	19.5	--	--	5.9	63	--	--	--	--	--
12...	8.4	19.5	2.2	--	5.6	60	410	70	.00	.01	.020
26...	8.9	20.7	--	44.4	8.1	88	--	--	--	--	--
26...	8.9	20.7	--	--	8.1	88	--	--	--	--	--
26...	8.9	20.7	1.4	--	8.1	88	430	299	--	.09	<.020
26...	8.9	20.7	--	--	8.1	88	--	--	--	--	--
26...	8.9	20.7	2.0	--	8.1	88	431	985	--	.09	<.020
26...	8.9	20.7	--	--	7.9	86	--	--	--	--	--
26...	8.9	20.7	1.3	--	7.9	86	431	87	.92	.09	.000
26...	8.9	20.7	--	--	7.9	86	--	--	--	--	--
26...	8.9	20.7	1.2	--	7.6	83	435	45	--	.08	<.020
SEP											
08...	8.8	19.3	--	122	8.4	88	--	--	--	--	--
08...	8.8	18.9	--	--	8.3	87	--	--	--	--	--
08...	8.8	18.4	2.2	--	8.0	91	439	92	--	.00	.010
08...	8.8	18.2	--	--	7.9	81	--	--	--	--	--
08...	8.8	18.2	1.9	--	7.8	80	441	104	--	.00	.010
08...	8.8	18.1	--	--	7.7	79	--	--	--	--	--
08...	8.8	18.1	1.9	--	7.7	79	443	97	--	.00	.010
08...	8.8	18.1	--	--	7.8	80	--	--	--	--	--
08...	8.8	18.1	1.8	--	7.8	80	442	84	--	.00	.010

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND

MAY										
18...	.000	.16	.01	.290	.110	2.3	1.3	2.60	1.2	1.4
JUN										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.14	.05	.230	.020	1.2	1.1	1.40	.30	1.1
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.12	.03	.240	.240	1.3	.86	1.50	.40	1.1
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.12	.04	.260	.260	1.2	1.3	1.50	.00	1.6
08...	--	--	--	--	--	--	--	--	--	--
08...	.000	.12	.04	.250	.270	1.5	1.0	1.70	.40	1.3
08...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.010	.14	.15	.250	.240	1.9	1.4	2.10	.50	1.6
22...	--	--	--	--	--	--	--	--	--	--
22...	.000	.15	.14	.220	.210	1.5	1.1	1.70	.40	1.3
22...	--	--	--	--	--	--	--	--	--	--
22...	.010	.16	.14	.240	.230	1.7	1.3	1.90	.40	1.5
22...	--	--	--	--	--	--	--	--	--	--
22...	.020	.14	.15	.200	.210	1.3	1.3	1.50	.00	1.5
22...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	.010	.04	.06	.180	.120	2.5	.98	2.70	1.6	1.1
13...	--	--	--	--	--	--	--	--	--	--
13...	.010	.04	.05	.210	.140	2.5	.96	2.70	1.6	1.1
13...	--	--	--	--	--	--	--	--	--	--
13...	.030	.04	.05	.180	.180	.92	.92	1.10	.00	1.1
13...	--	--	--	--	--	--	--	--	--	--
13...	.030	.04	.06	.240	.190	.96	.91	1.20	.10	1.1
13...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	.09	--	.330	--	.97	--	1.30	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	.10	--	.290	--	1.2	--	1.50	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	.020	.10	.09	.400	.430	1.1	.97	1.50	.10	1.4
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	.020	.10	.10	.510	.460	1.2	1.2	1.70	.00	1.7
AUG										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	.030	.00	.02	.210	.210	1.7	1.1	1.90	.60	1.3
12...	--	--	--	--	--	--	--	--	--	--
12...	.000	.00	.01	.250	.270	1.4	.93	1.60	.40	1.2
12...	--	--	--	--	--	--	--	--	--	--
12...	.020	.00	.03	.210	.200	1.4	1.0	1.60	.40	1.2
12...	--	--	--	--	--	--	--	--	--	--
12...	.000	.00	.01	.270	.240	1.4	.86	1.70	.60	1.1
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	<.09	.11	.070	.060	2.0	1.0	2.10	1.0	1.1
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	<.09	.11	.100	.120	1.8	.80	1.90	.98	.92
26...	--	--	--	--	--	--	--	--	--	--
26...	.020	.92	<.10	.090	.120	1.8	1.4	1.90	.40	1.5
26...	--	--	--	--	--	--	--	--	--	--
26...	.030	<.09	.11	.070	.130	1.5	.84	1.60	.63	.97
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	.010	<.09	<.09	.260	.340	1.3	1.2	1.60	.10	1.5
08...	--	--	--	--	--	--	--	--	--	--
08...	.010	<.09	<.09	.320	.310	1.3	1.2	1.60	.10	1.5
08...	--	--	--	--	--	--	--	--	--	--
08...	.010	<.09	<.09	.330	.370	1.4	.93	1.70	.40	1.3
08...	--	--	--	--	--	--	--	--	--	--
08...	.010	<.09	<.09	.290	.310	1.3	--	1.60	--	<.22

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS, HYDRO. + ORTHO DIS. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
, 470214098044300 - LAKE ASHTABULA (SITE A1 ABOVE GATES) AT BALDHILL DAM, ND										
MAY										
18...	2.8	.160	.120	.110	.020	.07	.05	27	--	--
JUN										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	1.5	.160	.130	.120	.100	.08	.05	15	2.74	.090
08...	--	--	--	--	--	--	--	--	--	--
08...	1.6	.150	.130	.090	.100	.08	.05	13	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	1.6	.160	.130	.100	.100	.09	.04	12	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	1.8	.160	.130	.100	.100	.09	.04	14	--	--
08...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	2.2	.130	.110	.080	.090	.08	.03	28	1.84	.190
22...	--	--	--	--	--	--	--	--	--	--
22...	1.9	.130	.110	.090	.090	.08	.03	28	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	2.1	.130	.100	.080	.090	.07	.03	20	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	1.6	.110	.120	.080	.100	.08	.04	25	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	2.7	.170	.040	.050	.050	.02	.02	14	93.6	.750
13...	--	--	--	--	--	--	--	--	--	--
13...	2.7	.210	.020	.050	.040	.01	.01	15	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.1	.070	.030	.070	.050	.01	.02	11	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	1.2	.060	.030	.040	.060	.01	.02	12	--	--
13...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	1.4	.060	--	.050	--	.07	--	13	2.04	.000
27...	--	--	--	--	--	--	--	--	--	--
27...	1.6	.060	--	.110	.050	.07	--	--	1.23	.000
27...	--	--	--	--	--	--	--	--	--	--
27...	1.6	.210	.160	.140	.120	.11	.05	11	.000	.000
27...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
27...	1.8	.180	.220	.180	.170	.19	.03	12	.170	.000
AUG										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	1.9	.240	.190	.150	.150	.15	.04	11	2.90	.000
12...	--	--	--	--	--	--	--	--	--	--
12...	1.6	.240	.190	.150	.160	.15	.04	11	2.18	.000
12...	--	--	--	--	--	--	--	--	--	--
12...	1.6	.240	.190	.150	.150	.16	.03	11	.870	.000
12...	--	--	--	--	--	--	--	--	--	--
12...	1.7	.230	.190	.150	.150	.15	.04	9.9	1.19	.000
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.180	.180	.140	.070	.09	.09	12	48.2	<.010
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.190	.180	.140	.080	.39	.00	14	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	2.8	.180	.190	.150	.080	.08	.11	12	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	.180	.190	.140	.080	.08	.11	12	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	.270	.180	.210	.200	.13	.05	11	3.12	<.010
08...	--	--	--	--	--	--	--	--	--	--
08...	--	.200	.190	.210	.200	.12	.07	11	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	.200	.190	.210	.210	.13	.06	10	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	.190	.200	.200	.210	.13	.07	9.8	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
485533098192200 - LAKE CARMEL (MIDDLE) NEAR MT. CARMEL, ND									
OCT									
23...	1530	.00	14	10.64	1.5	90	0	12	726
23...	1532	3.30	--	--	--	--	--	--	--
23...	1534	6.60	--	--	--	--	--	--	--
23...	1536	13.2	--	--	--	--	--	--	--

DATE	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT									
23...	618	8.2	4.0	19.0	10.9	89	--	--	--
23...	600	8.2	4.0	--	10.9	89	K4	48	.12
23...	590	8.2	4.0	--	11.0	89	--	--	.10
23...	605	8.2	4.0	--	10.9	89	--	--	.12

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
OCT								
23...	--	--	--	--	--	--	--	--
23...	.620	.490	100	10	770	4300	4.49	.000
23...	.590	.490	--	--	--	--	--	--
23...	.090	.490	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

485533098192200 - LAKE CARMEL (MIDDLE) NEAR MT. CARMEL, ND

DATE	OCT 23,80
TIME	1532
TOTAL CELLS/ML	4300
DIVERSITY: DIVISION	0.4
.CLASS	0.4
..ORDER	0.9
...FAMILY	0.9
....GENUS	0.9

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..EUPODISCALES		
...COSCINODISCACEAE		
....CYCLOTELLA	39	1
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...CHLOROCOCCACEAE		
....SCHROEDERIA	*	0
...OOCYSTACEAE		
....ANKISTRODESMUS	52	1
....SELENASTRUM	190	5
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	3600#	83
..NOSTOCALES		
...NOSTOCACEAE		
....APHANIZOMENON	400	9

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

485436098164600 - LAKE CARMEL (DEEP) NEAR MT. CARMEL, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)
OCT									
23...	1100	.00	29	10.64	1.0	100	0	15	725
23...	1102	3.30	--	--	--	--	--	--	--
23...	1104	6.60	--	--	--	--	--	--	--
23...	1106	13.2	--	--	--	--	--	--	--
23...	1108	19.8	--	--	--	--	--	--	--
23...	1110	26.4	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
485436098164600 - LAKE CARMEL (DEEP) NEAR MT. CARMEL, ND									
OCT									
23...	614	8.2	4.0	35.0	10.5	84	--	--	--
23...	640	8.1	4.0	--	10.5	84	28	930	.52
23...	640	8.2	4.5	--	--	--	--	--	--
23...	631	8.2	5.0	--	10.2	82	--	--	.52
23...	640	8.2	5.0	--	10.3	82	--	--	--
23...	640	8.1	5.0	--	10.3	82	--	--	.50

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
OCT								
23...	--	--	--	--	--	--	--	--
23...	.490	.460	90	50	1100	800	1.21	.000
23...	--	--	--	--	--	--	--	--
23...	.500	.470	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--
23...	.500	.490	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE	OCT 23,80
TIME	1102
TOTAL CELLS/ML	800
DIVERSITY: DIVISION	0.8
.CLASS	0.8
..ORDER	1.6
...FAMILY	1.7
....GENUS	1.8

ORGANISM	CELLS /ML	PERCENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...CHARACIACEAE		
....SCHROEDERIA	13	2
...OOCYSTACEAE		
....ANKISTRODESMUS	13	2
...SCENEDESMACEAE		
....SCENEDESMUS	26	3
....TETRASTRUM	100	13
CRYPTOPHYTA (CRYPTOMONADS)		
.CRYPTOPHYCEAE		
..CRYPTOMONADALES		
...CRYPTOCHRYSIDACEAE		
....CHROOMONAS	13	2
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	400#	50
..HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	230#	29

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
PART 5. HUDSON BAY BASIN									
RED RIVER OF THE NORTH BASIN									
484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND									
OCT									
21...	1528	.00	21	11.38	8.0	30	30	5.0	738
21...	1530	3.30	--	--	8.0	--	--	--	--
21...	1532	6.60	--	--	--	--	--	--	--
21...	1534	13.2	--	--	8.0	--	--	--	--
21...	1536	19.8	--	--	8.0	--	--	--	--

DATE	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT									
21...	622	8.2	5.0	42.0	10.5	85	--	--	--
21...	582	8.2	5.0	--	10.5	85	67	420	.02
21...	599	8.2	5.0	--	10.4	84	--	--	--
21...	603	8.2	5.0	--	10.4	84	--	--	.08
21...	593	8.2	5.0	--	10.2	82	--	--	.30

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
OCT								
21...	--	--	--	--	--	--	--	--
21...	.230	.080	110	<10	210	1200	3.93	.000
21...	--	--	--	--	--	--	--	--
21...	.220	.080	--	--	--	--	--	--
21...	.210	.080	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	OCT 21,80
TIME	1530
TOTAL CELLS/ML	1200
DIVERSITY: DIVISION	1.5
.CLASS	1.5
..ORDER	1.5
...FAMILY	1.7
....GENUS	1.9

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..EUPODISCALES		
...COSCINODISCACEAE		
....CYCLOTELLA	230#	19
....MELOSIRA	26	2
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...DICTYOSPHAERIACEAE		
....DICTYOSPHAERIUM	13	1
...OOCYSTACEAE		
....ANKISTRODESMUS	13	1
....CHODATELLA	13	1
....SELENASTRUM	39	3
...SCENEDESMACEAE		
....CRUCIGENIA	52	4
CRYPTOPHYTA (CRYPTOMONADS)		
.CRYPTOPHYCEAE		
..CRYPTOMONADALES		
...CRYPTOCHRYSIDACEAE		
....CHROOMONAS	39	3
...CRYPTOMONADACEAE		
....CRYPTOMONAS	13	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	770#	63
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....PHACUS	13	1
....TRACHELOMONAS	13	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
RED RIVER OF THE NORTH BASIN											
475741097352500 - NORTH BRANCH TURTLE RIVER NEAR LARIMORE, ND											
FEB											
19...	1245	4.6	535	8.0	6.0	.0	2.9	>2000	6800	247	67
23...	1250	5.6	518	8.0	--	.5	5.8	--	--	233	53
MAR											
18...	1045	4.7	576	7.9	1.0	.0	2.1	1600	29	255	55
MAY											
26...	1100	5.2	709	8.0	12.5	13.0	5.5	K77	410	324	64
AUG											
19...	1015	.49	700	7.9	25.0	19.0	.80	270	305	315	55

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB											
19...	66	20	17	13	.5	6.8	180	110	8.7	.2	20
23...	62	19	23	17	.7	7.2	180	83	14	.2	19
MAR											
18...	69	20	18	13	.5	4.0	200	88	8.9	.2	18
MAY											
26...	82	29	28	16	.7	5.4	260	120	11	.2	20
AUG											
19...	75	31	27	15	.7	4.8	260	110	11	.2	28

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
FEB										
19...	347	361	.47	4.3	.81	.230	30	70	10	.12
23...	325	339	.44	4.9	.65	.160	40	80	13	.20
MAR										
18...	358	347	.49	4.5	.17	.020	50	30	4	.05
MAY										
26...	460	452	.63	6.5	.00	.010	50	50	11	.15
AUG										
19...	449	444	.61	.59	.01	.460	50	26	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
RED RIVER OF THE NORTH BASIN									
475612097361200 - SOUTH BRANCH TURTLE RIVER RESERVOIR NEAR LARIMORE, ND									
AUG									
20...	1120	.00	7	480	8.3	21.5	22.0	8.1	96
20...	1130	3.30	--	478	8.3	--	22.0	7.9	93
20...	1140	7.50	--	483	8.3	--	21.5	7.2	84

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
475614097350200 - SOUTH BRANCH TURTLE RIVER AT MOUTH NEAR LARIMORE, ND										
FEB										
19...	1500	3.8	689	8.1	3.0	3.0	2.6	K4	44	346
23...	1410	7.7	662	8.1	13.0	4.5	2.6	--	--	341
MAR										
18...	1145	3.5	680	7.9	2.0	3.0	2.6	120	<1	319
MAY										
26...	1330	14	580	7.9	14.0	13.5	1.9	90	79	278
JUN										
25...	1105	4.2	982	7.8	22.5	17.0	1.8	87	210	--
AUG										
19...	1215	1.1	569	7.6	29.5	18.5	90	460	750	245

DATE	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
FEB									
19...	76	94	27	14	8	.3	4.9	270	80
23...	81	92	27	14	8	.3	4.8	260	75
MAR									
18...	59	85	26	14	9	.4	5.7	260	76
MAY									
26...	48	75	22	12	8	.3	4.8	230	65
JUN									
25...	--	--	--	--	--	--	--	--	--
AUG									
19...	55	60	23	13	10	.4	4.8	190	59

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)
RED RIVER OF THE NORTH BASIN									
475614097350200 - SOUTH BRANCH TURTLE RIVER AT MOUTH NEAR LARIMORE, ND									
FEB									
19...	16	.3	24	438	424	.60	4.5	--	--
23...	18	.3	23	416	411	.57	8.6	--	--
MAR									
18...	20	.3	20	423	404	.58	4.0	--	--
MAY									
26...	14	.2	21	368	353	.50	13.4	.000	.00
JUN									
25...	--	--	--	--	--	--	--	--	--
AUG									
19...	20	.3	30	345	328	.47	1.0	--	--

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	PUTASSIUM 40 DISSOLVED (PCI/L AS K40) (82068)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
FEB									
19...	.10	.040	.12	40	20	620	3.7	4	.04
23...	.08	.020	.06	50	20	620	3.6	10	.21
MAR									
18...	.07	.030	.09	60	20	590	4.3	6	.06
MAY									
26...	.02	.020	.06	40	10	590	3.6	9	.33
JUN									
25...	.16	.100	.31	--	--	--	--	--	--
AUG									
19...	.22	.460	1.4	50	120	2700	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS NONCARBONATE (MG/L AS CACO3) (95902)
480020097133600 - KELLY SLOUGH NEAR MANVEL, ND											
FEB											
20...	1310	E.02	5800	8.1	6.0	.0	21	<3	270	1162	1070
24...	1005	7.2	20000	7.6	--	.5	3.2	--	--	3155	2850
MAR											
19...	1230	6.6	13000	7.9	3.0	-.5	2.1	K17	1100	1715	1500
MAY											
27...	1050	11	18000	7.8	19.0	18.5	2.6	42	3400	2734	2500
AUG											
18...	1315	1.5	9900	8.0	26.0	21.0	2.2	K190	440	1531	1300

E - Estimated.
K - Results based on colony count outside the acceptable range (non-ideal colony count).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
RED RIVER OF THE NORTH BASIN											
480020097133600 - KELLY SLOUGH NEAR MANVEL, ND											
FEB											
20...	350	70	800	59	11	19	91	1100	1300	.8	12
24...	670	360	4200	74	33	89	310	2500	7000	1.7	25
MAR											
19...	390	180	2000	71	22	52	180	1400	3300	1.5	6.5
MAY											
27...	600	300	3300	72	28	43	230	2200	5400	2.1	6.1
AUG											
18...	300	190	1500	67	17	51	260	1200	2600	1.7	10

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
FEB										
20...	3570	3710	4.9	.19	.00	.270	1000	80	26	.00
24...	14100	15000	19.2	274	.21	.280	2000	160	14	.27
MAR										
19...	8010	7440	10.9	143	.00	.110	2900	110	8	.14
MAY										
27...	--	12000	16.3	356	.00	.370	4600	110	9	.27
AUG										
18...	6100	6010	8.3	24.7	.00	.730	2900	60	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
475411097242800 - HAZEN BROOK NEAR EMERADO, ND											
FEB											
23...	1530	3.3	413	8.1	14.0	.5	4.1	--	--	211	51
MAR											
18...	1455	1.2	388	7.8	3.0	1.0	1.3	250	K13	193	33
MAY											
26...	1555	4.3	692	7.9	13.5	13.0	1.0	830	720	362	92

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
RED RIVER OF THE NORTH BASIN											
475411097242800 - HAZEN BROOK NEAR EMERADO, ND											
FEB											
23...	53	19	4.8	5	.1	5.6	160	54	2.7	.2	23
MAR											
18...	51	16	3.9	4	.1	3.4	160	34	1.9	.2	20
MAY											
26...	89	34	9.4	5	.2	5.1	270	95	3.4	.3	30

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
FEB										
23...	266	260	.36	2.4	.27	.120	30	60	24	.21
MAR										
18...	237	227	.32	.77	.00	.030	40	30	6	.02
MAY										
26...	463	429	.63	5.4	.00	.020	40	20	10	.12

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
05082700 - SALTWATER COULEE NEAR EMERADO, ND											
FEB											
19...	1715	.47	1350	7.7	3.0	1.0	2.8	K27	>10000	702	600
24...	0905	1.7	1260	7.6	--	.5	2.2	--	--	343	240
MAR											
19...	1415	2.2	1040	8.2	5.0	2.0	1.1	4500	220	337	127
MAY											
27...	0915	4.2	2210	7.9	18.0	14.0	1.2	1400	3300	717	330

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB											
19...	230	31	23	7	.4	.1	73	660	23	.2	15
24...	96	25	130	44	3.2	11	98	250	190	.2	16
MAR											
19...	82	32	68	30	1.7	8.7	210	170	95	.3	22
MAY											
27...	160	77	220	39	3.7	14	390	380	310	.4	16

K - Results based on colony count outside the acceptable range (non-ideal colony count).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
RED RIVER OF THE NORTH BASIN										
05082700 - SALTWATER COULEE NEAR EMERADO, ND										
FEB										
19...	1080	1040	1.5	1.4	2.1	.320	40	20	12	.02
24...	783	781	1.1	3.6	.81	.320	180	30	10	.05
MAR										
19...	646	604	.88	3.8	.00	.240	150	30	6	.04
MAY										
27...	1450	1410	2.0	16.4	.03	.220	370	90	10	.11

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
05083000 - TURTLE RIVER AT MANVEL, ND											
FEB											
20...	1105	5.0	3390	7.5	3.0	.0	5.0	K57	5000	630	890
24...	1420	24	2340	8.0	.0	.5	7.4	--	--	498	310
MAR											
19...	1040	28	4090	7.9	2.0	.0	2.1	K8200	1500	796	626
MAY											
27...	1515	11	2740	7.7	20.0	16.5	4.0	870	390	543	290
AUG											
18...	1100	4.5	7300	8.2	25.0	18.0	13	--	--	1151	930

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB											
20...	160	56	450	60	8.1	16	270	360	760	.5	23
24...	130	42	290	55	5.9	15	190	310	440	.4	18
MAR											
19...	190	78	730	66	12	22	170	580	1200	.7	11
MAY											
27...	120	59	370	59	7.1	15	250	330	590	.5	17
AUG											
18...	230	140	1100	67	14	38	220	880	2000	1.2	10

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
FEB										
20...	1970	1990	2.7	26.6	.33	.160	640	40	16	.22
24...	1400	1360	1.9	90.7	.97	.110	440	40	57	3.7
MAR										
19...	2990	2920	4.1	226	.00	.030	1000	70	6	.45
MAY										
27...	1630	1650	2.2	48.4	.00	.110	580	80	20	.59
AUG										
18...	4440	4530	6.0	53.9	.00	.070	2100	30	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
RED RIVER OF THE NORTH BASIN										
485520098231000 - LITTLE SOUTH PEMBINA RIVER ABOVE LAKE CARMEL, ND										
OCT 22...	1400	.02	838	8.1	3.0	4.0	40	2.0	11.3	91

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT 22...	K13000	66	350	292	74	26	67	32	1.8	11

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 22...	100	37	.2	20	552	510	.75	.03	.000	.000

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 22...	.00	.00	.710	.190	1.50	1.1	.290	.160	.180	.150

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	LENGTH OF EXPO-SURE (DAYS) (00022)
RED RIVER OF THE NORTH BASIN									
485520098231000 - LITTLE SOUTH PEMBINA RIVER ABOVE LAKE CARMEL, ND									
OCT 22...	140	10	15	2.0	4300	.551	1.10	.400	26

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO OCTOBER 1980

DATE	OCT 22,80
TIME	1400
TOTAL CELLS/ML	4300
DIVERSITY: DIVISION	1.7
.CLASS	1.7
..ORDER	1.7
...FAMILY	2.3
....GENUS	2.7

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..BACILLARIALES		
...NITZSCHIACEAE		
....NITZSCHIA	*	0
..EUPODISCALES		
...COSCINODISCACEAE		
....CYCLOTELLA	710#	17
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...DICTYOSPHAERIACEAE		
....DICTYOSPHAERIUM	160	4
...MICRACTINIACEAE		
....GOLENKINIA	59	1
...OOCYSTACEAE		
....ANKISTRODESMUS	180	4
....CHODATELLA	59	1
....SELENASTRUM	140	3
....TREUBARIA	*	0
...SCENEDESMACEAE		
....CRUCIGENIA	79	2
....SCENEDESMUS	1100#	26
....TETRASTRUM	79	2
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	1500#	34
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....EUGLENA	79	2
....TRACHELOMONAS	160	4

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
				RED RIVER OF THE NORTH BASIN						
				485439098154600 - LITTLE SOUTH PEMBINA RIVER BELOW LAKE CARMEL, ND						
OCT 24...	0925	.35	968	8.2	.0	.5	30	1.5	11.9	86

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT 24...	10000	2200	1430	215	53	20	110	52	3.4	7.4

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT 24...	120	26	.3	23	549	541	.75	.52	.000	.000

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 24...	.00	.00	.940	.220	1.10	.79	.220	.200	.210	.220

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	LENGTH OF EXPO-SURE (DAYS) (00022)
RED RIVER OF THE NORTH BASIN									
485439098154600 - LITTLE SOUTH PEMBINA RIVER BELOW LAKE CARMEL, ND									
OCT 24...	260	20	12	.3	190	1.02	1.34	.420	30

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO OCTOBER 1980

DATE	OCT 24,80
TIME	0925
TOTAL CELLS/ML	190
DIVERSITY: DIVISION	0.7
.CLASS	0.7
..ORDER	0.7
...FAMILY	0.7
....GENUS	0.7

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..EUPODISCALES		
...COSCINODISCACEAE		
....CYCLOTELLA	170#	87
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....EUGLENA	13	7
PYRRHOPHYTA (FIRE ALGAE)		
.DINOPHYCEAE		
..DINOKONTAE		
...GLENODINIACEAE		
....GLENODINIUM	13	7

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
RED RIVER OF THE NORTH BASIN												
484643097474500 - TONGUE RIVER ABOVE LAKE RENWICK NEAR AKRA, ND												
OCT 21...	1115	30	692	8.1	9.5	4.5	30	2.9	11.1	87	18000	83

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT 21...	1100	288	79	22	36	21	1.0	7.4	100	13	.3

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT 21...	23	454	432	.62	36.8	.020	.009	.12	.14	.640	.200

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT 21...	1.00	.96	.180	.130	.140	.140	100	20	15	.7	1800

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
475549097373000 - SO. BR. TURTLE RIVER NR. LARIMORE, ND (LAT 47 55 49 LONG 097 37 30)							
AUG , 1981 19...	1320	1.6	620	7.8	18.0	110	130
475556097305100 - TURTLE RIVER ABV. STATE PARK NR. ARVILLA, ND (LAT 47 55 56 LONG 097 30 51)							
AUG , 1981 19...	1200	4.5	585	8.1	20.0	125	150
475807097254600 - TURTLE RIVER BLW. STATE PARK NR. ARVILLA, ND (LAT 47 58 07 LONG 097 25 46)							
AUG , 1981 19...	1505	1.3	628	8.0	23.0	113	100
480017097235900 - TURTLE RIVER BLW. AIR BASE NR. MEKINOCK, ND (LAT 48 00 17 LONG 097 23 59)							
AUG , 1981 19...	1600	1.5	702	8.2	23.0	1033	105
480128097203400 - TURTLE RIVER NR. MEKINOCK, ND (LAT 48 01 28 LONG 097 20 34)							
AUG , 1981 20...	1425	1.1	731	8.0	22.0	580	190
480058097141300 - TURTLE RIVER ABV. KELLY'S SLOUGH NR. MANVEL, ND (LAT 48 00 58 LONG 097 14 13)							
AUG , 1981 20...	1505	.02	3800	8.6	22.5	810	560
475504097214600 - HAZEN BROOK AT EMERADO, ND (LAT 47 55 04 LONG 097 21 46)							
AUG , 1981 19...	0920	E.01	765	7.7	15.0	770	2200
475207097294000 - HAZEN BROOK NR. ARVILLA, ND (LAT 47 52 07 LONG 097 29 10)							
AUG , 1981 19...	1000	E.01	550	7.2	16.0	290	1200
05082900 - FRESHWATER COULEE NEAR EMERADO, N. DAK. (LAT 47 56 00 LONG 097 14 00)							
AUG , 1981 18...	1500	.01	30500	8.7	29.0	1050	360

E - Estimated.

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)											
MAR , 1981											
19...	0755	206	489	8.5	.0	240	21	43	32	12	10
SEP											
04...	0910	35	473	8.5	17.5	240	18	42	33	17	13
05052100 - RICHLAND COUNTY DRAIN #65 NEAR GREAT BEND, ND (LAT 46 05 41 LONG 096 47 01)											
JUN , 1981											
25...	1605	3.4	528	7.2	25.0	220	49	49	24	23	18
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)											
MAR , 1981											
18...	0845	292	478	8.1	.0	250	32	44	34	14	11
SEP											
01...	0940	96	458	8.2	20.0	220	24	38	30	18	15
05056000 - SHEYENNE RIVER NR WARWICK, ND (LAT 47 48 20 LONG 098 42 57)											
FEB , 1981											
26...	1245	429	350	7.4	.5	99	.00	23	10	30	37
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)											
MAR , 1981											
05...	1450	120	560	7.3	.5	210	45	41	26	18	15
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)											
MAR , 1981											
04...	1535	43	462	8.0	.0	150	.00	37	14	34	31
05056400 - BIG COULEE NR CHURCHS FERRY, ND (LAT 48 10 40 LONG 099 13 15)											
MAR , 1981											
05...	1130	1.5	1060	7.1	.0	360	110	79	40	85	33
05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)											
APR , 1981											
01...	0825	335	740	8.5	4.5	250	.00	52	29	75	39
05059400 - SHEYENNE RIVER NR HORACE, ND (LAT 46 48 13 LONG 096 54 13)											
MAR , 1981											
18...	1120	E270	712	8.2	.0	260	43	60	27	53	30
SEP											
02...	1250	43	815	8.3	18.0	300	4.0	71	30	73	34

E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE, FET-LAB (MG/L AS HCO3) (95440)	CARBONATE, FET-LAB (MG/L AS CO3) (95445)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)											
MAR , 1981											
19...	.3	1.7	266	.00	218	1.3	42	10	.1	11	307
SEP											
04...	.5	4.7	271	.00	222	1.4	43	17	.1	1.1	259
05052100 - RICHLAND COUNTY DRAIN #65 NEAR GREAT BEND, ND (LAT 46 05 41 LONG 096 47 01)											
JUN , 1981											
25...	.7	11	210	.00	172	21	95	6.8	.2	31	332
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)											
MAR , 1981											
18...	.4	1.7	265	.00	217	3.4	42	10	.1	9.3	287
SEP											
01...	.5	5.6	239	.00	196	2.4	47	18	.1	1.9	248
05056000 - SHEYENNE RIVER NR WARWICK, ND (LAT 47 48 20 LONG 098 42 57)											
FEB , 1981											
26...	1.3	8.1	143	.00	117	9.1	44	8.2	.0	10	199
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)											
MAR , 1981											
05...	.5	9.6	200	.00	164	16	85	18	.1	16	348
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)											
MAR , 1981											
04...	1.2	11	194	.00	159	3.1	59	16	.1	17	297
05056400 - BIG COULEE NR CHURCHS FERRY, ND (LAT 48 10 40 LONG 099 13 15)											
MAR , 1981											
05...	1.9	17	310	.00	254	39	250	39	.1	23	704
05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)											
APR , 1981											
01...	2.1	6.5	317	.00	260	1.6	120	17	.1	17	495
05059400 - SHEYENNE RIVER NR HORACE, ND (LAT 46 48 13 LONG 096 54 13)											
MAR , 1981											
18...	1.4	3.0	266	.00	218	2.7	120	32	.2	14	432
SEP											
02...	1.8	11	361	.00	296	3.6	130	35	.2	21	518

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)										
MAR , 1981										
19...	284	.42	171	1.0	--	--	.02	190	20	10
SEP										
04...	291	.35	24.3	1.0	--	--	.04	0	50	10
05052100 - RICHLAND COUNTY DRAIN #65 NEAR GREAT BEND, ND (LAT 46 05 41 LONG 096 47 01)										
JUN , 1981										
25...	345	.45	3.1	1.0	--	--	.14	130	60	0
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)										
MAR , 1981										
18...	287	.39	226	1.0	--	--	.08	30	20	10
SEP										
01...	276	.34	64.1	1.0	--	--	.15	180	30	20
05056000 - SHEYENNE RIVER NR WARWICK, ND (LAT 47 48 20 LONG 098 42 57)										
FEB , 1981										
26...	208	.27	231	3.1	--	--	.54	130	170	50
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)										
MAR , 1981										
05...	316	.47	113	3.0	--	--	.78	190	40	60
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)										
MAR , 1981										
04...	288	.40	34.5	3.4	--	--	.97	160	60	40
05056400 - BIG COULEE NR CHURCHS FERRY, ND (LAT 48 10 40 LONG 099 13 15)										
MAR , 1981										
05...	690	.96	2.9	1.0	--	--	1.3	190	380	1600
05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)										
APR , 1981										
01...	474	.67	448	1.0	--	--	.09	260	10	90
05059400 - SHEYENNE RIVER NR HORACE, ND (LAT 46 48 13 LONG 096 54 13)										
MAR , 1981										
18...	441	.59	--	1.0	--	--	.02	100	0	120
SEP										
02...	549	.70	59.4	1.0	--	--	.19	50	60	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)											
MAR , 1981											
17...	1620	88	760	7.5	.0	260	34	61	26	56	32
SEP											
01...	1200	43	810	8.3	20.0	280	.00	68	27	76	36
05059700 - MAPLE RIVER NR ENDERLIN, ND (LAT 46 37 18 LONG 097 34 25)											
APR , 1981											
23...	1200	5.0	1620	7.9	9.0	730	380	180	68	100	23
23...	1201	5.0	1620	7.9	9.0	740	400	190	65	95	22
AUG											
12...	1425	3.2	1560	7.7	19.0	710	320	180	63	120	27
05060100 - CASS COUNTY DRAIN #52 NEAR AMENIA, ND (LAT 46 58 41 LONG 097 11 52)											
FEB , 1981											
25...	0935	.13	348	8.0	.0	150	20	34	16	12	14
05060150 - LOWER BRANCH RUSH RIVER NEAR PROSPER, ND (LAT 46 56 30 LONG 096 59 18)											
FEB , 1981											
25...	1250	1.2	213	7.5	.0	96	7.0	22	10	4.3	9
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)											
FEB , 1981											
25...	0850	.65	1160	7.9	.0	560	280	120	63	67	20
05060550 - RUSH RIVER NEAR PROSPER, ND (LAT 46 57 59 LONG 097 03 04)											
FEB , 1981											
25...	1055	.52	240	7.8	.0	110	17	24	12	5.9	10
05062200 - ELM RIVER NEAR KELSO, N. DAK. (LAT 47 17 30 LONG 097 06 50)											
FEB , 1981											
25...	1456	.01	500	7.4	3.5	230	58	63	18	5.9	5
05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)											
FEB , 1981											
25...	1150	9.4	2160	7.2	2.0	680	300	150	74	250	44
AUG											
31...	1420	8.2	1365	7.6	22.0	490	180	110	52	130	36
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)											
APR , 1981											
01...	1525	1370	420	7.9	2.0	190	31	42	21	16	15

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE, FET-LAB (MG/L AS HCO3) (95440)	CAR-BONATE, FET-LAB (MG/L AS CO3) (95445)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)											
MAR , 1981											
17...	1.5	3.3	275	.00	226	14	120	34	.2	14	447
SEP											
01...	2.0	12	354	.00	290	4.5	120	38	.2	20	531
05059700 - MAPLE RIVER NR ENDERLIN, ND (LAT 46 37 18 LONG 097 34 25)											
APR , 1981											
23...	1.6	8.0	429	.00	352	8.6	500	59	.2	23	1180
23...	1.5	10	--	--	340	6.9	520	50	.2	22	--
AUG											
12...	2.0	12	479	.00	393	15	480	50	.2	25	1180
05060100 - CASS COUNTY DRAIN #52 NEAR AMENIA, ND (LAT 46 58 41 LONG 097 11 52)											
FEB , 1981											
25...	.4	4.5	159	.00	130	2.5	32	12	.2	16	184
05060150 - LOWER BRANCH RUSH RIVER NEAR PROSPER, ND (LAT 46 56 30 LONG 096 59 18)											
FEB , 1981											
25...	.2	1.9	109	.00	89	5.5	15	5.4	.1	8.9	114
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)											
FEB , 1981											
25...	1.2	13	341	.00	280	6.9	350	34	.2	19	825
05060550 - RUSH RIVER NEAR PROSPER, ND (LAT 46 57 59 LONG 097 03 04)											
FEB , 1981											
25...	.2	1.2	112	.00	92	2.8	28	4.5	.1	12	136
05062200 - ELM RIVER NEAR KELSO, N. DAK. (LAT 47 17 30 LONG 097 06 50)											
FEB , 1981											
25...	.2	8.8	212	.00	174	14	35	6.9	.2	15	358
05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)											
FEB , 1981											
25...	4.2	15	463	.00	380	47	560	190	.6	23	1580
AUG											
31...	2.6	16	373	.00	306	7.5	340	79	.3	17	909
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)											
APR , 1981											
01...	.5	1.6	195	.00	160	3.9	39	11	.1	6.9	231

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)										
MAR , 1981										
17...	451	.61	106	1.0	--	--	.03	100	0	110
SEP										
01...	535	.72	60.9	2.5	.02	.300	.26	180	60	10
05059700 - MAPLE RIVER NR ENDERLIN, ND (LAT 46 37 18 LONG 097 34 25)										
APR , 1981										
23...	1150	1.6	15.9	1.0	--	--	.30	190	50	840
23...	1160	1.6	15.7	--	.10	.050	.15	280	40	--
AUG										
12...	1170	1.6	10.2	1.0	--	--	.03	460	70	1100
05060100 - CASS COUNTY DRAIN #52 NEAR AMENIA, ND (LAT 46 58 41 LONG 097 11 52)										
FEB , 1981										
25...	212	.25	.06	5.6	--	--	1.0	0	70	90
05060150 - LOWER BRANCH RUSH RIVER NEAR PROSPER, ND (LAT 46 56 30 LONG 096 59 18)										
FEB , 1981										
25...	125	.16	.37	3.2	--	--	.62	0	60	0
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)										
FEB , 1981										
25...	839	1.1	1.5	2.6	--	--	1.0	100	40	1300
05060550 - RUSH RIVER NEAR PROSPER, ND (LAT 46 57 59 LONG 097 03 04)										
FEB , 1981										
25...	148	.18	.19	4.7	--	--	.24	0	40	20
05062200 - ELM RIVER NEAR KELSO, N. DAK. (LAT 47 17 30 LONG 097 06 50)										
FEB , 1981										
25...	287	.49	.01	29	--	--	.96	0	10	40
05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)										
FEB , 1981										
25...	1500	2.2	40.1	2.9	--	--	.62	510	20	1800
AUG										
31...	928	1.2	20.1	1.0	--	--	1.2	50	20	530
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)										
APR , 1981										
01...	235	.31	854	1.0	--	--	.01	0	0	20

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)											
FEB , 1981											
20...	1740	21	220	7.6	.5	92	22	21	9.6	8.9	17
JUN											
29...	1645	.36	1510	7.9	23.0	1000	700	190	130	400	46
05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)											
FEB , 1981											
20...	1250	58	260	7.5	.5	110	27	24	12	8.4	14
05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)											
OCT , 1980											
08...	1655	4.8	715	7.8	12.5	310	56	77	29	33	18
APR , 1981											
09...	1805	55	670	8.1	8.0	290	87	67	30	37	21
05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)											
MAY , 1981											
22...	0750	8.1	638	7.7	11.5	200	13	51	17	34	26
05089100 - MIDDLE BRANCH PARK RIVER NR UNION, ND (LAT 48 32 32 LONG 098 01 10)											
FEB , 1981											
26...	1510	3.1	324	7.6	.5	100	.00	19	13	26	34
AUG											
27...	1548	.16	658	7.9	21.0	220	.00	53	21	68	39
05089500 - CART CREEK AT MOUNTAIN, ND (LAT 48 40 37 LONG 097 51 41)											
FEB , 1981											
26...	1640	2.6	672	8.0	.5	270	92	70	23	44	26
AUG											
28...	1400	.53	984	8.2	19.0	410	110	110	33	73	27
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)											
APR , 1981											
08...	1610	88	660	7.5	7.5	240	70	59	23	46	29
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)											
APR , 1981											
09...	1340	1570	810	8.0	8.5	230	62	52	24	75	41
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)											
MAR , 1981											
27...	1315	2.2	475	7.8	1.0	230	130	49	26	7.5	7
JUN											
30...	1200	1.2	768	8.0	22.5	380	230	65	53	20	10

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE, FET-LAB (MG/L AS HCO3) (95440)	CARBONATE, FET-LAB (MG/L AS CO3) (95445)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)											
FEB , 1981											
20...	.4	4.0	85	.00	70	3.4	28	7.0	.1	8.8	149
JUN											
29...	5.5	14	374	.00	307	7.5	1400	110	.2	6.9	2480
05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)											
FEB , 1981											
20...	.3	6.0	100	.00	82	5.1	36	6.3	.1	11	183
05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)											
OCT , 1980											
08...	.8	5.0	312	.00	256	7.9	100	24	.2	20	476
APR , 1981											
09...	.9	5.0	248	.00	203	3.2	140	17	.1	20	470
05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)											
MAY , 1981											
22...	1.1	6.7	228	.00	187	7.3	87	12	.1	17	364
05089100 - MIDDLE BRANCH PARK RIVER NR UNION, ND (LAT 48 32 32 LONG 098 01 10)											
FEB , 1981											
26...	1.1	8.8	133	.00	109	5.3	33	19	.1	15	215
AUG											
27...	2.0	11	370	.00	303	7.5	41	29	.3	30	455
05089500 - CART CREEK AT MOUNTAIN, ND (LAT 48 40 37 LONG 097 51 41)											
FEB , 1981											
26...	1.2	4.4	217	.00	178	3.5	150	18	.3	18	468
AUG											
28...	1.6	11	369	.00	303	3.7	230	33	.5	25	683
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)											
APR , 1981											
08...	1.3	6.2	210	.00	172	11	120	29	.2	20	447
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)											
APR , 1981											
09...	2.2	3.9	203	.00	167	3.2	82	100	.1	7.2	493
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)											
MAR , 1981											
27...	.2	2.0	127	.00	104	3.2	120	7.4	.1	6.9	309
JUN											
30...	.4	7.1	186	.00	153	3.0	260	13	.2	9.6	522

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)										
FEB , 1981										
20...	135	.20	8.5	4.5	--	--	.65	130	450	120
JUN										
29...	2440	3.4	2.4	1.0	--	--	.17	390	50	150
05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)										
FEB , 1981										
20...	158	.25	28.7	3.7	--	--	1.2	100	210	110
05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)										
OCT , 1980										
08...	443	.65	6.2	1.0	--	--	.08	190	30	160
APR , 1981										
09...	439	.64	69.8	.30	--	--	.00	100	20	70
05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)										
MAY , 1981										
22...	327	.50	8.0	1.0	.01	.190	.58	120	20	800
05089100 - MIDDLE BRANCH PARK RIVER NR UNION, ND (LAT 48 32 32 LONG 098 01 10)										
FEB , 1981										
26...	203	.29	1.8	1.0	--	--	1.9	60	260	200
AUG										
27...	435	.62	.20	1.0	--	--	1.2	0	40	50
05089500 - CART CREEK AT MOUNTAIN, ND (LAT 48 40 37 LONG 097 51 41)										
FEB , 1981										
26...	439	.64	3.3	3.2	--	--	.50	130	10	200
AUG										
28...	697	.93	.98	1.0	--	--	.47	50	10	50
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)										
APR , 1981										
08...	409	.61	106	1.8	--	--	.26	130	60	130
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)										
APR , 1981										
09...	445	.67	2090	1.0	--	--	.00	30	20	10
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)										
MAR , 1981										
27...	283	.42	1.8	1.3	--	--	.12	190	30	60
JUN										
30...	521	.71	1.7	1.0	--	--	.21	230	30	30

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)											
FEB , 1981											
27...	0920	15	339	7.8	.5	160	49	33	19	9.6	11
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)											
FEB , 1981											
27...	1110	25	353	7.5	.5	160	36	37	16	13	15
05099400 - LITTLE SOUTH PEMBINA RIVER NR WALHALLA, ND (LAT 48 51 55 LONG 098 00 20)											
FEB , 1981											
25...	1710	24	507	8.0	.5	170	41	47	13	34	29
AUG											
26...	1400	.38	855	8.3	26.5	330	66	86	28	75	32
05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)											
FEB , 1981											
26...	0915	59	338	8.2	.5	130	28	35	10	20	24
AUG											
27...	1015	9.0	788	8.4	22.0	340	95	76	36	50	23
05113600 - LONG CREEK NR NOONAN, ND (LAT 48 58 52 LONG 103 04 34)											
APR , 1981											
09...	1320	.98	850	8.8	8.5	250	54	50	30	78	40
05116000 - SOURIS RIVER NR FOXHOLM, ND (LAT 48 22 20 LONG 101 30 18)											
APR , 1981											
04...	1345	.98	615	8.4	10.0	200	14	41	24	58	38
SEP											
04...	1510	1.2	950	9.4	17.0	290	.00	51	40	140	49
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)											
APR , 1981											
04...	1150	4.5	1160	8.7	7.0	320	17	65	38	160	52
04...	1151	4.5	1160	8.7	7.0	310	23	66	36	160	52
SEP											
04...	1310	.44	1340	8.6	17.5	410	17	82	50	190	49
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)											
MAR , 1981											
30...	1820	12	640	8.4	8.0	210	20	43	25	66	40
SEP											
04...	1105	2.0	1050	8.6	15.5	290	.00	50	40	150	51
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)											
APR , 1981											
28...	2100	46	820	8.1	13.0	300	4.0	63	35	80	36
SEP											
03...	1740	15	995	8.7	19.0	320	.00	61	41	120	44

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE, FET-LAB (MG/L AS HCO3) (95440)	CAR-BONATE, FET-LAB (MG/L AS CO3) (95445)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
PART 5. HUDSÓN BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)											
FEB , 1981											
27...	.3	6.4	136	.00	112	3.4	51	8.1	.1	14	221
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)											
FEB , 1981											
27...	.4	5.2	149	.00	122	7.5	51	6.0	.1	15	257
05099400 - LITTLE SOUTH PEMBINA RIVER NR WALHALLA, ND (LAT 48 51 55 LONG 098 00 20)											
FEB , 1981											
25...	1.1	5.3	158	.00	130	2.5	99	12	.2	16	334
AUG											
26...	1.8	13	322	.00	264	4.1	200	30	.4	22	605
05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)											
FEB , 1981											
26...	.8	4.6	123	.00	101	1.2	57	8.1	.1	12	208
AUG											
27...	1.2	13	299	.00	245	4.8	170	34	.3	24	555
05113600 - LONG CREEK NR NOONAN, ND (LAT 48 58 52 LONG 103 04 34)											
APR , 1981											
09...	2.2	7.9	237	.00	194	.6	210	12	.1	4.8	550
05116000 - SOURIS RIVER NR FOXHOLM, ND (LAT 48 22 20 LONG 101 30 18)											
APR , 1981											
04...	1.8	5.6	228	.00	187	1.5	120	18	.1	1.0	396
SEP											
04...	3.6	17	300	.00	300	.5	230	40	.2	4.2	743
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)											
APR , 1981											
04...	3.9	5.9	345	11	301	1.2	330	20	.2	.4	783
04...	3.9	7.9	--	--	290	--	330	17	.3	.2	--
SEP											
04...	4.1	13	479	.00	393	4.8	380	30	.3	12	969
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)											
MAR , 1981											
30...	2.0	5.2	232	.00	190	1.5	130	18	.1	3.7	381
SEP											
04...	3.8	17	389	.00	319	4.9	230	44	.2	.7	744
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)											
APR , 1981											
28...	2.0	5.2	363	.00	298	4.6	130	19	.2	1.8	518
SEP											
03...	2.9	14	458	.00	396	2.3	150	40	.2	9.1	681

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
PART 5. HUDSON BAY BASIN										
RED RIVER OF THE NORTH BASIN										
05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)										
FEB , 1981										
27...	214	.30	9.0	4.3	--	--	1.0	290	60	20
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)										
FEB , 1981										
27...	225	.35	17.3	6.9	--	--	.97	30	20	50
05099400 - LITTLE SOUTH PEMBINA RIVER NR WALHALLA, ND (LAT 48 51 55 LONG 098 00 20)										
FEB , 1981										
25...	310	.45	21.6	4.5	--	--	1.2	60	90	40
AUG										
26...	--	.82	.62	1.0	--	--	.24	80	20	150
05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)										
FEB , 1981										
26...	215	.28	33.1	5.6	--	--	1.2	60	410	170
AUG										
27...	--	.75	13.5	1.0	--	--	.12	100	10	760
05113600 - LONG CREEK NR NOONAN, ND (LAT 48 58 52 LONG 103 04 34)										
APR , 1981										
09...	511	.75	1.5	1.0	--	--	.00	160	70	20
05116000 - SOURIS RIVER NR FOXHOLM, ND (LAT 48 22 20 LONG 101 30 18)										
APR , 1981										
04...	382	.54	1.1	1.0	--	--	.28	190	20	240
SEP										
04...	--	1.0	2.4	1.0	--	--	1.3	680	20	10
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)										
APR , 1981										
04...	802	1.1	9.5	1.0	--	--	.11	290	20	110
04...	792	1.1	9.6	--	.03	.020	.06	60	20	--
SEP										
04...	--	1.3	1.2	1.0	--	--	.26	580	10	90
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)										
MAR , 1981										
30...	407	.52	12.3	1.0	--	--	.03	60	20	110
SEP										
04...	--	1.0	4.1	1.0	--	--	.90	730	10	80
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)										
APR , 1981										
28...	515	.70	64.8	1.0	--	--	.68	230	50	130
SEP										
03...	--	.93	27.8	1.0	--	--	2.5	50	20	60

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)											
APR , 1981											
29...	1250	13	1360	8.1	12.0	450	37	78	62	160	43
JUL											
09...	1210	2.3	2630	8.4	23.5	730	150	94	120	400	54
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)											
APR , 1981											
01...	0940	1.4	720	7.9	5.0	230	42	48	27	68	38
SEP											
02...	1905	.44	925	7.9	16.0	300	.00	60	36	100	41
02...	1906	.44	925	7.9	16.0	290	.00	60	35	94	39

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE, FET-LAB (MG/L AS HCO3) (95440)	CAR-BONATE, FET-LAB (MG/L AS CO3) (95445)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)											
APR , 1981											
29...	3.3	9.8	504	.00	413	6.4	330	34	.1	9.0	946
JUL											
09...	6.4	21	678	16	583	4.5	900	100	.2	2.7	2080
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)											
APR , 1981											
01...	1.9	9.6	231	.00	189	4.7	180	14	.1	9.5	479
SEP											
02...	2.5	16	409	.00	335	5.2	170	27	.1	35	679
02...	2.7	16	--	--	310	--	150	22	.1	39	--

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)										
APR , 1981										
29...	934	1.3	33.7	1.0	--	--	.88	480	50	100
JUL										
09...	1990	2.8	13.1	1.0	--	--	.95	0	30	140
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)										
APR , 1981										
01...	471	.65	1.9	1.0	--	--	.23	130	60	20
SEP										
02...	--	.92	.81	1.0	--	--	1.5	130	150	50
02...	603	.82	.72	--	.02	.460	1.4	110	60	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	TEMPERATURE (DEG C) (00010)
PART 5. HUDSON BAY BASIN				
RED RIVER OF THE NORTH BASIN				
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)				
OCT , 1980				
09...	1725	47	690	14.0
NOV				
13...	1520	123	465	2.5
DEC				
19...	0945	66	522	.0
JAN , 1981				
22...	0955	114	599	.0
FEB				
20...	0935	153	488	.0
MAR				
19...	0755	206	489	.0
APR , 1981				
30...	0820	233	464	13.0
JUN				
11...	1335	166	480	21.0
25...	1225	242	564	21.0
JUL				
24...	1335	262	441	25.0
SEP				
04...	0910	35	473	17.5
05052100 - RICHLAND COUNTY DRAIN #65 NEAR GREAT BEND, ND (LAT 46 05 41 LONG 096 47 01)				
JUN , 1981				
25...	1605	3.4	528	25.0
05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)				
OCT , 1980				
08...	0905	22	640	13.0
NOV				
12...	0945	117	578	4.0
DEC				
18...	1100	114	640	.0
JAN , 1981				
20...	0910	76	592	.0
FEB				
26...	0945	197	600	.0
MAR , 1981				
18...	0845	292	478	.0
APR				
29...	0805	214	521	12.5
JUN				
10...	0950	200	602	20.0
JUL				
23...	0805	167	431	23.5
SEP				
01...	0940	96	458	20.0
05056000 - SHEYENNE RIVER NR WARWICK, ND (LAT 47 48 20 LONG 098 42 57)				
OCT , 1980				
29...	1345	63	930	7.0
DEC				
18...	1320	17	1360	.0
JAN , 1981				
28...	1605	11	1550	.5
FEB				
26...	1245	429	350	.5
APR , 1981				
07...	1245	87	841	7.5
MAY				
28...	1005	89	1110	14.5
JUN				
30...	1425	133	980	23.0
AUG				
21...	1510	19	1020	26.5
05056100 - MAUVAIS COULEE NR CANDO, ND (LAT 48 26 53 LONG 099 06 08)				
OCT , 1980				
30...	1615	4.7	1220	4.0
DEC				
17...	1215	2.2	2270	.5
JAN , 1981				
28...	1210	.06	2350	.0
FEB				
20...	1445	E4.0	2140	1.0
MAR				
05...	1450	120	560	.5
APR , 1981				
08...	1040	36	610	6.0
MAY				
22...	1345	6.5	1100	19.0
JUN				
25...	1500	6.1	1260	20.0
AUG				
20...	1310	.16	1380	23.0
05056200 - EDMORE COULEE NR EDMORE, ND (LAT 48 20 14 LONG 098 39 33)				
OCT , 1980				
22...	0930	7.9	810	4.5
DEC				
17...	1005	1.1	850	.5
MAR , 1981				
04...	1535	43	462	.0
APR , 1981				
08...	1745	23	590	8.5
MAY				
20...	1515	1.0	1060	17.0
JUN				
24...	1450	.70	1250	20.5

E - Estimated.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056400 - BIG COULEE NR CHURCHS FERRY, ND (LAT 48 10 40 LONG 099 13 15)

OCT , 1980					APR , 1981				
30...	1235	2.2	2390	3.0	09...	1115	84	716	8.0
DEC					MAY				
17...	1505	.54	2800	.0	21...	1555	16	910	20.5
FEB , 1981					JUN				
20...	1800	E20	435	.5	25...	1100	38	920	19.0
MAR					AUG				
05...	1130	1.5	1060	.0	21...	1040	.99	1110	22.5

05058500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)

APR , 1981					AUG , 1981				
01...	0825	335	740	4.5	11...	1615	E85	695	21.0

05059400 - SHEYENNE RIVER NR HORACE, ND (LAT 46 48 13 LONG 096 54 13)

MAR , 1981					SEP , 1981				
18...	1120	--	712	.0	02...	1250	43	815	18.0
APR									
02...	1245	329	670	6.5					

05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)

OCT , 1980					APR , 1981				
08...	1825	116	800	13.0	02...	1435	328	695	7.0
NOV					28...	1350	102	890	14.5
12...	1210	167	739	3.5	JUN				
DEC					09...	1440	182	960	20.0
17...	0910	73	1030	.0	JUL				
JAN , 1981					23...	1125	110	733	22.0
20...	1355	36	1060	.0	SEP				
FEB					01...	1200	43	810	20.0
26...	1240	64	810	.0					
MAR									
17...	1620	88	760	.0					

05059600 - MAPLE RIVER NR HOPE, ND (LAT 47 19 30 LONG 097 47 25)

FEB , 1981									
18...	1110	.01	362	3.0					

05059700 - MAPLE RIVER NR ENDERLIN, ND (LAT 46 37 18 LONG 097 34 25)

OCT , 1980					APR , 1981				
01...	1210	3.9	1400	14.0	23...	1200	5.0	1620	9.0
30...	1250	2.3	1510	6.0	23...	1201	5.0	1620	9.0
DEC					JUN				
04...	1550	4.3	1580	2.5	11...	1400	3.0	1780	20.5
JAN , 1981					JUL				
08...	1255	2.0	1580	2.0	08...	1215	2.2	1600	21.5
FEB					14...	1540	94	975	17.5
05...	1225	1.9	1540	2.0	AUG				
26...	1205	5.0	1550	3.0	12...	1425	3.2	1560	19.0
MAR					SEP				
12...	1355	2.2	1500	7.0	15...	1545	2.4	1550	15.5

E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05060100 - CASS COUNTY DRAIN #52 NEAR AMENIA, ND (LAT 46 58 41 LONG 097 11 52)

FEB , 1981					JUL , 1981				
19...	1440	6.9	270	.0	14...	1310	.28	180	17.5
25...	0935	.13	348	.0	22...	0955	.83	104	17.0
MAR									
17...	1105	.03	402	1.5					

05060150 - LOWER BRANCH RUSH RIVER NEAR PROSPER, ND (LAT 46 56 30 LONG 096 59 18)

FEB , 1981					MAR , 1981				
25...	1250	1.2	213	.0	17...	1330	.55	344	7.0

05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)

FEB , 1981					APR , 1981				
19...	1310	.46	333	.5	28...	0905	1.7	1210	10.5
25...	0850	.65	1160	.0	JUN				
MAR					09...	0940	1.3	1870	17.5
17...	0950	1.5	1600	.5					

05060550 - RUSH RIVER NEAR PROSPER, ND (LAT 46 57 59 LONG 097 03 04)

FEB , 1981					APR , 1981				
19...	1605	2.3	195	1.5	28...	1030	E.01	1460	13.5
25...	1055	.52	240	.0	JUN				
MAR					09...	1125	1.4	1550	18.0
17...	1225	2.6	1020	1.5					

05062200 - ELM RIVER NEAR KELSO, N. DAK. (LAT 47 17 30 LONG 097 06 50)

FEB , 1981					MAR , 1981				
19...	1800	E.02	400	1.0	31...	1435	.04	416	3.5
25...	1456	.01	500	3.5					

05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)

OCT , 1980					MAR , 1981				
07...	1150	.74	1640	11.0	16...	1200	9.9	1600	2.5
NOV					APR				
11...	1020	2.4	1620	2.5	24...	1050	5.2	1130	9.0
DEC					JUN				
16...	1105	2.6	2240	2.5	08...	1300	17	1140	19.5
JAN , 1981					JUL				
23...	1105	1.4	2750	1.0	21...	1220	3.8	1180	24.5
FEB					AUG				
18...	1200	3.7	2650	.5	31...	1420	8.2	1365	22.0
25...	1150	9.4	2160	2.0					

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)

OCT , 1980					APR , 1981				
27...	1330	460	660	3.0	01...	1525	1370	420	2.0
NOV					23...	1120	547	642	8.0
24...	1525	466	738	.5	MAY				
DEC					25...	1340	4260	450	16.0
22...	1535	319	938	.0	JUN				
JAN , 1981					26...	1045	1390	570	18.5
23...	1050	298	870	.5	JUL				
FEB					23...	1525	1860	538	24.0
12...	1305	258	830	.0	AUG				
12...	1430	255	830	.0	25...	1250	2000	455	23.5
MAR					SEP				
11...	1615	656	515	.0	28...	1435	866	452	12.5

E - Estimated.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)

OCT , 1980					MAR , 1981				
07...	1800	.46	1445	15.5	12...	1700	17	490	.5
NOV					APR				
03...	1520	.44	2010	5.0	07...	1555	4.4	1000	9.5
FEB , 1981					JUN				
18...	1645	5.2	190	.5	29...	1645	.36	1510	23.0
20...	1740	21	220	.5	AUG				
23...	1330	39	270	.5	04...	1220	.10	1500	23.0

05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)

OCT , 1980					MAR , 1981				
07...	1415	7.0	660	14.0	12...	1255	31	620	1.5
NOV					APR				
03...	1215	14	660	4.0	07...	1230	53	660	7.5
DEC					MAY				
17...	1300	6.7	788	.5	21...	1310	12	711	18.0
JAN , 1981					JUN				
27...	1450	4.4	680	.0	29...	1330	21	655	21.0
FEB					JUL				
18...	1315	20	395	.5	22...	1430	3.2	718	19.5
20...	1250	58	260	.5	AUG				
23...	1635	91	400	.5	18...	1605	2.2	640	26.0

05085000 - FOREST RIVER AT MINTO, ND (LAT 48 16 10 LONG 097 22 10)

OCT , 1980					APR , 1981				
08...	1655	4.8	715	12.5	09...	1805	55	670	8.0
NOV					MAY				
06...	1320	11	741	4.0	22...	1415	10	788	20.0
DEC					JUL				
15...	1200	7.7	1040	.5	01...	1803	29	680	23.0
JAN , 1981					20...	1350	7.6	788	24.0
29...	1205	1.5	1120	.0	AUG				
FEB					05...	1505	6.9	830	22.5
19...	1755	2.6	1210	.5					
MAR									
11...	1050	20	630	.5					

05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)

OCT , 1980					FEB , 1981				
08...	0930	5.6	678	11.5	24...	1735	127	520	.5
NOV					MAR				
03...	1745	12	710	5.0	13...	0835	12	870	.5
DEC					APR				
18...	1045	10	840	.0	08...	0910	4.1	520	4.5
JAN , 1981					MAY				
22...	1115	1.2	1140	.5	22...	0750	8.1	638	11.5

05089100 - MIDDLE BRANCH PARK RIVER NR UNION, ND (LAT 48 32 32 LONG 098 01 10)

NOV , 1980					APR , 1981				
05...	0920	.47	628	2.0	28...	1040	.44	552	9.0
DEC					JUN				
03...	1615	.33	808	.5	10...	1435	.13	711	18.5
FEB , 1981					JUL				
17...	1420	3.6	362	.5	15...	1413	.18	652	19.5
19...	1110	13	188	.5	AUG				
26...	1510	3.1	324	.5	27...	1548	.16	658	21.0
MAR									
19...	1350	1.2	328	.5					
31...	1040	2.1	420	1.0					

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
PART 5. HUDSON BAY BASIN				
RED RIVER OF THE NORTH BASIN				
05089500 - CART CREEK AT MOUNTAIN, ND (LAT 48 40 37 LONG 097 51 41)				
NOV , 1980				
05...	1055	2.2	900	3.5
DEC				
03...	1555	.61	1070	.5
JAN , 1981				
15...	1040	.32	970	.0
FEB				
17...	1255	13	352	.5
19...	0950	6.8	295	.5
26...	1640	2.6	672	.5
MAR				
19...	1135	1.9	752	.5
31...	1225	5.9	648	1.0
APR , 1981				
07...	0915	3.1	795	3.0
28...	1200	4.0	831	9.0
JUN				
10...	1325	2.7	875	15.5
JUL				
15...	1310	.92	902	18.5
AUG				
28...	1400	.53	984	19.0
SEP				
30...	1000	.50	840	7.0
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)				
OCT , 1980				
08...	1315	23	835	12.0
NOV				
06...	1110	34	1020	4.0
DEC				
15...	1540	15	1240	.5
JAN , 1981				
28...	1600	1.3	1160	.0
FEB				
19...	1430	2.0	1010	.5
MAR				
11...	1500	34	800	.5
APR , 1981				
08...	1610	88	660	7.5
MAY				
22...	1245	16	1330	20.0
JUL				
01...	1235	283	783	22.0
AUG				
05...	1400	27	895	23.0
SEP				
16...	1535	1.4	1150	15.0
05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)				
OCT , 1980				
09...	1145	481	2010	12.5
NOV				
04...	1315	638	1010	10.5
DEC				
16...	1555	448	1320	.0
JAN , 1981				
12...	1330	314	1850	.5
FEB				
21...	1445	339	1080	.5
MAR				
10...	1435	938	1100	.5
APR , 1981				
09...	1340	1570	810	6.5
15...	1405	1200	778	9.0
MAY				
20...	1125	665	909	18.0
JUL				
01...	0920	3520	1040	23.0
AUG				
17...	1535	1450	600	23.0
SEP				
17...	1325	1630	665	17.0
05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)				
OCT , 1980				
09...	1515	.02	1360	15.5
NOV				
04...	0945	.04	1920	2.5
MAR , 1981				
27...	1315	2.2	475	1.0
APR , 1981				
08...	1150	2.2	838	9.5
JUN				
30...	1200	1.2	768	22.5
AUG				
07...	1350	.46	1120	28.0
05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)				
OCT , 1980				
31...	1215	1.6	1160	1.5
FEB , 1981				
21...	1230	48	252	.5
27...	0920	15	339	.5
APR				
08...	1330	.56	943	4.5
MAY , 1981				
22...	1100	E.02	1480	17.0
JUL				
01...	1615	.43	1070	23.0
05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)				
OCT , 1980				
31...	1345	.03	1040	3.0
FEB , 1981				
27...	1110	25	353	.5
APR , 1981				
08...	1500	.72	614	8.0

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05099400 - LITTLE SOUTH PEMBINA RIVER NR WALHALLA, ND (LAT 48 51 55 LONG 098 00 20)

OCT , 1980					MAR , 1981				
08...	0850	1.2	1000	8.0	17...	1605	36	492	.5
NOV					APR				
04...	1615	2.9	1020	5.5	29...	0845	5.5	860	9.0
DEC					JUN				
03...	1220	.92	1090	.0	09...	1350	4.2	964	18.0
JAN , 1981					AUG				
14...	1345	.12	1120	.5	26...	1400	.38	855	26.5
FEB									
18...	1505	70	212	.5					
25...	1710	24	507	.5					

05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)

OCT , 1980					APR , 1981				
08...	1420	9.9	938	12.5	30...	0920	198	733	12.0
NOV					MAY				
05...	1550	23	933	4.0	21...	1020	89	860	18.0
DEC					JUN				
04...	0950	10	1120	.5	11...	0845	64	903	19.0
JAN , 1981					JUL				
14...	1625	.99	1250	.5	15...	0920	21	925	24.0
FEB					AUG				
19...	1545	.33	1080	.5	27...	1015	9.0	788	22.0
26...	0915	59	338	.5					
MAR									
18...	1435	136	410	.5					

05113600 - LONG CREEK NR NOONAN, ND (LAT 48 58 52 LONG 103 04 34)

NOV , 1980					MAR , 1981				
04...	1235	.13	1450	5.5	18...	1155	6.4	650	1.0
DEC					APR				
03...	1040	.21	1600	1.0	09...	1320	.98	850	8.5
JAN , 1981					MAY				
13...	1150	.01	2200	.0	05...	1100	.20	950	13.0
FEB					JUN				
20...	1155	248	390	.5	03...	1150	.09	900	19.5
25...	1040	102	520	1.0					

05116000 - SOURIS RIVER NR FOXHOLM, ND (LAT 48 22 20 LONG 101 30 18)

OCT , 1980					APR , 1981				
02...	1015	11	830	12.0	04...	1345	.98	615	10.0
NOV					MAY				
07...	1045	11	870	6.0	07...	1720	44	815	13.0
DEC					JUN				
04...	1640	12	940	1.5	05...	1020	17	910	18.5
JAN , 1981					JUL				
07...	1740	8.7	995	2.0	10...	1135	3.7	960	23.0
FEB					AUG				
05...	1555	9.0	1060	.5	06...	1705	5.6	880	25.0
MAR					SEP				
05...	1745	3.1	990	5.5	04...	1510	1.2	950	17.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	TEMPER-ATURE (DEG C) (00010)
PART 5. HUDSON BAY BASIN				
RED RIVER OF THE NORTH BASIN				
05116500 - DES LACS RIVER AT FOXHOLM, ND (LAT 48 22 14 LONG 101 34 11)				
OCT , 1980				
02...	1155	1.2	1450	10.0
NOV				
06...	1035	1.9	2050	5.0
DEC				
05...	1010	1.2	2650	.5
JAN , 1981				
09...	1115	1.3	3330	.5
FEB				
05...	1500	.50	1870	.0
19...	1450	532	150	.0
MAR				
05...	1605	13	550	.5
APR , 1981				
04...	1150	4.5	1160	7.0
04...	1151	4.5	1160	7.0
MAY				
07...	1530	2.0	1720	13.5
JUN				
05...	1250	5.2	1800	20.0
JUL				
10...	1010	E1.5	1100	21.5
AUG				
06...	1540	1.9	925	25.0
SEP				
04...	1310	.44	1340	17.5
05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)				
NOV , 1980				
05...	1220	19	900	4.0
DEC				
03...	1530	14	1180	.0
JAN , 1981				
09...	1330	12	1260	.0
FEB				
05...	1335	10	1210	.0
MAR				
05...	1905	26	420	.5
30...	1820	12	640	8.0
MAY , 1981				
07...	1305	45	830	14.5
JUN				
10...	1025	20	970	18.5
JUL				
10...	1425	4.0	1250	24.0
AUG				
05...	0810	6.0	1310	24.0
SEP				
04...	1105	2.0	1050	15.5
05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)				
NOV , 1980				
04...	1050	113	1100	1.5
DEC				
02...	1430	46	1300	.0
JAN , 1981				
06...	1625	32	1600	.0
FEB				
04...	1130	23	1530	.0
MAR				
03...	1555	353	355	.0
APR				
03...	1915	72	700	8.0
APR , 1981				
28...	2100	46	820	13.0
JUN				
04...	1525	115	990	20.0
JUL				
09...	1530	32	1030	27.0
AUG				
05...	1635	24	965	27.0
SEP				
03...	1740	15	995	19.0
05123400 - WILLOW CREEK NR WILLOW CITY, ND (LAT 48 35 20 LONG 100 26 30)				
NOV , 1980				
04...	1230	42	2000	3.0
DEC				
03...	1130	21	2600	.0
JAN , 1981				
06...	1245	1.0	3210	.5
FEB				
04...	1300	.17	3000	.0
MAR				
02...	1530	216	615	.0
APR , 1981				
03...	1740	57	880	9.0
29...	1250	13	1360	12.0
JUN				
04...	1120	12	1930	19.0
JUL				
09...	1210	2.3	2630	23.5
AUG				
05...	1515	.15	247	28.0
05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)				
NOV , 1980				
04...	1415	1.3	1390	4.0
DEC				
03...	0940	.13	2100	.0
MAR , 1981				
02...	1110	17	505	.0
APR				
01...	0940	1.4	720	5.0
APR , 1981				
29...	1025	.26	1120	10.5
JUN				
02...	1335	.12	1390	17.0
SEP				
02...	1905	.44	925	16.0
02...	1906	.44	925	16.0

BENSON COUNTY

480228098482501. Local number, 153-063-30CBC.
LOCATION.--Lat 48°02'28", long 098°48'25", Hydrologic Unit 09020201.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 200 ft (61 m), cased to 137 ft (41.8 m), plastic pipe, No. 18 slot screen set 137 to 143 ft (41.8 to 43.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,445 ft (440 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.98 ft (4.87 m) below land-surface datum, Aug. 5, 1981; lowest measured, 25.05 ft (7.64 m) below land-surface datum, Mar. 4, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 4	16.30	MAR 6	16.56	AUG 5	15.98		

BENSON COUNTY

480958099154801. Local number, 154-067-15BBB.
LOCATION.--Lat 48°09'58", long 099°15'48", Hydrologic Unit 09020201.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 180 ft (54.9 m), cased to 147 ft (44.8 m), plastic pipe, No. 18 slot screen set 147 to 153 ft (44.8 to 46.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,475 ft (450 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.04 ft (8.85 m) below land-surface datum, July 2, 1981; lowest measured, 33.80 ft (10.30 m) below land-surface datum, Mar. 15, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 5	31.79	MAR 6	31.67	JULY 2	29.04	AUG 11	31.21

BENSON COUNTY

481041099442701. Local number, 154-071-11AAD1.
LOCATION.--Lat 48°10'41", long 099°44'27", Hydrologic Unit 09020202.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 100 ft (30.5 m), cased to 42 ft (12.8 m), plastic pipe, No. 12 slot screen set 42 to 45 ft (12.8 to 13.7 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,590 ft (485 m). Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--August 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.94 ft (1.81 m) below land-surface datum, Dec. 5, 1980; lowest measured, 9.05 ft (2.76 m) below land-surface datum, Mar. 13, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	6.15	MAR 6	6.98	JUL 2	6.51	JULY 30	7.18
DEC 5	5.94						

CASS COUNTY

464359096541301. Local number, 138-049-29CCC.
LOCATION.--Lat 46°43'59", long 096°54'13", Hydrologic Unit 09020105.
Owner: North Dakota State Water Commission.
AQUIFER.--West Fargo.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 317 ft (96.6 m), cased to 278 ft (84.7 m), plastic pipe, screens set at 278 to 280 ft (84.7 to 85.3 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 912 ft (278 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--August 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.17 ft (9.81 m) below land-surface datum, Aug. 1, 1964; lowest measured, 45.27 ft (13.80 m) below land-surface datum, June 9, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	44.77	FEB 23	44.58	JUNE 9	45.27	SEPT 2	45.22
NOV 18	44.74	APR 27	44.91	JULY 22	45.22		

DIVIDE COUNTY

485649103155701. Local number, 163-97-15BCC.
LOCATION.--Lat 48°56'49", long 103°15'57", Hydrologic Unit 09010001.
Owner: North Dakota State Water Commission.
AQUIFER.--Yellowstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 575 ft (175 m), cased to 546 ft (166 m), steel pipe, No. 12 slot screen set 546 to 558 ft (166 to 170 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,915 ft (584 m). Measuring point: Top of casing 1.50 ft (0.46 m) above land-surface datum.
PERIOD OF RECORD.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.31 ft (3.14 m) below land-surface datum, June 5, 1979; lowest measured, 14.48 ft (4.41 m) below land-surface datum, Aug. 9, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	11.09	MAR 18	11.03	JUNE 3	11.09	SEPT 2	11.18

EDDY COUNTY

473720098592401. Local number, 148-065-19DAA.
LOCATION.--Lat 47°37'20", long 098°59'24", Hydrologic Unit 10160001.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 242 ft (74 m), cased to 220 ft (67 m), plastic pipe, slotted from 210 to 220 ft (64 to 67 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,526 ft (465 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--September 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 43.51 ft (13.26 m) below land-surface datum, June 28, 1966; lowest measured, 50.49 ft (15.39 m) below land-surface datum, Sept. 6, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	46.79	DEC 12	45.80	APR 16	46.85	JULY 15	44.80
NOV 14	46.10	MAR 5	45.27	JUNE 3	44.93	SEPT 2	45.01

GRAND FORKS COUNTY

474957097343501. Local number, 150-054-04CCD.
LOCATION.--Lat 47°49'57", long 097°34'35", Hydrologic Unit 09020307.
Owner: North Dakota State Water Commission.
AQUIFER.--Elk Valley.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 126 ft (38.4 m), cased to 40 ft (12.2 m), plastic pipe, No. 12 slot screen set 40 to 43 ft (12.2 to 13.1 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,127 ft (344 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--September 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.48 ft (0.76 m) below land-surface datum, May 6, 1966; lowest measured, 7.96 ft (2.43 m) below land-surface datum, Mar. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 17	6.35	MAR 12	7.44	JUNE 29	5.86	SEPT 30	6.69

GRIGGS COUNTY

471612098113101. Local number, 144-059-20CCC.
LOCATION.--Lat 47°16'12", long 098°11'31", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 240 ft (73 m), cased to 158 ft (48 m), plastic pipe, No. 25 slot screen set 158 to 161 ft (48 to 49 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,430 ft (436 m). Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.84 ft (13.97 m) below land-surface datum, Apr. 5, 1977; lowest measured, 86.99 ft (26.51 m) below land-surface datum, Aug. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	57.59	MAR 10	49.15	JUNE 3	53.56	AUG 25	70.62
NOV 19	53.79	APR 8	49.14	JUNE 30	53.14	SEPT 24	63.57
DEC 16	51.94	MAY 6	49.07	JULY 27	68.45		

GRIGGS COUNTY

473425098232901. Local number, 147-061-01CCC.
LOCATION.--Lat 47°34'25", long 098°23'29", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 340 ft (104 m), cased to 237 ft (72 m), plastic pipe, No. 25 slot screen set 237 to 240 ft (72 to 73 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,525 ft (465 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.82 ft (8.18 m) below land-surface datum, May 19, 1976; lowest measured, 96.10 ft (29.3 m) below land-surface datum, Aug. 12, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	34.30	DEC 18	30.89	APR 9	29.93	JUNE 4	37.70
NOV 21	31.80	MAR 12	30.27	MAY 7	29.70	JULY 1	31.74

GRIGGS COUNTY

473600098065901. Local number, 148-059-36AAB.
LOCATION.--Lat 47°36'00", long 098°06'59", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--McVille.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 180 ft (54.9 m), cased to 137 ft (41.8 m), plastic pipe, No. 12 slot screen set 137 to 143 ft (41.8 to 43.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,320 ft (402 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--October 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.40 ft (1.95 m) below land-surface datum, May 3, 1979; lowest measured, 12.09 ft (3.69 m) below land-surface datum, Aug. 9, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	11.16	DEC 17	10.22	MAR 12	10.57	JUNE 5	10.92
NOV 20	10.94						

PEMBINA COUNTY

48523909/501702. Local number, 162-056-01CCC2.
LOCATION.--Lat 48°52'39", long 097°50'17", Hydrologic Unit 09020313.
Owner: North Dakota State Water Commission.
AQUIFER.--Icelandic.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 40 ft (12 m), cased to 37 ft (11.3 m), plastic pipe, No. 12 slot screen set 37 to 40 ft (11.3 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 988 ft (301 m). Measuring point: Top of casing 1.8 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--October 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.65 ft (1.42 m) below land-surface datum, May 8, 1970; lowest measured, 8.06 ft (2.46 m) below land-surface datum, Dec. 4, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	6.40	MAY 5	6.07	MAY 12	5.99	AUG 25	6.87
NOV 19	6.24						

PIERCE COUNTY

475323100092101. Local number, 151-074-20AAA.
LOCATION.--Lat 47°53'23", long 100°09'21", Hydrologic Unit 09020202.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 320 ft (98 m), cased to 256 ft (78 m), plastic pipe, No. 18 slot screen set 256 to 259 ft (78 to 79 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,605 ft (489 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--November 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.50 ft (6.86 m) below land-surface datum, Mar. 5, 1981; lowest measured, 31.73 ft (9.67 m) below land-surface datum, Dec. 10, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	29.75	MAR 5	22.50	JUNE 4	29.79	SEPT 3	30.24

RICHLAND COUNTY

462633097163402. Local number, 134-052-06CCD2.
LOCATION.--Lat 46°26'33", long 097°16'34", Hydrologic Unit 09020204.
Owner: North Dakota State Water Commission.
AQUIFER.--Sheyenne Delta.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 40 ft (12 m), cased to 30 ft (9.1 m), plastic pipe, slotted 30 to 40 ft (9.1 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,067 ft (325 m). Measuring point: Top of casing 0.65 ft (0.20 m) above land-surface datum.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.78 ft (0.24 m) below land-surface datum, May 13, 1972; lowest recorded, 8.73 ft (2.66 m) below land-surface datum, Feb. 8, 1977. May have been lower during period of missing record, Jan. 17 - Feb. 7, 1977.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
PROVISIONAL DATA
MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.25	6.67	6.82	7.46	7.82	7.56	6.72	6.38	6.10	6.16	6.04	7.39
10	7.31	6.72	6.97	7.59	7.90	7.48	6.48	6.53	6.24	6.76	6.47	7.43
15	7.32	6.71	7.12	7.64	7.95	7.39	6.24	6.64	6.14	5.94	6.81	7.55
20	6.81	6.68	7.25	7.69	7.87	7.32	6.13	6.77	6.38	5.49	7.07	7.63
25	6.74	6.72	7.36	7.69	7.76	7.26	6.15	6.20	6.17	5.82	7.10	7.66
EOM	6.70	6.69	7.40	7.73	7.66	7.04	6.21	6.07	6.46	6.18	7.22	7.70
MIN	6.68	6.64	6.76	7.35	7.66	7.04	6.10	6.01	6.02	5.49	5.91	7.26

WTR YR 1981 MEAN 6.92 HIGH 5.49 JUL 20 LOW 7.95 FEB 13 AND OTHERS

STEELE COUNTY

471601097371001. Local number, 144-055-26BBB.
LOCATION.--Lat 47°16'01", long 097°37'10", Hydrologic Unit 09020109.
Owner: North Dakota State Water Commission.
AQUIFER.--Galesburg.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 300 ft (91 m), cased to 53 ft (16.2 m), plastic pipe, slotted 53 to 68 ft (16.2 to 20.7 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,160 ft (354 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.43 ft (5.31 m) below land-surface datum, June 27, 1970; lowest measured, 23.35 ft (7.12 m) below land-surface datum, Aug. 25, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	20.92	MAR 10	21.33	JUNE 12	20.91	AUG 13	21.83

TRAILL COUNTY

473228097051501. Local number, 147-051-22BBB.
LOCATION.--Lat 47°32'28", long 097°05'15", Hydrologic Unit 09020301.
Owner: North Dakota State Water Commission.
AQUIFER.--Hillsboro.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 103 ft (31.4 m), cased to 97 ft (29.6 m), plastic pipe, No. 18 slot screen set 97 to 100 ft (29.6 m to 30.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 925 ft (282 m). Measuring point: Top of casing 2.40 ft (0.73 m) above land-surface datum.
PERIOD OF RECORD.--August 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +1.90 ft (+0.58 m) above land-surface datum, July 4, 1979; lowest measured, 7.27 ft (2.22 m) below land-surface datum, Aug. 17, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 17	2.83	JUNE 8	3.40	AUG 31	3.92		

WALSH COUNTY

481657097473601. Local number, 156-056-36CCC1.
LOCATION.--Lat 48°16'57", long 097°47'36", Hydrologic Unit 09020308.
Owner: North Dakota State Water Commission.
AQUIFER.--Fordville.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 280 ft (85.3 m), cased to 27 ft (8.23 m), plastic pipe, No. 18 slot screen set 27 to 30 ft (8.23 to 9.14 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,145 ft (349 m). Measuring point: Top of casing 1.85 ft (0.56 m) above land-surface datum.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.03 ft (1.53 m) below land-surface datum, June 29, 1981; lowest measured, 6.95 ft (2.12 m) below land-surface datum, June 13, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 17	6.13	JUNE 29	5.03	JULY 8	5.99	SEPT 30	5.93

WALSH COUNTY

482408097443201. Local number, 157-055-21DBC.
LOCATION.--Lat 48°24'08", long 097°44'32", Hydrologic Unit 09020301.
Owner: North Dakota State Water Commission.
AQUIFER.--Dakota Formation.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 496 ft (151 m), cased to 491 ft (150 m), steel pipe, screen set 491 to 496 ft (150 to 151 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 975 ft (297 m). Measuring point: Top of casing at land-surface datum.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 90.61 ft (27.62 m) below land-surface datum, June 29, 1981; lowest measured, 92.75 ft (28.27 m) below land-surface datum, Sept. 17, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 19	90.77	MAR 13	91.09	JUNE 29	90.61	JULY 29	90.80

WALSH COUNTY

482449098095801. Local number, 157-058-18DDD.
LOCATION.--Lat 48°24'49", long 098°09'58", Hydrologic Unit 09020308.
Owner: North Dakota State Water Commission.
AQUIFER.--Pierre Shale.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 140 ft (42.7 m), cased to 80 ft (24.4 m), plastic pipe, slotted screen set 80 to 100 ft (24.4 to 30.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,580 ft (482 m). Measuring point: Top of casing 1.00 ft (0.30 m) above land-surface datum.
PERIOD OF RECORD.--June 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.89 ft (+0.27 m) above land-surface datum, Dec. 5, 1972; lowest measured, 9.15 ft (2.79 m) below land-surface datum, Mar. 14, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 17	2.64	JUNE 29	1.55	JULY 29	3.45	SEPT 30	2.68
MAR 12	4.66						

WARD COUNTY

480912101090301. Local number, 154-082-24ABA.
LOCATION.--Lat 48°09'12", long 101°09'03", Hydrologic Unit 09010001.
Owner: North Dakota State Water Commission.
AQUIFER.--Lower Souris.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 115 ft (35.1 m), cased to 10 ft (3.0 m), plastic pipe, slotted screen set 10 to 40 ft (3.0 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,850 ft (564 m). Measuring point: Top of casing 1.70 ft (0.52 m) above land-surface datum.
REMARKS.--Well damaged. No measurements made during year.
PERIOD OF RECORD.--January 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.33 ft (1.93 m) below land-surface datum, July 30, 1969; lowest measured, 13.69 ft (4.17 m) below land-surface datum, Mar. 4, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	LOCAL IDENTIFIER	COUNTY	GEOLOGIC UNIT	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)
			BENSON						
475329098351401	151-062-15CCC	005	112WRCK	80-11-19	0845	590	8.0	7.0	5
		005	112WRCK	81-02-24	1445	550	7.9	6.5	0
		005	112WRCK	81-05-13	0845	310	8.1	6.0	5
		005	112WRCK	81-08-19	0745	--	8.0	5.5	0
475131098444101	151-063-32ABD	005	112WRCK	80-11-19	1000	1250	7.3	8.5	70
		005	112WRCK	81-02-24	1530	1150	7.1	5.5	30
		005	112WRCK	81-05-13	1015	1280	7.1	5.0	55
		005	112WRCK	81-08-19	0900	1360	7.2	8.5	30
			BOTTINEAU						
483701101060401	159-081-11BBB	009	112TILL	80-11-18	0915	540	8.5	7.5	10
		009	112TILL	81-02-24	0840	500	8.1	4.0	5
		009	112TILL	81-05-11	0830	598	8.1	3.5	10
		009	112TILL	81-08-18	0930	600	7.7	7.5	0
			BURKE						
483948102175901	160-090-21DDD1	013	125SNLB	81-07-07	1010	2200	8.5	8.0	--
		013	125SNLB	81-07-07	1035	2200	8.2	9.0	--
483948102175902	160-090-21DDD2	013	125SNLB	81-07-07	1055	1725	7.9	9.0	--
		013	125SNLB	81-07-07	1115	1725	7.2	9.0	--
484033102162101	160-090-23BBA	013	125SNLB	81-07-07	1240	2900	8.2	15.0	--
484923102471401	162-093-30DDD1	013	125SNLB	81-07-08	0930	3100	8.5	8.0	--
		013	125SNLB	81-07-08	1005	3100	8.6	8.0	--
485245102511002	162-094-10AAA2	013	125SNLB	81-07-06	1500	3500	8.7	14.0	--
		013	125SNLB	81-07-06	1540	3450	8.0	16.5	--
485008102510001	162-094-26BBB	013	125SNLB	81-07-08	1130	6000	8.4	8.0	--
		013	125SNLB	81-07-08	1155	6000	7.9	9.0	--
			EDDY						
474347098524201	149-064-17ABB	027	112NRKF	80-11-19	1100	570	7.6	7.5	10
		027	112NRKF	81-02-24	1615	400	7.6	6.5	5
		027	112NRKF	81-05-13	1100	575	7.5	6.5	0
		027	112NRKF	81-08-19	1000	550	7.7	6.0	0
474346098561401	149-065-14AAB	027	112NRKF	80-11-19	1130	750	7.6	7.0	5
		027	112NRKF	81-02-24	1645	710	7.3	6.0	5
		027	112NRKF	81-05-13	1130	775	7.5	6.0	0
		027	112NRKF	81-08-19	1030	800	7.5	6.0	0
474747098354301	150-062-21ACD	027	112WRCK	81-05-28	1440	428	7.8	10.5	10
475004098375601	150-062-06DDA	027	112WRCK	80-11-19	0930	380	7.7	7.0	5
		027	112WRCK	81-02-24	1515	450	7.5	5.5	0
		027	112WRCK	81-05-13	0930	381	7.7	4.5	5
		027	112WRCK	81-08-19	0830	--	7.7	9.0	0
474628099010301	150-065-29CCC	027	112NRKF	80-11-19	1200	625	7.6	7.0	10
		027	112NRKF	81-02-24	1715	500	7.3	3.5	5
		027	112NRKF	81-05-13	1215	650	7.4	4.5	5
		027	112NRKF	81-08-19	1115	750	7.5	6.0	5
474851098425501	150-063-15BBC	027	112WRCK	80-12-18	1430	436	8.2	3.0	0
		027	112WRCK	81-05-28	1300	715	7.7	16.0	40

Geologic unit (aquifer):

125TGRV - Tongue River - Ludlow Members of Fort Union Formation, Paleocene age.
112WRCK - Warwick aquifer, Pleistocene age.
112TILL - Till deposits, Pleistocene age.
125SNLB - Sentinel Butte Member, Fort Union Formation.
112NRKF - New Rockford aquifer, Pleistocene age.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)
					BENSON						
475329098351401	80-11-19	311	71	80	27	5.2	3	.1	3.0	240	--
	81-02-24	298	78	78	25	5.3	4	.1	2.7	220	--
	81-05-13	167	27	42	15	4.5	5	.2	1.9	140	--
	81-08-19	163	23	42	14	3.9	5	.1	1.8	140	--
475131098444101	80-11-19	620	.00	67	110	52	15	.9	20	720	--
	81-02-24	681	23	75	120	49	13	.8	18	610	--
	81-05-13	630	10	71	110	49	14	.9	18	620	--
	81-08-19	571	.00	31	120	53	16	1.0	24	620	--
					BOTTINEAU						
483701101060401	80-11-18	277	27	58	32	12	9	.3	1.9	250	--
	81-02-24	279	39	54	35	13	9	.3	1.6	240	--
	81-05-11	318	48	73	33	11	7	.3	1.4	270	--
	81-08-18	309	39	71	32	12	8	.3	1.7	270	--
					BURKE						
483948102175901	81-07-07	23	.00	6.0	1.8	490	98	47	2.9	850	--
	81-07-07	22	.00	5.6	1.8	480	98	47	3.1	810	--
483948102175902	81-07-07	417	.00	100	40	250	56	5.5	7.9	450	--
	81-07-07	417	.00	100	40	250	56	5.5	8.2	490	--
484033102162101	81-07-07	60	.00	16	4.8	630	96	37	3.1	740	--
484923102471401	81-07-08	18	.00	4.7	1.5	720	99	77	2.1	1170	--
	81-07-08	18	.00	4.8	1.4	730	99	78	2.1	1160	--
485245102511002	81-07-06	36	.00	7.7	4.0	820	98	61	4.5	1670	--
	81-07-06	37	.00	8.7	3.7	850	98	63	4.4	1780	--
485008102510001	81-07-08	88	.00	20	8.9	1200	97	58	4.8	1100	--
	81-07-08	87	.00	20	8.8	1200	97	58	4.5	1080	--
					EDDY						
474347098524201	80-11-19	280	90	74	23	5.6	4	.2	2.4	190	--
	81-02-24	261	81	70	21	5.5	4	.2	2.2	180	--
	81-05-13	291	91	77	24	5.8	4	.2	2.4	200	--
	81-08-19	264	74	71	21	6.3	5	.2	2.4	190	--
474346098561401	80-11-19	314	54	83	26	42	22	1.1	4.1	260	--
	81-02-24	324	74	87	26	42	22	1.1	3.5	250	--
	81-05-13	337	77	92	26	41	21	1.0	3.4	260	--
	81-08-19	318	58	86	25	40	21	1.0	3.6	260	--
474747098354301	81-05-28	230	30	64	17	3.4	3	.1	.9	200	--
475004098375601	80-11-19	197	.00	56	14	2.7	3	.1	.8	200	--
	81-02-24	210	10	61	14	3.1	3	.1	.7	200	--
	81-05-13	207	7.0	60	14	2.8	3	.1	.6	200	--
	81-08-19	205	5.0	59	14	2.7	3	.1	.7	200	--
474628099010301	80-11-19	297	37	71	29	23	14	.6	5.5	260	--
	81-02-24	295	45	72	28	24	15	.6	4.9	250	--
	81-05-13	309	49	76	29	23	14	.6	4.8	260	--
	81-08-19	346	26	84	33	25	13	.6	5.1	320	--
474851098425501	80-12-18	213	23	59	16	8.6	8	.3	2.0	190	--
	81-05-28	386	.00	110	27	21	11	.5	.9	390	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
					BENSON						
475329098351401	80-11-19	82	2.3	.2	23	394	370	.54	.50	--	.020
	81-02-24	85	2.5	.2	23	359	355	.49	.29	--	.070
	81-05-13	27	2.6	.2	21	198	199	.27	.03	--	.050
	81-08-19	29	3.8	.2	23	197	203	.27	.25	--	.020
475131098444101	80-11-19	33	9.1	.3	35	804	765	1.1	.00	--	.030
	81-02-24	220	9.9	.3	34	834	899	1.1	.10	--	.110
	81-05-13	71	22	.3	32	831	752	1.1	.03	--	.090
	81-08-19	20	14	.4	37	876	679	1.2	.17	--	.060
					BOTTINEAU						
483701101060401	80-11-18	53	1.2	.2	10	335	320	.46	.36	--	.010
	81-02-24	67	.9	.2	11	324	330	.44	.61	--	.040
	81-05-11	68	1.1	.2	14	359	367	.49	.39	--	.060
	81-08-18	66	1.8	.3	17	364	368	.50	.53	--	.040
					BURKE						
483948102175901	81-07-07	250	11	.8	7.5	1410	1280	1.9	--	.97	--
	81-07-07	250	11	.8	7.0	1400	1250	1.9	--	1.2	--
483948102175902	81-07-07	440	4.2	.1	24	1060	1140	1.4	--	1.6	--
	81-07-07	430	4.6	.1	25	1130	1160	1.5	--	1.4	--
484033102162101	81-07-07	690	27	1.0	22	1870	1840	2.5	--	1.2	--
484923102471401	81-07-08	440	28	2.4	7.4	2090	1910	2.8	--	1.2	--
	81-07-08	450	28	2.3	7.6	2090	1930	2.8	--	1.2	--
485245102511002	81-07-06	2.0	120	1.2	7.6	2120	1970	2.9	--	1.1	--
	81-07-06	2.2	58	1.2	7.6	2060	2010	2.8	--	1.3	--
485008102510001	81-07-08	1500	29	1.3	9.4	3430	3440	4.7	--	1.6	--
	81-07-08	1500	66	1.3	9.0	3440	3460	4.7	--	1.5	--
					EDDY						
474347098524201	80-11-19	42	3.7	.1	23	373	368	.51	18	--	.030
	81-02-24	46	3.8	.1	23	321	351	.44	16	--	.130
	81-05-13	59	3.5	.1	21	358	340	.49	6.0	--	.050
	81-08-19	39	12	.2	23	334	351	.45	14	--	.030
474348098561401	80-11-19	120	22	.1	28	512	485	.70	.27	--	.050
	81-02-24	130	21	.1	28	496	491	.67	.26	--	.080
	81-05-13	130	20	.1	27	496	512	.67	3.2	--	.070
	81-08-19	120	25	.2	29	472	488	.64	.25	--	.060
474747098354301	81-05-28	18	1.1	.1	25	262	254	.36	1.0	--	.030
475004098375601	80-11-19	5.7	.7	.2	25	236	226	.32	.03	--	.020
	81-02-24	13	.7	.1	24	225	237	.31	.00	--	.070
	81-05-13	9.1	.6	.1	23	223	231	.30	.03	--	.050
	81-08-19	2.0	.5	.2	27	228	227	.31	.17	--	.020
474628099010301	80-11-19	80	4.6	.2	25	413	396	.56	.00	--	.020
	81-02-24	86	5.0	.1	25	396	397	.54	.17	--	.080
	81-05-13	89	4.6	.1	24	398	409	.54	.11	--	.050
	81-08-19	83	5.3	.2	27	418	457	.57	.14	--	.030
474851098425501	80-12-18	36	1.7	.2	27	269	265	.37	.04	--	.070
	81-05-28	3.0	1.7	.2	47	443	446	.60	.00	--	.030

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	STRONTIUM, DISSOLVED (UG/L AS SR)
			BENSON				
475329098351401	80-11-19	.000	50	<10	240	--	--
	81-02-24	--	40	<10	150	--	--
	81-05-13	.000	20	10	110	--	--
	81-08-19	.010	30	22	230	--	--
475131098444101	80-11-19	.010	130	5100	340	--	--
	81-02-24	--	80	5200	340	--	--
	81-05-13	.000	80	5400	340	--	--
	81-08-19	.030	100	5500	360	--	--
			BOTTINEAU				
483701101060401	80-11-18	.010	60	10	220	--	--
	81-02-24	--	40	50	280	--	--
	81-05-11	.000	30	160	680	--	--
	81-08-18	.020	40	210	860	--	--
			BURKE				
483948102175901	81-07-07	--	240	70	10	<0	170
	81-07-07	--	260	70	10	1	170
483948102175902	81-07-07	--	220	50	230	<10	2200
	81-07-07	--	200	930	240	<10	2200
484033102162101	81-07-07	--	270	90	10	1	330
484923102471401	81-07-08	--	1900	60	10	0	230
	81-07-08	--	2000	80	10	0	230
485245102511002	81-07-06	--	250	80	20	<0	410
	81-07-06	--	250	50	10	0	400
485008102510001	81-07-08	--	260	150	30	0	830
	81-07-08	--	260	50	40	0	850
			EDDY				
474347098524201	80-11-19	.010	50	10	220	--	--
	81-02-24	--	30	30	20	--	--
	81-05-13	.000	20	20	190	--	--
	81-08-19	.020	30	18	200	--	--
474346098561401	80-11-19	.010	90	1200	650	--	--
	81-02-24	--	70	1100	650	--	--
	81-05-13	.000	60	1200	610	--	--
	81-08-19	.020	70	1100	710	--	--
474747098354301	81-05-28	.010	10	30	10	--	--
475004098375601	80-11-19	.000	30	10	40	--	--
	81-02-24	--	10	<10	10	--	--
	81-05-13	.000	10	<10	30	--	--
	81-08-19	.020	10	<10	30	--	--
474628099010301	80-11-19	.000	70	950	210	--	--
	81-02-24	--	50	1000	200	--	--
	81-05-13	.000	30	1000	220	--	--
	81-08-19	.030	60	1300	250	--	--
474851098425501	80-12-18	.050	40	10	80	--	--
	81-05-28	.010	60	110	150	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	LOCAL IDENTIFIER	COUNTY	GEOLOGIC UNIT	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)
			MCHENRY						
482028100475601	156-079-14BBB	049	112TILL	80-11-17	1545	750	7.6	8.0	10
		049	112TILL	81-02-23	1420	800	7.9	4.0	0
		049	112TILL	81-05-11	1715	815	7.6	4.0	5
		049	112TILL	81-08-17	1430	850	7.4	9.4	0
482028100503201	156-079-16BBB	049	112TILL	80-11-17	1451	750	8.0	7.5	10
		049	112TILL	81-02-23	1345	700	8.1	4.5	5
		049	112TILL	81-05-11	1615	790	7.9	3.5	5
		049	112TILL	81-08-17	1345	790	7.8	8.4	0
482405100474601	157-078-19CCC	049	112TILL	81-02-23	1515	850	8.0	4.0	10
		049	112TILL	81-05-11	1745	960	7.6	4.0	5
		049	112TILL	81-08-17	1515	1220	7.4	9.0	0
482357100502302	157-079-26BBB2	049	112TILL	80-11-17	1700	740	7.7	8.0	5
		049	112TILL	81-02-23	1540	600	8.0	3.5	0
		049	112TILL	81-05-11	1830	670	8.0	4.0	0
		049	112TILL	81-08-17	1600	730	7.7	9.0	0
483240100503201	158-079-03AAA	049	112TILL	80-11-18	1345	>8000	7.4	8.0	20
		049	112TILL	81-02-24	1000	6400	7.1	3.0	5
		049	112TILL	81-05-12	1245	9800	7.5	3.0	10
		049	112TILL	81-08-18	1330	>8000	7.2	7.0	0
483003100503201	158-079-22AAA1	049	112LKSO	81-02-23	1615	470	8.5	6.0	5
		049	112LKSO	81-05-12	1115	511	8.4	5.0	5
		049	112LKSO	81-08-18	1215	520	8.0	7.5	0
483003100480401	158-079-24AAB	049	112TILL	80-11-18	1315	530	8.0	8.0	5
		049	112TILL	81-02-23	1630	490	8.3	6.5	5
		049	112TILL	81-05-12	1145	537	7.9	5.0	5
		049	112TILL	81-08-18	1245	580	7.6	7.0	0
482825100565502	158-080-25CCC2	049	112TILL	80-11-18	1200	2010	7.6	7.5	10
		049	112TILL	81-02-23	1745	1670	7.9	3.5	10
		049	112TILL	81-05-12	1045	1790	7.7	3.5	5
		049	112TILL	81-08-18	1130	1820	7.6	8.0	0
482825101100202	158-080-29DDD2	049	112TILL	80-11-18	1130	690	7.5	7.5	20
		049	112TILL	81-02-23	1715	520	7.8	4.5	10
		049	112TILL	81-05-12	1000	638	7.6	3.5	10
		049	112TILL	81-08-18	1100	690	7.4	7.0	5
483418100475501	159-079-25AAD	049	112TILL	80-11-18	1415	3030	7.6	8.0	10
		049	112TILL	81-02-24	1030	3000	7.2	3.0	0
		049	112TILL	81-05-12	1315	3100	7.7	3.5	5
		049	112TILL	81-08-18	1400	2400	7.5	8.5	0
483247100593201	159-080-34CCC	049	112TILL	80-11-18	1000	3000	7.2	7.5	5
		049	112TILL	81-02-24	0920	2300	7.0	3.5	5
		049	112TILL	81-05-11	0930	2800	7.6	4.0	5
		049	112TILL	81-08-18	1015	2300	7.1	6.5	0

Geologic unit (aquifer):

112TILL - Till deposits, Pleistocene age.

112LKSO - Lake Souris aquifer, Pleistocene age.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)
					MCHENRY						
482028100475601	80-11-17	368	.00	55	56	26	13	.6	6.0	400	--
	81-02-23	402	.00	80	49	38	17	.8	4.2	410	--
	81-05-11	401	1.0	65	58	23	11	.5	5.3	400	--
	81-08-17	397	.00	83	46	42	19	.9	4.6	410	--
482028100503201	80-11-17	353	3.0	72	42	29	15	.7	5.5	350	--
	81-02-23	389	29	85	43	28	13	.6	4.4	360	--
	81-05-11	381	21	80	44	28	14	.6	4.9	360	--
	81-08-17	394	34	82	46	30	14	.7	4.9	360	--
482405100474601	81-02-23	476	36	110	49	28	11	.6	4.0	440	--
	81-05-11	468	38	110	47	27	11	.6	3.5	430	--
	81-08-17	450	70	101	48	30	13	.6	3.9	380	--
482357100502302	80-11-17	357	130	87	34	7.6	4	.2	2.5	230	--
	81-02-23	362	160	92	32	6.8	4	.2	1.9	200	--
	81-05-11	348	140	85	33	7.4	4	.2	1.9	210	--
	81-08-17	368	160	93	33	7.4	4	.2	2.1	210	--
483240100503201	80-11-18	6813	6200	420	1400	700	18	3.7	14	620	--
	81-02-24	6426	5800	430	1300	660	18	3.6	11	590	--
	81-05-12	6276	5700	370	1300	710	20	3.9	9.3	580	--
	81-08-18	6551	6000	480	1300	630	17	3.4	11	570	--
483003100503201	81-02-23	259	260	56	29	12	9	.3	2.9	240	--
	81-05-12	257	7.0	50	32	12	9	.3	2.8	250	--
	81-08-18	277	17	60	31	12	9	.3	2.8	260	--
483003100480401	80-11-18	266	6.0	75	19	6.3	5	.2	2.2	260	--
	81-02-23	276	46	79	19	6.6	5	.2	1.9	260	--
	81-05-12	279	9.0	82	18	6.8	5	.2	1.9	270	--
	81-08-18	266	6.0	77	18	6.9	5	.2	2.9	260	--
482825100565502	80-11-18	885	470	140	130	160	28	2.4	4.8	410	--
	81-02-23	794	450	120	120	160	30	2.5	3.6	340	--
	81-05-12	778	370	130	110	150	29	2.4	3.2	410	--
	81-08-18	781	380	115	120	150	29	2.4	2.9	400	--
482825101100202	80-11-18	301	41	66	33	26	15	.7	11	260	--
	81-02-23	302	.00	68	32	25	15	.6	9.8	250	--
	81-05-12	287	37	64	31	26	16	.7	9.7	250	--
	81-08-18	313	53	71	33	24	14	.6	10	260	--
483418100475501	80-11-18	1692	1140	150	320	230	23	2.5	9.8	550	22
	81-02-24	1958	.00	240	330	210	19	2.1	9.6	550	--
	81-05-12	1676	1100	160	310	200	21	2.2	6.8	580	--
	81-08-18	1167	580	220	150	150	22	2.0	6.8	590	--
483247100593201	80-11-18	2063	1800	480	210	55	5	.5	12	290	--
	81-02-24	1831	1500	420	190	43	5	.5	9.7	300	--
	81-05-11	1805	1400	360	220	58	7	.6	7.2	370	--
	81-08-18	1483	1200	330	160	37	5	.4	8.2	320	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
					MCHENRY						
482028100475601	80-11-17	38	.4	.1	16	455	439	.62	.26	--	.020
	81-02-23	72	1.0	.1	17	485	509	.66	.17	--	.020
	81-05-11	50	1.3	.0	14	448	457	.61	.06	--	.040
	81-08-17	73	2.3	.1	22	501	520	.68	.17	--	.020
482028100503201	80-11-17	75	4.5	.2	19	481	458	.65	.00	--	.020
	81-02-23	74	4.9	.4	21	475	478	.65	.02	--	.030
	81-05-11	79	5.0	.1	18	474	476	.64	.04	--	.040
	81-08-17	87	4.7	.2	24	489	497	.67	.13	--	.020
482405100474601	81-02-23	86	7.6	.2	15	557	566	.76	.14	--	.020
	81-05-11	97	6.1	.1	17	569	570	.77	.03	--	.040
	81-08-17	100	6.2	.2	18	554	540	.75	.21	--	.020
482357100502302	80-11-17	82	1.5	.2	18	461	460	.63	20	--	.020
	81-02-23	110	1.4	.2	15	447	481	.61	23	--	.020
	81-05-11	88	1.7	.2	15	433	385	.59	6.0	--	.030
	81-08-17	79	2.1	.3	18	440	463	.60	<1.0	--	.020
483240100503201	80-11-18	6600	63	.2	25	11500	9670	15.6	16	--	.020
	81-02-24	7200	55	.1	23	10800	10100	14.7	14	--	.080
	81-05-12	7300	59	.1	20	10900	10200	14.8	15	--	.040
	81-08-18	6600	110	.3	22	10200	9550	13.9	11	--	.030
483003100503201	81-02-23	44	2.3	.2	7.2	284	299	.39	.20	--	.020
	81-05-12	43	2.4	.1	12	304	306	.41	.34	--	.040
	81-08-18	45	3.1	.2	14	324	328	.44	.71	--	.030
483003100480401	80-11-18	26	1.1	.1	19	329	308	.45	.56	--	.020
	81-02-23	28	1.1	.2	17	314	310	.43	.02	--	.020
	81-05-12	30	1.2	.1	21	326	324	.44	.06	--	.030
	81-08-18	6.0	13	.2	23	319	305	.43	.15	--	.030
482825100565502	80-11-18	630	12	.3	23	1630	1440	2.2	22	--	.010
	81-02-23	640	9.6	.4	19	1440	1360	2.0	19	--	.030
	81-05-12	640	8.8	.3	20	1440	1340	2.0	6.0	--	.040
	81-08-18	590	12	.4	19	1370	1330	1.9	17	--	.020
482825101100202	80-11-18	100	3.2	.1	23	456	430	.62	2.3	--	.030
	81-02-23	120	3.3	.2	21	418	431	.57	.18	--	.110
	81-05-12	100	3.3	.1	21	401	421	.55	3.2	--	.090
	81-08-18	110	3.3	.1	24	449	434	.61	.20	--	.060
483418100475501	80-11-18	1500	56	.8	17	2830	2614	3.8	.30	--	.020
	81-02-24	1800	50	.6	21	3230	2990	4.4	.15	--	.060
	81-05-12	1500	41	.7	16	2670	2600	3.6	3.3	--	.040
	81-08-18	910	22	.8	22	1930	1840	2.6	.35	--	.020
483247100593201	80-11-18	1700	9.3	.1	28	3020	2670	4.1	.00	--	.010
	81-02-24	1600	9.6	.1	24	2690	2480	3.7	.00	--	.090
	81-05-11	1600	10	.1	21	2610	2500	3.5	.34	--	.040
	81-08-18	1200	4.5	.2	26	2120	1960	2.9	.20	--	.020

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	STRONTIUM, DISSOLVED (UG/L AS SR)
			MCHENRY				
482028100475601	80-11-17	.000	50	10	4	--	--
	81-02-23	.000	30	10	5	--	--
	81-05-11	.000	20	10	5	--	--
	81-08-17	<.010	40	<10	26	--	--
482028100503201	80-11-17	.000	80	350	390	--	--
	81-02-23	.000	50	450	540	--	--
	81-05-11	.000	50	140	510	--	--
	81-08-17	<.010	70	220	520	--	--
482405100474601	81-02-23	.000	50	900	570	--	--
	81-05-11	.000	30	3100	620	--	--
	81-08-17	.020	50	3200	510	--	--
482357100502302	80-11-17	.000	40	30	40	--	--
	81-02-23	.000	20	70	6	--	--
	81-05-11	.000	5	20	9	--	--
	81-08-17	<.010	30	18	10	--	--
483240100503201	80-11-18	.010	180	90	30	--	--
	81-02-24	--	120	60	20	--	--
	81-05-12	.000	90	90	30	--	--
	81-08-18	.010	140	60	30	--	--
483003100503201	81-02-23	.000	30	30	120	--	--
	81-05-12	.000	10	20	200	--	--
	81-08-18	<.010	30	110	250	--	--
483003100480401	80-11-18	.000	40	30	370	--	--
	81-02-23	.000	30	<10	310	--	--
	81-05-12	.000	5	130	400	--	--
	81-08-18	.010	30	640	370	--	--
482825100565502	80-11-18	.000	100	30	20	--	--
	81-02-23	.000	70	10	10	--	--
	81-05-12	.000	70	20	10	--	--
	81-08-18	.020	80	31	7	--	--
482825101100202	80-11-18	.010	40	760	420	--	--
	81-02-23	.020	10	580	410	--	--
	81-05-12	.000	20	730	350	--	--
	81-08-18	.040	30	660	360	--	--
483418100475501	80-11-18	.000	180	90	10	--	--
	81-02-24	--	130	260	50	--	--
	81-05-12	.000	120	70	20	--	--
	81-08-18	.010	130	20	10	--	--
483247100593201	80-11-18	.010	100	40	10	--	--
	81-02-24	--	90	60	20	--	--
	81-05-11	.000	80	30	20	--	--
	81-08-18	.020	90	60	30	--	--

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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